

SH 1
DWG NO. ES6510

PARENTHETICAL IDENTITIES
ARE FOR REFERENCE ONLY

R E V I S I O N			
REV	DESCRIPTION	DATE	APPROVED
-	INITIAL RELEASE	94-08-23	AI
A	REVISED PER ECF CE4481	94-11-16	AI/PH
B	REVISED PER ECF CE4506	95-01-23	AI/PH
C	REVISED PER ECF CE4587	95-06-13	AI/PH
D	REVISED PER CO 2003985	05-01-31	RNR/
E	REVISED PER ECO 2037841 / ECR 3015990	15-04-08	JJA
F	REVISED PER ECO 2038686 / ECR 3016762	15-04-13	JJA

METRIC

THIS IS A COMPUTER PREPARED MULTI-SHEET DRAWING.
ALL SHEETS ARE IDENTIFIED WITH THE SAME REVISION LETTER.

SPECIFICATION CONTROL DRAWING

REV STATUS OF SHEETS	REVISION																		
	SHEET																		

UNLESS OTHERWISE SPECIFIED,
DIMENSIONS AND TOLERANCES
ARE IN INCHES AND PER
ANSI Y14.5M-1982

TOLERANCES ON	
DECIMALS	ANGLES
.X=±.1	±0.15
.XX=±.03	±0.30
.XXX=±0.015	±.1°

CONTRACT NO.
GSD-LRSS.005

DRAWN
Alford King 94-08-23

CHECKED
Robert Jones 94-08-23

APPROVED
R. Talaris 94-08-24

SYSTEMS & ELECTRONICS INC.
ST. LOUIS, MISSOURI 63136

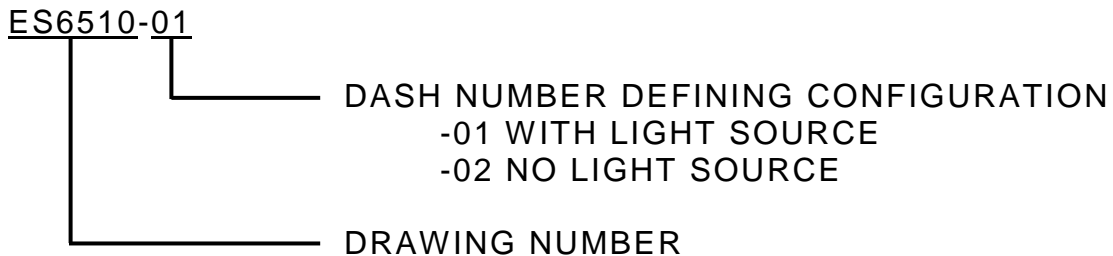
LEVEL, CYLINDRICAL, CIRCULAR VIAL
- OPTIONAL ILLUMINATION

DIST. 1

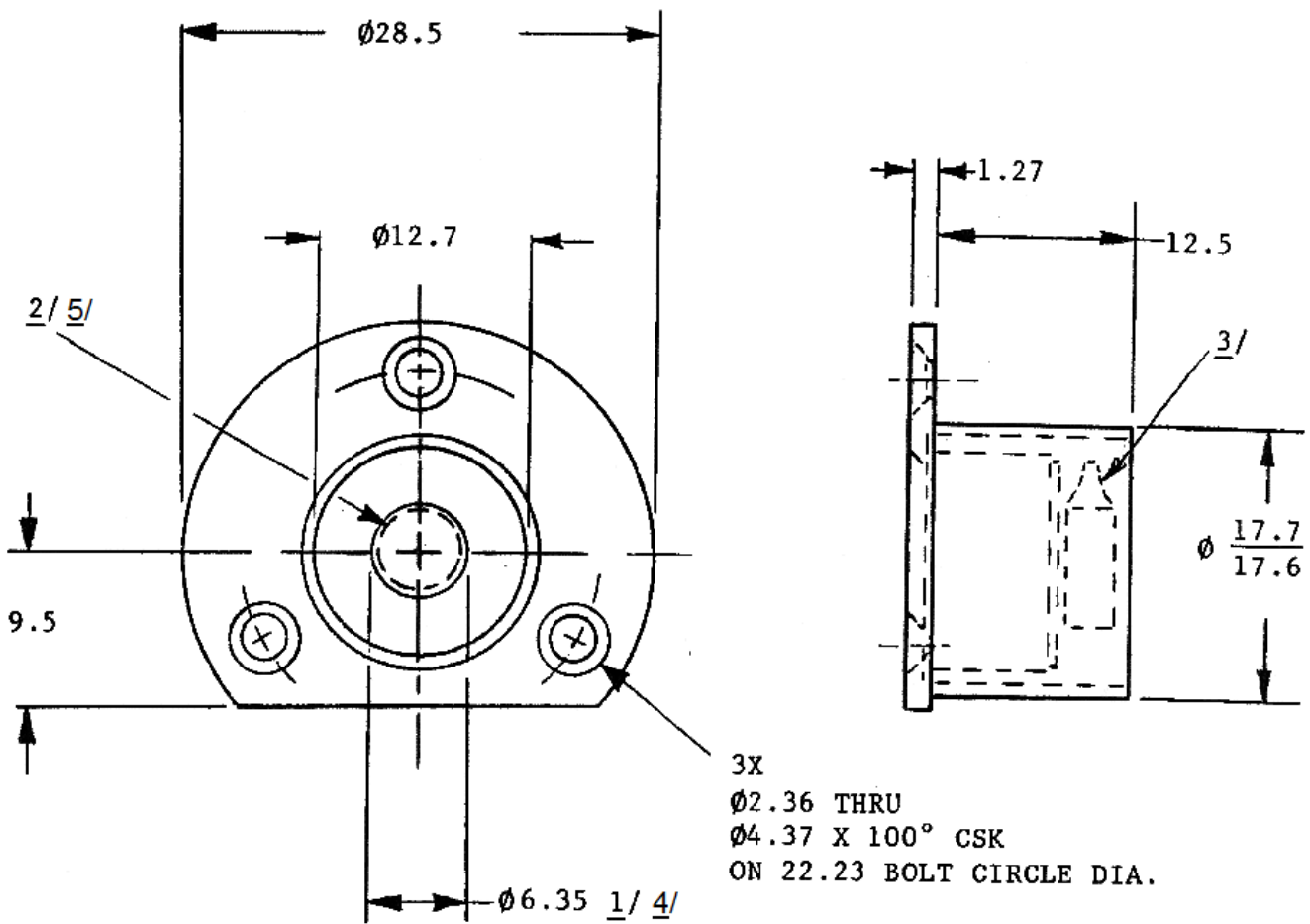
DESIGN APPROVAL
R. Talaris 94-08-24

SIZE A	CAGE CODE 20418	DWG NO. ES6510	REV F
SCALE NONE	UNIT WT -	SHEET 1 OF 6	

1. SCOPE. THIS DRAWING ESTABLISHES THE DETAIL REQUIREMENTS FOR A CIRCULAR, BUBBLE LEVEL. ES6510-01 IS ILLUMINATED BY A GASEOUS TRITIUM LIGHT SOURCE AND ES6510-02 OMITTS THE LIGHT SOURCE.
2. CONFIGURATION AND DIMENSIONS. THE CONFIGURATION AND DIMENSIONS SHALL BE AS DETAILED IN FIGURE 1.
3. MATERIALS. THE MATERIALS USED IN THE CONSTRUCTION OF THE LEVEL SHALL BE OF SUFFICIENT QUALITY TO ASSURE THAT THE LEVEL CAN WITHSTAND THE OPERATING AND STORAGE ENVIRONMENTS DEFINED HEREIN.
4. ENVIRONMENTAL. THE OPERATING AND NON-OPERATING ENVIRONMENT SHALL BE AS SPECIFIED IN TABLE I.
5. LIGHT SOURCE. THE LIGHT SOURCE USED TO ILLUMINATE THE LEVEL SHALL BE A GASEOUS TRITIUM TYPE THAT COMPLIES WITH GREAT BRITAIN DEFENSE STANDARD 62-4 (CAGE CODE K0851) FOR ES6510-01 ONLY.
- 5.1 SAFETY CONSIDERATIONS. THE GASEOUS TRITIUM LIGHT SOURCE CONTAINS RADIOACTIVE MATERIALS. ALL SAFETY CONSIDERATIONS DEFINED IN DEFENSE STANDARD 62-4 SHALL BE FOLLOWED.
6. PERFORMANCE. THE LEVEL SHALL MEET THE PERFORMANCE REQUIREMENTS SPECIFIED IN TABLE II.
7. MARKING. THE GRADUATIONS ON THE VIAL OF THE LEVEL SHALL SHOW NO SIGN OF BEING WATER SOLUBLE. THE GRADUATIONS SHALL BE FREE FROM DISTORTION WITH CLEAR SHARP EDGES AND SHALL NOT RUB OFF. THE -01 PART SHALL BE IDENTIFIED ON BUBBLE SIDE OF PART BY CO2 LASER ENGRAVING AS SHOWN IN FIGURE 2, MINIMUM CHARACTER HEIGHT SHALL BE 1 MM. THE -02 UNIT SHIPPING CONTAINER SHALL BE MARKED WITH THE SYSTEMS & ELECTRONICS INC. (SEI) CONTROL NUMBER.
- 7.1 SEI CONTROL NUMBER.



SIZE A	CAGE CODE 20418	DWG NO. ES6510	REV F
SCALE NONE	UNIT WT -	SHEET 2	

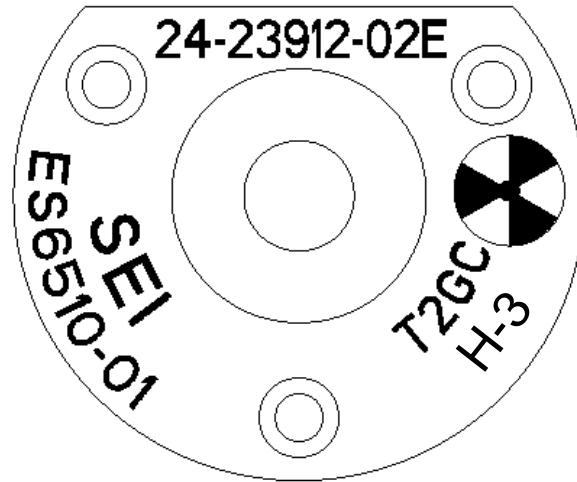


DIMENSIONS ARE IN
 MILLIMETERS
 TOLERANCE UNLESS
 OTHERWISE SPECIFIED
 .X = ± 0.3
 .XX = ± 0.1

- 1/ ENGRAVED BLACK LINE 0.2 TO 0.3 WIDE ON INNER SURFACE OF GLASS COVER.
- 2/ BUBBLE DIAMETER 4.0 MIN TO 4.5 MAX.
- 3/ LIGHT SOURCE PER PARA. 5. ON ES6510-01 ONLY.
- 4/ $\varnothing 5.9 +0.55 / -0.00$ NOT FOR NEW PROCUREMENT AFTER DECEMBER 4, 2014
- 5/ BUBBLE DIAMETER 3.0 MIN TO 4.5 MAX. NOT FOR NEW PROCUREMENT AFTER DECEMBER 4, 2014

FIGURE 1. CONFIGURATION AND DIMENSIONS.

SIZE A	CAGE CODE 20418	DWG NO. ES6510	REV F
SCALE NONE	UNIT WT -	SHEET 3	



-01 MARKING 1/
FIGURE 2

TABLE I. ENVIRONMENTAL.

TEMPERATURE RANGE OPERATING NON-OPERATING	-40°C TO +55°C -62°C TO +71°C
HUMIDITY	MIL-STD-810E, METHOD 507.3, PROCEDURE I, 45 CYCLES
SHOCK NON-OPERATING	SHALL NOT BE DAMAGED BY HANDLING SHOCK DEFINED AS ½ SINE PULSE, ACCELERATION OF 30g FOR DURATION OF 11 ms USING MIL-STD-810E, METHOD 516.2, PROCEDURE I
VIBRATION NON-OPERATING	SHALL NOT BE DAMAGED BY EXPOSURE TO MIL-STD-810E, METHOD 514.4, I-3.4.7, CATEGORY 8 – GROUND MOBILE, USING VIBRATION DATA OF TABLE 514.4-AII
FUNGUS	THE UNIT SHALL BE FUNGUS INERT

1/ -01 MARKING WITHOUT “H-3” IDENTIFIER IS NOT FOR NEW PROCUREMENT AFTER 23 APRIL, 2015.

-01 MARKING WITH “H-3” IDENTIFIER IS FOR NEW PROCUREMENT AFTER 23 APRIL, 2015.

SIZE A	CAGE CODE 20418	DWG NO. ES6510	REV F
SCALE NONE	UNIT WT -	SHEET 4	

TABLE II. PERFORMANCE.

COALESCENCE	WHEN THE LEVEL IS SHAKEN VIGOROUSLY, THE BUBBLES SHALL COALESE INTO ONE LARE BUBBLE WITHIN ONE SECOND AT 15°C TO 32°C
PRECIPITATE OR SOLID	NO PRECIPITATE OR SOLID SHALL FORM AT -62°C
BUBBLE MOVEMENT AND SIZE	THE BUBBLE SHALL HAVE A UNIFORM MOVEMENT OVER THE GRADUATED PORTION OF THE LEVEL AND SHALL BE OF THE SIZE SPECIFIED IN FIGURE 1
SENSITIVITY	10 TO 12 ANGULAR MINUTES PER MILLIMETER OF RUNOUT

8. QUALITY CONFORMANCE INSPECTION.

8.1 VISUAL AND MECHANICAL. THE PARTS SUPPLIED TO THIS DRAWING SHALL BE SUBJECTED TO A VISUAL AND MECHANICAL INSPECTION TO ASSURE COMPLIANCE WITH FIGURE 1 AND PARA. 7.

9. PACKING AND PACKAGING. THE PARTS SHALL BE PACKAGED IN A MANNER SUFFICIENT TO ASSURE ARRIVAL AT DESTINATION WITHOUT DAMAGE WHEN SHIPPED BY COMMON COMMERCIAL CARRIER.

10. VENDOR(S) SHALL MAKE NO CHANGE TO PRODUCT(S) SUPPLIED TO THIS DRAWING WHICH WOULD AFFECT INTERCHANGEABLITY OR DEGRADEEITHER PERFORMANCE OF RELIABILITY OF THE PRODUCT WITHOUT PRIOR NOTICE.

11. IDENTIFICATION OF THE "SUGGESTED SOURCE(S) OF SUPPLY" HEREON IS NOT TO BE CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOURCE OF SUPPLY FOR THE ITEM(S).

SIZE A	CAGE CODE 20418	DWG NO. ES6510	REV F
SCALE NONE	UNIT WT -	SHEET 5	

SEI CONTROL NUMBER	SUGGESTED SOURCE(S) OF SUPPLY		
	SUPPLIER DATA		
	CAGE CODE	PART NUMBER	NAME AND ADDRESS
ES6510-01	K5628	1544003 <u>1/</u>	SAUNDERS-ROE DEVELOPMENTS LTD MILLINGTON RD. HAYES MIDDX UBS 4NB ENGLAND
	0TBT2		SRB TECHNOLOGIES, INC. 2580 LANDMARK DR. WINSTON SALEM, NC 27103
ES6510-02	K5628	1544003-1 1544001-1 <u>2/</u>	SAUNDERS-ROE DEVELOPMENTS LTD MILLINGTON RD. HAYES MIDDX UBS 4NB ENGLAND
	0TBT2		SRB TECHNOLOGIES, INC. 2580 LANDMARK DR. WINSTON SALEM, NC 27103

NOTES:

1/ UNITS DELIVERED PRIOR TO JUNE 05, 2003 MAY NOT BE MARKED IN ACCORDANCE WITH PARAGRAPH 7.

2/ NOT FOR NEW PROCUREMENT AFTER DECEMBER 04, 2014.

SIZE A	CAGE CODE 20418	DWG NO. ES6510	REV F
SCALE NONE	UNIT WT -	SHEET 6	