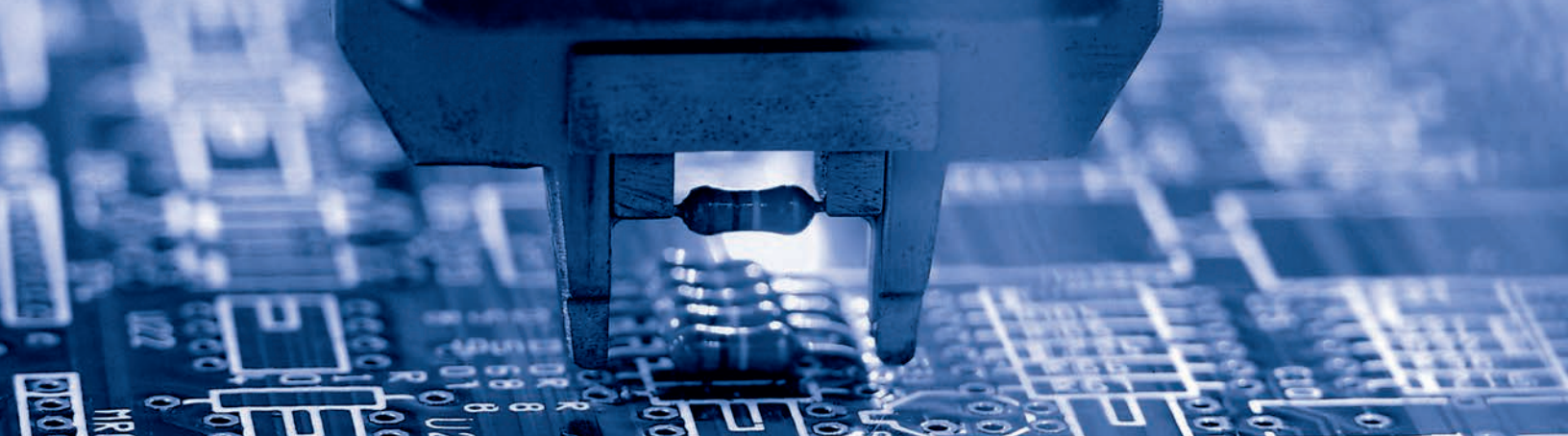




PowerMax-Pro 15 mm Sensor Developer's Kits

High-Speed and Large-Area Power Detector for Integration Inside Laser Systems

PowerMax-Pro thin-film transverse thermoelectric power sensing technology (Patent #9,012,848) offers the broad wavelength sensitivity and large dynamic range of a thermopile with the fast response speed of small infrared detectors. The microsecond response time enables nearly instant power measurement without any overshoot, and can provide pulse energy, peak power, and rise/fall time with modulated sources.

These detectors are designed for integration into laser systems for real-time QC monitoring and in-line control. PowerMax-Pro sensors alleviate issues common to semiconductor and infrared detectors that have smaller active areas and steeper spectral response curves.

FEATURES & BENEFITS

- High-speed 10 microsecond response time
- High-power handling to 9 W
- Supports lasers from 400 nm to 11 microns
- Broadband coating available with flat spectral response
- Large 15 mm square active area

APPLICATIONS

- Laser power monitoring of CW or modulated laser systems
- Active feedback control within laser processing systems



PowerMax-Pro 15 mm Sensor Developer's Kits Datasheet

SPECIFICATIONS	PowerMax-Pro 15 mm HD Developer's Kit	PowerMax-Pro 15 mm BB Developer's Kit	PowerMax-Pro 15 mm UP Developer's Kit
Wavelength Range	400 nm to 1100 nm 9 µm to 11 µm	400 nm to 11 µm	400 nm to 1100 nm 9 µm to 11 µm
Average Power Range (continuous)	2.5 mW to 5 W Up to 9 W with heat sink (optional)		
Maximum Modulated Peak Power ¹ (W) (use for >1 usec pulses up to CW)	9		
Max. Intermittent Avg. Power (W) (<5 min.; with no Heat Sink)	9		
Noise Equivalent Power Standard Mode (10 Hz) High Speed Mode (20 kHz) Snapshot Mode (625 kHz)	<50 µW <550 µW <6 mW		
Maximum Average Power Density (W/cm ²) with no Heat Sink with Heat Sink with Water-cooled Heat Sink ²	25 50 300		
Maximum Peak Power Density (kW/cm ²)	14		
Maximum Energy Density (mJ/cm ²)	33 (10 ns; 1064 nm)		
Rise & Fall Time (µs)	≤10	≤75 (typical 30 to 70)	≤10
Detector Coating	HD	BB	UP
Active Area (mm)	15 x 15		
Minimum Beam Size ³ (mm)	2	2	Damage threshold dependent
Calibration Uncertainty (%) (k=2)	±2.5		
Power Linearity (%)	±2		
Spectral Compensation Accuracy (%)	±3		
Spatial Uniformity ³ (%) (center 70% of aperture; 2.5 mm beam)	±5 ±3 typical	±5 ±3 typical	±3 (within 5 mm x 5 mm central area; 2.5 mm beam)
Calibration Wavelength (nm)	1064		
Cooling Method	Air (convective)		
Cable Type	DB25		
Cable Length	2.5 m (8.2 ft)		
Part Number	1342383	1382766	1342384

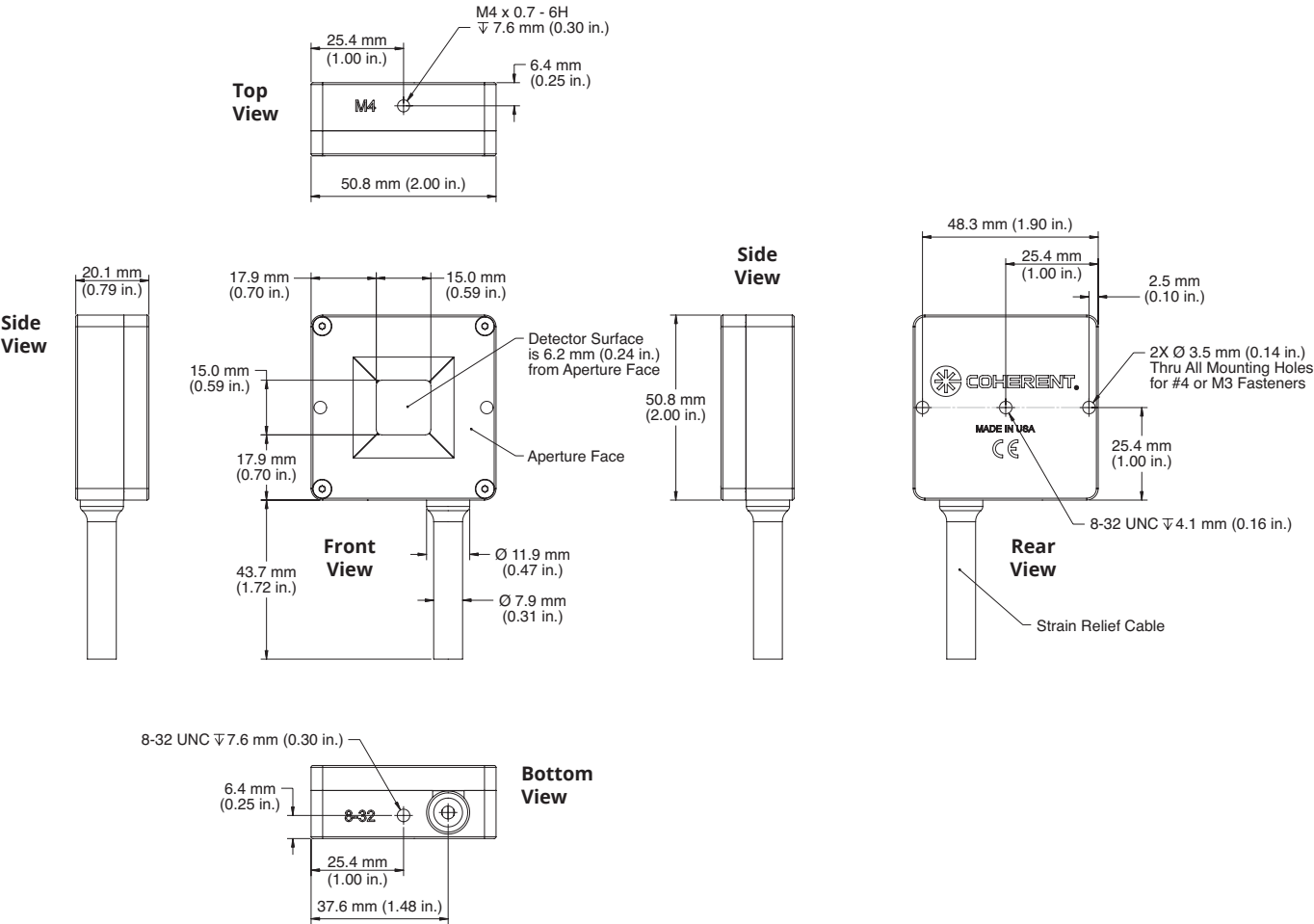
¹ Power is adjustable by changing amplifier gain.

² Customer supplied.

³ Unpatterned detectors are recommended for small beams <2 mm diameter in fixed installations with minimal beam movement.

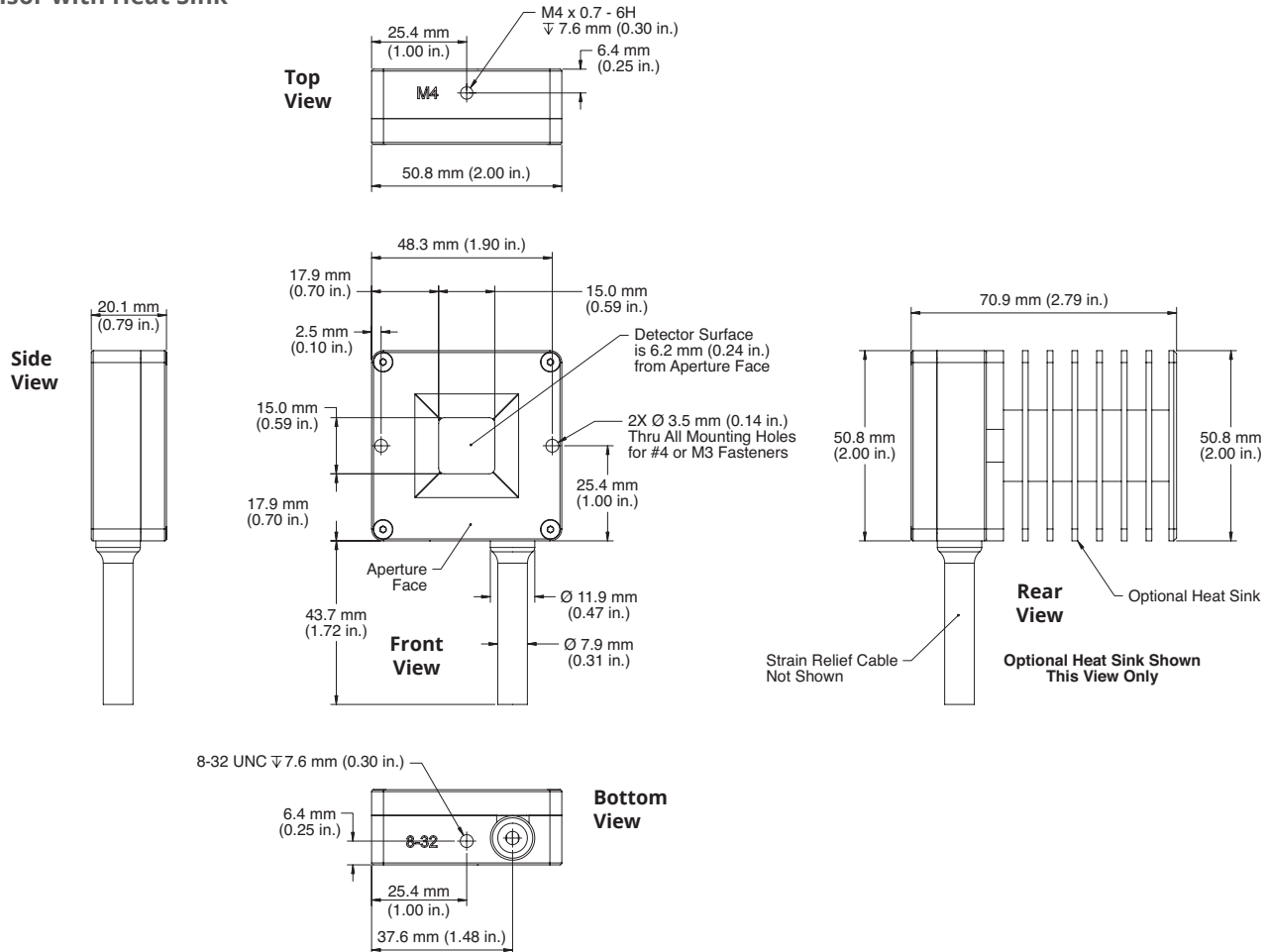
MECHANICAL SPECIFICATIONS

PowerMax-Pro 15 mm Sensor



MECHANICAL SPECIFICATIONS

PowerMax-Pro 15 mm Sensor with Heat Sink

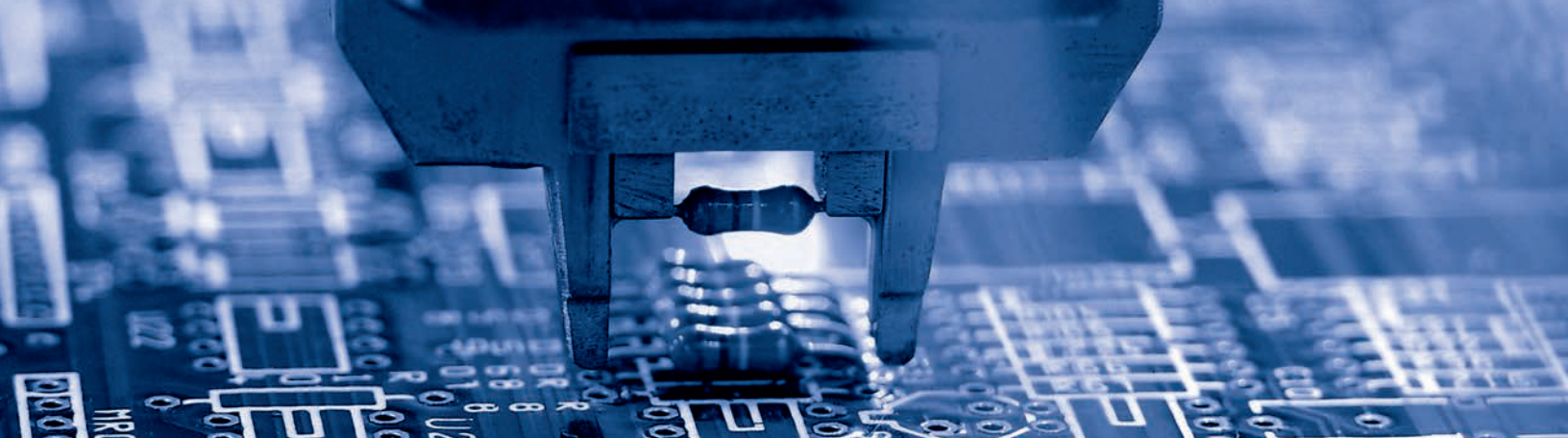


Coherent, Inc.,
5100 Patrick Henry Drive Santa Clara, CA 95054
p. (800) 527-3786 | (408) 764-4983
f. (408) 764-4646

tech.sales@coherent.com www.coherent.com

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PowerMax-Pro 15 mm OEM Detectors

High-Speed, Compact Power Detector with Large Active Area for Integration Inside Laser Systems

15 mm PowerMax-Pro OEM detectors are intended for integration inside laser systems with narrow process windows. The high-speed and high-power handling of these detectors offers advantages over semiconductor photodiodes and other infrared detectors commonly used in feedback loops and inline QC monitoring applications.

Small infrared detectors and photodiodes only sample a portion of the beam leading to errors and instability, they have steep spectral response curves, and require significant attenuation to avoid saturation. PowerMax-Pro OEM detectors will resolve these types of design challenges.

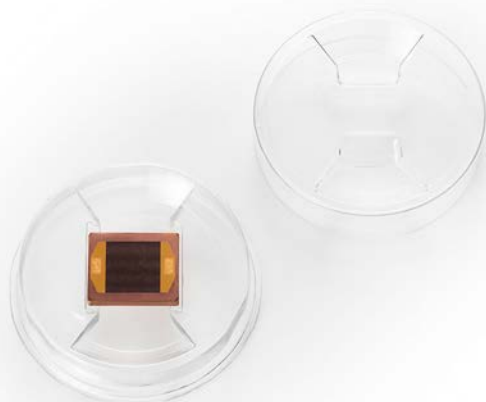
PowerMax-Pro thin-film transverse thermoelectric power sensing technology (Patent #9,012,848) offers the broad wavelength sensitivity, large dynamic range of a thermopile with a fast ten microsecond response speed.

FEATURES & BENEFITS

- High-speed 10 microsecond response time
- High-power handling to 9 W
- Supports lasers from 400 nm to 11 microns
- Broadband coating available with flat spectral response
- Large 15 mm square active area
- Compact form factor for OEM integration

APPLICATIONS

- Laser power monitoring of CW or modulated laser systems
- Active feedback control and inline QC within laser processing systems



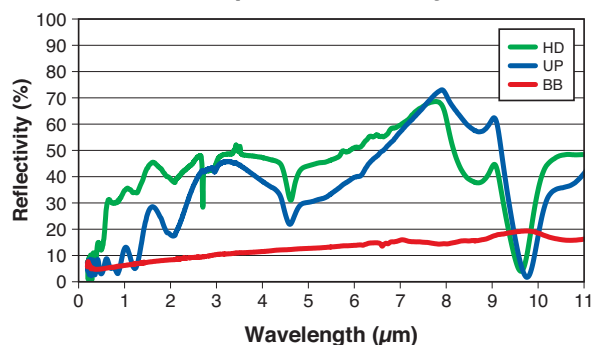
SPECIFICATIONS	PowerMax-Pro 15 mm OEM Detector - HD	PowerMax-Pro 15 mm OEM Detector - BB	PowerMax-Pro 15 mm OEM Detector - UP
Wavelength Range	400 nm to 1100 nm 9 μ m to 11 μ m	400 nm to 11 μ m	400 nm to 1100 nm 9 μ m to 11 μ m
Average Power Range Guidelines ¹ (W) in metal enclosure with finned heatsink	to 5 to 9		
Max. Average Power Density Guidelines ¹ (W/cm ²) without heatsink with finned heatsink with water-cooled heatsink	25 50 300		
Max. Peak Power Density (kW/cm ²)	14		
Max. Energy Density (mJ/cm ²)	33 (10 ns; 1064 nm)		
Typical Voltage Output ²	100 to 200 μ V/W (typical)		
Typical Current Output ²	10 to 20 μ A/W (typical)		
Rise & Fall Time (μ s)	≤ 10	≤ 75 (typical 30 to 70)	≤ 10
Detector Coating	HD	BB	UP
Active Area (mm)	15 x 15		
Maximum Beam Size ³ (mm)	10	10	2
Minimum Beam Size ³ (mm)	2	2	Damage threshold dependent
Spatial Uniformity ³ (%) (center 70% of aperture; 2.5 mm beam)	± 3 ± 1.5 typical	± 3 ± 1.5 typical	± 3 (within 5 mm x 5 mm central area; 2.5 mm beam)
Calibration	User Calibrated OEM Detector		
Part Number	1385327	1385329	1385328

¹ OEM detectors require mechanical mounting with a thermal interface to dissipate heat. See PMP 15mm Development Kit Sensor user manual for integration guidelines.

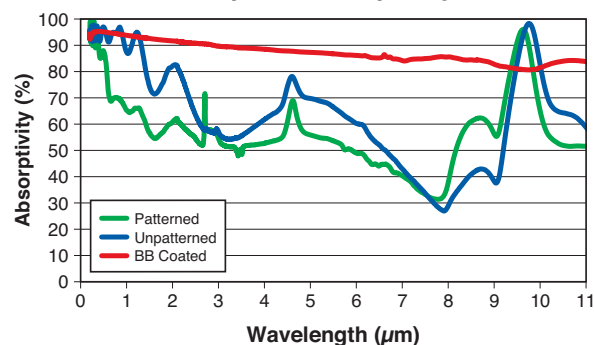
² Coherent recommends using these detectors in current mode with a transimpedance amplifier. See PMP 15 mm Development Kit Sensor user manual for integration guidelines.

³ The "UP" type detectors are recommended only for small beams <2 mm diameter in fixed installations with minimal beam movement. For larger beams choose HD or BB models.

**PowerMax-Pro 15 mm OEM Detector
Optical Reflectivity**

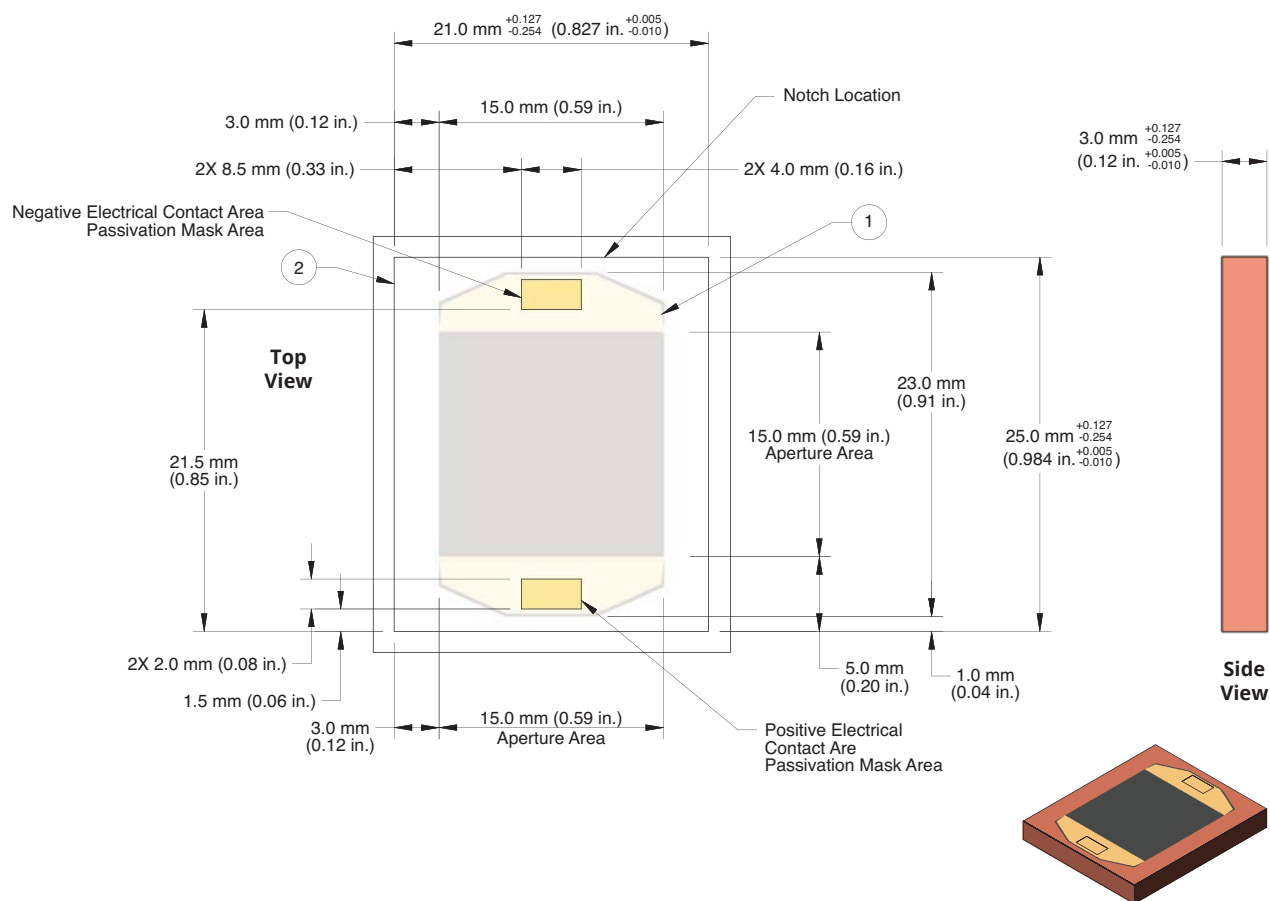


**PowerMax-Pro 15 mm OEM Detector
Optical Absorptivity**



MECHANICAL SPECIFICATIONS

PowerMax-Pro 15 mm OEM Detector

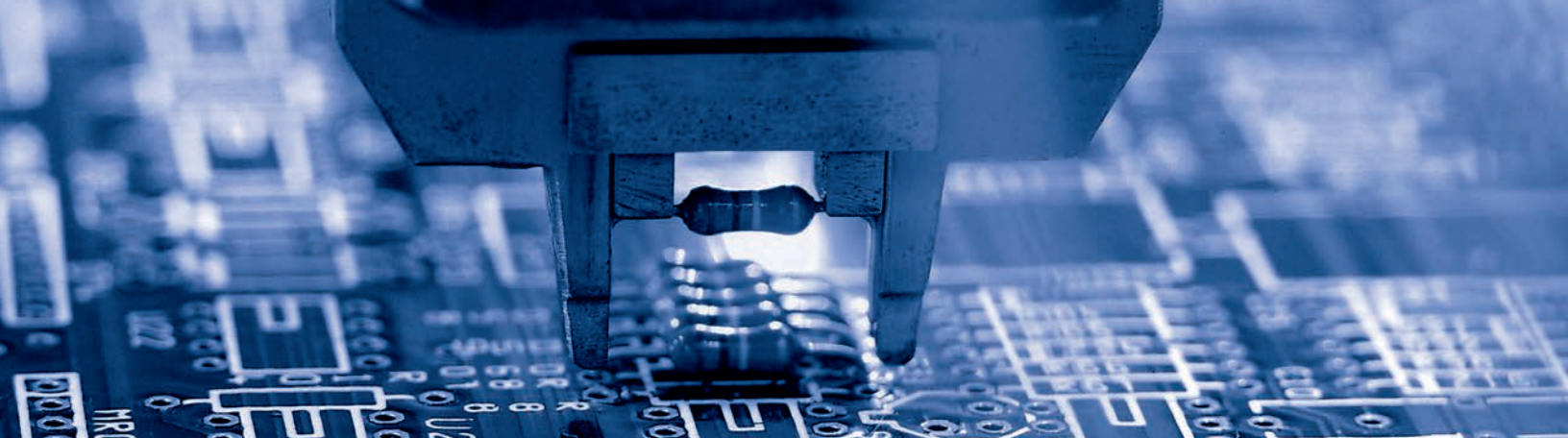


Coherent, Inc.,
5100 Patrick Henry Drive Santa Clara, CA 95054
p. (800) 527-3786 | (408) 764-4983
f. (408) 764-4646

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PowerMax-Pro Sensors

100 mW to 150 W

PowerMax-Pro (Patent #9,012,848) represents a dramatic technological advancement in laser power sensing that combines the broad wavelength sensitivity, dynamic range and laser damage resistance of a thermopile with the response speed of a semiconductor photodiode.

Coherent has invented a novel, thin-film technology to create a device which rapidly senses thermal changes due to incident laser energy. Unlike traditional thermopile detectors, in these new PowerMax-Pro sensors, heat flows vertically through a film which is only microns thick, rather than radially to the edge of the device over a distance of several centimeters. The result is a measurement response time below 10 μ s, as compared to over 1 second for traditional thermopiles. Plus, these detectors can operate over a spectral range as broad as 400 nm to 11 μ m, and incorporate a large 30 mm x 30 mm active area.



FEATURES & BENEFITS

- Measures power in tens of microseconds
- High power up to 150 W for HD models and 200 W for BB models
- Supports lasers from Visible to Far-IR wavelengths
- Capable of tracing the individual pulse shape of modulated and long pulse lasers
- Large 30 x 30 mm active area

APPLICATIONS

- Laser Processing including Cutting, Drilling, and Welding
- Medical Systems including Long Pulse Aesthetic applications
- Diode LIV Testing - increase resolution and shorten test time
- Scientific and Engineering
- Production and QA Testing

SPECIFICATIONS	PowerMax-Pro 150 BB	PowerMax-Pro 150 HD	PowerMax-Pro 150 BB Nano ¹	PowerMax-Pro 150 HD Nano ¹
Wavelength Range ²	400 nm to 11 μ m	400 nm to 1100 nm; 9 μ m to 11 μ m	400 nm to 11 μ m	400 nm to 1100 nm; 9 μ m to 11 μ m
Power Range for Continuous Usage Water-cooled ³ Air-cooled	100 mW to 150 W 100 mW to 17 W			
Maximum Peak Power (W) (use for >1 μ sec pulses up to CW)	170	170	200 ⁴	200 ⁴
Maximum Intermittent Power (W) (<5 min.)	65 (air-cooled)			
Noise Equivalent Power (mW) Standard Mode High Speed Mode Snapshot Mode	<1 <4 <9			
Maximum Power Density (kW/cm ²)	0.2 (150 W)			
Maximum Peak Power Density (kW/cm ²)	14			
Maximum Energy Density (mJ/cm ²)	33 (10 ns; 1064 nm)			
Rise & Fall Time (μ s)	≤ 50	≤ 10	≤ 350	≤ 350
Detector Coating	BB	HD	BB	HD
Active Area (mm)	30 x 30			
Minimum Beam Size (mm)	2.0 (1.0 mm - up to 3% error)			
Calibration Uncertainty (%) (k=2)	± 2			
Power Linearity (%)	± 3			
Spectral Compensation Accuracy (%)	± 3			
Spatial Uniformity (%) (center 75% of aperture; 2.5 mm beam)	± 5			
Calibration Wavelength (nm)	810			
Cooling Method	Water/Air (intermittent)			
Cable Type	DB25			
Cable Length	2.5 m (8.2 ft.)			
Part Number	1323849	1266709	1325550	1325549

¹ Choose a "Nano" model PowerMax-Pro sensor when measuring the average power of industrial short pulsed (nanosecond and picosecond) lasers. The amplifier in the "Nano" is adjusted to account for the high peak impulse powers associated with those types of lasers. Lasers of this type within the Coherent portfolio include the Matrix QS, Avia NX, Flare NX, Helios (the regular "HD" models are not appropriate for these short pulsed, high energy lasers).

² Contact Coherent for 355nm usage guidelines.

³ Water flow rate for water-cooled sensors must be >0.5 GPM (>2 LPM).

⁴ For pulses shorter than 1 μ sec, use the maximum pulse energy density and average power specifications instead of peak power.

SPECIFICATIONS	PowerMax-Pro 150F BB	PowerMax-Pro 150F HD	PowerMax-Pro 150F Nano ¹
Wavelength Range ²	400 nm to 11 μ m	400 nm to 1100 nm; 9 μ m to 11 μ m	400 nm to 1100 nm; 9 μ m to 11 μ m
Power Range for Continuous Usage Water-cooled ³ Air-cooled	– 100 mW to 150 W		
Maximum Peak Power (W) (use for >1 μ sec pulses up to CW)	170	170	200 ⁴
Maximum Intermittent Power (W) (<5 min.)	150 (maximum)		
Noise Equivalent Power (mW) Standard Mode High Speed Mode Snapshot Mode	<1 <4 <9		
Maximum Power Density (kW/cm ²)	0.2 (150 W)		
Maximum Peak Power Density (kW/cm ²)	14		
Maximum Energy Density (mJ/cm ²)	33 (10 ns; 1064 nm)		
Rise & Fall Time (μ s)	≤ 50	≤ 10	≤ 350
Detector Coating	BB	HD	HD
Active Area (mm)	30 x 30		
Minimum Beam Size (mm)	2.0 (1.0 mm - up to 3% error)		
Calibration Uncertainty (%) (k=2)	± 2		
Power Linearity (%)	± 3		
Spectral Compensation Accuracy (%)	± 3		
Spatial Uniformity (%) (center 75% of aperture; 2.5 mm beam)	± 5		
Calibration Wavelength (nm)	810		
Cooling Method	Fan		
Cable Type	DB25		
Cable Length	2.5 m (8.2 ft.)		
Part Number	1323848	1266708	1331019

¹ Choose a "Nano" model PowerMax-Pro sensor when measuring the average power of industrial short pulsed (nanosecond and picosecond) lasers. The amplifier in the "Nano" is adjusted to account for the high peak impulse powers associated with those types of lasers. Lasers of this type within the Coherent portfolio include the Matrix QS, Avia NX, Flare NX, Helios (the regular "HD" models are not appropriate for these short pulsed, high energy lasers).

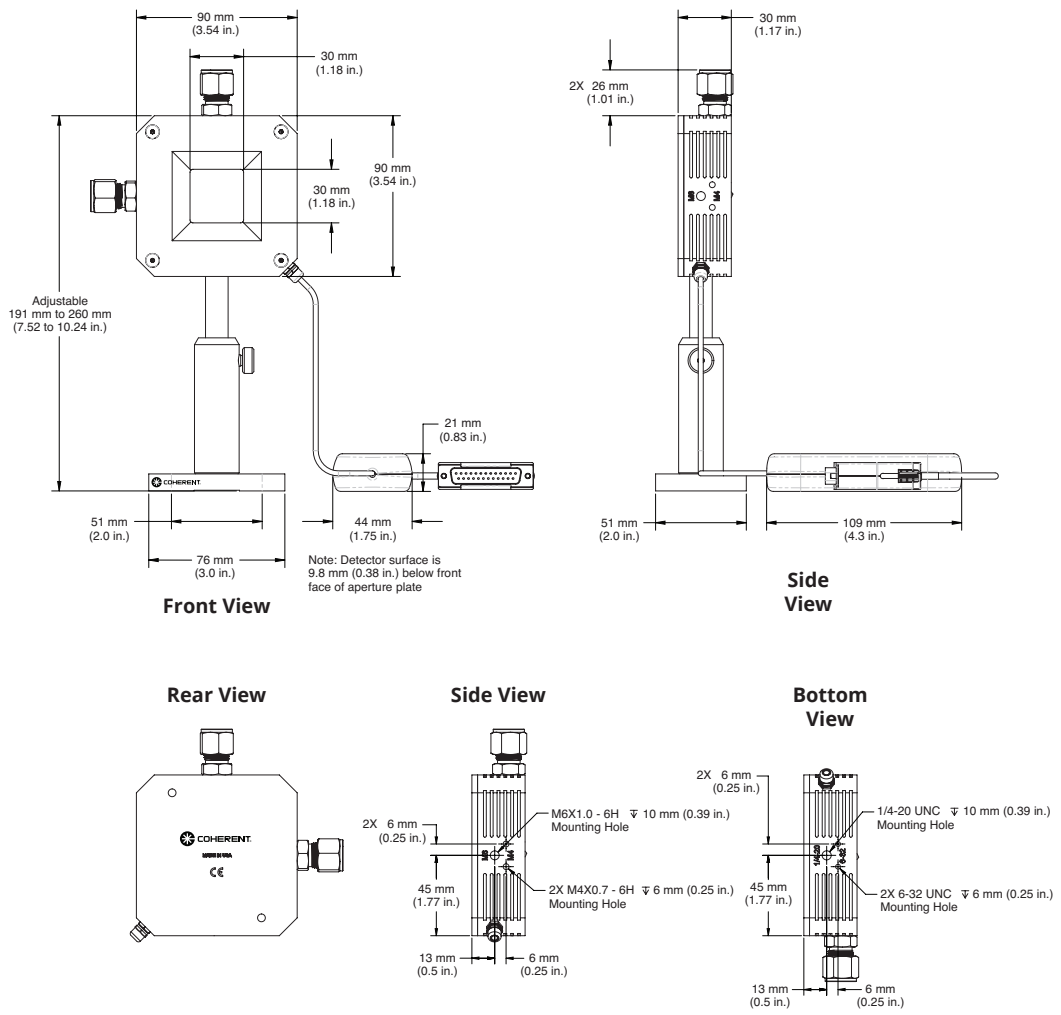
² Contact Coherent for 355nm usage guidelines.

³ Water flow rate for water-cooled sensors must be >0.5 GPM (>2 LPM).

⁴ For pulses shorter than 1 μ sec, use the maximum pulse energy density and average power specifications instead of peak power.

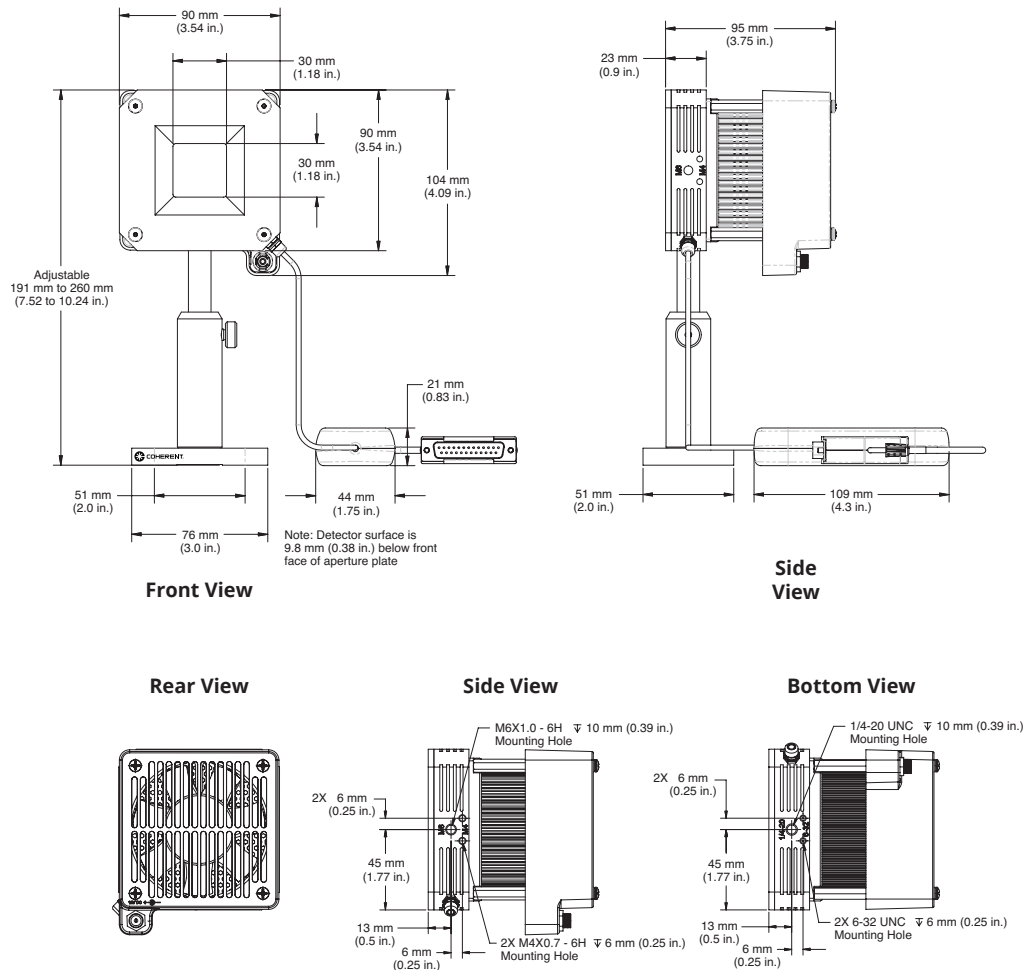
MECHANICAL SPECIFICATIONS

PowerMax-Pro 150 HD and BB



MECHANICAL SPECIFICATIONS

PowerMax-Pro 150F HD and BB



Coherent, Inc.,
5100 Patrick Henry Drive Santa Clara, CA 95054
p. (800) 527-3786 | (408) 764-4983
f. (408) 764-4646

tech.sales@Coherent.com www.coherent.com

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PowerMax-Pro HP Sensor

1W to 15 kW

PowerMax-Pro (Patent #9,059,346) represents a dramatic technological advancement in laser power sensing that combines the broad wavelength sensitivity, dynamic range and laser damage resistance of a thermopile with the response speed of a semiconductor photodiode.

Coherent has invented a novel, thin-film technology to create a device which rapidly senses thermal changes due to incident laser energy. Unlike traditional thermopile detectors, in these new PowerMax-Pro sensors, heat flows vertically through a film which is only microns thick, rather than radially to the edge of the device over a distance of several centimeters. The result is a measurement response time below 10 μ s, as compared to over 1 second for traditional thermopiles. This HP model incorporates a ZnSe diffuser to enable peak power measurements up to 15 kW.

The high response speed of PowerMax-Pro sensors is particularly advantageous in commercial applications, where it enables CW laser power and pulsed laser energy to be sampled much more frequently, resulting in increased throughput and improved process control.

FEATURES

- Measures power in tens of microseconds
- High power up to 350W continuous, 600W intermittent, 15 kW peak
- Supports lasers from the Near-IR to Far-IR wavelengths
- Capable of tracing the individual pulse shape of modulated and long pulse lasers
- Large active area

APPLICATIONS

- Laser Processing including Cutting, Drilling, and Welding
- Medical Systems including Long Pulse Aesthetic applications
- Diode LIV Testing - increase resolution and shorten test time
- Scientific and Engineering
- Production and QA Testing



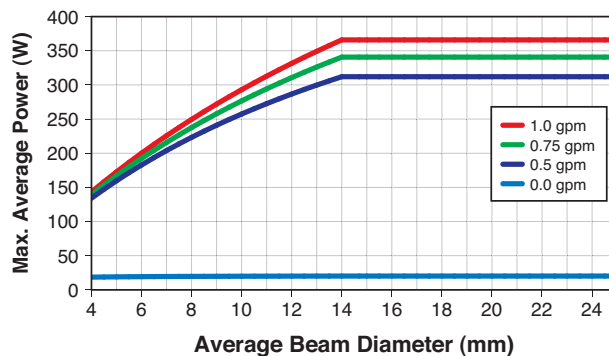
SPECIFICATIONS	PowerMax-Pro HP
Wavelength Range	700 nm to 1070 nm; 10.6 μm
Average Power Range ¹ (W)	1 to 350 (22W max air-cooled, cont.) (75W max air-cooled, 5 min.)
Max. Pulsed Peak Power (W)	15000 (<10 msec burst) 1500 (continuous)
Noise Equivalent Power (mW) Standard Mode (10 Hz) High Speed Mode (20 kHz) Snapshot Mode (625 kHz)	<25 <100 <300 (low 5 kW range) <1.5W (high 40 kW range)
Max. Power Density (kW/cm ²)	1.2 (150W)
Max. Peak Power Density (kW/cm ²)	50 (1 ms; 1064 nm)
Max. Energy Density (J/cm ²)	30 (3 ms; 755 nm)
Rise Time (μs)	≤ 10
Fall Time (μs)	≤ 10
Detector Coating	HD
Diffuser	ZnSe
Active Area (mm)	25 dia.
Minimum Beam Size (mm)	Set by damage threshold
Maximum Beam Size ² (mm)	18
Calibration Uncertainty (%) (k=2) at 810 nm	± 2
Spectral Compensation Accuracy (%)	± 5
Power Linearity ³ (%)	± 2 (1W to 10 kW) 3 to 10 (10 to 15 kW)
Spatial Uniformity (%) (center 64% of aperture; 2.5 mm beam)	± 5
Calibration Wavelength (nm)	810
Cooling Method	Water/Air (intermittent)
Cable Type	DB25
Cable Length	2.5 m (8.2 ft.)
Part Number	1286588

¹ Beam size dependent. See steady-state and intermittent power charts.

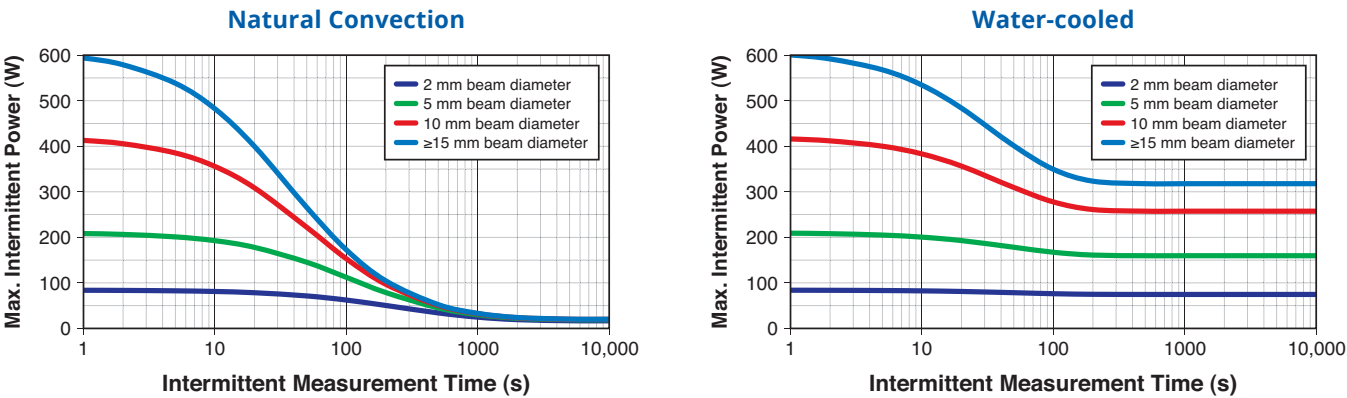
² See spatial uniformity and beam diameter charts for larger beams.

³ Beam size and pulse length dependent. See peak power and pulse length charts.

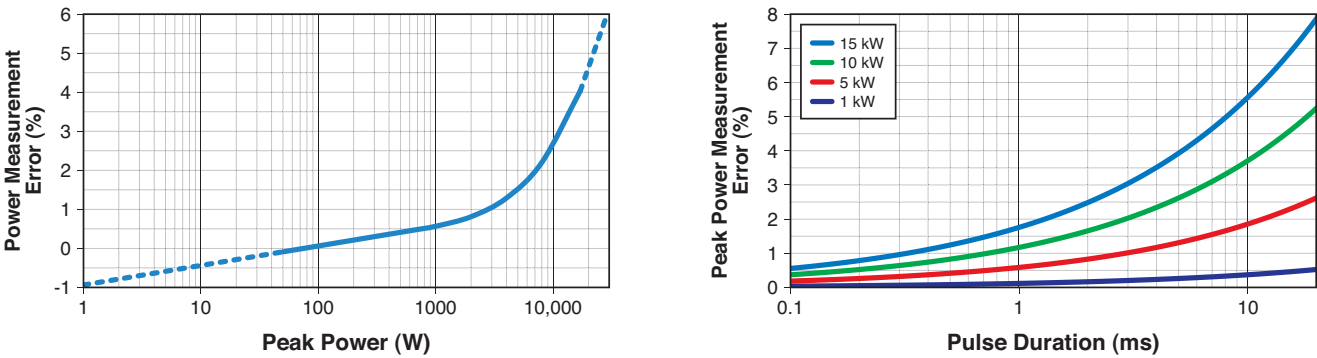
PowerMax-Pro HP Maximum Steady-State Average Power



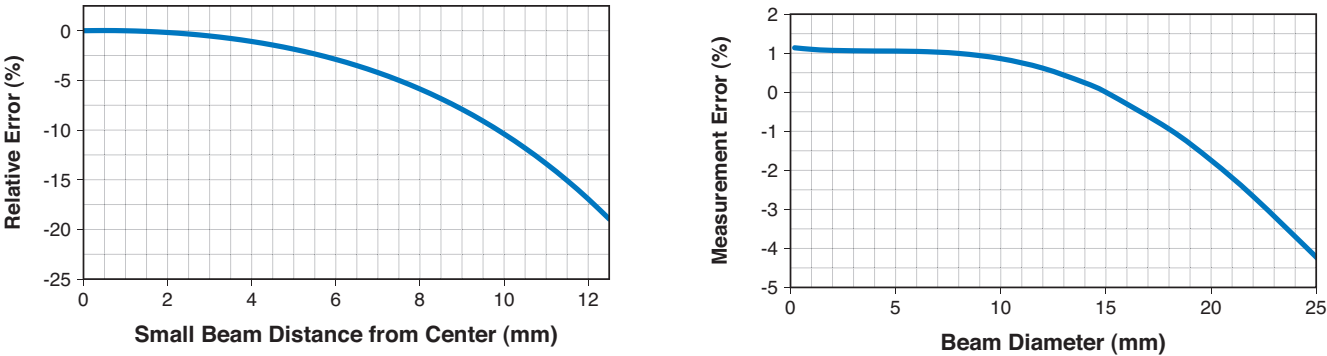
PowerMax-Pro HP Intermittent Average Power



PowerMax-Pro HP Measurement Error with Peak Power and Pulse Length

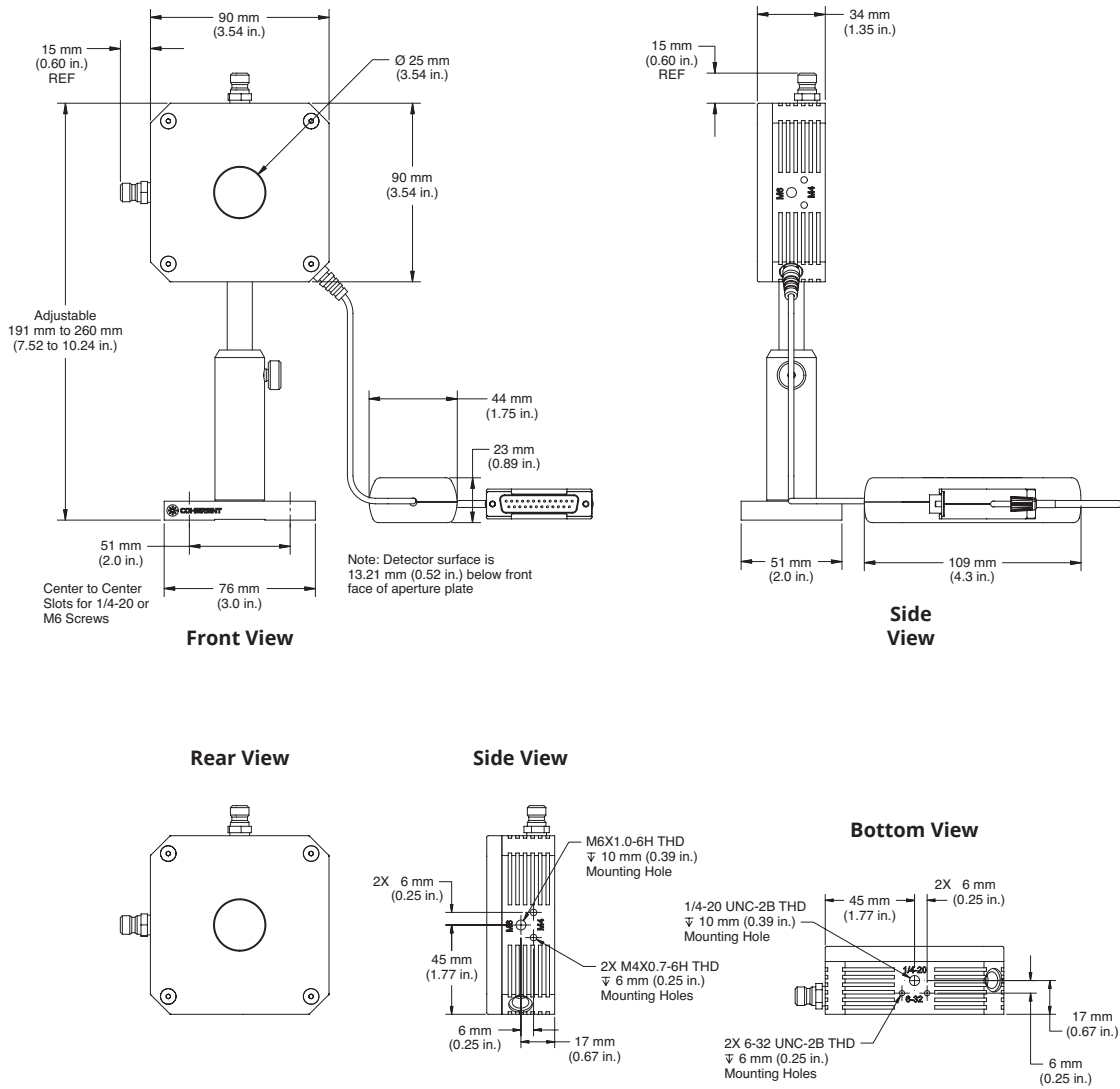


PowerMax-Pro HP Spatial Non-uniformity and Beam Diameter



MECHANICAL SPECIFICATIONS

PowerMax-Pro HP



SPECIFICATIONS	PowerMax-Pro USB/RS HP 2K
Wavelength Range	700 nm to 1070 nm; 10.6 μm
Average Power Range ¹ (W)	3 to 350 (22W max air-cooled, cont.) (75W max air-cooled, 5 min.)
Max. Pulsed Peak Power (W)	2000
Noise Equivalent Power (mW) Standard Mode (10 Hz) High Speed Mode (20 kHz) Snapshot Mode (625 kHz)	<150 <200 <300
Max. Power Density (kW/cm^2)	1.2 (150W)
Max. Peak Power Density (kW/cm^2)	50 (1 ms; 1064 nm)
Max. Energy Density (J/cm^2)	30 (3 ms; 755 nm)
Rise Time (μs)	≤ 10
Fall Time (μs)	≤ 10
Detector Coating	HD
Diffuser	ZnSe
Active Area (mm)	25 dia.
Minimum Beam Size (mm)	Set by damage threshold
Maximum Beam Size ² (mm)	18
Calibration Uncertainty (%) ($k=2$) at 810 nm	± 2
Spectral Compensation Accuracy (%)	± 5
Power Linearity ³ (%)	± 2
Spatial Uniformity (%) (center 64% of aperture; 2.5 mm beam)	± 5
Calibration Wavelength (nm)	810
Cooling Method	Water/Air (intermittent)
Cable Type	USB/RS-232
Cable Length	4.2 m (13.8 ft.)
Part Number	1315456 (USB) 1315457 (RS-232)

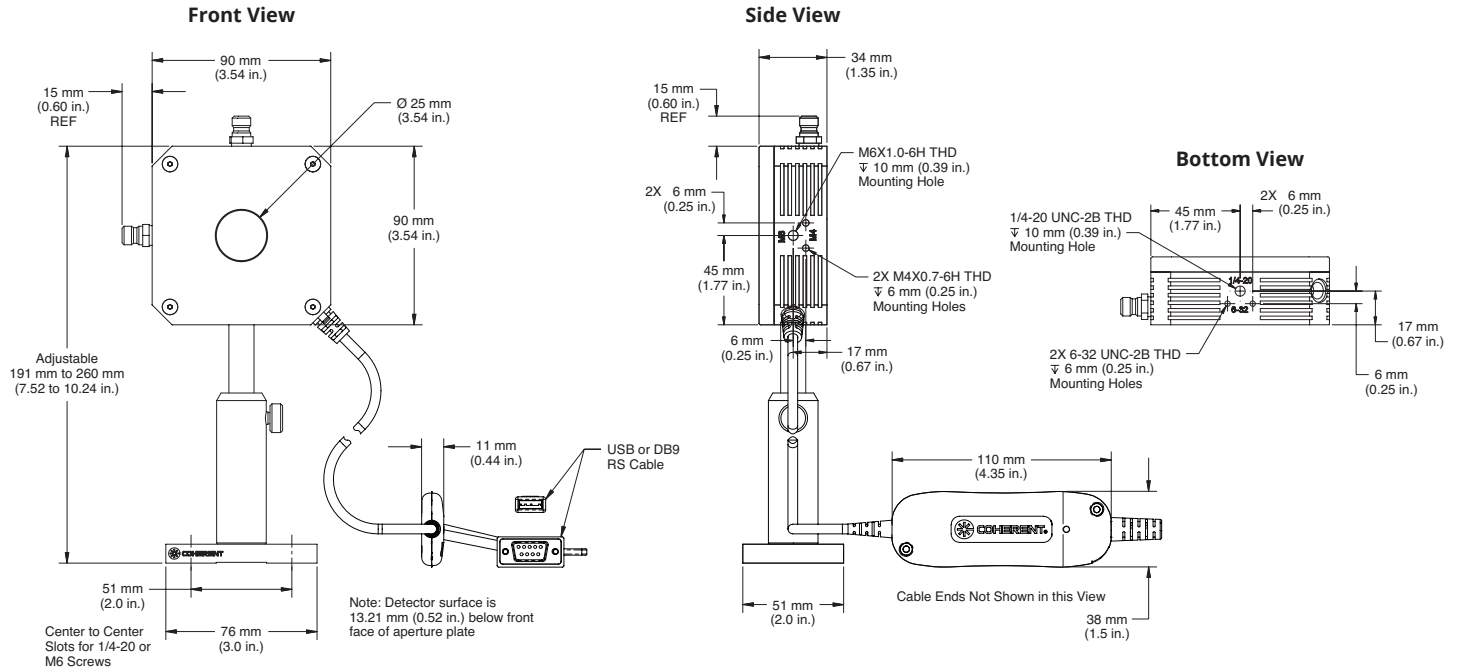
¹ Beam size dependent. See steady-state and intermittent power charts.

² See spatial uniformity and beam diameter charts for larger beams.

³ Beam size and pulse length dependent. See peak power and pulse length charts.

MECHANICAL SPECIFICATIONS

PowerMax-Pro USB/RS HP 2K

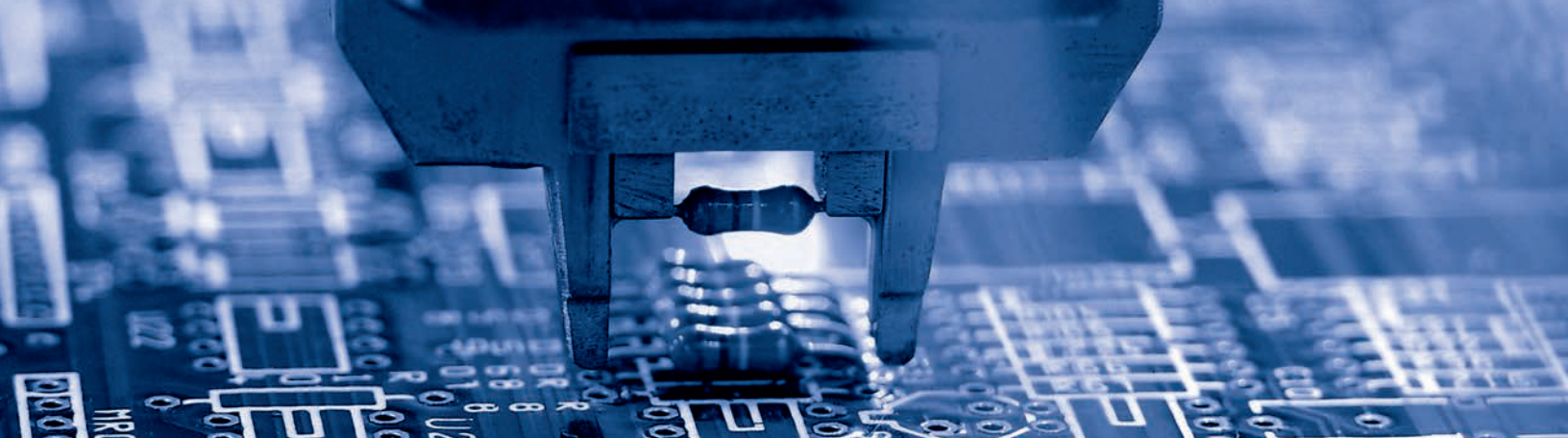


Coherent, Inc.,
5100 Patrick Henry Drive Santa Clara, CA 95054
p. (800) 527-3786 | (408) 764-4983
f. (408) 764-4646

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PowerMax-Pro USB and RS Sensors

200 mW to 150 W

PowerMax-Pro USB and RS sensors incorporate LabMax-Pro instrumentation directly within the sensor cable. Similar to other Coherent USB and RS sensors, this configuration offers a smaller form factor for use inside laser processing systems or production lines. Additionally, the cost of annual calibration is half that of a separate meter and sensor system. The PowerMax-Pro USB and RS sensors operate with LabMax-Pro PC applications software (included).

PowerMax-Pro (Patent #9,012,848) represents a dramatic technological advancement in laser power sensing that utilizes a thin-film detector only microns thick which rapidly senses thermal changes due to incident laser energy. The result is a measurement response time below 10 μ s, as compared to over 1 second for traditional thermopiles. These detectors can operate at high power over a spectral range as broad as 400 nm to 11 μ m, and incorporate a large 30 mm x 30 mm active area.

FEATURES & BENEFITS

- Includes USB and RS-232 instrumentation in cable
- Measures power in tens of microseconds
- Capable of tracing pulse shape of modulated and long pulse lasers
- High power up to 150 W
- Large 30 x 30 mm active area

APPLICATIONS

- Laser Processing including Cutting, Drilling, and Welding
- Medical Systems including Long Pulse Aesthetic applications
- Diode LIV Testing - increase resolution and shorten test time
- Scientific and Engineering
- Production and QA Testing



SPECIFICATIONS	PowerMax-Pro USB/RS 150 HD	PowerMax-Pro USB/RS 150 HD Nano ¹	PowerMax-Pro USB/RS 150F HD	PowerMax-Pro USB/RS 150F HD Nano ¹
Wavelength Range	400 nm to 1100 nm; 9 μm to 11 μm			
Power Range for Continuous Usage Water-cooled ² Air-cooled	200 mW to 150 W 200 mW to 17 W	200 mW to 150 W 200 mW to 17 W	– 200 mW to 150 W	– 200 mW to 150 W
Maximum Peak Power (W) (use for >1 μsec pulses up to CW)	200 ³			
Maximum Intermittent Power (W) (<5 min.)	65 (air-cooled)	65 (air-cooled)	150 (maximum)	150 (maximum)
Noise Equivalent Power (mW) Standard Mode High Speed Mode Snapshot Mode	<4 <8 <16			
Maximum Power Density (kW/cm ²)	0.2 (150 W)			
Maximum Peak Power Density (kW/cm ²)	14			
Maximum Energy Density (J/cm ²)	33 (10 ns; 1064 nm)			
Rise & Fall Time (μs)	≤10	≤350	≤10	≤350
Detector Coating	HD			
Active Area (mm)	30 x 30			
Minimum Beam Size (mm)	2.0 (1.0 mm - up to 3% error)			
Calibration Uncertainty (%) (k=2)	±2			
Power Linearity (%)	±5			
Spectral Compensation Accuracy (%)	±3			
Spatial Uniformity (%) (center 75% of aperture; 2.5 mm beam)	±5			
Calibration Wavelength (nm)	810			
Cooling Method	Water/Air (intermittent)		Fan	
External Trigger Input	SMB connector, 3 to 5 V _{in} , 2 to 10 mA, 50 ohm AC, 300 ohm DC impedance			
Power Input	5 VDC, center positive ⁴			
Cable Type	USB/RS-232			
Cable Length	4.2 m (13.8 ft.)			
Part Number				
USB	1295921	1330510	1295920	1330544
RS-232	1295923	1330545	1295922	1330546

¹ Choose a "Nano" model PowerMax-Pro sensor when measuring the average power of industrial short pulsed (nanosecond and picosecond) lasers. The amplifier in the "Nano" is adjusted to account for the high peak impulse powers associated with those types of lasers. Lasers of this type within the Coherent portfolio include the Matrix QS, Avia NX, Flare NX, Helios (the regular "HD" models are not appropriate for these short pulsed, high energy lasers).

² Water flow rate for water-cooled sensors must be >0.5 GPM (>2 LPM).

³ For pulses shorter than 1 μ sec, use the maximum pulse energy density and average power specifications instead of peak power.

⁴ Use of 5 VDC input on USB models is optional; for PCs that do not provide 5 VDC out when on battery or power save mode.

SPECIFICATIONS	PowerMax-Pro USB/RS 150 BB	PowerMax-Pro USB/RS 150F BB
Wavelength Range	400 nm to 11 μ m	
Power Range for Continuous Usage Water-cooled ¹ Air-cooled (65W max air-cooled, 5 min.)	200 mW to 150 W 200 mW to 50 W	– 200 mW to 150 W
Maximum Peak Power (W) (use for >1 μ sec pulses up to CW)	200 ²	
Maximum Intermittent Power (W) (<5 min.)	65 (air-cooled)	150 (maximum)
Noise Equivalent Power (mW) Standard Mode High Speed Mode Snapshot Mode	<4 <8 <16	
Maximum Power Density (kW/cm ²)	0.2 (150 W)	
Maximum Peak Power Density (kW/cm ²)	14	
Maximum Energy Density (J/cm ²)	33 (10 ns; 1064 nm)	
Rise & Fall Time (μ s)	$\leq$ 50	
Detector Coating	BB	
Active Area (mm)	30 x 30	
Minimum Beam Size (mm)	2.0 (1.0 mm - up to 3% error)	
Calibration Uncertainty (%) (k=2)	$\pm$ 2	
Power Linearity (%)	$\pm$ 5	
Spectral Compensation Accuracy (%)	$\pm$ 3	
Spatial Uniformity (%) (center 75% of aperture; 2.5 mm beam)	$\pm$ 5	
Calibration Wavelength (nm)	810	
Cooling Method	Water/Air (intermittent)	
External Trigger Input	SMB connector, 3 to 5 V _{in} , 2 to 10 mA, 50 ohm AC, 300 ohm DC impedance	
Power Input	5 VDC, center positive ³	
Cable Type	USB/RS-232	
Cable Length	4.2 m (13.8 ft.)	
Part Number USB RS-232	1342379 1342381	1342380 1342382

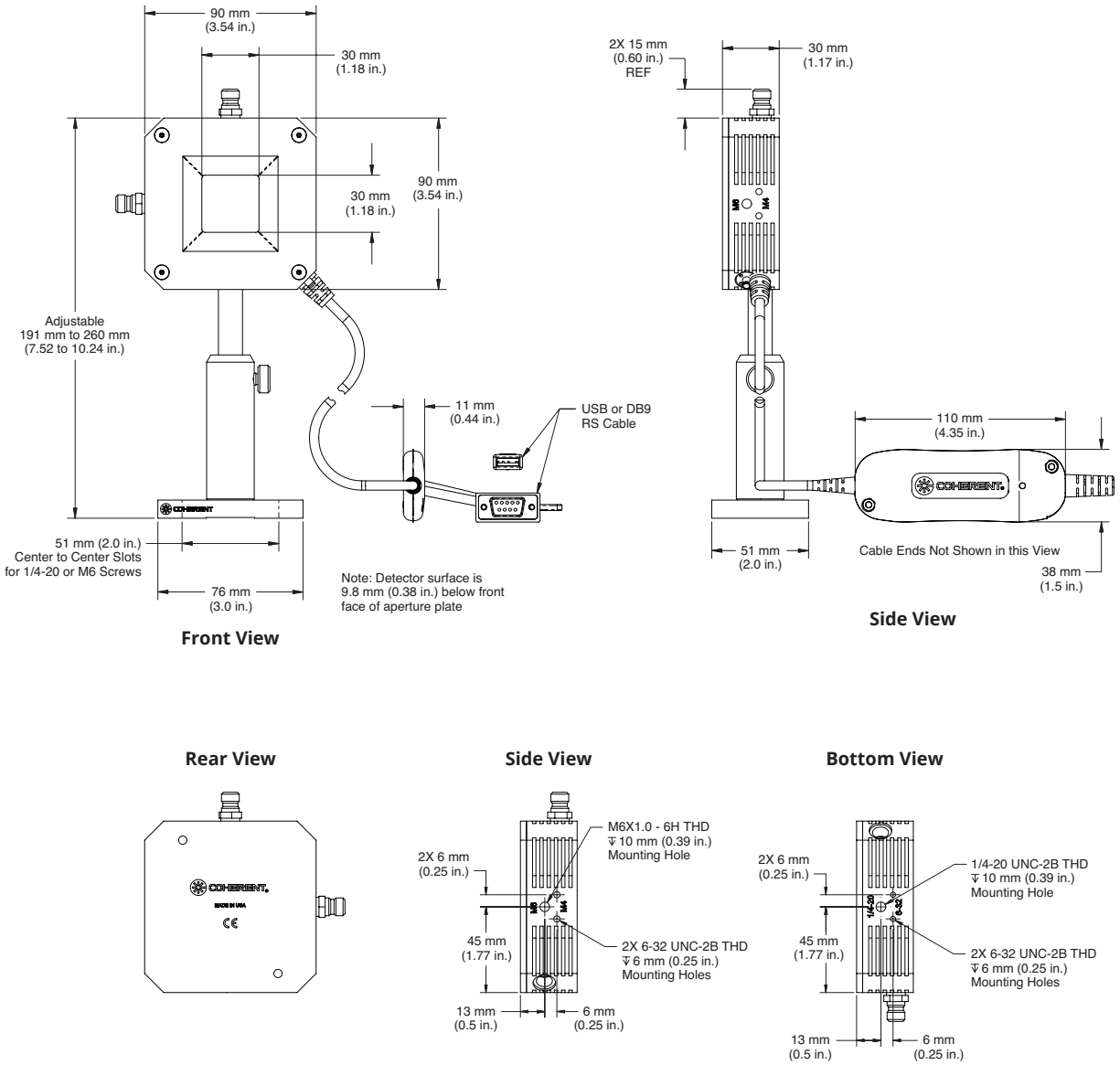
¹ Water flow rate for water-cooled sensors must be >0.5 GPM (>2 LPM).

² For pulses shorter than 1 μ sec, use the maximum pulse energy density and average power specifications instead of peak power.

³ Use of 5 VDC input on USB models is optional; for PCs that do not provide 5 VDC out when on battery or power save mode.

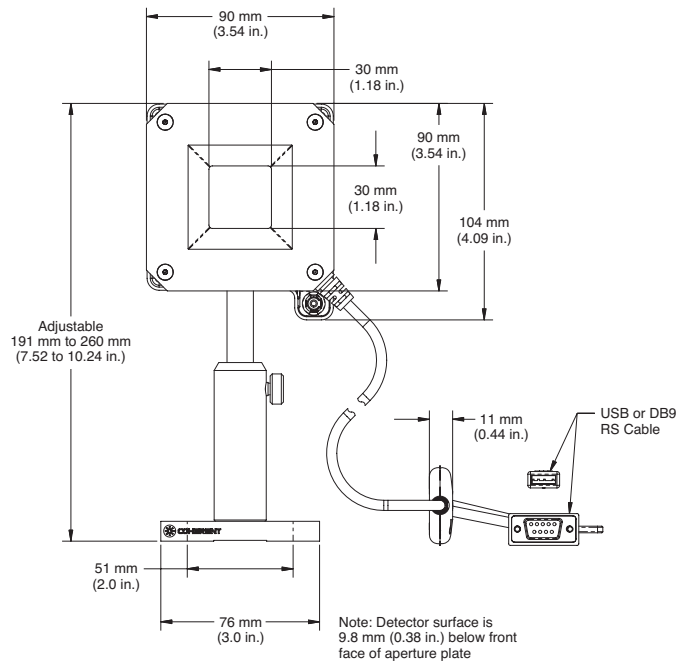
MECHANICAL SPECIFICATIONS

PowerMax-Pro USB/RS 150 HD and BB

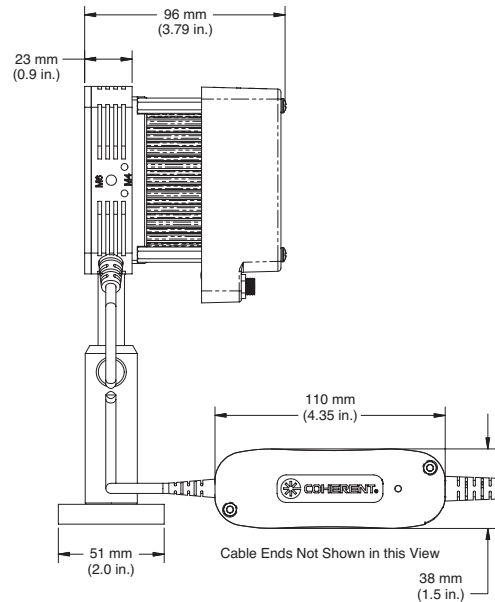


MECHANICAL SPECIFICATIONS

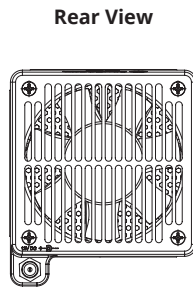
PowerMax-Pro USB/RS 150F HD and BB



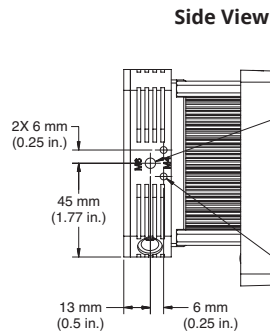
Front View



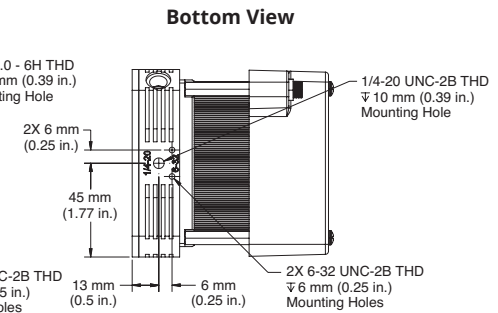
Side View



Rear View



Side View



Bottom View



Coherent, Inc.,
5100 Patrick Henry Drive Santa Clara, CA 95054
p. (800) 527-3786 | (408) 764-4983
f. (408) 764-4646

tech.sales@Coherent.com www.coherent.com

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 PowerMax-Pro 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. Printed in the U.S.A. MC-002-14-0M0620Rev.F Copyright ©2020 Coherent, Inc.