



GAMMA SCIENTIFIC Light Measurement Solutions

TIA-3000 Measurement Systems



About Gamma Scientific
Since 1961 Gamma Scientific has produced LED, display and light measurement test solutions for production and R&D environments. Gamma Scientific instruments are trusted by leading global organizations that require high-speed, precision measurements and custom configurations for the most challenging environments. Gamma Scientific also operates a NVLAP accredited laboratory that performs ENERGY STAR® lighting certification and is ISO 17025 compliant. NVLAP Lab Code 200823-0

To view the complete line of test and measurement solutions from Gamma Scientific, visit www.Gamma-Sci.com.

Gamma Scientific
9925 Carroll Canyon Road
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The TIA-3000 Measurement Systems are **detector-based absolute standards** for various measurements. Off-the-shelf configurations include thermo-electrically cooled silicon and indium gallium arsenide (InGaAs) detectors. Options include high-accuracy photometric correction filters ($f1' \sim 0.8\%$), flat response filters, trap detectors and ANVIS compatibility filters with field-of-view lenses making the TIA-3000 the standard for any light measurement requirement.

The heart of the TIA-3000 is its transimpedance amplifier. The state-of-the-art design of the transimpedance amplifier allows for extremely low dark current levels (3 femptoamps, 3×10^{-15} amps, at room temperature with the silicon detector) and excellent stability. This stability and sensitivity is 10 times more sensitive than anything else previously available, making it the ultimate tool for any standards lab.

The TIA-3000 incorporates 8 different ranges with a 0-to-10 volt output for each range.

Standard calibrations are available for any configuration of the TIA-3000 from Gamma Scientific's world-renowned standards lab directly traceable to NIST.





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Features

- **Temperature stabilized silicon and InGaAs detectors available covering 200 - 2600 nm**
- **Temperature stabilized correction filters available**
- **High accuracy photopic correction $f1' \sim 0.8\%$**
- **ANVIS compatibility filters and lenses**
- **High sensitivity down to 10-15 Watts or 10-8 Lux**
- **8 decades of dynamic range**
- **0-to-10 volt output for each decade**
- **RS-232 computer control**

Applications

- **Display measurement photometry**
- **LED radiometry**
- **Night-vision compatibility measurements**
- **Metrology lab primary standard detector**
- **Customized optics available for any application**





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Gain	10 ¹⁰ to 10 ⁴ volts/amp
Range	Eight decades; automatic or manual dial control
Output	0 to 10 VDC for each gain setting
Linearity	<0.25% non-linearity for all ranges
Temperature Variation	<5 ppm (parts -per-million) per degree Celsius
Noise	<20 microvolts on the 10 ¹⁰ range
Frequency Roll -Off	<10 Hz on 10 ¹⁰ range for output >1 volt
Length (Amplifier)	4.15 inches (10.5 cm)
Diameter (Amplifier)	2.5 inches (6.4 cm)
Length (TE Cooler control box)	12 inches (30.5 cm)
Width (TE Cooler control box)	11.3 inches (28.7 cm)
Height (TE Cooler control box)	4.5 inches (11.4 cm)
Temperature Stability	Short term (1 hr.) <0.001 °C, long term (24 hr.) <0.003 °C
Bipolar Output Current	+ 1.5 amp max
Maximum TEC Output Power	12 watts
Power	100-240 VAC, 50-60 Hz

* Specifications obtained from independent third party testing laboratory