

UDT C-Series Benchtop Optical Meters



The C Series Optical Meters include an integrated controller that is compatible with our thermo-electrically cooled silicon and indium gallium arsenide (InGaAs) detectors. This feature results in an order of magnitude greater sensitivity than standard Optical Meters, resulting in outstanding performance when measuring low light levels.

The product family includes two models; the C1, with single-stage cooling of the detector, and the C2, with dual stage cooling for applications that require a detector/filter combination. Both products feature eight measurement ranges accessible through the front panel touch display or via serial and USB interfaces.

Precision Solutions for Photometric, Radiometric & Laser Power Measurement

Key Features

- Temperature stabilized silicon and InGaAs detectors available covering 200 – 2600 nm
- Temperature stabilized correction filters available
- High accuracy photopic correction $f1' \sim 0.8\%$
- NVIS compatibility filters and lenses
- High sensitivity - down to 10^{-13} watts or 10^{-6} lux
- Eight decades of dynamic range
- USB, 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

Our wide range of optical power 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.

Meter - General Specifications		
Gain	10 ¹⁰ to 10 ³ Amps	
Range	8 decades – manual or auto-ranging	
Control	Touch screen, RS-232 or USB	
Linearity	Range-to-range linearity > 99.95	
Temperature Variation	< 5 ppm / °C	
Noise	< 70 x 10 ⁻¹⁵ A on range 10 ¹⁰	
Frequency Roll-off	Gain	Half-power Frequency
	10 ³	35 kHz
	10 ⁴	2200 kHz
	10 ⁵	220 Hz
	10 ⁶	100 Hz
	10 ⁷	100 Hz
	10 ⁸	100 Hz
	10 ⁹	48 Hz
	10 ¹⁰	12 Hz
Temperature Stability	Over 1 hour < 0.001°C	Over 24 hours < 0.003°C
Sensor Head Dimensions	105mm (4.15 in) L x 64mm (2.5 in) diameter	
Optical Meter Dimensions	330 mm (13 in) x 217mm (8.55 in) x 133 mm (5.22 in)	
Bipolar Output Current	+ 1.5 A maximum	
TEC Power	12 W maximum	
Input Power	12 VDC via external switching power supply 5 A	
Calibration Traceability	Traceable to NIST with optional ISO/IEC 17025 accreditation	
Relative Humidity	Up to 99% (non-condensing)	
Regulatory Compliance	TUV, UL, CSA, CE	
Model Number Configurations	C1 (single TEC)	C2 (dual TEC)
Specifications are subject to change without notice.		

Cooled Photodetector Options (sold separately)

Model	Dynamic Range	Type	λ Range (nm) ⁽¹⁾	Active Area (mm)	Max Dark Current	Rise Time	Photosensitivity @ Peak
19830-2L-Flex	1 x 10 ⁻⁶ to 1 x 10 ⁴ lux	Si	190-1100	10 x 10	200 pA	3 μsec	0.5 A/W @ 900 nm
19830-3-Flex	35.8 x 10 ⁻¹² to 4.18 x 10 ⁻¹	Si	190-1100	5.8 x 5.8	25 pA	1 μsec	4.2 x 10 ⁻³ A/W/cm ² @ 980 nm

(1) Quartz diffuser required for UV operation
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