

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

**WORK ORDER**

CERTIFICATE # 22376 ASSET # 2467 DATE 14 Aug 96

ITEM DATA:  
Manufacturer Fisher Model 14-983-10B  
Description Thermometer Serial # 183301  
Accessories \_\_\_\_\_

ACTION REQUESTED cal

CUSTODIAN Darrell Dunn Div 20

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

CHARGE # 20-04 20-5708-573 Date Required \_\_\_\_\_

INSTRUMENT USED ON:  NUCLEAR  DOD  NASA  GLP  SPPE  
 OTHER \_\_\_\_\_

COPY OF CALIBRATION CERTIFICATE  Yes  No

CONDITION RECEIVED: \_\_\_\_\_ Out of tolerance, repaired to specifications  
\_\_\_\_\_ In tolerance, minor adjustments/repairs made  
 In tolerance, no adjustments/repairs  
\_\_\_\_\_ Out of tolerance, adjusted to specifications  
\_\_\_\_\_ Received into system, introduced or reactivated  
\_\_\_\_\_ Calibration internal  
\_\_\_\_\_ Reliability code

ACTION TAKEN: (Calibration/Repair/Parts) Collect per Procedure

CAL ENVIRONMENT:  
Temperature 50 °F Humidity 33 %RH

CALIBRATED/REPAIRED:  
By [Signature] Cal Procedure WI-9-30-5763  
Date 19 Aug 96 Accuracy ± 1°C  
Cal Interval 6 Mos Time to complete:  
Next Cal due 18 Feb 97 Cal 2.0 Repair \_\_\_\_\_  
Standards used (Asset#) 219,328

DATE COMPLETED 19 Aug 96  
DATE PICKED UP 8/21/96 PICKED UP BY [Signature]

22376

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

WORK ORDER

CERTIFICATE # 24349 ASSET # 002467 DATE 17 Feb-97

ITEM DATA:  
Manufacturer Fisher Brand Model 14-983-10B  
Description Thermometer Serial # 183501  
Accessories \_\_\_\_\_

ACTION REQUESTED cal

CUSTODIAN Div. 20, Donell Dunn

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

CHARGE # 20-5708-561 Date Required \_\_\_\_\_

INSTRUMENT USED ON:  NUCLEAR  DOD  NASA  GLP  SPPE  
 OTHER \_\_\_\_\_

COPY OF CALIBRATION CERTIFICATE  Yes  No

CONDITION RECEIVED: \_\_\_\_\_ Out of tolerance, repaired to specifications  
\_\_\_\_\_ In tolerance, minor adjustments/repairs made  
 In tolerance, no adjustments/repairs  
\_\_\_\_\_ Out of tolerance, adjusted to specifications  
\_\_\_\_\_ Received into system, introduced or reactivated  
\_\_\_\_\_ Calibration internal  
\_\_\_\_\_ Realibility code

ACTION TAKEN: (Calibration/Repair/Parts) Calibrated Per Procedure  
AD 447  
0.02°C 0.0°C

CAL ENVIRONMENT:  
Temperature 78°F Humidity 51 %RH

CALIBRATED/REPAIRED:  
By [Signature] Cal Procedure 41-9-30-7763  
Date 20 Feb 97 Accuracy +/- 1°C  
Cal Interval 6 mos Time to complete: \_\_\_\_\_  
Next Cal due 20 Aug 97 Cal 2.0 Repair \_\_\_\_\_  
Standards used (Asset#) 218, 328

DATE COMPLETED 21 Feb 97  
DATE PICKED UP 2/26/97 PICKED UP BY [Signature]

24349

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

**WORK ORDER**

CERTIFICATE # 26592 ASSET # 002467 DATE 25 Aug 97

ITEM DATA:  
Manufacturer Fisher Model 11. 185 103  
Description 110, 10000 Serial # 19350  
Accessories \_\_\_\_\_

ACTION REQUESTED 101

CUSTODIAN DW. R. J. Smith

Turned in by: \_\_\_\_\_ Phone 1030

CHARGE # 70-5108-501 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 \_\_\_\_\_ Date \_\_\_\_\_

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) Calibrated per procedure  
RT 445  
0.016°C 0.2°C

CAL ENVIRONMENT:  
Temperature 80°F Humidity 34%RH

CALIBRATED/REPAIRED:  
By Richard P Cal Procedure WI-9-30-7103  
Date 3 Sept 97 Accuracy ±1°C  
Cal Interval 6 mo Reliability Code: 7  
Next Cal due 3 Sept 98 Cal Time 1.5 Repair Time \_\_\_\_\_  
Standards used (Asset#) 219, 328

DATE COMPLETED 7 Sept 97  
DATE PICKED UP 9/10/97 PICKED UP BY [Signature]

**26592**

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

**WORK ORDER**

CERTIFICATE # 28929 ASSET # 002467 DATE 09 Mar 98

ITEM DATA:

Manufacturer Fisher Model 14-983-10B  
Description Thermometer Serial # 103501  
Accessories \_\_\_\_\_

ACTION REQUESTED Cal

CUSTODIAN D. W. Dunn

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

CHARGE # 20-1402-511 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 \_\_\_\_\_ Date \_\_\_\_\_

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) \_\_\_\_\_  
Cal std of WTI  
0.004°C 0°C

CAL ENVIRONMENT: Temperature 72 °F Humidity 26 %RH

CALIBRATED/REPAIRED:  
By K. Hughes Cal Procedure W9-30-T#03  
Date 10 Mar 98 Accuracy ±1°C  
Cal Interval 6 mon Reliability Code: 8  
Next Cal due 10 Sep 98 Cal Time 1.0 Repair Time \_\_\_\_\_  
Standards used (Asset#) 219, 328

DATE COMPLETED 10 Mar 98  
DATE PICKED UP 3/18/98 PICKED UP BY [Signature]

**28929**

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

WORK ORDER

CERTIFICATE # 31647 ASSET # 002467 DATE 19 Oct 98

ITEM DATA:

Manufacturer Fisher Model 14-983-108  
Description Thermometer Serial # 183391  
Accessories \_\_\_\_\_

ACTION REQUESTED POI

CUSTODIAN Dr. J. O. Darrell Dunn

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

CHARGE # 20-1402-571 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 MAR Date 10-19-98

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) Calibrated to Standard

CAL ENVIRONMENT:  
Temperature 75 °F Humidity 54 %RH

CALIBRATED/REPAIRED:  
By K. [Signature] Cal Procedure ASTM E77-92  
Date 19 Oct 98 Accuracy 1/2  
Cal Interval 6 mos Reliability Code: 9  
Next Cal due 19 Apr 99 Cal Time 1.0 Repair Time \_\_\_\_\_  
Standards used (Asset#) 219, 328

DATE COMPLETED 19 Oct 98  
DATE PICKED UP 10/22/98 PICKED UP BY [Signature]

31647



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

WORK ORDER

CERTIFICATE # 34374 ASSET # 052467 DATE 04 May 99

ITEM DATA:

Manufacturer Fisher Brand Model 14-983-108  
Description thermometer Serial # 183301  
Accessories tube

ACTION REQUESTED cal

CUSTODIAN Div. 20, Danell Dunn

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

CHARGE # 20-04 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 MAJ Date 05-04-99

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) calibrated to spec

CAL ENVIRONMENT:  
Temperature 74 °F Humidity 33 %RH

CALIBRATED/REPAIRED:  
By [Signature] Cal Procedure T.O. 33X3-4-42-1, Apr 97  
Date 7/27/99 Accuracy [Signature]  
Cal Interval 6 mths Reliability Code: \_\_\_\_\_  
Next Cal due 2/26/99 Cal Time 1.5 Repair Time \_\_\_\_\_  
Standards used (Asset#) 5174, 7001

DATE COMPLETED 7/27/99  
DATE PICKED UP 5/13/99 PICKED UP BY [Signature]

34374





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

WORK ORDER

WORK ORDER # 36857 ASSET # 002467 DATE 17 Nov 99

ITEM DATA:

Manufacturer Fisher Model 14-723-106  
Description 1 hormone for Serial # 193301  
Accessories \_\_\_\_\_

ACTION REQUESTED cal

CUSTODIAN M. D. Darrell Dunn

Turned in by: \_\_\_\_\_ Phone 690

CHARGE # 20 off 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 WADT Date 11-17-99

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

CONDITION RECEIVED: \_\_\_\_\_ Out of tolerance  
 In tolerance  
\_\_\_\_\_ Damaged (Contact customer)  
\_\_\_\_\_ Contact \_\_\_\_\_ Date \_\_\_\_\_  
\_\_\_\_\_ Received into system, introduced or reactivated

ACTION TAKEN: (Calibration/Repair/Parts) Calibrate for customer

CAL ENVIRONMENT:  
Temperature 74 °F Humidity 49 %RH

CALIBRATED/REPAIRED:  
By [Signature] Cal Procedure CL-9, 11/17/99  
Date 19 Nov 99 Accuracy 10% span  
Cal Interval 6 mos Reliability Code 11  
Next Cal Due 19 May 00 Cal Time 2 Repair Time \_\_\_\_\_  
Standards used (Asset #) 5243, 5174

DATE COMPLETED 19 Nov 99  
DATE PICKED UP 11/23/99 PICKED UP BY [Signature]

36857





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

19 November 1999

**Issued to:** DARRELL DUNN DIV20 B57  
**Manufacturer/Model:** FISHER SCIENTIFIC 14-983-10B  
**Description:** THERMOMETER  
**Serial Number:** 183301  
**Asset Number:** 002467

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.

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:** 19 Nov 99 **Calibration Procedure:** CL-9, MAY99

**Condition as Received:** IN TOLERANCE

**Condition as Released:** IN TOLERANCE

**Remarks:**

**Approved by:**

  
\_\_\_\_\_  
Jim Patterson, Supervisor or Walt Hill, Metrologist

Certificate # 36857

m:\a2la.rpt Rev date 10 Mar 99

**Measurements performed by:**

  
\_\_\_\_\_  
Ken Harp, Technician

Page 1 of 1

# WORK ORDER 39217

Date Received 5/25/00

Asset No. 002467 Manufacturer FISHER SCIENTIFIC Model 14-983-10B  
 Description THERMOMETER Serial Number 183301  
 Accessory Received/Required NONE  
 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

## PARTS

Part Name	Part Number	Cost	Failure Description

39217

## WORK SUMMARY

Failure Description \_\_\_\_\_  
 Repair Action \_\_\_\_\_  
 Cal Procedure CL-9, MAY99 Temp 76 F Hum 47 %  
 Tech JW Cal Hrs. .7 Repair Hrs. \_\_\_\_\_ Part Cost \_\_\_\_\_  
 Action Taken OK  
 Standards Used 215 5174  
 Date Cal JUN 2000 Int. 6 Mo. Date Due 1 DEC 2000 Reliability Code 7  
 Date Picked Up 6/2/00 Picked Up By [Signature]





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

Accredited



Certificate #  
0972-01

## Certificate of Calibration

1 June 2000

**Issued to:** DARRELL DUNN DIV20 B57  
**Manufacturer/Model:** FISHER SCIENTIFIC 14-983-10B  
**Description:** THERMOMETER  
**Serial Number:** 183301  
**Asset Number:** 002467

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.

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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: 47 % RH

**Calibration Date:** 1 Jun 00 **Calibration Procedure:** CL-9, MAY99

**Condition as Received:** In Tolerance

**Remarks:**

**Approved by:**

Jim Patterson, Supervisor, or Walt Hill, Metrologist

Certificate # 39217

m:\a2la.rpt Rev date 22 May 00

**Measurements performed by:**

Jerry White, Technician

Page 1 of 1

# SOUTHWEST RESEARCH INSTITUTE

## Calibration Laboratory

### WORK ORDER

Processed by RCRUZ at 3:56:28PM on 12/14/00

1 0000 0000 0000 0000 0000 0000

**Work Order 444041750**

Arrived 12/14/00

Asset No. 002467

Manufacturer FISHER SCIENTIFIC

Model 14-983-10B

Instrument Type/Class THERMOMETER

Serial No. 183301

Accessory No.

Calibration Procedure CL-9, MAY99

Location B57

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
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

### REPAIR PARTS

Date	Hours	Part Name	Part Number	Failure Description	Cost
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

### WORK SUMMARY

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

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

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

Temp 69 F

Hum. 40 %

Tech QNW

Totals

Cal Hours 1

Repair Hours \_\_\_\_\_

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

Standards Used 219

Date Picked Up 1/9/2001

Picked Up By Darrell Dunn

444041750







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

22 December 2000

**Issued to:** DARRELL DUNN DIV20 B57  
**Manufacturer/Model:** FISHER SCIENTIFIC 14-983-10B  
**Description:** THERMOMETER  
**Serial Number:** 183301  
**Asset Number:** 002467

This certifies the above item was calibrated in compliance with MIL-STD-45662A and ANSI/NCSL 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: 69.0 Degrees Fahrenheit Humidity: 40 % RH

**Calibration Date:** 21 Dec 00 **Calibration Procedure:** CL-9, MAY99

**Condition as Received:** IN TOLERANCE

**Condition as Released:** IN TOLERANCE

**Remarks:**

**Approved by:**

Jim Patterson, Supervisor, or Walt Hill, Metrologist

**Certificate # 444041750**

mAa2la.rpt Rev date 22 May 00

**Measurements performed by:**

Jerry White, Technician

Page 1 of 1

# SOUTHWEST RESEARCH INSTITUTE

## Calibration Laboratory

### WORK ORDER

Processed by RCRUZ at 2:43:41PM on 6/22/01

||||| ||||| ||||| ||||| ||||| ||||| |||||

**Work Order 444044159**

Arrived 6/22/01

Asset No. 002467

Manufacturer FISHER SCIENTIFIC

Model 14-983-10B

Instrument Type/Class THERMOMETER

Serial No. 183301

Accessory No.

Calibration Procedure CL-9, MAY99

Location B57

Div/Client DIV20

Custodian DARRELL DUNN

Mail Stop B57

Tel. 6090

Charge/Project No. 00751.006 1.20

Delivered By / Telephone

IN4CAL

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

### WORK NOTES

Date	Hours	Remarks/Notes
<u>6/25</u>	<u>.5</u>	<u>Cal</u>
<u>6/26</u>	<u>.5</u>	<u>Cal</u>

### REPAIR PARTS

Date	Hours	Part Name	Part Number	Failure Description	Cost

### WORK SUMMARY

Failure Description N/A

Repair Action N/A

Calibration Procedure CL-9, 5/99 Temp 75F Hum. 50 %

Tech R Dykstra Totals Cal Hours 1.0 Repair Hours \_\_\_\_\_ Parts Cost \_\_\_\_\_

Standards Used 0219

Date Picked Up 7/9/01

Picked Up By [Signature]

**444044159**





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

27 June 2001

**Issued to:** DARRELL DUNN DIV20 B57  
**Manufacturer/Model:** FISHER SCIENTIFIC 14-983-10B  
**Description:** THERMOMETER  
**Serial Number:** 183301  
**Asset Number:** 002467  
**Work Order Number:** 444044159

This certifies the above item was calibrated in compliance with MIL-STD-45662A and ANSI/NCSL 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: 75.0 Degrees Fahrenheit Humidity: 50 % RH

**Calibration Date:** 26 Jun 01 **Calibration Procedure:** CL-9, MAY99

**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 RCRUZ, 12/6/01 2:25:38PM

||||| ||||| ||||| ||||| ||||| ||||| |||||

Arrived 12/6/01

Work Order **444046370**

Asset No. 002467 Manufacturer FISHER SCIENTIFIC

Model 14-983-10B

Equipment Type THERMOMETER

Serial No. 183301

Accessory No.

Interval 6 M

Calibration Procedure CL-9, MAY99

Location B57

Div/Client DIV20

Custodian DARRELL DUNN

Mail Stop B57

Tel 6090

**IN4CAL**

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

Notify before adjustments or repairs. (  Provide data with certificate (  Certificate Typ \_\_\_\_\_

Charge/Project No. 00751.006 1.20

Requester / Telephone \_\_\_\_\_

This information is correct for the work requested.

### WORK NOTES

Date	Hours	Remarks/Notes
<u>12/11</u>	<u>1.0</u>	<u>Cal</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Date	Hours	Part Name	Part Number	Failure Description	Cost
<u>n/a</u>	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

### WORK SUMMARY

Failure Description n/a

Repair Action n/a

Tech R Dyksh Cal Hrs. 1.0 Repair Hrs \_\_\_\_\_ Parts Cost \_\_\_\_\_ Temp 75 F Hum. 36 %

Standards Used 0219

Date Picked Up 12/18/01

Picked Up By Darrell Dunn

46370





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

## Certificate of Calibration

11 December 2001

**Issued to:** DARRELL DUNN DIV20 B57  
**Manufacturer/Model:** FISHER SCIENTIFIC 14-983-10B  
**Description:** THERMOMETER  
**Serial Number:** 183301  
**Asset Number:** 002467  
**Work Order Number:** 444046370

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: 75.0 Degrees Fahrenheit Humidity: 36 % RH


**Calibration Date:** 11 Dec 01 **Calibration Procedure:** CL-9, MAY99

**Condition as Received:** SEE ATTACHED DATA

**Condition as Returned:** SEE ATTACHED DATA

**Remarks:** SEE ATTACHED DATA SHEET FOR DATA AND UNCERTAINTY.

**Approved by:**

  
Walt Hill, Supervisor  
Institute Calibration Laboratory

**Measurements performed by:**

  
Roger Dykstra, Technician

# SOUTHWEST RESEARCH INSTITUTE

## Calibration Laboratory

### WORK ORDER

Received by AANDERSON, 6/6/02 9:11:09AM

Arrived 6/6/02

Work Order **444048916**

Asset No. 002467 Manufacturer FISHER SCIENTIFIC

Model 14-983-10B

Equipment Type THERMOMETER

Serial No. 183301

Accessory No.

Interval 6 M

Calibration Procedure CL-9, MAY99

Location B57

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 Typ \_\_\_\_\_

Charge/Project No. 00751.006 1.20

Requester/Telephone DARRELL DUNN

This information is correct for the work requested. *Darrell Dunn*

### WORK NOTES

Date	Hours	Remarks/Notes
<u>4/10/02</u>	<u>.5</u>	<u>cal</u>
<u>6/11/02</u>	<u>.5</u>	<u>cal</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Date	Hours	Part Name	Part Number	Failure Description	Cost
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

48916

### WORK SUMMARY

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

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

Tech R. D. Johnston Cal Hrs. 1.0 Repair Hrs \_\_\_\_\_ Parts Cost \_\_\_\_\_ Temp 74 F Hum. 55 %

Standards Used 9A1A, 5174, 9137, 8920

Date Picked Up 6/24/02

Picked Up By *Darrell Dunn*



Southwest Research Institute  
Calibration Laboratory  
Calibration Data Sheet

Workorder 444048916  
Asset #: 002467  
Serial #: 183301

Mfr. Fisher Scientific  
Model 14-983-10B  
Type Thermometer

Technician R Dykstra  
Procedure CL-9, 5/99  
Cal Date 6/10/02

**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
9414.00	12/06/02	H.P. 34420A Digital Multi-Meter
005174	12/06/02	RTD probe
009137	12/10/02	Hart Super Thermometer
008920	12/07/02	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 110 Degree C  
(if not required leave blank)

Degree C	Degree C	Degree C	Degree C	Degree C	
Std Reading	TI Reading	Error	Test Limits	Uncertainty	Results
-19.85	-19.4	0.45	1	0.35	Pass
12.14	12.4	0.26	1	0.35	Pass
44.11	44.4	0.29	1	0.35	Pass
75.97	76.6	0.63	1	0.35	Pass
108.94	110.0	1.06	1	0.35	

**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 their 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  
San Antonio, TX 78238  
(210) 522-5215  
Department of Quality Assurance  
Calibration Laboratory

## Certificate of Calibration

11 June 2002

**Issued to:** DARRELL DUNN DIV20 B57  
**Manufacturer/Model:** FISHER SCIENTIFIC 14-983-10B  
**Description:** THERMOMETER  
**Serial Number:** 183301  
**Asset Number:** 002467  
**Work Order Number:** 444048916

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: 68.0 Degrees Fahrenheit Humidity: 36 % RH


**Calibration Date:** 11 Jun 02 **Calibration Procedure:** CL-9, MAY99

**Condition as Received:** SEE ATTACHED DATA

**Condition as Returned:** SEE ATTACHED DATA

**Remarks:**

**Approved by:**

  
Walt Hill, Metrology Group Leader  
Institute Calibration Laboratory

**Measurements performed by:**

  
Roger Dykstra, Technician