

TIA-3000 Transimpedance Amplifier Systems



The TIA-3000 series consists of a high performance transimpedance amplifier with dark current levels as low as 3 femto-amps, superior blue light sensitivity and highly accurate measurement capability in terms of wavelength, color and power. Standard configurations include Si, InGaAs with temperature stabilized configurations available.

Our wide range of optical meters, photometric and radiometric sensors is complemented by ISO/IEC 17025 accreditation by NVLAP (NVLAP lab code 200823-0), resulting in unmatched performance, traceable standards and highly precise custom calibration options.

Precision Solutions for Photometric, Radiometric & Laser Power Measurement

- Precision amplifier with femto-amp level resolution
 - Sensitivity to 3.0E-15 Watts or 1.0E-8 lux
 - Temperature stabilized sensor options from 200 to 2600nm
 - Compatible with Si, InGaAs, GE, GaAsP sensors
 - Temperature stabilized correction filters available
 - Unmatched photopic correction -- $f1' < 0.8\%$
 - ANVIS compatibility filters and lenses available
 - Eight decades of dynamic range w/ automatic or manual control
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- Display measurement
 - LED radiometry
 - Night-vision intensity
 - General lab metrology

General Specifications	
Gain	10 ¹⁰ to 10 ⁴ Volts / Amp
Range	Eight decades; automatic or manual control
Output	0 to 10 VDC for each gain setting
Linearity	< 0.25% non-linearity for all ranges
Temperature Variation	< 5 ppm per °C
Noise	< 20 μV on the 10 ¹⁰ range
Frequency Roll-off	< 10 Hz on the 10 ¹⁰ range for output > 1 V
Temperature Stability	< 0.001° C over 1 hour < 0.003° C over 24 hours
Bipolar Output Current	+ 1.5 A maximum
Maximum TEC Power	12 W
Input Requirements	100 to 240 VAC at 50-60 Hz
Calibration Traceability	Traceable to NIST with optional ISO/IEC 17025 accreditation
Relative Humidity	Up to 99% (non-condensing)
Dimensions	Amplifier: 105 mm (4.15 in) L x 6.4 mm (2.5 in) dia Controller: 305 mm (12 in) L x 287 mm (11.3 in) W x 114 mm (4.5 in) L
Regulatory Compliance	TUV, UL, CSA, CE

Photodetector Specifications (sold separately)

Model	Type	λ Range ⁽¹⁾ (nm)	Active Area (mm)	Photosensitivity @ Peak
19830-2L	Si	190 - 1100	10 x 10	0.5 A/W at 900 nm
19830-3	Si	190 - 1100	5.8 x 5.8	0.5 A/W at 960 nm
19830-5	InGaAs	850-1600	5.0 x 5.0	0.95 A/W at 1550 nm
19830-6	InGaAs	850-1600	5.0 x 5.0	0.95 A/W at 1550 nm
19830-8	Si	110-1100	10 x 10	N/A
19830-10	InGaAs	500-2600	2.0 dia	1.2 A/W
19830-10D	InGaAs	500-2600	2.0 dia	1.2 A/W

(1) Quartz diffuser required for UV operation
Specifications are subject to change without notice.