

# Specifications

Dimensions:	3.7 x 7.5 x 9.0 in. (94 x 191 x 229 mm )
Weight:	5 lb ( 2.3 kg )
Enclosure:	Metal case, painted
Connectors:	Calibration Module: 8-Pin Sub Mini DIN Analog Output: BNC RS-232: 9 pin D-Sub GPIB: 24 Conductor D
Power :	100-120, 220-240 VAC $\pm$ 10%, 50/60 Hz
Absolute Maximum Line Current Rating:	200 mA
Signal Ranges:	Up to 8 decades (dependent on detector type)
Display:	4.5 digit, annunciator, backlit, wide angle view LCD
Display Update Rate:	75 ms
Auto-Ranging Time:	200 ms (typical)
GPIB Bus Transfer Time:	10 ms (typical)
Operating Environment:	0 to +40 degree C; < 70% RH noncondensing
Storage Environment:	-20 to +60 degree C; < 90% RH noncondensing
Compatible Detectors:	Low-Power (Semiconductor) Family

Signal Range <sup>1, 2</sup>	1	2	3	4	5	6	7	8
Full-Scale Current <sup>3</sup>	2 nA	20 nA	200 nA	2 $\mu$ A	20 $\mu$ A	200 $\mu$ A	2 mA	5 mA
Gain	1000 M	100 M	10 M	1 M	100 k	10 k	1 k	100
Resolution	0.1 pA	1 pA	10 pA	100 pA	1 nA	10 nA	100 nA	1 $\mu$ A
Analog Bandwidth	35 Hz	35 Hz	1.5 kHz	1.5 kHz	5 kHz	15 kHz	10 kHz	20 kHz
Full-Scale Accuracy <sup>4</sup> (Typical)	0.2 %	0.2 %	0.2 %	0.2 %	0.2 %	0.2 %	0.2 %	0.2 %
Full-Scale Accuracy <sup>4</sup> (Worst Case)	0.4 %	0.4 %	0.4 %	0.4 %	0.4 %	0.4 %	0.4 %	0.4 %

<sup>1</sup>Listed signal ranges specify meter capability. Available signal ranges are detector dependent.

<sup>2</sup>Maximum measurable signal is detector dependent. See description of detector saturation message "SA" in Table 2.

<sup>3</sup>Full scale current may vary due to the Auto-Calibration compensation of amplifier DC offsets.

<sup>4</sup>After 60 minute warm-up, followed by execution of an Auto-Calibration. See Section 2.5 and Section 6.2 ("O" Command).

## Analog Output

Full-Scale Voltage: 2V into 1M $\Omega$

Full-Scale Accuracy:  $\pm$ 1%

Maximum AC Noise: Range 1: <4 mV<sub>p-p</sub>  
(open input) Ranges 2-8: <1 mV<sub>p-p</sub>

<b>Display Calculation</b>	<b>Display Unit</b>	<b>Comment</b>
$I/R$	W	ZERO Disabled
$(I-I_z)/R$	W	ZERO Enabled
$10 \log\left(\frac{I/R}{1\text{mW}}\right)$	dBm	ZERO Disabled
$10 \log\left(\frac{(I-I_z)/R}{1\text{mW}}\right)$	dBm	ZERO Enabled
$10 \log\left(\frac{I}{I_{\text{STOREF}}}\right)$	dB	ZERO Disabled
$10 \log\left(\frac{I-I_z}{I_{\text{STOREF}}-I_z}\right)$	dB	ZERO Enabled
$\frac{I}{I_{\text{STOREF}}}$	REL	ZERO Disabled
$\left(\frac{I-I_z}{I_{\text{STOREF}}-I_z}\right)$	REL	ZERO Enabled

Where

- $I$  = detector current
- $I_z$  = detector background current defined when the ZERO key was pressed
- $R$  = responsivity of the detector (A/W)
- $I_{\text{STOREF}}$  = referenced detector current defined when the STOREF key was pressed

*Table 1. Measurement Modes*