

OL SERIES 730E

The OL 730E Programmable Radiometer / Photometer sets the standard when it comes to superior performance, accuracy, sensitivity, and versatility. When coupled with the appropriate detector, optical filter, and/or input optic, the OL 730E can provide research grade precision and accuracy at a fraction of the cost of comparable stand-alone systems.



The basic OL 730E is furnished with an internal preamplifier and has a sensitivity of 1×10^{-14} amperes. The optional detectors available for use with the OL 730E include silicon, photomultipliers, germanium, and indium gallium arsenide.

The OL 730E can be programmed by the user to read directly in any specified radiometric optical unit. Up to 25 calibration factors for different detector/filter/input optic configurations can be stored in memory. Once the desired detector/filter/input optic configuration and associated calibration factor are selected, the OL 730E will measure and read directly in the designated optical units. The OL 730E-HV, a programmable, high voltage DC power supply for use with photomultiplier detectors, is also available as an option at time of purchase or as a factory upgrade.

Design Features

The OL 730E is a microprocessor-controlled, high sensitivity radiometer / photometer that can be programmed to read directly in any user-specified radiometric or photometric quantity.



- High Sensitivity
- Auto-Ranging
- Auto-Zeroing
- Highly Accurate Readout and range-to-range Linearity
- Integrating Mode for Measuring Flash Sources
- 4 1/2 Digits Plus Exponent Display
- Variable Response Time
- USB Interface
- Multiple Detector Library
- Extremely Large Dynamic Range
- Software Application for PC Control and Remote Logging
- Small Footprint

SPECIFICATIONS

Readout (Units)	User Programmable
Display	4 1/2 Digits Plus Exponent
Range	2×10^{-10} to 2×10^{-3} Amps
Resolution (Standard)	10^{-14} Amps
Accuracy (@ 25°C Ambient)	
10^{-3} to 10^{-7} Amps	$\pm 0.05\% + 1$ Digit
10^{-8} to 10^{-9} Amps	$\pm 0.1\% + 1$ Digit
10^{-10} Amps	$\pm 0.5\% + 2$ Digits
Noise	1.0^{-14} A/√Hz
Range Selector	Auto, Manual, or Software Selectable
Response Time	0.1 Sec to 10.0 Sec
Operating Temp Range	5°C to 40°C
Operating Humidity Range	0% - 90% (Non-condensing)
Size	7.12" x 3.71" x 7.75" (18.1 x 9.4 x 19.7 cm)
Weight	2.5 lbs. (1.13 kg)
Power Input	85-265 VAC, 0.3A, 50/60Hz
Computer Interface	USB
Auxiliary I/O Interface	15-pin Female (HD15) TTL (4 Inputs, 4 Outputs)
Optional PMT High Voltage Range	-200 VDC to -1100 VDC

OL 730E FRONT PANEL CONTROLS

The OL 730E has eight (8) function keys and a 20 character X 2 line, alphanumeric, backlit LCD display

The function keys enable the user to:

- Select the desired detector head (*storage capacity is 25*)
- Select the units of measurement
- Auto-zero the background signal
- Select the gain range (*manual or autorange*)
- Select 100% or dB readings for transmittance and reflectance
- Enter a menu routine for specifying system and operating parameters

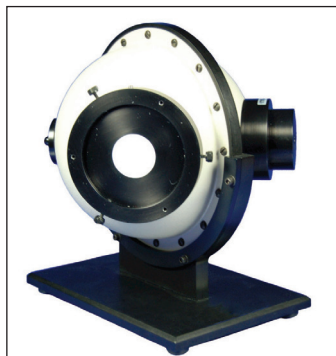
INPUT OPTICS

A line of accessories for the OL 730E are available to enable users to tailor the unit for multiple measurement applications. An OL 730E / detector / filter / input optic combination can be configured to measure:

- Luminance (*fl, cd/m²*)
- Illuminance (*lux, footcandle*)
- Radiant flux (*power, watts*)
- Radiance (*watts/cm²/sr*)
- Irradiance (*w/cm²*)
- Photopic transmittance (*%/db*)
- Luminous intensity (*lumens/sr, candela*)
- Radiant intensity (*watts/sr*)

The versatility and measurement capability of the OL 730E is greatly enhanced with the selection of optional input optic modules. With the proper input optics, the OL 730E can be calibrated and programmed to read directly in the desired optical units. In addition, up to 25 different optical head configurations with their associated calibration factors can be stored in the OL 730E at any one time. In actual use, the optical filter (if required) is inserted in the selected detector head and the combination is attached to the input optic module. All of the detectors, filters, and input optic modules are user changeable.

- OL 600 Direct Viewing Imaging Optics Module
- OL 16AB LED Receptor (*with OL 730-5 and OL 730-5-PF-1 filters*)
- OL Series 85 Cosine Receptors (*transmitting*)
- OL IS-430 4-inch Integrating Sphere (*in-line ports*)
- OL IS-670 6-inch Integrating Sphere (*90° ports*)
- OL 730-8 Reflex Microscope
- OL 730-9A Reflex Telescopes



DETECTORS			
Model #	Detector Type	Wavelength Range	NEP (Watts)
OL 730-5	Silicon	0.2 – 1.1 Gm	2 x 10 ⁻¹⁴ @ 960 nm
OL 730-Ge	Germanium (TE Cooled)	0.8 – 1.8 Gm	7 x 10 ⁻¹³ @ 1500 nm
OL 730-In-GaAs	Indium Gallium Arsenide (TE Cooled)	0.8 – 1.7 Gm	1 x 10 ⁻¹³ @ 1580 nm
OL 730-Si	Silicon (TE Cooled)	0.2 – 1.1 Gm	5 x 10 ⁻¹⁵ @ 960 nm
OL 740-15	Photomultiplier	0.2 – 0.8 Gm	6 x 10 ⁻¹⁷ @ 430 nm

OPTICAL FILTERS		
Model #	Filter Designation	Function
OL 730-5-PF	Photometric (<i>f1' < 4%</i>)	CIE V (λ) 380 – 780 nm
OL 730-5-PF-1	Photometric (<i>For S-20 Response PMT</i>)	CIE V (λ) 380 – 780 nm
OL 730-5-PF-LED	High-accuracy Photometric (<i>f1' < 1.6%</i>)	CIE V (λ) 380 – 780 nm
OL 730-5-RB	Color Temperature (<i>Set of 2</i>)	Red / Blue Ratio
OL 730-5-RF	Radiometric	Calibrated 460 – 980 nm
OL 730-1, -2, -3	Attenuation (<i>10, 1, & 0.1%</i>)	Calibrated 250 – 1100 nm



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LABORATORIES

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As part of our policy of continuous product improvement, we reserve the right to change specifications at any time.