

ENSL ELECTRICAL CAPABILITIES TABLE 1 of 3

PARAMETER	UNITS	RANGE	UNCERTAINTY	STANDARD
VOLTAGE DC	Volt (V)		(V)	Source/Meas
		10.00 V	0.5 ppm	Fluke 732A
		100.0 mV	1.225ppm	Fluke 732A, 752A, HP 3458A
		1.0 V	0.67ppm	
		10.0 V	0.64ppm	
		100.0 V	0.5477ppm	
		1000.0 V	0.5477ppm	
		> 1.1 kV to 10 kV	±0.0109%	Fluke 80E HP 3458A
		> 1.1 kV to 60 kV	± 0.04%rdg ± 0.02%rng	Vitrek 4600A
		> 1.1 kV to 100 kV	±0.5% +1Dig	Biddle 513100
VOLTAGE AC *Max out 250V from 15-50Hz	Volt (V)	10 Hz to 1 MHz:	(V) ±(% + uV)	Source
		2.2mV&22mV	± 0.0075+4 to ± 0.25+20	Fluke 5720A
		220mV	± 0.0075+7 to ± 0.25+45	
		2.2 V	± 0.004+8 to ± 0.15+300	
		22 V	± 0.004+50 to ± 0.13+3200	
			±(% + mV)	
		220 V	± 0.0047+0.6 to ± 0.7+80	
		1100 V*	± 0.0006+3.5 to ± 0.026+16	(15Hz to 1kHz)
		40 Hz to 30 kHz:		Fluke 5720A w/ Fluke 5725A
		1100 V	± 0.008+4 to ± 0.036+11	
		30 kHz to 100 kHz:		
		750 V	± 0.036+11to ± 0.13+45	
		50 to 60 Hz:		
		> 1000 V to 30 kV	± 0.4%rdg ± 0.15%rng	Vitrek 4600A (Meas)
		> 1.1 kV to 100 kV	±1.0% +1Dig (60Hz)	Biddle 513100

ENSL ELECTRICAL CAPABILITIES TABLE 2 of 3

PARAMETER	UNITS	RANGE	UNCERTAINTY	STANDARD	
VOLTAGE AC	Volt (V)	<i>10 Hz to 1 MHz:</i>	(V) ±(% + uV)	Meas	
		2.2mV **	± 0.042+1.3 to ± 0.5+8	Fluke 5790A *AC/DC Transfer Mode **Absolute Meas. Mode (Amplitude Flatness measurements to 30MHz)	
		7mV **	± 0.021+1.3 to ± 0.36+8		
		22mV**	± 0.011+1.3 to ± 0.26+8		
		70mV**	± 0.0069+1.5 to ± 0.13+8		
		220mV*	34ppm to 210ppm (10Hz to 50kHz)		
		700mV*	27ppm to 210ppm (10Hz to 50kHz)		
		2.2V* & 7V*	18ppm to 200ppm (10Hz to 50kHz)		
		22V*	21ppm to 200ppm (10Hz to 50kHz)		
		70V*	25ppm to 200ppm (10Hz to 50kHz)		
		220V*	23ppm to 200ppm (10Hz to 50kHz)		
		700V*	36ppm to 200ppm (10Hz to 20kHz)		
		1000V*	33ppm to 200ppm (10Hz to 20kHz)		
		<i>.1 to 4200MHz:</i>	Amplitude Flatness measurements		
		rf signals	± 1.6% worst case		HP 436A w/HP 8482A
RESISTANCE	Ohm (Ω)	(Ω)		Meas	
		<0.1Ω to 1Ω	0.007% + 0.0002%rng (1Ωrng)	Agilent 34420A	
		0.1Ω to 10kΩ	0.6ppm to 0.7ppm	L&N 4210, ESI SR104, MI 6010B, MI 6000A	
		10kΩ to 100MΩ	3.2ppm to 4.2ppm		
		100MΩ to 1GΩ	500ppm	Guildline 6500	
		1GΩ to 1TΩ	700ppm to 2000ppm		
CURRENT DC	Ampere (A)	200uA	4.825ppm	Fluke732A-10k HP 3458A	
		2mA	11.95ppm	L&N 4210, MI 6010B, SR1010, HP 3458A	
		20mA to 2A	13.1ppm		
		2A to 20A	0.0101% to 0.0107%	Fluke Y5020 HP 3458A	
		20A to 100A	0.05%	Guildline 9211A, HP 3458A	
		100A to 300A	.1%		

ENSL ELECTRICAL CAPABILITIES TABLE 3 of 3

PARAMETER	UNITS	RANGE	UNCERTAINTY	STANDARD
CURRENT AC	Ampere (A)	<i>10 Hz to 10kHz:</i>	<i>(A)</i>	Meas
		200uA	± 0.0137% to ± 0.021%	Fluke 5790A
		2.2mA	±0.0027% to 0.021%	
		20mA & 220mA	0.0048% to ±0.024%	Fluke 5790A Fluke A40 Fluke Y5020 HP 3458A
		2.2A	±0.0066% to 0.0095% (40Hz to 10kHz)	
		10A	±0.0184% to 0.0547% (40Hz to 10kHz)	
		20A	±0.018% to ±0.078% (50Hz to 5kHz)	Fluke Y5020 HP 3458A
		50A to 100A	±0.024% (60Hz)	Fluke Y5020 HP 3458A Weston 327 CT
		120A to 1200A	±0.024% to ±0.09%(60Hz)	Fluke Y5020 HP 3458A Weston 327 CT
			<i>(F)</i>	Meas
CAPACITANCE	Farad (F)	0pF to 31.8F	±.01% + .00003pF@1kHz to ±0.05%+1dig (50Hz to 2kHz)	GenRad 1620-A Fluke PM6304C
		1000pF	5ppm	GenRad 1404-A GenRad 1620-A
			<i>(F)</i>	Source
		1pF to 1F	±0.05% to 1.0273%	STD Artifacts Fluke 5500A GenRad 1417
			<i>(H)</i>	Meas
INDUCTANCE	Henry (H)	0uH to 637kH	±0.05% to ±0.1%	Fluke PM6304C GenRad 1660-A
			<i>(H)</i>	Source
		50uH to 10H	±0.2% to ±1.0%	STD Artifacts
FREQUENCY	Hertz (Hz)	10,000,000 Hz	0.0005 Hz	GPS Receiver/ comparator