

Mesa Laboratories, Inc.
12100 West 6th Ave., Lakewood, CO 80228

Certificate of Conformance

Customer: Mesa Laboratories, Inc.
Item: Thunder Scientific 2500 Humidity Generator
ID Number: TE10294
Serial Number: 501476
Procedure: Thunder Scientific User Manual Section 4
Calibration Date: Jan/8/2016



This certifies that the above product was calibrated in compliance with ISO/IEC 17025 using applicable Mesa Laboratories procedures. This calibration is traceable to the National Institute of Standards and Technology.

On the date tested, the instrument met its published operating specifications. The environment in which this instrument was calibrated is maintained within the operating specification of the instrument and the standards.

U (Measurement Uncertainty) is the RSS (root sum square) of the standard deviation of the UUT's errors over the test range, the UUT's resolution and the uncertainty of the standard used, with a coverage factor of $k=2$.

A handwritten signature in black ink, appearing to be "D. Lambert", written over a horizontal line.

Lab Manager

A handwritten signature in blue ink, appearing to be "James Jones", written over a horizontal line.

Quality Manager

This report shall not be reproduced except in full, without the written approval of Mesa Laboratories, Inc. Results relate only to the items tested or calibrated.

REPORT OF CALIBRATION

Item: Thunder Scientific 2500 Humidity Generator S/N 0501476, ID# TE10294
 Low Range Pressure Transducer, S/N 1008027
 High Range Pressure Transducer, S/N 955503

Low Pressure Calibration Required: As Received @ ambient, 30 & 50 psiA,
 As Left @ ambient, 20, 30, 40 & 50 psiA.

High Pressure Calibration Required: As Received @ 50, 100 & 150 psiA,
 As Left @ 50, 75, 100, 125 & 150 psiA.

Calibration Date: 15-Dec-15
 Ambient Conditions: 23.85 °C and 19.81 %RH
 Test Medium: Air

Standards Used: TE10704 calibration expires: 6/30/2016
 ±0.025% of reading uncertainty

As Received Data:

Low Pressure Transducer				High Pressure Transducer			
Test	2500	Error	U	Test	2500	Error	U
psiA	psiA	psiA	± psiA	psiA	psiA	psiA	± psiA
-----	-----	-----	-----	-----	-----	-----	-----
12.00	11.98	0.02	0.01	50.00	49.99	0.01	0.11
30.00	29.97	0.03	0.01	100.00	100.00	0.00	0.11
50.00	49.99	0.01	0.02	146.00	145.90	0.10	0.12

As Left Data:

Low Pressure Transducer				High Pressure Transducer			
Test	2500	Error	U	Test	2500	Error	U
psiA	psiA	psiA	± psiA	psiA	psiA	psiA	± psiA
-----	-----	-----	-----	-----	-----	-----	-----
12.00	11.99	0.01	0.01	50.00	49.99	0.01	0.02
20.00	19.99	0.01	0.01	75.00	74.99	0.01	0.02
30.00	29.99	0.01	0.01	100.00	99.99	0.01	0.03
40.00	40.00	0.00	0.01	125.00	125.00	0.00	0.04
50.00	49.99	0.01	0.02	146.00	146.00	0.00	0.04

Adjustments: New calibration coefficients were calculated and saved to memory

Manufacturer's specifications: ± 0.15% of full scale

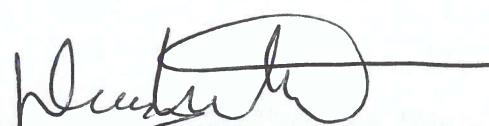
As Received: Within Tolerance: YES
 Operational Failure: NONE
 Physical Damage: NONE

As Left: Within Tolerance: YES
 Limited Range: NONE

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 Calibration Technician



 Lab Manager

REPORT OF CALIBRATION

Item: Thunder Scientific 2500 Humidity Generator S/N 0501476, ID# TE10294

Temperature Calibration Required: As Received @ 0, 35 & 70 °C
 As Left @ 0,20,35,50 & 70 °C

Calibration Date: 11-Dec-2015 @ 12:58AM/PM
 Ambient Conditions: 22.92 °C and 20.96 %RH
 Test Medium: Dimethyl Silicone Fluid

Standards Used: Fluke TE 10345 calibration expires: 7/30/2016
 Hart TE 10344 calibration expires: 7/30/2016
 ±0.018 °C uncertainty

As Received Data:

Actual °C	Saturation °C	Error °C	Exp Valve °C	Error °C	Chamber °C	Error °C	U ± °C
69.973	69.980	0.007	69.940	0.033	69.950	0.023	0.04
35.002	35.000	0.002	35.000	0.002	35.010	0.008	0.04
0.003	-0.0234	0.026	-0.2630	0.266	-0.0837	0.087	0.04

As Left Data:

Actual °C	Saturation °C	Error °C	Exp Valve °C	Error °C	Chamber °C	Error °C	U ± °C
69.999	69.99	0.0090	70	0.0010	70	0.0010	0.03
59.997	60.01	0.0130	60.01	0.0130	60.01	0.0130	0.03
49.984	50.00	0.0160	49.99	0.0060	50.00	0.0160	0.03
39.968	39.98	0.0120	39.98	0.0120	39.98	0.0120	0.03
30.002	30.02	0.0180	30.00	0.0020	30.00	0.0020	0.03
19.999	19.99	0.0090	19.99	0.0090	19.99	0.0090	0.03
9.993	10.000	0.0070	9.996	0.0030	9.987	0.0060	0.03
0.002	0.0000	0.0020	0.0000	0.0020	0.0000	0.0020	0.03

Adjustments: New calibration coefficients were calculated and saved to memory
 Note: As per manufacturer's instructions the Presat temperature was not calibrated.

Manufacturer's specifications: ± 0.06 °C

As Received: Within Tolerance: YES
 Operational Failure: NONE
 Physical Damage: NONE

As Left: Within Tolerance: YES
 Limited Range: NONE

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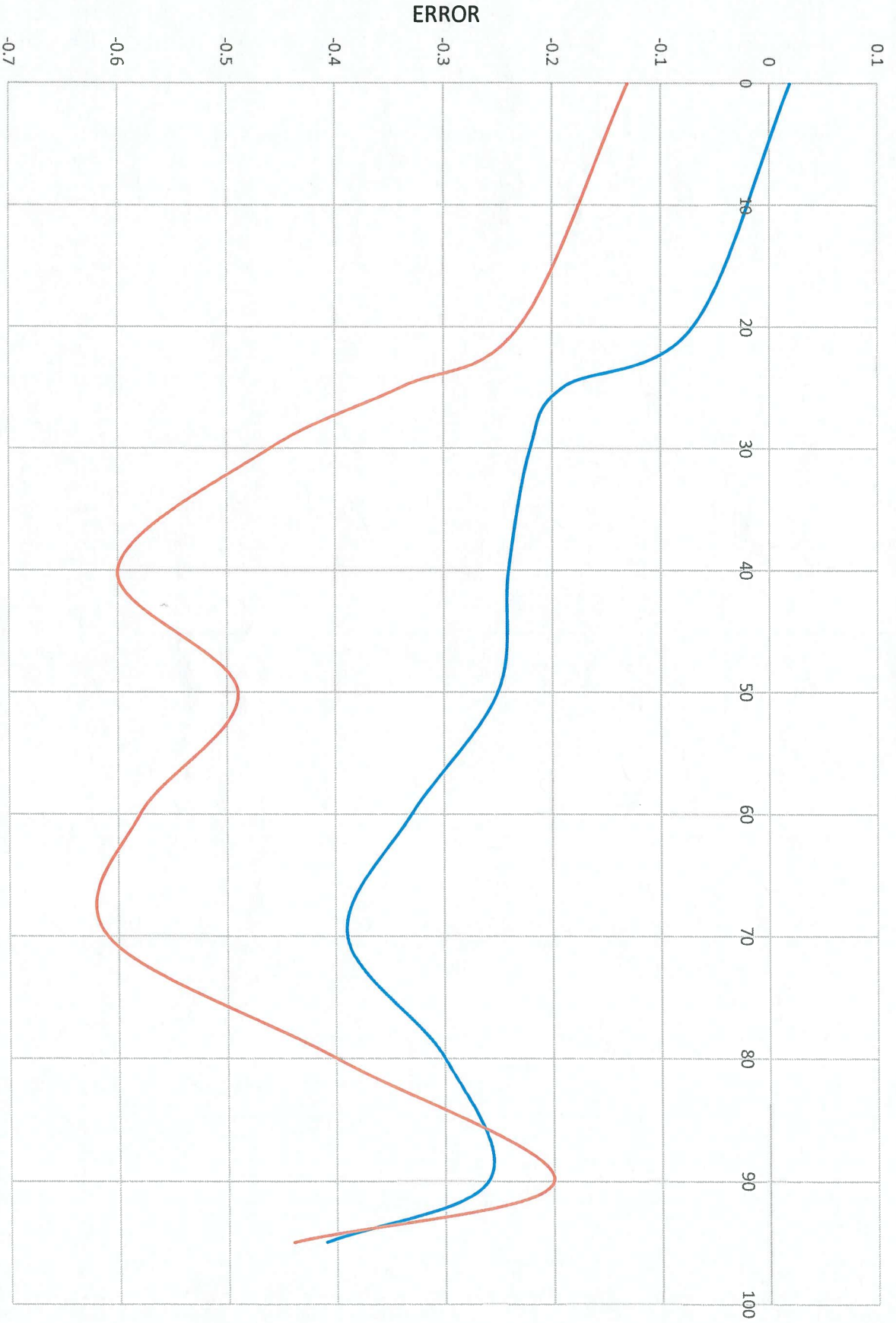


 Calibration Technician



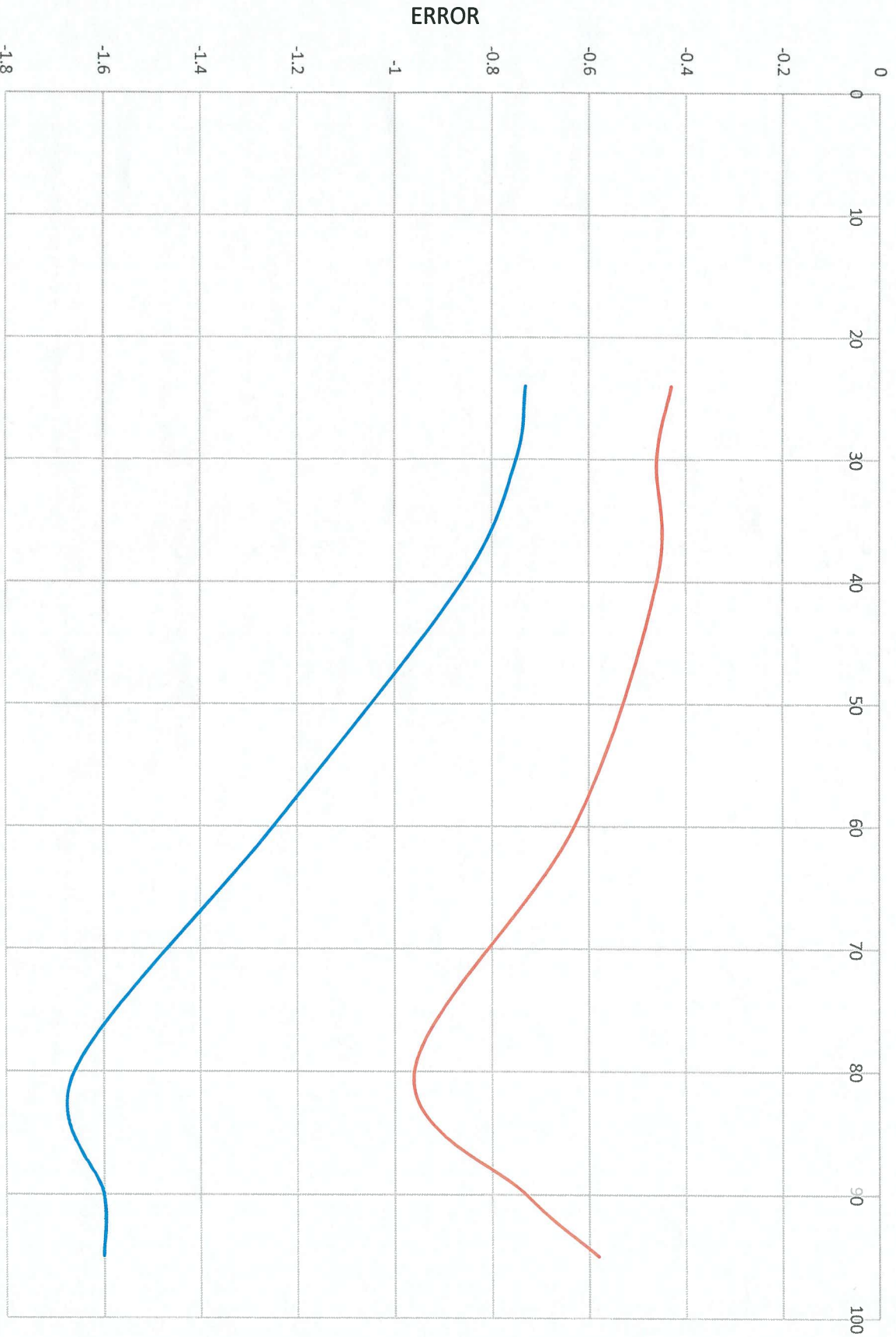
 Lab Manager

M3HREF02 @ 25°C



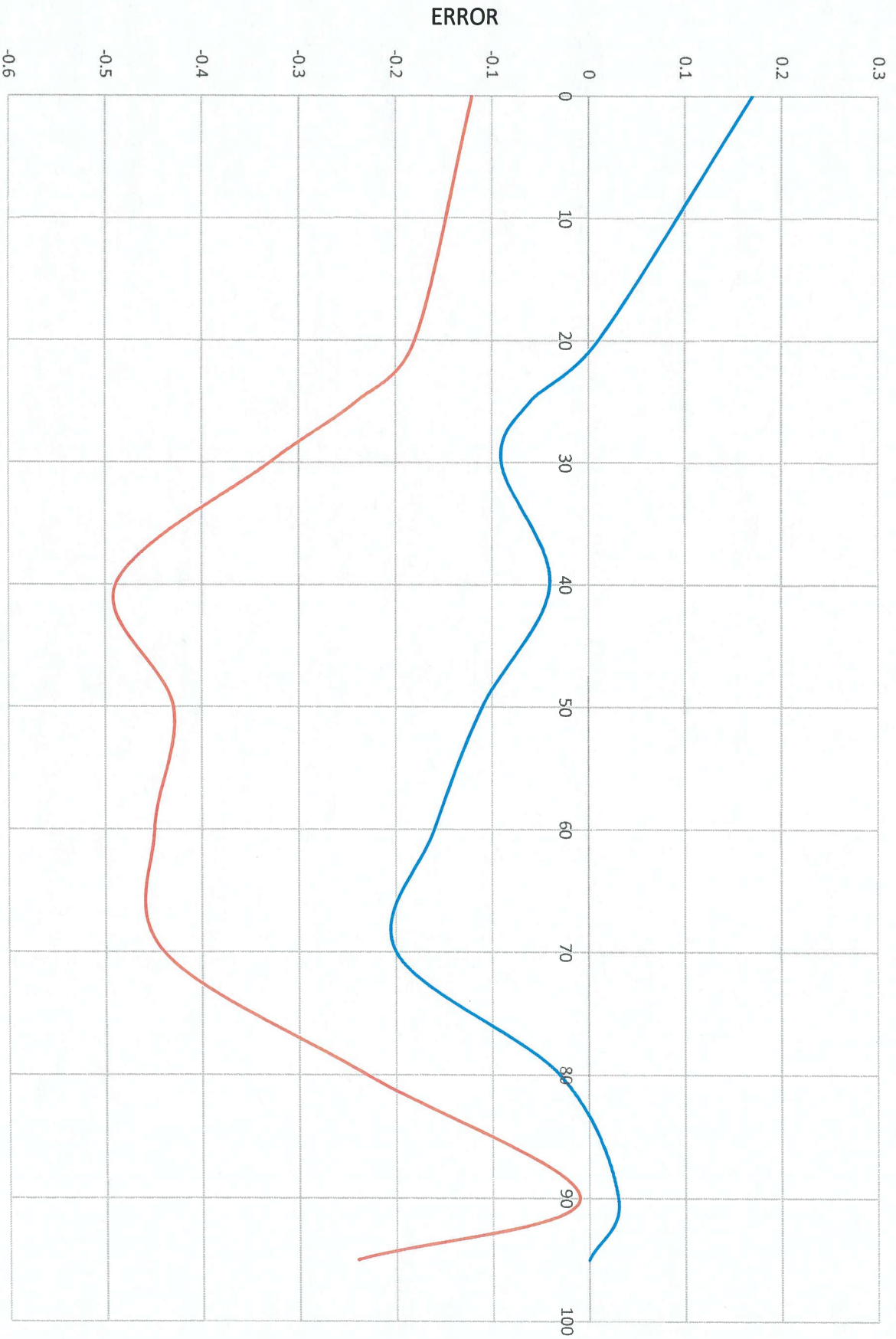
Standard (TEI0228) Chamber (TEI0294)

M3HREF02 @55°C



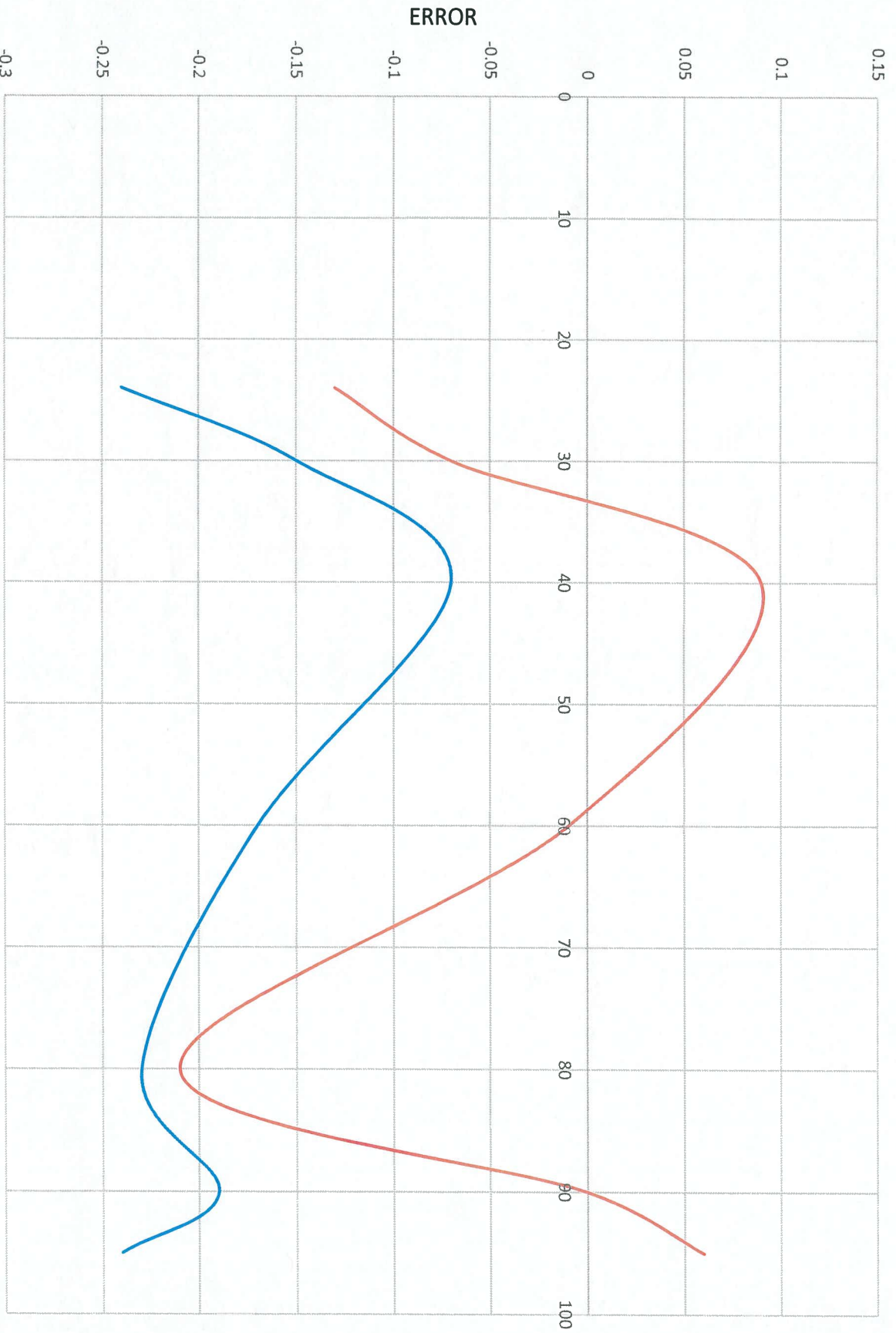
Standard (TE10228) Chamber (TE10294)

M3HREF03@25°C



Standard (TE10228) Chamber (TE10294)

M3HREF03@55°C



Standard (TE10228) Chamber (TE10294)