

SOUTHWEST RESEARCH INSTITUTE  
Department of Quality Assurance  
Calibration Laboratory • 522-5215

**WORK ORDER**

CERTIFICATE # 33563 ASSET # 007190 DATE 13 Mar 99

ITEM DATA:

Manufacturer Fisher brand Model 15-116A  
Description 4/100 micrometer Serial # 198-138  
Accessories cube

ACTION REQUESTED MI

CUSTODIAN Div 20, Danell Dunn

Turned in by: \_\_\_\_\_ Phone 6090

CHARGE # 20-448 SAT OFF 03/12 Date Required \_\_\_\_\_

INSTRUMENT USED ON:  (DOD/NASA)  (NUCLEAR)  (GLP)  (SPPE)  (ISO)  
 OTHER \_\_\_\_\_

COPY OF CALIBRATION CERTIFICATE  (Yes)  (No)

NEW WORK  Yes  No If yes, an evaluation shall be made to verify capabilities.

By MAW Date 13-05-99

Work involves proprietary/confidential information or equipment  (Yes)  (No)

- CONDITION RECEIVED: \_\_\_\_\_ (F) Out of tolerance, repaired to specifications  
\_\_\_\_\_ (G) In tolerance, minor adjustments/repairs made  
 (J) In tolerance, no adjustments/repairs  
\_\_\_\_\_ (K) Out of tolerance, adjusted to specifications  
\_\_\_\_\_ (S) Received into system, introduced or reactivated

ACTION TAKEN: (Calibration/Repair/Parts) 6 Point Cal

33563

CAL ENVIRONMENT:

Temperature 74 °F Humidity 49 %RH

CALIBRATED/REPAIRED:

By MM Wood Cal Procedure T033K5-4-42-1 APR97  
Date 3-17-99 Accuracy ±1.0°C  
Cal Interval 12m Reliability Code: \_\_\_\_\_  
Next Cal due 3-17-00 Cal Time 1h Repair Time \_\_\_\_\_  
Standards used (Asset#) 000219

DATE COMPLETED 3-17-99  
DATE PICKED UP 3/18/99 PICKED UP BY [Signature]



# WORK ORDER 40045

Date Received 8/4/00

Asset No. 007170 Manufacturer FISHER SCIENTIFIC Model 15-166A  
 Description THERMOMETER Serial Number C98-132  
 Accessory Received/Required CASE  
 Div/CC ID NONE Accessory to Asset No. N/A  
 Div/CC DIV20 Location B57 Custodian DARRELL DUNN Tel. 6090  
 Charge/Project No. 20.00751.006 Proprietary/Confidential N Date Required ROUTINE  
 Work Requested CALIBRATION  
 Receiving Inspection O.K.  
 Delivered By DARRELL DUNN Tel. 6090

### WORK HISTORY

Date	Start Time	Stop Time	Notes
			-20 to 15°C
			ATM IC-BF P.I.

SwRI Cal-Lab By:  
 CAL: 03/17/99 DUE: 03/17  
 AN: 007170 SN: C98-132

### PARTS

Part Name	Part Number	Cost	Failure Description

40045

### WORK SUMMARY

Failure Description \_\_\_\_\_

Repair Action \_\_\_\_\_

Cal Procedure CC-9 5/99 Temp 74 F Hum 49 %

Tech [Signature] Cal Hrs. 2 Repair Hrs. \_\_\_\_\_ Part Cost \_\_\_\_\_

Action Taken Cal

Standards Used 000219

Date Cal 8-8-00 Int. 12 Mo. Date Due 8-8-01 Reliability Code \_\_\_\_\_

Date Picked Up 8/8/2000 Picked Up By [Signature]

Long  
TH

SART

-15      -14.35      (131.4) SART  $\rightarrow$  -14.533  
(-9      -8.5      SART  $\rightarrow$  -8.674)  
0      0.3      0

Stem Term 74

30      30.5/31.4      30.125

60      60.2      60.055

90      90.4      90.015

120      120.0      119.976

140      139.5      139.981

7007





Southwest Research Institute  
6220 Culebra Road  
San Antonio, TX 78238  
(210) 522-5215  
Department of Quality Assurance  
Calibration Laboratory



Certificate #  
0972-01

## Certificate of Calibration

8 August 2000

**Issued to:** DARRELL DUNN DIV20 B57  
**Manufacturer/Model:** FISHER SCIENTIFIC 15-166A  
**Description:** THERMOMETER  
**Serial Number:** C98-132  
**Asset Number:** 007170

This certifies the above item was calibrated in compliance with MIL-STD-45662A and ANSI/NC SL Z540-1-1994. The results of this calibration relate only to the individual item as described above. Standards used in this calibration, described in the referenced calibration procedure with associated uncertainties or tolerances, are traceable to the National Institute of Standards and Technology (NIST). Supporting documentation relative to traceability is on file and available for examination upon request. This certificate is not to be reproduced, except in full, without the written approval of the Southwest Research Institute Department of Quality Assurance Calibration Laboratory.

This laboratory is accredited by the American Association for Laboratory Accreditation (A2LA) and the results of this calibration certificate were determined in accordance with the terms of accreditation unless stated otherwise below.

The uncertainty of the calibration was sufficient to determine that the item met the manufacturer's published specifications unless stated otherwise below.

**Ambient Conditions:** Temperature: 74.0 Degrees Fahrenheit Humidity: 49 % RH

**Calibration Date:** 8 Aug 00 **Calibration Procedure:** CL-9 5/99

**Condition as Received:** IN TOLERANCE

**Condition as Released:** IN TOLERANCE

**Remarks:**

**Approved by:**

Jim Patterson, Supervisor, or Walt Hill, Metrologist

**Certificate #** 40045

m:\a2la.rpt Rev date 22 May 00

**Measurements performed by:**

Mack Wood, Technician

# SOUTHWEST RESEARCH INSTITUTE

## Calibration Laboratory

### WORK ORDER

Received by RCRUZ,9/4/01 10:12:59AM

1 100011 0001 0001 10001 10011 0001 10001

Arrived 9/4/01

Work Order **444045056**

Asset No. 007170 Manufacturer FISHER SCIENTIFIC

Model 15-166A

Instrument Type/Class THERMOMETER

Serial No. C98-132

Accessory No.

Calibration Procedure CL-9 5/99

Location B57

Div/Client DIV20

Custodian DARRELL DUNN

Mail Stop B57

Tel. 6090

**IN4CAL**

Special Instructions \_\_\_\_\_

Notify before making adjustments or repairs. ( Provide measurement readings )

Charge/Project No. 00751.006 1.20

Requested By / Telephone

The above is correct for the work requested.

*Darrell D* 6090

### WORK NOTES

Date	Hours	Remarks/Notes
<u>9/11</u>	<u>1.5</u>	<u>Cal</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Date	Hours	Part Name	Part Number	Failure Description	Cost
<u>9/10</u>	<u>.5</u>	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

### WORK SUMMARY

Failure Description \_\_\_\_\_

Repair Action Re-vented mercury column

Calibration Procedure \_\_\_\_\_

Temp 74F

Hum. 54 %

Tech R Dykstra

Totals

Cal Hours 1.5

Repair Hours .5

Parts Cost \_\_\_\_\_

Standards Used 5243, 5174

Date Picked Up 9/11/01

Picked Up By *Darrell D*

**45056**

STD	TI
-19.958 °C	-20.0
0.062	0.4
50.048	50.0
99.941	100.0
149.913	149.0

42028





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Certificate #  
0972-01

## Certificate of Calibration

11 September 2001

**Issued to:** DARRELL DUNN DIV20 B57  
**Manufacturer/Model:** FISHER SCIENTIFIC 15-166A  
**Description:** THERMOMETER  
**Serial Number:** C98-132  
**Asset Number:** 007170  
**Work Order Number:** 444045056

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**Ambient Conditions:** Temperature: 74.0 Degrees Fahrenheit Humidity: 54 % RH

**Calibration Date:** 11 Sep 01 **Calibration Procedure:** CL-9 5/99

**Condition as Received:** SEE ATTACHED DATA

**Condition as Released:** SEE ATTACHED DATA

**Remarks:**

**Approved by:**

Walt Hill, Supervisor  
Institute Calibration Laboratory

**Measurements performed by:**

Roger Dykstra, Technician