GAMMA SCIENTIFIC
Light Measurement Solutions

flexOptometer Radiometer-Photometer

The UDT Instruments flexOptometer from Gamma Scientific is a high-performance radiometer/photometer designed to operate as either a stand-alone instrument or a computer-controlled, full-function photometric, radiometric or fiber optic measurement tool. Gamma's new model is available with a single head or with up to four interchangeable sensor heads for optimal flexibility. The 4-channel, flexOptometer includes a new touch-screen backlit LCD interface that offers the end user immediate readout results. Highly configurable via the USB, RS-232, RS-485, and IEEE-488.2 computer interfaces, it is easy to integrate into existing lab instrument architectures. The new light-measuring instrument offers faster, more accurate measurements than any previously available optometric system.

The electronic design is based on Gamma Scientific's advanced performance, highly reliable, TIA-3000 measurement systems, which have become the primary working standards of several National Standards Labs. The transimpedance amplifier design gives very stable DC measurements down to the femptowatt (10-15 Watt) level. It also includes a pulse-integrator for pulsed energy measurements . The instrument is designed as a laboratory grade optometer, with the robustness to operate flawlessly on even the most rigorous production lines. The optometer can be configured with UDTi's extensive collection of optical sensors making it suitable for a wide variety of light measurement applications. Simply put, the flexOptometer is the ideal instrument for measurement applications such as display, LED, laser power, fiber optics, strobe or signal measurements and more.

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.

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858-279-8034
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Features

- Available in single and multi-channel configurations
  - Model S470 Single-Channel
  - Model S480 Dual-Channel
  - Model S490 Four-Channel
- Touch screen back-lit LCD display
- Configurable from 1 to 4 measurement Sensor heads
- USB, RS-232-, RS-485, and IEEE-488.2 computer interfaces
- Low-light level measurements down to 10-15 Watts or 10-8 Lux
- Silicon, photomultiplier, germanium and indium-gallium- arsenide (InGaAs) sensors available
- Configurable with World-class photopic sensors (f1' < 1%)

Applications

- Display Measurements
- LED Measurements
- Fiber-optic Measurements
- Laser Power Measurements
- Strobe & Signal Measurements
- Lamp Measurements
- Night-Vision Testing
- Customized optics for any application

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Electronic	Integrator
Eight Photometric/Radiometric Ranges	Four Integrate Ranges
Range-to-Range Linearity <0.1% for most ranges (<0.25% for most sensitive range)	Range-to-Range Linearity <0.1% for most ranges (<0.25% for most sensitive range)
Sensitivity: 10^{-15} to 10^{-3} Amps	Sensitivity: 10^{-14} to 10^{-3} coulomb
Resolution: $1x10^{-15}$ Amps	Decay Error: analog-approx. 0.01% / sec
Dark Current Suppression: 50 nA Max	Digital-holds reading indefinitely
Noise: $<3x10^{-15}$ Amps	
Frequency Roll-off: <10 Hz on most sensitive range	
A-to-D converter: 24-bit for each decade	

Radiometric/Photometric Ranges		
Radiometric Units*	**Range**	**Sensor Configuration** (see descriptions below)
Irradiance	0.000001 nanoWatts/cm² to 1000 microWatts/cm²	Models 221 and 247
Radiant Energy	0.00001 nanoJoules/cm² to 1 microJoules/cm²	Models 221 and 247
Radiance	0.00001 nanoWatts/cm²/steradian to 10 milliWatts/cm²/steradian	Model 247 with 1153
Photometric Units*		
Luminous Intensity	0.00001 mcandelas to 10000 candelas	Model 424
Illuminance	0.00001 milliLux to 10000 Lux	Models 211 and 268P
Luminance	0.0001 millicandela/m² to 100000 candela/m²	Model 2153
Illuminant Energy	0.00001 milliLux*seconds to 10 Lux*seconds	Models 211 and 268P

*Ranges based on system configured with a 1 square centimeter silicon sensor and corresponding accessories

Sensors & Accessories (see Photosensors & Sensor Heads datasheet for more information)			
UV/Visible		**Photometric**	
221	Silicon Sensor (350-1100nm) 1cm² active area	211	Photometric Sensor with Cosine Receptor (Illuminance)
222	Silicon Sensor (200-400nm) 1 cm² active area	263	Miniature Photometric Sensor (Illuminance)
228	Silicon Sensor for HeNe Laser (633nm) BHR Compliance	268P	Low-Profile Photometric Sensor with Cosine Receptor
260	Miniature Silicon Sensor (350-1100nm) 0.34 cm² active area	2153	Photometric Sensor with 13 degree FOV Lens (Luminance)
268BLUE	Low Profile Blue Optimized 450 nm Sensor	265	Photometric Display Brightness Sensor (Luminance)
268UVA	Low Profile UVA Optimized Sensor Head (365 nm)	268M	Mini Photometric Display Brightness Sensor (Luminance)
268UVC	Low Profile UVC Optimized Sensor Head (254 nm)	424	LED Photometric Sensor (CIE 127 Luminous Intensity)
Radiometric		**Laser Power**	
247	Flat Response Sensor	264	Miniature Attenuated Laser Sensor Head
262	Miniature Flat Response Sensor	268LP	Low Profile Laser Sensor Head
264	Attenuated Laser Sensor Head	**Infrared**	
268R	Low Profile Flat Response Sensor	261	Miniature Infrared Germanium Sensor (800-1750nm)
424R	LED Radiometric Sensor (CIE 127 Luminous Intensity)	280	Miniature Infrared InGaAs Sensor (800-1750nm)

General
Automatic/Manual ranging
Microprocessor Controlled Functions
High Voltage circuit for photomultipliers (300-1500 Volts)
Thermo-electric coolers for Sensor and filter stabilization
USB, RS-232, RS-485 and IEEE-488.2 Communications
Analog Output
Power Input: 12.0 volts DC
Operating Temperature Range: 0 to 50° C
Humidity: 0% to 95% RH non-condensing