

NUREG-0274
Five in a Series of
Five Reports

802

CATALOG OF PHYSICAL PROTECTION EQUIPMENT

Book 2

Volume IV. Surveillance and Alarm Assessment Components

POOR
ORIGINAL

The MITRE Corporation
for
U. S. Nuclear Regulatory Commission

790913092

736 007

NOTICE

This report was prepared as an account of work sponsored by the United States Government. Neither the United States nor the United States Nuclear Regulatory Commission, nor any of their employees, nor any of their contractors, subcontractors, or their employees, makes any warranty, express or implied, nor assumes any legal liability or responsibility for the accuracy, completeness or usefulness of any information, apparatus, product or process disclosed, nor represents that its use would not infringe privately owned rights.

**POOR
ORIGINAL**

Available from
National Technical Information Service
Springfield, Virginia 22161
Price: Printed Copy \$9.50 ; Microfiche \$3.00

The price of this document for requesters outside of the North America Continent can be obtained from the National Technical Information Service.

003

CATALOG OF PHYSICAL PROTECTION EQUIPMENT

Book 2

Volume IV. Surveillance and Alarm Assessment Components

Wolf Haberman, and Others

Manuscript Completed: June 1977
Date Published: January 1978

The MITRE Corporation
P.O. Box 208
Bedford, MA 01730

Division of Safeguards, Fuel Cycle and Environmental Research
Office of Nuclear Regulatory Research
U. S. Nuclear Regulatory Commission
Under Contract No. AT(49-24)-0376

736 009

Reports in the Series

1. **Guidelines for the Development of a Methodology for Measuring Level of Effectiveness of Physical Protection Facilities at Fixed-Site Facilities**

NUREG-0270

2. **Physical Protection Equipment Study: Final Report**

NUREG-0271

3. **Cross Reference Index for Equipment Catalog and Evaluation Guide**

NUREG-0272

4. **Guide for the Evaluation of Physical Protection Equipment**

NUREG-0273

5. **Catalog of Physical Protection Equipment**

NUREG-0274

ABSTRACT

A catalog of commercially available physical protection equipment has been prepared under MITRE contract AT(49-24)-0376 for use by the U. S. Nuclear Regulatory Commission (NRC). Included is information on barrier structures and equipment, interior and exterior intrusion detection sensors, entry (access) control devices, surveillance and alarm assessment equipment, contraband detection sensors, automated response equipment, general purpose displays and general purpose communications, with one volume devoted to each of these eight areas. For each item of equipment the information included consists of performance, physical, cost and supply/logistics data. The entire catalog is contained in three notebooks for ease in its use by licensing and inspection staff at NRC.

THIS CATALOG DOES NOT REPRESENT A QUALIFIED PRODUCTS LIST. INCLUSION OF ANY ITEM IN THE CATALOG DOES NOT CONSTITUTE AN ENDORSEMENT BY EITHER THE MITRE CORPORATION OR THE U. S. NUCLEAR REGULATORY COMMISSION.

PREFACE AND ACKNOWLEDGEMENTS

The Catalog of Physical Protection Equipment presents information on currently used or currently available physical protection equipment that could be employed to safeguard special nuclear materials. The primary source of information was the responses of manufacturers and vendors to requests for literature and data, unless otherwise noted, and as discussed in the Final Report (NUREG-0271, MTR 3458). All equipment listed in the Catalog has been screened in accordance with the following general criteria, and only items meeting one or more of these criteria have been included:

- Equipment is commercially available off-the-shelf;
- Equipment is currently in use at commercial nuclear facilities licensed or to be licensed by NRC;
- Equipment is applicable for use at nuclear facilities licensed or to be licensed by NRC;
- Equipment can operate in the environmental conditions present at nuclear facilities;
- Equipment is not designed solely or primarily for residential.

The final report describes the methodology and rationale used to create the Catalog of Physical Protection Equipment. Individuals seeking background information concerning the Catalog are directed to that report.

The Catalog of Physical Protection Equipment was edited and reviewed by W. L. Parlee; W. Haberman had overall responsibility for its preparation. Inputs to the Catalog were prepared by the following individuals, and their contributions are gratefully acknowledged:

Volume I.

L. I. Egelson Sections 1, 4, 5, 6, 7, 8, 9, 10
R. G. Hansen Sections 2, 3

Volume II.

J. L. Conway Section 1
R. D. Cotell Section 2
Z. Kohorn Sections 11, 14
R. N. Lawson Sections 4, 5, 7, 9, 12
J. O. Runkle Sections 6, 8, 10, 13, 15
G. O. Sauermann Section 3

Volume III.

W. L. Parlee

Volume IV.

G. O. Sauermann

Volume V.

A. J. Graff

Volume VI.

R. N. Lawson

Volume VII.

C. E. Dolberg

Volume VIII.

D. Stone

D. G. Willard

TABLE OF CONTENTS

BOOK 1

VOLUME I. BARRIERS AND STRUCTURAL COMPONENTS

Section 1. Doors and Frames

Section 2. Hinges

Section 3. Locks

Category a. Mechanical Locks

Category b. Electro-magnetic Locks

Category c. Switch Locks

Section 4. Gate Operators

Section 5. Gates/Turnstiles

Section 6. Glazing Materials

Section 7. Window Guards

Section 8. Fence

Category a. Galvanized Steel Fence

Category b. Net Barriers and Entrapments

Section 9. Structural Materials

Section 10. Wide-Area Detection Mirrors

VOLUME II. INTRUSION DETECTION COMPONENTS

Section 1. Acoustic Components

Category a. Active Acoustic Components

Category b. Passive Acoustic Components

Section 2. Microwave/Radar Components

Category a. Monostatic Radar Components

Category b. Bistatic Radar Components

Section 3. Electro-optic Barriers

- Category a. Infrared Passive Components
- Category b. Infrared Active Components
- Category c. Video Motion Detection Components

Section 4. Electric Field Components

Section 5. Orientation Components

Section 6. Ferrous Metal Detection Components

Section 7. Proximity Detection Components

- Category a. Interior Proximity Detection Components
- Category b. Exterior Proximity Detection Components

Section 8. Vibration Detection Components

- Category a. Fence-Mounted Vibration Detection Components
- Category b. Window Breakage Detection Components
- Category c. Wall/Object-Mounted Detection Components

Section 9. Seismic Components

Section 10. Pressure-Sensitive Components

- Category a. Mechanical Deformation Detection Components
- Category b. Trap Wires

Section 11. Pressure Mats

- Category a. Personnel Detection, Foot-Activated Sensors
- Category b. Personnel Detection, Hand or Finger-Activated Sensors
- Category c. Vehicle Pressure Detection Sensors
- Category d. Object Removal Detection Sensors

Section 12. Continuity Components

Section 13. Electrical/Magnetic Switches

Section 14. Fire Detection Components

- Category a. Heat Detection Components
- Category b. Smoke Detection Components
- Category c. Flame Detection Components
- Category d. Heat Detection/Control and Display Instruments

Section 15. Mechanical Contact Switches

BOOK 2

VOLUME III. ENTRY CONTROL COMPONENTS

Section 1. Code Combination Locks

Section 2. Card Locks

- Category a. Magnetic Card Locks
- Category b. Capacitive Card Locks
- Category c. Embossed Card Locks
- Category d. Radio Frequency Card Locks
- Category e. Code Circuitry Card Locks

Section 3. Code Combination and Card Locks

Section 4. Card Systems

- Category a. Magnetic Card Systems
- Category b. Capacitive Card Systems
- Category c. Optically Coded Card Systems
- Category d. Coded Circuitry Card Systems

Section 5. Personal Characteristics Verification Systems

- Category a. Fingerprint Verification Systems
- Category b. Hand Geometry Verification Systems
- Category c. Photo Badge and CCTV Verification Systems
- Category d. Badge Comparison Verification Systems

VOLUME IV. SURVEILLANCE AND ALARM ASSESSMENT COMPONENTS

Section 1. Thermal Imaging Systems

Section 2. Video Camera Equipment

- Category a. Cameras with Standard Vidicon
- Category b. Cameras with Silicon Diode Vidicon
- Category c. Cameras with Intensified Target Tube
- Category d. Cameras with Special Sensor
- Category e. Video Camera Enclosures
- Category f. Video Camera Positioning Equipment

Section 3. Video Monitors

Section 4. Video Tape Recorders

VOLUME V. CONTRABAND DETECTION COMPONENTS

Section 1. Explosives Detectors

- Category a. Portable Explosives Detection Components
- Category b. Walk-Through Explosives Detection Components

Section 2. Ferrous Metal Detectors

- Category a. Hand-Held Ferrous Metal Detection Components
- Category b. Walk-Through Ferrous Metal Detection Components

Section 3. All-Metal Detectors

- Category a. Hand-Held All-Metal Detection Components
- Category b. Walk-Through All-Metal Detection Components

Section 4. SNM Detection Components

Section 5. X-Ray Inspection Equipment

BOOK 3

VOLUME VI. AUTOMATED RESPONSE COMPONENTS

Section 1. Siren and Bell Controls

Section 2. Automatic Illumination Controls

Section 3. Automatic Photograph Controls

Section 4. Automatic Dialers

VOLUME VII. GENERAL PURPOSE DISPLAY COMPONENTS

Section 1. Cathode Ray Tubes (CRT)

- Category a. Alphanumeric CRT Displays
- Category b. Alphanumeric with Limited Graphics CRT Displays
- Category c. Graphics CRT Displays

Section 2. Printers

- Category a. Serial and Read-Only Printers
- Category b. Data Logging, Digital and List Printers
- Category c. Keyboard Teleprinters

Section 3. Other Displays

- Category a. Event Displays and Recorders
- Category b. Transilluminated Displays

VOLUME VIII. GENERAL PURPOSE COMMUNICATION COMPONENTS

Section 1. Alarm Signalling Systems

Section 2. Portable Voice Communications

- Category a. UHF Portable Voice Communications
- Category b. VHF Portable Voice Communications

THERMAL IMAGING SYSTEM

Thermal imaging systems display an object's temperature contrasts in the form of a thermal picture, using natural infrared radiation, which varies with the object's surface temperature and a material constant, the emissivity. The camera scans over its field of view and focuses the infrared radiation on a detector which converts the infrared variations to an electronic signal. After amplification the signal is used to control the electron beam of a TV-type picture tube. The beam sweeps over the picture screen in synchronism with the camera scanner, forming a thermal image of the object in which the brightness variations represent details of differences in temperature. The result is a live, or real-time, thermal picture of the object on the monitor display screen. The system, consisting of a camera and a display unit operates independently of other sensors.

The scanning system, in contrast to standard TV systems, is optical-mechanical. Two prisms move at high speed -- one in the horizontal and one in the vertical direction -- to provide a raster scan. Interchangeable lenses offer various fields of view from wide-angle (45 degrees) to narrow-field (2 degrees) telephoto lenses. The thermal image can be displayed on either a black-and-white or a color television-type monitor. Since the scan rates of the thermal system differ from those of standard TV, the electronics of standard monitors have to be modified to display the thermal image. Different shades of gray represent different object temperatures. Alternatively, temperature differences can be displayed as different colors for easier identification. Temperature differences as low as 0.3°F (0.2°C) can be detected at object temperatures of 86°F (30°C). Several display modes are offered for each system, including an overall temperature map, temperature contours or both. Changing from one mode to another is done by simple

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	1	a	0	1

736 019

switching. The most effective mode for a specific application has to be determined on location. Thermal imaging devices are offered as small hand-held units with a small portable display unit (monitor) and battery pack, or as larger tripod-mounted units with separate electronic control units.

One drawback of thermal imaging systems of this type is the need to cool the detector element with liquid nitrogen. One filling of the reservoir will keep the device operational for two to four hours, which means that liquid nitrogen has to be available at all times, since when the detector warms up, the device ceases to function and becomes useless. The need for storage of liquid nitrogen and its transportation to the cameras can provide a difficult logistics problem.

Thermal imaging devices are very useful for detection of objects (intruders) showing very small visual contrast or during conditions of low visibility. People hidden in vegetation or camouflaged can be detected easily and with a high rate of confidence even if they cannot be seen with the unaided eye. The devices work equally well during day or night since no external lighting is required.

Thermal imaging systems are very difficult to spoof. Unless the intruder blends totally with the background, i.e., his body temperature and emissivity match the background over the whole spectral range, the intruder cannot hide within the field of view. If these thermal imaging systems are used in combination with closed circuit television, two detection systems with very different detection mechanisms must be spoofed simultaneously, a task which is generally considered to be impossible.

The cost, mechanical complexity and need for liquefied gas cooling, however, make thermal imaging devices less attractive as a general surveillance tool. However, as a gap filler, thermal imagers can be very helpful and sometimes essential where other devices fail completely.

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	1	a	0	2

736 020

THERMAL IMAGING SYSTEM

Manufacturer AGA Corp.
550 County Ave
Seacaucus, NJ 07094
(201) 866-3344

Model Thermovision 680

Reference Evaluation Guide Procedure No. IV-1.A NRC Identification No.

NARRATIVE DESCRIPTION

AGA Thermovision 680 shows temperature differences of an object in the form of a thermal picture, utilizing the natural infrared radiation which varies with the surface temperature of the object. The camera scans the field of view and focuses the infrared radiation on a sensitive detector which converts the infrared radiation to an electronic signal. After amplification, the signal is used to control the electron beam of a TV-type picture tube. The beam sweeps over the picture screen in synchronism with the camera scanner, forming a thermal image of the object in which the lighter areas represent details of higher temperature. The result is a live, or real-time, thermal picture of the object on the screen. The system, consisting of a camera and a display unit, is self-contained.

PERFORMANCE DATA

Probability of Detection: 100 percent for human standing at 450ft (135m) with 8x8 degree field of view;
100 percent for human standing at 250ft (75m) with 15x15 degree field of view;
100 percent for human standing at 150ft (45m) with 25x25 degree field of view;
100 percent for human standing at 90ft (27m) with 45x45 degree field of view.

Target Temperature

Resolution: 0.36F (0.2C) at 85F (30C) target temperature.

Surveillance Mechanism: Camera detects thermal radiation.

Surveillance Coverage

Area/Volume: See Probability of Detection.

Capacity: Several cameras can be multiplexed to one display.

Display Mechanism: TV-type monitor, 16 frames/second, 210 lines, interlaced.

Display Controls: Normal thermogram, single isotherms, graytone suppression.

Illumination Requirements: None.

Indoor/Outdoor Operation: Information not available.

Temperature: 5 to 130F (-15 to +55C).

Humidity: Information not available.

Other Environmental

Characteristics: Information not available.

Resistance to Spoofing and Tampering: Thermal radiation from person could be shielded, but TV picture should reveal shielding in most cases. No tamper protection provided.

Interface: Self-contained system.

PHYSICAL DATA

Size: Camera, excluding lens, 13.5x8in dia (34.5x20.5cm dia); Monitor, 17.5x20x9.5in (44.0x50.0x24.0cm); Lens, 3.2 to 6in long (8.0 to 15.0cm).

Weight: Camera, 24.5lb (11kg); Monitor, 56lb (25kg); Lens 5.5 to 9lb (2.5 to 4kg).

Power (Primary/Secondary): 115 or 230V ac \pm 10%, 50-400Hz, 200VA single phase. No standby power provided.

Emplacement: Can be tripod-mounted (camera and monitor); no specific installation techniques necessary.

DATE
31 December 1976

CATALOG VOLUME
IV

SECTION
1

CATEGORY
a

DATA SHEET
1

PAGE
1

736 021

SUPPLY/LOGISTICS DATA

Documentation and Training: Information not available.
Parts and Repairs: Information not available.
Reliability: MTBF not available.
Maintainability: MTTR not available.
Warranty Information: Information not available.
Government or Professional Standards: Information not available.
Lead Time: Information not available.

COST DATA

Unit Acquisition Cost: \$45,000.
Unit Installation Cost: Information not available.
Training Cost: Information not available.
Maintenance Cost: Information not available.
Operation Cost: Information not available.

NOTES

1. Some information contained in this data sheet was obtained by a telephone conversation with a company representative.
2. Camera detector has to be cooled with liquid nitrogen; one filling good for 4 hours (minimum) operation.

INSTALLATIONS

THERMAL IMAGING SYSTEM

Manufacturer AGA Corp.
550 County Ave.
Seacaucus, NJ 07094
(201) 866-3344

Model Thermovision

Reference Evaluation Guide Procedure No. IV-1.A NRC Identification No.

NARRATIVE DESCRIPTION

The invisible infrared (IR) radiation emitted by the observed object is transmitted by an IR-optical system to an IR-detector element. This system includes focusing front lenses and a prism scanning mechanism. The detector is a semi-conductor component which converts the scanned IR-radiation into a video signal. After pre-amplification, the signal is conveyed to the display unit. To obtain optimum temperature sensitivity the detector element is cooled by liquid nitrogen - 320F (-196C). The unit has interchangeable front lenses giving various fields of view, selectable apertures for different temperature ranges and a range of filters to match the IR-spectral characteristics of objects. The camera unit is intended for hand-held operation.

PERFORMANCE DATA

Probability of Detection: 100 percent for human standing at 20ft (6m) with 20x20 degree field of view (normal lens).
100 percent for human standing 60ft (18m) with 7x7 degree field of view (tele lens).

Target Temperature

Resolution: 0.36F (0.2C) at 85F (30C) target temperature.

Surveillance Mechanism: Camera detects thermal radiation.

Surveillance Coverage

Area/Volume: See Probability of Detection.

Capacity: One camera attached to one display.

Display Mechanism: TV-type, portable monitor, target covers 1/10 of image screen.

Display Controls: Adjustment for object temperature, normal or isotherm display

Illumination Requirements: None.

Indoor/Outdoor Operation: Information not available.

Temperature: 5 to 130F (-15 to +55C).

Humidity: Information not available.

Other Environmental

Characteristics: Information not available.

Resistance to Spoofing and Tampering: Thermal radiation from person could be shielded, but TV picture should reveal shielding in most cases. No tamper protection provided.

Interface: Self-contained system.

PHYSICAL DATA

Size: Camera, excluding lens, 3.2x5x8in (8.0x12.5x20cm); Monitor, 10x5.1x12.5in (25.3x12.9x32.2cm); Lens, 2.8x6in long (7.0x15cm).

Weight: Camera, 3.31lb (1.5kg); Monitor, 10lb (4.5kg); Lens, 0.4 to 1.31lb (0.18 to 0.6kg).

Power (Primary/Secondary): Battery-pack (rechargeable) 3 to 5 hours operation, or 115V ac powered.

Emplacement: Hand-held, portable, can be mounted on tripod or in fixed position.

DATE
31 December 1976

CATALOG VOLUME
IV

SECTION
1

CATEGORY
a

DATA SHEET
2

PAGE
1

736 023

SUPPLY/LOGISTICS DATA

Documentation and Training: Information not available.
Parts and Repairs: Information not available.
Reliability: MTBF not available.
Maintainability: MTTR not available.
Warranty Information: Information not available.
Government or Professional Standards: Information not available.
Lead Time: Information not available.

COST DATA

Unit Acquisition Cost: \$40,000.
Unit Installation Cost: Information not available.
Training Cost: Information not available.
Maintenance Cost: Information not available.
Operation Cost: Information not available.

NOTES

1. Some information contained in this data sheet was obtained by a telephone conversation with a company representative.
2. Camera has to be cooled with liquid nitrogen; one filling good for two hours (minimum) operation.

INSTALLATIONS

TV CAMERAS WITH STANDARD VIDICON SENSORS

Television cameras in principle consist of three major components which have clearly defined functions. The light-sensitive detector, usually referred to as the sensor or pickup device, converts the incoming light energy into an electrical signal. The optical lens system focuses the light from a given scene onto the sensor, creating an electrical charge pattern which is "read out" within the sensor by an internal electronic scan. The electronic support system provides all the necessary voltages, timing pulses and amplification of the electrical signal.

Most commercial closed-circuit television cameras use standard vidicon tubes as pickup devices. Vidicon pickup tubes are basically cylindrical glass vacuum devices between 1/2 and 2 inches in diameter and between 3 and 7 inches long. One of the flat ends of the cylinder holds the photosensitive material; the other is used for electrical feedthrough. The term "standard vidicon" refers to a tube using a particular type of photosensitive material, a homogeneous layer of Antimonide trisulfide which responds to visible light only.

Vidicon tubes are inexpensive, rugged and of moderate sensitivity. They can be used under normal lighting conditions indoors, and outdoors during daytime. They have a relatively high range of sensitivity (dynamic range), but are very vulnerable to illumination overload. Very high illumination levels can burn out the photosensitive area and damage the tube permanently. At high light levels standard vidicons exhibit extensive blooming; very bright areas seem to flow into adjacent darker sections and obscure part of the scene. Furthermore, standard vidicons are susceptible to "burn-in" -- a memory effect. Closed-circuit television cameras equipped with standard vidicons exposed to the same scene for a long period can

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	2	a	0	1

become completely insensitive and display part or all of a previously observed scene on a video monitor even when the camera lens is covered.

An advantage of the standard vidicon is the ability to control its sensitivity electronically by varying a single critical voltage. This allows for automatic sensitivity adjustment, widely used with these devices. It eliminates the lens stop (iris) adjustments similar to those used in film cameras.

The pickup tube is surrounded by a coil whose electromagnetic field deflects the electron scan beam within the tube. By varying the current in the deflection coil the electron beam is moved to create a raster scan identical to that used in home television sets. In the following paragraphs, technical terms specific to television cameras are explained in more detail. They appear in the text in the same order as they are mentioned on the Catalog data sheets. For reference purposes the technical terms are underlined and so are expressions which appear on the Catalog data sheets.

A camera's sensitivity is measured in terms of the amount of light falling on the light-sensitive surface (faceplate) of the camera sensor. Usually two values are given. The first indicates the amount necessary to produce a usable picture, enabling an observer to identify familiar objects on a correctly adjusted monitor. This value is subjective and depends on circumstances. The second value gives the illumination necessary to produce ten distinctly discernible shades of gray. These levels and the camera response can be measured in the laboratory and constitute an objective method for evaluation of the camera.

Signal transfer distance is defined as the maximum distance between camera and television monitors which can be used without amplifier repeaters.

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	2	a	0	2

736 026

The video signal itself has two components, one containing the picture content (raw video) and the other the timing information (horizontal and vertical synchronization pulses). The raw video and sync pulses are superimposed to form the composite signal.

The scan format defines the details of the scanning process. All television cameras designed to be used in connection with a monitor for visual observation scan the image in an "interlaced" mode. First all odd-numbered lines are scanned, defining field one, then all the even-numbered lines, defining field two. Fields one and two constitute the whole scan, called a frame. The standard rate in the U.S. is 60 fields (30 frames) per second; this scan format is called 2:1 interlaced. The scan timing can be controlled by the ac line frequency, by an internal oscillator or by an external synchronization (sync) pulse. If the starting times of the two successive fields are not locked together, the scan sequence is called 2:1 random interlaced. Minimum standards to make closed circuit television systems compatible are listed in Electronic Industries Association Standard EIA RS-170, which covers output and equipment standardization. More rigid standards for closed-circuit television cameras are defined in EIA RS-330 which specifies 525 scan lines per picture height and 30 frames (60 fields) per second. Some cameras are also equipped with an option to comply with CCIR standards which are the European equivalents to the US EIA RS standards, but based on a rate of 50 frames/sec and 625 scan lines per picture height.

Scan fail protection is provided by a special sensing circuit which turns the electron scan beam off in case the scan circuitry fails. This prevents possible severe damage to the sensor tube when the electron read beam stops moving.

Automatic gain control (AGC) enables the camera to provide a constant-output signal over a wide variety of illumination conditions, but only within the sensor's sensitivity range. The video

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	2	a	0	3

736 027

amplifier gain is automatically controlled by a feedback circuit, which in turn is controlled by the video output signal. Most cameras can override the AGC when necessary.

If the illumination range exceeds the automatic gain control's sensitivity range, the camera's lens stop (iris) must be adjusted. Several cameras include provisions for automatic operation of a motor-driven lens stop -- an automatic iris -- to maintain a constant electrical output signal over a wide range of illuminations. An entry of "YES" for a specific camera indicates that an output connector is provided to operate the automatic iris. In cases where the automatic iris is provided with the camera as one unit, this fact is mentioned in "NOTES".

In many instances television cameras are provided with remote control of their own electronic adjustments (but not of their positioning). The camera controls available to an operator are electrical and mechanical focus, scan beam adjustment, and in some cases target voltage control. For more technical details, consult the camera servicing manuals.

Camera pickup tubes for closed-circuit TV usually come in two sizes, nominally 2/3 inch and 1 inch. Manufacturers specify the tube to be used with their cameras, but many tubes are interchangeable without any need to change electronic circuits. Tube interchangeability guides are provided by all major tube manufacturers.

Most cameras have interchangeable lenses with a standard threaded mount referred to as a "C Mount". Lens selection depends on the specific requirements for area coverage. Tables and diagrams to aid in the selection are available from various manufacturers. It is important to note that the size of the sensor itself (in the case of vidicons, 2/3 or 1 inch) is an important parameter in selecting the camera lens. Many camera lenses are also produced with a variety of additional features. Zoom lenses are available in good

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	2	a	0	4

736 028

quality either for manual or motorized adjustment. Motorized lens stop (auto-iris) adjustments are very common, as is motorized optical focus adjustment for remote-control operation. Many lens systems provide all three motorized options in one unit.

A special feature provided by some manufacturers is the "one-cable" camera, in which power to run the camera, the video signal and camera control signals are transmitted over the same cable. Other features, usually provided on special request, include matching circuits directly attached to the camera for video rf signal transmission.

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	2	a	0	5

736 029

CAMERAS WITH STANDARD VIDICONS

<i>Manufacturer</i>	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700
<i>Model</i>	2006-011	2006-005, 2006-006	2006-007, 2006-012
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	1.0fc (10lm/m ²)	1.0fc (10lm/m ²)	1.0fc (10lm/m ²)
Usable Picture	0.1fc (1lm/m ²)	0.1fc (1lm/m ²)	0.1fc (1lm/m ²)
Signal Transfer Distance	2,000ft (600m)	2,000ft (600m)	2,000ft (600m)
Scan Format	2:1 Interlace	2:1 Interlace	2:1 Interlace
Scan Fail Protection	YES	YES	YES
Automatic Gain Control	5,000:1	5,000:1	5,000:1
Automatic Iris	NO	NO	NO
Remote Control Provision	NO, can be provided	NO, can be provided	NO, can be provided
Controls/Control Unit	7900 Series control unit — rack-mounted	7900 Series control unit — rack-mounted	7900 Series control unit — rack-mounted
Temperature	0 to 140F (-17 to +60C)	0 to 140F (-17 to +60C)	0 to 140F (-17 to +60C)
Humidity	100 percent	100 percent	100 percent

PHYSICAL DATA

Camera Tube	7262A or 7263A	7262A or 7263A	7262A or 7263A
Lens Mount	"C", integral lens	"C", integral lens	"C", integral lens
Lens Provided	See notes	See notes	See notes
Weight	11lb (5kg)	005: 17lb (7.6kg) 006: 18lb (8kg)	007: 18lb (8kg) 012: 10lb (4.5kg)
Size H	3in (7.6cm) dia	4in (10cm) dia	007: 4in (10cm) dia 012: 3in (7.6cm) dia
W	—	—	—
L	8.9in (22.5cm)	19.2in (49cm)	007: 19in (43cm) 012: 12in (30cm)
Output Connector	Multipin	Multipin	Multipin
Input Voltage	110V ac	110V ac	110V ac
Input Power	60W	60W	60W

COST DATA

Price	\$1,155	005: \$3,580 006: 3,710	007: \$3,710 012: 1,155
--------------	---------	----------------------------	----------------------------

NOTES

- | | | |
|---|---|---|
| 1. Magnetic shielding provided — lens exposed | Mod. 005, 10:1 Zoom lens f/2.8, 15 to 150mm, for 48 to 4.8 degree field of view | Mod. 007, 10:1 Zoom lens 2x Extender, f/5.6; 30 to 300mm for 23 to 2.3 degree field of view |
| 1. Vibration-, Explosion-, Shock-proof. | Mod. 006, 10:1 Zoom lens 1.5x Extender; f/3.8, 22.5 to 225mm for 30 to 3 degree field of view | Mod. 012: f/1.4, focal length 0.5 or 2.0in; or f/1.9, focal length 10mm (wide angle) |

INSTALLATIONS

CAMERAS WITH STANDARD VIDICONS

<i>Manufacturer</i>	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700
<i>Model</i>	2006-014, 2006-015	2006-016	2505-011, 2505-012
Evaluation Guide Procedure IV-2 A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	1.0fc (10lm/m ²)	1.0fc (10lm/m ²)	1.0fc (10lm/m ²)
Usable Picture	0.1fc (1lm/m ²)	0.1fc (1lm/m ²)	0.1fc (1lm/m ²)
Signal Transfer Distance	2,000ft (600m)	2,000ft (600m)	1,000ft (300m)
Scan Format	2:1 Interlace	2:1 Interlace	2:1 Interlace
Scan Fail Protection	YES	YES	YES
Automatic Gain Control	5,000:1	5,000:1	4,000:1
Automatic Iris	NO	NO	NO
Remote Control Provision	NO, but can be provided	NO, but can be provided	YES
Controls/Control Unit	7900 Series control unit — rack-mounted	7900 Series control unit — rack-mounted	3990 Series control unit — rack-mounted
Temperature	0 to 140F (-17 to +60C)	0 to 140F (-17 to +60C)	5 to 130F (-20 to +55C)
Humidity			

PHYSICAL DATA

Camera Tube	7262A or 7263A	7262A or 7263A	C74128
Lens Mount	"C", integral lens	"C", Integral lens	"C"
Lens Provided	See notes	See notes	See notes
Weight	10lb (4.5kg)	10lb (4.5kg)	011: 6lb (2.7kg) 012: 9lb (4kg)
Size H	3in (7.6cm) dia	3in (7.6cm) dia	3in (7.6cm) dia
W	—	—	—
L	014: 14in (35cm) 015: 12in (30cm)	23in (58cm)	011: 12.2in (31cm) 012: 15.8in (40cm)
Output Connector	Multipin	Multipin	Multipin
Input Voltage	110V ac	110V ac	107 to 110V ac or 220V ac or 28V ac
Input Power	60W	60W	70W

COST DATA

Price	\$1,155	\$1,155	011: \$1,300 012: 1,390
--------------	---------	---------	----------------------------

NOTES

Mod. 014: f/2.8 focal length 4in or 2.0in; f/1.9, focal length 10mm (Wide Angle)

Mod. 015: f/1.4, focal length 1in, or f/0.95, focal length, 1in.

f/1.4, focal length 3in or f/2.8, focal length 6in (TELE).

Mod. 011: lens exposed.

Hardened camera will withstand 10^8 rad or 10^{12} NEUT/cm²

Mod. 012: enclosed lens up to 1inch long can be accommodated.

INSTALLATIONS

CAMERAS WITH STANDARD VIDICONS

Manufacturer	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700
Model	2505-013 2505-014	2810	2820B-202, 302 2820B-211, 311
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	1.0fc (10lm/m ²)	0.2fc (2lm/m ²)	0.5fc (5lm/m ²)
Usable Picture	0.1fc (1lm/m ²)	Information not available	0.01fc (0.1lm/m ²)
Signal Transfer Distance	1,000ft (300m)	1,000ft (300m)	1,000ft (300m)
Scan Format	2:1 Interlace	2:1 Interlace, RS170 standard or external sync	2:1 Interlace, RS170 standard
Scan Fail Protection	YES	YES	YES
Automatic Gain Control	4,000:1	5,000:1	40,000:1
Automatic Iris	NO	NO	NO
Remote Control Provision	YES	Electronic focus, beam, target	YES
Controls/Control Unit	3990 Series Camera Control Unit — rack-mounted	Auto/Man. Switch for gain Control; Blanking level; Zoom	See notes
Temperature	-5 to +130F (-20 to +55C)	-5 to +140F (-20 to +60C)	-40 to +140F (-40 to +100C)
Humidity	100 percent	95 percent	100 percent

PHYSICAL DATA

Camera Tube	C74128	7735 or 8507A	8541 or 8541A
Lens Mount	"C"	"C"	"C"
Lens Provided	See notes	Information not available	See notes
Weight	9lb (4kg)	12lb (5.4kg)	211/311: 15.5lb (7kg); 202/302: 26lb (12kg)
Size H	3in (7.6cm) dia	4.25in (11cm)	6in (15.2cm) dia
W	—	6.5in (17.5cm)	—
L	013: 16.9in 014: 21.2in (54cm)	14.5in (37cm)	See notes
Output Connector	Multipin	Multipin	PC-07C-18-32P
Input Voltage	107 to 110V ac; or 220V ac or 28V dc	110 to 130V ac	105 to 130V ac
Input Power	70W	35W	20W (100W with heater)

COST DATA

Price	\$1,390	Information not available	2820B-211/311: \$2,050 2820B-202/302: 4,760
-------	---------	---------------------------	--

736 054

NOTES

013 will accommodate up to 3in (7.6cm) enclosed lens	Designed as surveillance camera. Model -1200 with RS 170 STD sync generator	Weatherproof, hands-off operation, tamper-proof housing. Remote control for beam, electronic focus, sensitivity, iris, lens focus, zoom, pan, tilt.
-014 will accommodate up to 6in enclosed lens		202/302: Length: 25in (63cm), 10:1 Zoom, f/1.8 lens in housing 211-211: Length: 15in (38cm) less lens; lens exposed

INSTALLATIONS

CAMERAS WITH STANDARD VIDICONS

<i>Manufacturer</i>	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700
<i>Model</i>	2820B-203, 303 2820B-204, 304	2820B-205, 305 2820B-206, 306	2820B-207, 307 2820B-212, 312
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	0.5fc (5lm/m ²)	0.5fc (5lm/m ²)	0.5fc (5lm/m ²)
Usable Picture	0.01fc (0.1lm/m ²)	0.01fc (0.1lm/m ²)	0.01fc (0.1lm/m ²)
Signal Transfer Distance	1,000ft (300m)	1,000ft (300m)	1,000ft (300m)
Scan Format	2:1 Interlace, RS170	2:1 Interlace, RS170	2:1 Interlace, RS170
	Standard	Standard	Standard
Scan Fail Protection	YES	YES	YLS
Automatic Gain Control	40,000:1	40,000:1	40,000:1
Automatic Iris	NO	NO	NO
Remote Control Provision	YES	YES	YES
Controls/Control Unit	See notes	See notes	See notes
Temperature	-40 to +140F (-40 to +60C)	-40 to +140F (-40 to +60C)	-40 to +140F (-40 to +60C)
Humidity	100 percent	100 percent	100 percent

PHYSICAL DATA

Camera Tube	8541 or 8541A	8541 or 8541A	8541 or 8541A
Lens Mount	"C"	"C"	"C"
Lens Provided	See notes	See notes	See notes
Weight	26lb (12kg)	23lb (10.5kg)	207/307: 23lb (10.5kg) 212/312: 17.5lb (8kg)
Size H	6in (15.2cm)	6in (15.2cm)	6in (15.2cm)
W	—	—	—
L	25in (63cm)	23in (58cm)	207/307: 23in (58cm) 212/312: 18in (46cm)
Output Connector	PC-07C-18-32P	PC-07C-18-32P	PC-07C-18-32P
Input Voltage	105 to 130V ac	105 to 130V ac	105 to 130V ac
Input Power	20W (100W with heater)	20W (100W with heater)	20W (100W with heater)

COST DATA

Price	\$4,885	205/305: \$3,905 206/306: 4,030	207/307: \$4,030 212/312: 2,050
-------	---------	------------------------------------	------------------------------------

NOTES

Rugged weatherproof, hands-off operation, tamper-proof housing; remote control provided for beam, electronic focus, sensitivity, iris, lens focus, zoom, pan, tilt 2820B-203/303: lens 10:1 zoom; 1.5x extender; f/1.8 2820B-204/304: lens 10:1 zoom; 2x extender; f/1.8	Rugged weatherproof, hands-off operation, tamper-proof housing; remote control provided for beam, electronic focus, sensitivity, iris, lens focus, zoom, pan, tilt 205/305: lens 10:1 zoom; f/2.8 206/306: lens 10:1 zoom; 1.5x extender; f/2.8	Rugged weatherproof, hands-off operation, tamperproof housing; remote control provided for beam, electronic focus, sensitivity, iris lens focus, zoom, pan, tilt 207/307: lens 10:1 zoom; 2x extender; f/2.8 212/312: lens; f/1.4; 0.5in focal length
--	---	---

INSTALLATIONS

736 037

CAMERAS WITH STANDARD VIDICONS

<i>Manufacturer</i>	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700
<i>Model</i>	2820B-213, -313 2820B-214, -314	2820B-215, -315	3000.011 3000-012
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	0.5fc (5lm/m ²)	0.5fc (5lm/m ²)	1.0fc (10lm/m ²)
Usable Picture	0.01fc (0.1lm/m ²)	0.01fc (0.1lm/m ²)	0.1fc (1lm/m ²)
Signal Transf. Distance	1,000ft (300m)	1,000ft (300m)	Information not available
Scan Format	2:1 Interface, RS170 Standard	2:1 Interface, RS170 Standard	2:1 Interface, RS170 Standard
Scan Fail Protection	YES	YES	YES
Automatic Gain Control	40,000:1	40,000:1	Information not available
Automatic Iris	NO	NO	NO
Remote Control Provision	YES	YES	Standard
Controls/Control Unit	See notes	See notes	Rack-mount Control Unit
Temperature	-40 to +140F (-40 to +60C)	-40 to +140F (-40 to +60C)	-5 to +140F (-20 to +60C)
Humidity	100 percent	100 percent	100 percent

PHYSICAL DATA

Camera Tube	8541 or 8541A	8541 or 8541A	8507
Lens Mount	"C"	"C"	011: "C", external mount 012: "C", internal mount
Lens Provided	See notes	See notes	See notes
Weight	213/313: 17.5lb (8kg) 214/314: 20 lb (9kg)	21lb (9.4kg)	011: 12.4lb (5.8kg) 012: 14lb (6.3kg)
Size H	6in (15.2cm) dia	6in (15.2cm) dia	6in (15.2cm) dia
W	—	—	—
L	213/313: 18in (45cm) 214/314: 21in (53cm)	23in (58cm)	011: 10in (25cm) 012: 14.2in (36cm)
Output Connector	PC-07C-18-32P	PC-07C-18-32P	Mil-Std
Input Voltage	105 to 130V ac	105 to 130V ac	Information not available
Input Power	20W (100W with heater)	20W (100W with heater)	Information not available

COST DATA

Price	\$2,050	\$2,050	Information not available
--------------	---------	---------	---------------------------

736 038

NOTES

Rugged weatherproof,
hands-off operation,
tamperproof housing;
remote control provided
for beam, electronic
focus, sensitivity, iris,
lens focus, zoom, pan,
tilt

213/313: lens: f/1.4,
1.0in focal length or
2.0in focal length; f/0.95, 1in
focal length

214/314: lens: f/1.4, 3.0in
focal length or f/2.0, 1in focal
length

Rugged weatherproof,
hands-off operation,
tamperproof housing;
remote control provided
for beam, electronic
focus, sensitivity, iris,
lens focus, zoom, pan,
tilt

Lens: f/2.8; 6.0in
focal length

Surveillance camera
for adverse environ-
ment 012: lens f/1.4,
0.5in or f/1.4, 1.0in

INSTALLATIONS

736 039

CAMERAS WITH STANDARD VIDICONS

<i>Manufacturer</i>	Cohu, inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700
<i>Model</i>	3000-013, 3000-014	3000-015	7120
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity	1.0fc (10lm/m ²)	1.0fc (10lm/m ²)	0.5fc (5lm/m ²)
10 Gray Scale	0.1fc (1lm/m ²)	0.1fc (1lm/m ²)	Information not available
Usable Picture	Information not available	Information not available	2,000ft (600m)
Signal Transfer Distance	2:1 Interlace, RS170	2:1 Interlace, RS170	2:1 Interlace, RS170,
Scan Format	Standard	Standard	RS330 or RS343
Scan Fail Protection	YES	YES	YES
Automatic Gain Control	Information not available	Information not available	10,000:1
Automatic Iris	NO	NO	NO
Remote Control Provision	Standard	Standard	Standard
Controls/Control Unit	Rack-mounted camera control unit, 3900	Rack-mounted camera control unit, 3900	Rack-mounted camera control unit, 7900
Temperature	-5 to +140F (-20 to +60C)	-5 to +140F (-20 to +60C)	-5 to +120F (-20 to +50C)
Humidity	100 percent	100 percent	Information not available

PHYSICAL DATA

Camera Tube	8507	8507	8541
Lens Mount	"C" internal mount	"C" internal mount	"C"
Lens Provided	See notes	See notes	See notes
Weight	013: 14.5lb (6.6kg) 014: 15.5lb (7kg)	13.5lb (6.1kg)	5.25lb (2.4kg)
Size H	6in (15.cm) dia	6in (15.cm) dia	4in (10cm)
W	013: 16in (41cm)	—	4in (10cm)
L	014: 18.7in (48cm)	13in (33cm)	9.5in (24cm)
Output Connector	Mil-Std	Mil-Std	Information not available
Input Voltage	Information not available	Information not available	117V ac
Input Power	Information not available	Information not available	60W

COST DATA

Price	Information not available	Information not available	\$1,625
--------------	---------------------------	---------------------------	---------

736 040

NOTES

Surveillance camera for
adverse environment.
013: Lens f/1.4, 2.0in
or f/1.4, 3.0in or f/1.4, 4.0in
014: Lens f/2.8, 6.0in.

Surveillance camera for
adverse environment.
Lens: f/1.8 10mm focal
length

High resolution camera,
remote control for target,
beam, focus, gain.

INSTALLATIONS

CAMERAS WITH STANDARD VIDICONS

<i>Manufacturer</i>	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700
<i>Model</i>	4410	4510/011, 4510/005	4510/006, 4510/007
Evaluation Guide Procedure IV-2.A	NRC Identification No.		

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	0.5fc (5lm/m ²)	1.0fc (10lm/m ²)	1.0fc (10lm/m ²)
Usable Picture	0.01fc (0.1lm/m ²)	Information not available	Information not available
Signal Transfer Distance	Information not available	1,000ft (300m)	1,000ft (300m)
Scan Format	2:1 Interlace, RS170 Standard	2:1 Interlace, RS170 Standard	2:1 Interlace, RS170 Standard
Scan Fail Protection	YES	YES	YES
Automatic Gain Control	40,000:1	5,000:1	5,000:1
Automatic Iris	NO	YES	YES
Remote Control Provision	None	Standard, see notes	Standard, see notes
Controls/Control Unit	See notes	Self-contained	Self-contained
Temperature	-5 to +130F (-20 to +55C)	-15 to +120F (-10 to +50C)	-15 to +120F (-10 to +50C)
Humidity	Information not available	100 percent	100 percent

PHYSICAL DATA

Camera Tube	8541 or 8541A	See notes	See notes
Lens Mount	"C"	011: "C" 005: internal mount	"C", internal mount
Lens Provided	See notes	See notes	See notes
Weight	9lb (4.0kg) without lens	011: 5lb (2.2kg) 005: 9.5lb (4.3kg)	006: 10lb (4.5kg) 007: 12lb (5.4kg)
Size H	4.4in (11cm)	3in (7.6cm) dia	3in (7.6cm) dia
W	6.5in (16.5cm)	—	—
L	12in (30cm)	011: 17in (43cm) 005: 25.6in (62cm)	26.4in (67cm)
Output Connector	Information not available	PC-07C-18-32P	PC-07C-18-32P
Input Voltage	117V ac	11 to 16 or 22 to 30V dc	11 to 16 or 22 to 30V dc
Input Power	17W	10W	10W

COST DATA

Price	Information not available	Information not available	Information not available
-------	---------------------------	---------------------------	---------------------------

NOTES

Self-contained, "hands-off operation" camera.

Camera tube: 8541A Std. 7262 or 8541A or 4532, optional. Self-contained, portable, will accept Si-Vidicon; sealed unit, manual iris and focus control, Mods. 4500-022/023/025; Motorized Iris and focus control Mods 4500-032/033/035; Motorized iris or focus control, Mod. 4500-042/043/045. Factory installed. Remote control unit 2380-400 available.
011: Standard camera with exposed lens.
005: Standard camera with sealed-in 10:1 zoom, f/2.8, 15 to 150mm lens

Camera Tube: 8541A Std. 7262 or 8541A or 4532, optional. Self-contained, portable, will accept Si-Vidicon; sealed unit, manual iris and focus control, Mods 4500-022/023/025; Motorized iris and focus control; Mods 4500-32/33/35; Motorized iris or focus control, Mod. 4500-042/043/045. Factory installed remote control unit 2380-400 available.
006: Standard camera with sealed-in 10:1 zoom f/3.8, 15 to 150mm lens and 1.5 extender.
007: Standard camera with sealed-in 10:1 zoom f/5.6, 15 to 150mm lens and 2x extender.

INSTALLATIONS

CAMERAS WITH STANDARD VIDICONS

<i>Manufacturer</i>	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700	Cohu, Inc. electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700	Dage-MTI, Inc. 208 Wabash St. Michigan City, IN 46360 (219) 872-5514
<i>Model</i>	4510/012, 4510/013	4510/014, 4510/015	650
Evaluation Guide Procedure IV-2.A	NRC identification No.		

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	1.0fc (10lm/m ²)	1.0fc (10lm/m ²)	Information not available
Usable Picture	Information not available	Information not available	5.0x10 ⁻³ fc (5.4x10 ⁻² lrv/m ²)
Signal Transfer Distance	1,000ft (300m)	1,000ft (300m)	Information not available
Scan Format	2:1 Interlace, RS170, Standard	2:1 Interlace, RS170, Standard	2:1 Interlace, RS170, RS330 Standard
Scan Fail Protection	YES	YES	YES
Automatic Gain Control	5,000:1	5,000:1	25,000:1
Automatic Iris	YES	YES	YES
Remote Control Provision	Standard	Standard	NO
Controls/Control Unit	See notes	See notes	Hands-off; no external controls
Temperature	15 to 120F (-10 to +50C)	15 to 120F (-10 to +50C)	-5 to +160F (-20 to +70C)
Humidity	100 percent	100 percent	95 percent

PHYSICAL DATA

Camera Tube	See notes	See notes	8541
Lens Mount	"C" internal mount	"C" internal mount	"C"
Lens Provided	See notes	See notes	Information not available
Weight	012: 6.5lb (3kg) 013: 6lb (2.7kg)	7lb (3.2kg)	8lb (3.5kg)
Size H	3in (7.5cm) dia	3in (7.5cm) dia	6in (15cm)
W	—	—	4.5in (11.5cm)
L	012: 20.3in (51cm) 013: 19.6in (50cm)	014: 22.0in (56cm) 015: 21.3in (54cm)	11in (28cm)
Output Connector	PC-07C-18-32P	PC-07C-18-32P	BNC
Input Voltage	11 to 16, or 22 to 30V dc	11 to 16, or 22 to 30V dc	98 to 135V ac
Input Power	10W	10W	13.5W

COST DATA

Price	Information not available	Information not available	\$775
--------------	---------------------------	---------------------------	-------

NOTES

Camera tube: 8541A Std. 7262 or 8541A or 4532 optional.	Camera Tube: 8541a Std. 7262 or 8541A or 4532, optional.	Self-contained camera, Mil Spec Mil-T-4807A
Self-contained portable, will accept Si-Vidicon;	Self-contained portable, will accept Si-Vidicon;	
Sealed unit, exposed lens manual iris and focus control, Mod. 4500-022/023/025; Motorized iris and focus control, Mod. 4500-032/033/035; Motorized iris or focus control, Mod. 4500-042/043/045; factory installed remote control unit 2380-400 available	sealed unit, exposed lens, manual iris and focus control, Mods 4500-022/023/025; Motorized iris and focus control; Mods 4500-032/033/035; Motorized iris or focus control, Mods 4500-042/043/045; factory installed remote control unit 2380-400 available	
012: Lens: Standard camera with sealed-in f/1.4 focal length 0.5in or f/1.4 focal length 2.0in.	014: Lens: Standard camera with sealed-in f/2.8 focal length 4.0 in	
013: Lens: Standard camera with sealed-in f/1.4 focal length 1.0in or f/0.95 focal length 1.0in.	015: Lens: Standard camera with sealed-in f/1.4 focal length 2.0in	

INSTALLATIONS

CAMERAS WITH STANDARD VIDICONS

<i>Manufacturer</i>	Dage-MTI, Inc. 208 Wabash St. Michigan City, IND. 46360 (219) 872-5514	Dage-MTI, Inc. 208 Wabash St. Michigan City, IND 46360 (219) 872-5514	Edo Western Corp. 2645 So. 300 West Salt Lake City, UT 84115 (801) 486-7481
<i>Model</i>	RGS-50, -51, -52	800	CH 1411, CH 1431
Evaluation Guide Procedure IV-2.A	NRC Identification No.		

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	Information not available	1.0fc (10lm/m ²)	1.0fc (10lm/m ²)
Usable Picture	0.05fc (0.5lm/m ²)	Information not available	Information not available
Signal Transfer Distance	3,000ft (900m)	500ft (150m)	2,000ft (600m)
Scan Format	2:1 Random	2:1 Random, or RS170 Standard	2:1 Interlace
Scan Fail Protection	YES	YES	Information not available
Automatic Gain Control	5,000:1	4,000:1	10,000:1
Automatic Iris	YES	NO	NO
Remote Control Provision	Optional	Information not available	YES
Controls/Control Unit	Information not available	Information not available	Camera control unit
Temperature	-5 to +120F (-20 to +50C) outdoor	Information not available	10 to 150F (-10 to +65C)
Humidity	95 percent	Information not available	95 percent

PHYSICAL DATA

Camera Tube	7735	8507 or 7735	See notes
Lens Mount	"C"	"C"	"C"
Lens Provided	See notes	Information not available	Information not available
Weight	9lb (4kg)	15lb (6.7kg)	3lb (1.4kg)
Size H	6.6in (16.5cm) dia	3.5in (8.9cm)	2.5in (6.3cm) dia
W	—	7in (17.8cm)	—
L	See note 2	14in (35.6cm)	9.25in (23cm)
Output Connector	MS/310A221-14 Pin	Information not available	BNC
Input Voltage	103 to 130V ac	105 to 130V ac	See note 2
Input Power	17W	25W	18W

COST DATA

Price	RGS 50: \$628	\$1,569	Information not available
	RGS 51: 704		
	RGS 52: 740		

NOTES

1. Lens, RGS-50, -51, -52; Mod lens L
 2. RGS-50: length: 13in (33cm); (lens exposed);
RGS 51: 16in (40cm) (lens enclosed)
RGS 52: 21in (54cm) (Zoom lens enclosed)
Available with Si-Vidicon
- Price for camera equipped with Si-Vidicon or Plumbicon \$1,850
1. CH 1411: Camera tube: 7262A or: 7735A; standard camera not hermetically sealed
CH 1431: Camera tube: 8484 or 8507 or 8537A; standard camera hermetically sealed.
 2. Control unit 1270: 115V ac
Control unit 1402: 12V dc.

INSTALLATIONS

CAMERAS WITH STANDARD VIDICONS

<i>Manufacture</i>	Edo Western Corp. 2645 So. 300 West Salt Lake City, UT 84115 (801) 486-7481	Edo Western Corp. 2645 So. 300 West Salt Lake City UT 84115 (801) 486-7481	Edo Western Corp. 2645 So. 300 West Salt Lake City, UT 84115 (801) 486-7481
<i>Model</i>	CH 1511, CH 1531	CH 1611, CH 1631	1600 HT
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity	1.0fc (10lm/m ²)	1.0fc (10lm/m ²)	1.0fc (10lm/m ²)
10 Gray Scale Usable Picture	Information not available	Information not available	Information not available
Signal Transfer Distance	2,000ft (600m)	2,000ft (600m)	2,000ft (600m)
Scan Format	2:1 Interlace	2:1 Interlace, RS330, RS170 Standard	2:1 Interlace, RS 330 Standard
Scan Fail Protection	YES	YES	YES
Automatic Gain Control	10,000:1	10,000:1	10,000:1
Automatic Iris	NO	NO	NO
Remote Control Provision	YES	YES	YES
Controls/Control Unit	Camera control unit	Remote focus provided	Self-contained
Temperature	10 to 150F (-10 to +65C)	-10 to +130F (-10 to +55C)	-15 to +175F (-25 to +80C)
Humidity	95 percent	95 percent	95 percent

PHYSICAL DATA

Camera Tube	See Note 1	8484 or 8507 or 8573A	7262A
Lens Mount	"C"	"C"	"C"
Lens Provided	Information not available	See notes	See notes
Weight	1lb (0.5kg)	3.3lb (1.5kg)	4lb (1.8kg)
Size - H	2.5in (6. cm) dia	2.5in (6. cm) dia	2.5in (6. cm) dia
W	—	—	—
L	8in (21cm)	13.3in (35cm)	14.5in (37cm)
Output Connector	BNC	BNC	Information not available
Input Voltage	See Note 3	14V dc	13V dc
Input Power	Information not available	11W	11W

COST DATA

Price	Information not available	Information not available	Information not available
--------------	---------------------------	---------------------------	---------------------------

NOTES

- | | | |
|---|--|--|
| 1. CH 1511: Same as
CH 1411 but lt. wgt.
version not sealed.
Camera Tube: 7262A
or 7735A
CH 1531: Same as CH 1431
but lt. wgt. version
hermetically sealed.
Camera Tube: 8484 or 8507
or 8537A | Similar to standard
version, shockproof | High Temp. version of
1631, shockproof
Radiation res. 10^6
Roentg.
10^{18} fast Neutrons |
| 2. Input Power: Control unit
1270: 115V ac
Control unit 1402: 12V dc | | |

INSTALLATIONS

CAMERAS WITH STANDARD VIDICONS

<i>Manufacturer</i>	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433
<i>Model</i>	CTC 2100 CTC 2100/PB 210	CTC 3000, CTC 3500	OD 3000
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	4.0fc (45lm/m ²)	Information not available	Information not available
Usable Picture	Information not available	See notes	0.2fc (2lm/m ²)
Signal Transfer Distance	See notes	Information not available	Information not available
Scan Format	2:1 Interface	Information not available	Information not available
Scan Fail Protection	Information not available	Information not available	Information not available
Automatic Gain Control	12,000:1	10,000:1	10,000:1
Automatic Iris	NO	NO	NO
Remote Control Provision	NO	NO	NO
Controls/Control Unit	See notes	Self-contained; controls in rear	Self-contained controls in rear
Temperature	15 to 140F (-10 to +60C)	32 to 130F (0 to 50C) Indoor use	32 to 130F (0 to 50C) Outdoor use
Humidity	Information not available	Information not available	95 percent

PHYSICAL DATA

Camera Tube	20 PE 19A	3/4in sep. mesh	3/4in sep. mesh
Lens Mount	"C"	"C"	"C"
Lens Provided	Information not available	See notes	Information not available
Weight	2.6lb (1.2kg)	5lb (2.2kg)	Information not available
Size H	3in (7.6cm)	3.5in (8.9cm)	5.3in (13cm)
W	4in (10cm)	5in (12.5cm)	9in (22.5cm)
L	7.3in (18.5cm)	11.5in (29cm)	18in (45cm)
Output Connector	Mini-jack	UHF/S0239	Information not available
Input Voltage	CTC 2100: 12 to 24V dc CTC 2100/PB 210: 110 to 117V ac	117 or 24V ac	117 or 24V ac
Input Power	CTC 2100: 4W CTC 2100/PB 210: 15W	Information not available	Information not available

COST DATA

Price	CTC 2100: \$439.95 CTC 2100/PB 210: \$549.95	CTC 3000: \$199.50 CTC 3500: \$279.50	\$269.50
--------------	---	--	----------

NOTES

CTC 2100: lightweight, portable. <i>Signal Transfer Dist:</i> information not available. <i>Controls:</i> Self contained, contr in rear.	CTC 3000: <i>usable picture:</i> 0.2fc (2lm/m ²) <i>Lens Provided:</i> f/1.6, 16mm lens provided	Can be supplied with: WPH-3 controlled heater; WPG-3 controlled cooler; security lock
CTC 2100/PB 210: single cable version of CTC 2100 <i>Signal Transfer Dist:</i> 200ft (600m) <i>Controls:</i> power unit required, single cable to camera for signal and power	CTC 3500: same as CTC 3000 but with 1in vidicon. <i>Usable Picture:</i> Information not available <i>Lens Provided:</i> Information not available	

INSTALLATIONS

CAMERAS WITH STANDARD VIDICONS

<i>Manufacturer</i>	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433
<i>Model</i>	CTC 5000, OD 5000	CTC 5008, OD 5008	CTC 6000
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity	Information not available	Information not available	Information not available
10 Gray Scale	Information not available	Information not available	Information not available
Usable Picture	0.1fc (1lm/m ²)	0.1fc (1lm/m ²)	0.1fc (1lm/m ²)
Signal Transfer Distance	Information not available	Information not available	Information not available
Scan Format	2:1 Interlace — random, external or crystal	2:1 Interlace — random, external or crystal	2:1 Crystal, plug-in circuit for EIA Std
Scan Fail Protection	Information not available	YES	YES
Automatic Gain Control	5,000:1	5,000:1	25,000:1
Automatic Iris	NO	NO	NO
Remote Control Provision	NO	NO	NO
Controls/Control Unit	Self-contained; controls in rear	Self-contained; controls in rear	Self-contained; controls in rear
Temperature	25 to 140F (-5 to +60C)	25 to 140F (-5 to +60C)	15 to 140F (-10 to +60C)
	See notes	See notes	
Humidity	95 percent	95 percent	95 percent

PHYSICAL DATA

Camera Tube	7735A, 7262A	7735A	8541
Lens Mount	"C"	"C"	"C"
Lens Provided	Information not available	Information not available	Information not available
Weight	7.3lb (3.6kg)	7.7lb (3.5kg)	9.3lb (4.2kg)
Size H	4.3in (11cm)	6.4in (16.3cm)	4.8in (12cm)
W	5.7in (14.5cm)	3.8in (9.6cm)	3.7in (9.4cm)
L	11in (28cm)	10.5in (27cm)	11.8in (30cm)
Output Connector	BNC	Information not available	Multipin
Input Voltage	100 to 120V ac	100 to 130V ac	90 to 140V ac
Input Power	18W	18W	26W

COST DATA

Price	CTC 5000: \$544.50 OD 5000: \$654.50	CTC 5008: \$545. OD 5008: \$745.95	\$1,094
--------------	---	---------------------------------------	---------

NOTES

RF output variable (CTC High resolution camera. High resolution
5000RF), 16 pin connector, OD 5008 Outdoor version camera
SK-C16-32C AV(CTC 5016) of CTC 5008 — same
OD 5000 Outdoor version of characteristics
CTC 5000 — same
characteristics

INSTALLATIONS

CAMERAS WITH STANDARD VIDICONS

<i>Manufacturer</i>	General Electro-Dynamics Corp. 4430 Forest Ln. Garland, TX 75042 (214) 276-1161	General Electro-Dynamics Corp. 4430 Forest Ln. Garland, TX 75042 (214) 276-1161	General Electro-Dynamics Corp. 4430 Forest Ln. Garland, TX 75042 (214) 276-1161
<i>Model</i>	ED 6073B/100 ED 6073B/101	ED 7047/100	ED 7084/100 ED 7084/101
<i>Evaluation Guide Procedure IV-2 A</i>		<i>NRC Identification No.</i>	

PERFORMANCE DATA

Sensitivity	Information not available	1.0fc (10lm/m ²)	1.0fc (10lm/m ²)
10 Gray Scale Usable Picture	0.3fc (3lm/m ²)	0.3fc (3lm/m ²)	0.03fc (0.3lm/m ²)
Signal Transfer			
Distance	500ft (150m)	3,000ft (900m)	Information not available
Scan Format	2:1 Interlace; RS170, RS330 or RS343 Standard	2:1 Interlace; RS330 Standard	Mod./100; 2:1 Interlace — Random mod./101, crystal control
Scan Fail Protection	YES	YES	YES
Automatic Gain Control	10,000:1	2,000:1	40,000:1
Automatic Iris	NO	NO	YES
Remote Control Provision	YES	YES	YES
Controls/Control Unit	Rack-mounted control unit	Rack-mounted control unit	See notes
Temperature	15 to 160F (-10 to +70C)	ED 7058 15 to 130F (-10 to +50C)	-5 to +140F (-10 to +60C)
Humidity	90 percent	90 percent	90 percent

PHYSICAL DATA

Camera Tube	TD 1306-001	TD 1306-001	TD 1319
Lens Mount	"C"	"C"	"C"
Lens Provided	Information not available	See notes	Information not available
Weight	4lb (1.8kg)	16lb (7kg)	10lb (4.5kg)
Size H	2.5in (6.4cm)	6.0in (15cm)	4.5in (11.5cm)
W	—	—	6in (15cm)
L	9.5in (24cm)	14in (35cm)	12.5in (32cm)
Output Connector	BNC UG-625BG	Information not available	BNC
Input Voltage	115V ac	105 to 130V ac or 12 to 36V dc	120V ac
Input Power	50W	17W	20W

COST DATA

Price	/100: \$4,010 /101: \$3,769	\$2,823	/100: \$995 /101: \$1,195
--------------	--------------------------------	---------	------------------------------

NOTES

/101: No internal sync generator
Model ED6073B/102 or /103 equipped with TD1306-046 Si-Vidicon
Sensitivity given for standard vidicon. If equipped with Si-Vidicon, values are lower by approx a factor 10

Model ED7047/102 or /103 equipped with TD1306-046 Si-Vidicon
Zoom lens optional.
Sensitivity given for standard vidicon. If equipped with Si-Vidicon, values are lower by approx a factor 10

Remote control unit, 7109 Series, for zoom, focus, iris; other controls are on camera
Self-contained: indoor camera, general purpose.

INSTALLATIONS

CAMERAS WITH STANDARD VIDICONS

<i>Manufacturer</i>	General Electro-Dynamics Corp. 4430 Forest Ln. Garland, TX 75042 (214) 276-1161	General Electro-Dynamics Corp. 4430 Forest Ln. Garland, TX 75042 (214) 276-1161	General Electric Co. Imaging and Display Devices Electronics Park Syracuse, NY 13201 (315) 456-3293
<i>Model</i>	EU 7084/102 ED 7084/103	ED 7084/104 ED 7084/105	TE 31A
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	1.0fc (10lm/m ²)	1.0fc (10lm/m ²)	Information not available
Usable Picture	0.03fc (0.3lm/m ²)	0.03fc (0.3lm/m ²)	Information not available
Signal Transfer			
Distance	Information not available	Information not available	Information not available
Scan Format	102: RS170 Line sync 103: 2:1 Random	104: RS170, Crystal locked 105: RS170 Line sync	2:1 Interlace; RS343, RS 330 or RS170
Scan Fail Protection	YES	YES	YES
Automatic			
Gain Control	40,000:1	40,000:1	information not available
Automatic Iris	YES	YES	Output provided
Remote Control Provision	YES	YES	YES
Controls/Control Unit	See notes	See notes	Hands-on operation Rack mounted CCU
Temperature	-5 to +140F (-20 to +60C)	-5 to +140F (-20 to +60C)	32 to 130F (0 to 55C)
Humidity	90 percent	90 percent	55 percent

PHYSICAL DATA

Camera Tube	102: TD 1319 103: 8507A	8507A	8541 or equiv.
Lens Mount	"C"	"C"	"C"
Lens Provided	Information not available	Information not available	Information not available
Weight	10lb (4.5kg)	10lb (4.5kg)	Information not available
Size H	4.5in (11.5cm)	4.5in (11.5cm)	Information not available
W	6in (15cm)	6in (15cm)	Information not available
L	12.5in (32cm)	12.5in (32cm)	Information not available
Output Connector	BNC	BNC	Information not available
Input Voltage	120V ac	120V ac	117V ac
Input Power	20W	20W	70W

COST DATA

Price	102: \$1,245; 103: \$1,142	104: \$1,342, 105: \$1,392	Information not available
--------------	-------------------------------	-------------------------------	---------------------------

NOTES

Remote control unit,
7109 Series for zoom,
focus, iris; others are
on camera

Remote control unit: to
serve for zoom, focus,
iris; other are on camera

High resolution camera
Special order with
8507 or 8541 Vidicon

With silicon vidicon,
random interlace; high
resolution camera; Mod.
B same camera but less
resolution

INSTALLATIONS

CAMERAS WITH STANDARD VIDICONS

<i>Manufacturer</i>	General Electric Co. Imaging and Display Devices Electronics Park Syracuse, NY 13201 (315) 456-3293	General Electric Co. Imaging and Display Devices Electronics Park Syracuse, NY 13201 (315) 456-3293	General Electric Co. Imaging and Display Devices Electronics Park Syracuse, NY 13201 (315) 456-3293
<i>Model</i>	TE33	TE44	TE45
	Evaluation Guide Procedure IV-2.A	NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	1.0fc (10lm/m ²)	0.2fc (2lm/m ²)	0.2fc (2lm/m ²)
Usable Picture	0.1fc (1lm/m ²)	0.03fc (0.3lm/m ²)	0.03fc (0.3lm/m ²)
Signal Transfer			
Distance	Variable, depends on cable	Information not available	Information not available
Scan Format	2:1 Random	2:1 RS170 standard	2:1 RS170 standard
Scan Fail Protection	Information not available	Information not available	Information not available
Automatic			
Gain Control	10,000:1	50,000:1	50,000:1
Automatic Iris	Information not available	see notes	see notes
Remote Control Provision	NO	NO	NO
Controls/Control Unit	Rear panel: Focus, beam	Hands-off, Internal	Hands-off, Internal
Temperature	32 to 120F (0 to +50C) (Indoor)	-5 to +140F (-20 to +60C) (Outdoor)	-20 to +140F (-30 to +60C) (Outdoor)
Humidity	95 percent	95 percent	100 percent

PHYSICAL DATA

Camera Tube	7911	7735	7735
Lens Mount	"C"	"C"	"C"
Lens Provided	Information not available	See notes	See notes
Weight	8lb (3.6kg)	6lb (2.7kg)	16lb (7.2kg)
Size H	3.5in (9cm)	3.2in (8cm)	5.4in (14cm)
W	5.3in (13.5cm)	6.0in (15cm)	7.4in (19cm)
L	11.8in (30cm)	12.4in (32cm)	25.4in (65cm)
Output Connector	BNC	BNC	Composite feed-through
Input Voltage	117V ac	117V ac	117V ac
Input Power	15W	12W	12W

COST DATA

Price	Information not available	See notes	See notes
--------------	---------------------------	-----------	-----------

NOTES

Self-contained: Mod. A random; interlace; Mod. B Crystal controlled; Mod. D master (EXT) sync Mod. E high resolution vidicon, remote sync. Also available with Si-Vidicon Z 7975

Self-contained. Option with 24V ac input. Option with Si-Vidicon extends range to 100,000:1

Options: TE44A:
Self-contained crystal-control camera with 7735 vidicon tube, /less lens

TE 44B:
Self-contained RS-170 camera with 7735 vidicon, /less lens

TE 44AS:
Self-contained crystal-control camera adapted for silicon target vidicon, /less vidicon and lens

TE 44BS:
Self-contained RS-170 camera adapted for silicon target vidicon, /less image tube and lens

TE 44ASA:
Self-contained crystal-control camera adaptable for silicon target vidicon and Auto. Iris Lens, /less image tube lens

TE 44 BSA:
Self-contained RS-170 camera adapted for silicon target vidicon and Auto. Iris, Lens, /less image tube and lens
10 fixed focal length lenses avail. 4 with auto iris

TE44A: \$200;

TE44B: \$313

TE44AS: \$203;

TE44BS: \$316

TE44ASA: \$214;

TE44BSA: \$327

Self-contained. Option with 24V ac input. Option with Si-Vidicon extends range to 100,000:1

Options: TE45A:
Environmental self-contained crystal-control camera with 7735, /less lens

TE 45B:
Self-contained RS-170 camera 7735 vidicon /less lens

TE45AS:
Self-contained crystal-control camera for silicon target vidicon, /less vidicon and lens

TE 45BS:
Self-contained RS-170 camera for silicon target vidicon, /less image tube and lens

TE 45ASA:
Self-contained crystal control camera adaptable for silicon target vidicon and Auto. Iris Lens, /less image tube and lens

TE 45BSA:
RS-170 camera for silicon target vidicon and Auto. Iris Lens, /less image tube and lens 10 fixed focal length lenses avail.

4 with auto iris

TE45A: \$307;

TE45B: \$420

TE45AS: \$310;

TE45BS: \$423

TE45ASA: \$321;

TE45BSA: \$434

INSTALLATIONS

CAMERAS WITH STANDARD VIDICONS

<i>Manufacturer</i>	Hitachi Denshi America Ltd. 58-25 Brooklyn-Queen's Expwy. Woodside, NY 11377 (212) 898-1261	Hitachi Denshi America Ltd. 58-25 Brooklyn-Queen's Expwy. Woodside, NY 11377 (212) 898-1261	Hitachi Denshi America Ltd. 58-25 Brooklyn-Queen's Expwy. Woodside, NY 11377 (212) 898-1261
<i>Model</i>	HV 16S (HV 16A)	HV 62	HV 40S
Evaluation Guide Procedure IV-2 A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	Information not available	Information not available	Information not available
Usable Picture	0.1fc (1lm/m ²)	0.1fc (1lm/m ²)	0.5fc (5lm/m ²)
Signal Transfer			
Distance	Information not available	Information not available	Information not available
Scan Format	2:1 Interlace; internal	2:1 Random, line sync	2:1 Random, line sync
Scan Fail Protection	YES	Information not available	Information not available
Automatic			
Gain Control	3,000:1	10,000:1	200:1
Automatic Iris	NO	NO	NO
Remote Control Provision	NO	NO	NO
Controls/Control Unit	Information not available	Hands-off, Internal	Hands-off, Internal
Temperature	15 to 120F (-10 to +50C) Indoor	15 to 120F (-10 to +50C) Indoor	15 to 120F (-10 to +50C) Indoor
Humidity	Information not available	Information not available	Information not available

PHYSICAL DATA

Camera Tube	7262	20PE19, 20PE 20	Any 3/8in sep. mesh Vidicon
Lens Mount	"C"	"C"	"C"
Lens Provided	See notes	Information not available	Information not available
Weight	7.7lb (3.5kg)	2.9lb (1.3kg)	5.5lb (2.5kg)
Size H	6.5in (16.5cm)	2.6in (6.6cm)	3.8in (9.6cm)
W	4.0in (10.0cm)	4.0in (10.0cm)	4.6in (11.5cm)
L	11.3in (28cm)	8.0in (20cm)	9.3in (24cm)
Output Connector	UHF, 2 Channels	UHF	UHF
Input Voltage	117V ac	117V ac or 24V ac	Information not available
Input Power	13W	9W	10.5W

COST DATA

Price	HV 16S: \$520. HV 16A: \$570	\$215	\$295
--------------	---------------------------------	-------	-------

NOTES

Self-contained HV16A:
Without tube, without
lens also for Si-Vidicon
or Plumbicon

Self-contained,
reversible scan;
Model HV62A for
24V ac power input

Self-contained;
economy version

INSTALLATIONS

CAMERAS WITH STANDARD VIDICONS

Manufacturer	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490
Model	CC 600	CC 800, CC 810	SC 821, MV 824
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	Information not available	1.0fc (10lm/m ²)	1.0fc (10lm/m ²)
Usable Picture	0.04fc (0.4lm/m ²)	Information not available	Information not available
Signal Transfer			
Distance	Information not available	Information not available	Information not available
Scan Format	2:1 Random	2:1 Internal	SC821: Crystal-controlled MV824: 2:1 Internal
Scan Fail Protection	Information not available	Information not available	Information not available
Automatic Gain Control	10,000:1	10,000:1	10,000:1
Automatic Iris	NO	Optional	Optional
Remote Control Provision	NO	NO	NO
Controls/Control Unit	External controls for Target, Focus, Beam	On rear panel of camera: Target, Focus, Beam	On rear panel of camera: Target, Focus, Beam
Temperature	15 to 120F (-10 to +50C) Indoor	15 to 120F (-10 to +50C) Indoor	15 to 120F (-10 to +50C) Indoor
Humidity	Information not available	Information not available	Information not available

PHYSICAL DATA

Camera Tube	20 PE-11	8844	8844
Lens Mount	"C"	"C"	"C"
Lens Provided	See notes	See notes	Information not available
Weight	4.7lb (2.1kg)	5.5lb (2.5kg)	5.5lb (2.5kg)
Size H	2.6in (6.6cm)	3.2in (7.8cm)	3.2in (8cm)
W	4.9in (12.5cm)	4.3in (11cm)	4.3in (11cm)
L	9.2in (24cm)	10in (25cm)	10in (25cm)
Output Connector	PL259	UHF	UHF
Input Voltage	105 to 125V ac	117V ac	SC821: 117V ac MV824: 24V ac
Input Power	Information not available	Information not available	18W

COST DATA

Price	\$242	CC600: \$304.; CC812: \$349	SC821: \$410.; MV824: \$304
--------------	-------	--------------------------------	--------------------------------

NOTES

Self-contained with
16mm f/1.6 fixed iris;
general purpose; will
accept zoom and auto. iris

CC800: Self-contained
with 16mm/f/1.6 fixed
iris, but will accept
auto. iris and zoom

CC810: "One cable"
camera, one cable for power
and video, requires power
supply PS810, 117V ac-18W

INSTALLATIONS

CAMERAS WITH STANDARD VIDICONS

<i>Manufacturer</i>	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490	Jerrold Electronics Corp. 200 Witmer Rd. Horsham, PA 19044 (215) 674-4800	Panasonic Corp. Matsushita Electric Corp. of America One Panasonic Way Secaucus, NJ 07094 (201) 348-7000
<i>Model</i>	MV 8242, ES 831	TVC 501	WV 200P, OP WV 240P
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	1.0fc (10lm/m ²)	0.3fc (3lm/m ²)	0.3fc (3lm/m ²)
Usable Picture	Information not available	0.06fc (0.6lm/m ²)	Information not available
Signal Transfer			
Distance	Information not available	Information not available	Information not available
Scan Format	See notes	Information not available	200P: 2:1 Random 240P: 2:1 Random/ external
Scan Fail Protection	Information not available	Information not available	Information not available
Automatic			
Gain Control	10,000:1	8,000:1	5,000:1
Automatic Iris	Optional	NO	NO
Remote Control Provision	NO	NO	NO
Controls/Control Unit	On rear panel, Target, Focus, Beam	Self-contained/Ext. Beam, Target, Mechanical Focus, Focus	Self-contained/con- trols are Internal, Manual, Light Control switch
Temperature	15 to +120F (-10 to +50C)	-15 to +120F (-10 to +50C) Indoor	-15 to +120F (-10 to +50C) Indoor
Humidity	Information not available	Information not available	Information not available

PHYSICAL DATA

Camera Tube	8844	Any standard 3/5 Sep. Mesh EL. MAG. VID.	20 PE-13A or 8844
Lens Mount	"C"	"C"	"C"
Lens Provided	Information not available	f/1.6, 16mm	f/1.6, 16mm
Weight	5.5lb (2.5kg)	3.5lb (1.6kg)	4.4lb (2.0kg)
Size H	3.2in (8cm)	2.8in (7cm)	5.6in (14cm)
W	4.3in (11cm)	4.5in (11.5cm)	3.7in (9.4cm)
L	10.0in (25cm)	9.5in (24cm)	10.3 (26cm)
Output Connector	UHF	BNC	BNC
Input Voltage	MV 8242: 24V ac ES 831: \$379	120V ac	117V ac
Input Power	18W	14W	8W

COST DATA

Price	MV 8242: \$433 ES 831: \$379	\$347	Information not available
--------------	---------------------------------	-------	---------------------------

NOTES

MV 8242: Scan format-2:1 Self-contained
Crystal-controlled
sync ES831: Scan
format-2:1 random, 2:1,
external E1A standard
switch for internal or external
sync

Model 120 for 24V ac
input. Self contained

INSTALLATIONS

CAMERAS WITH STANDARD VIDICONS

<i>Manufacturer</i>	Panasonic Corp. Matsushita Electric Corp. of America One Panasonic Way Secaucus, NJ 07094 (201) 348-7000	Panasonic Corp. Matsushita Electric Corp. of America One Panasonic Way Secaucus, NJ 07094 (201) 348-7000	Panasonic Corp. Matsushita Electric Corp. of America One Panasonic Way Secaucus, NJ 07094 (201) 348-7000
<i>Model</i>	WV 241P, WV 250A	WV 245P	WV401
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	WV241P: 0.03fc (3lm/m ²) WV250A: 0.1fc (1lm/m ²)	0.03fc (3lm/m ²)	0.03fc (3lm/m ²)
Usable Picture	Information not available	Information not available	Information not available
Signal Transfer			
Distance	Information not available	Information not available	Information not available
Scan Format	WV 241P: 2:1 Internal /external WV 250A: 2:1 Random/external	Internal/random; external	2:1 Random
Scan Fail Protection	Information not available	Information not available	Information not available
Automatic			
Gain Control	5,000:1	5,000:1	5,000:1
Automatic Iris	NO	NO	NO
Remote Control Provision	NO	YES	YES
Controls/Control Unit	Controls are Internal, Manual Light Control Switch	Information not available	Internal
Temperature	15 to 120F (-10 to +50C) Indoor	15 to 120F (-10 to +50C) Indoor	15 to 120F (-10 to +50C) Indoor
Humidity	Information not available	Information not available	Information not available

PHYSICAL DATA

Camera Tube	WV241P: 20 PE 13A or 8844 WV250A: 20 PE 13AS	20 PE 13A	20 PE 14
Lens Mount	"C"	"C"	Information not available
Lens Provided	Information not available	Information not available	See notes
Weight	4.4lb (2.0kg)	9lb (4kg)	1.8lb (8kg)
Size I:	5.6in (14cm)	4.3in (11cm)	4.6in (11.5cm)
W	3.7in (9.4cm)	5.8in (15cm)	2.0in (5cm)
L	10.3in (26cm)	10.0in (25cm)	8.5in (21cm)
Output Connector	BNC	Information not available	Information not available
Input Voltage	120V ac	117V ac	15V dc
Input Power	8W	12W	Information not available

COST DATA

Price	Information not available	Information not available	\$200 (\$495 including Monitor)
--------------	---------------------------	---------------------------	------------------------------------

NOTES

Self contained. Mod.
—/20 for 24V ac input

Self contained. Remote
control unit WV 690P
available

Self-contained; Part
of TV surveillance
system WV 30R (with
Monitor WV411) with f/
1.6m 16mm lens, power
supplied from monitor

INSTALLATIONS

CAMERAS WITH STANDARD VIDICONS

<i>Manufacturer</i>	Panasonic Corp. Matsushita Electric Corp. of America One Panasonic Way Secaucus, NJ 07094 (201) 348-7000	Panasonic Corp. Matsushita Electric Corp. of America One Panasonic Way Secaucus, NJ 07094 (201) 348-7000	Panasonic Corp. Matsushita Electric Corp. of America One Panasonic Way Secaucus, NJ 07094 (201) 348-7000
<i>Model</i>	WV 1000, WV 1004	WV 1100, WV 1104	WV 1300, WV 1304
Evaluation Guide Procedure IV-2.A	NRC Identification No.		

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	0.03fc (3lm/m ²)	0.6fc (6lm/m ²)	0.6fc (6lm/m ²)
Usable Picture	0.03fc (3lm/m ²)	0.06fc (6lm/m ²)	0.06fc (6lm/m ²)
Signal Transfer			
Distance	100ft (30m)	100ft (30m)	100ft (30m)
Scan Format	2:1 Internal random, or external	2:1 Internal random, or external	2:1 Internal or external
Scan Fail Protection	Information not available	Information not available	Information not available
Automatic			
Gain Control	10,000:1	10,000:1	10,000:1
Automatic Iris	NO	NO	NO
Remote Control Provision	NO	NO	NO
Controls/Control Unit	Self-contained; E1. Focus, Mechanical	Self-contained; E1. Focus, Mechanical	Self-contained; E1. Focus, Mechanical
	Focus, Beam, Target	Focus, Beam, Target	Focus, Beam, Target
Temperature	15 to 120F (-10 to +50C) Indoor	15 to 120F (-10 to +50C) Indoor	15 to 120 (-10 to +50C) Indoor
Humidity	90 percent	90 percent	90 percent

PHYSICAL DATA

Camera Tube	20 PE 13A	20 PE 13A	20 PE 13A
Lens Mount	"C"	"C"	"C"
Lens Provided	See notes	Information not available	Information not available
Weight	3.5lb (1.6kg)	4lb (1.8kg)	4lb (1.8kg)
Size H	3.8in (9.6cm)	3.8in (9.6cm)	3.8in (9.6cm)
W	3.7in (9.5cm)	3.7in (9.5cm)	3.7in (9.5cm)
L	8.5in (21cm)	9.3in (23.5cm)	9.3in (23.5cm)
Output Connector	UHF	UHF and 10 Pin	UHF and 10 Pin
Input Voltage	See notes	See notes	See notes
Input Power	WV 1000: 10W; WV 1064: 11W	WV 1100: 11W; WV 1104: 12W	WV 1300: 11W; WV 1304: 12W

COST DATA

Price	\$275	\$350	\$420
--------------	-------	-------	-------

NOTES

Family specially
designed for
surveillance
WV 1000: Voltage —
117V ac, Standard
camera with f/1.6,
16mm lens
WV 1004: Voltage — 24V ac

Family specially
designed for
surveillance
WV 1100: Voltage —
117V ac
WV 1104: Voltage —
24V ac

Family specially
designed for
surveillance
WV 1300: Voltage
— 117Vac
WV 1304: Voltage —
24V ac

INSTALLATIONS

CAMERAS WITH STANDARD VIDICONS

<i>Manufacturer</i>	RCA Corp. Closed Circuit Video Equipment New Holland Ave. Lancaster, PA 17604 (800) 233-0421	RCA Corp. Closed Circuit Video Equipment New Holland Ave. Lancaster, PA 17604 (800) 233-0421	RCA Corp. Closed Circuit Video Equipment New Holland Ave. Lancaster, PA 17604 (800) 233-0421
<i>Model</i>	TC 1000, TC 1000/02	TC 1000/E, TC 1000/E2	TC 1000/P, TC 1000/P2
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	0.3fc (3lm/m ²)	0.3fc (3lm/m ²)	0.3fc (3lm/m ²)
Usable Picture	0.3fc (3lm/m ²)	0.3fc (3lm/m ²)	0.3fc (3lm/m ²)
Signal Transfer			
Distance	Information not available	Information not available	Information not available
Scan Format	2:1 Random	Internal or external	2:1 Random
Scan Fail Protection	YES	YES	YES
Automatic Gain			
Control	10,000:1	10,000:1	10,000:1
Automatic Iris	NO	NO	NO
Remote Control Provision	NO	NO	NO
Controls/Control Unit	Self-contained control on rear; Beam, Tar- get, Focus, Vidicon	Self-contained control on rear; Beam, Tar- get, Focus, Vidicon	Self-contained control on rear; Beam, Target, Focus, Vidicon Focus
Temperature	10 to 120F (-12 to +50C) Indoor	10 to 120F (-12 to +50C) Indoor	10 to 120F (-12 to +50C) Indoor
Humidity	Information not available	Information not available	Information not available

PHYSICAL DATA

Camera Tube	4848	4848	4848
Lens Mount	"C"	"C"	"C"
Lens Provided	f/1.6, 16mm	f/1.6, 16mm	f/1.6, 16mm
Weight	3.5lb (1.6kg) with lens	3.5lb (1.6kg) with lens	3.5lb (1.6kg) with lens
Size H	2.8in (7cm)	2.8in (7cm)	2.8in (7cm)
W	4.5in (11.5cm)	4.5in (11.5cm)	4.5in (11.5cm)
L	9.5in (24cm)	9.5in (24cm)	9.5in (24cm)
Output Connector	BNC	BNC	BNC
Input Voltage	1000: 117-120V ac 1000/02: 24V ac	1000/E: 117-120V ac 1000/EL: 24V ac	1000/P: 117-120V ac 1000/P2 24V ac
Input Power	1000: 8W 1000/02: 12W	1000/E: 8W 1000/E2: 12W	1000/P: 8W 1000/P2: 12W

COST DATA

Price	\$290	\$320	\$300
--------------	-------	-------	-------

NOTES

Low cost surveillance camera, Standard camera of family, Self-contained; TC 1000/02: 24V version TC 1000	Similar to TC 1000, but internal/external sync. provided TC 1000/E2: — 24V version of TC 1000/E	Similar to TC 1000, but peak Automatic light control TC 1000/P2: — 24V version of TC 1000/P
--	---	---

INSTALLATIONS

CAMERAS WITH STANDARD VIDICONS

Manufacturer	RCA Corp. Closed Circuit Video Equipment New Holland Ave. Lancaster, PA 17604 (800) 233-0421	RCA Corp. Closed Circuit Video Equipment New Holland Ave. Lancaster, PA 17604 (800) 233-0421	RCA Corp. Closed Circuit Video Equipment New Holland Ave. Lancaster, PA 17604 (800) 233-0421
Model	TC 1020, TC 1020/02	TC 1020/05, TC 1025	TC 1005/01, TC 1005/01
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	0.3fc (3lm/m ²)	0.3fc (3lm/m ²)	0.08fc (0.8lm/m ²)
Usable Picture	0.03fc (0.3lm/m ²)	0.03fc (0.3lm/m ²)	0.02fc (0.2lm/m ²)
Signal Transfer			
Distance	Information not available	Information not available	Information not available
Scan Format	RS: 30 Standard	1020/05: RS330 Standard 1025: 2:1 Internal	2:1 Internal RS330 Standard
Scan Fail Protection	YES	YES	YES
Automatic Gain Control	10,000:1	10,000:1	50,000:1
Automatic Iris	NO	NO	NO
Remote Control Provision	NO	NO	NO
Controls/Control Unit	Self-contained control; on rear; Beam, Target, Focus, Vidicon	Self-contained control; on rear; Beam, Target, Focus, Vidicon	Self-contained; control on rear; Beam, Target, Focus, Vidicon Focus
Temperature	10 to 120F (-12 to +50C) Indoor	10 to 120F (-12 to +50C) Indoor	0 to 140F (-20 to +60C) Indoor
Humidity	Information not available	Information not available	Information not available

PHYSICAL DATA

Camera Tube	4848	4848	8541
Lens Mount	"C"	"C"	"C"
Lens Provided	f/1.6, 16mm	f/1.6, 16mm	f/1.6, 16mm
Weight	3.5lb (1.6kg) with lens	3.5lb (1.6kg) with lens	6.0lb (2.7kg) without lens
Size H	2.8in (7cm)	2.8in (7cm)	3.5in (9cm)
W	4.5in (11.5cm)	4.5in (11.5cm)	5.5in (14cm)
L	9.5in (24cm)	9.5in (24cm)	11.3in (29cm) without lens
Output Connector	BNC	BNC	BNC
Input Voltage	1020: 117-120V ac 1020/02: 24V ac	1020/05: 18-26V dc 1025: 117V ac	TC1005/01: 120V ac TC1005/01F: 24V ac
Input Power	1020: 8W 1020/02: 12W	1020/05: Information not available 1025: 8W	20W

COST DATA

Price	\$350	1020/05: \$350 1025: \$385	\$635
--------------	-------	-------------------------------	-------

NOTES

TC 1020: Similar to TC 1000 But different scan format TC 1020/02: 24V version of TC 1020	TC 1020/05: 26V dc version of TC 1020	TC 1025: Similar to TC 1000 but Single cable for video and power	High performance, general purpose camera TC 1005/01F High Performance, general purpose camera low voltage version of TC 1005/01
--	---------------------------------------	--	---

INSTALLATIONS

CAMERAS WITH STANDARD VIDICONS

<i>Manufacturer</i>	RCA Corp. Closed Circuit Video Equipment New Holland Ave. Lancaster, PA 17604 (800) 233-0421	RCA Corp. Closed Circuit Video Equipment New Holland Ave. Lancaster, PA 17604 (800) 233-0421	Sanyo Electric Inc. 1200 W. Artesia Blvd. Compton, CA 90220 (213) 537-5830
<i>Model</i>	TC 1005, TC 1005/F	TC 1055, TC 1056	VC 1600X, VC 1600L
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale Usable Picture	0.15fc (1.6lm/m ²)	0.4fc (4lm/m ²)	.08fc (0.8lm/m ²)
Signal Transfer Distance	0.03fc (0.3lm/m ²)	0.07fc (0.8lm/m ²)	Information not available
Scan Format	Information not available	50ft (15m)	1,500ft (450m)
Scan Fail Protection	2:1 Interlace, RS330 Standard	2:1 Random, internal	2:1 Internal, line-locked
Automatic Gain Control	YES	NO	Information not available
Automatic Iris	50,000:1	8,000:1	10,000:1
Remote Control Provision	NO	NO	NO
Controls/Control Unit	NO	Hand-held	YES
Temperature	Self-contained; controls on rear; Beam, Target, Focus, Light Control	Zoom, Focus, F-stop	Controls on rear; Beam, Focus, Target
Humidity	0 to 140F (-20 to +60C) Indoor	32 to 120F (0 to +50C)	15 to 120F (-10 to +50C) Indoor
	95 percent	Information not available	Information not available

PHYSICAL DATA

Camera Tube	8844	4848	8844
Lens Mount	"C"	"C"	"C"
Lens Provided	Information not available	Information not available	f/1.6, focal length 16mm
Weight	6.0lb (2.7kg) without lens	2.3lb (1.1kg)	5.5lb (2.5kg)
Size H	3.5in (9cm)	3.5in (9cm)	3in (7.6cm)
W	5.5in (14cm)	2.4in (6cm)	4.3in (11cm)
L	11.3in (29cm) without lens	9.5in (24cm)	10in (25cm)
Output Connector	BNC	BNC	PL 259
Input Voltage	TC 1005: 120V ac TC 1005/F: 24V ac	TC 1055: 120V ac TC 1056: 24V ac	VC 1600X: 117V ac VC 1600L: 24V ac
Input Power	20W	See notes	12W

COST DATA

Price	\$565	\$425	\$300
--------------	-------	-------	-------

NOTES

High performance, general purpose camera
TC 1005/F: Low voltage version of TC 1005

Hand-held camera for video tape record with separate power supply

TC 1056: Takes power and sync from video tape recorder

Self contained cam-camera;
Power transformer VPT 116 available for VC1600 for operation of 117V ac
Power unit VCA 116 allows for single cable operation (video & power on one single line) for VC 1600L

INSTALLATIONS

CAMERAS WITH STANDARD VIDICONS

<i>Manufacturer</i>	Sanyo Electric Inc. 1200 W. Artesia Blvd. Compton, CA 90220 (213) 537-5830	Sanyo Electric Inc. 1200 W. Artesia Blvd. Compton, CA 90220 (213) 537-5830	Sierra Scientific Corp. 2189 Leghorn St. Mountain View, CA 94043 (415) 969-9315
<i>Model</i>	VC 1610X, SVC 1620X	VC 1620L, VC 1630P	M 200, M 400
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	.08fc (0.08lm/m ²)	0.8 fc (8lm/m ²)	Information not available
Usable Picture	Information not available	Information not available	Information not available
Signal Transfer			
Distance	1,500ft (450m)	1,500ft (450m)	Information not available
Scan Format	1610X: External line-locked 1620X: Internal/external	1620L: Internal or external 1630P: Internal	2:1 Random or line-locked, RS330/343 standards
Scan Fail Protection	Information not available	Information not available	YES
Automatic Gain Control	10,000:1	10,000:1	Information not available
Automatic Iris	NO	NO	NO
Remote Control Provision	YES	YES	NO
Controls/Control Unit	Controls in rear; Beam, Focus, Target	Controls in rear; Beam, Focus, Target	Information not available
Temperature	15 to 120F (-10 to +50C) Indoor	15 to 120F (-10 to +50C) Indoor	32 to 120F (-0 to +50C) Indoor
Humidity	Information not available	Information not available	95 percent

PHYSICAL DATA

Camera Tube	8844	8844	1" Magnet focused image tube
Lens Mount	"C"	"C"	"C"
Lens Provided	Information not available	Information not available	Information not available
Weight	5.5lb (2.5kg)	5.5lb (2.5kg)	Information not available
Size H	3in (7.6cm)	3in (7.6cm)	See notes
W	4.3in (11cm)	4.3in (11cm)	See notes
L	10in (25cm)	10in (25cm)	See notes
Output Connector	PL 259	PL 259	BNC
Input Voltage	117V ac	VC 1620L: 24V ac VC 1630P: DC, see notes	105 to 130V ac
Input Power	12W	1620L: 12W 1630P: Information not available	30W

COST DATA

Price	VC1610X: \$370 VC1620X: \$445	VC1620L: \$445 VC1630P: \$415	Information not available
--------------	----------------------------------	----------------------------------	---------------------------

NOTES

Both models same as VC1600, but different interlace and different input voltage. 24V ac allows for single cable operation with power unit VCA161

Same as VC1600, but different interlace and input voltages. 24V ac allows for single cable operation. VC 1630P: dc powered camera with power unit VCA161 for 117V ac

M200: Hgt.: 6.7in (17cm)
Wid.: 6.2in (16cm)
Lth.: 11.5in (29cm)
Self-contained
M 400: Hgt.: 7.5in (19cm)
Wid.: 6in (15cm)
Lth.: 12in (30cm)
Self-contained for precision mounting

INSTALLATIONS

CAMERAS WITH STANDARD VIDICONS

<i>Manufacturer</i>	Sierra Scientific Corp. 2189 Leghorn St. Mountain View, CA 94043 (415) 969-9315	Sierra Scientific Corp. 2189 Leghorn St. Mountain View, CA 94043 (415) 969-9315	Sony Corp. of America 9 West 57th St. New York, NY 10019 (212) 371-5800
<i>Model</i>	M 600	LSV1, LSV1.5R	AVC 1400
Evaluation Guide Procedure IV-2 A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	Information not available	LSV1: 0.1fc (1. lm/m ²) LSV1.5R: Inf. not available	0.2fc (2. lm/m ²)
Usable Picture	Information not available	Information not available	0.02fc (0.2 lm/m ²)
Signal Transfer	100 ft (30m)	LSV1: 200 ft (60m) LSV1.5R: 15ft (4.5m)	700ft (210m)
Distance			
Scan Format	2:1 Random or line-locked RS330/343 Standards	2:1 Internal	2:1 Internal
Scan Fair Protection	YES	Information not available	Information not available
Automatic Gain Control	Information not available	LSV1: 3,000:1 LSV1.5R: Information not available	1,000:1
Automatic Iris	NO	LSV1: NO LSV1.5R: Information not available	NO
Remote Control Provision	YES	YES	YES
Controls/Control Unit Temperature	Rack or desk 32 to 130F (0 to 55C) Indoor	Rack mount controls 32 to 130F (0 to 55C)	Separate Power Supply 20 to 110F (-5 to +45C) Indoor
Humidity	95%	95%	Information not available

PHYSICAL DATA

Camera Tube	1" Magnet, focused image tube	LSV1: 8541A LSV1.5R: C23225	8929
Lens Mount	"C"	LSV1: "C" LSV1.5R: "LEICA"	"C"
Lens Provided	Information not available	Information not available	F/1.7; 16mm
Weight	Information not available	LSV1: 8lb (3.5kg) LSV1.5R: 13lb (5.8kg)	2.2lb (1.0kg)
Size H	3.0in (7.6cm) dia.	See notes	4.3in (11cm)
W	—	See notes	2.7in (6.8cm)
L	8.5in (22cm)	See notes	6.5in (16.5cm)
Output Connector	BNC	LSV1: Nk 27/23 LSV1.5R: Nk 27/23	UHF
Input Voltage	105 to 130V ac	90 to 140V ac	120V ac
Input Power	35W	75W	12W

COST DATA

Price	Information not available	Information not available	Information not available
--------------	---------------------------	---------------------------	---------------------------

NOTES

Two unit camera
(Head and power
supply)

LSV1: Hgt.: 4.7in (12cm)
Wid.: 5.2in (13cm)
Lth.: 10.2in (26cm)

High performance camera,
high resolution, various
options available

LSV1.5R: Hgt.: 5.8in
(15cm)
Wid.: 7.3in
(18.5 cm)
Lth.: 12.2in
(31 cm)

Very high resolution camera

INSTALLATIONS

CAMERAS WITH STANDARD VIDICONS

<i>Manufacturer</i>	Sony Corp. of America 9 West 57th St. New York, NY 10019 (212) 371-5800	Telemation, Inc. P.O. Box 15068 Salt Lake City, UT 84115 (801) 487-5399	Sperry-Vision Corp. 1311 Northern Blvd. Manhasset, NY 11030 (516) 627-0100
<i>Model</i>	AVC 3450	TMC 1100 T TMC 1100 TL	SV 550
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	0.3fc (3. lm/m ²)	0.1fc (1. lm/m ²)	0.2fc (2. lm/m ²)
Usable Picture	information not available	Information not available	0.03fc (0.3 lm/m ²)
Signal Transfer	Information not available	Information not available	Information not available
Distance			
Scan Format	2:1 External	2:1 Internal or external random	2:1 RS330 Standard
Scan Fail Protection	Information not available	YES	YES
Automatic Gain Control	3,000:1	40,000:1	50,000:1
Automatic Iris	NO	NO	NO
Remote Control	NO	NO	NO
Provision			
Controls/Control Unit	Self-contained camera	Self-contained camera	Self-contained; no external controls
Temperature	Information not available	5 to 140F (-20 to +60C) Indoor	5 to 140F (-20 to +60C) Indoor
Humidity	Information not available	90%	95%

PHYSICAL DATA

Camera Tube	20 PE 19	7735T	7735
Lens Mount	Information not available	"C"	"C"
Lens Provided	See notes	Information not available	Information not available
Weight	4lb (1.8kg)	9lb (4kg)	6lb (2.7 kg) (less lens)
Size H	3.6in (9cm)	4.5in (11.5cm)	4.6in (11.5cm)
W	9.2in (23cm)	6.0in (15.2cm)	3.2in (8cm)
L	14.0in (35cm)	12.5in (31.7cm)	12.4in (31.5cm)
Output Connector	Information not available	BNC	BNC
Input Voltage	12V dc	TMC-1100T — 117V ac TMC-1100TL — 24V ac	117V ac, 24V ac, Opt.
Input Power	7W	Information not available	12W

COST DATA

Price	Information not available	TMC 1100T : 750 TMC 1100TL: 800	Information not available
-------	------------------------------	------------------------------------	------------------------------

NOTES

VTR camera supplied with
zoom lens, f/2.0 and f/2.5

Standard indoor
surveillance camera

INSTALLATIONS

CAMERAS WITH STANDARD VIDICONS

<i>Manufacturer</i>	Hamamatsu Corp. 120 Wood Ave. Middlesex, NJ 08846 (201) 469-6640	Gyrr Products 1341 S. Claudina St. Anaheim, CA 92805 (714) 635-9100
<i>Model</i>	HTV C 158	G 550
Evaluation Guide Procedure IV-2.A		NRC Identification No.

PERFORMANCE DATA

Sensitivity		
Video Scale	Information not available	Information not available
Usable Picture	Information not available	Information not available
Signal Transfer Distance	15ft (4.5m)	Information not available
Scan Format	2:1 Interlace	2:1 Internal or External
Scan Fail Protection	Information not available	Information not available
Automatic Gain Control	Information not available	10,000:1
Automatic Iris	NO	NO
Remote Control Provision	Information not available	NO
Controls/Control Unit	Separate control unit	Self-contained control unit for internal or external sync
Temperature	Information not available, Indoor	Information not available, Indoor
Humidity	Information not available	Information not available

PHYSICAL DATA

Camera Tube	N156 or 7738	Information not available
Lens Mount	"C"	"C"
Lens Provided	Information not available	See notes
Weight	4.4lb (2kg)	3.3lb (2.4kg)
Size H	3.6in (9cm) dia.	4.9in (12.5cm)
W	—	3.1in (8cm)
L	10.0in (25cm)	9.4in (24cm)
Output Connector	Information not available	Information not available
Input Voltage	90 to 110V ac	117V ac
Input Power	100W	11W

COST DATA

Price	Information not available	\$350
--------------	---------------------------	-------

NOTES

Camera has standard Vidicon as sensor tube with extended IR response, special filter available to convert camera into IR sensor

Standard camera: f/1.6, 16mm lens included

INSTALLATIONS

CAMERAS WITH STANDARD VIDICONS

Manufacturer General Electric Co.
Imaging and Display
Devices
Electronics Park
Syracuse, NY 13201
(315) 456-3293

Model TE21

Evaluation Guide Procedure IV-2.A NRC Identification No.

PERFORMANCE DATA

Sensitivity
10 Gray Scale Information not available
Usable Picture 0.03fc (0.3 lm/m²)
Signal Transfer 75ft (22.5m)
Distance
Scan Format 2:1 Interlace
Scan Fail Protection YES
Automatic Gain Control Information not available
Automatic Iris Information not available
Remote Control NO
Provision
Controls/Control Unit See notes
Temperature -6 to 100F (-14 to +39C)
Humidity 95%

PHYSICAL DATA

Camera Tube Standard electromagnetic
Vidicon
Lens Mount "C"
Lens Provided Information not available
Weight 4.5lb (2.0kg)
Size H 4.8in (12 cm)
W 3.2in (8cm)
L 8.6in (22cm)
Output Connector Cannon NK27
Input Voltage 117V ac
Input Power TE21: 45.

COST DATA

Price Information not available

NOTES

Controls, separate CCU
box, Mod. 875
Camera tube with
Si-Vid. Special Order

INSTALLATIONS

TV CAMERAS WITH SILICON DIODE VIDICON OR EQUIVALENT

Television cameras in principle consist of three major components which have clearly defined functions. The light-sensitive detector, usually referred to as the sensor or pickup device, converts the incoming light energy into an electronic signal. The optical lens system focuses the light from the given scene onto the sensor, creating an electrical charge pattern which is "read out" within the sensor by an internal electronic scan. The electronic support system provides all the necessary voltages, timing pulses and amplification of the electrical signal.

High-performance closed-circuit television cameras are usually equipped with silicon diode vidicons as electronic pickup devices. Vidicon pickup tubes are basically cylindrical glass vacuum devices between 1/2 and 2 inches in diameter and between 3 and 7 inches long. One of the flat ends of the cylinder holds the photosensitive material; the other is used for electrical feedthrough. The term "silicon diode" vidicon refers to a tube using a particular type of photosensitive material, an array of up to 500,000 individual silicon diodes. Interchangeable with these silicon diode vidicons are the newly developed Newvicons and Chalnicons, which are very similar to silicon diode vidicons in all important performance characteristics but use different electro-optical sensor materials, which make these vidicons less sensitive in the near infrared region than silicon diode vidicons.

Silicon diode array vidicons (silicon vidicons), Newvicons and Chalnicons are approximately ten times as sensitive as standard vidicons, and can be used during dusk and dawn without external lights. They are very rugged and can withstand very heavy illumination overloads without damage. They also exhibit no "burn in"

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	2	b	0	1

736 086

image-retaining effects, even if exposed to the same scene continuously for many months. They do exhibit "blooming" to some extent, very brightly illuminated areas seeming to flow into darker sections of the picture. The sensitivity of silicon vidicons, Newvidicons and Chalnicons cannot be controlled externally over any wide range; cameras equipped with these sensors therefore, like standard film cameras, require automatic lens stop (iris) adjustments to prevent overexposure. Silicon vidicons are also sensitive to the near-infrared region of the electromagnetic spectrum, which makes them very useful surveillance devices in fog, rain, and snow.

A vidicon pickup tube is surrounded by a coil whose electromagnetic field deflects the electron scan beam inside the tube. By varying the current in the deflection coil the electron beam is moved to create a raster scan identical to that used in home television sets. In the following paragraphs, technical terms specific to television cameras are explained in more detail. They appear in the text in the same order as they are mentioned on the Catalog data sheets. For reference purposes the technical terms are underlined and so are expressions which appear on the Catalog data sheets.

A camera's sensitivity is measured in terms of the amount of light falling on the light-sensitive surface (faceplate) of the camera sensor. Usually two values are given. The first indicates the amount necessary to produce a usable picture, enabling an observer to identify familiar objects on a correctly adjusted monitor. This value is subjective and depends on circumstances. The second value gives the illumination necessary to produce ten distinctly discernible shades of gray. These levels and the camera response can be measured in the laboratory and constitute an objective evaluation of the camera.

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	2	b	0	2

Signal transfer distance is defined as the maximum distance between cameras and television monitors which can be used without amplifier repeaters.

The video signal itself has two components, one containing the picture content (raw video) and the other the timing information (horizontal and vertical synchronization pulses). The raw video and sync pulses are superimposed to form the composite signal.

The scan format defines the details of the scanning process. All television cameras designed to be used in connection with a monitor for visual observation scan the image in an "interlaced" mode. First all odd-numbered lines are scanned, defining field one, then all the even-numbered lines defining field two. Fields one and two constitute the whole can, called a frame. The standard rate in the U.S. is 60 fields (30 frames) per second; this scan format is called 2:1 interlaced. The scan timing can be controlled by the ac line frequency, by an internal oscillator or by an external synchronization (sync) pulse. If the starting times of the two successive fields are not locked together, the scan sequence is called 2:1 random interlaced. Minimum standards to make closed circuit television systems compatible are listed in Electronic Industries Association Standard EIA RS-170, which covers output and equipment standardization. More rigid standards for closed circuit television cameras are defined in EIA RS-330 which specifies 525 scan lines per picture height and 30 frames (60 fields) per second. Some cameras are also equipped with an option to comply with CCIR standards which are the European equivalents to the US EIA RS standards, but based on a rate of 50 frames/sec and 625 scan lines per picture height.

Scan fail protection is provided by a special sensing circuit which turns the electron scan beam off in case the scan circuitry fails. This presents possible severe damage to the sensor tube when the electron read beam stops moving.

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	2	b	0	3

736 088

Dynamic range defines the ratio between the highest and lowest illumination levels at which the camera can produce usable pictures. The limit at high levels is given by saturation effects, while the lower limit is set by the system noise, which appears on a monitor as oscillating white spots. In both cases details are lost, which make the picture unusable.

The dynamic range that can be obtained in a TV camera is a function of two very different parameters, one being the automatic gain control (AGC), and the other the automatic light control (ALC). All TV camera have AGC, where the gain of the video signal amplifier is automatically controlled by a feedback circuit, which in turn is controlled by the video output signal. In most cameras the AGC can be disabled by a switch, if so desired. If the illumination range exceeds the range of the automatic gain control, the camera's lens stop (iris) must be adjusted. Several cameras include provisions for automatic operation of a motor driven lens stop -- an automatic iris -- to maintain a constant electrical output signal over a wide range of illumination levels.

Most manufacturers give only the combined dynamic range as it can be achieved with automatic gain control (amplifier) and automatic light control (iris) in tandem. This value is entered in the Catalog under Dynamic Range. A second entry -- Range Extended with Automatic Iris -- is provided to distinguish between cameras which have internal provisions for automatic iris control and those which have not. A "YES" entry indicates that the dynamic range is obtained with automatic gain control and automatic iris; "NO" indicates that provisions are made for automatic gain control only. If an automatic iris is provided with the camera as a unit, this fact is mentioned under NOTES.

In some cases the automatic iris is replaced by a filterwheel which contains a set of attenuation filters; in other cases auto-

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	2	b	0	4

matic light control is achieved by electronic means which change the characteristics of the sensor. These facts are also mentioned under NOTES.

Many television cameras are provided with remote control of their own electronic adjustments (but not of their positioning). The camera controls available to an operator are electrical and mechanical focus, scan beam adjustment, and in some cases target voltage control. For more technical details, consult the camera servicing manuals.

Camera pickup tubes for closed-circuit TV usually come in two sizes, nominally 2/3 inch and 1 inch. Manufacturers specify the tube to be used with their cameras, but many tubes are interchangeable without any need to change electronic circuits. Tube interchangeability guides are provided by all major tube manufacturers.

Most cameras have interchangeable lenses with a standard threaded mount referred to as a "C Mount". Lens selection depends on the specific requirements for area coverage. Tables and diagrams to aide in the selection are available from various manufacturers. It is important to note that the size of the sensor itself (in the case of vidicons, 2/3 or 1 inch) is an important parameter in selecting the camera lens. Many camera lenses are also produced with a variety of additional features. Zoom lenses are available in good quality either for manual or motorized adjustment. Motorized lens stop (auto-iris) adjustments are very common, as is motorized optical focus adjustment for remote-control operation. Many lens systems provide all three motorized options in one unit.

A special feature provided by some manufacturers is the "one cable" camera, in which power to run the camera, the video signal and camera control signals are transmitted over the same cable. Other features, usually provided on special request, include matching circuits directly attached to the camera for video rf signal transmission.

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	2	b	0	5

736 090

CAMERAS WITH SILICON DIODE VIDICON OR EQUIVALENT

<i>Manufacturer</i>	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700
<i>Model</i>	2850B-211,-311	2850B-202,-302, 2850B-203,-303	2850B-204,-304
Evaluation Guide Procedure IV-2.a		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	$1 \times 10^{-2} \text{fc}$ (0.1 lm/m ²)	$1 \times 10^{-2} \text{fc}$ (0.1 lm/m ²)	$1 \times 10^{-2} \text{fc}$ (0.1 lm/m ²)
Usable Picture	$1 \times 10^{-3} \text{fc}$ ($1 \times 10^{-2} \text{lm/m}^2$)	$1 \times 10^{-3} \text{fc}$ ($1 \times 10^{-2} \text{lm/m}^2$)	$1 \times 10^{-3} \text{fc}$ ($1 \times 10^{-2} \text{lm/m}^2$)
Signal Transfer Distance	1,000ft (300m)	1,000ft (300m)	1,000ft (300m)
Scan Format	2:1 Internal, RS170 standard	2:1 Internal, RS170 standard	2:1 Internal, RS170 standard
Scan Fail Protection	YES	YES	YES
Dynamic Range	$6 \times 10^5:1$	$6 \times 10^5:1$	$6 \times 10^5:1$
Range Ext. With Autom. Iris	YES	YES	YES
Remote Control Provision	YES	YES	YES
Controls/Control Unit	See notes	See notes	See notes
Temperature	-40 to +140F (-40 to +60C)	-40 to +140F (-40 to +60C)	-40 to +140F (-40 to +60C)
Humidity	100%	100%	100%

PHYSICAL DATA

Camera Tube	Si Vidicon 4532	Si Vidicon 4532	Si Vidicon 4532
Lens Mount	"C"	"C"	"C"
Lens Provided	Without lens	202/302: 10:1 zoom, f/1.8 203/303: 10:1 zoom, 1.5x extender, f/1.8	204/304: 10:1 zoom, 2X extender, f/1.8
Weight	15.5lb (7kg) less lens	26lb (11.8kg)	26lb (11.8kg)
Size H	6in (15cm) dia.	6in (15cm) dia.	6in (15cm) dia.
W	—	—	—
L	15in (38cm) less lens	25in (64cm)	25in (64cm)
Output Connector	PC-07C-18-32P	PC-07C-18-32P	PC-07C-18-32P
Input Voltage	105 to 130V ac	105 to 130V ac	105 to 130V ac
Input Power	20W (125W with heater)	20W (125W with heater)	20W (125W with heater)

COST DATA

Price	Information not available	202/302: \$5,635 203/302: \$5,760	\$5,760
--------------	---------------------------	--------------------------------------	---------

DATE
31 December 1976

CATALOG VOLUME
IV

SECTION
2

CATEGORY
b

DATA SHEET
1

PAGE
1

736 091

NOTES

Self-contained surveillance camera; in environmental housing
Remote controls Series 2380 for: Electronic focus, lens focus, aperture, zoom.
Meets MIL SPEC-E-5400M

Self-contained surveillance camera; in environmental housing
Remote controls Series 2380 for: Electronic focus, lens focus, aperture, zoom.
Meets MIL SPEC-E-5400M

Self-contained surveillance camera; in environmental housing
Remote controls Series 2380 for: Electronic focus, lens focus, aperture, zoom.
Meets MIL SPEC-E-5400M

18 cameras of 2850B series tested by MITRE Corp. Data summarized in MITRE Report, WP-20848, 20 Sept. 1976 (Conf.).

INSTALLATIONS

CAMERAS WITH SILICON DIODE VIDICON OR EQUIVALENT

<i>Manufacturer</i>	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700
---------------------	---	---	---

<i>Model</i>	2850B-205,-305	2850B-206,-306 2850B-207,-307	2850B-222,-322 2850B-224,-324
--------------	----------------	----------------------------------	----------------------------------

Evaluation Guide Procedure IV-2.A NRC Identification No.

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	$1 \times 10^{-2} \text{fc}$ (0.1 lm/m ²)	$1 \times 10^{-2} \text{fc}$ (0.1 lm/m ²)	$1 \times 10^{-2} \text{fc}$ (0.1 lm/m ²)
Usable Picture	$1 \times 10^{-3} \text{fc}$ ($1 \times 10^{-2} \text{ lm/m}^2$)	$1 \times 10^{-3} \text{fc}$ ($1 \times 10^{-2} \text{ lm/m}^2$)	$1 \times 10^{-3} \text{fc}$ ($1 \times 10^{-2} \text{ lm/m}^2$)
Signal Transfer Distance	1,000ft (300m)	1,000ft (300m)	1,000ft (300m)
Scan Format	2:1 Internal, RS170 standard	2:1 Internal, RS170 standard	2:1 Internal, RS170 standard
Scan Fail Protection	YES	YES	YES
Dynamic Range	$6 \times 10^5:1$	$6 \times 10^5:1$	$6 \times 10^5:1$
Range Ext. With Autom. Iris	YES	YES	YES
Remote Control Provision	YES	YES	YES
Controls/Control Unit	See notes	See notes	See notes
Temperature	-40 to +140F (-40 to +60C)	-40 to +140F (-40 to +60C)	-40 to +140F (-40 to +60C)
Humidity	100%	100%	100%

PHYSICAL DATA

Camera Tube	4532	4532	4532
Lens Mount	"C"	"C"	"C"
Lens Provided	205/305: 10:1 zoom, f/2.8	206/306: 10:1 zoom, 1.5X extender, f/2.8 207/307: 10:1 zoom, 2X extender, f/2.8	222/322: Auto iris, f/1.4, Focal length, .5in. 224/324: Auto iris, f/1.4, Focal length 1.0in.
Weight	23lb (10.5kg)	23lb (10.5kg)	222/322: 18lb (8kg) 224/324: 18.5lb (8.4kg)
Size H	6in (15cm) dia.	6in (15cm) dia.	6in (15cm) dia.
W	—	—	—
L	23in (58cm)	23in (58cm)	18in (45cm)
Output Connector	PC-07C-18-32P	PC-07C-18-32P	PC-07C-18-32P
Input Voltage	105 to 130V ac	105 to 130V ac	105 to 130V ac
Input Power	20W (125W with heater)	20W (125W with heater)	20W (125W with heater)

COST DATA

Price	\$4780	\$4905	\$3225
-------	--------	--------	--------

NOTES

Environmental housing
Self-contained surveillance camera;
Remote controls Series
2380 for: Electronic
focus, lens focus,
aperture, zoom.
Meets Mil-Spec-E-
5400M

Environmental housing
Self-contained surveillance camera;
Remote controls Series
2380 for: Electronic
focus, lens focus,
aperture, zoom.
Meets Mil-Spec-E-
5400M

Environmental housing
Self-contained surveillance camera;
Remote controls Series
2380 for: Electronic
focus, lens focus,
aperture, zoom.
Meets Mil-Spec-E-
5400M

18 cameras of 2850 series tested by MITRE Corp. Data summarized in MITRE Report, WP-20848, 20 Sept. 1976 (Conf.).

INSTALLATIONS

CAMERAS WITH SILICON DIODE VIDICON OR EQUIVALENT

Manufacturer	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700	Edo Western Corp. 2645 So. 300 West Salt Lake City, UT 84115 (801) 486-7481
Model	2850B-226, -326 2850B-228, -328	4415	1432
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	1x10 ⁻² fc (0.1 lm/m ²)	5x10 ⁻² fc (0.1 lm/m ²)	Information not available
Usable Picture	1x10 ⁻³ fc (1.08x10 ⁻² lm/m ²)	1x10 ⁻³ fc (1.08x10 ⁻² lm/m ²)	Information not available
Signal Transfer Distance	1,000ft (300m)	Information not available	2,000ft (600m)
Scan Format	2:1 Internal, RS170 standard	2:1 Internal, RS170 standard	2:1 Internal
Scan Fail Protection	YES	YES	Information not available
Dynamic Range	6x10 ⁵ :1	6x10 ⁵ :1	10 ⁴ :1
Range Ext. With Autom. Iris	YES	YES	NO
Remote Control Provision	YES	NO	YES
Controls/Control Unit	See notes	Information not available	See notes
Temperature	-40 to +140F (-40 to +60C)	-5 to +130F (-20 to +55C)	15 to 150F (-10 to +65C)
Humidity	100%	95%	95%

PHYSICAL DATA

Camera Tube	4532	4532 or 4532A	4532 or 4532A
Lens Mount	"C"	"C"	"C"
Lens Provided	See notes	Information not available	Information not available
Weight	226/326: 20lb (9kg) 228/328: 21lb (9kg) f/1.8, focal length, 3.0in	9lb (4kg)	3lb (1.4kg)
Size H	6in (15cm) dia.	4.4in (11cm)	2.5in (6.2cm) dia.
W	—	—	—
L	21in (54cm)	12in (30cm)	9.25in (23cm)
Output Connector	PC-07C-18-32P	Information not available	BNC
Input Voltage	105 to 130V ac	117V ac	See notes
Input Power	20W (125W with heater)	17W	18W

COST DATA

Price	\$3,225	Information not available	Information not available
-------	---------	---------------------------	---------------------------

NOTES

Self-contained surveillance camera in Remote controls Series 2380 for: Electronic focus, lens focus, aperture, zoom. Meets Mil-Spec-E 5400M	Self-contained camera, also available with other pickup tubes	Same camera as CH 1411 (Std. vidicon) Camera Control Unit 1270, for 115V ac Camera Control Unit 1400, for 22 to 32V dc
226/326: Auto. iris f/1.4, Focal length 2.0in		
228/328: Auto. iris f/1.8, Focal length 3.0in		
18 cameras of 2850 series tested by MITRE Corp. Data summarized in MITRE Report, WP-20848, 20 Sept. 1976 (Conf.).		

INSTALLATIONS

CAMERAS WITH SILICON DIODE VIDICON OR EQUIVALENT

<i>Manufacturer</i>	Edo Western Corp. 2645 So. 300 West Salt Lake City, UT 84115 (801) 486-7481	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433
<i>Model</i>	1632	TD 1400B, OD 1400	TD 2100, TD 2100/PB 210
Evaluation Guide Procedure IV-2 A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	Information not available	0.2fc (2. lm/m ²)	Information not available
Usable Picture	Information not available	0.02fc (0.2 lm/m ²)	Information not available
Signal Transfer Distance	2,000ft (600m)	Information not available	TD 2100: None TD 2100/PB 210: 2,000ft (600m)
Scan Format	2:1 Internal, RS330 or RS170 standard	2:1 Line-locked, crystal or external	2:1 Internal
Scan Fail Protection	YES	Information not available	Information not available
Dynamic Range	10 ⁴ :1	5x10 ⁵ :1	1.2x10 ⁴ :1
Range Ext. With Autom. Iris	NO	NO	NO
Remote Control Provision	YES	Information not available	TD 2100: NO TD 2100/PB 210: YES
Controls/Control Unit	Self-contained	Self-contained; sync switch, electronic focus, beam	Self-contained; controls in rear of power unit
Temperature	15 to 130F (-10 to +55C)	20 to 140F (-5 to +60C)	15 to 150F (-10 to +60C) Indoor
Humidity	95%	95%	Information not available

PHYSICAL DATA

Camera Tube	4532 or 4532A	1" Si-Vidicon or Newicon	2/3" Si-Vidicon
Lens Mount	"C"	"C"	"C"
Lens Provided	Information not available	Information not available	Information not available
Weight	3.3lb (1.5kg)	7.4lb (3.3kg)	2.6lb (1.2kg)
Size H	2.5in (6.2cm) dia.	4.3in (11cm)	3in (7.6cm)
W	—	5.7in (14.5cm)	4in (10cm)
L	13.3in (34cm)	11.0in (28cm)	7.3in (18.5cm)
Input Voltage	14V dc	100 to 120V ac	TD 2100: 12-24V dc TD2100/PB210: 110-117V ac
Input Power	11W	18W	TD 2100: 4W TD 2100/PB 210: 15W

COST DATA

Price	Information not available	TD 1400B: \$1,094.50 OD 1400: 1,424.50	TD 2100: \$985 TD 2100/PB 210: \$1,235
--------------	---------------------------	---	---

NOTES

Same camera as 1432,
but ruggedized

OD 1400: Same as
TD 1400B, but outdoor
version

TD 2100: Same as
CTC 2100; standard
Vidicon camera (sub-
miniature

TD 2100/PB 210:
Same as TD 2100,
but single cable (video
and power) camera

INSTALLATIONS

CAMERAS WITH SILICON DIODE VIDICON OR EQUIVALENT

<i>Manufacturer</i>	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433
<i>Model</i>	TD 3400	TD 5010, GD 5010	CTC 6400 CTC 6400P OD 6400

Evaluation Guide Procedure IV-2.A NRC Identification No.

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	$5 \times 10^{-2} \text{fc}$ (0.5 lm/m ²)	Information not available	$1 \times 10^{-2} \text{fc}$ (0.1 lm/m ²)
Usable Picture	$5 \times 10^{-3} \text{fc}$ ($5.4 \times 10^{-2} \text{lm/m}^2$)	Information not available	$1 \times 10^{-3} \text{fc}$ ($1.1 \times 10^{-2} \text{lm/m}^2$)
Signal Transfer	Information not available	None	None
Distance			
Scan Format	Information not available	2:1 Random, line-locked, internal or external	2:1 Internal, external, crystal, or RS170 standard
Scan Fail Protection	Information not available	Information not available	YES
Dynamic Range	$5 \times 10^5:1$	Information not available	$10^6:1$
Range Ext. With	YES	NO	YES
Autom. Iris			
Remote Control	NO	NO	NO
Provision			
Controls/Control Unit	Self-contained	Self-contained controls for zoom, focus	Self-contained controls for external/internal sync, focus, beam, gain
Temperature	32 to 120F (0 to 50C) Indoor	20 to 140F (-5 to +60C) See notes	15 to 140F (-10 to +60C) See notes
Humidity	95%	96%	95%

PHYSICAL DATA

Camera Tube	$\frac{3}{4}$ " Si Vidicon or $\frac{3}{4}$ " Newicon	1" Si-Vidicon	See notes
Lens Mount	"C"	"C"	"C"
Lens Provided	Information not available	Information not available	Information not available
Weight	5.6 (2.2kg)	TD 5010: 7.7lb (3.5 kg) OD 5010: Information not available	9.3lb (4.2kg)
Size H	3.5in (9 cm)	See notes	4.8in (12cm)
W	5in (12.5cm)	See notes	3.6in (9cm)
L	11.5in (29cm)	See notes	11.8in (30cm)
Output Connector	Information not available	Information not available	Information not available
Input Voltage	117V ac or 24V ac	110 to 130V ac	90 to 140V ac
Input Power	15W	18W	CTC 6400: 30W CTC 6400P/OD6400: 26W

COST DATA

Price

Information not available

TD 5010: \$ 997.50
OD 5010: 1,195.45

CTC6400: \$1,754.50
CTC6400P: 2,475.
OD 6400: 2,080.50

NOTES

TD 5010: Hgt.: 6.3in
(16.5cm); Width: 3.9in
(10cm); Length: 10.5in
(27cm); Indoor
Silicon Vidicon version
of CTC 5008 Camera
OD 5010:
Hgt. Information
Wgt. not
Lth. available
Outdoor version of
TD 5010

CTC 6400: Camera tube:
1" Si-Vidicon;
Low light level, high
resolution camera
Indoor operation
6400P: Camera tube:
1" Plumbicon; Same as
CTC6400, but with
Plumbicon (lead oxide
Vidicon); Indoor
operation
OD6400: Camera tube
1" Si-Vidicon; Out-
door version of
CTC6400

INSTALLATIONS

CAMERAS WITH SILICON DIODE VIDICON OR EQUIVALENT

Manufacturer	General Electric Co. Imaging and Display Devices Room 301, Bldg. 7 Electronics Park Syracuse, NY 13201 (315) 456-3293	Hitachi Denshi America, Ltd. 58-25 Brooklyn-Queen's Expwy. Woodside, NY 11377 (212) 898-1261	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490
Model	4TE-26A	HV16A	NT 855/865
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale Usable Picture	2×10^{-2} fc (0.2 lm/m ²)	Information not available	Information not available
Signal Transfer Distance	Information not available	1×10^{-3} fc (1×10^{-2} lm/m ²)	1×10^{-3} fc (1×10^{-2} lm/m ²)
Scan Format	Information not available	Information not available	Information not available
Scan Fail Protection	2:1 random, or RS170 and RS330 standard	2:1 random or external	2:1 random
Dynamic Range	YES	Information not available	Information not available
Range Ext. With Autom. Iris	$5 \times 10^4:1$	$10^5:1$	$10^5:1$
Remote Control Provision	YES	YES	YES
Controls/Control Unit	YES	NO	NO
Temperature	See notes	Hands-off, internal	On camera; Target, beam, focus controls
Humidity	-5 to +140F (-20 to +60C) Indoor 95%	15 to 120F (-10 to +50C) Indoor Information not available	15 to 120F (-10 to 50C) Indoor Information not available

PHYSICAL DATA

Camera Tube	Z-7975A or Z7975 IND.	4532 or 25PE 14	4833
Lens Mount	"C"	"C"	"C"
Lens Provided	Information not available	Information not available	Information not available
Weight	11lb (5kg)	7.7lb (3.5kg)	4.5lb (2.0kg)
Size H	3.75in (9.5cm)	6.5in (16.5cm)	3in (7.6cm)
W	6in (15cm)	4.0in (10cm)	4.3in (11cm)
L	14.8in (37cm)	11.3in (29cm)	10in (25cm)
Output Connector	BNC	UHF	BNC
Input Voltage	117V ac	117V ac	105 to 125V ac
Input Power	20W	13W	12W

COST DATA

Price	Information not available	\$570 without tube	\$1,620
--------------	---------------------------	--------------------	---------

NOTES

Controls in rear panel.
Self-contained, remote
operation up to 2 miles
(3km) with remote control
unit, Model 4TZ 26S

Self-contained crystal-
controlled, sync
optional

INSTALLATIONS

CAMERAS WITH SILICON DIODE VIDICON OR EQUIVALENT

<i>Manufacturer</i>	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490
<i>Model</i>	LL850/860, LL851/861	LL852/862, LL853/863	LI.854/864
Evaluation Guide Procedure IV-2.A	NRC Identification No.		

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	Information not available	Information not available	Information not available
Usable Picture	1×10^{-3} fc (1×10^{-2} lm/m ²)	1×10^{-3} fc (1×10^{-2} lm/m ²)	1×10^{-3} fc (1×10^{-2} lm/m ²)
Signal Transfer Distance	Information not available	Information not available	Information not available
Scan Format	2:1 random	See notes	2:1, internal
Scan Fail Protection	Information not available	Information not available	Information not available
Dynamic Range	10 ⁵ :1	10 ⁵ :1	10 ⁵ :1
Range Ext. With Autom. Iris	YES	YES	YES
Remote Control Provision	NO	NO	NO
Controls/Control Unit	On camera: Target, beam, focus controls	On camera: Target, beam, focus controls	On camera: Target beam, focus controls
Temperature	15 to 120F (-10 to +50C)	15 to 120F (-10 to +50C)	15 to 120F (-10 to +50C)
Humidity	Information not available	Information not available	Information not available

PHYSICAL DATA

Camera Tube	S 4075 (Newicon)	S 4075 (Newicon)	S 4075 (Newicon)
Lens Mount	"C"	"C"	"C"
Lens Provided	Information not available	Information not available	Information not available
Weight	5.5lb (2.5kg)	5.5lb (2.5kg)	5.5lb (2.5kg)
Size H	3in (7.6cm)	3in (7.6cm)	3in (7.6cm)
W	4.3in (11cm)	4.3in (11cm)	4.3in (11cm)
L	10in (25cm)	10in (25cm)	10in (25cm)
Output Connector	BNC	BNC	BNC
Input Voltage	850/860: 117V ac	117V ac	24V ac
Input Power	12.5W	12.5W	12.5W

COST DATA

Price	\$1,660	LL852/862: \$1,825 LL853/863: 1,692	\$1,900
--------------	---------	--	---------

NOTES

1. Same mechanical design as NT 855 Series
2. 860 series without lens. Auto Iris provided with camera

1. Scan format: 852/862: 2:1 interlace, internal sync. 853/863: 2:1 interlace, also external sync.
Auto Iris provided with camera
2. Same mechanical design as NT 855 Series
3. 860 series without lens

1. Same mechanical design as NT 855 Series
2. 860 series without lens. Auto Iris provided with camera

INSTALLATIONS

CAMERAS WITH SILICON DIODE VIDICON OR EQUIVALENT

<i>Manufacturer</i>	Panasonic Co. One Panasonic Way Secaucus, NJ 07094 (201) 348-7000	Panasonic Co. One Panasonic Way Secaucus, NJ 07094 (201) 348-7000	Panasonic Co. One Panasonic Way Secaucus, NJ 07094 (201) 348-7000
<i>Model</i>	WV 1051	WV1050, WV 1054	WV1150, WV1151
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	Information not available	0.03 fc (0.3 lm/m ²)	0.03 fc (0.3 lm/m ²)
Usable Picture	2x10 ⁻³ fc (2x10 ⁻² lm/m ²)	0.06 fc (0.75 lm/m ²)	0.06 fc (0.7 lm/m ²)
Signal Transfer	Information not available	100ft (30m)	100ft (30m)
Distance			
Scan Format	2:1 random, internal or external	2:1 random, internal or line-locked	Internal, line-locked or external
Scan Fail Protection	Information not available	Information not available	Information not available
Dynamic Range	10 ⁴ :1	10 ⁴ :1	10 ⁴ :1
Range Ext. With Autom. Iris	YES	YES	YES
Remote Control Provision	YES	NO	NO
Controls/Control Unit	Internal	Self-contained; controls for: Electronic focus, lens focus, beam	Self-contained; controls for: Electronic focus, mechanical focus, beam
Temperature	15 to 110F (-10 to +45C)	15 to 120F (-10 to +50C)	15 to 120F (-10 to +50C)
Humidity	Information not available	Indoor Less than 90%	Indoor Less than 90%

PHYSICAL DATA

Camera Tube	S 4075 (Newicon)	S 4075 (Newicon)	S 4075 (Newicon)
Lens Mount	Information not available	"C"	"C"
Lens Provided	See notes	See notes	See notes
Weight	9lb (4kg) without lens	3.5lb (1.6kg)	4lb (1.8kg)
Size H	4.3in (11cm)	3.7in (9.4cm)	3.7in (9.4cm)
W	5.8in (15cm)	3.7in (9.4cm)	3.7in (9.4cm)
L	10in (25cm)	8.6in (22cm)	9.2in (23cm)
Output Connector	BNC	UHF	UHF and 10-Pin
Input Voltage	117V ac	1050: 117V ac 1054: 24V ac	1150: 117V ac 1154: 24V ac
Input Power	15W	1050: 11W 1054: 12W	1150: 12W 1154: 13W

COST DATA

Price	Information not available	\$650	\$750
--------------	---------------------------	-------	-------

NOTES

Self-contained, Remote control box WV 690P; Auto. iris lens; SF90AP (f/1.8, 9mm) or SF 13NO (f/1.4, 13mm) included

Surveillance cameras; Auto. iris required, but not included; Auto. iris lenses available: KF85A, f/1.5, 8.5mm; KF16A, f/1.6, 1.6mm; KF25A, f/1.4, 25mm Telephoto; KF50A, f/1.8, 50mm Telephoto or SZ 95 RND/KT, f/2.0, 16 to 95mm; Motorized Zoom with rem. control

Surveillance cameras; Auto. iris required, but not included; Auto. iris lenses available: KF85A, f/1.5, 8.5mm; KF16A, f/1.6, 1.6mm; KF25A, f/1.4, 25mm Telephoto, KF50A, f/1.8, 50mm, Telephoto or SZ 95 RND/KT, f/2.0, 16 to 95mm; motorized zoom with rem. controls

INSTALLATIONS

CAMERAS WITH SILICON DIODE VIDICON OR EQUIVALENT

<i>Manufacturer</i>	Panasonic Co. One Panasonic Way Secaucus, NJ 07094 (201) 348-7000	RCA Corp. New Holland Ave. Lancaster, PA 17604 (800) 233-0421	RCA Corp. New Holland Ave. Lancaster, PA 17604 (800) 233-0421
<i>Model</i>	WV 1350, WV 1354	TC 1000/S02, TC 1000/S24	TC 1000/N 02 TC 1000/N 24
Evaluation Guide Procedure IV-2.b.1-9		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	0.03fc (0.3lm/m ²)	4x10 ⁻² fc (0.4lm/m ²)	4x10 ⁻² fc (0.4lm/m ²)
Usable Picture	0.06fc (0.7lm/m ²)	4x10 ⁻³ fc (4x10 ⁻² lm/m ²)	4x10 ⁻³ fc (4x10 ⁻² lm/m ²)
Signal Transfer			
Distance	100ft (30m)	Information not available	Information not available
Scan Format	Internal or external	2:1 random	2:1 random
Scan Fail Protection	Information not available	YES	YES
Dynamic Range	5x10 ⁴ :1	3x10 ⁵ :1	3x10 ⁵ :1
Range Ext. With			
Autom. Iris	YES	YES	YES
Remote Control Provision	NO	NO	NO
Controls/Control Unit	Self-contained controls for electronic focus, mechanical focus, beam	Self-contained; controls in rear of camera: Beam, focus, video, position	Self-contained; controls in rear of camera: Beam, focus, video, position
Temperature	15 to 120F (-10 to +50C) Indoor	15 to 120F (-10 to +50C) Indoor	15 to 120F (-10 to +50C) Indoor
Humidity	Less than 90 percent	Information not available	Information not available

PHYSICAL DATA

Camera Tube	S 4075 (Newicon)	$\frac{3}{8}$ in Si-Vidicon (any type)	$\frac{3}{8}$ in Newicon (any type)
Lens Mount	"C"	"C"	"C"
Lens Provided	See notes	Information not available	Information not available
Weight	4lb (1.8kg)	3.3lb (1.5kg)	3.3lb (1.5kg)
Size H	3.7in (9.3cm)	2.8in (7cm)	2.8in (7cm)
W	3.7in (9.3cm)	4.5in (11.5cm)	4.5in (11.5cm)
L	9.2in (23cm)	8.5in (22cm) without lens	8.5in (22cm) without lens
Output Connector	UHF and 10-pin	BNC	BNC
Input Voltage	1350: 117V ac 1354: 24V ac	/S02: 117V ac /S24: 24V ac	/N02: 117V ac /N24: 24V ac
Input Power	1350: 12W 1354: 13W	/S02: 8W /S24: 12W	/N02: 8W /N24: 12W

COST DATA

Price	\$850.	\$725.	\$825.
--------------	--------	--------	--------

NOTES

Surveillance cameras, Auto. iris required, but not included; Auto. iris available: KF 85A, f/1.5, 8.5mm; KF16A, f/1.6, 1.6mm; KF 25A, f/1.4, 25mm Telephoto; KF 50A, F/1.8, 50mm telephoto; or: SZ 95 RND/KT F/2.0, 16 to 95mm; motorized zoom with rem controls	Standard camera of family; self-contained Si-Vidicon version of TC 1000 /S24 Low voltage version of TC1000/502
--	---

INSTALLATIONS

CAMERAS WITH SILICON DIODE VIDICON OR EQUIVALENT

<i>Manufacturer</i>	RCA Corp. New Holland Ave. Lancaster, PA 17604 (800) 233-0421	RCA Corp. New Holland Ave. Lancaster, PA 17604 (800) 233-0421	RCA Corp. New Holland Ave. Lancaster, PA 17604 (800) 233-0421
<i>Model</i>	TC1010/S02 TC1010/S24	TC1010/N02, TC1010/N24	TC1020/S02, TC1020/S24
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity	$4 \times 10^{-2} \text{fc (0.4lm/m}^2\text{)}$	$4 \times 10^{-2} \text{fc (0.4lm/m}^2\text{)}$	$4 \times 10^{-2} \text{fc (0.4lm/m}^2\text{)}$
1@ Gray Scale			
Usable Picture	$4 \times 10^{-3} \text{fc (4x10}^{-2}\text{lm/m}^2\text{)}$	$4 \times 10^{-3} \text{fc (4x10}^{-2}\text{lm/m}^2\text{)}$	$4 \times 10^{-3} \text{fc (4x10}^{-2}\text{lm/m}^2\text{)}$
Signal Transfer			
Distance	Information not available	Information not available	Information not available
Scan Format	2:1 Internal, line-locked, RS330 Standard or external	2:1 Internal, line-locked, RS330 Standard or external	2:1 Internal, line-locked, RS330 Standard or external
Scan Fail Protection	YES	YES	YES
Dynamic Range	$3 \times 10^5:1$	$3 \times 10^5:1$	$3 \times 10^5:1$
Range Ext. With			
Autom. Iris	YES	YES	YES
Remote Control Provision	NO	NO	NO
Controls/Control Unit	Self-contained; controls on rear of camera: Beam, focus, video position	Self-contained; controls on rear of camera: Beam, focus, video position	Self-contained; controls in rear of camera: Beam, focus, video, position
Temperature	15 to 120F (-10 to +50C) Indoor	15 to 120F (-10 to +50C) Indoor	15 to 120F (-10 to +50C) Indoor
Humidity	Information not available	Information not available	Information not available

PHYSICAL DATA

Camera Tube	$\frac{3}{8}$ in Si-Vidicon (any type)	$\frac{3}{8}$ in Newicon (any type)	$\frac{3}{8}$ in Si-Vidicon (any type)
Lens Mount	"C"	"C"	"C"
Lens Provided	See notes	See notes	Information not available
Weight	3.3lb (1.5kg)	3.3lb (1.5kg)	3.3lb (1.5kg)
Size H	2.8in (7cm)	2.8in (7cm)	2.8in (7cm)
W	4.5in (11.5cm)	4.5in (11.5cm)	4.5in (11.5cm)
L	8.5in (22cm) without lens	8.5in (22cm) without lens	8.5in (22cm) without lens
Output Connector	BNC	BNC	BNC
Input Voltage	/S02: 117V ac /S24: 24V ac	/N02: 117V ac /N24: 24V ac	/S02: 117V ac /S24: 24V ac
Input Power	/S02: 8W /S24: 12W	/N02: 8W /N24: 12W	/S02: 8W /S24: 12W

COST DATA

Price	\$825	\$1,025	\$790
--------------	-------	---------	-------

NOTES

Avail: Auto-iris with
14 to 38mm lens
/S24: low voltage
version of TC1010/S02

Avail: Auto-iris with
14 to 38mm lens
/N24: low voltage
version of TC1010/N02

TC1000 but different sync
/S24: low voltage
version of TC1010/S02

INSTALLATIONS

CAMERAS WITH SILICON DIODE VIDICON OR EQUIVALENT

<i>Manufacturer</i>	RCA Corp. New Holland Ave. Lancaster, PA 17604 (800) 233-0421	RCA Corp. New Holland Ave. Lancaster, PA 17604 (800) 233-0421	RCA Corp. New Holland Ave. Lancaster, PA 17604 (800) 233-0421
<i>Model</i>	TC1025/S02, TC1025/N02	TC1005/S01, TC1605/N01	TC1005/S02, TC1005/N02
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	$4 \times 10^{-2} \text{fc (0.4lm/m}^2\text{)}$	$2 \times 10^{-2} \text{fc (0.2lm/m}^2\text{)}$	$4 \times 10^{-2} \text{fc (0.4lm/m}^2\text{)}$
Usable Picture	$4 \times 10^{-3} \text{fc (4x10}^{-2}\text{/m}^2\text{)}$	$2 \times 10^{-3} \text{fc (2x10}^{-2}\text{/m}^2\text{)}$	$4 \times 10^{-3} \text{fc (4x10}^{-2}\text{lm/m}^2\text{)}$
Signal Transfer			
Distance	Information not available	Information not available	Information not available
Scan Format	2:1 internal	2:1 line-locked	2:1, RS170 standard
Scan Fail Protection	YES	YES	YES
Dynamic Range	$3 \times 10^5:1$	$5 \times 10^5:1$	$5 \times 10^5:1$
Range Ext. With			
Autom. Iris	YES	YES	YES
Remote Control Provision	NO	NO	NO
Controls/Control Unit	Self-contained controls on rear of camera; Beam, focus, video position	Self-contained; controls on rear of camera; Beam, focus, AGC	Self-contained; controls on rear of camera; Beam, focus, AGC
Temperature	15 to 120F (-10 to +50C) Indoor	-5 to +140F (-20 to +60C) Indoor	-5 to +140F (-20 to +60C) Indoor
Humidity	Information not available	95 percent	95 percent

PHYSICAL DATA

Camera Tube	See notes	TC1005/S01: 4532 TC1005/N01: Newicon	TC1005/S02: 4833 TC1005/N02: Newicon
Lens Mount	"C"	"C"	"C"
Lens Provided	Information not available	See notes	See notes
Weight	3.3lb (1.5kg) without lens	6lb (2.7kg) without lens	6lb (2.7kg) without lens
Size H	2.8in (7.1cm)	3.5in (8.9cm)	3.5in (8.9cm)
W	4.5in (11.5cm)	5.5in (14cm)	5.5in (14cm)
L	8.5in (22cm)	11.8in (30cm) without lens	11.8in (30cm) without lens
Output Connector	BNC	BNC	BNC
Input Voltage	117V ac	120V ac	120V ac
Input Power	8W	20W	20W

COST DATA

Price	\$830	\$1,095	TC1005/S02: \$995 TC1005/N02: 894
--------------	-------	---------	--------------------------------------

NOTES

/S02: Camera tube: 2 1/2 in
Si-Vid. tube (any type);
single cable camera for
video and power; silicon
diode version of TC1025

/N02: Camera tube: 2 1/2 in
Newicon (any type);
Newicon version of TC1025/
S02

Low light level camera
family; includes f/1.5 to
f/360 auto-iris

Low light level camera
family, includes f/1.5
to f/360 auto-iris
Same cameras as
/S01 and /N01 but
different scan format

INSTALLATIONS

CAMERAS WITH SILICON DIODE VIDICON OR EQUIVALENT

<i>Manufacturer</i>	RCA Corp. New Holland Ave. Lancaster, PA 17604 (800) 233-0421	RCA Corp. New Holland Ave. Lancaster, PA 17604 (800) 233-0421	Sanyo Electric, Inc. 1200 W. Artesia Blvd. Compton, CA 90220 (213) 537-5830
<i>Model</i>	TC1005/H01, TC1005/H05	TC1005/H08, TC1005/H10	VC3300X, VC3300L
Evaluation Guide Procedure IV-2.A	NRC Identification No		

PERFORMANCE DATA

Sensitivity			
10 Gray Scale Usable Picture	$2 \times 10^{-3} \text{fc}$ (0.2lm/m^2)	$2 \times 10^{-2} \text{fc}$ (0.2lm/m^2)	Information not available
Signal Transfer Distance	$2 \times 10^{-3} \text{fc}$ ($2 \times 10^{-3} \text{lm/m}^2$)	$2 \times 10^{-3} \text{fc}$ ($2 \times 10^{-2} \text{lm/m}^2$)	$7 \times 10^{-3} \text{fc}$ ($8 \times 10^{-2} \text{lm/m}^2$)
Scan Format	Information not available	Information not available	1,500ft (450m)
Scan Fail Protection	2:1; EIA RS170 standard	2:1; EIA RS170 standard	2:1; Random or external, switch selected
Dynamic Range	YES	YES	Information not available
Range Ext. With Autom. Iris	$5 \times 10^5:1$	$5 \times 10^5:1$	$5 \times 10^5:1$
Remote Control Provision	YES	YES	YES
Controls/Control Unit	NO	NO	YES (for zoom lens)
	Self-contained controls on rear for: Beam, focus, AGC	Self-contained controls on rear for: Beam, focus, AGC	Self-contained; controls on rear for: Beam, focus, target, remote zoom
Temperature	-5 to +140F (-20 to +60C)	-5 to +140F (-20 to +60C)	15 to 120F (-10 to +50C)
Humidity	Indoor 95 percent	Indoor 95 percent	Indoor Information not available

PHYSICAL DATA

Camera Tube	4537H	4537H	S 4075 (Newvicon)
Lens Mount	"C"	"C"	"C"
Lens Provided	See notes	See notes	Information not available
Weight	6lb (2.7kg) without lens	6lb (2.7kg) without lens	5.5lb (2.5kg) without lens
Size H	3.5in (9cm)	3.5in (9cm)	3in (7.6cm)
W	5.5in (14cm)	5.5in (14cm)	4.5in (11.5cm)
L	11.8in (30cm) without lens	11.8in (30cm) without lens	10in (25cm) without lens
Output Connector	BNC	BNC	PL 259
Input Voltage	120V ac	120V ac	3300X: 117V ac 3300L: 24V ac
Input Power	20W	20W	12.5W

COST DATA

Price	/H01: \$1,250 /H05: 2,850	/H08: \$3,345 /H10: 4,595	\$940
-------	------------------------------	------------------------------	-------

NOTES

/H01: Low bloom vidicon provided

/H05: Same as /H01, but 20 to 100mm, f/1.8; zoom lens with spot-filter and control

/H08: Same as /H01, but 18 to 144mm, f/2.0; zoom lens with spot filter and controls

/H10: Same as /H01, but 16 to 160mm, f/1.8; zoom lens with spot filter and control

3300X: Standard camera of family, fixed focal length lens

3300L: Low voltage version of 3300X with power supply VPT116, or single cable option with VCA116

Tested continuously by the MITRE Corp., Bedford, MA. for 1 year without failure.

INSTALLATIONS

CAMERAS WITH SILICON DIODE VIDICON OR EQUIVALENT

<i>Manufacturer</i>	Sanyo Electric, Inc 1200 W. Artesia Blvd Compton, CA 90220 (213) 537-5830	Sanyo Electric, Inc 1200 W. Artesia Blvd Compton, CA 90220 (213) 537-5830	Sanyo Electric, Inc 1200 W. Artesia Blvd Compton, CA 90220 (213) 537-5830
<i>Model</i>	VC3310X, VC3310L	VC3320X, VC3320L	VC3360X, VC3360L
Evaluation Guide Procedure IV-2.A	NRC Identification No.		

PERFORMANCE DATA

Sensitivity	Information not available	Information not available	Information not available
10 Gray Scale	Information not available	Information not available	Information not available
Usable Picture	$7 \times 10^{-3} \text{fc}$ ($7.5 \times 10^{-2} \text{lm/m}^2$)	$7 \times 10^{-3} \text{fc}$ ($8 \times 10^{-2} \text{lm/m}^2$)	$7 \times 10^{-3} \text{fc}$ ($8 \times 10^{-2} \text{lm/m}^2$)
Signal Transfer			
Distance	1,500ft (450m)	1,500ft (450m)	1,500ft (450m)
Scan Format	2:1 random or external switch selected	2:1 random or external switch selected	2:1 random or external switch selected
Scan Fail Protection	YES	YES	YES
Dynamic Range	$10^5:1$	$10^5:1$	$10^5:1$
Range Ext. With			
Autom. Iris	YES	YES	YES
Remote Control Provision	YES (For zoom lens)	YES (For zoom lens)	YES (For zoom lens)
Controls/Control Unit	Self-contained controls on rear for beam, focus, target, zoom, remote	Self-contained controls on rear for beam, focus, target, zoom, remote	Controls on rear of camera for beam, focus and target
Temperature	15 to 120F (-10 to +50C) Indoor	15 to 120F (-10 to +50C) Indoor	15 to 120F (-10 to +50C) Indoor
Humidity	Information not available	Information not available	Information not available

PHYSICAL DATA

Camera Tube	S4075 Newicon	S4075 Newicon	S4075 Newicon
Lens Mount	"C"	"C"	"C"
Lens Provided	See notes	See notes	125 to 75mm remote control zoom
Weight	7lb (3.1kg)	7lb (3.1kg)	8.3lb (3.7kg)
Size H	3in (7.6cm)	3in (7.6cm)	3in (7.6cm)
W	4.5in (11.5cm)	4.5in (11.5cm)	4.3in (11cm)
L	12.9in (32cm)	12.9in (32cm)	16in (40cm) without lens
Output Connector	BNC	BNC	BNC
Input Voltage	3310X: 117V ac 3310L: 24V ac	3320X: 117V ac 3320L: 24V ac	3360X: 117V ac 3360L: 24V ac
Input Power	12.5W	12.5W	12.5W

COST DATA

Price	\$1,465	\$1,465	\$2,095
--------------	---------	---------	---------

NOTES

3310X: Same as VC3300X, but with f/1.4, 9mm lens	3320X: Same as VC3300X, but with f/1.4, 16mm lens	Same as VC3300X, but with 12.5mm 125 to 75mm, f/1.8
3310L: Low voltage version of VC3300L, but f/1.4, 9mm lens	3310L: Low voltage version of VC3320X	remote control zoom lens, desk-top control unit

INSTALLATIONS

CAMERAS WITH SILICON DIODE VIDICON OR EQUIVALENT

<i>Manufacturer</i>	Sanyo Electric, Inc. 1200 W. Artesia Blvd. Compton, CA 90220 (213) 537-5830	Sony Corp. of America 9 West 57th St. New York, NY 10019 (212) 371-5800	Telemation, Inc. P.O. Box 15068 Salt Lake City, UT 84115 (801) 487-5399
<i>Model</i>	VC 3365X, VC3365L	AVC 1450	TMC-1100-SD
Evaluation Guide Procedure IV-2.A	NRC Identification No.		

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	Information not available	0.02fc (0.2lm/m ²)	Depending on tube used
Usable Picture	7x10 ⁻³ fc (8x10 ⁻² lm/m ²)	Information not available	Depending on tube used
Signal Transfer Distance	1,500ft (450m)	1,000ft (300m)	Information not available
Scan Format	2:1 Random or external, switch selected	2:1 internal,	2:1 Random, internals, external or RS170 standard
Scan Fail Protection	YES	Information not available	YES
Dynamic Range	10 ⁵ :1	10 ⁴ :1	1.3x10 ⁵ :1
Range Ext. With Autom. Iris	YES	NO	YES
Remote Control Provision	YES (For zoom lens)	YES (Optional)	NO
Controls/Control Unit	Controls on rear of camera for beam, focus and target	Separate desk mount low supply	Controls on rear for beam, electronic focus, mechanical focus
Temperature	15 to 120F (-10 to +50C) Indoor	42 to 110F (6 to 45C) Indoor	5 to 140F (-20 to +60C) Indoor
Humidity	Information not available	Information not available	Information not available

PHYSICAL DATA

Camera Tube	S 4075 Newicon	S 4102 (Newicon) or E5195 Chalnicon	No tube provided
Lens Mount	"C"	"C"	"C"
Lens Provided	12.5 to 75mm, remote control zoom	Information not available	No lens provided
Weight	8.3lb (3.7kg)	2.2lb (1.0kg)	9lb (4kg)
Size H	3in (7.6cm)	5in (1.3cm)	4.5in (11.5cm)
W	4.3in (11cm)	2.5in (6.4cm)	6in (15cm)
L	16in (40cm)	7in (18cm)	12.5in (32cm)
Output Connector	PL 259	BNC	BNC
Input Voltage	3365X: 117V ac 3365L: 24V ac	120V ac	117V ac or 24V ac
Input Power	12.5W	13.0W	Information not available

COST DATA

Price	\$2,095	\$1,195	\$695
--------------	---------	---------	-------

NOTES

Same as VC3300X, but 12.5 to 75mm, remote control zoom lens from rack-control unit	Standard camera of 1400 Series Automatic iris JF-161- EA-2 available	Standard camera, no tube or lens provided.
---	---	---

INSTALLATIONS

CAMERAS WITH SILICON DIODE VIDICON OR EQUIVALENT

Manufacturer	Telemation, Inc. P.O. Box 15068 Salt Lake City, UT 84115 (801) 487-5399	Sperry-Vision Corp 1311 Northern Blvd Manhasset, NY 11030 (516) 627-0100
Model	TMC-1100-SD-F1, F2, F3, F4 TMC-1100-5D-Z1, Z2, Z3, Z4	SV 555

Evaluation Guide Procedure IV-2.A NRC Identification No.

PERFORMANCE DATA

Sensitivity		
10 Gray Scale	Information not available	$3 \times 10^{-2} \text{fc}$ (0.3lm/m ²)
Usable Picture	$3 \times 10^{-3} \text{fc}$ ($3 \times 10^{-2} \text{lm/m}^2$)	$1 \times 10^{-2} \text{fc}$ (0.1lm/m ²)
Signal Transfer		
Distance	Information not available	Information not available
Scan Format	2:1 random, internal external, or RS170 standard	2:1; RS330 Standard
Scan Fail Protection	YES	YES
Dynamic Range	$1.3 \times 10^5:1$	$10^5:1$
Range Ext. With		
Autom. iris	YES	NO
Remote Control Provision	NO	NO
Controls/Control Unit	Controls on rear for: beam, electronic focus, mechanical focus	Self-contained, no external controls
Temperature	5 to 140F (-20 to +60C) Indoor	-20 to +85F (-30 to +30C) Outdoor
Humidity	Information not available	100 percent

PHYSICAL DATA

Camera Tube	4532	1in Si-Vidicon
Lens Mount	"C"	"C"
Lens Provided	Various; see notes	None
Weight	9lb (4kg) without lens	16lb (7.2kg) without lens
Size H	4.5in (11.5cm)	5.4in (14cm)
W	6in (15cm)	7.4in (19cm)
L	12.5in (32cm) without lens	25.4in (62cm)
Output Connector	BNC	Sealed feed-through
Input Voltage	117V ac or 24V ac	117V ac
Input Power	Information not available	12W

COST DATA

Price	Depends on lens supplied; See notes	Information not available
--------------	-------------------------------------	---------------------------

NOTES

— F1: f/1.4, 12.5mm; Enviornmental housing,
— F2: f/1.4, 25mm; accepts most standard
— F3: f/1.4, 50mm; "C" mount lenses with
— F4: f/1.4, 75mm, all auto-iris (user-sup-
with auto-iris and plied), optional for
spot-filter 24V ac and RS170 sync

— Z1: f/1.8, 20 to 100mm

— Z2: f/2.0, 18 to 144mm;

— Z3: f/12.5 16 to 160mm;

— Z4: f/12.8, 15 to 150mm,

all zooms with neutral

density spot-filters

Prices range from \$1,665. to

\$2,820

This camera is presently field tested and evaluated by the U.S. Air Force (Electronic Systems Division, Hanscom AFB, MA) for the BISS (Base Installation Security System) program.

INSTALLATIONS

CAMERAS WITH SILICON DIODE VIDEOCON OR EQUIVALENT

Manufacturer Hitachi Denshi
America, Ltd
58-25 Brooklyn-Queen's
Expwy
Woodside, NY 11377
(212) 896-1261

Model HV 620L
HV 621L

Evaluation Guide Procedure IV-2.A NRC Identification No.

PERFORMANCE DATA

Sensitivity
10 Gray Scale Information not available
Usable Picture $1 \times 10^{-3} \text{fc}$ ($1 \times 10^{-2} \text{lm/m}^2$)
Signal Transfer
Distance Information not available
Scan Format 2:1 random, line-locked.
Scan Fail Protection Information not available
Dynamic Range $10^5:1$
Range Ext. With
Autom. Iris YES
Remote Control Provision NO
Controls/Control Unit Hands-off, internal
Temperature +15 to +120F (-10 to
+50C) Indoor
Humidity Information not available

PHYSICAL DATA

Camera Tube 4875
Lens Mount "C"
Lens Provided Information not available
Weight 2.9lb (1.3kg)
Size H 2.6in (6.6cm)
W 4.0in (10cm)
L 8.0in (20cm)
Output Connector UHF
Input Voltage 117V ac
Input Power 9W

COST DATA

Price \$725

NOTES

HV 621L same as HV 620L
but for 24V ac input

INSTALLATIONS

TV CAMERAS WITH INTENSIFIED TUBES

Television cameras in principle consist of three major components which have clearly defined functions. The light-sensitive detector, usually referred to as the sensor or pickup device, converts the incoming light energy into an electrical signal. The optical lens system focuses the light from a given scene onto the sensor, creating an electrical charge pattern which is "read out" within the sensor by an internal electronic scan. The electronic support system provides all the necessary voltages, timing pulses and amplification of the electrical signal.

TV cameras used for surveillance under very-low-illumination conditions, called Low Light Level TV (LLLTV) cameras, are equipped with intensified pickup tubes. The actual sensor is a vidicon with an electro-optical intensifier stage attached to it. The incoming light is electronically amplified first and then the more intense light is directed to the vidicon for signal generation.

Vidicon pickup tubes are basically cylindrical glass vacuum devices between 1/2 and 2 inches in diameter and between 3 and 7 inches long. One of the flat ends of the cylinder holds the photosensitive material; the other is used for electrical feedthrough. Two types of vidicons are used in connection with light amplifiers: the standard vidicon and the silicon-diode vidicon.

The term standard vidicon refers to a tube using a particular type of photosensitive material, a homogeneous layer of antimony trisulfide. A silicon diode vidicon has as a sensor an array of a large number of photodiodes, which are about ten times more sensitive than the sensor material used in the standard vidicon.

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	2	c	0	1

756 122

Optical amplification in the LLLTV camera can reach a value of several hundred times normal illumination, with an equivalent increase in camera sensitivity. In some models the intensifier stage is external to the vidicon, the devices having individual vacuum housings. They are mechanically coupled, however, and cannot be separated without possibility of damage. In this case the pickup tube configuration is called an IV (intensified vidicon), or if two or three intensifiers are cascaded as I^2V or I^3V respectively, each step dramatically increasing the sensitivity. Another configuration incorporates the first intensifier stage in the vidicon vacuum housing; in this case the pickup tube system is referred to as a SIT (Silicon Intensified Target) tube.

An external electro-optical intensifier stage can be combined with a SIT tube, making it an ISIT. As a rule of thumb, an ISIT is about as sensitive as an I^2V (double intensified vidicon). Intensified pickup tubes are sensitive only in the visible part of the electromagnetic spectrum. ISIT tubes are usually preferred over I^2V combinations where high resolution is required.

Intensifier stages require high voltages (up to 12,000V), which can be supplied by small power supplies specifically designed for this application. The voltage of the intensifier controls the amount of light amplification and is therefore often used for automatic exposure control to increase the camera's operating range. With automatic lens stop (iris) controls, these cameras can operate on very dark nights (moonless, cloud covered sky) with no artificial illumination as well as during broad daylight.

Intensified pickup tubes are susceptible to blooming, very brightly illuminated areas seeming to flow into the darker areas. For this reason good automatic exposure control is required. An exception is the SIT pickup tube, which is extremely rugged and shows very small blooming effects.

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	2	c	0	2

736 123

Within the camera the pickup tube is surrounded by a coil whose electromagnetic field deflects the electron scan beam inside the tube. By varying the current in the deflection coil, the electron beam can be moved to create a raster scan identical to that used in home television sets. In the following paragraphs, technical terms specific to television cameras are explained in more detail. They appear in the text in the same order as they are mentioned on the Catalog data sheets. For reference purposes the technical terms are underlined, and so are expressions which appear on the Catalog data sheets.

A camera's sensitivity is measured in terms of the amount of light falling on the light sensitive surface (faceplate) of the camera sensor. Usually two values are given. The first indicates the amount necessary to produce a usable picture, enabling an observer to identify familiar objects on a correctly adjusted monitor. This value is subjective and depends on circumstances. The second value gives the illumination necessary to produce ten distinctly discernible shades of gray. These levels and the camera response can be measured in the laboratory and constitute an objective evaluation of the camera.

Signal transfer distance is defined as the maximum distance between camera and television monitors which can be used without amplifier repeaters.

The video signal itself has two components, one containing the picture content (raw video) and the other the timing information (horizontal and vertical synchronization pulses). The raw video and sync pulses are superimposed to form the composite signal.

The scan format defines the details of the scanning process. All television cameras designed to be used in connection with a monitor for visual observation scan the image in an "interlaced" mode. First all odd-numbered lines are scanned, defining field one, then all the even-numbered lines defining field two. Fields

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	2	c	0	3

736 124

one and two constitute the whole can, called a frame. The standard rate in the U.S. is 60 fields (30 frames) per second; this scan format is called 2:1 interlaced. The scan timing can be controlled by the ac line frequency, by an internal oscillator or by an external synchronization (sync) pulse. If the starting times of the two successive fields are not locked together, the scan sequence is called 2:1 random interlaced. Minimum standards to make closed circuit television systems compatible are listed in Electronic Industries Association Standard EIA RS-170, which covers output and equipment standardization. More rigid standards for closed circuit television cameras are defined in EIA RS-330 which specifies 525 scan lines per picture height and 30 frames (60 fields) per second. Some cameras are also equipped with an option to comply with CCIR standards which are the European equivalents to the US EIA RS standards, but based on a rate of 50 frames/sec and 625 scan lines per picture height.

Scan fail protection is provided by a special sensing circuit which turns the electron scan beam off in case the scan circuitry fails. This presents possible severe damage to the sensor tube when the electron read beam stops moving.

Dynamic range defines the ratio between the highest and lowest illumination levels at which the camera can produce usable pictures. The limit at high levels is given by saturation effects, while the lower limit is set by the system noise, which appears on a monitor as oscillating white spots. In both cases details are lost, which make the picture unusable.

The dynamic range that can be obtained in a TV camera is a function of two very different parameters, one being the automatic gain control (AGC), and the other the automatic light control (ALC). All TV cameras have AGC, where the gain of the video signal amplifier is automatically controlled by a feedback circuit, which in turn is controlled by the video output signal. In most cameras the

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	2	C	0	4

AGC can be disabled by a switch, if so desired. If the illumination range exceeds the range of the automatic gain control, the camera's lens stop (iris) must be adjusted. Several cameras include provisions for automatic operation of a motor driven lens stop -- an automatic iris -- to maintain a constant electrical output signal over a wide range of illumination levels.

Most manufacturers give only the combined dynamic range as it can be achieved with automatic gain control (amplifier) and automatic light control (iris) in tandem. This value is entered in the Catalog under Dynamic Range. A second entry -- Range Extended with Automatic Iris -- is provided to distinguish between cameras which have internal provisions for automatic iris control and those which have not. A "YES" entry indicates that the dynamic range is obtained with automatic gain control and automatic iris; "NO" indicates that provisions are made for automatic gain control only. If an automatic iris is provided with the camera as a unit, this fact is mentioned under NOTES.

In some cases the automatic iris is replaced by a filterwheel which contains a set of attenuation filters; in other cases automatic light control is achieved by electronic means which change the characteristics of the sensor. These facts are also mentioned under NOTES.

Many television cameras are provided with remote control of their own electronic adjustments (but not of their positioning). The camera controls available to an operator are electrical and mechanical focus, scan beam adjustment, and in some cases target voltage control. For more technical details, consult the camera servicing manuals.

Camera pickup tubes for closed-circuit TV usually come in two sizes, nominally 2/3 inch and 1 inch. Manufacturers specify the

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	Iv	2	c	0	5

736 126

tube to be used with their cameras, but many tubes are interchangeable without any need to change electronic circuits. Tube interchangeability guides are provided by all major tube manufacturers.

Most cameras have interchangeable lenses with a standard threaded mount referred to as "C Mount". Lens selection depends on the specific requirements for area coverage. Tables and diagrams to aid in the selection are available from various manufacturers. It is important to note that the size of the sensor itself (in the case of vidicons, 2/3 or 1 inch) is an important parameter in selecting the camera lens. Many camera lenses are also produced with a variety of additional features. Zoom lenses are available in good quality either for manual or motorized adjustment. Motorized lens stop (auto-iris) adjustments are very common as is motorized optical focus adjustment for remote control operation. Many lens systems provide all three motorized options in one unit.

A special feature provided by some manufacturers is the "one cable" camera, in which power to run the camera, the video signal and camera control signals are transmitted over the same cable. Other features, usually provided on special request, include matching circuits directly attached to the camera for video rf signal transmission.

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	2	C	0	6

736 127

CAMERAS WITH INTENSIFIED TUBES

<i>Manufacturer</i>	Cohu, Inc Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700	Cohu, Inc Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700	Cohu, Inc Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700
<i>Model</i>	2855B-211, -311	2855B-202, -302 2855B-203, -303	2855B-204, -304 2855B-205, -305
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	4x10 ⁻⁴ fc (4.3x10 ⁻³ lm/m ²)	4x10 ⁻⁴ fc (4.3x10 ⁻³ lm/m ²)	4x10 ⁻⁴ fc (4.3x10 ⁻³ lm/m ²)
Usable Picture	4x10 ⁻⁵ fc (4.3x10 ⁻⁴ lm/m ²)	4x10 ⁻⁵ fc (4.3x10 ⁻⁴ lm/m ²)	4x10 ⁻⁵ fc (4.3x10 ⁻⁴ lm/m ²)
Signal Transfer			
Distance	1,000ft (300m)	1,000ft (300m)	1,000ft (300m)
Scan Format	2:1 Internal	2:1 Internal	2:1 Internal
	-211 RS170 Std. -311 CCIR Std	-202, -302: RS170 Std -302, -303 CCIR Std	-204, -205: RS170 Std -304, -305: CCIR Std
Scan Fail Protection	YES	YES	YES
Dynamic Range	10 ⁸ :1	10 ⁸ :1	10 ⁸ :1
Automatic Iris Provision	YES	YES	YES
Remote Control Provision	Standard	Standard	Standard
Controls/Control Unit	See notes	See notes	See notes
Temperature	-40 to +120F (-40 to +50C) Outdoor	-40 to +120F (-40 to +50C) Outdoor	-40 to +120F (-40 to +50C) Outdoor
Humidity	100 percent	100 percent	100 percent

PHYSICAL DATA

Camera Tube	RCA SIT 4804/P2	RCA SIT 4804/P2	RCA SIT 4804/P2
Lens Mount	"C"	"C"	"C"
Lens Provided	Without lens	See notes	See notes
Weight	15.5lb (7kg)	29lb (13.5kg)	See notes
Size H	6in (15cm) dia	6in (15cm) dia	6in (15cm) dia
W	17.5in (42cm)	27in (68cm)	See notes
L			
Output Connector	PC-07C-18-32P	PC-07C-18-32P	PC-07C-18-32P
Input Voltage	105 to 130V ac, 220 to 230V ac, optional	105 to 130V ac, 220 to 230V ac, optional	105 to 130V ac, 220 to 230V ac, optional
Input Power	20W (125W with heater)	20W (125W with heater)	20W (125W with heater)

COST DATA

Price	Information not available	202, 203: \$9045. 203, 303: \$9170	204, 304V: \$9170 205, 305: \$8190
--------------	---------------------------	---------------------------------------	---------------------------------------

NOTES

Low light level surveillance cameras; Full remote control for electronic focus and sensitivity; Manual optical focus; Sealed housing but lens exposed

Low light level surveillance cameras; Full remote control for electronic focus and sensitivity; Manual optical focus; Sealed housing
202/302: 10:1 Zoom, f/1.8,
203/303: 10:1 Zoom, f/1.8,
1.5X Extender

Low light level surveillance cameras; Full remote control for electronic focus and sensitivity; Manual optical focus; Sealed housing
204/304: Weight: 29lbs (13kg); Length: 29in (73cm);
10:1 Zoom, f/1.8, 2X Extender
205/305: Weight: 26lbs (12kg); Length: 26in (65cm); 10:1 Zoom, f/2.8

INSTALLATIONS

CAMERAS WITH INTENSIFIED TUBES

Manufacturer	Cohu, Inc Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700	Cohu, Inc Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700	Cohu, Inc Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700
Model	2855B-206, -306 2855B-207, -307	2855B-222, -322 2855B-224, -324	2855B-226, -326 2855B-228, -328
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	$4 \times 10^{-4} \text{fc}$ ($4.3 \times 10^{-3} \text{lm/m}^2$)	$4 \times 10^{-4} \text{fc}$ ($4.3 \times 10^{-3} \text{lm/m}^2$)	$4 \times 10^{-4} \text{fc}$ ($4.3 \times 10^{-3} \text{lm/m}^2$)
Usable Picture	$4 \times 10^{-5} \text{fc}$ ($4.3 \times 10^{-4} \text{lm/m}^2$)	$4 \times 10^{-5} \text{fc}$ ($4.3 \times 10^{-4} \text{lm/m}^2$)	$4 \times 10^{-5} \text{fc}$ ($4.3 \times 10^{-4} \text{lm/m}^2$)
Signal Transfer			
Distance	1,000ft (300m)	1,000ft (300m)	1,000ft (300m)
Scan Format	2:1 Internal -206, -207: RS170 Std -306, -307: CCIR Std	2:1 Internal -222, -224: RS170 Std -322, -324: CCIR Std	2:1 Internal -226, -228: RS170 Std -326, -328: CCIR Std
Scan Fail Protection	YES	YES	YES
Dynamic Range	$10^8:1$	$10^8:1$	$10^8:1$
Automatic Iris Provision	YES	See notes	See notes
Remote Control Provision	Standard	Standard	Standard
Controls/Control Unit	See notes	See notes	See notes
Temperature	-40 to +120F (-40 to +50C) Outdoor	-40 to +120F (-40 to +50C) Outdoor	-40 to +120F (-40 to +50C) Outdoor
Humidity	100 percent	100 percent	100 percent

PHYSICAL DATA

Camera Tube	RCA SIT 4804/P2	RCA SIT 4804/P2	RCA SIT 4804/P2
Lens Mount	"C"	"C"	"C"
Lens Provided	See notes	See notes	See notes
Weight	26lb (12kg)	22lb (10kg)	24lb (11kg)
Size H	6in (15cm) dia	6in (15cm) dia	6in (15cm) dia
W	—	—	—
L	26in (65cm)	21in (53cm)	24in (70cm)
Output Connector	PC-07C-18-32P	PC-07C-18-32P	PC-07C-18-32P
Input Voltage	105 to 130V ac, 220 to 230V ac, optional	105 to 130V ac, 220 to 230V ac, optional	105 to 130V ac, 220 to 230V ac, optional
Input Power	20W (125W with heater)	0W (125W with heater)	20W (125W with heater)

COST DATA

Price	\$8315	\$6635	\$6635
--------------	--------	--------	--------

NOTES

Low light level surveillance cameras; full remote control for electronic focus and sensitivity; manual optical focus; European sync and scan available
Sealed housing.

206, -306: 10:1 Zoom, f/2.8, 1.5X extender

207, -307: 10:1 Zoom, f/2.8, 2X extender

Low light level surveillance cameras; full remote control for electronic focus and sensitivity; manual optical focus; European sync and scan available
Sealed housing.

222, -322: Focal Length 0.5in, f/1.4

222, -324: Focal Length 1.0in, f/1.4

Low light level surveillance cameras; full remote control for electronic focus and sensitivity; manual optical focus; European sync and scan available
Sealed housing.

226, -326: Focal Length 2.0in, f/1.4

228, -328: Focal Length 2.0in, f/1.8

INSTALLATIONS

CAMERAS WITH INTENSIFIED TUBES

Manufacturer	Cohu, Inc Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 989-4433	Cohu, Inc Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 989-4433	Cohu, Inc Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 989-4433
Model	2856-005, -205 2856-006, -206	2856-007, -207	2856-022, -222 2856-024, -224
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	5x10 ⁻⁵ fc (5.3x10 ⁻⁴ lm/m ²)	5x10 ⁻⁵ fc (5.3x10 ⁻⁴ lm/m ²)	5x10 ⁻⁵ fc (5.3x10 ⁻⁴ lm/m ²)
Usable Picture	2x10 ⁻⁶ fc (2.1x10 ⁻⁵ lm/m ²)	2x10 ⁻⁶ fc (2.1x10 ⁻⁵ lm/m ²)	2x10 ⁻⁶ fc (2.1x10 ⁻⁵ lm/m ²)
Signal Transfer			
Distance	1,000ft (300m)	1,000ft (300m)	1,000ft (300m)
Scan Format	-005, -006: Ext. sync only	-007: Ext. sync only	-022, -024: Ext. sync only
Scan Fail Protection	-205, -206: RS170 std YES	-207: RS170 std YES	-222, -224: RS170 std YES
Dynamic Range	Information not available	Information not available	Information not available
Automatic Iris Provision	YES, Filterwheel	YES, Filterwheel	YES, Filterwheel
Remote Control Provision	Standard	Standard	Standard
Controls/Control Unit	See notes	See notes	See notes
Temperature	-5 to +140F (-20 to +60C) Outdoor	-5 to +140F (-20 to +60C) Outdoor	-5 to +140F (-20 to +60C) Outdoor
Humidity	100 percent	100 percent	100 percent

PHYSICAL DATA

Camera Tube	RCA ISIT 4849A	RCA ISIT 4849A	RCA ISIT 4849A
Lens Mount	"C"	"C"	"C"
Lens Provided	See notes	See notes	See notes
Weight	29lb (13kg)	29lb (13kg)	23lb (10.5kg)
Size H	6in (15cm) dia	6in (15cm) dia	6in (15cm) dia
W	—	—	—
L	29in (74cm)	29in (74cm)	24in (60cm)
Output Connector	PC-07C-18-32P	PC-07C-18-32P	PC-07C-18-32P
Input Voltage	105 to 130V ac, 220 to 230V ac, optional	105 to 130V ac, 220 to 230V ac, optional	105 to 130V ac, 220 to 230V ac, optional
Input Power	40W	40W	40W

COST DATA

Price	Information not available	Information not available	Information not available
--------------	---------------------------	---------------------------	---------------------------

NOTES

-005, -205: lens: 10:1 zoom	Lens: 10:1 zoom, with	-022, -222: lens 12.5mm
-006, -206: lens 10:1 zoom,	2.0X Extender	focal length, f/1.4
with 1.5X extender	Controls for beam,	-024, -224: lens 25mm
Controls for beam,	electronic focus,	focal length, f/1.4
electronic focus, blank-	blanking, auto/manual	Controls for beam,
ing, auto/manual iris.	iris. Sealed housing	electronic focus,
Sealed housing		blanking, auto/manual
		iris. Sealed housing

INSTALLATIONS

CAMERAS WITH INTENSIFIED TUBES

Manufacturer	Cohu, Inc Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 989-4433	Cohu, Inc Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 989-4433	Edo-Western Corp 2645 So. 300 West Salt Lake City, UT 84115 (801) 486-7481
Model	2856-026, -226	4410/SIT	1433, 1633
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	$5 \times 10^{-5} \text{fc}$ ($5.3 \times 10^{-4} \text{lm/m}^2$)	$3 \times 10^{-4} \text{fc}$ ($3.2 \times 10^{-3} \text{lm/m}^2$)	Information not available
Usable Picture	$2 \times 10^{-6} \text{fc}$ ($2.1 \times 10^{-5} \text{lm/m}^2$)	$6 \times 10^{-6} \text{fc}$ ($6.4 \times 10^{-5} \text{lm/m}^2$)	Information not available
Signal Transfer			
Distance	1,000ft (300m)	Information not available	2,000ft (600m)
Scan Format	026: Ext. sync only -226: RS170 Std	2:1 Internal, RS170 Std	2:1 Internal
Scan Fail Protection	YES	YES	Information not available
Dynamic Range	Information not available	10,000:1	Information not available
Automatic Iris Provision	YES, Filterwheel	NO	NO
Remote Control Provision	Standard	NO	Information not available
Controls/Control Unit	See notes	None	Information not available
Temperature	-5 to +140F (-20 to +60C) Outdoor	-5 to +140F (-20 to +60C)	15 to 150F (-10 to +65C)
Humidity	100 percent	95 percent	95 percent

PHYSICAL DATA

Camera Tube	RCA ISIT 4849A	RCA 4804/P2	S.I.T.
Lens Mount	"C"	"C"	"C"
Lens Provided	See notes	Without lens; lens optional	Information not available
Weight	23lb (10.5kg)	12lb (5.4kg)	3lb (1.4kg)
Size H	6in (15cm) dia	4.4in (11cm)	2.5in (6.3cm) dia
W	—	6.5in (16.5cm)	—
L	24in (60cm)	15in (38cm) without lens	9.25in (23cm)
Output Connector	PC-07C-18-30P	BNC	BNC
Input Voltage	105 to 130V ac, 220 to 230V ac, optional	110 to 120V ac	See notes
Input Power	40W	27W	1433: 18W 1633: 11W

COST DATA

Price	Information not available	Information not available	Information not available
--------------	---------------------------	---------------------------	---------------------------

NOTES

Lens: 50mm focal length,
f/1.4 Controls for beam,
electronic focus,
blanking, auto./manual
iris. Sealed housing

Self-contained, low light
level surveillance
camera

1633 is a ruggedized
version of 1433
Power requirements:
1433 depends on control
unit used; Unit 1270 for
115V ac, Unit 1400 for 22
to 32V ac
1633: 14V dc

INSTALLATIONS

CAMERAS WITH INTENSIFIED TUBES

<i>Manufacturer</i>	Edo-Western Corp. 2645 So. 300 West Salt Lake City, UT 84115 (801) 486-7481	General Electro- Dynamics Corp. 4430 Forest Lane Garland, TX 75042 (214) 276-1161	General Electro- Dynamics Corp. 4430 Forest Lane Garland, TX 75042 (214) 276-1161
<i>Model</i>	1434, 1634	ED 7085	ED 7090
Evaluation Guide Procedure IV-2.A	NRC Identification No.		

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	Information not available	4x10 ⁻⁶ fc (4.3lm/m ²)	8x10 ⁻⁴ fc (8.6x10 ⁻³ lm/m ²)
Usable Picture	Information not available	Information not available	Information not available
Signal Transfer Distance	2,000ft (600m)	3,000ft (900m)	3,000ft (900m)
Scan Format	2:1 Internal	2:1 Internal, RS170 standard	2:1 Internal, RS330 standard
Scan Fail Protection	Information not available	YES	YES
Dynamic Range	Information not available	5x10 ⁷ :1	3x10 ⁶ :1
Automatic Iris Provision	NO	YES	YES
Remote Control Provision	Information not available	None	None
Controls/Control Unit			
Temperature	15 to 150F (-10 to +65C)	-5 to +140F (-20 to +60C)	15 to 120F (-10 to +50C)
Humidity	95 percent	Information not available	Information not available

PHYSICAL DATA

Camera Tube	I.S.I.T.	I.S.I.T. 4849 or S.I.T. 4804	S.I.T. 4804
Lens Mount	"C"	Information not available	Information not available
Lens provided	Information not available	Zoom lens available	Zoom lens available
Weight	3lb (1.4kg)	Information not available	Information not available
Size H	2.5in (6.3cm) dia	6in (15cm) dia	6in (15cm) dia
W	—	—	—
L	9.25in (23cm)	18.2in (46cm)	16.4in (42cm)
Output Connector	BNC	AMP83-22R, BNC82-112, BNC31-236, PC-02A-12- 16P, PC-02A-14-19P	AMP83-22R, BNC 92-112, BNC31-236, PC-02A-14-16P PC-02A- 14-19P
Input Voltage	See notes	105 to 130V ac or 12 to 36V dc	95 to 135V ac or 12 to 36V dc
Input Power	1434: 18W, 1634: 11W	19W	19W

COST DATA

Price	Information not available	\$9,500	\$8,900
--------------	---------------------------	---------	---------

NOTES

1634 is a ruggedized
version of 1434

Power requirements:

1434; depends on

control unit used; Unit 1270

for 115V ac, Unit 1400 for 22

to 32V dc

1634: 14V dc

Self-contained, but
external control unit
available

Zoom lens available

Self-contained, but
external control
unit available.

INSTALLATIONS

CAMERAS WITH INTENSIFIED TUBES

<i>Manufacturer</i>	General Electric Co. Imaging & Display Devices Room 301, Bldg. 7 Electronics Park Syracuse, NY 13201 (315) 456-3293	General Electric Co. Imaging & Display Devices Room 301, Bldg. 7 Electronics Park Syracuse, NY 13201 (315) 456-3293	General Electric Co. Imaging & Display Devices Room 301, Bldg. 7 Electronics Park Syracuse, NY 13201 (315) 456-3293
<i>Model</i>	TE 36C	TE 37A	TE 36D
Evaluation Guide Procedure IV-2.A	NRC Identification No.		

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	Information not available	Information not available	Information not available
Usable Picture	$7 \times 10^{-5} \text{fc}$ ($7.5 \times 10^{-4} \text{lm/m}^2$)	Information not available	$5 \times 10^{-5} \text{fc}$ ($5.4 \times 10^{-4} \text{lm/m}^2$)
Signal Transfer Distance	3ft (1m)	5,000ft (1,500m)	Information not available
Scan Format	2:1 Internal, RS-170, RS-330	2:1 Internal, RS-330	2:1 Internal, RS-330
Scan Fail Protection	YES	YES	YES
Dynamic Range	$2 \times 10^7:1$	$2 \times 10^7:1$	20,000:1
Automatic Iris Provision	YES	YES	Information not available
Remote Control Provision	NO	YES	NO
Controls/Control Unit	External controls	External controls	External controls
Temperature	5 to 120F (-15 to +50C) Indoor	5 to 120F (-15 to +50C) Indoor	5 to 120F (-15 to +50C) Indoor
Humidity	Information not available	Information not available	Information not available

PHYSICAL DATA

Camera Tube	SIT 7399284	7399284 I.S.I.T.	Information not available
Lens Mount	"C"	"C"	"C"
Lens Provided	None provided, but many lens options available	10:1 ratio zoom, f/2.5 16 to 160mm	Information not available
Weight	17lb (7.6kg)	21lb (9.4kg)	17lb (7.6kg)
Size H	3.8in (9.6cm)	5.0in (12.5cm)	3.8in (9.6cm)
W	6.0in (15cm)	6.0in (15cm)	6.0in (15cm)
L	19.2in (48cm)	27in (64cm)	19.2in (48cm)
Output Connector	BNC	BNC	BNC
Input Voltage	117V ac	117V ac	117V ac
Input Power	20W	20W	20W

COST DATA

Price	Information not available	Information not available	Information not available
--------------	---------------------------	---------------------------	---------------------------

NOTES

Self contained.

1. Auto iris included
2. Self contained.
equipped with 10:1 zoom
lens f/2.5; 16 to 160mm

Same as TE36C but for
low-light level only;

INSTALLATIONS

CAMERAS WITH INTENSIFIED TUBES

<i>Manufacturer</i>	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490	RCA Corp. New Holland Ave. Lancaster, PA 17604 (800) 233-0421
<i>Model</i>	LL 774	LL 775	TC 1030/H
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	$1 \times 10^{-4} \text{fc}$ ($1.1 \times 10^{-3} \text{lm/m}^2$)	$1 \times 10^{-5} \text{fc}$ ($1.1 \times 10^{-4} \text{lm/m}^2$)	$7.5 \times 10^{-5} \text{fc}$ ($8.1 \times 10^{-4} \text{lm/m}^2$)
Usable Picture	$3 \times 10^{-6} \text{fc}$ ($3.2 \times 10^{-5} \text{lm/m}^2$)	$1 \times 10^{-7} \text{fc}$ ($1.1 \times 10^{-6} \text{lm/m}^2$)	$2.5 \times 10^{-5} \text{fc}$ ($2.7 \times 10^{-4} \text{lm/m}^2$)
Signal Transfer Distance	Information not available	Information not available	Information not available
Scan Format	2:1 Internal, RS-170	2:1 Internal, RS-170	Phase lock or crystal control, RS-170; accepts external sync
Scan Fail Protection	Information not available	Information not available	YES
Dynamic Range	$3 \times 10^6:1$	$3 \times 10^6:1$	$10^8:1$
Automatic Iris Provision	YES	YES	Information not available
Remote Control Provision	NO	NO	NO
Controls/Control Unit	See notes	See notes	Beam, Focus, Video Position
Temperature	-10 to +140F (-25 to +60C) Indoor	-10 to +140F (-25 to +60C) Indoor	5 to 140F (-15 to +60C) Indoor
Humidity	95 percent	95 percent	95 percent

PHYSICAL DATA

Camera Tube	8904 SIT	8905 ISIT	8404 series SIT
Lens Mount	"C"	"C"	"C"
Lens Provided	Not provided; Zoom lens available	Not provided; Zoom lens available	Without lens
Weight	10lb (4.5kg)	11lb (5.0kg)	7lb (3.2kg) without lens
Size H	4.5in (11.5cm)	4.5in (11.5cm)	3.5in (8.8cm)
W	6.0in (15cm)	6.0in (15cm)	5.5in (14cm)
L	12.5in (32cm)	12.5in (32cm)	11.8in (30cm) without lens
Output Connector	BNC	BNC	BNC
Input Voltage	110 to 135V ac	110 to 135V ac	100 to 140V ac
Input Power	21W	21W	20W

COST DATA

Price	\$11,835.00	\$19,167.00	Information not available
--------------	-------------	-------------	---------------------------

NOTES

1. Auto iris included
2. Rear panel: controls
for electronic focus,
mechanical focus,
beam
Zoom lens and remote
control unit available

1. Auto iris included
2. Rear panel: controls
for electronic focus,
mechanical focus,
beam
Zoom lens and remote
control unit available

Self contained
camera, standard unit
without lens

INSTALLATIONS

CAMERAS WITH INTENSIFIED TUBES

Manufacturer	RCA Corp. New Holland Ave. Lancaster, PA 17604 (800) 233-0421	RCA Corp. New Holland Ave. Lancaster, PA 17604 (800) 233-0421	RCA Corp. New Holland Ave. Lancaster, PA 17604 (800) 233-0421
Model	TC 1030/H05 TC 1030/H08	TC 1030/H10	TC 1030/H13 TC 1030/H25
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	7.5x10 ⁻⁵ fc (8.1x10 ⁻⁴ lm/m ²)	7.5x10 ⁻⁵ fc (8.1x10 ⁻⁴ lm/m ²)	7.5x10 ⁻⁵ fc (8.1x10 ⁻⁴ lm/m ²)
Usable Picture	2.5x10 ⁻⁵ fc (2.7x10 ⁻⁴ lm/m ²)	2.5x10 ⁻⁵ fc (2.7x10 ⁻⁴ lm/m ²)	2.5x10 ⁻⁵ fc (2.7x10 ⁻⁴ lm/m ²)
Signal Transfer Distance	Information not available	Information not available	Information not available
Scan Format	Phase lock or crystal control, RS-170; accepts external sync	Phase lock or crystal control RS-70; accepts external sync	Phase lock or crystal control, RS-170; accepts external sync
Scan Fail Protection	YES	YES	YES
Dynamic Range	10 ⁸ :1	10 ⁸ :1	10 ⁸ :1
Automatic Iris Provision	YES	YES	YES
Remote Control Provision	NO	NO	NO
Controls/Control Unit	Beam, Focus, Video Position	Beam, Focus, Video Position	Beam, Focus, Video Position
Temperature	5 to 140F (-15 to +60C) Indoor	5 to 140F (-15 to +60C) Indoor	5 to 140F (-15 to +60C) Indoor
Humidity	95 percent	95 percent	95 percent

PHYSICAL DATA

Camera Tube	8404 series S.I.T.	8404 series S.I.T.	8404 series S.I.T.
Lens Mount	"C"	"C"	"C"
Lens Provided	See notes	See notes	See notes
Weight	7lb (3.2kg) without lens	7lb (3.2kg) without lens	7lb (3.2kg) without lens
Size H	3.5in (8.8cm)	3.5in (8.8cm)	3.5in (8.8cm)
W	5.5in (14cm)	5.5in (14cm)	5.5in (14cm)
L	11.8in (30cm) without lens	11.8in (30cm) without lens	11.8in (30cm) without lens
Output Connector	BNC	BNC	BNC
Input Voltage	100 to 140V ac	100 to 140V ac	100 to 140V ac
Input Power	20W	20W	20W

COST DATA

Price	Information not available	Information not available	Information not available
--------------	---------------------------	---------------------------	---------------------------

NOTES

- | | | |
|---|---|---|
| 1. Auto iris included | 1. Auto iris included | 1. Auto iris included |
| 2./H05: Zoom lens,
f/1.8, 20 to 100mm focal
length, with spot filter
and control | 2./H10: Zoom lens,
f/1.8, 16 to 160mm focal
length, with spot filter
and control | 2./H13: Fixed lens
f/1.4, 12.5mm focal
length, with spot
filter; |
| /H08: Zoom lens, f/2.0
18 to 144mm focal
length, with spot
filter control | | /H25: Fixed lens, f/1.4,
25mm focal length
with spot filter |

INSTALLATIONS

CAMERAS WITH INTENSIFIED TUBES

<i>Manufacturer</i>	RCA Corp. New Holland Ave. Lancaster, PA 17604 (800) 233-0421	Sierra Scientific Corp. 2189 Leghorn St. Mountain View, CA 94043 (415) 969-9315	Sierra Scientific Corp. 2189 Leghorn St. Mountain View, CA 94043 (415) 969-9315
<i>Model</i>	TC 1030/H50 TC 1030/H75	IVG 1.5/25	M201/V/S/F
Evaluation Guide Procedure IV-2.A	NRC Identification No.		

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	7.5x10 ⁻⁵ fc (8.1x10 ⁻⁴ lm/m ²)	Information not available	0.5fc (5.4lm/m ²)
Usable Picture	2.5x10 ⁻⁵ fc (2.7x10 ⁻⁴ lm/m ²)	Information not available	0.01fc (0.11lm/m ²)
Signal Transfer Distance	Information not available	1,000ft (300m)	1,000ft (300m)
Scan Format	Phase lock or crystal control, RS-170; accepts external sync	RS-330/RS-343	2:1 Internal, RS-330, or RS-343
Scan Fail Protection	YES	YES	YES
Dynamic Range	10 ⁶ :1	Information not available	Information not available
Automatic Iris Provision	YES	NO	Information not available
Remote Control Provision	NO	NO	NO
Controls/Control Unit	Beam, Focus, Video Position	None	None
Temperature	5 to 140F (-15 to +60C) Indoor	32 to 120F (0 to 50C)	32 to 120F (0 to 50C)
Humidity	95 percent	95 percent	95 percent

PHYSICAL DATA

Camera Tube	8404 series S.I.T.	IV (MICROCHANNEL)	4569 Vidicon only
Lens Mount	"C"	"C"	"C"
Lens Provided	See notes	Information not available	None provided
Weight	7lb (3.2kg) without lens	Information not available	16.5lb (7.5kg)
Size H	3.5in (8.8cm)	6.0in (15.3cm)	6.8in (7.5cm)
W	5.5in (14cm)	8.0in (20.0cm)	6.1in (15.5cm)
L	11.8in (30cm) without lens	20.5in (52cm)	10.9in (27.5cm)
Output Connector	BNC	BNC	BNC
Input Voltage	100 to 140V ac	105 to 130V ac	105 to 130V ac
Input Power	20W	Information not available	40W

COST DATA

Price	Information not available	\$15 to \$20k	Information not available
-------	---------------------------	---------------	---------------------------

NOTES

1. Auto iris included
- 2./H50: Fixed lens,
f/1.4, 50mm focal length,
with spot filter
- /H75: Fixed lens,
f/1.8, 75mm focal length,
with spot filter

New development; characteristics similar to M-251, but physically smaller; no other information available

Standard camera of series, no intensifier
M201/S has silicon vidicon
M201/F has plumbicon

INSTALLATIONS

CAMERAS WITH INTENSIFIED TUBES

<i>Manufacturer</i>	Sierra Scientific Corp. 2189 Leghorn St. Mountain View, CA 94043 (415) 969-9315	Sierra Scientific Corp. 2189 Leghorn St. Mountain View, CA 94043 (415) 969-9315	Sierra Scientific Corp. 2189 Leghorn St. Mountain View, CA 94043 (415) 969-9315
<i>Model</i>	M251V	M252V	M261S
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity	0.01fc (0.11lm/m ²)	0.01fc (0.11lm/m ²)	Information not available
10 Gray Scale			
Usable Picture	3x10 ⁻⁴ fc (3.2x10 ⁻³ lm/m ²)	3x10 ⁻⁴ fc (3.2x10 ⁻³ lm/m ²)	Information not available
Signal Transfer Distance	1,000ft (300m)	1,000ft (300m)	1,000ft (300m)
Scan Format	2:1 Internal, RS-330 or RS-343	2:1 Internal, RS-330 or RS-343	2:1 Internal, RS-330 or RS-343
Scan Fail Protection	YES	YES	YES
Dynamic Range	30,000:1	3x10 ⁷ :1	Information not available
Automatic Iris Provision	N.D. filter (manual)	N.D. filter (automatic)	N.D. filter (manual)
Remote Control Provision	NO	NO	NO
Controls/Control Unit	None	None	None
Temperature	32 to 120F (0 to 50C)	32 to 120F (0 to 50C)	32 to 120F (0 to 50C)
Humidity	95 percent	95 percent	95 percent

PHYSICAL DATA

Camera Tube	4569 plus 1 intensifier	4569 plus 1 intensifier	4804 S.I.T.
Lens Mount	"C"	"C"	"C"
Lens Provided	None	None	None
Weight	16.5lb (7.5kg)	17.0lb (7.7kg)	17lb (7.7kg)
Size H	6.8in (17.5cm)	6.8in (17.5cm)	6.8in (17.5cm)
W	6.1in (15.5cm)	6.1in (15.5cm)	6.1in (15.5cm)
L	15.7in (45cm)	15.7in (45cm)	15.7in (45cm)
Output Connector	BNC	BNC	BNC
Input Voltage	105 to 130V ac	105 to 130V ac	105 to 130V ac
Input Power	40W	40W	40W

COST DATA

Price	\$7,600	\$8,750	\$6,200
--------------	---------	---------	---------

NOTES

Same as M251V but
with automatic filter

Same as M251V but
with S.I.T.

INSTALLATIONS

CAMERAS WITH INTENSIFIED TUBES

<i>Manufacturer</i>	Sierra Scientific Corp. 2189 Leghorn St. Mountain View, CA 94043 (415) 969-9315	Sierra Scientific Corp. 2189 Leghorn St. Mountain View, CA 94043 (415) 969-9315	Sierra Scientific Corp. 2189 Leghorn St. Mountain View, CA 94043 (415) 969-9315
<i>Model</i>	M262S	M271V	M272V
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity	Information not available	3x10 ⁻⁴ fc (3.2x10 ⁻³ lm/m ²)	3x10 ⁻⁴ fc (3.2x10 ⁻³ lm/m ²)
10 Gray Scale	Information not available	1x10 ⁻⁵ fc (1.1x10 ⁻⁴ lm/m ²)	1x10 ⁻⁵ fc (1.1x10 ⁻⁴ lm/m ²)
Usable Picture	Information not available	1x10 ⁻⁵ fc (1.1x10 ⁻⁴ lm/m ²)	1x10 ⁻⁵ fc (1.1x10 ⁻⁴ lm/m ²)
Signal Transfer Distance	1,000ft (300m)	1,000ft (300m)	1,000ft (300m)
Scan Format	2:1 Internal, RS-330 or RS-343	2:1 Internal, RS-330 or RS-343	2:1 Internal, RS-330 or RS-343
Scan Fail Protection	YES	YES	YES
Dynamic Range	Information not available	1x10 ⁶ :1	1x10 ⁶ :1
Automatic Iris Provision	N.D. filter (automatic)	ND filter (manual)	N.D. filter (automatic)
Remote Control Provision	NO	NO	NO
Controls/Control Unit	None	None	None
Temperature	32 to 120F (0 to 50C)	32 to 120F (0 to 50C)	32 to 120F (0 to 50C)
Humidity	95 percent	95 percent	95 percent

PHYSICAL DATA

Camera Tube	4804 S.I.T.	4569 plus two intensifiers	4569 plus two intensifiers
Lens Mount	"C"	"C"	"C"
Lens Provided	None	None	None
Weight	17lb (7.7kg)	18lb (8kg)	18.5lb (8.3kg)
Size H	6.8in (17.5cm)	6.8in (17.5cm)	6.8in (17.5cm)
W	6.1in (15.5cm)	6.1in (15.5cm)	6.1in (15.5cm)
L	15.7in (42cm)	18.1in (46cm)	18.1in (46cm)
Output Connector	BNC	BNC	BNC
Input Voltage	105 to 130V ac	105 to 130V ac	105 to 130V ac
Input Power	40W	40W	40W

COST DATA

Price	\$6,200	\$8,600	\$9,750
-------	---------	---------	---------

NOTES

Same as M251V but with S.I.T. and automatic filter	Same as M251V but with two stage intensifier	Same as M251V but with two-stage intensifier and automatic filter wheel
--	---	--

INSTALLATIONS

736 147

CAMERAS WITH INTENSIFIED TUBES

<i>Manufacturer</i>	Sierra Scientific Corp. 2189 Leghorn St. Mountain View, CA 94043 (415) 969-9315	Sierra Scientific Corp. 2189 Leghorn St. Mountain View, CA 94043 (415) 969-9315	Telemation, Inc. P.O. Box 15068 Salt Lake City, UT 84115 (801) 487-5399
<i>Model</i>	M281/V	M282/V	SL 1983
Evaluation Guide Procedure IV-2.A	NRC Identification No.		

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	3x10 ⁻⁵ fc (3.2x10 ⁻⁴ lm/m ²)	3.0fc (0.32lm/m ²)	Information not available
Usable Picture	1x10 ⁻⁶ fc (1.1x10 ⁻⁵ lm/m ²)	1x10 ⁻⁶ fc (1.1x10 ⁻⁵ lm/m ²)	Information not available
Signal Transfer Distance	1,000ft (300m)	1,000ft (300m)	Information not available
Scan Format	2:1 Internal, RS-330 or RS-343	2:1 Internal, RS-330 or RS-343	Information not available
Scan Fail Protection	YES	YES	Information not available
Dynamic Range	10 ⁹ :1	10 ⁹ :1	Information not available
Automatic Iris Provision	NO, see notes	N.D. filter wheel	Information not available
Remote Control Provision	NO	NO	Information not available
Controls/Control Unit	None	None	Information not available
Temperature	32 to 120F (0 to 50C)	32 to 120F (0 to 50C)	Information not available
Humidity	95 percent	95 percent	Information not available

PHYSICAL DATA

Camera Tube	4804 S.I.T. plus intensifier	4804 S.I.T. plus intensifier	S.I.T.
Lens Mount	"C"	"C"	Information not available
Lens Provided	None	None	Information not available
Weight	20lb (9kg)	20lb (9kg)	Information not available
Size H	6.8in (17.5cm)	6.8in (17.5cm)	Information not available
W	6.1in (15.5cm)	6.1in (15.5cm)	Information not available
L	20in (50cm)	20in (50cm)	Information not available
Output Connector	BNC	BNC	Information not available
Input Voltage	105 to 130V ac	105 to 130V ac	Information not available
Input Power	40W	40W	Information not available

COST DATA

Price	Information not available	Information not available	\$8,500
--------------	---------------------------	---------------------------	---------

NOTES

High response camera. Same as M251V but with intensified S.I.T. and manual light control	High resolution camera. Same as M251V but with intensified S.I.T.
---	---

INSTALLATIONS

CAMERAS WITH INTENSIFIED TUBES

<i>Manufacturer</i>	Venus Scientific, Inc. 399 Smith St. Farmingdale, NY 11735 (516) 293-4100	Venus Scientific, Inc. 399 Smith St. Farmingdale, NY 11735 (516) 293-4100	Venus Scientific, Inc. 399 Smith St. Farmingdale, NY 11735 (516) 293-4100
<i>Model</i>	DV-1	DV-2	DV-3
	Evaluation Guide Procedure IV-2.A	NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	Information not available	Information not available	Information not available
Usable Picture	$5 \times 10^{-3} \text{fc}$ ($5.4 \times 10^{-4} \text{lm/m}^2$)	$1 \times 10^{-6} \text{fc}$ ($1.1 \times 10^{-5} \text{lm/m}^2$)	$5 \times 10^{-8} \text{fc}$ ($5.4 \times 10^{-7} \text{lm/m}^2$)
Signal Transfer Distance	Information not available	Information not available	Information not available
Scan Format	2:1 Internal, line-locked	2:1 Internal, line-locked	2:1 Internal, line-locked
Scan Fail Protection	YES	YES	YES
Dynamic Range	$2 \times 10^7:1$	$10^9:1$	$2 \times 10^{10}:1$
Automatic Iris Provision	NO; See Note 1	NO; See Note 1	NO; See Note 1
Remote Control Provision	YES	YES	YES
	Self contained; on rear	Self contained; on rear	Self contained; on rear
Controls/Control Unit	Beam, Focus, Target	Beam, Focus, Target	Beam, Focus, Target
Temperature	32 to 120F (0 to 50C)	32 to 120F (0 to 50C)	32 to 120F (0 to 50C)
Humidity	75 percent	75 percent	75 percent

PHYSICAL DATA

Camera Tube	PN 25080 + 1 Int.	PN 25080 + 2 Int.	PN 25080 + 3 Int.
Lens Mount	"C"	"C"	"C"
Lens Provided	None	None	None
Weight	15lb (6.8kg)	16lb (7.2kg)	17lb (7.6kg)
Size H	4.5in (11.5cm)	4.5in (11.5cm)	4.5in (11.5cm)
W	7.0in (17.8cm)	7.0in (17.8cm)	7.0in (17.8cm)
L	17in (43cm)	19in (48cm)	21in (53cm)
Output Connector	Cannon SK-19	Cannon SK-19	Cannon SK-19
Input Voltage	105 to 130V ac	105 to 130V ac	105 to 130V ac
Input Power	30W	30W	30W

COST DATA

Price	Information not available	Information not available	Information not available
--------------	---------------------------	---------------------------	---------------------------

NOTES

- | | | |
|--|--|---|
| <p>1. Light level compensation by varying intensifier gain.</p> <p>2. High resolution performance, very low light level camera.
Intensifiers — vacuum diode, ERMA R-5 (S-25) response.</p> | <p>1. Light level compensation by varying intensifier gain.
High resolution performance, very low light level camera.
Intensifiers — vacuum diode, ERMA R-5 (S-25) response.</p> | <p>1. Light level compensation by varying intensifier gain.
High resolution performance, very low light level camera.
Intensifiers are vacuum diode, ERMA R-5 (S-5) response.</p> |
|--|--|---|

INSTALLATIONS

CAMERAS WITH INTENSIFIED TUBES

Manufacturer	Venus Scientific, Inc. 399 Smith St. Farmingdale, NY 11735 (516) 293-4100	Venus Scientific, Inc. 399 Smith St. Farmingdale, NY 11735 (516) 293-4100	Venus Scientific, inc. 399 Smith St. Farmingdale, NY 11735 (516) 293-4100
Model	NV-1	NV-2	NV-3
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	Information not available	Information not available	Information not available
Usable Picture	$1 \times 10^{-4} \text{fc}$ ($1.1 \times 10^{-3} \text{lm/m}^2$)	$2 \times 10^{-6} \text{fc}$ ($2.1 \times 10^{-5} \text{lm/m}^2$)	$1 \times 10^{-7} \text{fc}$ ($1.1 \times 10^{-6} \text{lm/m}^2$)
Signal Transfer Distance	Information not available	Information not available	Information not available
Scan Format	2:1 Internal; See Note 1	2:1 Internal; See Note 1	2:1 Internal; See Note 1
Scan Fail Protection	NO	NO	NO
Dynamic Range	$10^7:1$	$5 \times 10^8:1$	$10^{10}:1$
Automatic Iris Provision	NO; See Note 2	NO; See Note 2	NO; See Note 2
Remote Control Provision	YES	YES	YES
Controls/Control Unit	Beam, Focus, Target	Beam, Focus, Target	Beam, Focus, Target
Temperature	32 to 120F (0 to 50C)	32 to 120F (0 to 50C)	32 to 120F (0 to 50C)
Humidity	75 percent	75 percent	75 percent

PHYSICAL DATA

Camera Tube	PN25080 +1 Int.	PN 25080 +2 Int.	PN 25080 +3 Int.
Lens Mount	"C"	"C"	"C"
Lens Provided	None	None	None
Weight	9lb (4kg)	10lb (4.5kg)	11lb (5kg)
Size H	4.0in (10cm)	4.0in (10cm)	6.0in (15cm)
W	5.8in (14.5cm)	5.8in (14.5cm)	5.8in (14.5cm)
L	15in (38cm)	18in (46cm)	21in (53cm)
Output Connector	Cannon SK-19	Cannon SK-19	Cannon SK-19
Input Voltage	105 to 130V ac	105 to 130V ac	105 to 130V ac
Input Power	20W	20W	20W

COST DATA

Price	Information not available	Information not available	Information not available
--------------	---------------------------	---------------------------	---------------------------

NOTES

- | | | |
|--|--|--|
| 1: External scan drive provision. | 1: External scan drive provision. | 1: External scan drive provision. |
| 2: Light level compensation by varying intensifier gain. | 2: Light level compensation by varying intensifier gain. | 2: Light level compensation by varying intensifier gain. |
| 3: High resolution performance; very low light level camera. | 3: High resolution performance; very low light level camera. | 3: High resolution performance; very low light level camera. |
| 4: Intensifiers — vacuum diode, ERMA R-5 (S-25) response. | 4: Intensifiers — vacuum diode, ERMA R-5 (S-25) response. | 4: Intensifiers — vacuum diode, ERMA R-5 (S-25) response. |

INSTALLATIONS

CAMERAS WITH INTENSIFIED TUBES

<i>Manufacturer</i>	Venus Scientific, Inc. 399 Smith St. Farmingdale, NY 11735 (516) 293-4100	Venus Scientific, Inc. 399 Smith St. Farmingdale, NY 11735 (516) 293-4100	Venus Scientific, Inc. 399 Smith St. Farmingdale, NY 11735 (516) 293-4100
<i>Model</i>	V-1	H-2	H-3
Evaluation Guide Procedure IV-2.A	NRC Identification No.		

PERFORMANCE DATA

Sensitivity	Information not available	Information not available	Information not available
10 Gra. Scale	Information not available	Information not available	Information not available
Usable Picture	0.02fc (0.22lm/m ²)	3x10 ⁻⁸ fc (3.2x10 ⁻⁵ lm/m ²)	1x10 ⁻⁷ fc (0.1x10 ⁻⁶ lm/m ²)
Signal Transfer Distance	Information not available	Information not available	Information not available
Scan Format	2:1 Internal, see Note 1	2:1 Internal	2:1 Internal
Scan Fail Protection	NO	NO	NO
Dynamic Range	5x10 ⁴ :1	5x10 ⁸ :1	10 ¹⁰ :1
Automatic Iris Provision	NO	NO; See Note 1	NO; See Note 1
Remote Control Provision	YES	YES	YES
Controls/Control Unit	Beam, Focus, Target	Beam, Focus, Target	Beam, Focus, Target
Temperature	32 to 120F (0 to 50C)	32 to 120F (0 to 50C)	32 to 120F (0 to 50C)
Humidity	75 percent	75 percent	75 percent

PHYSICAL DATA

Camera Tube	PN 25080	PN 25080 + 2 Int.	PN 25080 + 3 Int.
Lens Mount	"C"	"C"	"C"
Lens Provided	None	None	None
Weight	8lb (3.6kg)	6lb (2.7kg)	6lb (2.7kg)
Size H	4.0in (10cm)	5.0in (12.5cm)	5.0in (12.5cm)
W	5.8in (14.5cm)	2.8in (7cm)	2.8in (7cm)
L	12in (53cm)	15.8in (40cm)	18.5in (47cm)
Output Connector	Cannon SK-19	Cannon SK-19	Cannon SK-19
Input Voltage	105 to 130V ac	12V dc; See Note 2	12V dc; See Note 2
Input Power	20W	Information not available	Information not available

COST DATA

Price	Information not available	Information not available	Information not available
--------------	---------------------------	---------------------------	---------------------------

NOTES

- | | | |
|---|---|--|
| 1. External scan drive provision. | 1. Light level compensation by varying intensifier gain. | 1. Light level compensation by varying intensifier gain. |
| 2. Standard camera without intensifier. | 2. For use with video tape recorder, 12V dc supplied by recorder. | 2. For use with video tape recorder 12V dc supplied by recorder. |
| 3. The models V-1, H-2 and H-3 form a family, each with one more stage of intensification. For this reason this camera is listed here and not in section "a" in spite of being equipped with a standard vidicon only. | 3. High performance/ resolution, very low light level camera. | 3. High performance/ resolution, very low light level camera. |
| | 4. Intensifiers — vacuum diode, ERMA R-5 (S-25) response. | 4. Intensifiers — vacuum diode, ERMA R-5 (S-25) response. |

INSTALLATIONS

CAMERAS WITH INTENSIFIED TUBES

<i>Manufacturer</i>	Video Optics, Inc. 916 Old Middlefield Way Mountain View, CA 94043 (415) 965-4298	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433
<i>Model</i>	V-1000	NVC-100V	NVC-101V
Evaluation Guide Procedure IV-2.A	NRC Identification No.		

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	$2 \times 10^{-4} \text{fc}$ ($2.1 \times 10^{-3} \text{lm/m}^2$)	Information not available	Information not available
Usable Picture	$3 \times 10^{-5} \text{fc}$ ($3.2 \times 10^{-4} \text{lm/m}^2$)	Information not available	Information not available
Signal Transfer Distance	1,000ft (300m)	Information not available	Information not available
Scan Format	2:1 Internal, crystal or line-locked, RS170 Std.	Information not available	Information not available
Scan Fail Protection	Information not available	Information not available	Information not available
Dynamic Range	400:1, 400,000:1, $2 \times 10^6:1$	Information not available	Information not available
Automatic Iris Provision	4-Position N.D. filter	See notes	See notes
Remote Control Provision	YES	Information not available	Information not available
Controls/Control Unit	Controls on rear panel	On rear panel	On rear panel
Temperature	-5 to +120F (-20 to +50C) Indoor	15 to 120F (-10 to +50C)	15 to 120F (-10 to +50C)
Humidity	90 percent	Information not available	Information not available

PHYSICAL DATA

Camera Tube	4804/P2 or equiv.	Intensifier and Vidicon	Intensifier and Vidicon
Lens Mount	"TV 88" Bayonet or C	"C"	"C"
Lens Provided	None	None	f/1.9, 14-140mm Zoom, with Auto./Iris
Weight	26lb (11.5kg) without lens	Information not available	Information not available
Size H	7in (17cm)	4.7in (12cm)	4.7in (12cm)
 W	11in (28cm)	5.7in (14.5cm)	5.7in (14.5cm)
 L	18.5in (47cm)	Information not available	Information not available
Output Connector	Information not available	Multipin	Multipin
Input Voltage	90 to 110V ac	110 to 117V ac	110 to 117V ac
Input Power	40W	40W	40W

COST DATA

Price	Information not available	\$6,582	\$8,162
--------------	---------------------------	---------	---------

NOTES

High performance, low
light level camera;
Externally controlled

Low light level camera
with internal automatic
light level compensation

Low light level
camera silicon intensi-
fied tube with internal
automatic light level
compensation.
Lens supplied is f/1.9, 14
to 140mm Zoom with
Auto. Iris

INSTALLATIONS

CAMERAS WITH INTENSIFIED TUBES

<i>Manufacturer</i>	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433
<i>Model</i>	NVC-100S	NVC-101S	NVC-200S
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity			
10 Gray Scale	$5 \times 10^{-4} \text{fc}$ ($5.4 \times 10^{-3} \text{lm/m}^2$)	$5 \times 10^{-4} \text{fc}$ ($5.4 \times 10^{-3} \text{lm/m}^2$)	$2 \times 10^{-5} \text{fc}$ ($2.1 \times 10^{-4} \text{lm/m}^2$)
Usable Picture	$5 \times 10^{-5} \text{fc}$ ($5.4 \times 10^{-4} \text{lm/m}^2$)	$5 \times 10^{-5} \text{fc}$ ($5.4 \times 10^{-4} \text{lm/m}^2$)	$2.5 \times 10^{-6} \text{fc}$ ($2.7 \times 10^{-5} \text{lm/m}^2$)
Signal Transfer Distance	Information not available	Information not available	Information not available
Scan Format	2:1 Internal, random, EIA RS-170	2:1 Internal, random, EIA RS-170	2:1 Internal, line- locked or external
Scan Fail Protection	YES	YES	YES
Dynamic Range	$2 \times 10^{-7}:1$	$2 \times 10^{-7}:1$	$2 \times 10^{-7}:1$
Automatic Iris Provision	See notes	See notes	See notes
Remote Control Provision	CCM 603 available	CCM 603 available	CCM 603 available
Controls/Control Unit	On rear panel	Rear panel	Rear panel
Temperature	15 to 120F (-10 to +50C) Indoor	15 to 120F (-10 to +50C) Indoor	15 to 120F (-10 to +50C) Indoor
Humidity	Information not available	Information not available	Information not available

PHYSICAL DATA

Camera Tube	GBC 2807 S.I.T.	GBC 2807 S.I.T.	GBC 2809 I.S.I.T.
Lens Mount	"C"	"C"	"C"
Lens Provided	None	f/1.9, 14-140mm Zoom with Auto. Iris	None
Weight	13.2lb (6kg)	13.2lb (6kg)	14.3lb (6.4kg)
Size H	4.7in (12cm)	4.7in (12cm)	4.7in (12cm)
W	5.7in (14.5cm)	5.7in (14.5cm)	5.7in (14.5cm)
L	14.8in (37cm)	14.8in (37cm)	17in (43cm)
Output Connector	Multipin	Multipin	Multipin
Input Voltage	110 to 117V ac	110 to 117V ac	110 to 117V ac
Input Power	40W	40W	40W

COST DATA

Price	\$8,240	\$9,771	\$12,335
--------------	---------	---------	----------

NOTES

Low light level camera
silicon intensified tube
with internal automatic
light level compen-
sation

Low light level camera
with SIT tube with
internal automatic
light level compen-
sation

Furnished with f/1.9, 14 to
140mm Zoom with Auto. Iris

Very low light level
camera with ISIT tube
with internal auto-
matic light level
compensation

INSTALLATIONS

CAMERAS WITH INTENSIFIED TUBES

Manufacturer	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433	General Electric Co. Imaging & Display Devices Room 301, Bldg. 7 Electronics Park Syracuse, NY 13201 (315) 456-3293
Model	NVC-201S	UVR-711
Evaluation Guide Procedure IV-2.A		NRC Identification No.

PERFORMANCE DATA

Sensitivity		
10 Gray Scale	$2 \times 10^{-9} \text{fc}$ ($2.1 \times 10^{-4} \text{lm/m}^2$)	Information not available
Usable Picture	$2.5 \times 10^{-6} \text{fc}$ ($2.7 \times 10^{-5} \text{lm/m}^2$)	Information not available
Signal Transfer Distance	Information not available	Information not available
Scan Form:	2:1 Internal, line-locked, or external	2:1 Internal pos.
Scan Fail Protection	YES	Information not available
Dynamic Range	$2 \times 10^{-7}:1$	$1 \times 10^{-5}:1$
Automatic Iris Provision	See notes	See notes
Remote Control Provision	CCM 603 control unit available	Information not available
Controls/Control Unit	Rear panel	None
Temperature	15 to 120F (-10 to +50C)	Information not available
Humidity	Information not available	Information not available

PHYSICAL DATA

Camera Tube	GBC 2809 I.S.I.T.	Hybrid 2nd gen. FPS Z-7801 vidicon
Lens Mount	"C"	Information not available
Lens Provided	$\frac{1}{1.9}$, 14-140mm, zoom with auto iris	None
Weight	14.3lb (6.4kg)	3lb (1.3kg)
Size H	4.7in (12cm)	3in (7.5cm) dia
W	5.7in (14.5cm)	—
L	17in (43cm)	9in (23cm)
Output Connector	Multipin	Information not available
Input Voltage	110 to 117V ac or 24V dc	28V dc
Input Power	40W	30W

COST DATA

Price	\$13,750.00	Information not available
--------------	-------------	---------------------------

736 159

NOTES

Very low light level
camera with ISIT tube
Furnished with f/1.9,
14-140mm Zoom with
Auto. Iris

Low light level
TV camera for typical
installations in
aircraft
Other cameras in series:
UVR 700, 820, 825, 860
Separate power unit
"Hands off" operation
Light compensation by filter
wheel

INSTALLATIONS

CAMERAS WITH SPECIAL SENSORS

Television cameras in principle consist of three major components which have clearly defined functions. The light-sensitive detector, usually referred to as the sensor or pickup device, converts the incoming light energy into an electrical signal. The optical lens system focuses the light from a given scene onto the sensor, creating an electrical charge pattern which is "read out" within the sensor by an internal electronic scan. The electronic support system provides all the necessary voltages, timing pulses and amplification of the electrical signal.

Special sensors used in closed-circuit television include the Isocon, the intensified Isocon, pyroelectric vidicons and solid-state self-scanning arrays. Isocons are cylindrical vacuum tube devices approximately 1 to 2 inches in diameter and up to 16 inches long. One flat end of the cylinder holds the photosensitive material, the other the feedthroughs. Special sensor devices combine high sensitivity with high resolution but are more complex in structure and operations than standard pickup tubes.

Isocons use the well-established principle of a scanning electron beam for signal generation, but employ a very sophisticated scheme for electronic signal output. Quite frequently Isocons are coupled to an electro-optical light intensifier, which increases the sensitivity of the device by as much as one hundred times -- the intensified Isocon. The Isocon or intensified Isocon pickup tube is surrounded by coils whose electromagnetic fields deflect the electron scan beam within the tube. By varying the current in the deflection coil, the electron beam can be moved to create a raster scan identical to that used in home television sets.

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	2	d	0	1

736 161

Another class of special sensors is the pyroelectric vidicon. These devices appear identical to other vacuum type pickup sensors, but respond only to thermal radiation, recording a thermal image. They require a shutter or panning motion, however; this makes the camera mechanically more complex. Deflection coils and electronic circuitry requirements remain the same, except for a special signal processing stage connected with the signal amplifier.

Another class of closed-circuit television cameras with special sensors employ all solid-state detectors, called Charge Transfer Devices (CTD). This light-sensitive device, a very small chip less than the size of a thumbnail, does not require electron beam readout as vacuum pickup tubes do. Scanning is done solely by timing pulses from an electronic clock, eliminating the bulky magnetic deflection coil. Thus the whole camera is much smaller and consumes much less power than standard TV cameras. On the other hand, solid-state cameras are lower in resolution than cameras with standard pickup tubes. In the following paragraphs, technical terms specific to television cameras are explained in more detail. They appear in the text in the same order as they are mentioned in the Catalog data sheets. For reference purposes the technical terms are underlined and so are expressions which appear in the Catalog data sheets.

A camera's sensitivity is measured in terms of the amount of light falling on the light sensitive surface (faceplate) of the camera sensor. Usually two values are given. The first indicates the amount necessary to produce a usable picture, enabling an observer to identify familiar objects on a correctly adjusted monitor. This value is subjective and depends on circumstances. The second value gives the illumination necessary to produce ten distinctly discernible shades of gray. These levels and the camera response can be measured in the laboratory and constitute an objective evaluation of the camera.

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	2	d	0	2

736 162

Signal transfer distance is defined as the maximum distance between camera and television monitors which can be used without amplifier repeaters.

The video signal itself has two components, one containing the picture content (raw video) and the other the timing information (horizontal and vertical synchronization pulses). The raw video and sync pulses are superimposed to form the composite signal.

The scan format defines the details of the scanning process. All television cameras designed to be used in connection with a monitor for visual observation scan the image in an "interlaced" mode. First all odd-numbered lines are scanned, defining field one, then all the even-numbered lines defining field two. Fields one and two constitute the whole can, called a frame. The standard rate in the U.S. is 60 fields (30 frames) per second; this scan format is called 2:1 interlaced. The scan timing can be controlled by the ac line frequency, by an internal oscillator or by an external synchronization (sync) pulse. If the starting times of the two successive fields are not locked together, the scan sequence is called 2:1 random interlaced. Minimum standards to make closed circuit television systems compatible are listed in Electronic Industries Association Standard EIA RS-170, which covers output and equipment standardization. More rigid standards for closed circuit television cameras are defined in EIA RS-330 which specifies 525 scan lines per picture height and 30 frames (60 fields) per second. Some cameras are also equipped with an option to comply with CCIR standards which are the European equivalents to the US EIA RS standards, but based on a rate of 50 frames/sec and 625 scan lines per picture height.

Scan fail protection is provided by a special sensing circuit which turns the electron scan beam off in case the scan circuitry fails. This presents possible severe damage to the sensor tube when the electron read beam stops moving.

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	2	d	0	3

736 163

Dynamic range defines the ratio between the highest and lowest illumination levels at which the camera can produce usable pictures. The limit at high levels is given by saturation effects, while the lower limit is set by the system noise, which appears on a monitor as oscillating white spots. In both cases details are lost, which make the picture unusable.

The dynamic range that can be obtained in a TV camera is a function of two very different parameters, one being the automatic gain control (AGC), and the other the automatic light control (ALC). All TV cameras have AGC, where the gain of the video signal amplifier is automatically controlled by a feedback circuit, which in turn is controlled by the video output signal. In most cameras the AGC can be disabled by a switch, if so desired. If the illumination range exceeds the range of the automatic gain control, the camera's lens stop (iris) must be adjusted. Several cameras include provisions for automatic operation of a motor driven lens stop -- an automatic iris -- to maintain a constant electrical output signal over a wide range of illumination levels.

Most manufacturers give only the combined dynamic range as it can be achieved with automatic gain control (amplifier) and automatic light control (iris) in tandem. This value is entered in the Catalog under Dynamic Range. A second entry -- Range Extended with Automatic Iris -- is provided to distinguish between cameras which have internal provisions for automatic iris control and those which have not. A "YES" entry indicates that the dynamic range is obtained with automatic gain control and automatic iris; "NO" indicates that provisions are made for automatic gain control only. If an automatic iris is provided with the camera as a unit, this fact is mentioned under NOTES.

In some cases the automatic iris is replaced by a filterwheel which contains a set of attenuation filters; in other cases auto-

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	2	d	0	4

736 164

matic light control is achieved by electronic means which change the characteristics of the sensor. These facts are also mentioned under NOTES.

Many television cameras are provided with remote control of their own electronic adjustments (but not of their positioning). The camera controls available to an operator are electrical and mechanical focus, scan beam adjustment, and in some cases target voltage control. For more technical details, consult the camera servicing manuals.

Camera pickup tubes for closed-circuit TV usually come in two sizes, nominally 2/3 inch and 1 inch. Manufacturers specify the tube to be used with their cameras, but many tubes are interchangeable without any need to change electronic circuits. Tube interchangeability guides are provided by all major tube manufacturers.

Most cameras have interchangeable lenses with a standard threaded mount referred to as a "C Mount". Lens selection depends on the specific requirements for area coverage. Tables and diagrams to aide in the selection are available from various manufacturers. It is important to note that the size of the sensor itself (in the case of vidicons, 2/3 or 1 inch) is an important parameter in selecting the camera lens. Many camera lenses are also produced with a variety of additional features. Zoom lenses are available in good quality either for manual or motorized adjustment. Motorized lens stop (auto-iris) adjustments are very common as is motorized optical focus adjustment for remote control operation. Many lens systems provide all three motorized options in one unit.

A special feature provided by some manufacturers is the "one-cable" camera, in which power to run the camera, the video signal and camera control signals are transmitted over the same cable. Other

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	2	d	0	5

736 165

features, usually provided on special request, include matching circuits directly attached to the camera for video rf signal transmission.

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	2	d	0	6

736 166

CAMERAS WITH SPECIAL SENSORS

Manufacturer	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700	Cohu, Inc. Electronics Div. P.O. Box 623 San Diego, CA 92112 (714) 277-6700	General Electric Co. Imaging & Display Devices Room 301, Bldg. 7 Electronics Park Syracuse, NY 13201 (315) 456-3293
Model	7302A	7304A	TN 2000
Evaluation Guide Procedure IV-2. A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity	$1 \times 10^{-4} \text{fc}$ ($1 \times 10^{-3} \text{lm/m}^2$)	$2 \times 10^{-5} \text{fc}$ ($2 \times 10^{-4} \text{lm/m}^2$)	$1 \times 10^{-1} \text{fc}$ (1lm/m^2)
10 Gray Scale Usable Picture	$< 1 \times 10^{-4} \text{fc}$ ($1 \times 10^{-5} \text{lm/m}^2$)	$< 1 \times 10^{-6} \text{fc}$ ($1 \times 10^{-5} \text{lm/m}^2$)	$3 \times 10^{-3} \text{fc}$ ($3 \times 10^{-2} \text{lm/m}^2$)
Signal Transfer Distance	1,000ft (300m)	1,000ft (300m)	Information not available
Scan Format	2:1 Internal, RS-170	2:1 Internal, RS-170	2:1 Internal, RS-170
Scan Fail Protection	YES	YES	Not required
Dynamic Range	$10^7:1$	$10^8:1$	Information not available
Automatic Iris Provision	See notes	See notes	NO
Remote Control Provision	NO	NO	NO
Controls/Control Unit	Rack-mounted 7800 unit	Rack-mounted 7800 unit	Self contained
Temperature	32 to 120F (0 to 50C)	32 to 120F (0 to 50C)	32 to 120F (0 to 50C)
Humidity	95 percent	95 percent	Information not available

PHYSICAL DATA

Camera Tube	EEV P8041 ISOCON	EEV P8041 ISOCON and 8605 intensifier	Solid state sensor (CID)
Lens Mount	Information not available	Information not available	"C"
Lens Provided	None	None	None
Weight	40lb (18kg)	40lb (18kg)	2.8lb (1.3kg)
Size H	6in (15cm) dia	6in (15cm) dia	2.3in (5.8cm)
W	—	—	4.4in (11cm)
D	16.2in (41cm)	20in (50cm)	8.5in (21.5cm)
Output Connector	Information not available	Information not available	BNC
Input Voltage	100 to 130V ac	100 to 130V ac	117V ac or 12V dc
Input Power	75W	75W	17W

COST DATA

Price	Information not available	Information not available	Information not available
--------------	---------------------------	---------------------------	---------------------------

NOTES

Low light level camera
Sealed for environmental
protection.
No provisions for auto-
matic iris control, but
electronic sensitivity
adjustments

Very low light level
Sealed for operation
in hostile environment.
No provisions for auto-
matic iris control, but
internal electronic
sensitivity adjustments

Camera also available
with lens on side and
remote head, or in
cylindrical housing

INSTALLATIONS

CAMERAS WITH SPECIAL SENSORS

<i>Manufacturer</i>	RCA Corp. New Holland Ave. Lancaster, PA 17604 (800) 233-0421	Sierra Scientific Corp. 2189 Leghorn St. Mountain View, Ca 94043 (415) 969-9315	I.S.I. Group, Inc. 133 Jackson St., NE Albuquerque, NM 87108 (505) 265-6771
<i>Model</i>	TC 1155	ISO-3	Model 82 Thermal Image Camera
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Sensitivity	0. fc ($1 \mu\text{P}^2 \cdot \text{m}^2$)	1x10 ⁻³ fc ($1.08 \times 10^{-2} \text{lm/m}^2$)	Information not available
10 Gray Scale			
Usable Picture	9x10 ⁻³ fc ($3.69 \times 10^{-2} \text{lm/m}^2$)	Information not available	Information not available
Signal Transfer Distance	Information not available	15ft (4.m)	Information not available
Scan Format	2:1 Internal, RS-170, or RS-330	2:1 Internal, line- locked	Internal Sync; 2:1 Master Osc.; EIA RS-330
Scan Fail Protection	Not required	YES	Information not available
Dynamic Range	Information not available	Information not available	Information not available
Automatic Iris Provision	NO	NO	NO
Remote Control Provision	NO	YES	NO
Controls/Control Unit	Mechanical focus	Rack-mounted control unit	Rack-mounted control unit Focus, Beam, Black Level, Gain
Temperature	5 to 120F (-15 to +50C)	65 to 105F (20 to 40C)	Information not available
Humidity	Information not available	95 percent	information not available

PHYSICAL DATA

Camera Tube	SID 51232; 512x300 solid array	ISOCON 4827 or ISOCON 4828	Pyro El. Vidicon EEV; P8090 or CSF; TH9840
Lens Mount	"C"	90mm Dia. 1mm Pitch	Information not available
Lens Provided	None	None	None
Weight	2.5lb (1.1kg)	43.5lb (19.5kg)	Information not available
Size H	2.8in (7cm)	10.3in (26cm)	4.0in (10cm)
W	4.5in (11.5cm)	9.3in (23.5cm)	4.2in (10.5cm)
L	6.0in (15cm)	32.0in (80cm)	9.0in (23cm)
Output Connector	BNC	UHF	Information not available
Input Voltage	12V dc	90 to 140V ac	105 to 130V ac
Input Power	6W	100W	35W

COST DATA

Price	Information not available	\$25,000	Information not available
--------------	---------------------------	----------	---------------------------

NOTES

Solid state camera, uses charge transfer sensor.

High resolution, high sensitivity, high performance camera

Camera provides thermal images in standard television display

INSTALLATIONS

VIDEO CAMERA ENCLOSURES

Enclosures are used to protect a TV camera system from the elements, dust, corrosive materials and tampering, and in some cases to conceal the camera system itself. Except for special units, camera enclosures are sturdy rectangular metal boxes with provisions for camera mounting, cable feedthroughs, air vents and a window. For some models electrical heaters and air blowers are standard; in most cases they can be attached to the unit as accessories. Access to the cameras is usually through large doors protected in most cases by key locks, sometimes by electrical tamper switches. The windows are usually much larger than the camera lens aperture, so that careful adjustment of the camera position within the enclosure is not necessary.

Outdoor enclosures, usually called environmental enclosures, are sealed units with special cable feedthroughs for signal and power. They usually have a sunshade, and some models have windshield wipers as standard equipment. Heaters for the windshield and the camera itself are optional. Special explosive-proof, hermetically sealed units are available, as well as pressurized units for use in corrosive atmospheric environments. For deployment in high-temperature areas, special housings with refrigeration units are provided by several manufacturers. For deployment in extremely cold temperatures, manufacturers offer housings with special insulation for operation down to -100°F (-60°C).

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	2	e	0	1

736 171

VIDEO CAMERA ENCLOSURES

<i>Manufacturer</i>	ADEMCO 165 Eileen Way Syosset, NY 11791 (516) 921-6700	ADEMCO 165 Eileen Way Syosset, NY 11791 (516) 921-6700	ADEMCO 165 Eileen Way Syosset, NY 11791 (516) 921-6700
<i>Model</i>	# 1507	# 1536	# 1536A
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Indoor/Outdoor Use	Indoor	Outdoor	Outdoor
Temperature	Information not available	Information not available	Information not available
Humidity	Information not available	Information not available	Information not available
Other Environmental Characteristics	Information not available	For cold climate	For warm climate
Mounting — Housing	Ceiling bracket	Ceiling/wall bracket	Ceiling/wall bracket
Mounting — Camera	—	—	—
Ventilation	Louvres	Blower thermostat	Blower thermostat
Heater	NO	YES	NO
Cooler	NO	NO	YES
Window	High-impact plexiglass	High-impact plexiglass	High-impact plexiglass
Wiper	NO	NO	NO
Sunshield	NO	NO	NO
Tamper Protection	Non-removable, one-way screws, locking side panel	Lock provided	Lock provided
Other Features	—	—	—
Electrical Connections	None	115V ac for heater and blower	115V ac for blower

PHYSICAL DATA

External Size	8.5in (21.5cm)	8.5in (21.5cm)	8.5in (21.5cm)
H			
W	8.5in (21.5cm)	8.5in (21.5cm)	8.5in (21.5cm)
L	18.0in (45cm)	18.0in (45cm)	8.5in (45cm)
Internal Size	8.0in (20cm)	8.0in (20cm)	8.0in (20cm)
H			
W	8.0in (20cm)	8.0in (20cm)	8.0in (20cm)
L	16.0in (40cm)	16.0in (40cm)	16.0in (40cm)
Weight	16.5lb (7.4kg)	—	—

COST DATA

Price	\$63	\$191.25	\$191.25
--------------	------	----------	----------

NOTES

INSTALLATIONS

VIDEO CAMERA ENCLOSURES

<i>Manufacturer</i>	Cunningham Corp. 10 Carriage St. Honeoye Falls, NY 14472 (716) 624-2000	Cunningham Corp. 10 Carriage St. Honeoye Falls, NY 14472 (716) 624-2000	Cunningham Corp. 10 Carriage St. Honeoye Falls, NY 14472 (716) 624-2000
<i>Model</i>	CHE 9-7-22	CHE 10-10-24	CHE 10-10-30
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Indoor or Outdoor	All weather	All weather	All weather
Temperature	Information not available	Information not available	Information not available
Humidity	Information not available	Information not available	Information not available
Other Environmental Characteristics	Information not available	Information not available	Information not available
Mounting — Housing	Baseplate	Baseplate	Baseplate
Mounting — Camera	Tray	Tray	Tray
Ventilation	Information not available	Information not available	Information not available
Heater	Optional	Optional	Optional
Cooler	Optional	Optional	Optional
Window	5x6in (12.5x15cm)	5.8x8in (14.5x20cm)	5.8x8in (14.5x20cm)
Wiper	Optional	Optional	Optional
Sunshield	NO	NO	NO
Tamper Protection	—	—	—
Other Features	Hinged back door; removable cover	Hinged back door; removable cover	Hinged back door; removable cover
Electrical Connections	Cable port, dual ac outlet inside	Cable port, dual ac outlet inside	Cable port, dual ac outlet inside

PHYSICAL DATA

External Size H	9in (23cm)	10in (25cm)	10in (25cm)
W	7in (17.5cm)	10in (25cm)	10in (25cm)
L	22in (56cm)	24in (60cm)	30in (75cm)
Internal Size	Same as external size	Same as external size	Same as external size
Weight	15lb (6.8kg)	19lb (8.5kg)	23lb (10.5kg)

COST DATA

Price	\$170	\$210	\$220
--------------	-------	-------	-------

NOTES

INSTALLATIONS

VIDEO CAMERA ENCLOSURES

<i>Manufacturer</i>	Cunningham Corp. 10 Carriage St. Honeoye Falls, NY 14472 (716) 624-2000	Cunningham Corp. 10 Carriage St. Honeoye Falls, NY 14472 (716) 624-2000	Cunningham Corp. 10 Carriage St. Honeoye Falls, NY 14472 (716) 624-2000
<i>Model</i>	CHE 10-10-36	CHXR 6-24	CHSR 8-24
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Indoor or Outdoor	All weather	Indoor	Indoor
Temperature	Information not available	Information not available	Information not available
Humidity	Information not available	Information not available	Information not available
Other Environmental Characteristics	Information not available	Explosion proof, non-pressurized	Explosion-proof, non-pressurized
Mounting — Housing	Baseplate	Baseplate	Baseplate
Mounting — Camera	Tray	Tray	Tray
Ventilation	Information not available	Information not available	Information not available
Heater	Optional	Information not available	Information not available
Cooler	Optional Blower	Information not available	Information not available
Window	5.8x8in (14.5x20cm)	5in (12.5cm) diam	5in (12.5cm) diam
Wiper	Optional	NO	NO
Sunshield	NO	NO	NO
Tamper Protection	Information not available	NO	NO
Other Features	Hinged back door; removable cover	Information not available	Information not available
Electrical Connections	Cable port, dual ac outlet inside	"Seal-offs"	"Seal-offs"

PHYSICAL DATA

External Size H	10in (25cm)	7.8in (20cm) dia	9.5in (24cm) dia
W	10in (25cm)	—	—
L	36in (91cm)	27in (68cm)	27.6in (70cm)
Internal Size H	Same as external	6.0in (15cm) dia	8.0in (20cm) dia
W	—	—	—
L	size	24in (60cm)	24in (60cm)
Weight	27lb (12kg)	24lb (11kg)	31lb (14kg)

COST DATA

Price	\$230	\$530	\$570
--------------	-------	-------	-------

NOTES

Pressurized version CHXP-6-24: \$740	Pressurized version CHXP-8-24: \$780
Underwater CHUW-6-24: \$650	Underwater CHUW-8-24: \$690

INSTALLATIONS

VIDEO CAMERA ENCLOSURES

<i>Manufacturer</i>	Cunningham Corp. 10 Carriage St. Honeoye Falls, NY 14472 (716) 624-2000	Cunningham Corp. 10 Carriage St. Honeoye Falls, NY 14472 (716) 624-2000	Cunningham Corp. 10 Carriage St. Honeoye Falls, NY 14472 (716) 624-2000
<i>Model</i>	CHXR 10-24	CHXR 12-24	CHWC 10-24
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Indoor or Outdoor Temperature	Indoor Information not available	Indoor Information not available	Indoor Information not available
Humidity	Information not available	Information not available	Information not available
Other Environmental Characteristics	Explosion-proof; non-pressurized	Explosion-proof; non-pressurized	Information not available
Mounting — Housing	Baseplate	Baseplate	Baseplate
Mounting — Camera	Tray	Tray	Tray
Ventilation	Information not available	Information not available	Information not available
Heater	Information not available	Information not available	Information not available
Cooler	Information not available	Information not available	Water jacket operation up to 570F (398C)
Window	5in (12.5cm) dia	5in (12.5cm) dia	4.5in (11.5cm) dia
Wiper	NO	NO	NO
Sunshield	NO	NO	NO
Tamper Protection	NO	NO	NO
Other Features	—	—	—
Electrical Connections	"Seal-offs"	"Seal-offs"	As Specified

PHYSICAL DATA

External Size H	11.0in (28cm) dia	14.4in (37cm) dia	13.3in (34cm)
W	—	—	—
L	28.4in (66cm) dia	27.5in (70cm)	24in (60cm)
Internal Size H	10.0in (25cm) dia	12.0in (30cm) dia	Information not available
W	—	—	—
L	24in (60cm)	24in (60cm)	—
Weight	45lb (20kg)	55lb (25kg)	Information not available

COST DATA

Price	\$610	\$650	\$1,297
--------------	-------	-------	---------

NOTES

MIL SPEC E-5272

Pressurized version CHXP-10-24: \$820	Pressurized version CHXP-12-24: \$860
Underwater CHUW-10-24: \$730	Underwater CHUW-12-24: \$770

INSTALLATIONS

VIDEO CAMERA ENCLOSURES

<i>Manufacturer</i>	Cunningham Corp. 10 Carriage St. Honeoye Falls, NY 14472 (716) 624-2000	Cunningham Corp. 10 Carriage St. Honeoye Falls, NY 14472 (716) 624-2000
<i>Model</i>	CHTP 9-7-14	CHTP-9-7-22
Evaluation Guide Procedure IV-2.A		NRC Identification No.

PERFORMANCE DATA

Indoor or Outdoor	Indoor	Indoor
Temperature	Information not available	Information not available
Humidity	Information not available	Information not available
Other Environmental Characteristics	Information not available	Information not available
Mounting — Housing	Information not available	Information not available
Mounting — Camera	Tray	Tray
Ventilation	Information not available	No special provisions
Heater	Information not available	NO
Cooler	Information not available	NO
Window	Hinged, key-locked	Hinged, key-locked
Wiper	Information not available	NO
Sunshield	Information not available	NO
Tamper Protection	Key-locked window	Key-locked window
Other Features	Inverted mounting possible	Inverted mounting possible
Electrical Connections	Strain relief cables, two entry ports	Strain relief cables, two entry ports

PHYSICAL DATA

External Size	Information	9.3in (23.5cm)
H		
W	not available	6.3in (16.5cm)
L	available	25.3in (64cm)
Internal Size	Information	6.3in (16.5cm)
H		
W	not available	6.3in (16.5cm)
L	available	22.0in (56cm)
Weight	Information not available	14.0lb (6.3kg)

COST DATA

Price	\$80	\$80
--------------	------	------

NOTES

INSTALLATIONS

VIDEO CAMERA ENCLOSURES

<i>Manufacturer</i>	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490
<i>Model</i>	HO-5	JEH-21	JEH-23
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Indoor or Outdoor	Outdoor	Outdoor	Outdoor
Temperature	Information not available	Information not available	Information not available
Humidity	Information not available	Information not available	Information not available
Other Environmental Characteristics	Information not available	Information not available	Information not available
Mounting — Housing	Mounting cradle	Bolts on directly	Bolts on directly
Mounting — Camera	Mounting cradle option	Screwed in directly	Screwed in directly
Ventilation	Optional	Rear louvres	Rear louvres
Heater	Optional	NO	NO
Cooler	Optional	NO	NO
Window	Glass, 6.2x9in (16x2.3cm)	Glass, 6x5in (15x12.5cm)	Glass, 4.7x3in (12x7.6cm)
Wiper	Optional	NO	NO
Sunshield	Optional	Optional	Optional
Tamper Protection	Information not available	Keylock	Keylock
Other Features	See notes	NO	NO
Electrical Connections	Two gland fittings	Two gland fittings	Two gland fittings

PHYSICAL DATA

External Size H	10.5in (27cm)	7.2in (18cm)	7.0in (17.5cm)
W	12.5in (32cm)	6.9in (17.5cm)	4.5in (11.5cm)
L	27.5in (65cm)	19.9in (50cm)	17.9in (45cm)
Internal Size H	10.0in (25cm)	7.1in (18cm)	6.1in (15.5cm)
W	12.0in (30cm)	6.2in (16cm)	4.0in (10.0cm)
L	25.0in (63cm)	19.5in (50cm)	17.1in (43cm)
Weight	18lb (8kg)	12lb (5.4kg)	7lb (3.3kg)

COST DATA

Price	\$217	\$145	\$124
--------------	-------	-------	-------

NOTES

Options: Thermal
insulation, blower,
heater with thermostat,
window defroster, window
washer
24V ac control unit
Maximum cable distance
for control 2,500ft
(750m)

Same housing sold by
EMI as their
model SCH-1

Same housing sold by
EMI as their
model SCH-3

INSTALLATIONS

VIDEO CAMERA ENCLOSURES

Manufacturer	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490
Model	V800H	V850H	JEH-24
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Indoor or Outdoor	Outdoor	Indoor	Outdoor
Temperature	Information not available	Information not available	Information not available
Humidity	Information not available	Information not available	Information not available
Other Environmental Characteristics	See notes	Explosion proof; unpressurized	Information not available
Mounting — Housing	Bolt holes	Bolt holes	Bolts on directly
Mounting — Camera	Rack available	Rack provided	Bolts on directly
Ventilation	Convection	No special provision	Rear louvres
Heater	Optional	Optional	NO
Cooler	Optional	Information not available	NO
Window	Information not available	5.4in (13.5cm) diameter	5x6in (12.5x15cm)
Wiper	Optional	Information not available	NO
Sunshield	Optional	Information not available	Optional
Tamper Protection	NO	NO	Keylock
Other Features	Hinged cover	None	None
Electrical Connections	Information not available	Cable ports, Crouse Hinds: EY 5-116	Two gland fittings

PHYSICAL DATA

External Size	9.5in (24cm)	Cylindrical	5.8in (14.5cm)
H			
W	10.5in (27cm)	See notes	4.0in (10cm)
L	31.0in (79cm)	27.6in (65cm)	15.8in (40cm)
Internal Size	8.0in (20cm)	Cylindrical	5.0in (12.5cm)
H			
W	Top: 7.0in (17.5cm); Bot.: 8.5in (22cm)	See notes	3.5in (8.8cm)
L	25in (63cm)	24in (60cm)	15in (38cm)
Weight	12.5lb (5.6kg)	See notes	5.5lb (2.5kg)

COST DATA

Price	\$185	See notes	\$110
--------------	-------	-----------	-------

NOTES

Heater, 115V, available;
holds camera at 36F
(2C) for outside temperature
of -10F (-22C), insulated
model, V800 I, for
outside temperature
down to -35F (-37C),
extreme low tempera-
ture model V800LT, for
temperature down to
-103F (-77C)

Dash-No. indicator
ID, e.g., V850H-6 is
the 6 inch ID model

For low-profile
cameras

MODEL	ID	OD	WEIGHT	PRICE
V850H — 6	6in (15cm)	7.62in (19cm)	24lb (11kg)	\$400
— 8	8in (20cm)	9.62in (24cm)	31lb (14kg)	435
— 10	10in (25cm)	11.62in (29cm)	45lb (20kg)	465
— 12	12in (30cm)	13.62in (34cm)	55lb (25kg)	530

INSTALLATIONS

VIDEO CAMERA ENCLOSURES

<i>Manufacturer</i>	Vicon Industries, Inc. 130 Central Ave. Farmingdale, NY 11735 (516) 293-2200	Vicon Industries 130 Central Ave. Farmingdale, NY 11735 (516) 293-2200	Vicon Industries, Inc. 130 Central Ave. Farmingdale, NY 11735 (516) 293-2200
<i>Model</i>	V800H	V810H	V820H
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Indoor or Outdoor	Outdoor	Outdoor	Indoor
Temperature	Information not available	Information not available	Information not available
Humidity	Information not available	Information not available	Information not available
Other Environmental Characteristics	See notes	See notes	See notes
Mounting — Housing	Bolt holes	Bolt holes	Bracket
Mounting — Camera	Rack available	Rack available	Bolt holes
Ventilation	Convection	Convection	Convection
Heater	Optional	Optional	Optional
Cooler	Optional	Optional	Optional
Window	Information not available	Information not available	6.25x4.5in (16x11.5cm)
Wiper	Optional	Optional	Optional
Sunshield	Optional	Optional	Optional
Tamper Protection	NO	NO	—
Other Features	Hinged cover	Hinged cover	Dual hinged doors
Electrical Connections	Information not available	Information not available	Two knockouts in rear

PHYSICAL DATA

External Size	9.5in (24cm)	9.5in (24cm)	8.5in (22cm)
H			
W	10.5in (27cm)	10.5in (27cm)	8.5in (22cm)
L	31.0in (79cm)	40.3in (100cm)	18.0in (45cm)
Internal Size	8.0in (20cm)	8.0in (20cm)	7.8in (20cm)
H			
W	Top: 7.0in (17.5cm)	Top: 7.0in (17.5cm);	8.2in (21cm)
L	Bot.: 8.5in (22cm)	Bot: 8.5in (22cm)	
Weight	25in (63cm)	35in (89cm)	17.5in (45cm)
H	12.5lb (5.6kg)	16.0lb (7.2kg)	17.0lb (7.6kg)

COST DATA

Price	\$185	\$249	\$84
--------------	-------	-------	------

NOTES

Heater, 115V, available;
holds camera at 36F (2C)
for outside temperature
of -10F (-22C), insulated
model, V800 I, for outside
temperature down to
-35F (-37C), extreme
low temperature
model V800LT, for
temperature down to
-103F (-77C)

Tested by MITRE Corp., Bedford, MA. for 1 year under local weather conditions
without failures.

1. Special design for
LLTV cameras
 2. Same heater and insula-
tion available as for
V800H
- Special insulated unit
V810 I for outside
temp. -35F to (-37C)
Extreme low temp. unit
V810LT for temp. down
to -103F (-75C)

Same heater as for
V800H available

INSTALLATIONS

VIDEO CAMERA ENCLOSURES

Manufacturer	Vicon Industries, Inc. 130 Central Ave. Farmingdale, NY 11735 (516) 293-2200	Vicon Industries, Inc. 130 Central Ave. Farmingdale, NY 11735 (516) 293-2200	Vicon Industries, Inc. 130 Central Ave. Farmingdale, NY 11735 (516) 293-2200
Model	V830H	V850H	V851H
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Indoor or Outdoor Temperature	Outdoor Information not available	Indoor Information not available	Indoor Information not available
Humidity	Information not available	Information not available	Information not available
Other Environmental Characteristics	Information not available	Explosion-proof, not pressurized	Explosion-proof, pressurized to 22psi (150,000 Pa)
Mounting — Housing	Bolt holes	Bolt holes	Bolt holes
Mounting — Camera	Bolt holes	Rack provided	Rack provided
Ventilation	Convection (blower option) Optional	NO	NO
Heater	Optional	Information not available	Information not available
Cooler	Optional	Information not available	Information not available
Window	Information not available	5.4in (13.5cm) diameter	5.4in (13.5cm) diameter
Wiper	Optional	Information not available	Information not available
Sunshield	Optional	Information not available	Information not available
Tamper Protection	NO	NO	NO
Other Features	Hinged dual door	Information not available	Information not available
Electrical Connections	Protected inlet port	Cable ports, Crouse Hinds EY 5-116	Cable ports, Crouse Hinds EY 5-116

PHYSICAL DATA

External Size	H 7.5in (19cm)	Cylindrical	Cylindrical
	W 7.12in (18cm)	See notes	See notes
	L 24.6in (62cm) or 25.8in (63cm)*	27.6in (70cm)	27.6in (70cm)
Internal Size	H 6.25in (16.5cm)	Cylindrical	Cylindrical
	W 6.0in (15cm)	See notes	See notes
	L 21.4in (54cm) or 20.8in (52cm)**	24in (60cm)	24in (60cm)
Weight	8.0lb (3.6kg)	See notes	See notes

COST DATA

Price	\$132	See notes	See notes
--------------	-------	-----------	-----------

NOTES

*With rear cover

**With air blower

MODEL	ID	OD	WEIGHT	PRICE
V850H - 6	6in (15cm)	7.62in (19cm)	24lb (11kg)	\$400
V850H - 8	8in (20cm)	9.62in (24cm)	31lb (14kg)	435
V850H - 10	10in (25cm)	11.62in (29cm)	45lb (20kg)	465
V850H - 12	12in (30cm)	13.62in (34cm)	55lb (25kg)	530
V851H - 6	6in (15cm)	7.62in (19cm)	24lb (11kg)	620
V851H - 8	8in (20cm)	9.62in (24cm)	31lb (14kg)	665
V851H - 10	10in (25cm)	11.62in (29cm)	45lb (20kg)	710
V851H - 12	12in (30cm)	13.62in (34cm)	55lb (25kg)	760

INSTALLATIONS

VIDEO CAMERA ENCLOSURES

<i>Manufacturer</i>	Vicon Industries, Inc. 130 Central Ave. Farmingdale, NY 11735 (516) 293-2200	Vicon Industries, Inc. 130 Central Ave. Farmingdale, NY 11735 (516) 293-2200	Vicon Industries, Inc. 130 Central Ave. Farmingdale, NY 11735 (516) 293-2200
<i>Model</i>	V 860H	V 862H	V 863H
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Indoor or Outdoor	Information not available	Information not available	Information not available
Temperature	Information not available	Information not available	Information not available
Humidity	Information not available	Information not available	Information not available
Other Environmental Characteristics	Dustproof	Information not available	Information not available
Mounting — Housing	Tapped holes	Recessed in ceiling, fits standard 24 inch drop ceiling grid	Tapped holes
Mounting — Camera	Tapped holes	Bracket in side	Slits in base
Ventilation	Rear louvers	Information not available	Rear louvers
Heater	NO	NO	NO
Cooler	NO	NO	NO
Window	Approximately 6x4in (15x10cm)	3.75x9.75in (9.6x24cm)	2.62x3.00in (6.6x7.5cm)
Wiper	NO	Information not available	Information not available
Sunshield	NO	Information not available	Information not available
Tamper Protection	YES	YES	YES
Other Features	Information not available	Fold-down cover	Access port in rear
Electrical Connections	Knockout holes in rear	Knockout holes	Grommet

PHYSICAL DATA

External Size H	7.13in (18cm)	11.92in (30cm) overall 5.12in (13cm) exposed	3.38in (8.5cm)
W	6.13in (15.5cm)	23.75in (60cm)	5.5in (14cm)
L	19.00in (48cm)	23.75in (60cm)	17.7in (45cm)
Internal Size H	7.00in (18cm)	Accepts cameras 7in (18cm) 5.25in (13.5cm)	
W	6.00in (15cm)	High and	
L	16.00in (40cm)	16in (40cm) Long	15.75in (40cm)
Weight	9lb (4kg)	29lb (13kg)	4.5lb (2kg)

COST DATA

Price	\$50.50	\$280	\$64
--------------	---------	-------	------

NOTES

Specially designed for
RCA cameras, TC 1000
series

INSTALLATIONS

VIDEO CAMERA ENCLOSURES

Manufacturer	Vicon Industries, Inc. 130 Central St. Farmingdale, NY 11735 (516) 293-2200	Vicon Industries, Inc. 130 Central St. Farmingdale, NY 11735 (516) 293-2200	Vicon Industries, Inc. 130 Central St. Farmingdale, NY 11735 (516) 293-2200
Model	V864H	V870H	V880H
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Indoor or Outdoor Temperature	Indoor and outdoor Information not available	Indoor and outdoor Information not available	Indoor and outdoor Information not available
Humidity	Information not available	Information not available	Information not available
Other Environmental Characteristics	Information not available	Information not available	Dust and moisture-proof
Mounting — Housing	Tapped holes	Wall-mounted	Bolts on plate
Mounting — Camera	Slots in base	Bracket inside	Bolts on plate
Ventilation	Rear louvres	Information not available	Information not available
Heater	NO	NO	Optional
Cooler	NO	NO	Optional
Window	4.0x4.5in (10x11.5cm)	5x4in (12.5x10cm), 20 mesh wire	5.75in (14.5cm) diameter
Wiper	NO	NO	NO
Sunshield	NO	NO	Optional
Tamper Protection	Keylock	—	Optional
Other Features	Split rear access doors	Housing disguised as smoke detector	—
Electrical Connections	Split grommets	Cable knockouts	Cable port

PHYSICAL DATA

External Size	H	4.87in (12.5cm)	12.00in (30cm)	See notes
	W	6.63in (17cm)	7.19in (18cm)	
	L	20.87in (54cm)	14.00in (35cm)	
Internal Size	H	4.63in (11.5cm)	7.0in (18cm)	See notes
	W	6.38in (16cm)	6.5in (16.5cm)	
	L	19.50in (50cm)	13.0in (36cm)	
Weight		6.25lb (2.8kg)	13.4lb (6kg)	See notes

COST DATA

Price	\$69	\$96	See notes
--------------	------	------	-----------

NOTES

MODEL	EXTERNAL	INTERNAL	WEIGHT	PRICE
V880H - 8	8.31x8.94x24.2in (21x22.5x62cm)	6.25x6.25x23.9in (16x16x60cm)	12.0lb (5.4kg)	\$275
V880H - 10	10.31x10.94x24.4in (26x27.5x62cm)	8.25x8.25x23.9in (21x21x60cm)	15.0lb (6.6kg)	290

INSTALLATIONS

VIDEO CAMERA ENCLOSURES

Manufacturer	Visual Methods, Inc. 5 Wortendyke Ave. Montvale, NJ 07645 (201) 391-7383	Triple-S Development Co., Inc. 1450 E. 289th St. Wickliffe, OH 44092 (216) 944-7070
Model	H-422	C-24
Evaluation Guide Procedure IV-2.A		NRC Identification No.

PERFORMANCE DATA

	Outdoor	Outdoor
Indoor and Outdoor Temperature:	Information not available.	Information not available.
Humidity:	Information not available.	Information not available.
Other Environmental Characteristics	—	—
Mounting — Housing	Direct bolt	Bracket or shelf
Mounting — Camera	Direct bolt	Special mount provided
Ventilation	Optional blower/ thermostat	Sealed
Heater	Optional blower/ thermostat	NO
Cooler	NO	NO
Window	5.5in (14cm) diameter	Rotating disk with built-in dust/ moisture wiper
Wiper	NO	Not required
Sunshield	NO	Optional
Tamper Protection	—	Keylock
Other Features	None	None
Electrical Connections	Information not available	115V ac required for window drive motor

PHYSICAL DATA

External H	10.0in (25cm)	12.5in (32cm)
W	10.0in (25cm)	12.5in (32cm)
L	26.5in (64cm)	26.5in (68cm)
Internal H	8.0in (20cm)	8.0in (20cm)
W	8.0in (20cm)	10.5in (26cm)
L	22.0in (56cm)	23.3in (60cm)
Weight	4.0lb (1.8kg)	34lb (15kg)

COST DATA

Price	Information not available	\$645
--------------	---------------------------	-------

NOTES

INSTALLATIONS

VIDEO CAMERA POSITIONING EQUIPMENT

Video camera positioning equipment is used to remotely point a closed-circuit television camera. There are two classes: pan units, which provide horizontal sweep only, and pan and tilt units which can be operated vertically as well. Different classes of units are also distinguished by their mode of operation. They may operate automatically, scanning a predetermined angular range without operator assistance in an autoscanning operation, or they may be operated as needed from a control center by manual remote control operation. A third distinction is in timing. Some units are designed for continuous operation, 24 hours a day without overheating or damage to the device. Others can be operated only intermittently, not operating at specified periods to prevent equipment overload or fatigue.

Units designed for smaller cameras and lightweight housing usually are controlled directly; that is, the voltages fed to the unit from the control center are also the operating voltages. Larger devices usually require their own attached power supplies, which in turn are controlled by command voltages from the control center. Maximum cable lengths for remote control are stated by the manufacturers based on the power requirements for a given unit.

Remote positioning equipment is manufactured either for indoor or for outdoor use, the latter having waterproof electrical connections and sealed moving mechanical parts. Provision for mounting is simple, usually a base plate with holes. Care has to be taken not to overload the positioning equipment keeping the total weight of the camera, lens and housing at or below the maximum rating for that positioning device. During installation, the camera and housing must be well balanced to prevent unnecessary backlash and wear and tear on the positioning units.

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	2	f	0	1

736 188

VIDEO CAMERA POSITIONING EQUIPMENT

<i>Manufacturer</i>	ADEMCO 165 Eileen Way Syosset, NY 11791 (516) 921-6700	ADEMCO 165 Eileen Way Syosset, NY 11791 (516) 921-6700	ADEMCO 165 Eileen Way Syosset, NY 11791 (516) 921-6700
<i>Model</i>	1530	1531	1533
Evaluation Guide Procedure IV.-2.A		NRC Identification No.	

PERFORMANCE DATA

Maximum Load	20lb (9kg)	20lb (9kg)	100lb (45kg)
Mounting of Base	Horizontal plate	Horizontal plate	Horizontal plate
Mounting of Camera	Plate	Plate	Plate
Movement — Horizontal	0 to 350 degrees	0 to 350 degrees	0 to 350 degrees
— Vertical	0 degrees	0 degrees	0 degrees
Remote Control	None	Remote	Remote
Continuous Control	Continuous	Information not available	Information not available
Indoor or Outdoor	Indoor	Indoor	Outdoor
Temperature	Information not available	Information not available	Information not available
Control Voltage	Information not available	24V	24V
Maximum Cable Length	6ft (1.8m)	250ft (75m)	250ft (75m)

PHYSICAL DATA

Size H	7.2in (18cm)	8.9in (23cm)	13.0in (33cm)
W	5.3in (13.5cm)	5.3in (13.5cm)	6.3in (16cm)
L	5.3in (13.5cm)	5.3in (13.5cm)	6.3in (16cm)
Weight	4.5lb (2kg)	8.0lb (3.6kg)	14.0lb (6.3kg)
Power	Information not available	Information not available	Information not available

COST DATA

Price	\$88.20	\$138.90	\$320
--------------	---------	----------	-------

NOTES

Appears to be the same as Vicon V321AP	Appears to be the same as Vicon V310AP
---	---

INSTALLATIONS

VIDEO CAMERA POSITIONING EQUIPMENT

<i>Manufacturer</i>	ADEMCO 165 Eileen Way Syosset, NY 11791 (516) 921-6700	ADEMCO 165 Eileen Way Syosset, NY 11791 (516) 921-6700
<i>Model</i>	1535	1539
Evaluation Guide Procedure IV-2.A		NRC Identification No.

PERFORMANCE DATA

Maximum Load	20lb (9kg)	35lb (16kg)
Mounting of Base	Horizontal plate	Horizontal plate
Mounting of Camera	Plate	Plate
Movement — Horizontal	0 to 350 degrees	0 to 350 degrees
— Vertical	-45 to +45 degrees	-45 to +45 degrees
Remote Control	Remote	Remote
Continuous Control	Information not available	Information not available
Indoor or Outdoor	Indoor	Outdoor
Temperature	Information not available	Information not available
Control Voltage	24V	24V
Maximum Cable Length	100ft (30m)	100ft (30m)

PHYSICAL DATA

Size H	Information	Information
W	not	not
L	available	available
Weight	Information not available	Information not available
Power	Information not available	Information not available

COST DATA

Price	\$363.70	\$591.50
--------------	----------	----------

NOTES

INSTALLATIONS

VIDEO CAMERA POSITIONING EQUIPMENT

<i>Manufacturer</i>	Cunningham Corp. 10 Carriage St. Honeoye Falls, NY 14472 (716) 624-2000	Cunningham Corp. 10 Carriage St. Honeoye Falls, NY 14472 (716) 624-2000	Cunningham Corp. 10 Carriage St. Honeoye Falls, NY 14472 (716) 624-2000
<i>Model</i>	LTJ 120	CP 30	CP 90
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Maximum Load	20lb (9kg)	30lb (13.5kg)	90lb (41kg)
Mounting of Base	4in (10cm) disk	4in (10cm) disk	4in (10cm) disk
Mounting of Camera	5x12in (12.5x30cm)	13x6.5in (33x16.5cm)	13x6.5in (33x16.5cm)
Movement — Horizontal	0 to 355 degrees	0 to 355 degrees	0 to 355 degrees
— Vertical	-90 to +90 degrees	-90 to +90 degrees	-90 to +90 degrees
Remote Controls	Remote	Remote	Remote
Continuous Controls	Autoscan	Autoscan	Autoscan
Indoor or Outdoor	Indoor	All weather	All weather
Temperature	32 to 105F (0 to 40C)	-5 to +110F (-15 to +45C)	-5 to +110F (-15 to +45C)
Control Voltage	Information not available	Information not available	Information not available
Maximum Cable Length	6ft (1.8m)	Information not available	Information not available

PHYSICAL DATA

Size H	10in (25cm)	12in (30cm)	12in (30cm)
W	12.5in (30cm)	13.3in (30.4cm)	13.3in (30.4cm)
L	5in (12.5cm)	7.75in (19.5cm)	7.75in (19.5cm)
Weight	24lb (11kg)	31lb (14kg)	34lb (15kg)
Power	115V ac	115V ac	115V ac

COST DATA

Price	\$407	\$630	\$930
--------------	-------	-------	-------

NOTES

Remote power supply required	Remote power supply required
------------------------------	------------------------------

INSTALLATIONS

VIDEO CAMERA POSITIONING EQUIPMENT

<i>Manufacturer</i>	Cunningham Corp. 10 Carriage St. Honeoye Falls, NY 14472 (716) 624-2000	Cunningham Corp. 10 Carriage St. Honeoye Falls, NY 14472 (716) 624-2000	Cunningham Corp. 10 Carriage St. Honeoye Falls, NY 14472 (716) 624-2000
<i>Model</i>	LTS 122	LT 122	HTXP 120 DC
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Maximum Load	20lb (9kg)	20lb (9kg)	90lb (40kg)
Mounting of Base	4in (10cm) disk	4in (10cm) disk	Information not available
Mounting of Camera	11x6in (28x15cm) plate	11x6in (28x15cm) plate	Information not available
Movement — Horizontal	0 to 355 degrees	0 to 355 degrees	0 to 350 degrees
— Vertical	-90 to +90 degrees	-90 to +90 degrees	-90 to +90 degrees
Remote Control	Remote	Remote	Remote
Continuous Control	Autoscan	Intermittent	Intermittent
Indoor or Outdoor	All weather	All weather	All weather
Temperature	-15 to +140F (-25 to +60C)	Information not available	Information not available
Control Voltage	Information not available	Information not available	Information not available
Maximum Cable Length	Information not available	Information not available	2,000ft (600m)

PHYSICAL DATA

Size H	10in (25cm)	10in (25cm)	Information
W	11.4in (29cm)	11.4in (29cm)	not
L	7.3in (18.5cm)	7.3in (18.5cm)	available
Weight	26lb (11.5kg)	26lb (11.5kg)	Information not available
Power	115V ac	115V ac	115V ac

COST DATA

Price	\$770	\$490	\$3,000
--------------	-------	-------	---------

NOTES

Adjustable limit stops

Explosion-proof;
pressurized

INSTALLATIONS

VIDEO CAMERA POSITIONING EQUIPMENT

Manufacturer	Cunningham Corp. 10 Carriage St. Honeoye Falls, NY 14472 (716) 624-2000	Cunningham Corp. 10 Carriage St. Honeoye Falls, NY 14472 (716) 624-2000	Cunningham Corp. 10 Carriage St. Honeoye Falls, NY 14472 (716) 624-2000
Model	MTS 123	MT 123	MHTS 125
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Maximum Load	30lb (13.5kg)	30lb (13.5kg)	90lb (41kg)
Mounting of Base	6in (15cm) disk	6in (15cm) disk	6in (15cm) disk
Mounting of Camera	6x11in (15x28cm) plate	6x11in (15x28cm) plate	8x11in (20x28cm) plate
Movement — Horizontal	0 to 355 degrees	0 to 355 degrees	0 to 355 degrees
— Vertical	-90 to +90	-90 to +90	-90 to +90
Remote Controls	Remote	Remote	Remote
Continuous Controls	Autoscan	Intermittent	Autoscan
Indoor or Outdoor	All weather	All weather	All weather
Temperature	-15 to +140F (-25 to +60C)	-15 to +140F (-25 to +60C)	-15 to +140F (-25 to +60C)
Control Voltage	Information not available	Information not available	Information not available
Maximum Cable Length	Information not available	Information not available	Information not available

PHYSICAL DATA

Size H	11.5in (29cm)	11.5in (29cm)	14.3in (36cm)
W	11.4in (29cm)	11.4in (29cm)	11.1in (28cm)
L	7.3in (18.5)	7.3in (18.5cm)	11.0in (28cm)
Weight	27.5lb (12.5kg)	27.5lb (12.5kg)	46lb (21kg)
Power	115V ac	115V ac	115V ac

COST DATA

Price	\$820	\$630	\$1,100
--------------	-------	-------	---------

NOTES

INSTALLATIONS

VIDEO CAMERA POSITIONING EQUIPMENT

<i>Manufacturer</i>	Cunningham Corp. 10 Carriage St. Honeoye Falls, NY 14472 (716) 624-2000	Cunningham Corp. 10 Carriage St. Honeoye Falls, NY 14472 (716) 624-2000	Cunningham Corp. 10 Carriage St. Honeoye Falls, NY 14472 (716) 624-2000
<i>Model</i>	MHT 125	HT 130 AC	HT 130 DC
Evaluation Guide Procedure IV-2.A	NRC Identification No.		

PERFORMANCE DATA

Maximum Load	90lb (41kg)	400lb (180kg)	400lb (180kg)
Mounting of Base	6in (15cm) disk	8in (20cm) disk	8in (20cm) disk
Mounting of Camera	8x11in (20x28cm) plate	8x19in (20x48cm) plate	8x19in (20x48cm) plate
Movement — Horizontal	0 to 355 degrees	0 to 355 degrees	0 to 355 degrees
— Vertical	-90 to +90 degrees	-90 to +90 degrees	-90 to +90 degrees
Remote Controls	Remote	Remote	Remote
Continuous Controls	Intermittent	Autoscan	Intermittent
Indoor or Outdoor	All weather	All weather	All weather
Temperature	-15 to +140F (-25 to +60C)	-20 to +140F (-29 to +60C)	-20 to +140F (-29 to +60C)
Control Voltage	Information not available	Information not available	Information not available
Maximum Cable Length	Information not available	Information not available	Information not available

PHYSICAL DATA

Size H	14.3in (36cm)	19.8in (50cm)	19.8in (50cm)
W	11.1in (28cm)	21.3in (55cm)	21.3in (55cm)
L	11.0in (28cm)	12.3in (34cm)	12.3in (34cm)
Weight	46lb (21kg)	120lb (54kg)	120lb (54kg)
Power	.15V ac	115V ac, 500W	115V ac, 500W

COST DATA

Price	\$1,000	\$1,825	\$2,400
--------------	---------	---------	---------

NOTES

Units have self-contained power supply using relay control

INSTALLATIONS

VIDEO CAMERA POSITIONING EQUIPMENT

<i>Manufacturer</i>	Cunningham Corp. 10 Carriage St. Honeoye Falls, NY 14472 (716) 624-2000	Cunningham Corp. 10 Carriage St. Honeoye Falls, NY 14472 (716) 624-2000	Cunningham Corp. 10 Carriage St. Honeoye Falls, NY 14472 (716) 624-2000
<i>Model</i>	HT 132 AC	HT 132 DC	MHTX 125
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Maximum Load	400lb (180kg)	400lb (180kg)	90lb (41kg)
Mounting of Base	8in (20cm) disk	8in (20cm) disk	6in (15cm) disk
Mounting of Camera	8x19in (20x48cm) plate	8x19in (20x48cm) • plate	8x11in. (20x28cm) plate
Movement — Horizontal	0 to 355 degrees	0 to 355 degrees	0 to 355 degrees
— Vertical	- 90 to +90 degrees	- 90 to +90 degrees	- 90 to +90 degrees
Remote Controls	Remote	Remote	Remote
Continuous Controls	Autoscan	Intermittent	No Autoscan
Indoor or Outdoor	All weather	All weather	Information not available
Temperature	- 20 to +140F (- 29 to +60C)	- 20 to +140F (- 29 to +60C)	- 20 to +140F (- 29 to +60C)
Control Voltage	Information not available	information not available	Information not available
Maximum Cable Length	Information not available	Information not available	Information not available

PHYSICAL DATA

Size H	19.8in (50cm)	19.8in (50cm)	14.3in (36cm)
W	21.3in (55cm)	21.3in (55cm)	11.1in (28cm)
L	12.3in (34cm)	12.3in (34cm)	11.0in (28cm)
Weight	120lb (54kg)	120lb (54kg)	44lb (20kg)
Power	115V ac	115V ac	115V ac

COST DATA

Price	\$1,500	\$1,650	\$1,275
--------------	---------	---------	---------

NOTES

Same as HT 130 AC, but without self- contained power supply	Same as HT 130 DC, but without self- contained power supply	Explosion-proof
--	--	-----------------

INSTALLATIONS

VIDEO CAMERA POSITIONING EQUIPMENT

Manufacturer	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433
Model	AS-5	AS-7	AS-11
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Maximum Load	20lb (9kg)	20lb (9kg)	50lb (22kg)
Mounting of Base	Square plate	Square plate	Square plate
Mounting of Camera	Table	Table	Table
Movement — Horizontal	0 to 350 degrees	0 to 350 degrees	5 to 360 degrees
— Vertical	- 60 to +60 degrees	- 60 to +60 degrees	- 60 to +60 degrees
Remote Controls	Remote	Remote	Remote
Continuous Control	Autoscan	Autoscan	Autoscan
Indoor or Outdoor	Indoor	Indoor	Outdoor
Temperature	- 5 to +110F (- 15 to +55C)	- 5 to +110F (- 15 to +55C)	Information not available
Control Voltage	24V	24V	24V
Maximum Cable Length	Information not available	6,000ft (1,800m)	Information not available

PHYSICAL DATA

Size H	7.2in (18cm)	7.2in (18cm)	10.0in (25cm)
W	5.25in (13cm)	5.25in (13cm)	6.2in (16cm)
L	5.25in (13cm)	5.25in (13cm)	6.2in (16cm)
Weight	5lb (2.2kg)	5lb (2.2kg)	18lb (8kg)
Power	115V ac, 7W	115V ac, 7W	115V ac, 30W

COST DATA

Price	\$149	\$200	\$491.95
--------------	-------	-------	----------

NOTES

Control box provided

INSTALLATIONS

VIDEO CAMERA POSITIONING EQUIPMENT

Manufacturer	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433
Model	YU 303	YU 304
Evaluation Guide Procedure	IV-2.A	NRC Identification No.

PERFORMANCE DATA

Maximum Load	35lb (16kg)	35lb (16kg)
Mounting of Base	Square plate	Square plate
Mounting of Camera	Table	Table
Movement — Horizontal	0 to 350 degrees	0 to 350 degrees
— Vertical	-90 to +90 degrees	-90 to +90 degrees
Remote Control	Remote	Remote
Continuous Control	No Autoscan	Autoscan
Indoor or Outdoor	Outdoor	Outdoor
Temperature	-60 to +170F (-50 to +75C)	-60 to +170F (-50 to +75C)
Control Voltage	24V	24V
Maximum Cable Length	1,000ft (300m)	1,000ft (300m)

PHYSICAL DATA

Size H	13.9in (35cm)	13.9in (35cm)
W	10.8in (28cm)	10.8in (28cm)
L	6.5in (16.5cm)	6.5in (16.5cm)
Weight	37lb (17kg)	37lb (17kg)
Power	115V ac, 48W	115V ac, 49W

COST DATA

Price	\$750	\$825
--------------	-------	-------

NOTES

Control box provided Control box provided

INSTALLATIONS

VIDEO CAMERA POSITIONING EQUIPMENT

<i>Manufacturer</i>	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490
<i>Model</i>	V340 PT V360 APT V366 APT	V352 PTV V353 APTV	V300 PT V330 APT

Evaluation Guide Procedure IV-2.A NRC Identification No.

PERFORMANCE DATA

Maximum Load	20lb (9kg)	80lb (36kg)	35lb (16kg)
Mounting of Base	5x4in (12.5x10cm) Plate	6x5in (15x12.5cm) Plate	6x5in (15x12.5cm) Plate
Mounting of Camera	Table	Table	Table
Movement — Horizontal	0 to 350 degrees	0 to 350 degrees	0 to 355 degrees
— Vertical	-90 to +90 degrees	-90 to +90 degrees	-90 to +90 degrees
Remote Controls	Remote	Remote	Remote
Continuous Controls	See notes	Variable speed	See notes
Indoor or Outdoor	Indoor	Outdoor	Outdoor
Temperature	-5 to +120F (-15 to +50C)	-20 to +120F (-30 to +50C)	-60 to +170F (-56 to +75C)
Control Voltage	24V	24V	24V
Maximum Cable Length	1,000ft (300m)	240ft (72m)	1,000ft (300m)

PHYSICAL DATA

Size H	15.5in (39cm)	16.5in (42cm)	13.9in (35cm)
W	9.0in (23cm)	10.8in (27cm)	10.8in (27cm)
L	5.9in (15cm)	6.5in (16.5cm)	6.5in (16.5cm)
Weight	22lb (10kg)	42lb (19kg)	37lb (17kg)
Power	24V ac, 55W	24V ac, 180W	24V ac, 90W

COST DATA

Price	\$449 515 577	\$1,434 1,505	\$734 800
--------------	---------------------	------------------	--------------

NOTES

V340 PT Standard Unit V360 APT and V366 APT have Autoscan V366 silent motor drive	V353 APTV has Autoscan	V3000 Standard Unit V330 APT has Autoscan
---	---------------------------	--

INSTALLATIONS

736 198

VIDEO CAMERA POSITIONING EQUIPMENT

<i>Manufacturer</i>	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490
<i>Model</i>	V350 PTV V355 APTV	V380 PT V390 APT	PTI-4-24
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Maximum Load	35lb (16kg)	80lb (36kg)	20lb (9kg)
Mounting of Base	6x5in (15x12.5cm) plate	6x5in (15x12.5cm) plate	2in (5cm) Circular plate
Mounting of Camera	Table	Table	Cradle
Movement — Horizontal	0 to 355 degrees	0 to 355 degrees	0 to 355 degrees
— Vertical	-90 to +90 degrees	-90 to +90 degrees	-45 to +45 degrees
Remote Controls	Remote	Remote	Remote
Continuous Controls	See notes	See notes	Information not available
Indoor or Outdoor	Outdoor	Outdoor	Indoor
Temperature	-60 to +170F (-50 to +75C)	-60 to +170F (-50 to +75C)	Information not available
Control Voltage	24V ac	Information not available	24V ac
Maximum Cable Length	1,000ft (300m)	6,400ft (2,000m)	1,300ft (390m)

PHYSICAL DATA

Size H	13.9in (35cm)	V380 PT: 14.4in (37cm) V390 APT: 13.9in (35cm)	10.9in (28cm)
W	10.8in (27cm)	10.8in (27cm)	14.9in (38cm)
L	6.5in (16.5cm)	6.5in (16.5cm)	5.3in (13.5cm)
Weight	37lb (17kg)	47lb (21kg) V380 PT 40lb (9kg) V390 APT	Information not available
Power	115V ac, 90W	115V ac, 70W	115V ac, 24W

COST DATA

Price	\$1,072 1,134	\$1,200 1,275	\$492
--------------	------------------	------------------	-------

NOTES

V350 PTV has variable speed; V355 APTV has variable speed and Autoscan	V390 APT has Autoscan; V380 PT is explosion-proof
--	---

INSTALLATIONS

VIDEO CAMERA POSITIONING EQUIPMENT

<i>Manufacturer</i>	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490
<i>Model</i>	PTI-5-24	PTI-6-24	PTI-7-115, PTI-8-115
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Maximum Load	40lb (18kg)	40lb (18kg)	80lb (36kg)
Mounting of Base	6in (15cm) dia plate	6in (15cm) dia plate	7in (17.5cm) dia plate
Mounting of Camera	Table, 5x9in (12.5x23cm)	Table, 5x9in (12.5x23cm)	Table, 10x18in (25x46cm)
Movement — Horizontal	0 to 355 degrees	0 to 355 degrees	0 to 350 degrees
— Vertical	-45 to +45 degrees	-90 to +90 degrees	-60 to +60 degrees
Remote Controls	Remote	Remote	Remote
Continuous Controls	Information not available	Information not available	Information not available
Indoor or Outdoor	Indoor	Outdoor	Outdoor
Temperature	Information not available	Information not available	Information not available
Control Voltage	24V ac	24V ac	Information not available
Maximum Cable Length	1,300ft (390m)	1,300ft (390m)	2,500ft (750m)

PHYSICAL DATA

Size H	10.8in (28cm)	11.4in (29cm)	13.5in (34cm)
W	9.9in (25cm)	9.9in (25cm)	18.1in (45cm)
L	5.9in (15cm)	5.9in (15cm)	10.0in (25cm)
Weight	20lb (9kg)	22lb (10kg)	65lb (29kg)
Power	115V ac, 25W	115V ac, 25W	115V ac, 175W

COST DATA

Price	\$575	\$734	\$1,275 1,617
--------------	-------	-------	------------------

NOTES

PTI-8-115 is
explosion-proof

INSTALLATIONS

VIDEO CAMERA POSITIONING EQUIPMENT

<i>Manufacturer</i>	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490	Panasonic Co. One Panasonic Way Secaucus, NJ 07094 (201) 348-7000
<i>Model</i>	PTI-9-115	WV7220
Evaluation Guide Procedure IV-2.A		NRC Identification No.

PERFORMANCE DATA

Maximum Load	80lb (36kg)	Information not available
Mounting of Base	7in (17.5cm) dia Plate	Information not available
Mounting of Camera	20x11in (50x28cm) Table	Information not available
Movement — Horizontal	0 to 355 degrees	0 to 320 degrees
— Vertical	-90 to +90 degrees	None
Remote Controls	Remote	Remote
Continuous Controls	Information not available	Information not available
Indoor or Outdoor	Outdoor	Indoor
Temperature	Information not available	Information not available
Control Voltage	Information not available	Information not available
Maximum Cable Length	1,300ft (390m)	Information not available

PHYSICAL DATA

Size H	18.4in (47cm)	7.4in (19cm)
W	20.6in (52cm)	5.5in (14cm)
L	11.3in (29cm)	6.9in (17.5cm)
Weight	110lb (50kg)	Information not available
Power	115V ac, 200W	Information not available

COST DATA

Price	\$1,950	Information not available
--------------	---------	---------------------------

NOTES

Pan only; tilt adjustable, but fixed

INSTALLATIONS

VIDEO CAMERA POSITIONING EQUIPMENT

<i>Manufacturer</i>	Panasonic Co. One Panasonic Way Secaucus, NJ 07094 (201) 348-7000	Panasonic Co. One Panasonic Way Secaucus, NJ 07094 (201) 348-7000	RCA Corporation New Holland Ave. Lancaster, PA 17604 (800) 233-0421
<i>Model</i>	WV 7230	WV 7260	V340PT, V360 APT, V366 APT
Evaluation Guide Procedure: IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Maximum Load	Information not available	Information not available	20lb (9kg)
Mounting of Base	Information not available	Information not available	5x4in (12.5x10cm) plate
Mounting of Camera	Information not available	Information not available	Table
Movement — Horizontal	0 to 340 degrees	0 to 340 degrees	0 to 350 degrees
— Vertical	-45 to +45 degrees	-60 to +15 degrees	-90 to +90 degrees
Remote Controls	Remote	—	Remote
Continuous Controls	Information not available	Information not available	See notes
Indoor or Outdoor	Indoor	Indoor	Indoor
Temperature	Information not available	Information not available	-5 to +120F (-15 to +50C)
Control Voltage	Information not available	24V ac	24V ac
Maximum Cable Length	Information not available	Information not available	1,000ft (300m)

PHYSICAL DATA

Size H	9.9in (25cm)	10.5in (27cm)	15.5in (39cm)
W	6.9in (16.5cm)	7.4in (19cm)	9in (23cm)
L	7.9in (20cm)	9.1in (23cm)	5.9in (15cm)
Weight	Information not available	Information not available	22lb (9kg)
Power	Information not available	Information not available	24V ac, 55W

COST DATA

Price	Information not available	Information not available	\$449, \$515, \$577
--------------	---------------------------	---------------------------	---------------------

NOTES

V360 APT and V366 APT
have Autoscan; V366
Silent Motor Drive

INSTALLATIONS

VIDEO CAMERA POSITIONING EQUIPMENT

<i>Manufacturer</i>	RCA Corp. New Holland Ave. Lancaster, PA 17604 (800) 233-0421	RCA Corp. New Holland Ave. Lancaster, PA 17604 (800) 233-0421	RCA Corp. New Holland Ave. Lancaster, PA 17604 (800) 233-0421
<i>Model</i>	V352 PT, V353 APTV	V300 PT, V330 APT	V350 PTV, V355 APTV
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Maximum Load	80lb (36kg)	35lb (16kg)	35lb (16kg)
Mounting of Base	6x5in (15x12.5cm) Plate	6x5in (15x12.5cm) Plate	6x5in (15x12.5cm) Plate
Mounting of Camera	Table	Table	Table
Movement — Horizontal	0 to 350 degrees	0 to 355 degrees	0 to 355 degrees
— Vertical	-90 to +90 degrees	-90 to +90 degrees	-90 to +90 degrees
Remote Controls	Remote	Remote	Remote
Continuous Controls	Variable speed	See notes	See notes
Indoor or Outdoor	Outdoor	Outdoor	Outdoor
Temperature	-20 to 120F (-30 to +50C)	-60 to 170F (-50 to +75C)	-20 to 170F (-50 to +75C)
Control Voltage	24V ac	24V ac	24V ac
Maximum Cable Length	240ft (72m)	1,000ft (300m)	1,000ft (300m)

PHYSICAL DATA

Size H	16.5in (42cm)	13.9in (35cm)	13.9in (35cm)
W	10.8in (27cm)	10.8in (27cm)	10.8in (27cm)
L	6.5in (16.5cm)	6.5in (16.5cm)	6.5in (16.5cm)
Weight	42lb (19kg)	37lb (17kg)	37lb (17kg)
Power	24V ac, 180W	24V ac, 90W	24V ac, 90W

COST DATA

Price	\$1,434	\$734	\$1,072
	1,505	800	1,134

NOTES

V352 PT standard unit	V330 PT standard unit	V350 PTV has variable speed; V355 APTV has variable speed and Autoscan
V353 APTV has Autoscan	V330 APT has Autoscan	

INSTALLATIONS

VIDEO CAMERA POSITIONING EQUIPMENT

<i>Manufacturer</i>	RCA Corp. New Holland Ave. Lancaster, PA 17604 (800) 233-0421	Vicon Industries, Inc. 130 Central Ave. Farmingdale, NY 11735 (516) 293-2200	Vicon Industries, Inc. 130 Central Ave. Farmingdale, NY 11735 (516) 293-2200
<i>Model</i>	V380 PTX, V390 APT	V340 PT, V360 APT, V366 APT	V300 PT, V330 APT
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Maximum Load	80lb (36kg)	20lb (9kg)	35lb (16kg)
Mounting of Base	6x5in (15x12.5cm) Plate	5x4in (12.5x10cm) Plate	6x5in (15x12.5cm) Plate
Mounting of Camera	Table	Table	Table
Movement — Horizontal	0 to 350 degrees	0 to 350 degrees	0 to 355 degrees
— Vertical	-90 to +90 degrees	-90 to +90 degrees	-90 to +90 degrees
Remote Controls	Remote	Remote	Remote
Continuous Controls	See notes	See notes	See notes
Indoor or Outdoor	Outdoor	Indoor	Outdoor
Temperature	-60 to +170F (-50 to +75C)	-5 to +120F (-15 to +50C)	-60 to +170F (-50 to +75C)
Control Voltage	Information not available	24V ac	24V ac
Maximum Cable Length	6,400ft (2,000m)	1,000ft (300m)	1,000ft (300m)

PHYSICAL DATA

Size H	14.4in (37cm) V380PT 13.9in (35cm) V390APT	15.5in (39cm)	13.9in (35cm)
W	10.8in (27cm)	9.0in (23cm)	10.8in (27cm)
L	6.5in (16.5cm)	5.9in (15cm)	6.5in (16.5cm)
Weight	47lb (21kg) V380 PT 40lb (19kg) V390 APT	22lb (10kg)	37lb (17kg)
Power	115V ac, 70W	24V ac, 55W	24V ac, 90W

COST DATA

Price	\$1,200, \$1,275	\$449, \$515, \$577	\$734, \$800
--------------	------------------	---------------------	--------------

NOTES

V390 has Autoscan; V380 PTX Explosion- proof	V340 PT standard unit V360 APT and V366 APT have Autoscan; V366 silent motor drive	V300 PT standard unit V330 APT has Autoscan
--	---	--

INSTALLATIONS

VIDEO CAMERA POSITIONING EQUIPMENT

Manufacturer Vicon Industries, Inc.
130 Central Ave.
Farmingdale, NY 11735
(516) 293-2200

Model V380 PTX, V390 APT

Evaluation Guide Procedure IV-2.A NRC Identification No.

PERFORMANCE DATA

Maximum Load 80lb (36kg)
Mounting of Base 6x5in (15x12.5cm)
Plate
Mounting of Camera Table
Movement --- Horizontal 0 to 350 degrees
--- Vertical -90 to +90 degrees
Remote Controls Remote
Continuous Controls See notes
Indoor or Outdoor Outdoor
Temperature -60 to +170F
(-50 to +75C)
Control Voltage Information not available
Maximum Cable Length 6,400ft (2,000m)

PHYSICAL DATA

Size H V380PTX: 14.4in (37m),
V390 APT: 13.9in (35cm);
W 10.8in (27cm)
L 6.5in (16.5cm)
Weight V380 PTX: 47lb (21kg)
V390 APT: 40lb (9kg)
Power 115V ac, 70W

COST DATA

Price \$1,200, \$1,275

NOTES

V390 APT has Autoscan;
V380 PTX explosion-proof

INSTALLATIONS

VIDEO MONITORS

Television monitors convert a video signal into a visible picture for observation. The central component is a cathode ray tube (CRT) in which a high-velocity electron beam strikes a phosphor, causing it to emit light.

The electron beam is deflected by an electromagnetic coil to form a raster pattern of 525 horizontal lines. The scan starts at the upper-left-hand corner of the display. The intensity of the electron beam is modulated while the beam is scanning, causing the phosphor to radiate according to the intensity of the modulation. The raster scan is repeated 60 times each second (60 fields), one field scanning the odd-numbered lines of the raster and the following field scanning the even numbered scan lines. In this way the total scan is repeated 30 times (frames) per second. This scan format is called 2:1 interlaced.

Synchronization (sync) pulses contained within the video signal provide proper timing, which is essential to stabilization of the picture. Only if the raster scan lines correspond directly to those from the video camera can a usable picture be displayed on the monitor; small departures from proper timing cause noticeable distortions on the visual display.

Electronic circuits provide the proper voltages for operation of the cathode ray display tube, signal amplification, signal synchronization and controls. The required video signal input is specified either for the composite video signal, which includes video information and sync pulses, or for the non-composite signal, which refers to the video information alone. The voltages always are measured as the differ-

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	3	a	0	1

736-206

ences between the highest positive and negative signals -- the peak-to-peak voltage. (The abbreviation used is usually ppc for the composite signal.)

Most video monitors are equipped with their own timing (signal) circuits, which lock on to the timing signals in the composite video signal. Some manufacturers also provide external synchronization options; in this case the monitors can be driven by external timing devices, if desired.

Controls for operation of television monitors are basically the same as on a home television set. Contrast and brightness control knobs are usually mounted on the front for easy access, but some monitors have special lockable compartments for these controls. In addition there are control knobs for vertical and horizontal hold -- adjustments to the timing circuits to provide a proper lock onto vertical and horizontal timing pulses, thus preventing the display from shifting and rolling. Usually on the rear panel or inside the monitor cover are controls to adjust the height and width of the picture as it is displayed on the monitor, and to change the electronic focus of the electron scan beam to obtain a sharper picture. The acceleration voltage of the electron beam, measured in kilovolts (1000 volts), is an indicator of the maximum display brightness: the higher the voltage the brighter the picture.

A monitor's resolution is a measure of its capability to display fine details. Usually only the resolution for the horizontal direction is given. The basic unit is the TV line. If the resolution is 550 TV lines, 550 alternating black and white dots can be resolved across the monitor screen along a section of a horizontal scan line whose length is equal to the picture height. The resolution in the vertical direction is approximately 0.7 times the number of scan lines. This means that on a monitor with 525 scan lines, a series of 350 alternating black and white dots arranged in a vertical line will be separated. It is important to note that the horizontal

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	3	a	0	2

736 207

lution given in TV lines per picture height is independent of the number of scan lines in the raster, in contrast to the vertical resolution which is strongly dependent on the raster spacing. In some cases the term "active scan lines" is used, denoting the scan lines which can actually be seen on the display. This number is about 10% less than the number of scan lines in the raster (525). Fewer scan lines are displayed simply for convenience; the edges of the picture are cut off to eliminate any frayed edges. Monitors provide for underscan (display of the raster at a smaller than normal size). This mode of operation is used to check proper adjustment of camera and monitors.

Linearity on a monitor specifies the tolerances allowed for horizontal and vertical displacement of parts of the picture with respect to other parts. The values given for linearity are the difference between the actual position of a given point on the display and the position this same point would occupy on an ideal display system.

Monitors are manufactured either for desktop operation or rack mounting. In some cases manufacturers provide twin or triple mounts, allowing monitors to be placed side by side for easier observation.

Performance limitations, vulnerability and the resistance to electromagnetic interference of TV monitors has to be considered in the context of the whole closed circuit television system. The cameras, camera control units, signal transfer systems, switching devices and monitors form a chain; a malfunction in any link will impede the system to a point where the system ceases to serve its purpose.

Electromagnetic interference can cause severe problems. Since the signal transmission lines can be several thousand feet long, they have to be carefully shielded and kept away from power lines

to avoid picking up stray fields which can cause severe distortions of the TV picture even if the monitor is adjusted correctly. For this reason the proper routing of TV signal lines and the placement of switch boxes is not trivial. A careful analysis of the whole TV system layout is necessary to determine actual or possible trouble spots prior to system installation.

Circuits are available on some units that automatically detect loss of video signal, loss of sync and tampering with TV signal transmission lines. If these are provided, the resistance to spoofing and internal sabotage is high.

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	3	a	0	4

VIDEO MONITORS

<i>Manufacturer</i>	DAGE-MTI, Inc. 208 Wabash St. Michigan City, IN 46360 (219) 872-5514	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433
<i>Model</i>	DAGE 5"	MV-5	MV-5DC
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Video Input Voltage	0.5 to 2.0V	1.4V Composite	1.4V Composite
Video Input Imp.	75 ohm	75 ohm	75 ohm
Sync Requirement	External/Internal	Internal	Internal
Sync Voltage	Information not available	Sync Negative	Sync Negative
Controls External	Contrast, Brightness, Hold, Width	Hold, Contrast, Brightness	Hold, Contrast, Brightness
Rear or Internal	Focus, Linearity, Height	Focus, Linearity, Height	Focus, Linearity Height
Highlight Brightness	Information not available	Information not available	Information not available
Acc. Voltage	9kV	Information not available	Information not available
Resolution	550	650	650
Linearity	1% vertical; 3% horizontal	2%	2%
Temperature	68 to 110F (20 to 45C)	Information not available	120F (50C)

PHYSICAL DATA

Size H	7in (18cm)	6.3in (16cm)	6.3in (16cm)
W	6.4in (16cm)	5.9in (15cm)	5.9in (15cm)
D	12.5in (32cm)	8.9in (22cm)	8.9in (22cm)
Weight	13lb (5.8kg)	9lb (4kg)	9lb (4kg)
Input Voltage	105 to 130V ac	100 to 117V ac	12 to 14V dc
Input Power	26W	20W	14W
Mounting	Desk or rack	Desk or rack	Desk or rack
Display Tube	5in (12.7cm) rectangular	5in (12.7cm) 140 FB4	5in (12.7cm) 140 FB4

COST DATA

Price	Information not available	\$347.50	\$347.50
--------------	---------------------------	----------	----------

NOTES

MV-5-RM: three MV-5 monitors mounted in single 19in rack	DC Version of MV-5
--	--------------------

INSTALLATIONS

VIDEO MONITORS

Manufacturer	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433	Panasonic Co. One Panasonic Way Secaucus, NJ 07094 (201) 348-7000	Panasonic Co. One Panasonic Way Secaucus, NJ 07094 (201) 348-7000
Model	MV-5EX	WV-760	WV-763
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Video Input Voltage	1.4V Composite	0.5 to 2.5V Composite	0.5 to 2.5V Composite
Video input Imp.	75 ohm	75 ohm	75 ohm
Sync Requirement	External	External	External
Sync Voltage	Sync Negative	2.0 to 5.0V	2.0 to 5.0V
Controls External	Hold, Contrast, Brightness	Hold, Contrast, Brightness	Hold, Contrast, Brightness
Rear or Internal	Focus, Linearity, Height	None	Information not available
Highlight Brightness	Information not available	Information not available	Information not available
Acc. Voltage	Information not available	7kV	7kV
Resolution	650	600	600
Linearity	2%	2%	2%
Temperature	Up to 120F (50C)	- 10 to +120F (- 23 to +50C)	- 10 to +120F (- 23 to +50C)

PHYSICAL DATA

Size H	6.3in (16cm)	7.2in (18cm)	7.0in (18cm)
W	5.9in (15cm)	5.9in (15cm)	19in (48cm)
D	8.9in (22cm)	11.2in (29cm)	11.5in (30cm)
Weight	9lb (4kg)	10.2lb (4.6kg)	36.7lb (16.5kg)
Input Voltage	12 to 14V dc	120V ac	120V ac
Input Power	14W	27W	81W
Mounting	Desk or rack	Desk	Rack
Display Tube	5in (12.7cm) 140 FB4	5in (12.7cm)	5in (12.7cm)

COST DATA

Price	\$368.50	\$250	\$750
--------------	----------	-------	-------

NOTES

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. MV-5 EX-RM: three MV-5EX mounted in single 19in rack 2. External sync version of MV-5DC | Rack-mount version, three units in one rack |
|---|---|

INSTALLATIONS

VIDEO MONITORS

Manufacturer RCA Corp.
New Holland Ave.
Lancaster, PA 17604
(800) 233-0421

Model TC1206/3

Evaluation Guide Procedure IV-2.A NRC Identification No.

PERFORMANCE DATA

Video Input Voltage 0.5 to 2.0V
Video Input Imp. 75 ohm
Sync Requirement Information not available
Sync Voltage Negative
Controls External Brightness, Contrast,
Hold
Rear or Internal Focus, Width
Highlight Brightness Information not available
Acc. Voltage 10kV
Resolution 600
Linearity 3%
Temperature Information not available

PHYSICAL DATA

Size H 7in (18cm)
W 17.3in (45cm)
D 10.3in (26cm)
Weight 26lb (12kg)
Input Voltage 120V ac
Input Power 60W
Mounting Rack
Display Tube 6in (15.2cm)

COST DATA

Price \$690

NOTES

Three units, rack-mounted

INSTALLATIONS

VIDEO MONITORS

Manufacturer Sony Corp. of
America
9 West 57th St.
New York, NY 10019
(212) 371-5800

Model CVM-960

Evaluation Guide Procedure IV-2.A NRC Identification No.

PERFORMANCE DATA

Video Input Voltage 1.0Vpp Composite
Video Input Imp. 75 ohm
Sync Requirement All EIA
Sync Voltage Negative
Controls External Channel select, Audio
control
Rear or Internal Brightness, Contrast
Hold
Highlight Brightness Information not available
Acc. Voltage Information not available
Resolution Information not available
Linearity Information not available
Temperature Information not available

PHYSICAL DATA

Size H 11.3in (29cm)
W 10.0in (25cm)
D 11.0in (28cm)
Weight 12.5lb (5.6kg)
Input Voltage 120V ac or 12V dc
Input Power 23W ac/12W dc
Mounting Information not available
Display Tube 8in (20.3cm)

COST DATA

Price Information not available

NOTES

Also UHF/VHF TV receiver

INSTALLATIONS

DATE
31 December 1976

CATALOG VOLUME
IV

SECTION
3

CATEGORY
a

DATA SHEET
3

PAGE
1

VIDEO MONITORS

<i>Manufacturer</i>	Electrohome, Ltd. 809 Wellington St. No. Kitchner, Ont., Canada N2G 4J6 (519) 744-7111	Electrohome, Ltd. 809 Wellington St. No. Kitchner, Ont., Canada N2G 4J6 (519) 744-7111	Electrohome, Ltd. 809 Wellington St. No. Kitchner, Ont., Canada N2G 4J6 (519) 744-7111
<i>Model</i>	EVM 910	EVM 910 R	EVM 910 R2
Evaluation Guide Procedure IV-2.A	NRC Identification No.		

PERFORMANCE DATA

Video Input Voltage	0.5V to 2.0V	0.5V to 2.0V	0.5V to 2.0V
Video Input Imp.	75 ohm	75 ohm	75 ohm
Sync Requirement	Information not available	Information not available	Information not available
Sync Voltage	Information not available	Information not available	Information not available
Controls External	Brightness, Focus, Hold, Vertical Size	Brightness, Focus, Hold, Vertical Size	Brightness, Focus, Hold, Vertical Size
Rear or Internal	Various Gain and Sync	Various Gain and Sync	Various Gain and Sync
Highlight Brightness	55fc (590 lm/m ²)	55fc (590 lm/m ²)	55fc (590 lm/m ²)
Acc. Voltage	10.5kV	10.5kV	10.5kV
Resolution	800	800	800
Linearity	2%	2%	2%
Temperature	32 to 120F (0 to 50C)	32 to 120F (0 to 50C)	32 to 120F (0 to 50C)

PHYSICAL DATA

Size H	9.5in (24cm)	8.75in (22cm)	8.75in (22cm)
W	9.0in (23cm)	9.0in (23cm)	9.0in (23cm)
D	12.3in (31cm)	12.3in (31cm)	12.3in (31cm)
Weight	21lb (9.5kg)	38lb (17kg)	49lb (22kg)
Input Voltage	90 to 132V ac	90 to 132V ac	90 to 132V ac
Input Power	60W	60W	60W
Mounting	Desk	Rack	Twin Rack
Display Tube	9in (23cm) CRT	9in (23cm) CRT	9in (23cm) CRT

COST DATA

Price	\$289	\$319	\$589
--------------	-------	-------	-------

NOTES

Rack version of
EVM 910

Double monitor rack
version of EVM 910

INSTALLATIONS

VIDEO MONITORS

Manufacturer	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433	Hitachi Denshi America, Ltd. 58-25 Brooklyn- Queen's Expwy. Woodside, NY 11377 (212) 898-1261
Model	MV 98	MV 95	VM 905
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Video Input Voltage	0.3 to 2.0V	0.3 to 2.0V	1.0Vpp
Video Input Imp.	75 ohm	75 ohm	75 ohm
Sync Requirement	Information not available	Information not available	Information not available
Sync Voltage	Complies with RS 375A	Complies with RS 375A	Sync Negative
Controls External	Brightness, Contrast	Brightness, Contrast	Hold, Brightness, Contrast
Rear or Internal Highlight Brightness	Information not available	Information not available	Information not available
Acc. Voltage	Information not available	Information not available	Information not available
Resolution	800	800	10kV 700 horizontal/ 350 vertical
Linearity	Information not available	Information not available	1%
Temperature	32 to 120F (0 to 50C)	32 to 120F (0 to 50C)	15 to 120F (-10 to +50C)

PHYSICAL DATA

Size H	8.5in (22cm)	8.5in (22cm)	8.7in (22cm)
W	8.7in (22cm)	8.7in (22cm)	8.7in (22cm)
D	9.3in (23.5cm)	9.3in (23.5cm)	9.3in (23.5cm)
Weight	13.4lb (6kg)	13.4lb (6kg)	13.2lb (5.9kg)
Input Voltage	110V ac	110V ac	117V ac
Input Power	Information not available	Information not available	25W
Mounting	Desk	Desk	Desk
Display Tube	9in (23cm) CRT	9in (23cm) CRT	9in (23cm) CRT, 230 AYB4

COST DATA

Price	\$347.50	\$347.50	\$222.50
--------------	----------	----------	----------

NOTES

Replaces Models: MV 9, MV 9A, MV 9AEX, MV 900

Similar to MV 98, but built to U.S. Post. Spec. USPS-M-576

INSTALLATIONS

VIDEO MONITORS

<i>Manufacturer</i>	Hitachi Denshi America, Ltd. 58-25 Brooklyn-Queen's Expwy. Woodside, NY 11377 (212) 898-1261	Hitachi Denshi America, Ltd. 58-25 Brooklyn-Queen's Expwy. Woodside, NY 11377 (212) 898-1261	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490
<i>Model</i>	VM905/2RM	VM909	VM9A

Evaluation Guide Procedure IV-2.A NRC Identification No.

PERFORMANCE DATA

Video Input Voltage	1.0Vpp	1.0Vpp	1.0Vpp Composite
Video Input Imp.	75 ohm	75 ohm	Information not available
Sync Requirement	Information not available	Information not available	EIA, Internal
Sync Voltage	Sync Negative	Line Lock Sync Negative	Negative
Controls External	Hold, Brightness, Contrast	Hold, Brightness, Contrast	Hold, Brightness, Contrast
Internal	Information not available	Information not available	Information not available
Highlight Brightness	Information not available	Information not available	Information not available
A.c. Voltage	10kV	10kV	Information not available
Resolution	700 horizontal/ 350 vertical	500 horizontal/ 300 vertical	550
Linearity	1%	3%	Information not available
Temperature	Information not available	20 to 120F (-5 to +50C)	Information not available

PHYSICAL DATA

Size H	8.7in (22cm)	8.7in (22cm)	9.3in (23.5cm)
W	8.7in (22cm)	8.7in (22cm)	8.7in (22cm)
D	9.3in (23.5cm)	9.3in (23.5cm)	9.8in (25cm)
Weight	13.2lb (5.9kg)	12.1lb (5.5kg)	13.8lb (6.2kg)
Input Voltage	117V ac	117V ac	117V ac or 12V dc
Input Power	25W	22W	25W
Mounting	Rack	Desk	Desk
Display Tube	9in (23cm) CRT, 230 AYB4	9in (23cm) CRT, 230 AYB4	9in (23cm) CRT, 240 DB4

COST DATA

Price	\$495	\$195	\$200
--------------	-------	-------	-------

NOTES

Same as VM905 but two Adaptors available for
monitors in rack mount rack mount

INSTALLATIONS

VIDEO MONITORS

<i>Manufacturer</i>	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490	Panasonic Co. One Panasonic Way Secaucus, NJ 07094 (201) 348-7000
<i>Model</i>	VM9A-1RM	VM9A-2RM	WV-900
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Video Input Voltage	1.0Vpp Composite	1.0Vpp Composite
Video Input Imp.	information not available	Information not available
Sync Requirement	EIA, Internal	EIA, Internal
Sync Voltage	Negative	Negative
Controls External	Hold, Brightness, Contrast	Hold, Brightness, Contrast
Internal	Information not available	Information not available
Highlight Brightness	Information not available	Information not available
Acc. Voltage	Information not available	Information not available
Resolution	550	550
Linearity	Information not available	Information not available
Temperature	Information not available	Information not available

PHYSICAL DATA

Size H	9.3in (23.5cm)	9.3in (23.5cm)
W	8.7in (22cm)	8.7in (22cm)
D	9.8in (25cm)	9.8in (25cm)
Weight	13.8lb (6.2kg)	13.8lb (6.2kg)
Input Voltage	117V ac or 12V dc	117V ac or 12V dc
Input Power	25W	25W
Mounting	Rack	Rack
Display Tube	9in (23cm) CRT, 240 DB4	9in (23cm) CRT, 240 DB4

COST DATA

Price	\$280	\$479	\$300
--------------	-------	-------	-------

NOTES

Rack mount version of VM9A.	Double monitor rack mount version of VM9A.
-----------------------------	--

INSTALLATIONS

VIDEO MONITORS

<i>Manufacturer</i>	Panasonic Co. One Panasonic Way Secaucus, NJ 07094 (201) 348-7000	Panasonic Co. One Panasonic Way Secaucus, NJ 07094 (201) 348-7000	Panasonic Co. One Panasonic Way Secaucus, NJ 07094 (201) 348-7000
<i>Model</i>	WV-5300	WV-5301	WV-5302
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Video Input Voltage	0.5 to 2.0V	0.5 to 2.0V	0.5 to 2.0V
Video Input Imp.	75 ohm	75 ohm	75 ohm
Sync Requirement	Information not available	Information not available	Information not available
Sync Voltage	2.0 to 5.0Vpp, External	2.0 to 5.0Vpp, External	2.0 to 5.0Vpp, External
Controls External	Hold, Brightness, Contrast	Hold, Brightness, Contrast	Hold, Brightness, Contrast
Internal	Sync Select, Video termination	Sync Select, Video termination	Sync Select, Video termination
Highlight Brightness	Information not available	Information not available	Information not available
Acc. Voltage	10kV	10kV	10kV
Resolution	700	700	700
Linearity	2 percent	2 percent	2 percent
Temperature	-10 to +120F (-23 to +50C)	-10 to +120F (-23 to +50C)	-10 to +120F (-23 to +50C)

PHYSICAL DATA

Size H	8.8in (22cm)	8.8in (22cm)	8.8in (22cm)
W	9.0in (23cm)	19.0in (49cm)	19.0in (49cm)
D	10.3in (26cm)	10.75in (27cm)	10.75in (27cm)
Weight	13.6lb (6.7kg)	18.7lb (8.4kg)	30lb (13.5kg)
Input Voltage	120V ac	120V ac	120V ac
Input Power	30W	30W	60W
Mounting	Desk	Rack	Rack
Display Tube	9in (23cm) CRT	9in (23cm) CRT	9in (23cm) CRT

COST DATA

Price	\$250	\$280	\$495
--------------	-------	-------	-------

NOTES

Humidity 90 percent	1. Rack mount version of WV 5300, one unit in rack. 2. Humidity 90 percent	Rack mount version of WV 5300, 2 units in rack.
---------------------	---	---

INSTALLATION'S

VIDEO MONITORS

Manufacturer	Panasonic Co. One Panasonic Way Secaucus, NJ 07094 (201) 348-7000	Panasonic Co. One Panasonic Way Secaucus, NJ 07094 (201) 348-7000	Panasonic Co. One Panasonic Way Secaucus, NJ 07094 (201) 348-7000
Model	WV-5310	WV-5311	WV-5312
Evaluation Guide Procedure IV-2.A		EPC Identification No.	

PERFORMANCE DATA

Video Input Voltage	0.5 to 2.0Vpp Composite	0.5 to 2.0Vpp Composite	0.5 to 2.0Vpp Composite
Video Input Imp.	75 ohm	75 ohm	75 ohm
Sync Requirement	Ext./Int.	Ext./Int.	Ext./Int.
Sync Voltage	2.0 to 5.0V Composite	2.0 to 5.0V Composite	2.0 to 5.0V Composite
Controls External	Hold, Brightness, Contrast	Hold, Brightness, Contrast	Hold, Brightness, Contrast
Rear or Internal	Sync Select, Video termination	Sync Select, Video termination	Sync Select, Video termination
Highlight Brightness	Information not available	Information not available	Information not available
Acc. Voltage	10kV	10kV	10kV
Resolution	700	700	700
Linearity	2 percent	2 percent	2 percent
Temperature	-10 to +120F (-10 to +50C)	-10 to +120F (-10 to +50C)	-10 to +120F (-10 to +50C)

PHYSICAL DATA

Size H	8.8in (22cm)	8.8in (22cm)	8.8in (22cm)
W	9.0in (23cm)	19.0in (49cm)	19.0in (49cm)
D	10.3in (26cm)	10.8in (27cm)	10.8in (27cm)
Weight	13.6lb (6.1kg)	18.7lb (8.4kg)	30lb (13.5kg)
Input Voltage	120V ac	120V ac	120V ac
Input Power	38W	32W	64W
Mounting	Desk	Rack	Rack
Display Tube	9in (23cm) CRT	9in (23cm) CRT	9in (23cm) CRT

COST DATA

Price	\$360	\$390	\$690
--------------	-------	-------	-------

NOTES

Humidity 90 percent	1. Rack mount version of WV 5310, single unit. 2. Humidity 90 percent.	1. Rack mount version of WV 5310, double unit. 2. Humidity 90 percent.
---------------------	---	---

INSTALLATIONS

VIDEO MONITORS

<i>Manufacturer</i>	Panasonic Co. One Panasonic Way Secaucus, NJ 07094 (201) 348-7000	RCA Corp. New Holland Ave Lancaster, PA 17604 (800) 233-0421	RCA Corp. New Holland Ave Lancaster, PA 17604 (800) 233-0421
<i>Model</i>	TR-920M	TC 1209	TC 1209/02
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Video Input Voltage	0.5 to 2.0V Composite	0.5 to 2.0V Composite	0.5 to 2.0V Composite
Video Input Imp.	Information not available	75 ohm	75 ohm
Sync Requirements	Information not available	Information not available	Information not available
Sync Voltage	Information not available	Negative	Negative
Controls External	Information not available	Brightness, Hold, Contrast, Height, Focus, Vertical Linearity	Brightness, Hold, Contrast, Height, Focus, Vertical Linearity
Rear or Internal	Information not available	Input, impedance, select	Input, impedance, select
Highlight Brightness	Information not available	Information not available	Information not available
Acc. Voltage	Information not available	12kV	12kV
Resolution	550	640	640
Linearity	Information not available	2 percent	2 percent
Temperature	Information not available	Information not available	Information not available

PHYSICAL DATA

Size H	9.7in (25cm)	8.8in (22cm)	9.2in (23cm)
W	9.7in (25cm)	8.7in (22cm)	19.0in (49cm)
D	9.2in (23cm)	10.6in (27cm)	10.6in (27cm)
Weight	13lb (5.9kg)	14lb (6.3kg)	15lb (6.7kg)
Input Voltage	117V ac	120V ac	120V ac
Input Power	23W	27W	27W
Mounting	Desk	Desk	Rack
Display Tube	9in (23cm) CRT	9in (23cm) CRT	9in (23cm) CRT

COST DATA

Price	\$170	\$235	\$260
--------------	-------	-------	-------

NOTES

Model M has UHF bridging;
Model V has standard 8 pin conn. for use with video tape.

Rack mount double unit, left pan. blank

INSTALLATIONS

VIDEO MONITORS

<i>Manufacturer</i>	RCA Corp. New Holland Ave. Lancaster, PA 17604 (800) 233-0421	RCA Corp. New Holland Ave. Lancaster, PA 17604 (800) 233-0421	Sanyo Electric, Inc. 1200 W. Artesia Blvd. Compton, CA 90220 (213) 537-5830
<i>Model</i>	TC 1209/03	TC1209/04	VM-4092
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Video Input Voltage	0.5 to 2.0V	0.5 to 2.0V	1.0Vpp Composite
Video Input Imp.	75 ohm	75 ohm	75 ohm
Sync Requirement	Information not available	Information not available	EIA 375A
Sync Voltage	Negative	Negative	Internal Negative
Controls External	Brightness, Hold, Contrast, Height, Focus, Vertical Linearity	Brightness, Hold, Contrast, Height, Vertical Linearity, Focus	Brightness, Hold, Contrast
Clear or Internal Highlight Brightness	Input impedance select Information not available	Input impedance select Information not available	Input impedance select Information not available
Acc. Voltage	12kV	12kV	Information not available
Resolution	640	640	600
Linearity	2 percent	2 percent	Information not available
Temperature	Information not available	Information not available	Information not available

PHYSICAL DATA

Size H	9.2in (23cm)	9.2in (23cm)	9.2in (23cm)
W	19.0in (49cm)	19.0in (49cm)	8.7in (22cm)
D	10.6in (27cm)	10.6in (27cm)	9.8in (25cm)
Weight	15lb (6.7kg)	30lb (13.5kg)	13.5lb (6.1kg)
Input Voltage	120V ac	120V ac	117V ac
Input Power	22W	54W	25W
Mounting	Rack	Rack	Desk
Display Tube	9in (23cm) CRT	9in (23cm) CRT	9in (23cm) CRT, 240 D14

COST DATA

Price	\$260	\$485	\$205
--------------	-------	-------	-------

NOTES

Rack mount double unit, right pan. blank.	Rack mount double unit.	Rack mount available; RMK 4092 for two units.
---	-------------------------	---

INSTALLATIONS

VIDEO MONITORS

<i>Manufacturer</i>	Sony Corp. of America 9 West 57th St. New York, NY 10019 (212) 371-5800	Sony Corp. of America 9 West 57th St. New York, NY 10019 (212) 371-5800	M.M.S., Inc. 3665 W. 240th St. Torrance, CA 90505 (213) 772-8411
<i>Model</i>	PVM 900	PVM 900A	VM9A
Evaluation Guide Procedure IV-2 A		NRC Identification No.	

PERFORMANCE DATA

Video Input Voltage	0.5 to 1.8V non-composite; 1.0Vpp composite	0.5 to 1.8V non-composite; 1.0Vpp composite	1.0Vpp Composite
Video Input Imp.	75 ohm	75 ohm	information not available
Sync Requirement	Information not available	Information not available	EIA, Internal
Sync Voltage	Information not available	Information not available	Negative
Controls External	Information not available	Information not available	Hold, Brightness, Contrast
Rear or Internal Highlight Brightness	Information not available	Information not available	Information not available
Acc. Voltage	Information not available	Information not available	Information not available
Resolution	Greater than 500	Greater than 500	Information not available
Linearity	Information not available	Information not available	550
Temperature	Information not available	Information not available	Information not available

PHYSICAL DATA

Size H	8.5in (22cm)	9.5in (24cm)	9.3in (23.5cm)
W	18.7in (47cm)	18.7in (50cm)	8.7in (22cm)
D	10.3in (26cm)	21.9in (56cm)	9.8in (25cm)
Weight	55lb (25kg)	65lb (29kg)	13.8lb (6.2kg)
Input Voltage	120V ac	120V ac	117V ac or 12V dc
Input Power	24W	24W	25W
Mounting	Rack	Desk	Desk
Display Tube	9in (23cm) CRT	9in (23cm) CRT	9in (23cm) CRT, 240 DB4

COST DATA

Price	Information not available	Information not available	\$149
--------------	---------------------------	---------------------------	-------

NOTES

Dual unit; independent monitors	Dual unit; independent monitors
---------------------------------	---------------------------------

INSTALLATIONS

VIDEO MONITORS

Manufacturer Gyrr Products
1341 S. Claudina St.
Anaheim, CA 92805
(714) 635-9100

Model G99

Evaluation Guide Procedure IV-2.A NRC Identification No.

PERFORMANCE DATA

Video Input Voltage 1.0Vpp Composite
Video Input Imp. 75 ohm
Sync Requirement Information not available
Sync Voltage Information not available
Controls External Hold, Brightness, Contrast
Rear or Internal Information not available
Highlight Brightness Information not available
Acc. Voltage Information not available
Resolution 550
Linearity Information not available
Temperature Information not available

PHYSICAL DATA

Size: H 10.7in (27cm)
W 9.5in (24cm)
D 9.3in (24cm)
Weight 12.6lb (5.6kg)
Input Voltage 117V ac or 12V dc
Input Power 26W
Mounting Desk
Display Tube 9in (23cm) CRT, 230 ADBA

COST DATA

Price Information not available

NOTES

INSTALLATIONS

VIDEO MONITORS

<i>Manufacturer</i>	Electrohome, Ltd. 809 Wellington St. No. Kitchner, Ont., Canada N2G 4J6 (519) 744-7111	Electrohome, Ltd. 809 Wellington St. No. Kitchner, Ont., Canada N2G 4J6 (519) 744-7111	Sony Corp. of America 9 West St. 57 Str. New York, NY 10019 (212) 371-5800
<i>Model</i>	EVM 1110	EVM 1110 R	CVM-115
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Video Input Voltage	0.5 to 2.0V	0.5 to 2.0V	1.0Vpp Composite
Video Input Imp.	75 ohm	75 ohm	75 ohm
Sync Requirement	Information not available	Information not available	Information not available
Sync Voltage	Information not available	Information not available	Information not available
Controls External	Brightness, Focus, Hold, Vertical Size	Brightness, Focus, Hold, Vertical Size	Channel Selection, Audio
Rear or Internal	Various Gain and Sync Controls	Various Gain and Sync Controls	Various Gain and Sync Controls
Highlight Brightness	55fc (590lm/m ²)	55fc (590lm/m ²)	information not available
Acc. Voltage	13.5kV	13.5kV	Information not available
Resolution	800	800	Information not available
Linearity	2 percent	2 percent	Information not available
Temperature	-10 to +130F (-23 to +55C)	-10 to +130F (-23 to +55C)	Information not available

PHYSICAL DATA

Size H	10.75in (27cm)	10.5in (27cm)	12.5in (32cm)
W	11in (28cm)	11in (28cm)	11.7in (30cm)
D	13.2in (34cm)	13.2in (34cm)	12.4in (32cm)
Weight	23lb (10.5kg)	31lb (14kg)	15.6lb (7kg)
Mounting	Desk	Rack	Desk
Input Voltage	90 to 130V ac	90 to 130V ac	120V ac or 12V dc
Input Power	60W	60W	29W
Display Tube	11in (28cm) CRT	11in (28cm) CRT	11in (28cm) CRT

COST DATA

Price	\$334	\$349	Information not available
--------------	-------	-------	---------------------------

NOTES

98 percent Humidity	98 percent Humidity	Monitor/receiver combination, loop through for 10 units, audio.
---------------------	---------------------	---

INSTALLATIONS

VIDEO MONITORS

<i>Manufacturer</i>	Hitachi Denshi America, Ltd. 58-25 Brooklyn Queen's Expwy. Woodside, NY 11377 (212) 898-1261	RCA Corp. New Holland Ave. Lancaster, PA 17604 (800) 233-0421
<i>Model</i>	VM 126	TC 1212
Evaluation Guide Procedure IV-2.A	NRC Identification No.	

PERFORMANCE DATA

Video Input Voltage	1.0V	0.5 to 2.0V
Video Input Imp.	75 ohm	75 ohm
Sync Requirement	Optional External Sync	Information not available
Sync Voltage	Sync Negative	Negative
Controls External	Brightness, Contrast, Hold	Brightness, Contrast, Hold, Height, Focus
Rear or Internal	Information not available	Impedance Switch
Highlight Brightness	Information not available	Information not available
Acc. Voltage	11kV	11kV
Resolution	700 horizontal/300 vertical	640
Linearity	2 percent	Less than 2 percent
Temperature	10 to 120F (-10 to +50C)	Information not available

PHYSICAL DATA

Size H	11.2in (28cm)	11.3in (28.7cm)
W	12.4in (32cm)	11.8in (30cm)
D	13.3in (34cm)	11.7in (30cm)
Weight	26.4lb (12kg)	20lb (9kg)
Mounting	Desk	Desk
Input Voltage	117V ac	117V ac
Input Power	37W	27W
Display Tube	310 DG B4, 12in (30.5cm) CRT	12in (30.5cm) CRT

COST DATA

Price	\$320	\$285
--------------	-------	-------

NOTES

Picture tube mask.

INSTALLATIONS

VIDEO MONITORS

Manufacturer Sanyo Electric Inc.
1200 W. Artesia Blvd.
Compton, CA 90220
(213) 537-5830

Model VM-4130
Evaluation Guide Procedure IV-2.A **NRC Identification No.**

PERFORMANCE DATA

Video Input Voltage 1.0Vpp Composite
Video Input Imp. 75 ohm
Sync Requirement EIA-375A
Sync Voltage Negative
Controls — External Contrast, Brightness, Select
Channel
Rear or Internal Information not available
Highlight Brightness Information not available
Acc. Voltage Information not available
Resolution 500
Linearity Information not available
Temperature Information not available

PHYSICAL DATA

Size H 11.5in (29cm)
W 17.3in (44cm)
D 10.8in (27cm)
Weight 20.5lb (9.2kg)
Mounting Desk
Input Voltage 117V ac
Input Power 40W
Display Tube 340ATB4, 13in (33cm) CRT

COST DATA

Price \$295

NOTES

Equipped with audio and speaker; can be used as TV receiver.

INSTALLATIONS

VIDEO MONITORS

<i>Manufacturer</i>	Electrohome, Ltd. 809 Wellington St. No. Kitchner, Ont., Canada N2G 4J6 (519) 744-7111	Electrohome, Ltd. 809 Wellington St. No. Kitchner, Ont., Canada N2G 4J6 (519) 744-7111
<i>Model</i>	EVM 1410	EVM 1410R
Evaluation Guide Procedure IV-2.A	NRC Identification No.	

PERFORMANCE DATA

Video Input Voltage	0.5 to 2.0V	0.5 to 2.0V
Video Input Imp.	75 ohm	75 ohm
Sync Requirement	Information not available	Information not available
Sync Voltage	Information not available	Information not available
Controls — External	Brightness, Focus, Hold, Vertical Size	Contrast
Rear or Internal	Various Gain and Sync Controls	Various Gain and Sync Controls
Highlight Brightness	55fc (590lm/m ²)	55fc (590lm/m ²)
Acc. Voltage	15kV	15kV
Resolution	800	800
Linearity	2 percent	2 percent
Temperature	-10 to +130F (-23 to +55C)	-10 to +130F (-23 to +55C)

PHYSICAL DATA

Size H	13 ¹ / ₈ in (33cm)	12.3in (31cm)
W	13 ³ / ₈ in (34cm)	13 ³ / ₈ in (34cm)
D	14 ¹ / ₈ in (36cm)	14 ¹ / ₈ in (36cm)
Weight	34lb (15kg)	39lb (17.5kg)
Mounting	Desk	Rack
Input Voltage	90 to 130V ac	90 to 130V ac
Input Power	60W	60W
Display Tube	14in (35.6cm)CRT	14in (35.6cm)CRT

COST DATA

Price	\$359	\$374
--------------	-------	-------

NOTES

98 percent Humidity 98 percent Humidity

INSTALLATIONS

736 227

VIDEO MONITORS

<i>Manufacturer</i>	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490	Sanyo Electric, Inc. 1200W. Artesia Blvd. Compton, CA 94043 (213) 537-5830
<i>Model</i>	VM 15	VM 15 RM	VM-4155
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Video Input Voltage	1.0Vpp Composite	1.0Vpp Composite	1.0Vpp Composite
Video Input Imp.	75 ohm	75 ohm	75 ohm
Sync Requirement	EIA Internal	EIA Internal	EIA 375A
Sync Voltage	Negative	Negative	internal Negative
Controls — External	Hold, Brightness, Contrast	Hold, Brightness, Contrast	Hold, Brightness, Contrast
Rear or Internal	Information not available	Information not available	Information not available
Highlight Brightness	Information not available	Information not available	Information not available
Acc. Voltage	Information not available	Information not available	Information not available
Resolution	550	550	550
Linearity	Information not available	Information not available	Information not available
Temperature	Information not available	Information not available	Information not available

PHYSICAL DATA

Size H	14in (35cm)	14in (35cm)	13.9in (35cm)
W	15.3in (39cm)	15.3in (39cm)	15.4in (39cm)
D	12.2in (31cm)	12.2in (31cm)	12.2in (31cm)
Weight	31.5lb (14kg)	31.5lb (14kg)	31.3lb (14kg)
Mounting	Desk	Rack	Desk
Input Voltage	117V ac	117V ac	117V ac
Input Power	60W	60W	60W
Display Tube	15in (38cm) CRT, 400CTB4	15in (38cm) CRT, 400CTB4	15in (38cm) CRT, 400CTB4

COST DATA

Price	\$282	\$362	\$280
--------------	-------	-------	-------

NOTES

Equipped with audio inputs and speaker.

INSTALLATIONS

VIDEO MONITORS

<i>Manufacturer</i>	Sierra Scientific Corp. 2189 Leghorn St. Mountain View, CA 94043 (415) 969-9315	M.M.S., Inc. 3665 W. 240th St. Torrance, CA 90505 (213) 772-8411
<i>Model</i>	HD 1501	VM 15
Evaluation Guide Procedure IV-2.A	NRC Identification No.	

PERFORMANCE DATA

Video Input Voltage	0.3 to 2.5Vpp	1.0Vpp Composite
Video Input Imp.	75 ohm	75 ohm
Sync Requirement	All EIA, External/ Internal	EIA Internal
Sync Voltage	0.2 to 1.0V Negative	Negative
Controls — External Rear or Internal	Brightness, Contrast Vid. TCRM Sync Mode, Focus, Size	Hold, Brightness, Contrast Information not available
Highlight Brightness	Information not available	Information not available
Acc. Voltage	17kV	Information not available
Resolution	1300 to 1500	550
Linearity	1 percent	Information not available
Temperature	32 to 130F (0 to 55C)	Information not available

PHYSICAL DATA

Size H	14.3in (36cm)	14in (35cm)
W	15.5in (39cm)	15.3in (39cm)
D	21.5in (55cm)	12.2in (31cm)
Weight	66lb (30kg)	31.5lb (14kg)
Mounting	Desk	Desk
Input Voltage	90 to 260V ac	117V ac
Input Power	90W	60W
Display Tube	CRT, P4 15in (38cm)	CRT, 400CTB4

COST DATA

Price	Information not available	\$185
--------------	---------------------------	-------

NOTES

1. Sweep-fail protection,
Rack-mount option.
2. Humidity 5% to 95%.

INSTALLATIONS

VIDEO MONITORS

<i>Manufacturer</i>	Electrohome, Ltd. 809 Wellington St. No. Kitchner, Ont., Canada N2G 4J6 (519) 744-7111	Electrohome, Ltd. 809 Wellington St. No. Kitchner, Ont., Canada N2G 4J6 (519) 744-7111	GBC Closed Circuit Television Corp. 74 Fifth Ave New York, NY 10011 (212) 898-1261
<i>Model</i>	EVM 1710	EVM 1710 R	MV-17
Evaluation Guide Procedure No. IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Video Input Voltage	0.5 to 2.0Vpp	0.5 to 2.0Vpp	1.4Vpp Composite or 1.0Vpp Non-composite
Video Input Imp.	75 ohm	75 ohm	75 ohm
Sync Requirement	Information not available	Information not available	RS 375A
Sync Voltage	Information not available	Information not available	Information not available
Controls — External	Brightness, Focus, Contrast, Hold, Vertical Size	Brightness, Focus, Contrast, Hold, Vertical Size	Brightness, Contrast, Hold
Rear or Internal	Various Gain and Sync Controls	Various Gain and Sync Controls	Linearity, Focus, Termination
Highlight Brightness	55fc (590lm/m ²)	55fc (590lm/m ²)	Information not available
Acc. Voltage	15.5kV	15.5kV	Information not available
Resolution	800	800	800
Linearity	2 percent	2 percent	3 percent
Temperature	-10 to +120F (-23 to +50C)	-10 to +120F (-23 to +50C)	32 to 120F (0 to 50C)

PHYSICAL DATA

Size H	15.6in (40cm)	15.8in (40cm)	14.6in (37cm)
W	16.5in (42cm)	16.5in (42cm)	16.2in (41cm)
D	14.6in (37cm)	14.6in (37cm)	12.0in (30cm)
Weight	48lb (22kg)	40lb (18kg)	39lb (17.5kg)
Mounting	Desk	Rack	Desk
Input Voltage	90 to 130V ac	90 to 130V ac	Information not available
Input Power	60W	60W	80W
Display Tube	17in (43.2cm) CRT	17in (43.2cm) CRT	17in (43.2cm) CRT, 440 AB4

COST DATA

Price	\$379	\$394	\$405
--------------	-------	-------	-------

NOTES

Humidity 98% Humidity 98%

INSTALLATIONS

736 230

VIDEO MONITORS

Manufacturer	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433	Hitachi Denshi America, Ltd. 58-25 Brooklyn-Queen's Expwy. Woodside, NY 11377 (212) 989-1261	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490
Model	MV-17EX	VM 172	VM 17A
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Video Input Voltage	1.4Vpp Composite or 1.0Vpp Non-composite	1.0Vpp Composite	Information not available
Video Input Imp.	75 ohm	75 ohm	Information not available
Sync Requirement	RS 375A	Sync Negative	Information not available
Sync Voltage	Information not available	Information not available	Information not available
Controls — External Rear or Internal	Hold, Contrast, Brightness Linearity, Focus, Termination	Hold, Contrast, Brightness Information not available	Information not available Information not available
Highlight Brightness	Information not available	Information not available	Information not available
Acc. Voltage	Information not available	16kV	Information not available
Resolution	800	650 horizontal/350 vertical	650
Linearity	3 percent	2 percent	Information not available
Temperature	32 to 120F (0 to 50C)	32 to 105F (0 to 40C)	Information not available

PHYSICAL DATA

Size H	14.6in (37cm)	15.3in (39cm)	Information not available
W	16.2in (41cm)	16.3in (42cm)	Information not available
D	12.0in (30cm)	11.5in (29cm)	Information not available
Weight	39lb (17.5kg)	33lb (15kg)	Information not available
Mounting	Desk	Desk	Desk
Input Voltage	Information not available	117V ac	Information not available
Input Power	80W	62W	Information not available
Display Tube	17in (43.2cm) CRT, 440 AB4	17in (43.2cm) CRT, 400 AB4	17in (43.2cm) CRT

COST DATA

Price	\$423.50	\$340	\$548
--------------	----------	-------	-------

NOTES

Same as MV 17, but accepts Ext. Sync	playback	For use with VTR
---	----------	------------------

INSTALLATIONS

VIDEO MONITORS

<i>Manufacturer</i>	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490	RCA Corp New Holland Ave. Lancaster, PA 17604 (800) 233-0421
<i>Model</i>	VM 17A RM	TC 1217
Evaluation Guide Procedure No. IV-2.A		NRC Identification No.

PERFORMANCE DATA

Video Input Voltage	Information not available	0.5 to 2.0V
Video Input Imp.	Information not available	75 ohm
Sync Requirement	Information not available	Information not available
Sync Voltage	Information not available	Negative
Controls — External	Information not available	Brightness, Contrast, Hold
Rear or Internal	Information not available	Width, Linearity, Centering
Highlight Brightness	Information not available	Information not available
A.C. Voltage	Information not available	17kV
Resolution	Information not available	800
Linearity	Information not available	2 percent
Temperature	Information not available	Information not available

PHYSICAL DATA

Size H	Information not available	16.2in (41cm)
W	Information not available	16.3in (42cm)
D	Information not available	12.0in (30cm)
Weight	Information not available	32lb (14.5kg)
Mounting	Rack	Desk
Input Voltage	Information not available	120V ac
Input Power	Information not available	50W
Display Tube	17in (43.2cm) CRT	17in (43.2cm) CRT, P4

COST DATA

Price	\$647	\$330
--------------	-------	-------

NOTES

Rack version of VM 17A

INSTALLATIONS

VIDEO MONITORS

<i>Manufacturer</i>	Panasonic Co. One Panasonic Way Secaucus, NJ 07094 (201) 348-7000	Sony Corp. of America 9 West 57th St. New York, NY 10019 (212) 371-5800
<i>Model</i>	TR 195M	CVM 194
Evaluation Guide Procedure IV-2.A		NRC Identification No.

PERFORMANCE DATA

Video Input Voltage	>0.5V	1.0Vpp Composite
Video Input Imp.	75 ohm	75 ohm
Sync Requirement	Information not available	All EIA
Sync Voltage	Information not available	Negative
Controls — External	Hold, Brightness, Contrast	Information not available
Rear or Internal	None	Information not available
Highlight Brightness	Information not available	Information not available
Acc. Voltage	Information not available	Information not available
Resolution	600	Information not available
Linearity	Information not available	Information not available
Temperature	Information not available	Information not available

PHYSICAL DATA

Size H	16.3in (41cm)	19.4in (49cm)
W	22.5in (57cm)	22.4in (65cm)
D	14.5in (37cm)	14.8in (37cm)
Weight	41lb (18.5kg)	46.2lb (21kg)
Mounting	Desk	Desk
Input Voltage	120V ac	120V ac
Input Power	79W	65W
Display Tube	19in (48.3cm) CRT	19in (48.3cm) CRT

COST DATA

Price	\$280	Information not available
--------------	-------	---------------------------

NOTES

Viewing room unit	Monitor/receiver combination
-------------------	------------------------------

INSTALLATIONS

VIDEO MONITORS

Manufacturer	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433
Model	MV-20	MV-20 EX
Evaluation Guide Procedure No. IV-2.A		NRC Identification No.

PERFORMANCE DATA

Video Input Voltage	1.4V Composite or 1.0V non-composite	1.4V Composite or 1.0V non-composite
Video Input Imp.	75 ohm	75 ohm
Sync Requirement	RS 375A	RS 375A
Sync Voltage	Information not available	Information not available
Controls — External	Hold, Contrast	Vertical Hold, Brightness
Rear or Internal	Vertical Height Termination	Vertical Linearity
Highlight Brightness	Information not available	Information not available
Acc. Voltage	Information not available	Information not available
Resolution	800	800
Linearity	2 percent	2 percent
Temperature	32 to 120F (0 to 50C)	32 to 120F (0 to 50C)

PHYSICAL DATA

Size H	18in (45cm)	18in (45cm)
W	19.7in (50cm)	19.7in (50cm)
D	13.9in (35cm)	13.9in (35cm)
Weight	48lb (22kg)	48lb (22kg)
Mounting	Desk	Desk
Input Voltage	100 to 117V ac	100 to 117V ac
Input Power	Information not available	Information not available
Display Tube	20in (50.8cm) CRT, 500MB4	20in (50.8cm) CRT, 500MB4

COST DATA

Price	\$434.50	\$454.50
--------------	----------	----------

NOTES

Same as MV 20, but accepts ext. sync

INSTALLATIONS

VIDEO MONITORS

<i>Manufacturer</i>	Electrohome, Ltd. 809 Wellington St. No. Kitchener, Ont., Canada N2G 4J6 (519) 744-7111	Electrohome, Ltd. 809 Wellington St. No. Kitchener, Ont., Canada N2G 4J6 (519) 744-7111
<i>Model</i>	EVM 23	EVM 23AG
Evaluation Guide Procedure IV-2.A		NRC Identification No.

PERFORMANCE DATA

Video Input Voltage	0.25 to 4.0V	0.25 to 4.0V
Video Input Imp.	75 ohm	75 ohm
Sync Requirement	Information not available	Information not available
Sync Voltage	Information not available	Information not available
Controls — External	Brightness, Contrast, Hold, Sync level, Linearity Phase, Size	Brightness, Contrast, Hold, Sync level, Linearity Phase, Size
Rear or Internal	Various Gain and Sync Adjustments	Various Gain and Sync Adjustments
Highlight Brightness	130fc (1,400lm/m ²)	130fc (1,400lm/m ²)
Acc. Voltage	20kV	20kV
Resolution	800 to 1,000	800 to 1,000
Linearity	2 percent	2 percent
Temperature	32 to 120F (0 to 50C)	32 to 120F (0 to 50C)

PHYSICAL DATA

Size H	22in (56cm)	22in (56cm)
W	23 ⁵ / ₈ in (60cm)	23 ⁵ / ₈ in (60cm)
D	17 ⁷ / ₈ in (45cm)	17 ⁷ / ₈ in (45cm)
Weight	96lb (43kg)	96lb (43kg)
Mounting	Desk, Wall, Ceiling	Desk, Wall, Ceiling
Input Voltage	105 to 130V ac	105 to 130V ac
Input Power	100W	100W
Display Tube	23in (58.4cm) CRT	23in (58.4cm) CRT

COST DATA

Price	\$499	\$519
--------------	-------	-------

NOTES

Anti-glare surface

INSTALLATIONS

VIDEO TAPE RECORDERS

Video tape recorders are considered support equipment in closed-circuit television surveillance; nevertheless they are an important part of such systems. In the following paragraphs, technical terms specific to video tape recorders are explained. They appear in the text in the same order as they are mentioned on the Catalog data sheets.

Video tape recorders usually serve one or both of two functions. For real-time recording they are activated by an intrusion alarm to document events immediately following the alarm, aiding the alarm assessment function. In the time-lapse mode, video signals are automatically sampled and recorded to continually document activities within a given surveillance area. Time lapse video recording operates in a similar manner to time lapse photography: only one TV picture frame is recorded during a given time interval in contrast to the 30 frames which are generated by the camera every second. The ratio of recorded frames to those which are discarded can be preset by a manual switch. Most machines have several settings; ratios between 1:1 and 1:90 can be obtained.

In the time lapse mode only a fraction of the video information is recorded which results in more economical use of the tape but in loss of video information. In security surveillance systems this trade-off becomes critical, especially for high time lapse ratios where events that may take place between recorded frames cannot be observed during replay. Individual video picture frame recall (stop action) is provided in some video recorders with the time-lapse feature, permitting examination of individual frames which were originally exposed as much as three seconds apart.

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	4	a	0	1

736 236

Videotape recording systems for closed-circuit television are commercially available in two different versions, reel-to-reel and cassette machines. Though they differ in appearance, they operate on the same basic principle: the helical scan. The construction of the recording and playback system itself is the same except for minor mechanical details. In order to standardize the details of video recording and to be able to play back on one machine the recordings made on another, the EIAJ-1 standard was developed by the Electronic Industry Association of Japan. This standard covers all video tape recorders except those used for commercial broadcasting systems, which follow an entirely different principle of operation.

In a videotape recorder, the recording heads are not stationary (as they are in all audio recorders), but rotate within a recording drum approximately 4 inches (10 cm) in diameter at high speed (several thousand rpm). The video tape is pulled around the recording drum at speeds of 7.5 in/sec (19.1 cm/sec) in reel-to-reel machines and at speeds of 3.75 in/sec (9.5 cm/sec) in cassette machines. To reduce friction between the drum and tape, the tape rides on an air bearing, the air flow being provided by the rotating heads and their supports, which act like blades of an air blower.

Reel-to-reel type video recorders use either 1/2 inch, 3/4 inch, or 1 inch wide tapes, while cassette recorders use 1/2 inch and 3/4 inch tape cassettes. Recording durations are usually an hour for reel-to-reel machines which accept 7 inch reels with 2400 feet of tape. Cassettes are available for recordings of 15, 30 and 60 minutes duration. Some videotape recorders provide fast playback, permitting the video picture to be played back at faster speeds than the recording speed to save time during examination. Some units offer special features such as electronic editing.

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	4	a	0	2

The required video signal input is specified either for the composite video signal which includes video information and sync pulses or for the non-composite signal, which refers to the video information alone. The voltages always are measured as the differences between the highest positive and negative signals -- the peak-to-peak voltage. (The abbreviation used is usually ppc for the composite signal.)

A video tape recorder's resolution is a measure of its capability to record fine details which then can be displayed on a monitor. Resolution is a direct function of the electrical bandwidth -- the larger the tape recorder's bandwidth, the larger the achievable resolution. For use with closed circuit TV, a bandwidth of 4.5 MHz is required. Usually only the resolution for the horizontal direction is given. The basic unit is the TV line. If the resolution is 550 TV lines, 550 alternating black and white dots can be resolved across the screen of a monitor along a section of a horizontal scan line whose length is equal to the picture height. The resolution in the vertical direction is approximately 0.7 times the number of scan lines. This means that on a system with 525 scan lines, a series of 350 alternating black and white dots arranged in a vertical line will be separated. It is important to note that the horizontal resolution given in TV lines per picture height is independent of the number of scan lines in the raster, in contrast to the vertical resolution which is strongly dependent on the raster spacing.

Linearity specifies the tolerances allowed for horizontal and vertical displacement of parts of the picture with respect to other parts. The values given for linearity are the difference between the actual position of a given point on the display and the position this same point would occupy on an ideal display system.

Although simple in principle, a video tape recorder is a complex electro-mechanical device which has to operate at high speeds within very close mechanical tolerances. For this reason video tape

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	4	a	0	3

recorders operate within their specifications only when carefully adjusted by experienced technicians. One of the problems most commonly encountered with video tape recorders is the deterioration of the recording heads either due to mechanical wear or due to dust and dirt. Periodic performance tests and inspections of the heads are mandatory. But video tape recorders are still susceptible to noise problems, either mechanical or electrical, that can manifest themselves in periodic bars visible on a monitor, or by "snowstorm" like noise superimposed on the display. If the mechanical scan is not completely stable, "rolling" of the picture or gross distortion, which can be observed as a "wavy" appearance of otherwise straight lines, may result.

The limitations encountered in video recorders are dictated by the degree of loss of resolution, and by the limits of interchangeability between different tape recorders in spite of the EIAJ-1 standard. Video tape recording machines still have individual differences which may introduce additional noise and distortion, even when they have been adjusted with extreme care. For this reason when a video surveillance system having video tape recorders is used, it is important that the system be designed with a considerable safety margin beyond the minimum specifications in order to accommodate these types of degradations.

DATE	VOLUME	SECTION	CATEGORY	SHEET	PAGE
31 DEC 1976	IV	4	a	0	4

VIDEO TAPE RECORDERS

<i>Manufacturer</i>	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433	GBC Closed Circuit Television Corp. 74 Fifth Ave. New York, NY 10011 (212) 989-4433	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490
<i>Model</i>	GV 212	TVR 321	XL 5000
Evaluation Guide Procedure No. IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Type	Reel-to-reel	Reel-to-reel	Reel-to-reel
Tape Width	1/2in (1.8cm)	1/2in (1.8cm)	1/2in (1.8cm)
Reel Size/Footage	7in/2,400ft (17.8cm/832m)	7in/2,400ft (17.8cm/832m)	7in/2,400ft (17.8cm/832m)
Time Lapse Prov.	NO	YES	YES
Recording Time (Hours)	1	1, 12, 24, 48	1, 24, 48, 60
Playback Ratio	Information not available	48:1	60:1
Special Features	Stop action, edit control, 2 motors	Information not available	Frame adv.
Rewind Time (minutes)	5.5	Information not available	Less than 6
Video Rec. Format	EIAJ-1	EIAJ-1	EIAJ-1
Video Signal Syst.	—	—	EIA standard
Video Input Volt.	0.5 to 1.5V	0.5 to 1.5V	0.6 to 2.0Vpp
Video Input Imp.	75 ohm	75 ohm	75 ohm
Video Output	0.8 to 1.2V	1.0Vpp	1.0Vpp
Video Sync	Information not available	Information not available	Negative
Resolution	300	350	300
Audio	YES	YES	YES
Temperature	Information not available	- 10 to +105F (-23 to +40C)	Information not available

PHYSICAL DATA

Size H	9.2in (23cm)	9in (23cm)	17in (44cm)
W	17.2in (44cm)	17in (44cm)	18.5in (47cm)
D	16.7in (42cm)	15.3in (39cm)	10.3in (26cm)
Weight	37lb (17.5kg)	52lb (23kg)	58lb (26kg)
Input Voltage	120V ac	110V ac	117V ac
Input Power	55W	140W	75W

COST DATA

Price	\$1,095	\$2,733.50	\$2,250
--------------	---------	------------	---------

NOTES

INSTALLATIONS

VIDEO TAPE RECORDERS

<i>Manufacturer</i>	Javelin Electronics 6357 Arizona Circle Los Angeles, CA 90045 (213) 641-4490	Odetics 1845 So. Manchester Ave. Anaheim, CA 92802 (714) 530-6050	Odetics 1845 So. Manchester Ave. Anaheim, CA 92802 (714) 530-6050
<i>Model</i>	XL 5001	TL 210	VTL 310
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Type	Reel-to-reel	Reel-to-reel	Reel-to-reel
Tape Width	1/2in (1.8cm)	1/2in (1.8cm)	1/2in (1.8cm)
Reel Size/Footage	7in/2,400ft (17.6/832m)	7in/2,400ft (17.8/832m)	7in/2,400ft (17.8/832m)
Time Lapse Prov.	YES	YES	YES
Recording Time (Hours)	1, 24, 48, 60	Up to 57 hours according to order	1, 2, 3, 5, 7, 9, 11, 15, 29, 61 — switch selectable
Playback Ratio	60:1	1:1 to 57:1 according to order	Variable
Special Features	Remote switching from time lapse to real time recording	Playback at time lapse or norm steel frame	Single frame provision
Rewind Time (Minutes)	Less than 6	Less than 7	Less than 7
Video Rec. Format	EIAJ-1	Information not available	Information not available
Video Signal System	EIA Std.	EIA Std.	EIA Std.
Video Input Voltage	0.6 to 2.0Vpp	0.7 to 1.0Vpp	0.7 to 1.0Vpp
Video Input imp.	75 ohm	75 ohm	75 ohm
Video Output	1.0Vpp	1.0Vpp Composite	1.0Vpp Composite
Video Sync	Negative	Negative	Negative
Resolution	300	300	300
Audio	YES	YES	YES
Temperature	Information not available	32 to 105F (0 to 40C)	32 to 105F (0 to 40C)

PHYSICAL DATA

Size H	17in (44cm)	10.2in (26cm)	10.2in (26cm)
W	18.5in (47cm)	18.4in (47cm)	22.5in (54cm)
D	10.3in (26cm)	15.7in (40cm)	15.7in (40cm)
Weight	58lb (26kg)	55lb (25kg)	72lb (33kg)
Input Voltage	117V ac	115V ac to 120V ac	115V ac to 120V ac
Input Power	75W	95W	106W

COST DATA

Price	\$2,499	Information not available	Information not available
--------------	---------	---------------------------	---------------------------

NOTES

Also available for 12V dc operation

INSTALLATIONS

VIDEO TAPE RECORDERS

<i>Manufacturer</i>	Odetics 1845 So. Manchester Ave. Anaheim, CA 92802 (714) 530-6050	Odetics 1845 So. Manchester Ave. Anaheim, CA 92802 (714) 530-6050	Odetics 1845 So. Manchester Ave. Anaheim, CA 92802 (714) 530-6050
<i>Model</i>	TP400R	TL 500	VTL 510
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Type of Video Recorder	Reel-to-reel	Reel-to-reel	Reel-to-reel
Tape Width	½in (1.8cm)	½in (1.8cm)	½in (1.8cm)
Reel Size/Footage	5in/1,200ft (12.7cm/416m)	7in/2,400ft (17.8cm/832m)	7in/2,400ft (17.8cm/832m)
Time Lapse Prov.	YES	YES	YES
Recording Time (Hours)	½ to 15	Up to 61	1, 2, 3, 5, 9, 11, 15, 29, 61
Playback Ratio	Information not available	Information not available	Information not available
Special Features	Portable 115V ac power adaptor	Stop action	Stop action
Rewind Time (Minutes)	Information not available	Less than 3	Less than 3
Video Rec. Format	EIAJ-1	EIAJ-1	EIAJ-1
Video Signal System	EIA std	EIA std	EIA std
Video Input Voltage	1.0Vpp	0.5 to 2.0Vpp	0.5 to 2.0Vpp
Video Input Imp.	75 ohm	75 ohm	75 ohm
Video Output	1.0Vpp	1.0Vpp	1.0Vpp
Video Sync	Information not available	Negative	Negative
Resolution	300	300	300
Audio	Optional	YES	YES
Temperature	Information not available	32 to 105F (0 to 40C)	32 to 105F (0 to 40C)

PHYSICAL DATA

Size H	6.4in (16cm)	7.7in (19.5cm)	9.8in (25cm)
W	11in (28cm)	16.5in (42cm)	21.5in (37cm)
D	11.7in (30cm)	14in (35cm)	14.8in (37cm)
Weight	19lb (8.6kg)	29.7lb (13kg)	43lb (19kg)
Input Voltage	12V dc or 115V dc	117V ac	117V ac
Input Power	12W	55W	55W

COST DATA

Price	Information not available	Information not available	Information not available
--------------	---------------------------	---------------------------	---------------------------

NOTES

Usually supplied as Lightweight version
video system with camera
TP400 trap

INSTALLATIONS

VIDEO TAPE RECORDERS

Manufacturer	Odetics 1845 So. Manchester Ave. Anaheim, CA 92802 (714) 530-6050	Panasonic Co. One Panasonic Way Secaucus, NJ 07094 (201) 348-7000	Panasonic Co. One Panasonic Way Secaucus, NJ 07094 (201) 348-7000
Model	ITL 700	NV 3020	NV 3020SD
Evaluation Guide Procedure IV-2.A	NRC Identification No.		

PERFORMANCE DATA

Type of Video Recorder	Reel-to-reel	Reel-to-reel	Reel-to-reel
Tape Width	1in (2.5cm)	½in (1.8cm)	½in (1.8cm)
Reel Size/Footage	8in/2,150ft (20.3/655m)	7in/2,400ft (17.8cm/832m)	7in/2,400ft (17.8cm/832m)
Time Lapse Prov.	YES	NO	NO
Recording Time (Hours)	Up to 61, variable	1.0	1.0
Playback Ratio	Information not available	Information not available	Information not available
Special Features	Can be remotely controlled	None	Electronic Editing
Rewind Time (Minutes)	Less than 2	Information not available	Information not available
Video Rec. Format	Information not available	EIAJ-1	EIAJ-1
Video Signal System	EIA std	Information not available	Information not available
Video Input Voltage	0.5 to 2.0Vpp	>0.5Vpp	>0.5Vpp
Video Input Imp.	75ohm	75ohm	75ohm
Video Output	1.0Vpp	1.0Vpp	1.0Vpp
Video Sync	Information not available	Information not available	Information not available
Resolution	400	300	300
Audio	YES	YES	YES
Temperature	32 to 120F (0 to 50C)	40 to 105F (5 to 40C)	40 to 105F (5 to 40C)

PHYSICAL DATA

Size H	14in (35cm)	6.6in (16cm)	6.6in (16cm)
W	25.3in (64cm)	15.4in (39cm)	15.4in (39cm)
D	10in (25cm)	15.6in (40cm)	15.8in (40cm)
Weight	78lb (35kg)	35.5lb (16kg)	36lb (16kg)
Input Voltage	105V ac to 130V ac	117V ac	117V ac
Input Power	350W	60W	70W

COST DATA

Price	Information not available	Information not available	Information not available
--------------	---------------------------	---------------------------	---------------------------

NOTES

INSTALLATIONS

VIDEO TAPE RECORDERS

<i>Manufacturer</i>	Panasonic Co. One Panasonic Way Secaucus, NJ 07094 (201) 348-7000	Panasonic Co. One Panasonic Way Secaucus, NJ 07094 (201) 348-7000	RCA Corp. New Holland Ave. Lancaster, PA 17604 (800) 233-0421
<i>Model</i>	NV 3130	NV 3160	TC 3000
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Type of Video Recorder	Reel-to-reel	Reel-to-reel	Reel-to-reel
Tape Width	½in (1.8cm)	½in (1.8cm)	½in (1.8cm)
Reel Size/Footage	7in (17.8 cm)/Information not available	7in/3,400 ft (17.8cm/1037m)	7in (17.8cm)/Information not available
Time Lapse Prov.	NO	NO	YES
Recording Time (Hours)	1.0	1.5	1 hour; available in odd hours, 11 to 99
Playback Ratio	Information not available	Approximately 0 to 1/5	44 various speeds
Special Features	Stop action-slow motion playback	See notes	Remote switching into real time reading
Rewind Time (Minutes)	Information not available	Information not available	Information not available
Video Rec. Format	EIAJ-1	EIAJ-1	EIAJ-1
Video Signal System	EIA std.	EIA std.	EIA 375A
Video Input Voltage	>0.5Vpp	>0.5Vpp	0.5 to 1.5Vpp
Video Input Imp.	75ohm	75ohm	75ohm
Video Output	1.0Vpp	1.0Vpp	1.0Vpp
Video Sync	Information not available	Information not available	Information not available
Resolution	>300	350	Information not available
Audio	YES	YES	YES
Temperature	Information not available	40 to 105F (5 to 40C)	Information not available

PHYSICAL DATA

Size H	7.8in (19.5cm)	10.8in (27cm)	10in (25cm)
W	15.9in (40cm)	15.8in (40cm)	16in (40cm)
D	16.8in (42cm)	17.8in (45cm)	15in (38cm)
Weight	46lb (21kg)	51lb (23kg)	33lb (15kg)
Input Voltage	117V ac	120V ac	120V ac
Input Power	90W	95W	60W

COST DATA

Price

Information not available

Information not available

\$2,395

NOTES

1. Stop action, slow playback, capstan servo, field-by-field editing, sync lock for other VTRs, camera selector.
2. Humidity 35 to 80%

INSTALLATIONS

736 245

VIDEO TAPE RECORDERS

<i>Manufacturer</i>	Sanyo Electric, Inc. 1200 W. Artesia Blvd. Compton, CA 90220 (213) 537-5830	Sanyo Electric, Inc. 1200 W. Artesia Blvd. Compton, CA 90220 (213) 537-5830	Sanyo Electric, Inc. 1200 W. Artesia Blvd. Compton, CA 90220 (213) 537-5830
<i>Model</i>	VTR 1200	VTR 1350	VTR 1375
<i>Evaluation Guide Procedure IV-2.A</i>		<i>NRC Identification No.</i>	

PERFORMANCE DATA

Type of Video Recorder	Reel-to-reel	Reel-to-reel	Reel-to-reel
Tape Width	1/2in (1.8cm)	1/2in (1.8cm)	1/2in (1.8cm)
Reel Size/Footage	7in/2,400ft (17.8cm/832m)	7in/2,400ft (17.8cm/832m)	7in/2,400ft (17.8cm/832m)
Time Lapse Prnv.	NO Slow motion	YES	YES
Recording Time (Hours)	1.0	1.0, 12, 24, 48	1.0, 25, 50, 75
Playback Ratio	Information not available	1/12, 1/24, 1/48	1/25, 1/50, 1/75
Special Features	Frame-by-frame slow motion	Frame-by-frame, continuous playback; stop action	See notes
Rewind Time (Minutes)	Less than 6	Less than 6	Less than 6
Video Rec. Format	EIAJ-1	EIAJ-1	EIAJ-1
Video Signal System	EIA std.	EIA std.	EIA std.
Video Input Voltage	0.5 to 2.0Vpp	0.6 to 2.0Vpp	0.6 to 2.0Vpp
Video Input imp.	75ohm	75ohm	75ohm
Video Output	1.0Vpp	1.0Vpp	1.0Vpp
Video Sync	Information not available	Information not available	Information not available
Resolution	300+	300	300
Audio	YES	YES	YES
Temperature	Information not available	Information not available	Information not available

PHYSICAL DATA

Size H	10in (25cm)	17in (43cm)	17in (43cm)
W	18.5in (47cm)	18.5in (47cm)	18.5in (47cm)
D	17in (43cm)	10.3in (26cm)	10.3in (26cm)
Weight	58lb (26kg)	58lb (26kg)	58lb (26kg)
Input Voltage	117V ac	117V ac	117 Vac
Input Power	95W to 100W	75W	76W

COST DATA

Price	Information not available	\$2,350	\$2,495
--------------	---------------------------	---------	---------

NOTES

Frame-by-frame
continuous play-
back, stop action,
remote switching from
time lapse to real
time recording up
three cameras

INSTALLATIONS

VIDEO TAPE RECORDERS

<i>Manufacturer</i>	Sony Corp. of America 9 West 57th St. New York, NY 10019 (212) 371-5800	Sony Corp. of America 9 West 57th St. New York, NY 10019 (212) 371-5800	Sony Corp. of America 9 West 57th St. New York, NY 10019 (212) 371-5800
<i>Model</i>	AV 3600	AV 3650	AV 8650

Evaluation Guide Procedure IV-2.A NRC Identification No.

PERFORMANCE DATA

Type of Video Recorder	Reel-to-reel	Reel-to-reel	Reel-to-reel
Tape Width	½in (1.8cm)	½in (1.8cm)	½in (1.8cm)
Reel Size/Footage	Information not available	Information not available	Information not available
Time Lapse Prov.	Information not available	Information not available	Information not available
Recording Time (Hours)	1.0	Information not available	Information not available
Playback Ratio	Information not available	Information not available	Information not available
Special Features	Still frame	Still frame; variable slow motion, editing	Still frame; variable slow motion, editing
Rewind Time (Minutes)	Information not available	Information not available	Information not available
Video Rec. Format	EIAJ-1	EIAJ-1	EIAJ-1
Video Signal System	EIA std.	Information not available	EIA std.
Video Input Voltage	Information not available	Information not available	Information not available
Video Input Imp.	Information not available	Information not available	Information not available
Video Output	Information not available	Information not available	Information not available
Video Sync	Information not available	Information not available	Information not available
Resolution	300	300	Information not available
Audio	Information not available	Information not available	YES
Temperature	Information not available	Information not available	Information not available

PHYSICAL DATA

Size H	Information not available	Information not available	Information not available
W	Information not available	Information not available	Information not available
D	Information not available	Information not available	Information not available
Weight	Information not available	Information not available	Information not available
Input Voltage	Information not available	Information not available	Information not available
Input Power	Information not available	Information not available	Information not available

COST DATA

Price	Information not available	Information not available	Information not available
--------------	---------------------------	---------------------------	---------------------------

NOTES

INSTALLATIONS

VIDEO TAPE RECORDERS

Manufacturer	Sperry-Vision Corp. 1311 Northern Blvd. Manhasset, NY 11030 (516) 627-0100	Gyrr Products 1341 S. Claudina St. Anaheim, CA 92805 (714) 635-9100	Gyrr Products 1341 S. Claudina St. Anaheim, CA 92805 (714) 635-9100
Model	VTR 1200	DAS300 MK 11	TL 350
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Type of Video Recorder	Reel-to-reel	Reel-to-reel	Reel-to-reel
Tape Width	1/2in (1.8cm)	1/2in (1.8cm)	1/2in (1.8cm)
Reel Size/Footage	7in/2,400ft (17.8cm/832m)	7in (17.8 cm)/ Information not available	7in (17.8cm) Information not available
Time Lapse Prov.	YES	YES, 45 speeds	YES
Recording Time (Hours)	1, 7, 12, 24, 48, 60, 71	11 to 99	Up to 25
Playback Ratio	Information not available	Variable	Variable
Special Features	Still frames, slow motion	See notes	Still frame
Rewind Time (Minutes)	6	Information not available	Information not available
Video Rec. Format	EIAJ-1	EIAJ-1	EIAJ-1
Video Signal System	EIA std. V	EIA std. V	EIA std. V
Video Input Voltage	0.5 to 2.0Vpp	0.5 to 2.0Vpp	0.5 to 1.5Vpp
Video Input Imp.	75 ohm	75ohm	75ohm
Video Output	1.0Vpp	1.0Vpp	1.0Vpp
Video Sync	Information not available	Information not available	Information not available
Resolution	300+	300+	300
Audio	YES	YES	Information not available
Temperature	Information not available	Information not available	Information not available

PHYSICAL DATA

Size H	10in (25cm)	8.8in (22cm)	9.9in (25cm)
W	18.5in (47cm)	19.5in (50cm)	16in (40cm)
D	17in (43cm)	14.3in (36cm)	15in (38cm)
Weight	59lb (26kg)	45lb (20kg)	33lb (15kg)
Input Voltage	117V ac	117V ac	120V ac
Input Power	95 to 100W	125W	70W

COST DATA

Price	Information not available	\$2,750	\$2,995
--------------	---------------------------	---------	---------

NOTES

Same as Sanyo VTR 1200 but with time lapse provision	Remote switching from time lapse to real time recording, still frame
--	--

INSTALLATIONS

VIDEO TAPE RECORDERS

Manufacturer: Gyrr Products
1341 S. Claudina St.
Anaheim, CA 92805
(714) 635-9100

Model DAS 700

Evaluation Guide Procedure IV-2.A NRC Identification No.

PERFORMANCE DATA

Type of Video Recorder Reel-to-reel
Tape Width 1.0in (2.5cm)
Reel Size/Footage 8in/2,150ft
(20.3cm/655m)
Time Lapse Prov. YES, 44 different sets
Recording Time (Hours) Up to 99, in
odd hours
Playback Ratio 11:1 to 99:1
Special Features Playback at normal
speed
Rewind Time (Minutes) Less than 2
Video Rec. Format Information not available
Video Signal System Information not available
Video Input Voltage 0.5 to 2.0Vpp
Video Input Imp. 75ohm
Video Output 1.0Vpp
Video Sync Information not available
Resolution 400
Audio YES
Temperature 32 to 120F (0 to 50C)

PHYSICAL DATA

Size H 9.7in (25cm)
W 19in (48cm)
D 12.3in (31cm)
Weight 59lb (26.5kg)
without case
Input Voltage 105V ac to 130V ac
Input Power 350W

COST DATA

Price \$7,649

NOTES

Same as Odetics ITL 700

INSTALLATIONS

VIDEO TAPE RECORDERS

<i>Manufacturer</i>	Panasonic Co. One Panasonic Way Secaucus, NJ 07094 (201) 348-7000	Panasonic Co. One Panasonic Way Secaucus, NJ 07094 (201) 348-7000	Panasonic Co. One Panasonic Way Secaucus, NJ 07094 (201) 348-7000
<i>Model</i>	NV 5120	NV 5125	NV 2110 M
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Type of Video Recorder	Cartridge	Cartridge	Cartridge
Tape Width	½in (1.8cm)	½in (1.8cm)	¾in (2.2cm)
Footage	1,200ft (416m)	1,200ft (416m)	1,175ft (358m)
Time Lapse Prov.	NO	NO	NO
Recording Time (Hours)	0.5	0.5	1.0
Playback Ratio	NA	NA	NA
Special Features	None	VHF/UHF tuner	Playback at preset time
Rewind Time (Minutes)	Information not available	Information not available	Information not available
Video Rec. Format	EIAJ-1	EIAJ-1	EIAJ-1
Video Signal System	EIA std	EIA std	Information not available
Video Input Voltage	1.0Vpp	1.0Vpp	1.0Vpp
Video Input Imp.	75ohm	75ohm	74ohm
Video Output	1.0Vpp	1.0Vpp	1.0Vpp
Video Sync	Information not available	Information not available	Information not available
Resolution	240	240	300
Audio	YES	YES	YES
Temperature	Information not available	Information not available	40 to 105F (5 to 40C)

PHYSICAL DATA

Size H	8.5in (21.5cm)	8.5in (21.5cm)	7.9in (20cm)
W	22.1in (56cm)	22.1in (56cm)	20.1in (51cm)
D	15.8 (40cm)	15.8in (40cm)	17.8in (45cm)
Weight	52.8lb (24kg)	55.5lb (25kg)	54lb (24kg)
Input Voltage	120V ac	120V ac	120V ac
Input Power	110W	110W	95W

COST DATA

Price	Information not available	Information not available	Information not available
--------------	---------------------------	---------------------------	---------------------------

NOTES

Humidity 35 to 80%

INSTALLATIONS

VIDEO TAPE RECORDERS

<i>Manufacturer</i>	Panasonic Co. One Panasonic Way Secaucus, NJ 07094 (201) 348-7000	Panasonic Co. One Panasonic Way Secaucus, NJ 07094 (201) 348-7000	Sony Corp. of America 9 West 57th St. New York, NY 10019 (212) 371-5800
<i>Model</i>	NV 2120	NV 2125	Betamax SL 7200
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Type of Video Recorder	Cartridge	Cartridge	Cartridge
Tape Width	¾in (2.2cm)	¾in (2.2cm)	Information not available
Footage	1,175ft (358m)	1,175ft (358m)	Information not available
Time Lapse Prov.	NO	NO	Information not available
Recording Time (Hours)	1.0	1.0	1.0
Playback Ratio	NA	NA	Information not available
Special Features	None	VHF/UHF tuner	VHF/UHF tuner, pause mode timer
Rewind Time (Minutes)	Information not available	Information not available	Less than 3.5
Video Rec. Format	Information not available	EIAJ-1	Information not available
Video Signal System	Information not available	Information not available	EIA std
Video Input Voltage	>0.5Vpp	>0.5Vpp	1.0Vpp
Video Input Imp.	75ohm	75ohm	75ohm
Video Output	1.0V	1.0V _{p-p}	Information not available
Video Sync	Information not available	Information not available	Negative
Resolution	>300	>300	>280
Audio	YES	YES	YES
Temperature	Information not available	40 to 105F (5 to 40C)	40 to 105F (5 to 40C)

PHYSICAL DATA

Size H	7.9in (20cm)	7.9in (20cm)	8.1in (20cm)
W	24in (61cm)	24in (61cm)	20.5in (52cm)
D	17.8in (45cm)	17.8in (45cm)	16.1in (41cm)
Weight	52lb (28kg)	66lb (30kg)	45lb (20kg)
Input Voltage	120V ac	120V ac	120V ac
Input Power	120W	125W	80W

COST DATA

Price	Information not available	Information not available	Information not available
--------------	---------------------------	---------------------------	---------------------------

NOTES

Humidity 35 to 80%

INSTALLATIONS

VIDEO TAPE RECORDERS

<i>Manufacturer</i>	Sony Corp. of America 9 West 57th St. New York, NY 10019 (212) 371-5800	Sony Corp. of America 9 West 57th St. New York, NY 10019 (212) 371-5800	Sony Corp. of America 9 West 57th St. New York, NY 10019 (212) 371-5800
<i>Model</i>	VO 2600	VO 2800	VO 2850
Evaluation Guide Procedure IV-2.A		NRC Identification No.	

PERFORMANCE DATA

Type of Video Recorder	Cartridge	Cartridge	Cartridge
Tape Width	Information not available	Information not available	Information not available
Footage	Information not available	Information not available	Information not available
Time Lapse Prov.	Information not available	Information not available	Information not available
Recording Time (Hours)	Information not available	Information not available	Information not available
Playback Ratio	Information not available	Information not available	Information not available
Special Features	See notes	See notes	See notes
Rewind Time (Minutes)	Information not available	Information not available	Information not available
Video Rec. Format	Information not available	Information not available	Information not available
Video Signal System	EIA std	Information not available	Information not available
Video Input Voltage	Information not available	Information not available	Information not available
Video Input Imp.	Information not available	Information not available	Information not available
Video Sync	Information not available	Information not available	Information not available
Resolution	Information not available	Information not available	Information not available
Audio	YES	YES	YES
Temperature	Information not available	Information not available	Information not available

PHYSICAL DATA

Size H	Information not available	Information not available	Information not available
W	Information not available	Information not available	Information not available
D	Information not available	Information not available	Information not available
Weight	Information not available	Information not available	Information not available
Input Voltage	Information not available	Information not available	Information not available
Input Power	Information not available	Information not available	Information not available

COST DATA

Price	Information not available	Information not available	Information not available
--------------	---------------------------	---------------------------	---------------------------

NOTES

Pause, freeze frame, standby, remote control	Pause, freeze frame, standby, remote control	Editing, external sync, slow speed playback, standby, remote control
--	--	--

INSTALLATIONS

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, \$300

POSTAGE AND FEES PAID
U.S. NUCLEAR REGULATORY
COMMISSION



NUREG-0274

~~Set~~ 2 Book (2)

Vol. III

2031 AND 2032

146 Books

146

POOR
ORIGINAL

736 254