ELECTRICAL MEASUREMENT

Section 1: Voltage DC

Generate

Range	Accuracy	Cal. Device	Notes
100µV	10ppm +1µV	Wavetek 4805	
1mV	0.006%	Wavetek 4805/9100/5080A	
10mV	0.006%	Wavetek 4805/9100/5080A	
100mV	0.006%	Wavetek 4805/9100/5080A	
1V	0.006%	Wavetek 4805/9100/5080A	
10V	0.0065%	Wavetek 4805/9100/5080A	
100V	0.0065%	Wavetek 4805/9100/5080A	
1000V	0.006%	Wavetek 4805/9100/5080A	
40kV	±2%	HV probe	Using T&R PT30-10

Measure

Range	Accuracy	Cal. Device	Notes
100mV	10ppm	Wavetek 1271/Fluke 8508A	
1V	8ppm	Wavetek 1271/Fluke 8508A	
10V	7ppm	Wavetek 1271/Fluke 8508A	
100V	8ppm	Wavetek 1271/Fluke 8508A	
1000V	10ppm	Wavetek 1271/Fluke 8508A	
Up to 40kV	±2%	HV probe	
Up to 100kV	±3%	Avo OTS VCM	

ELECTRICAL MEASUREMENT

Section 2: Voltage AC

Generate

Range	Accuracy	Cal. Device	Notes
1mV	0.04% +384µV	Wavetek 4805/9100/5080A	
10mV	0.04% +96µV	Wavetek 4805/9100/5080A	
100mV	0.04% +19.2µV	Wavetek 4805/9100/5080A	
1V	0.04% +192µV	Wavetek 4805/9100/5080A	
10V	0.04% +1.92mV	Wavetek 4805/9100/5080A	
100V	0.04% +6.3mV	Wavetek 4805/9100/5080A	
1000V	0.05% +126mV	Wavetek 4805/9100/5080A	
40kV	5%	HV probe	T&R PT 30-10

Measure

Range	Accuracy	Cal. Device	Notes
100mV	10ppm	Wavetek 1271/Fluke 8508A	
1V	8ppm	Wavetek 1271/Fluke 8508A	
10V	7ppm	Wavetek 1271/Fluke 8508A	
100V	8ppm	Wavetek 1271/Fluke 8508A	
1000V	11ppm	Wavetek 1271/Fluke 8508A	
Up to 40kV	±5%	HV probe	
Up to 100kV	±3%	Avo OTS VCM	

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ELECTRICAL MEASUREMENT

Section 3: Current DC

Generate

Range	Accuracy	Cal. Device	Notes
1µA	0.14% +11nA	Wavetek 9100/5080A	
10µA	0.014% +11nA	Wavetek 9100/5080A	
100µA	0.14% +11nA	Wavetek 4805/9100/5080A	
1mA	0.014% +83nA	Wavetek 4805/9100/5080A	
10mA	0.014% +900nA	Wavetek 4805/9100/5080A	
100mA	0.016% +9.6µA	Wavetek 4805/9100/5080A	
2A	0.06% +118µA	Wavetek 4805/9100/5080A	
20A	0.055% +4.5mA	Wavetek 9100/5080A	
1000A	0.055% +225mA	Wavetek 9100/5080A	Via current coil

Measure

Range	Accuracy	Cal. Device	Notes
100µA up to 10mA	50ppm	Wavetek 1271/Fluke 8508A	
100mA	100ppm	Wavetek 1271/Fluke 8508A	
2A	150ppm	Wavetek 1271/Fluke 8508A	
2000A	±1.3% of rdg	Heme LH 2015 clampmeter	
2000A	+0.01%	High current transformer	

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ELECTRICAL MEASUREMENT

Section 4: Current AC

Generate

Range	Accuracy	Cal. Device	Notes
1µA	0.07% +900nA	Wavetek 9100/5080A	
10µA	0.07% +900nA	Wavetek 9100/5080A	
100µA	0.07% +300nA	Wavetek 4805/9100/5080A	
1mA	0.07% +300nA	Wavetek 4805/9100/5080A	
10mA	0.07% +3.2µA	Wavetek 4805/9100/5080A	
100mA	0.08% +32µA	Wavetek 4805/9100/5080A	
2A	0.1% +480µA	Wavetek 4805/9100/5080A	
20A	0.2% +6.9mA	Wavetek 9100/5080A	
1000A	±1.3% of rdg	Heme LH2015/Wavetek 9100/High current transformer /Fluke 5080A	Via high current inj set.

Measure

Range	Accuracy	Cal. Device	Notes
100µA up to 10mA	200ppm	Wavetek 1271/Fluke 8508A	
2A	500ppm	Wavetek 1271/Fluke 8508A	
2000A	±1.3% of rdg	Heme LH2015/Fluke 8508A	
2000A	±0.01%	High current transformer	

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ELECTRICAL MEASUREMENT

Section 5: Resistance

Generate

Range	Accuracy	Cal. Device	Notes
50Ω to 2Ω	±0.8%	Time 5070	
1Ω	0.025% +10mΩ	Wavetek 9100/5080A	Used as transfer standard against Time 5070
10Ω	0.025% +10mΩ	Wavetek 4805/9100 /5080A	The 1271 is a meter and can only measure the stated values.
100Ω	0.02% +20mΩ	Wavetek 4805/9100/5080A	
1kΩ	0.015% +80mΩ	Wavetek 4805/9100/5080A	
10kΩ	0.02% +800mΩ	Wavetek 4805/9100/5080A	
100kΩ	0.02% +8Ω	Wavetek 4805/9100/5080A	
1MΩ	0.05% +100Ω	Wavetek 4805/9100/5080A	
10MΩ	0.15% +2kΩ	Wavetek 4805/9100/5080A	
100MΩ	0.26% +40kΩ	Wavetek 4805/9100/5080A	
100GΩ	±1%	Hi Ohms Box/Fluke 5320A	

Measure

Range	Accuracy	Cal. Device	Notes
50μΩ to 2000Ω	±0.01%	Time 5070	
10Ω	18ppm	Wavetek 1271/Fluke 8508A	
100Ω to 100kΩ	10ppm	Wavetek 1271/Fluke 8508A	
1MΩ	15ppm	Wavetek 1271/Fluke 8508A	
10MΩ	30ppm	Wavetek 1271/Fluke 8508A	
100MΩ	400ppm	Wavetek 1271/Fluke 8508A	
1GΩ	±0.3%	Wavetek 1271/Fluke 8508A	

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ELECTRICAL MEASUREMENT

Section 6: Frequency

Generate

Range	Accuracy	Cal. Device	Notes
0.1Hz to 10MHz	0.01ppm	Global 4401/Wavetek 395	
0.5Hz to 10MHz	25ppm of rdg	Wavetek 9100	

Measure

Range	Accuracy	Cal. Device	Notes
10Hz to 200MHz	±1 count + time base	Racal Dana 9904	Standard used: GPS Frequency Reference

Section 7: Conductivity and Capacitance

Generate

Range	Accuracy	Cal. Device	Notes
2.5nS to 2.5mS	±0.04% (Best)	Wavetek 9100	
500pF to 40mF	±0.3 +15pF (Best)	Wavetek 9100	
10pF to 100µF	±1%	Time 1071 Decade box	
1mH to 11.11H	±5%	Hameg HM8118	Via Time 1053 Inductance Box

Measure

Range	Accuracy	Cal. Device	Notes
2.5µS to 2.5mS	±0.04%	Wavetek 9100	
500pF to 40mF	±0.2%	Wavetek 9100	

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ELECTRICAL MEASUREMENT

Section 8: RCD Testers

Measure

Range	Accuracy	Cal. Device	Notes
3mA to 3000A	0.1mA on 3000mA rng	Fluke 5320A	
10ms to 5000ms	±0.25ms	Fluke 5320A	

Section 9: Tachometers

Generate

Range	Accuracy	Cal. Device	Notes
90000rpm	±0.01%	Global 4401/Wavetek 395	Via test box.
10000rpm	±1%	Global 4401/Wavetek 395	Via motor and calibrated tacho

Section 9: Sound Level Calibration

Generate

Range	Accuracy	Cal. Device	Notes
94 & 104dB	±0.3dB	Cirrus Calibrator	Generate. Dual Frequency

Measure

Range	Accuracy	Cal. Device	Notes
35dB to 135dB			Via calibrated sound level meter

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