flexOptometer

PRODUCT SUMMARY

The Gamma Scientific flexOptometer 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 detector heads for optimal flexibility. With the ability to add up to 4 individual channels, the 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 Gamma's extensive collection of optical detectors 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.

FEATURES

- *Touch screen back-lit LCD display*
- *Configurable from 1 up to 4 measurement detector 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) detectors available*
- *Configurable with World-class photopic detectors (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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SPECIFICATIONS

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**	**Detector Configuration** (see descriptions below)
Irradiance	0.000001 nanoWatts/cm² to 1000 microWatts/cm²	24600 or 24610 with 24960
Radiant Energy	0.00001 nanoJoules/cm² to 1 microJoules/cm²	24600 or 24610 with 24960
Radiance	0.00001 nanoWatts/cm²/steradian to 10 milliWatts/cm²/steradian	24600 or 24610 with 24960 and 54694
Photometric Units*		
Luminous Intensity	0.00001 mcandelas to 10000 candelas	24600 or 24610 with 24973-x
Illuminance	0.00001 milliLux to 10000 Lux	24600 or 24610 with 24606-x
Luminance	0.0001 millicandela/m² to 100000 candela/m²	24600 or 24610 with 24606-x and 54694
Illuminant Energy	0.00001 milliLux*seconds to 10 Lux*seconds	24600 or 24610 with 24973-x or 24606-x
*Ranges based on system configured with a 1 square centimeter silicon detector and corresponding accessories		

Detectors & Accessories			
UV/Visible/near-IR		**Filters**	
24600	Silicon Detector (200-1100nm) 1cm² active area with rear-mounted BNC connector.	24606-x	Photometric Filter for 24600 and 24610
		24742-x	Photometric Cosine Receptor for 24600 and 24610
24610	Silicon Detector (200-1100nm) 1 cm² active area with side-mounted BNC connector.	24973-x	CIE127 Photometric Receptor for 24600 and 24610
		D-46-01	Photopic Correction Filter for D-46DQ
D-46DQ	Photomultiplier Detector (200-930 nm)	D-46-02	Scotopic Correction Filter for D-49DQ
D-49DQ	Photomultiplier Detector (200-1000 nm)	D-49-01	Photopic Correction Filter for D-46DQ
Infrared		D-49-02	Scotopic Correction Filter for D-49DQ
DR-2550-2I	InGaAs Detector (800-1800nm), 3mm² active area.	24642-1	Cosine Receptor, Flat Response for 24600 and 24610
D-100-2G	Germanium Detector (800-1800nm), 1.5mm² active area.	24659	CIE127 Flat Response for 24600 and 24610
D-100-2I	InGaAs Detector Head (800-1800nm), 3mm² active area.	24960	Flat Response Filter for 24600 and 24610
DC-200I	Cooled InGaAs Detector 3mm active area.	**Accessories**	
DC-200G	Cooled Germanium Detector 3mm active area.	54694	8.5° Field-of-view Lens for 24600 and 24610
		550-17-x	Neutral density filters 200-2000 nm (choose density)
		24792-1	Basic LED measurement tube (CIE127 Condition B)
		40044	Precision LED Alignment System (CIE127 Conditions A & B)

General
Automatic/Manual ranging
Microprocessor Controlled Functions
High Voltage circuit for photomultipliers (300-1500 Volts)
Thermo-electric coolers for detector 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

*Specifications subject to change without notice at any time

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