



YAG/Harmonics and IR Sensors

Very High Damage Threshold, Large Area, Laser Energy Sensors Optimized for Nd:YAG, Erbium, Ruby, and Holmium Lasers

The YAG and IR EnergyMax laser energy sensors are designed for use with very high energy/peak power lasers operating at low repetition rates, such as those based on Nd:YAG, Erbium, and Ho:YAG. The J-50MB-YAG sensors can operate with laser beams up to 35 mm in diameter, and can work at 1064 nm, 532 nm, 355 nm and 266 nm without the need to change diffusers or any other accessories. The J-50MB-IR sensor is optimized for Erbium lasers at 2940 nm.

These sensors have USB and RS-232 interfaces for use with a PC or industrial controller. DB25 models are also available for use with stand-alone energy meters.

FEATURES

- USB connectivity
- High damage resistance for lasers with high pulse energy and high peak power at low repetition rates
- Operate over the 266 nm to 3 μ m range
- Enable pulse energy measurements from 2.4 mJ to 3 J
- Measure 10 Hz to 300 Hz repetition rate

APPLICATIONS

- Medical
- Scientific
- Industrial



| SPECIFICATIONS | J-50MB-YAG | J-50MB-YAG-1528 | J-50MB-YAG-1535 | J-50MB-IR |
|---|---|------------------|-------------------|--|
| Energy Range | 2.4 mJ to 3 J | 2.4 mJ to 3 J | 12 mJ to 15 J | 3.2 mJ to 3 J |
| Noise Equivalent Energy (μJ) | <240 | | | <320 |
| Wavelength Range (μm) | 0.266 to 2.1 | | | 0.5 to 3.0 |
| Maximum Beam Size (mm) | 35 | | | 30 |
| Maximum Average Power ¹ (W) | 20 | | | 15 |
| Maximum Pulse Width | 340 μs | 57 μs | 2 ms ² | 1000 μs |
| Maximum Repetition Rate (pps) | 50 | 300 | 10 | 30 |
| Maximum Energy Density (J/cm^2) | 14.0 (at 1064 nm, 10 ns) 2.8 (at 532 nm, 10 ns) 0.75 (at 355 nm, 10 ns) 1.0 (at 266 nm, 10 ns) | | | 100 (at 2940 nm, 100 μs) |
| Detector Coating | MaxBlack | | | |
| Diffuser | YAG | | | IR |
| Calibration Wavelength (nm) | 1064 | | | 1064, 2940 |
| Calibration Uncertainty (%) (k=2) | ± 2 | | | ± 2 (at 1064 nm) ± 3 (at 2940 nm) |
| Energy Linearity (%) | ± 3 | | | ± 3.5 |
| Cable Length (m) | 3 | | | |
| Cable Type | USB and RS | | | |
| Part Number | | | | |
| USB | 1191437 ³ | 1191439 | 1191438 | 1191440 |
| RS | 1191430 | - | 1219962 | - |

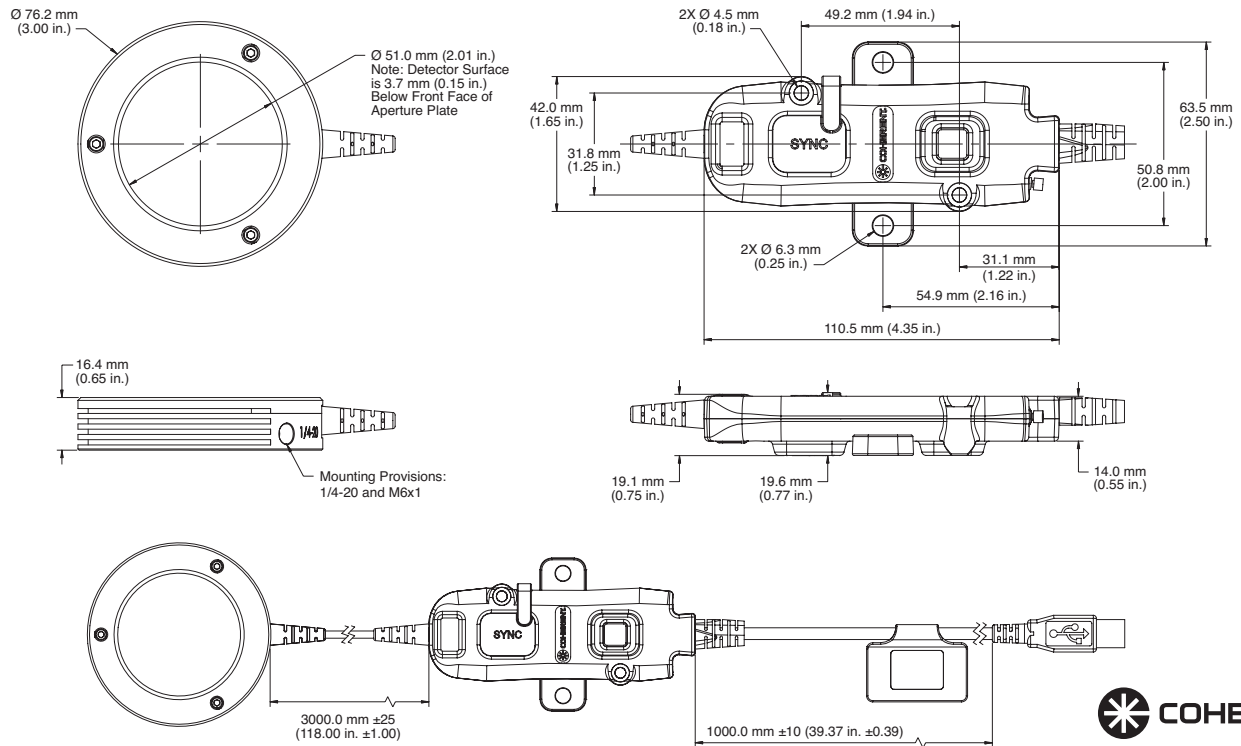
1 Extend average power range with optional heat sink. See page 100.

2 Pulsewidths up to 5 ms can be measured with an additional $\pm 1\%$ uncertainty.

3 1 Day Ship program: eligible for next business day shipment.

MECHANICAL SPECIFICATIONS

J-50MB-YAG and -IR USB

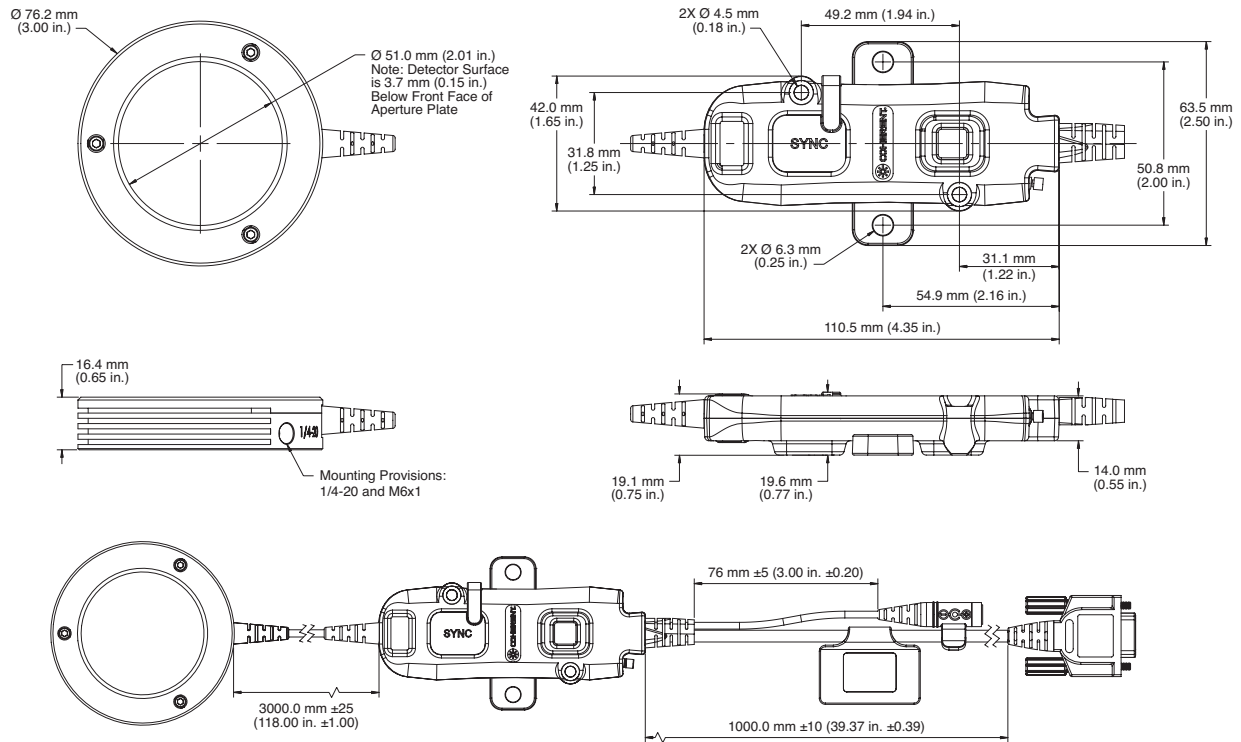




YAG/Harmonics and IR Sensors Datasheet

MECHANICAL SPECIFICATIONS

J-50MB-YAG and -IR RS-232



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Coherent follows a policy of continuous product improvement. Specifications are subject to change without notice. Coherent's scientific and industrial lasers are certified to comply with the Federal Regulations (21 CFR Subchapter J) as administered by the Center for Devices and Radiological Health on all systems ordered for shipment after August 2, 1976.

Coherent offers a limited warranty for all YAG/Harmonics and IR Sensors. For full details of this warranty coverage, please refer to the Service section at www.coherent.com or contact your local Sales or Service Representative. MC-029-21-0M0122Rev.A Copyright ©2022 Coherent, Inc.