

SpotOn *USB* *Optical Beam Position and Power Measurement System*



A portable, fast and accurate positioning system

- **Versatile:** Measures both Beam Position (over area up to 9mm diameter) and power (from 10 μ W to 2.5mW without filters)
- **Precise:** Available with dual axis Lateral Effect detector (down to 0.1 μ m resolution & 50Hz digital filter, \pm 25 μ m absolute accuracy) or with a 4-Quadrant detector (accuracy down to \pm 0.25% of beam diameter)
- **Convenient:** USB2.0 interface, detectors and software work with any Notebook/Desktop under WinXP/Vista
- **Easy to use:** User friendly software, complete on-line Help routine

Key Features

- Power input through USB2.0 port
- Convenient automatic Gain setting
- New hardware having 24 bit A/D
- Simultaneous operation of one or two PSD's in one system
- ActiveX package for integration in user application program
- Multiple devices operation available
- Real time display of Position and Power measurements
- Data streaming via RS232, direct data logging to Excel files

Main Applications

- Measure laser power and centration or displacement
- Align beams and quality control optical systems
- Measure target rotation and displacement
- Calibrate surface flatness and machine tool alignment
- Monitor vibration, deflection and motion

DUMA OPTRONICS LTD.

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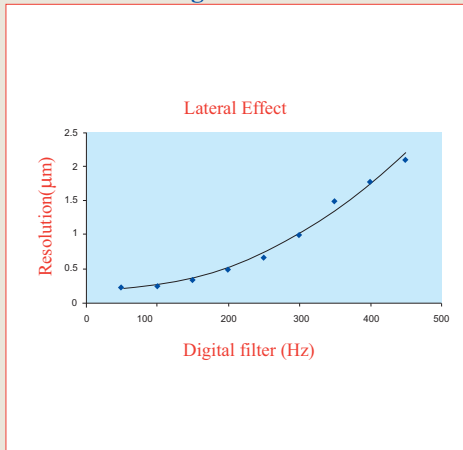


Measurement Specifications

Detector	N – Lateral Effect	L – Lateral Effect	U – Four Quadrant	F – Four Quadrant
Size	10mmx10mm	9mmx9mm	10mmx10mm	10mmx10mm
Type	Dual-axis Si with glass cover	Dual-axis Si resin No glass cover	4XSi sectors separated by 10µm gap, with glass cover	4XSi resin sectors separated by 30µm gap, no glass cover
Usable beam size	50µm to Ø8mm	50µm to Ø9mm	50µm to Ø5mm	50µm to Ø5mm
Position measurement range	Ø8mm	Ø9mm	One beam radius up to ±2.5mm	One beam radius up to ±2.5mm
Position resolution	Down to 0.1µm at 50Hz digital filter plus averaging	Down to 0.1µm at 50Hz digital filter plus averaging	Down to ±0.25% of beam size	Down to ±0.25% of beam size
Position accuracy	± 25 µm over 8 mm dia.	± 25 µm over 9 mm dia.	± 1 µm or ±0.25% of beam size	± 1 µm or ±0.25% of beam size
Update rate	Max 150Hz at 500Hz digital filter			
Operational spectral range	350-1100nm			
Power range	10µW to 10 mW with attenuating ND filters			
Power accuracy(*)	±5%			

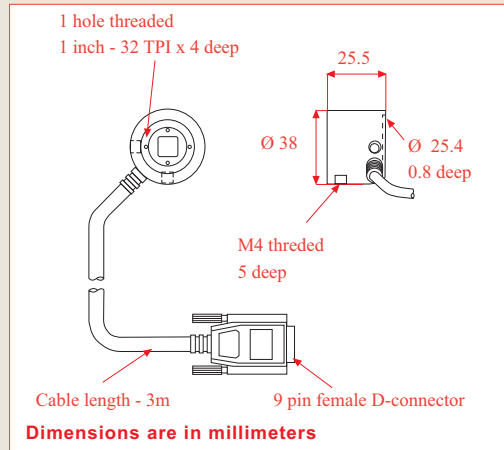
* To maintain full calibration accuracy, attenuating optical filters may be necessary for operation with beams greater than 1 mW. Saturating "non-linear" effects depend on the beam size, type and wavelength, but caution should be exercised when using the 4Quad PSD above 3-6mW or the Lateral Effect PSD above 1-3mW.

Digital Filter



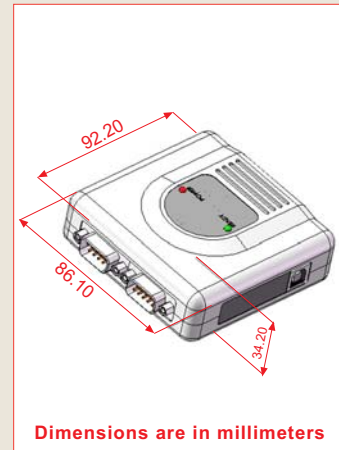
Controls the bandwidth of detector's response, where lower digital Filter attenuates the system noise and increases system's resolution

Sensor head dimensions



Weights: 175 G with cable

Manifold Box dimensions



Weights: 125 G

Ordering information

SPOTUSB - Complete system including manifold box, USB2.0 cable, software and user manual on CD, carrying case.

Select one or two sensor heads, calibration files are saved on the PSD heads and loads automatically to the software:

- L** – Lateral Effect PnP 9X9mm, no glass cover
- N** – Lateral Effect PnP 10x10mm, with glass cover
- Q** – Four Quadrant PnP 10x10mm with 30µm gap, no glass cover
- U** – Four Quadrant PnP 10x10mm with 10µm gap, with glass cover

Additional Optional Heads

- L44** - DUM SPOT Lateral Effect PnP
- L18** - Lateral Effect PnP 18x18mm with glass cover
- L04** - Lateral Effect PnP 4x4mm, no glass cover
- ER** - Dual Lateral Effect PnP with built in optical expander

Hardware Requirements

Pentium 4, 2.4GHz and above with 128MB RAM, 15MB HDD free, one CD ROM, Windows XP/Vista, VGA 8MB 1024x768 resolution , 16 bit, one USB2.0 socket

Optional accessories

NG4/NG9/NG10 – ND filter in housing (3/4" –32 thread)
Hood – 55mm long, for ambient light suppression



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