INNOVATIVE MEDICAL SOLUTIONS

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"XY4QD" - Real-time Laser Beam Position Monitor

Description

The monitor comprises a 4-quadrant diode (4-QD) with integrated signal processing for real-time beam position measurement with highest resolution.

The device directly delivers the x- and y-position of a laser beam relative to the center of the 4-QD. The signals can be displayed by any oscilloscope.

Applications

- Laser beam alignment
- Target acquisition
- Measurement of beam pointing, thermal drift, vibrations, and other laser fluctuations (Characterization and quality assurance)
- Recognition of fluctuation sources
- Integration in closed-loop beam alignment systems
- On-line laser performance control

Features

The monitor detects beam fluctuations with a temporal resolution of up to 100 kHz. In contrast to beam viewers based on camera chips, the monitor enables the display of single laser pulses instead of integrated signals.

Typical spatial resolutions are down to the sub-µm range depending on the laser beam size and profile. With the integrated power scaling, the measurement is independent on the laser power.

Specification

Work in progress. Subject to change without prior notice.

Bandwidth	up to 100 kHz
Total sensing area	10.0 x 10.0 mm^2
Typical spatial resolution*	< 1 µm
Spectral response	320 – 1100 nm
Operating temperature	0 – 70 °C
Housing dimensions	50 x 41 x 20 mm^3
Connectors	MCX
Supply voltage	12V

* measured with a 2 mW He-Ne laser with Ø = 2mm (Gaussian)

Options

- Integrated LED line for laser intensity control
- Integrated LED cross for display of x- and y- position

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