

# Certificate of Calibration



Illiana Instrumentation Service LLC  
1831 Govert Drive  
Scherverville, IN 46375



Cert #: 14077 Rev. 1 Item # 1304 Certificate Date: 12/2/2023

## CUSTOMER

ILLIANA INSTRUMENTATION SERVICE LLC  
1831 GOVERT DRIVE  
SCHERERVILLE, IN 46375

Purchase Order:

## EQUIPMENT INFORMATION

Item # 1304 Calibration Result: PASS  
Manufacturer FLUKE  
Model Number 741B  
Serial Number 8448010  
Equip. Location MOBILE  
Description CALIBRATOR

## CALIBRATION INFORMATION

Date received: 12/2/2023 Cal Date: 12/2/2023 Cal. Interval 12 MONTHS Cal. Due Date: 12/2/2024  
Technician: PAUL GROLLA Temperature: 72 F Humidity 32 Cal location LAB  
Tag

Department:

Notes:

Problems: None

Adjustments None

Equipment Notes

Sensitivity OKAY

Initial modification offset 0

Final modification offset 0

Note: If the modification offset is not zero, readings reflect zero

Limitations NONE

Accuracy VARIES BY POINT

## Quality and traceability statements

This certifies that the above equipment was calibrated using appropriate Illiana Instrumentation technical procedures. At planned intervals, Illiana Instrumentation standards are calibrated by comparison to or measurement against standards which are traceable to the SI units through the NIST or other recognized national measurement institutes or international standard bodies. The results in this report relate only to the item(s) calibrated. If so indicated above, detailed calibration results are attached to this certificate. These results are part of this certificate and this certificate shall not be reproduced except in full, without the written approval of Illiana Instrumentation. Any number of factors not under the control of the calibration laboratory may cause the calibration of the above item(s) to drift before the recommended recalibration date. Supporting documentation relative to traceability and technical procedures used is on file and is available for examination upon request and approval of our quality assurance manager. The above uncertainties represent an expanded uncertainty expressed at approximately 95% confidence level using a coverage factor of k=2. The certificate date on this report constitutes the issue date. Pass/Fail criteria does not take into account measurement uncertainty.

Calibrated By:

*Paul Grolla*

Approved By:

Laura Grolla

Customer Approval \_\_\_\_\_



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**Calibration Data**

Values found OOT and adjusted are indicated by "A" and items left OOT are indicated by "F"

Group	Description	Nominal	Lower Tol.	Upper Tol.	As Found	As Left	Units	Uncert.	OOT
MEASURE	TYPE K	-180.0	-180.6	-179.4	-180.0	-180.0	°C	0.19	
MEASURE	TYPE K	0.0	-0.6	0.6	0.0	0.0	°C	0.19	
MEASURE	TYPE K	400.0	399.4	400.6	400.0	400.0	°C	0.19	
MEASURE	TYPE K	800.0	799.2	800.8	799.9	799.9	°C	0.19	
MEASURE	TYPE K	1000.0	999.0	1001.0	999.9	999.9	°C	0.19	
MEASURE	TYPE K	1300.0	1298.7	1301.3	1299.9	1299.9	°C	0.19	
SIMULATE	TYPE K	-180.00	-180.60	-179.40	-179.80	-179.80	°C	0.16	
SIMULATE	TYPE K	0.00	-0.60	0.60	0.10	0.10	°C	0.16	
SIMULATE	TYPE K	400.00	399.40	400.60	400.10	400.10	°C	0.16	
SIMULATE	TYPE K	800.00	799.20	800.80	800.10	800.10	°C	0.16	
SIMULATE	TYPE K	1000.00	999.00	1001.00	1000.10	1000.10	°C	0.16	
SIMULATE	TYPE K	1300.00	1298.70	1301.30	1300.10	1300.10	°C	0.16	
MEASURE	TYPE J	-210.0	-210.6	-209.4	-210.2	-210.2	°C	0.17	
MEASURE	TYPE J	0.0	-0.6	0.6	-0.1	-0.1	°C	0.17	
MEASURE	TYPE J	300.0	299.4	300.6	299.9	299.9	°C	0.17	
MEASURE	TYPE J	600.0	599.4	600.6	599.9	599.9	°C	0.17	
MEASURE	TYPE J	900.0	899.1	900.9	899.9	899.9	°C	0.17	
MEASURE	TYPE J	1200.0	1198.8	1201.2	1199.9	1199.9	°C	0.17	
SIMULATE	TYPE J	-210.00	-210.60	-209.40	-209.70	-209.70	°C	0.13	
SIMULATE	TYPE J	0.00	-0.60	0.60	0.10	0.10	°C	0.13	
SIMULATE	TYPE J	300.00	299.40	300.60	300.10	300.10	°C	0.13	
SIMULATE	TYPE J	600.00	599.40	600.60	600.10	600.10	°C	0.13	
SIMULATE	TYPE J	900.00	899.10	900.90	900.10	900.10	°C	0.13	
SIMULATE	TYPE J	1200.00	1198.80	1201.20	1200.10	1200.10	°C	0.13	
MEASURE	TYPE S	0.0	-0.6	0.6	0.3	0.3	°C	0.67	
MEASURE	TYPE S	400.0	399.4	400.6	399.9	399.9	°C	0.58	
MEASURE	TYPE S	800.0	799.2	800.8	800.0	800.0	°C	0.58	
MEASURE	TYPE S	1200.0	1198.8	1201.2	1200.0	1200.0	°C	0.58	
MEASURE	TYPE S	1600.0	1598.4	1601.6	1600.1	1600.1	°C	0.58	
MEASURE	TYPE S	1767.0	1765.2	1768.8	1766.9	1766.9	°C	0.58	



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Group	Description	Nominal	Lower Tol.	Upper Tol.	As Found	As Left	Units	Uncert.	OOT
SIMULATE	TYPE S	0.00	-0.60	0.60	0.20	0.20	°C	0.66	
SIMULATE	TYPE S	400.00	399.40	400.60	400.00	400.00	°C	0.55	
SIMULATE	TYPE S	800.00	799.20	800.80	800.20	800.20	°C	0.55	
SIMULATE	TYPE S	1200.00	1198.80	1201.20	1199.90	1199.90	°C	0.55	
SIMULATE	TYPE S	1600.00	1598.40	1601.60	1600.00	1600.00	°C	0.55	
SIMULATE	TYPE S	1767.00	1765.20	1768.80	1767.20	1767.20	°C	0.55	
MEASURE	TYPE N	-100.0	-100.6	-99.4	-99.6	-99.6	°C	0.2	
MEASURE	TYPE N	0.0	-0.6	0.6	0.3	0.3	°C	0.2	
MEASURE	TYPE N	300.0	299.4	300.6	300.2	300.2	°C	0.2	
MEASURE	TYPE N	600.0	599.4	600.6	600.2	600.2	°C	0.2	
MEASURE	TYPE N	900.0	899.1	900.9	900.3	900.3	°C	0.2	
MEASURE	TYPE N	1300.0	1298.7	1301.3	1300.3	1300.3	°C	0.2	
SIMULATE	TYPE N	-100.00	-100.60	-99.40	-100.30	-100.30	°C	0.18	
SIMULATE	TYPE N	0.00	-0.60	0.60	-0.30	-0.30	°C	0.18	
SIMULATE	TYPE N	300.00	299.40	300.60	299.70	299.70	°C	0.18	
SIMULATE	TYPE N	600.00	599.40	600.60	599.70	599.70	°C	0.18	
SIMULATE	TYPE N	900.00	899.10	900.90	899.80	899.80	°C	0.18	
SIMULATE	TYPE N	1300.00	1298.70	1301.30	1299.80	1299.80	°C	0.18	
MEASURE	TYPE T	-200.0	-200.6	-199.4	-200	-200	°C	0.74	
MEASURE	TYPE T	0.0	-0.6	0.6	0.0	0.0	°C	0.73	
MEASURE	TYPE T	100.0	99.4	100.6	100.0	100.0	°C	0.73	
MEASURE	TYPE T	200.0	199.4	200.6	200	200	°C	0.73	
MEASURE	TYPE T	300.0	299.4	300.6	300.0	300.0	°C	0.73	
MEASURE	TYPE T	400.0	399.4	400.6	400.0	400.0	°C	0.73	
SIMULATE	TYPE T	-200.00	-200.60	-199.40	-200.10	-200.10	°C	0.73	
SIMULATE	TYPE T	0.00	-0.60	0.60	0.00	0.00	°C	0.33	
SIMULATE	TYPE T	100.00	99.40	100.60	100.00	100.00	°C	0.33	
SIMULATE	TYPE T	200.00	199.40	200.60	200.00	200.00	°C	0.33	
SIMULATE	TYPE T	300.00	299.40	300.60	300.00	300.00	°C	0.33	
SIMULATE	TYPE T	400.00	399.40	400.60	400.00	400.00	°C	0.33	



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Group	Description	Nominal	Lower Tol.	Upper Tol.	As Found	As Left	Units	Uncert.	OOT
MEASURE	mVDC 110 RANGE	0.000	-0.017	0.017	-0.002	-0.002	mVDC	0.0033	
MEASURE	mVDC	100.000	99.959	100.042	100.010	100.010	mVDC	0.0033	
MEASURE	mVDC	-100.000	-100.042	-99.959	-99.992	-99.992	mVDC	0.0033	
MEASURE	VDC 1.1 RANGE	0.00000	-0.00006	0.00006	0.00000	0.00000	VDC	0.000033	
MEASURE	VDC	1.00000	0.99970	1.00081	1.00001	1.00001	VDC	0.00045	
MEASURE	VDC 11 RANGE	0.0000	-0.0006	0.0006	0.0000	0.0000	VDC	0.000033	
MEASURE	VDC	10.0000	9.9970	10.0031	9.9999	9.9999	VDC	0.005	
MEASURE	mADC 30 mA RANG	4.0000	3.9963	4.0037	3.9990	3.9990	maDC	0.0016	
MEASURE	mADC	20.0000	19.9947	20.0053	19.9990	19.9990	maDC	0.0016	
MEASURE	OHMS 11 RANGE	0.000	-0.050	0.050	0.000	0.000	Ohm	0.042	
MEASURE	OHMS 11 RANGE	10.000	9.945	10.055	10.010	10.010	Ohm	0.025	
MEASURE	OHMS 110 RANGE	0.00	-0.05	0.05	0.000	0.000	Ohm	0.042	
MEASURE	OHMS 110 RANGE	100.00	99.90	100.10	100.000	100.000	Ohm	0.025	
MEASURE	OHMS 1100 RANGE	0.00	-0.50	0.50	0.000	0.000	Ohm	0.042	
MEASURE	OHMS 1100 RANGE	1000	999	1001	1000	1000	Ohm	0.34	
SOURCE	mVDC	100.000	99.985	100.016	100.004	100.004	mVDC	0.01	
SOURCE	mVDC	120.000	119.933	120.067	120.000	120.000	mVDC	0.062	
SOURCE	mVDC	1000.00	999.85	1000.16	1000.07	1000.07	mVDC	0.53	
SOURCE	mVDC	14000.0	13997.9	14002.2	14000.0	14000.0	mVDC	5.8	
SOURCE	mADC	2.0000	1.9965	2.0035	2.0021	2.0021	maDC	0.01	
SOURCE	mADC	4.0000	3.9963	4.0037	4.0034	4.0034	maDC	0.01	
SOURCE	mADC	22.0000	21.9945	22.0055	22.0050	22.0050	maDC	0.012	
SOURCE	OHMS 11 RANGE	0.100	0.080	0.120	0.100	0.100	Ohm	0.02	
SOURCE	OHMS 11 RANGE	1.000	0.980	1.020	1.001	1.001	Ohm	0.02	
SOURCE	OHMS 11 RANGE	10.000	9.979	10.021	9.999	9.999	Ohm	0.02	
SOURCE	OHMS 110 RANGE	20.000	19.958	20.042	20.001	20.001	Ohm	0.02	
SOURCE	OHMS 110 RANGE	100.000	99.950	100.050	100.001	100.001	Ohm	0.02	
SOURCE	OHMS 1100 RANGE	200.000	199.460	200.540	199.980	199.980	Ohm	0.11	
SOURCE	OHMS 1100 RANGE	1000.00	999.30	1000.70	999.89	999.89	Ohm	0.11	



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SOURCE	K OHMS 11K RANGE	2.0000	1.9944	2.0056	1.9998	1.9998	kOhm	0.0011	
MEASURE	RTD PLT 100 OHM	-180.0	-180.3	-179.7	-180.0	-180.0	DEG C.	0.63	
MEASURE	385 CURVE	100.0	99.5	100.5	100.0	100.0	DEG C.	0.049	
SOURCE	RTD OHMS 385	100.0	99.5	100.5	100.012	100.012	DEG C.	0.049	

Standards Used

I.D.	Model	Description	Manufacturer	Serial No.
1546	525B	TEMP/PRESSURE CALIBRATOR	FLUKE	2041092
1731	34401A	DIGITAL MULTIMETER	HEWLETT PACKARD/AGILENT	3146A27542

Procedures Used

Name	Description
WI-523	CALIBRATION OF TEST CALIBRATORS