

# Certificate of Calibration

Customer: ACCURATE CALIBRATION  
1924 PINNACLE DR.  
AURORA, IL, 60502  
(630)269-1480

P.O. Number:  
**ID Number: 49103**

Description: CALIBRATOR  
Manufacturer: OMEGA  
Model Number: CL525  
Serial Number: 49103  
Technician: ANDREW DAVIS  
On-Site Calibration: \*\*  
Comments: Calibrated in accordance with AMS 2750 E.

Calibration Date: 12/28/2015  
Calibration Due: 03/28/2016  
Procedure: OMEGA CL520 SERIES  
Rev: 3/10/2005  
Temperature: 68 F  
Humidity: 28 % RH  
**As Found Condition: IN TOLERANCE**  
**Calibration Results: IN TOLERANCE**

### Limiting Attribute:

This instrument has been calibrated using standards traceable to the National Institute of Standards and Technology, derived from natural physical constants, ratio measurements or compared to consensus standards. Unless otherwise noted, the method of calibration is direct comparison to a known standard.

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 and ANSI/NCSL Z540-1 by A2LA. ISO/IEC 17025 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 A2LA Scope of Accreditation and complies with the requirements of ISO/IEC 17025 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.

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ANTHONY ROGERS, BRANCH MANAGER



JACK SHULER, QUALITY MANAGER

### Calibration Standards

<u>Asset Number</u>	<u>Manufacturer</u>	<u>Model Number</u>	<u>Date Calibrated</u>	<u>Cal Due</u>
2823A07541	HEWLETT PACKARD	3458A	5/4/2015	5/4/2016
4610013	FLUKE	5720A/003	6/13/2015	6/13/2016
KR91200846	HEWLETT PACKARD	53131A	5/7/2015	5/7/2016
RFD7526A-156	FLUKE	7526A-156	5/19/2015	5/19/2016
RS-1	PHIPPS & BIRD, INC	236A	3/11/2015	3/11/2016



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## Data Sheet

<u>Parameter</u>	<u>Nominal</u>	<u>Minimum</u>	<u>Maximum</u>	<u>As Found</u>	<u>As Left</u>	<u>Uncertainty</u>	<u>Unit</u> <u>ADJ/FAIL</u>
Voltage Output Accuracy, -20 to 200 mV range	-20.00000	-20.00400	-19.99600	-19.99858	-19.99858	0.66 uV	mV
Voltage Output Accuracy, -20 to 200 mV range	0.00000	-0.00200	0.00200	0.00179	0.00179	0.3 uV	mV
Voltage Output Accuracy, -20 to 200 mV range	10.00000	9.99700	10.00300	10.00256	10.00256	0.48 uV	mV
Voltage Output Accuracy, -20 to 200 mV range	50.00000	49.99300	50.00700	50.00391	50.00391	1.2 uV	mV
Voltage Output Accuracy, -20 to 200 mV range	100.00000	99.99800	100.01200	100.00518	100.00518	2.1 uV	mV
Voltage Output Accuracy, -20 to 200 mV range	200.00000	199.97800	200.02200	200.00890	200.00890	2.5 uV	mV
Voltage Output Accuracy, -0.2 to 2 V range	-0.200000	-0.200030	-0.199970	-0.200006	-0.200006	2.5 uV	mV
Voltage Output Accuracy, -0.2 to 2 V range	-0.100000	-0.100020	-0.099980	-0.100004	-0.100004	2.1 uV	mV
Voltage Output Accuracy, -0.2 to 2 V range	0.000000	-0.000010	0.000010	0.000000	0.000000	0.3 uV	mV
Voltage Output Accuracy, -0.2 to 2 V range	0.500000	0.499940	0.500060	0.500019	0.500019	5.8 uV	mV
Voltage Output Accuracy, -0.2 to 2 V range	1.000000	0.999890	1.000110	1.000037	1.000037	11.3 uV	mV
Voltage Output Accuracy, -0.2 to 2 V range	2.000000	1.999790	2.000210	2.000077	2.000077	22.5 uV	mV
Voltage Output Accuracy, -2 to 20 V range	-2.000000	-2.000280	-1.999720	-2.000084	-2.000084	22.5 uV	mV
Voltage Output Accuracy, -2 to 20 V range	-1.000000	-1.000180	-0.999820	-1.000049	-1.000049	11.3 uV	mV
Voltage Output Accuracy, -2 to 20 V range	0.000000	-0.000080	0.000008	0.000000	0.000000	0.3 uV	mV
Voltage Output Accuracy, -2 to 20 V range	5.000000	4.999420	5.000580	5.000173	5.000173	55.5 uV	mV
Voltage Output Accuracy, -2 to 20 V range	10.000000	9.998920	10.001080	10.000367	10.000367	110.5 uV	mV
Voltage Output Accuracy, -2 to 20 V range	20.000000	19.997920	20.002080	20.000680	20.000680	290 uV	mV
Voltage Measurement Accuracy, -20 to 200 mV range	-20.000	-20.005	-19.995	-20.000	-20.000	1.48 uV	mV
Voltage Measurement Accuracy, -20 to 200 mV range	-10.000	-10.004	-9.996	-10.002	-10.002	1.24 uV	mV
Voltage Measurement Accuracy, -20 to 200 mV range	0.000	-0.003	0.003	-0.001	-0.001	1 uV	mV
Voltage Measurement Accuracy, -20 to 200 mV range	50.000	49.993	50.007	49.997	49.997	2.7 uV	mV
Voltage Measurement Accuracy, -20 to 200 mV range	100.000	99.987	100.013	99.995	99.995	3.4 uV	mV
Voltage Measurement Accuracy, -20 to 200 mV range	200.000	199.977	200.023	199.991	199.991	5.8 uV	mV
Voltage Measurement Accuracy, -200 to 2000 mV range	-200.00	-200.04	-199.96	-199.99	-199.99	5.8 uV	mV
Voltage Measurement Accuracy, -200 to 2000 mV range	-100.00	-100.03	-99.97	-99.99	-99.99	3.4 uV	mV
Voltage Measurement Accuracy, -200 to 2000 mV range	0.000	-0.020	0.020	0.000	0.000	1 uV	mV
Voltage Measurement Accuracy, -200 to 2000 mV range	100.000	99.970	100.030	99.990	99.990	3.4 uV	mV
Voltage Measurement Accuracy, -200 to 2000 mV range	500.00	499.93	500.07	499.98	499.98	9 uV	mV
Voltage Measurement Accuracy, -200 to 2000 mV range	1000.00	999.88	1000.12	999.96	999.96	16 uV	mV
Voltage Measurement Accuracy, -200 to 2000 mV range	2000.00	1999.78	2000.22	1999.93	1999.93	30 uV	mV
Voltage Measurement Accuracy, -2 to 20 V range	-2.0000	-2.0004	-1.9996	-1.9999	-1.9999	30 uV	mV
Voltage Measurement Accuracy, -2 to 20 V range	-1.0000	-1.0003	-0.9997	-0.9999	-0.9999	16 uV	mV
Voltage Measurement Accuracy, -2 to 20 V range	0.0000	-0.0002	0.0002	0.0000	0.0000	1 uV	mV
Voltage Measurement Accuracy, -2 to 20 V range	2.0000	1.9996	2.0004	1.9999	1.9999	30 uV	mV
Voltage Measurement Accuracy, -2 to 20 V range	5.0000	4.9993	5.0007	4.9998	4.9998	95 uV	mV
Voltage Measurement Accuracy, -2 to 20 V range	10.0000	9.9988	10.0012	9.9996	9.9996	170 uV	mV
Voltage Measurement Accuracy, -2 to 20 V range	20.0000	19.9978	20.0022	19.9994	19.9994	320 uV	mV
Current Output Accuracy, 0 to 50 mA range	0.000000	-0.000400	0.000400	0.000018	0.000018	0.04 uA	mA
Current Output Accuracy, 0 to 50 mA range	1.000000	0.999500	1.000500	0.999987	0.999987	0.075 uA	mA
Current Output Accuracy, 0 to 50 mA range	5.000000	4.999100	5.000900	4.999850	4.999850	0.175 uA	mA
Current Output Accuracy, 0 to 50 mA range	10.000000	9.998600	10.001400	9.999792	9.999792	0.3 uA	mA
Current Output Accuracy, 0 to 50 mA range	30.000000	29.996600	30.003400	29.999410	29.999410	1.705 uA	mA
Current Output Accuracy, 0 to 50 mA range	50.000000	49.994600	50.005400	49.999380	49.999380	2.4 uA	mA
Current Measurement Accuracy, -5 to 50 mA range	-5.0000	-5.0013	-4.9987	-4.9996	-4.9996	0.85 uA	mA
Current Measurement Accuracy, -5 to 50 mA range	1.0000	0.9994	1.0006	1.0000	1.0000	0.42 uA	mA
Current Measurement Accuracy, -5 to 50 mA range	5.0000	4.9990	5.0010	4.9997	4.9997	0.85 uA	mA



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ISO/IEC 17025:2005  
CALIBRATION CERT.#1378.07

## Data Sheet

<u>Parameter</u>	<u>Nominal</u>	<u>Minimum</u>	<u>Maximum</u>	<u>As Found</u>	<u>As Left</u>	<u>Uncertainty</u>	<u>Unit ADJ/FAIL</u>
Current Measurement Accuracy, -5 to 50 mA range	10.0000	9.9985	10.0015	9.9994	9.9994	1.45 uA	mA
Current Measurement Accuracy, -5 to 50 mA range	30.0000	29.9966	30.0034	29.9997	29.9997	2.95 uA	mA
Current Measurement Accuracy, -5 to 50 mA range	50.0000	49.9945	50.0055	49.9986	49.9986	14.5 uA	mA
Thermocouple Measurement Accuracy, Type J	-205.0	-205.2	-204.8	-205.2	-205.2	0.14	Deg C
Thermocouple Measurement Accuracy, Type J	-190.0	-190.2	-189.8	-190.2	-190.2	0.14	Deg C
Thermocouple Measurement Accuracy, Type J	-50.00	-50.12	-49.89	-50.10	-50.10	0.14	Deg C
Thermocouple Measurement Accuracy, Type J	0.00	-0.11	0.11	-0.10	-0.10	0.13	Deg C
Thermocouple Measurement Accuracy, Type J	100.00	99.88	100.12	99.90	99.90	0.13	Deg C
Thermocouple Measurement Accuracy, Type J	300.00	299.86	300.14	299.90	299.90	0.13	Deg C
Thermocouple Measurement Accuracy, Type J	600.00	599.83	600.17	599.90	599.90	0.13	Deg C
Thermocouple Measurement Accuracy, Type J	750.00	749.82	750.19	749.90	749.90	0.14	Deg C
Thermocouple Measurement Accuracy, Type J	1000.00	999.79	1000.21	999.80	999.80	0.14	Deg C
Thermocouple Measurement Accuracy, Type J	1200.00	1199.77	1200.23	1199.81	1199.81	0.14	Deg C
Thermocouple Measurement Accuracy, Type J	32.0	31.7	32.3	31.8	31.8	0.234	Deg F
Thermocouple Measurement Accuracy, Type K	-160.00	-160.20	-159.80	-160.20	-160.20	0.2	Deg C
Thermocouple Measurement Accuracy, Type K	-50.00	-50.20	-49.80	-50.20	-50.20	0.2	Deg C
Thermocouple Measurement Accuracy, Type K	0.00	-0.11	0.11	-0.10	-0.10	0.14	Deg C
Thermocouple Measurement Accuracy, Type K	100.00	99.80	100.20	99.80	99.80	0.14	Deg C
Thermocouple Measurement Accuracy, Type K	300.00	299.80	300.20	299.80	299.80	0.14	Deg C
Thermocouple Measurement Accuracy, Type K	500.00	499.80	500.20	499.80	499.80	0.14	Deg C
Thermocouple Measurement Accuracy, Type K	700.00	699.80	700.20	699.80	699.80	0.14	Deg C
Thermocouple Measurement Accuracy, Type K	900.00	899.80	900.20	899.80	899.80	0.17	Deg C
Thermocouple Measurement Accuracy, Type K	1100.00	1099.70	1100.30	1099.70	1099.70	0.17	Deg C
Thermocouple Measurement Accuracy, Type K	1260.00	1259.70	1260.30	1259.70	1259.70	0.17	Deg C
Thermocouple Measurement Accuracy, Type K	1360.0	1359.7	1360.3	1359.7	1359.7	0.17	Deg C
Thermocouple Measurement Accuracy, Type K	32.0	31.7	32.3	31.7	31.7	0.252	Deg F
Thermocouple Measurement Accuracy, Type T	-250.0	-250.2	-249.8	-249.8	-249.8	0.2	Deg C
Thermocouple Measurement Accuracy, Type T	-130.00	-130.20	-129.80	-129.80	-129.80	0.2	Deg C
Thermocouple Measurement Accuracy, Type T	-50.00	-50.20	-49.20	-49.80	-49.80	0.2	Deg C
Thermocouple Measurement Accuracy, Type T	0.00	-0.11	0.11	0.10	0.10	0.15	Deg C
Thermocouple Measurement Accuracy, Type T	100.00	99.88	100.12	100.10	100.10	0.13	Deg C
Thermocouple Measurement Accuracy, Type T	200.00	199.87	200.13	200.10	200.10	0.13	Deg C
Thermocouple Measurement Accuracy, Type T	300.00	299.86	300.14	300.10	300.10	0.13	Deg C
Thermocouple Measurement Accuracy, Type T	400.00	399.80	400.20	400.20	400.20	0.13	Deg C
Thermocouple Measurement Accuracy, Type T	32.0	31.7	32.3	32.3	32.3	0.234	Deg F
Thermocouple Measurement Accuracy, Type E	-250.0	-250.2	-249.8	-249.8	-249.8	0.16	Deg C
Thermocouple Measurement Accuracy, Type E	-200.00	-200.20	-199.80	-199.80	-199.80	0.16	Deg C
Thermocouple Measurement Accuracy, Type E	-50.00	-50.20	-49.80	-49.80	-49.80	0.16	Deg C
Thermocouple Measurement Accuracy, Type E	0.00	-0.20	0.20	0.20	0.20	0.13	Deg C
Thermocouple Measurement Accuracy, Type E	50.00	49.80	50.20	50.20	50.20	0.13	Deg C
Thermocouple Measurement Accuracy, Type E	100.00	99.80	100.20	100.20	100.20	0.13	Deg C
Thermocouple Measurement Accuracy, Type E	200.00	199.80	200.20	200.20	200.20	0.13	Deg C
Thermocouple Measurement Accuracy, Type E	400.00	399.80	400.20	400.20	400.20	0.13	Deg C
Thermocouple Measurement Accuracy, Type E	500.00	499.80	500.20	500.20	500.20	0.13	Deg C
Thermocouple Measurement Accuracy, Type E	750.00	749.80	750.20	750.20	750.20	0.14	Deg C
Thermocouple Measurement Accuracy, Type E	1000.00	999.70	1000.30	1000.30	1000.30	0.14	Deg C
Thermocouple Measurement Accuracy, Type E	32.00	31.72	32.28	32.20	32.20	0.234	Deg F



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## Data Sheet

<u>Parameter</u>	<u>Nominal</u>	<u>Minimum</u>	<u>Maximum</u>	<u>As Found</u>	<u>As Left</u>	<u>Uncertainty</u>	<u>Unit ADJ/FAIL</u>
Thermocouple Measurement Accuracy, Type R	150.00	149.78	150.23	150.10	150.10	0.46	Deg C
Thermocouple Measurement Accuracy, Type R	300.00	299.76	300.24	300.10	300.10	0.33	Deg C
Thermocouple Measurement Accuracy, Type R	500.00	499.74	500.26	500.20	500.20	0.33	Deg C
Thermocouple Measurement Accuracy, Type R	1000.00	999.69	1000.31	1000.10	1000.10	0.27	Deg C
Thermocouple Measurement Accuracy, Type R	1200.00	1199.67	1200.33	1200.10	1200.10	0.26	Deg C
Thermocouple Measurement Accuracy, Type R	1760.00	1759.61	1760.39	1760.20	1760.20	0.28	Deg C
Thermocouple Measurement Accuracy, Type S	-50.0	-50.3	-49.7	-49.8	-49.8	0.6	Deg C
Thermocouple Measurement Accuracy, Type S	170.00	169.77	170.23	170.20	170.20	0.45	Deg C
Thermocouple Measurement Accuracy, Type S	300.00	299.76	300.24	300.20	300.20	0.45	Deg C
Thermocouple Measurement Accuracy, Type S	500.00	499.70	500.30	500.30	500.30	0.35	Deg C
Thermocouple Measurement Accuracy, Type S	1000.00	999.69	1000.31	1000.30	1000.30	0.27	Deg C
Thermocouple Measurement Accuracy, Type S	1760.00	1759.60	1760.40	1760.40	1760.40	0.31	Deg C
Thermocouple Measurement Accuracy, Type B	50	49	51	50	50	0.6	Deg C
Thermocouple Measurement Accuracy, Type B	500.0	499.6	500.5	500.0	500.0	0.6	Deg C
Thermocouple Measurement Accuracy, Type B	920.00	919.60	920.40	919.90	919.90	0.41	Deg C
Thermocouple Measurement Accuracy, Type B	1200.00	1199.57	1200.43	1199.90	1199.90	0.33	Deg C
Thermocouple Measurement Accuracy, Type B	1600.00	1599.53	1600.47	1599.80	1599.80	0.33	Deg C
Thermocouple Measurement Accuracy, Type B	1820.00	1819.51	1820.49	1819.80	1819.80	0.27	Deg C
Thermocouple Measurement Accuracy, Type B	2000.0	1999.2	2000.8	1999.8	1999.8	0.594	Deg F
Thermocouple Measurement Accuracy, Type N	0.00	-0.11	0.11	0.10	0.10	0.31	Deg C
Thermocouple Measurement Accuracy, Type N	50.00	49.89	50.12	50.10	50.10	0.15	Deg C
Thermocouple Measurement Accuracy, Type N	100.00	99.88	100.12	100.10	100.10	0.15	Deg C
Thermocouple Measurement Accuracy, Type N	250.00	249.80	250.20	250.20	250.20	0.14	Deg C
Thermocouple Measurement Accuracy, Type N	300.00	299.80	300.20	300.20	300.20	0.14	Deg C
Thermocouple Measurement Accuracy, Type N	500.00	499.80	500.20	500.20	500.20	0.14	Deg C
Thermocouple Measurement Accuracy, Type N	700.00	699.80	700.20	700.20	700.20	0.14	Deg C
Thermocouple Measurement Accuracy, Type N	1000.00	999.79	1000.21	1000.20	1000.20	0.16	Deg C
Thermocouple Measurement Accuracy, Type N	1300.00	1299.70	1300.30	1300.30	1300.30	0.16	Deg C
Thermocouple Output Accuracy, Type J	-205.00	-205.12	-204.88	-205.01	-205.01	0.14	Deg C
Thermocouple Output Accuracy, Type J	-190.00	-190.12	-189.88	-190.01	-190.01	0.14	Deg C
Thermocouple Output Accuracy, Type J	0.00	-0.10	0.10	0.03	0.03	0.14	Deg C
Thermocouple Output Accuracy, Type J	100.00	99.89	100.11	100.06	100.06	0.13	Deg C
Thermocouple Output Accuracy, Type J	300.00	299.87	300.13	300.07	300.07	0.13	Deg C
Thermocouple Output Accuracy, Type J	500.00	499.85	500.15	500.05	500.05	0.13	Deg C
Thermocouple Output Accuracy, Type J	1200.00	1199.78	1200.22	1200.14	1200.14	0.14	Deg C
Thermocouple Output Accuracy, Type J	32.00	31.82	32.18	31.89	31.89	0.234	Deg F
Thermocouple Output Accuracy, Type K	-160.00	-160.12	-159.88	-160.08	-160.08	0.2	Deg C
Thermocouple Output Accuracy, Type K	0.00	-0.10	0.10	-0.09	-0.09	0.14	Deg C
Thermocouple Output Accuracy, Type K	100.00	99.89	100.11	99.89	99.89	0.14	Deg C
Thermocouple Output Accuracy, Type K	300.00	299.87	300.13	299.95	299.95	0.14	Deg C
Thermocouple Output Accuracy, Type K	500.00	499.85	500.15	499.90	499.90	0.14	Deg C
Thermocouple Output Accuracy, Type K	1260.00	1259.77	1260.23	1259.92	1259.92	0.17	Deg C
Thermocouple Output Accuracy, Type K	32.00	31.82	32.18	31.87	31.87	0.252	Deg F
Thermocouple Output Accuracy, Type T	-250.00	-250.13	-249.88	-250.10	-250.10	0.2	Deg C
Thermocouple Output Accuracy, Type T	-130.00	-130.11	-129.89	-130.09	-130.09	0.2	Deg C
Thermocouple Output Accuracy, Type T	0.00	-0.10	0.10	-0.03	-0.03	0.15	Deg C
Thermocouple Output Accuracy, Type T	100.00	99.89	100.11	99.94	99.94	0.15	Deg C



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## Data Sheet

<u>Parameter</u>	<u>Nominal</u>	<u>Minimum</u>	<u>Maximum</u>	<u>As Found</u>	<u>As Left</u>	<u>Uncertainty</u>	<u>Unit ADJ/FAIL</u>
Thermocouple Output Accuracy, Type T	250.00	249.88	250.13	249.93	249.93	0.13	Deg C
Thermocouple Output Accuracy, Type T	400.00	399.86	400.14	399.92	399.92	0.13	Deg C
Thermocouple Output Accuracy, Type T	32.00	31.82	32.18	31.82	31.82	0.27	Deg F
Thermocouple Output Accuracy, Type E	-250.00	-250.13	-249.88	-250.12	-250.12	0.16	Deg C
Thermocouple Output Accuracy, Type E	-200.00	-200.12	-199.88	-200.03	-200.03	0.16	Deg C
Thermocouple Output Accuracy, Type E	0.00	-0.10	0.10	0.02	0.02	0.13	Deg C
Thermocouple Output Accuracy, Type E	100.00	99.89	100.11	100.01	100.01	0.13	Deg C
Thermocouple Output Accuracy, Type E	250.00	249.88	250.13	250.08	250.08	0.13	Deg C
Thermocouple Output Accuracy, Type E	500.00	499.85	500.15	500.12	500.12	0.13	Deg C
Thermocouple Output Accuracy, Type E	1000.00	999.80	1000.20	999.85	999.85	0.14	Deg C
Thermocouple Output Accuracy, Type E	32.00	31.82	32.18	32.09	32.09	0.234	Deg F
Thermocouple Output Accuracy, Type R	150.00	149.79	150.22	150.16	150.16	0.33	Deg C
Thermocouple Output Accuracy, Type R	500.00	499.75	500.25	500.09	500.09	0.33	Deg C
Thermocouple Output Accuracy, Type R	800.00	799.72	800.28	800.16	800.16	0.26	Deg C
Thermocouple Output Accuracy, Type R	1200.00	1199.68	1200.32	1200.21	1200.21	0.26	Deg C
Thermocouple Output Accuracy, Type R	1700.00	1699.63	1700.37	1700.24	1700.24	0.28	Deg C
Thermocouple Output Accuracy, Type S	-45.00	-45.20	-44.80	-45.10	-45.10	0.6	Deg C
Thermocouple Output Accuracy, Type S	170.00	169.78	170.22	169.85	169.85	0.35	Deg C
Thermocouple Output Accuracy, Type S	500.00	499.75	500.25	499.98	499.98	0.35	Deg C
Thermocouple Output Accuracy, Type S	800.00	799.72	800.28	800.01	800.01	0.35	Deg C
Thermocouple Output Accuracy, Type S	1200.00	1199.68	1200.32	1200.02	1200.02	0.27	Deg C
Thermocouple Output Accuracy, Type S	1700.00	1699.63	1700.37	1700.01	1700.01	0.31	Deg C
Thermocouple Output Accuracy, Type B	50.00	49.70	50.31	50.09	50.09	0.6	Deg C
Thermocouple Output Accuracy, Type B	500.00	499.65	500.35	500.05	500.05	0.6	Deg C
Thermocouple Output Accuracy, Type B	920.00	919.61	920.39	920.08	920.08	0.41	Deg C
Thermocouple Output Accuracy, Type B	1000.00	999.60	1000.40	1000.11	1000.11	0.33	Deg C
Thermocouple Output Accuracy, Type B	1500.00	1499.55	1500.45	1500.16	1500.16	0.33	Deg C
Thermocouple Output Accuracy, Type B	1800.00	1799.52	1800.48	1800.11	1800.11	0.27	Deg C
Thermocouple Output Accuracy, Type B	1688.00	1687.29	1688.71	1688.20	1688.20	0.594	Deg F
Thermocouple Output Accuracy, Type N	-200.00	-200.12	-199.88	-200.01	-200.01	0.15	Deg C
Thermocouple Output Accuracy, Type N	0.00	-0.10	0.10	0.01	0.01	0.15	Deg C
Thermocouple Output Accuracy, Type N	100.00	99.89	100.11	100.01	100.01	0.15	Deg C
Thermocouple Output Accuracy, Type N	300.00	299.87	300.13	300.07	300.07	0.15	Deg C
Thermocouple Output Accuracy, Type N	600.00	599.84	600.16	600.08	600.08	0.15	Deg C
Thermocouple Output Accuracy, Type N	1000.00	999.80	1000.20	1000.13	1000.13	0.16	Deg C
Thermocouple Output Accuracy, Type N	1300.00	1299.77	1300.23	1300.21	1300.21	0.16	Deg C
Thermocouple Output Accuracy, Type N	32.00	31.82	32.18	31.89	31.89	0.27	Deg F
Resistance Measurement Accuracy, 0 to 500 ohm range	0.000	-0.013	0.013	0.000	0.000	N/A	ohms
Resistance Measurement Accuracy, 0 to 500 ohm range	100.000	99.977	100.023	99.995	99.995	0.0183	ohms
Resistance Measurement Accuracy, 0 to 500 ohm range	200.000	199.967	200.033	200.005	200.005	0.0266	ohms
Resistance Measurement Accuracy, 0 to 500 ohm range	300.000	299.957	300.043	300.009	300.009	0.0299	ohms
Resistance Measurement Accuracy, 0 to 500 ohm range	400.000	399.947	400.053	400.007	400.007	0.0332	ohms
Resistance Measurement Accuracy, 0 to 500 ohm range	500.000	499.937	500.063	500.021	500.021	0.0365	ohms
Resistance Measurement Accuracy, 0 to 5 kohm range	0.00000	-0.01300	0.01300	0.00000	0.00000	N/A	kohms
Resistance Measurement Accuracy, 0 to 5 kohm range	1.00000	0.99977	1.00023	1.00007	1.00007	0.053	kohms
Resistance Measurement Accuracy, 0 to 5 kohm range	2.00000	1.99967	2.00033	1.99989	1.99989	0.268	kohms
Resistance Measurement Accuracy, 0 to 5 kohm range	3.00000	2.99957	3.00043	2.99990	2.99990	0.302	kohms



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ISO/IEC 17025:2005  
CALIBRATION CERT.#1378.07

# Certificate of Calibration

## Data Sheet

<u>Parameter</u>	<u>Nominal</u>	<u>Minimum</u>	<u>Maximum</u>	<u>As Found</u>	<u>As Left</u>	<u>Uncertainty</u>	<u>Unit ADJ/FAIL</u>
Resistance Measurement Accuracy, 0 to 5 kohm range	4.00000	3.99947	4.00053	3.99985	3.99985	0.236	kohms
Resistance Measurement Accuracy, 0 to 5 kohm range	5.00000	4.99937	5.00063	4.99998	4.99998	0.27	kohms
Resistance Output Accuracy, 0 to 500 ohm range	0.0000	-0.0130	0.0130	0.0000	0.0000	0.01	ohms
Resistance Output Accuracy, 0 to 500 ohm range	100.0000	99.9700	100.0300	99.9966	99.9966	0.0183	ohms
Resistance Output Accuracy, 0 to 500 ohm range	200.0000	199.9600	200.0400	199.9987	199.9987	0.0264	ohms
Resistance Output Accuracy, 0 to 500 ohm range	300.0000	299.9500	300.0500	299.9843	299.9843	0.0299	ohms
Resistance Output Accuracy, 0 to 500 ohm range	400.0000	399.9400	400.0600	399.9788	399.9788	0.0326	ohms
Resistance Output Accuracy, 0 to 500 ohm range	500.0000	499.9300	500.0700	499.9731	499.9731	0.0365	ohms
Resistance Output Accuracy, 0 to 5 kohm range	0.0000000	-0.0002000	0.0002000	0.0000000	0.0000000	0.00001	kohms
Resistance Output Accuracy, 0 to 5 kohm range	0.5000000	0.4997500	0.5002500	0.4999917	0.4999917	0.0000365	kohms
Resistance Output Accuracy, 0 to 5 kohm range	1.0000000	0.9997000	1.0003000	0.9999910	0.9999910	0.0000135	kohms
Resistance Output Accuracy, 0 to 5 kohm range	2.0000000	1.9996000	2.0004000	1.9999120	1.9999120	0.000033	kohms
Resistance Output Accuracy, 0 to 5 kohm range	3.0000000	2.9995000	3.0005000	2.9999590	2.9999590	0.000047	kohms
Resistance Output Accuracy, 0 to 5 kohm range	4.0000000	3.9994000	4.0006000	3.9999690	3.9999690	0.000061	kohms
Resistance Output Accuracy, 0 to 5 kohm range	5.0000000	4.9993000	5.0007000	4.9999970	4.9999970	0.000075	kohms
Frequency Output Accuracy, 1 to 200 Hz range	1.000000	0.998950	1.001050	1.000009	1.000009	3 nHz	Hz
Frequency Output Accuracy, 1 to 200 Hz range	25.00000	24.99775	25.00225	25.00010	25.00010	75 nHz	Hz
Frequency Output Accuracy, 1 to 200 Hz range	50.00000	49.99650	50.00350	50.00020	50.00020	150 nHz	Hz
Frequency Output Accuracy, 1 to 200 Hz range	100.0000	99.9940	100.0060	100.0004	100.0004	300 nHz	Hz
Frequency Output Accuracy, 1 to 200 Hz range	150.0000	149.9915	150.0085	150.0006	150.0006	450 nHz	Hz
Frequency Output Accuracy, 1 to 200 Hz range	200.0000	199.9890	200.0110	200.0008	200.0008	600 nHz	Hz
Frequency Output Accuracy, 1 to 2000 Hz range	1.000000	0.998950	1.001050	1.000013	1.000013	3 nHz	Hz
Frequency Output Accuracy, 1 to 2000 Hz range	250.0000	249.9865	250.0135	250.0010	250.0010	750 nHz	Hz
Frequency Output Accuracy, 1 to 2000 Hz range	500.0000	499.9740	500.0260	500.0021	500.0021	1.5 uHz	Hz
Frequency Output Accuracy, 1 to 2000 Hz range	1000.000	999.949	1000.051	1000.004	1000.004	3 uHz	Hz
Frequency Output Accuracy, 1 to 2000 Hz range	1500.000	1499.924	1500.076	1500.006	1500.006	4.5 uHz	Hz
Frequency Output Accuracy, 1 to 2000 Hz range	2000.000	1999.899	2000.101	2000.008	2000.008	6 uHz	Hz
Frequency Output Accuracy, 1 to 20000 Hz range	1.000000	0.998950	1.001050	1.000003	1.000003	3 nHz	Hz
Frequency Output Accuracy, 1 to 20000 Hz range	2500.000	2499.874	2500.126	2500.001	2500.001	7.5 uHz	Hz
Frequency Output Accuracy, 1 to 20000 Hz range	5000.000	4999.749	5000.251	5000.021	5000.021	15 uHz	Hz
Frequency Output Accuracy, 1 to 20000 Hz range	10000.000	9999.499	10000.501	10000.040	10000.040	30 uHz	Hz
Frequency Output Accuracy, 1 to 20000 Hz range	15000.000	14999.249	15000.751	15000.006	15000.006	45 uHz	Hz
Frequency Output Accuracy, 1 to 20000 Hz range	20000.000	19998.999	20001.001	20000.007	20000.007	60 uHz	Hz



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