

Certificate of Calibration

Fluke Calibration, American Fork

Primary Temperature Laboratory

Description:	IR Calibrator	Certificate Number:	B6831035
Manufacturer:	Fluke	Date of Calibration:	30 Aug 2016
Model:	4181	Date Due:	
Serial Number:	B68471	Temperature:	20.0 to 26.0 °C
Status:	As-Found: New As-Left: In Tolerance	Relative Humidity:	< 60 %RH
Calibration:	Full	Pressure:	83.5 to 88.5 kPa
Procedure:	AFC301 - 002	Issue Date:	31 Aug 2016
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Customer:	VIDITEC SA BUENOS AIRES, AR		
PO Number:	RMA 30978721		

This calibration is traceable to the SI through recognized national measurement institutes, radiometric techniques, or natural physical constants and is in compliance with ISO17025:2005 and ANSI/NCSL Z540.1. The calibration has been completed in accordance with the Fluke Calibration Quality System document QSD 111.0. Calibration certificates without signatures are not valid. This certificate applies to only the item identified and shall not be reproduced other than in full, without the specific written approval by Fluke Corporation. This certificate shall not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

This calibration certificate may contain data that is not covered by the Scope of Accreditation. The unaccredited test points, where applicable, are indicated by an asterisk (*), or confined to clearly marked sections. Functional tests are not accredited.

Measurement uncertainties at the time of test are given where applicable. They are calculated in accordance with the method described in the ISO Guide to the Expression of Uncertainty in Measurement. The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k such that the coverage probability corresponds to approximately 95 %.

Comments:



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877-355-3225 www.flukecal.com

Approved Signatory

Emmanuel Narvaez
 Calibration Technician

Standards Used**Description**

1560 Precision Digital Thermometer
2562-H Precision Digital Thermometer
APER_RTD Platinum Resistance Thermometer
KT19.82 Radiation Thermometer
Precision IR Calibrator Test Station

Serial Number

A2C135
A55644
B5C0400
2502
3

Due-Date

NCR
03-Mar-2017
07-Sep-2016
29-Oct-2016
NCR

Quality Manuals

This calibration has been completed in accordance with:

- The Fluke Corporate Quality Manual, QSD 111.0, Revision 118, Dated August, 2014 and/or
- The Fluke 17025 Quality Manual, QSD 111.41, Revision 005, Dated Sept. 2014

The instrument described herein was calibrated by direct measurement of generated temperatures using the reference standards listed in the "Test Equipment" section of this report. The calibration was performed radiometrically as described in the technical guide with the emissivity set to 0.95. The IR thermometer used has a spectral response of 8 to 14 μm . Thus, this calibration represents this spectral range only. When in use, the uncertainty of the measurement due to the instrument will be different if the spectral response of the IR thermometer under test is other than 8 to 14 μm . Please refer to the technical guide for further guidance. The calibration data, internal calibration constants, and uncertainties are shown on the following page(s) of this report.

The calibration uncertainties are shown at a coverage factor of 2 ($k=2$). All known significant sources of uncertainty have been considered. Any limitations or remarks pertaining to this instrument and/or calibration are shown below. Additionally, out of tolerance indications, if any, are identified along with the corresponding data on the data pages of this report. Calibration uncertainties have been taken into account in the determination of tolerance status using risk analysis algorithms. When using the instrument in a calibration process, it is recommended that the instrument specifications be used as the contribution of the instrument rather than the calibration uncertainties. The instrument tolerances are shown on the report at a confidence interval of 95%.

Notes:

- 1) Data represents 8 to 14 μm spectral band as described in the technical manual.
- 2) Where applicable if the UUT was received with an emissivity setting other than 0.95, then this setting was changed to 0.95, as indicated, prior to collection of "As Found" data. The emissivity setting prior to the change is shown on the data page of the report.

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Model: 4181

Serial No.: B68471

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As Found Data

No As Found Data Required

Note: Data represents 8 to 14 μm spectral band as described in the technical manual.

As Left Data

Data ID: B6243074747654

Radiometric Temperature Accuracy

Calibration Setting		Set-point °C	Apparent °C	Error °C	Tolerance °C	Uncertainty °C	Pass/Fail
EMISSIVITY	0.950	35.000	35.042	0.042	±0.350	±0.16	P
Calibration Constants		100.000	99.897	-0.103	±0.500	±0.21	P
		200.000	199.986	-0.014	±0.700	±0.32	P
IR CAL 1	0.34	350.000	349.983	-0.017	±1.200	±0.52	P
IR CAL 2	1.72	500.000	499.886	-0.114	±1.600	±0.79	P
IR CAL 3	5.24						

Control Constants	
TEMP PBAND	10.0
TEMP INT	30.0
TEMP DER	5.0

Note: Data represents 8 to 14 μm spectral band as described in the technical manual.