

SpotOn

Optical Beam Position and Power Measurement System

Stand Alone Version

In the effort to provide better solutions for measuring the position and total power of laser beams for places with limited room, we have developed the Stand-Alone SpotOn system, using either Lateral Effect or 4-Quadrant detectors.



Features:

The system consists of a measuring head with an attached cable and a rugged small footprint instrument which is perfect for environments like a factory floor, areas where shock and vibrations are common and too harsh for a commercial PC, and where simplified mode of operation is required.

The instrument measures and displays:

- Beam Position X,Y (μm), either absolute or relative measurements.
- Beam power at a selected wavelength

Applications in Optics & Metrology:

- Pointing stability of laser beams
- Optical beam alignment
- Testing beam-delivery systems
- Monitor laser power & centration

- An external VGA screen can be connected to the unit for full graphics presentation of the SpotOn software.
- The unit is equipped with a 3.5" FDD enabling data saving, or loading user defined filter transmission files.
- The unit is capable of printing measured data and transmitting data via RS232 to another computer.



DUMA OPTRONICS LTD.

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Measurement Specification

Specification	Quadrant Detector	Lateral Effect Detector
Photodetector	10mm * 10mm silicon 4 sectors separated by 30 μ m gap (optional 10 μ m gap)	10 mm * 10 mm dual axis silicon 8 mm calibrated-diameter
Position resolution:	Better than 0.5 μ m	Better than $\pm 1 \mu$ m
Position accuracy:	$\pm 1 \mu$ m or $\pm 0.25\%$ of beam diameter whichever is greater	$\pm 50 \mu$ m over 8mm diameter calibrated area (Software linearization)
Spectral range:	350 nm to 1100 nm	
Usable beam size range:	50 μ m < diameter < 8mm	
Measurable beam power range(*):	10 μ W to 10mW	
Power accuracy(*):	$\pm 5\%$	
Measurement update rate:	20 Hz	

(*) To maintain the full calibration accuracy, attenuating optical ("neutral-density") filters may be necessary for operation with beams greater than 1mW. Saturating "non-linear" effects depend on beam size, type and wavelength, but caution should be exercised when using the quadrant detector above 3-6mW or the lateral effect detector above 1-3mW.

Stand alone unit specifications

Construction:	Heavy-duty steel
Power supply maximum output:	60 Watts AC input voltage: 90 VAC to 264 VAC
Input frequency:	47 to 63 Hz
Safety standards:	Meets UL, CAS, VDE standards
EMI standards:	Meets FCC standards, CE mark
Vibration (operating):	5 Hz to 15Hz, 0.24" peak to peak, 15 to 500Hz, 2.5G peak to peak.

Dimensions

Detector Head:	Dimension: 38mm diameter, 20mm long, M4-tapped post mounting hole, aligned to detector axes to $< \pm 0.5^\circ$, optical aperture threaded 1"-32 TPI ("C") for mounting filters. Weight: 175g with cable
Cable:	3m long attached to head
Stand Alone unit:	Operating: 0° to $+35^\circ$ c Storage: -10° to $+45^\circ$ c
Temperature:	248mm * 122mm * 215mm, weight: 4.5Kg

Ordering Information

Complete system, including sensor head with an attached cable and compact measuring Stand Alone unit. The SpotOn Stand Alone is provided in three versions:

Quadrant detector system (30 μ m gap)	DQUAD01-SA
Quadrant detector system (10 μ m gap)	DQUAD02-SA
Dual-axis Lateral Effect detector system	DLAT001-SA

Additional C-mount Optical ND filters are available. Other detectors such as 5 x 5mm / 25 x 25mm dual-axis silicon Lateral Effect detectors are available by special order.



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