

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

WORK ORDER

CERTIFICATE # 22378 ASSET # 2470 DATE 14 Aug 96

ITEM DATA:

Manufacturer Fisher Model 14-983-10B
Description Thermometer Serial # 183304
Accessories _____

ACTION REQUESTED cal

CUSTODIAN Darrell Dunn Div 20

Turned in by: 20-5708-573 Phone _____

CHARGE # 2001 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) Calibrated per Procedure
0.0°C 1°C

CAL ENVIRONMENT:
Temperature 80 °F Humidity 33%RH

CALIBRATED/REPAIRED:
By [Signature] Cal Procedure 41-9-30-7403
Date 19 Aug 96 Accuracy ±1°C
Cal Interval 6 Mo Time to complete:
Next Cal due 19 Feb 97 Cal 2.0 Repair _____
Standards used (Asset#) 4965

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

22378

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

WORK ORDER

CERTIFICATE # 24346 ASSET # 002470 DATE 17 FEB-97

ITEM DATA:
Manufacturer Kistler brand Model 14-983-10B
Description Pressure Transducer Serial # 183304
Accessories _____

ACTION REQUESTED cal

CUSTODIAN Div. 20, Daniel Duma

Turned in by: _____ Phone _____

CHARGE # 70-5708-561 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
_____ Reliability code

ACTION TAKEN: (Calibration/Repair/Parts) Calibrated per Procedure
21 FEB 97
0.03°C 1.0°C

24346

CAL ENVIRONMENT:
Temperature 50 °F Humidity 35 %RH

CALIBRATED/REPAIRED:
By [Signature] Cal Procedure WI-F-30-2403
Date 21 FEB 97 Accuracy ±1°C
Cal Interval 6 mos Time to complete:
Next Cal due 21 FEB 97 Cal 2.0 Repair _____
Standards used (Asset#) 219,528

DATE COMPLETED 21 FEB 97
DATE PICKED UP 21 FEB 97 PICKED UP BY [Signature]

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

WORK ORDER

CERTIFICATE # 26597 ASSET # 002470 DATE 25 Aug 97

ITEM DATA:

Manufacturer T. S. Co. Inc. Model 14-908-115
Description 1100 Monitor Serial # 103501
Accessories _____

ACTION REQUESTED Cal

CUSTODIAN J. W. 20, L. O. 01, J. W. 01

Turned in by: _____ Phone 6070

CHARGE # 20. 5108-561 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
0.020°C 0.7°C

26597

CAL ENVIRONMENT:
Temperature 81 °F Humidity 34 %RH

CALIBRATED/REPAIRED:
By [Signature] Cal Procedure 411-9-30-TF03
Date 3 Sep 97 Accuracy ± 1°C
Cal Interval 6 Mos Reliability Code: 3
Next Cal due 3 Sep 98 Cal Time 1.05 Repair Time _____
Standards used (Asset#) 219, 328

DATE COMPLETED 4 Sep 97
DATE PICKED UP 9/10/97 PICKED UP BY [Signature]

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

WORK ORDER

CERTIFICATE # 28932 ASSET # 002470 DATE 09 MAR 98

ITEM DATA:

Manufacturer Fisher Model 14-983-1013
Description Thermometry Serial # 183304
Accessories _____

ACTION REQUESTED cal

CUSTODIAN M. P. Davis

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 wt
0.007°C 0.2°C

CAL ENVIRONMENT: Temperature 72 °F Humidity 26 %RH

CALIBRATED/REPAIRED:
By K. H. H. H. Cal Procedure WI 9-30-FH03
Date 10 Dec 98 Accuracy ± 1°C
Cal Interval 6 mo Reliability Code: 8
Next Cal due 10 Sep 99 Cal Time 1.0 Repair Time _____
Standards used (Asset#) 219, 328

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

28932

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

WORK ORDER

CERTIFICATE # 31643 ASSET # 002470 DATE 19 00198

ITEM DATA:

Manufacturer Fisher Model 14.983-103
Description Thermometer Serial # 183304
Accessories _____

ACTION REQUESTED Cal

CUSTODIAN Div. 20, Daniel Quinn

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 MARJ 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 per procedure

CAL ENVIRONMENT:
Temperature 74°F Humidity 60 %RH

CALIBRATED/REPAIRED:
By [Signature] Cal Procedure ASTM E177-92
Date 20 Oct 98 Accuracy 1/2
Cal Interval 6 mos Reliability Code: 9
Next Cal due 20 Apr 99 Cal Time 1.0 Repair Time _____
Standards used (Asset#) 219, 328

DATE COMPLETED 20 Oct 98
DATE PICKED UP 10/20/98 PICKED UP BY [Signature]

31643

CALIBRATION CHECK FORM

Date Calibrated 20 OCT 98 Work Order 31643
Technician 8216 CAL. PROCEDURE: ASIM E77-92
Unit Under Test THERMOMETER
Manufacturer FISHERBROW Model 14-983-10B SN 183304 ASN 2470

Rev _____ Chg _____
Page 1 of 1

STEP	FUNCTION OR RANGE	APPLIED	TOLERANCE		MEASURED VALUES		P/F
			MIN	MAX	AS FOUND	RELEASED	
		0°C			10		
		0.00	+/-	1.0°C	0.5		P

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

WORK ORDER

CERTIFICATE # 34375 ASSET # 002470 DATE 04 May 99

ITEM DATA:

Manufacturer Fisher brand Model 14-983-10A
Description Thermometer Serial # 183304
Accessories tube

ACTION REQUESTED Cal

CUSTODIAN Du. 20, Darrell 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) Calibrate per procedure

CAL ENVIRONMENT:
Temperature 76 °F Humidity 33 %RH

CALIBRATED/REPAIRED:
By [Signature] Cal Procedure T.O. 3315-4-42-1, 4/18/97
Date 7 May 99 Accuracy 4% spec
Cal Interval 6 mths Reliability Code: _____
Next Cal due 7 Dec 99 Cal Time 1.5 Repair Time _____
Standards used (Asset#) 5174, 7001

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

34375

WORK ORDER HISTORY

DATE	START STOP	CAL	REP	REMARKS:
<i>6/2/04</i>		<i>0.5</i>		
TOTAL CAL/REPAIR				TOTAL HOURS _____

Date Calibrated 7 May 99 Work Order 34375
 Technician 8216 Calibration Procedure T.O. 23X5-4-12-1, AIR 97
 Unit Under Test THERMOMETER
 Manufacturer FISHER SUBMITER Model 14-983-108 SN _____ ASN 2470

STEP	FUNCTION OR RANGE	APPLIED	TOLERANCE		MEASURED VALUES		P/F
			MIN	MAX	AS FOUND	RELEASED	
	RANGE: -20°C To 110°C	°C	± 1°C		°C		
		-20.0	-19	-21	-19		P P P P P P
	(20% Range)	6.0	5	7	7		
	(40% Range)	32.0	31	33	32		
	(60% Range)	58.0	57	59	58		
	(80% Range)	84.0	83	85	84		
	(100% Range)	108.0	107	109	108		

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

WORK ORDER

WORK ORDER # 36843 ASSET # 002470 DATE 19 Nov. 99

ITEM DATA:

Manufacturer Fisher brand Model 14-983-100
Description Thermometer Serial # 183904
Accessories _____

ACTION REQUESTED Cal

CUSTODIAN Dr. D. Daniel Dina

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 MAO 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) Calibrated by procedure

CAL ENVIRONMENT:
Temperature 74 °F Humidity 49 %RH

CALIBRATED/REPAIRED:
By [Signature] Cal Procedure CL-9, 10/99
Date 19 Nov 99 Accuracy [Signature]
Cal Interval 6 mos Reliability Code 11
Next Cal Due 12/19/00 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]

36843

CALIBRATION WORKSHEET

Date Calibrated 19 Nov 99 Work Order 36843 Cal By E216

Procedure No./Date CL-9, May 99 Unit Under Test Thermometer

Mfg. Fisher Brand Model 14-983-10A SN 183324 AN 2770

STEP	FUNCTION OR RANGE	APPLIED	TOLERANCE		MEASURED VALUES		P/F
			MIN	MAX	AS FOUND	RELEASED	
		°C	± 1°C		°C		
	20% Range	6.00			7		/
	40% Range	32.00			32.5		/
	60% Range	58.00			58		/
	80% Range	84.00			84		/
	100% (-1.20%)	109.0			109		/



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

19 November 1999

Issued to: DARRELL DUNN DIV20 B57
Manufacturer/Model: FISHER SCIENTIFIC 14-983-10B
Description: THERMOMETER
Serial Number: 183304
Asset Number: 002470

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 # 36843

m:\a2la.rpt Rev date 10 Mar 99

Measurements performed by:

Ken Harp, Technician

Page 1 of 1

WORK ORDER 39216

Date Received 5/25/00

Asset No. 002470 Manufacturer FISHER SCIENTIFIC Model 14-983-10B
Description THERMOMETER Serial Number 183304
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

39216

WORK SUMMARY

Failure Description _____
Repair Action _____
Cal Procedure CL-9, MAY99 Temp 76 F Hum 47 %
Tech JW Cal Hrs. .2 Repair Hrs. _____ Part Cost _____
Action Taken OK
Standards Used 219 5174
Date Cal 1 JUN 2000 Int. 6 Mo. Date Due 1 Dec 2000 Reliability Code 12
Date Picked Up 6/2/00 Picked Up By Darrell Dunn



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Department of Quality Assurance
Calibration Laboratory



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: 183304
Asset Number: 002470

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.

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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:

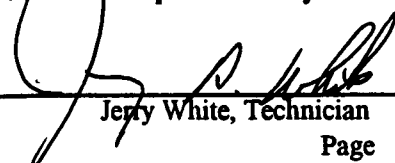


Jim Patterson, Supervisor, or Walt Hill, Metrologist

Certificate # 39216

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

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

Work Order **444041761**

Arrived 12/14/00

Asset No. 002470

Manufacturer FISHER SCIENTIFIC

Model 14-983-10B

Instrument Type/Class THERMOMETER

Serial No. 183304

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

WORK SUMMARY

Failure Description _____

Repair Action _____

Calibration Procedure _____ Temp 69 F Hum. 40 %

Tech JAW Totals Cal Hours 1 Repair Hours _____ Parts Cost _____

Standards Used 2/8

Date Picked Up 1/9/2001

Picked Up By Darrell Dunn

444041761

CALIBRATION CHECK FORM

Date Calibrated 21 DEC 2000 Work Order 41761 Cal By JMD

Procedure No./Date: CL-9 MAY 99 Unit Under Test: THERMOMETER

Mfg.: FISHER Model: 14-983-10B SN 183304 AN 2470

STEP	FUNCTION OR RANGE	APPLIED	TOLERANCE		MEASURED VALUES		P/ F
			MIN	MAX	AS FOUND	RELEASED	
	THERMOMETER CNL	-20°C	± 1°C		-20.0		P
		0°C			+0.8		P
		+40°C			+40.2		P
		+80°C			+80.5		P
		+110°C			+110.2		P



Southwest Research Institute
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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: 183304
Asset Number: 002470

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 # 444041761

mAa2la.rpt Rev date 22 May 00

Measurements performed by:

Jerry White, Technician

SOUTHWEST RESEARCH INSTITUTE

Calibration Laboratory

WORK ORDER

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

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

Work Order **444044163**

Arrived 6/22/01

Asset No. 002470 Manufacturer FISHER SCIENTIFIC

Model 14-983-10B

Instrument Type/Class THERMOMETER

Serial No. 183304

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>6/25</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 75 F Hum. 50 %

Tech R Dykstra Totals Cal Hours 1.0 Repair Hours _____ Parts Cost _____

Standards Used 0219

Date Picked Up ~~6/22/01~~ 7/4/01 Picked Up By ~~R Dunn~~ [Signature]

444044163



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: 183304
Asset Number: 002470
Work Order Number: 444044163

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.

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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: 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 JIBARRA, 1/8/02 11:36:03AM

Arrived 1/8/02

Work Order **444046683**

Asset No. 002470 Manufacturer FISHER SCIENTIFIC

Model 14-983-10B

Equipment Type THERMOMETER

Serial No. 183304

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 Type _____

Charge/Project No. 00751.006 1.20

Requester / Telephone DARRELL DUNN/ X6090

This information is correct for the work requested.

WORK NOTES

Date	Hours	Remarks/Notes
<u>1/14/02</u>	<u>1.5</u>	<u>Cal</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

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

Tech R Dykstra Cal Hrs. 1.5 Repair Hrs _____ Parts Cost _____ Temp 76 F Hum. 21 %

Standards Used 0219

Date Picked Up 1/21/02

Picked Up By Darrell Dunn

444046683

Southwest Research Institute
 Calibration Laboratory
 Calibration Data Sheet Z 540

Workorder	444046683	Mfr.	Fisher Scientific	Technician	R Dykstra
Asset #.	002470	Model	14-983-10B	Procedure	CL-9, 5/99
Serial #.	183304	Type	Thermometer	Cal Date	1/14/02

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%.
 The error is equal to the TI reading - Standard reading.
 The major contributor to the uncertainty is the resolution of the thermometer.
 The results can be Pass, Fail or if blank "Not determinable. If not determinable it is up to end user to determine if results meet their needs.

Parameter	Degree C	Degree C	Degree C	Degree C	Degree C	
		As Found				
	Standard Reading	TI Reading	Error	Test Limits	Uncertainty	Results
	-19.98	-19.0	0.98	1	1.7	Pass
	4.09	4.8	0.72	1	1.7	Pass
	28.04	28.6	0.56	1	1.7	Pass
	52.06	52.6	0.54	1	1.7	Pass
	75.98	76.6	0.62	1	1.7	Pass
	107.95	108.8	0.85	1	1.7	Pass



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

Certificate of Calibration

14 January 2002

Issued to: DARRELL DUNN DIV20 B57
Manufacturer/Model: FISHER SCIENTIFIC 14-983-10B
Description: THERMOMETER
Serial Number: 183304
Asset Number: 002470
Work Order Number: 444046683

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: 21 % RH


Calibration Date: 14 Jan 02 **Calibration Procedure:** CL-9, MAY99

Condition as Received: IN TOLERANCE

Condition as Returned: IN TOLERANCE

Remarks:

Approved by:


Walt Hill, Supervisor
Institute Calibration Laboratory

Measurements performed by:


Roger Dykstra, Technician