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Find the *Coherent J-50MB-YAG* at our website: ***Click HERE***

MaxBlack EnergyMax Sensors With Diffusers



MaxBlack EnergyMax sensors with diffusers are specifically designed for use with very high energy/peak power lasers operating at low repetition rates, such as those based on Nd:YAG, Ruby, Ho:YAG, and Erbium. The YAG/Harmonics sensor can work at 1064 nm, 532 nm, 355 nm, and 266 nm without the need to change diffusers or any other accessories. The J-25MB-IR sensor can operate throughout the 694 nm to 2.1 µm wavelength range. The J-50MB-IR sensor operates from 500 to 2940 nm and is optimized for use with medical lasers.

These sensors combine a MaxBlack coating with a diffuser that produces superior damage resistance characteristics. This combination enables operation with lasers that produce either very high energy per pulse or very high peak fluences.

Table 5. MaxBlack EnergyMax Sensor With Diffusers Selection Chart

Calibration Wavelength	Active Area Diameter		
	25 mm for Ruby to Ho:YAG	50 mm for Nd:YAG	50 mm for Erbium[a]
1064 nm	J-25MB-IR	J-50MB-YAG	J-50MB-IR

a. Sensor is rated for a maximum of four minutes continuous use before the sensor must be cooled for at least four minutes (to achieve < 2% measurement non-linearity).

These sensors accept a user-installable, optional heat sink (see “Increasing Average Power With Heat Sinks” on page 21), which can extend either the maximum energy or average power range. These heat sinks allow the J-25MB-IR sensor to be used up to 15W average power, and the J-50MB-YAG sensor to be used up to 45W average power.



Use of EnergyMax sensors at average power levels beyond the base model average power specification—without the optional heat sink—may cause permanent damage to the sensor.

MaxBlack EnergyMax sensors with diffusers are compatible with Coherent LabMax-TOP, 3sigma, FieldMaxII-TOP, FieldMaxII-P, EPM1000, and EPM2000 meters.

Table 6. MaxBlack EnergyMax Sensor With Diffusers Specifications

	J-50MB-YAG	**J-50MB-IR**	**J-25MB-IR**
Energy Range	1.5 mJ to 3J[a]	1.0 mJ to 3J	1.5 mJ to 3J
Noise Equivalent Energy (µJ)	< 50	< 100	< 50
Wavelength Range (µm)	0.266 to 2.1	0.5 to 3.0	0.532 to 2.1
Max. Beam Size (mm)	35	30	12.5
Max. Avg. Power (W)	20	15[b]	20
Max. Pulse Width (µs)	340	1000	860
Max. Rep. Rate (pps)	50	30	20
Max. Energy Density (J/cm^2)	14.0 (@ 1064 nm, 10 ns) 2.8 (@ 532 nm, 10 ns) 0.75 (@ 355 nm, 10 ns) 1.0 (@ 266 nm, 10 ns)	> 100 (@ 2940 nm, 100 µs)	5.0 (@ 1064 nm, 10 ns)
Sensor Coating	MaxBlack	MaxBlack	MaxBlack
Diffuser	YAG	IR	IR
Calibration Wavelength (nm)	1064	1064, 2940	1064
Calibration Uncertainty (%)	± 2	± 2	± 3
Linearity (%)	Refer to “Measurement Linearity” on page 25.		
Cable Length (m)	2.5	2.5	2.5
Cable Type	J DB-25	J DB-25	J DB-25
Item Number	1110744	1155722	1110577

a. Modified sensors with higher repetition rate, energy range and/or pulse width are available. Contact Coherent.
b. Sensor is rated for a maximum of four minutes continuous use before the sensor must be cooled for at least four minutes (to achieve < 2% measurement non-linearity).

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