Certificate Number
A3525080
Issue Date: 3/3/20

Certificate of Calibration

P.O. Number:

ID Number: 000099

Description:	DC REFERENCE STANDARD	Calibration Date:	03/03/2020
Manufacturer:	FLUKE	Calibration Due:	03/03/2021
Model Number:	732B	Procedure:	METCAL FLUKE 732A Rev: 11/4/2017
Serial Number:	5265014	Temperature:	71 °F
Technician:	JIM HYATT	Humidity:	42 % RH
On-Site Calibration: ☐		**As Found Condition:**	**IN TOLERANCE**
Comments:		**Calibration Results:**	**IN TOLERANCE**

Limiting Attribute:

This instrument has been calibrated using standards traceable to the SI units through the National Institute of Standards and Technology (NIST) or other National Metrological Institute (NMI). The method of calibration is direct comparison to a known standard, derived from natural physical constants, ratio measurements or compared to consensus standards.

Reported uncertainties are expressed as expanded uncertainty values at an approximately 95% confidence level using a coverage factor of k=2. Statements of compliance are based on test results falling within specified limits with no reduction by the uncertainty of the measurement.

TMI's Quality System is accredited to ISO/IEC 17025:2017 and ANSI/NCSL Z540-1-1994. ISO/IEC 17025:2017 is written in a language relevant to laboratory operations, meeting the principles of ISO 9001 and aligned with its pertinent requirements. This calibration is within the current Scope of Accreditation and complies with the requirements of ISO/IEC 17025:2017 and TMI's Quality Manual, QM-1.

Results contained in this document relate only to the item calibrated. Calibration due dates appearing on the certificate or label are determined by the client for administrative purposes and do not imply continued conformance to specifications.

This certificate shall not be reproduced, except in full, without the written permission of Technical Maintenance, Inc.

Measurements not currently on TMI's Scope of Accreditation are identified with an asterisk.

WALLY GYNN, BRANCH MANAGER

Scott Chamberlain, QUALITY MANAGER

Calibration Standards

Asset Number	Manufacturer	Model Number	Date Calibrated	Cal Due
952383	FLUKE	732B	10/17/2019	10/17/2020
US36000197	HEWLETT PACKARD	34420A	1/15/2020	7/15/2020

TMI Technical Maintenance, Inc.
12530 TELECOM DRIVE, TEMPLE TERRACE, FL 33637
Phone: 813-978-3054 Fax 813-978-3758
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AC-2080

Fluke Model 732B Solid-State Voltage Reference - Serial Number - 5265014	
Reported Value (Volts)	9.9999268
Todays Value (Volts)	9.9999275
Difference (ppm)	-0.07
S_{pred} K=1 (ppm)	0.05
Expanded Unc (U_{95}) (ppm)	0.39

Regression Analysis	
0.1133582091	-73.386
0.069982398	0.15992505
0.272635	0.270034942
2.623785403	7
0.191323466	0.510432089
#N/A	#N/A

Date of Report (dd/mm/yy)	Elapsed Time (Days)	Compared to	Reported [2]Revised SI 2019 (uVolts)	Predicted (uVolts)	Reported - Predicted (ppm)	S_{pred} (ppm)	S_{pred} (ppm)	Expanded U95 (ppm)	Expanded U96 (ppm)
24-Feb-20	0	952383	-73.32	-73.39	0.01	0.03	-0.03	0.39	-0.39
24-Feb-20	0	952383	-73.30	-73.39	0.01	0.03	-0.03	0.39	-0.39
25-Feb-20	1	952383	-73.78	-73.27	-0.05	0.03	-0.03	0.39	-0.39
26-Feb-20	2	952383	-72.69	-73.16	0.05	0.03	-0.03	0.39	-0.39
26-Feb-20	2	952383	-73.08	-73.16	0.01	0.03	-0.03	0.39	-0.39
26-Feb-20	2	952383	-73.24	-73.16	-0.01	0.03	-0.03	0.39	-0.39
27-Feb-20	3	952383	-73.05	-73.05	0.00	0.03	-0.03	0.39	-0.39
27-Feb-20	3	952383	-73.07	-73.05	0.00	0.03	-0.03	0.39	-0.39
28-Feb-20	4	952383	-73.02	-72.93	-0.01	0.03	-0.03	0.39	-0.39
03-Mar-20	8			-72.48		0.05	-0.05	0.39	-0.39

Mean	9.9999268	VDC
Std Deviation	0.03	ppm
[1]Unc	0.39	ppm

[1] Time of test uncertainty - does include long term drift

[2] Revised SI - numerical corrected by +0.1067e-7