

SOUTHWEST RESEARCH INSTITUTE

Calibration Laboratory

WORK ORDER

Processed by RCRUZ at 10:05:37AM on 5/15/01



Work Order **444043597**

Arrived 5/15/01

Asset No. 008724 Manufacturer FISHER SCIENTIFIC

Model 15-166A

Instrument Type/Class THERMOMETER

Serial No. H 00-387

Accessory No.

Calibration Procedure

Location

Div/Client DIV20

Custodian DARRELL DUNN

Mail Stop B57

Tel. 6090

Charge/Project No. 20.00751.006

Delivered By / Telephone

IN4CAL

Special Instructions _____

WORK NOTES

Date	Hours	Remarks/Notes
<u>5/15/01</u>	<u>2.0</u>	<u>Calibrate</u>

REPAIR PARTS

Date	Hours	Part Name	Part Number	Failure Description	Cost
<u>N/A</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

WORK SUMMARY

Failure Description N/A

Repair Action N/A

Calibration Procedure CLCP-9, RO 5/18/01 ⁹⁹ _{RD} Temp 83 F Hum. 41 %

Tech R Dijkstra Totals Cal Hours 2.0 Repair Hours Parts Cost

Standards Used S174, S24.3

Date Picked Up 5/18/2001

Picked Up By [Signature]

Calibration Laboratory Calibration Data Sheet

[illegible]



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

15 May 2001

Issued to: DARRELL DUNN DIV20 B57
Manufacturer/Model: FISHER SCIENTIFIC 15-166A
Description: THERMOMETER
Serial Number: H 00-387
Asset Number: 008724
Work Order Number: 444043597

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: 83.0 Degrees Fahrenheit Humidity: 40 % RH

Calibration Date: 15 May 01 **Calibration Procedure:** CL-9, 5/99

Condition as Received: IN TOLERANCE

Condition as Released: IN TOLERANCE

Remarks:

Approved by:

Walt Hill, Supervisor
Institute Calibration Laboratory

Measurements performed by:

Roger Dykstra, Technician

SOUTHWEST RESEARCH INSTITUTE

Calibration Laboratory

WORK ORDER

Received by WHILL, 11/16/01 12:38:23PM

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

Arrived 11/16/01

Work Order **444046130**

Asset No. 008724 Manufacturer FISHER SCIENTIFIC

Model 15-166A

Equipment Type THERMOMETER

Serial No. H 00-387

Accessory No.

Interval 6 M

Calibration Procedure CL-9, 5/99

Location

Div/Clien: DIV20

Custodian DARRELL DUNN

Mail Stop B57

Tel 6090

IN4CAL

Special Instructions _____

Notify before adjustments or repairs. () Provide data with certificate () Certificate Type _____

Charge/Project No. 00751.006.1.20

Requester / Telephone BRIAN

This information is correct for the work requested. Brian Dunn

WORK NOTES

Date	Hours	Remarks/Notes
11/19	1.0	Cal

Date	Hours	Part Name	Part Number	Failure Description	Cost
n/a	→				

WORK SUMMARY

Failure Description n/a

Repair Action n/a

Tech RD/Ksh Cal Hrs. 1.0 Repair Hrs _____ Parts Cost _____ Temp 76 F Hum. 49 %

Standards Used 0219

Date Picked Up 12/4/01

Picked Up By Dunn

**Southwest Research Institute
Calibration Laboratory
Calibration data sheet**

[illegible]



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

Certificate of Calibration

19 November 2001

Issued to: DARRELL DUNN DIV20 B57
Manufacturer/Model: FISHER SCIENTIFIC 15-166A
Description: THERMOMETER
Serial Number: H 00-387
Asset Number: 008724
Work Order Number: 444046130

This certifies the above item was calibrated in compliance with MIL-STD-45662A and ANSI/NCSL Z540-1-1994. 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 is 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.

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: 76.0 Degrees Fahrenheit Humidity: 49 % RH

Calibration Date: 19 Nov 01 **Calibration Procedure:** CL-9, 5/99

Condition as Received: IN TOLERANCE

Condition as Received: IN TOLERANCE

Remarks:

Approved by:

Walt Hill, Supervisor
Institute Calibration Laboratory

Measurements performed by:

Roger Dykstra, Technician

Calibration Laboratory

Received by RCRUZ,5/9/02 9:18:19AM



Arrived 5/9/02

Work Order

Work Order 444048466

Asset No. 008724 **Manufacturer** FISHER SCIENTIFIC

Model 15-166A

Equipment Type THERMOMETER

Serial No. H 00-387

Accessory No.

Interval 6 M

Calibration Procedure CL-9, 5/99

Location

Div/Client DIV20

Custodian DARRELL DUNN

Mail Stop B57

Tel 6090

IN LINE

Special Instructions

Notify before adjustments or repairs. () Provide data with certificate (✓) Certificate Type.

Charge/Project No. 00751.006 1.20

Requester / Telephone

This information is correct for the work requested.

Date	Hours	Remarks/Notes
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5/10/02 1.0 and

Date	Hours	Part Name	Part Number	Failure Description	Cost
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n/n

Hours

Part Name

Part Number

Failure Description

Cost

Failure Description	n/n
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Repair Action n/a

Tech B Dyke Cal Hrs. 1.0 Repair Hrs _____ Parts Cost _____ Temp 71 F Hum. 55 %

Standards Used 5243 due 12/3/62

5174 due 3/18/03

Date Picked Up 6/6/2002

Picked Up By

Southwest Research Institute
Calibration Laboratory
Calibration Data Sheet

Workorder 444048466
Asset #. 008724
Serial #. H00-387

Mfr. Fisher Scientific
Model 15-166A
Type Thermometer

Technician R Dykstra
Procedure CL-9, 5/99
Cal Date 5/9/02

Ambient Conditions:

Temperature 74 Degree F
Humidity 55 % R.H.
Baro. Pressure N/A PSIA

Data sheet Revision:

Revision 0 2/21/02

Standards used:

Asset #	Due Date	Nomenclature
005243	12/03/02	H.P. 34420A Digital Multi-Meter
005174	02/18/03	RTD probe

Is statement of compliance to a specification requested. Yes
(if statement is required, print yes otherwise leave blank)

Tolerance 1.00 Degree C Range -20 to 150 Degree C
(if not required leave blank)

Degree C	Degree C	Degree C	Degree C	Degree C	
	As Found				
Std Reading	TI Reading	Error	Test Limits	Uncertainty	Results
-19.90	-20.0	-0.10	1	0.35	Pass
0.10	0.2	0.10	1	0.35	Pass
49.89	50.0	0.11	1	0.35	Pass
99.94	100.0	0.06	1	0.35	Pass
149.90	149.8	-0.10	1	0.35	Pass

Remarks:

The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor of k=2, which provides a level of confidence of approximately 95%.

If compliance testing to a specification is requested. The results can be pass, fail, or if blank "Not determinable". If results are not determinable it is to end user to determine if results meet thier needs.

If compliance testing to a specification is not requested, only data and uncertainty will be given on data sheet.



Southwest Research Institute
6220 Culebra Road
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Department of Quality Assurance
Calibration Laboratory

Certificate of Calibration

10 May 2002

Issued to: DARRELL DUNN DIV20 B57
Manufacturer/Model: FISHER SCIENTIFIC 15-166A
Description: THERMOMETER
Serial Number: H 00-387
Asset Number: 008724
Work Order Number: 444048466

This certifies the above item was calibrated in compliance with MIL-STD-45662A and ANSI/NCSL Z540-1-1994. 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 is 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.

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: 55 % RH


Calibration Date: 10 May 02 **Calibration Procedure:** CL-9, 5/99

Condition as Received: IN TOLERANCE

Condition as Returned: IN TOLERANCE

Remarks:

Approved by:


Walt Hill, Metrology Group Leader
Institute Calibration Laboratory

Measurements performed by:


Roger Dykstra, Technician