

Thermal Sensors for Low Power Lasers

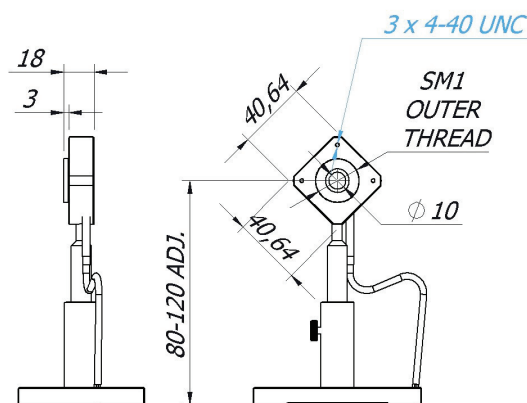
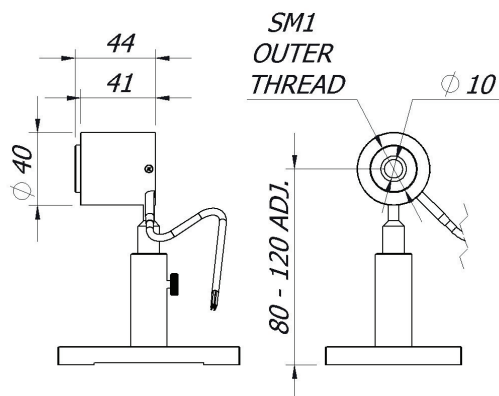
Range: 100µW to 5W

Features:

- Very low power measurements
- Small footprints
- Broadband absorbers



Model	A-02-D12-BBF	A-2-D12-BBF	A-2-D12-HPB	A-5-D12-BBF
Power Mode				
Max. Average Power	200 mW	2 W	2 W	5 W
Max. Intermittent Power ⁽¹⁾	200 mW	2 W	2 W	7.5 W
Min. Power	0.1 mW	1 mW	1 mW	10 mW
Power Resolution	10 µW	10 µW	10 µW	100 µW
Noise Equivalent Power (NEP)	5 µW	50 µW	50 µW	500 µW
Response Time	2 sec	2 sec	2.5 sec	0.7 sec
Power Calibration Uncertainty	± 3%	± 3%	± 3%	± 3%
Power Linearity ⁽²⁾	± 1%	± 1%	± 1%	± 1%
Single Shot Energy Mode				
Max. Energy (with 100 ms pulse)	200 mJ	2 J	2 J	5 J
Min. Energy	1 mJ	1 mJ	1 mJ	10 mJ
Energy Resolution	10 µJ	10 µJ	10 µJ	0.1 mJ
Energy Calibration Uncertainty	± 5%	± 5%	± 5%	± 5%
Absorber Specs				
Aperture	10 mm	10 mm	10 mm	10 mm
Type	BBF	BBF	HPB	BBF
Absorber Spectral Range	0.19 - 25 µm	0.19 - 25 µm	0.19 - 11 µm	0.19 - 25 µm
Calibration Spectral Range	0.19 - 2.1 µm, 2.94µm, 9 - 11 µm	0.19 - 2.1 µm, 2.94µm, 9 - 11 µm	0.19 - 2.1 µm, 2.94µm, 9 - 11 µm	0.19 - 2.1 µm, 2.94µm, 9 - 11 µm
Max Power Density ⁽³⁾	200 W/cm ²	200 W/cm ²	18 kW/cm ² @10 W	200 W/cm ²
Max Energy Density ⁽³⁾	5ms pulse width: 3.6 J/cm ² 10µs pulse width: 0.2 J/cm ² 10ns pulse width: 0.1 J/cm ²	5ms pulse width: 3.6 J/cm ² 10µs pulse width: 0.2 J/cm ² 10ns pulse width: 0.1 J/cm ²	5ms pulse width: 36 J/cm ² 10µs pulse width: 1.2 J/cm ² 10ns pulse width: 0.3 J/cm ²	5ms pulse width: 3.6 J/cm ² 10µs pulse width: 0.2 J/cm ² 10ns pulse width: 0.1 J/cm ²
General Characteristics				
Cooling	Convection	Convection	Convection	Convection
Weight	0.2 kg	0.2 kg	0.2 kg	0.2 kg
Dimension	Ø 40 x 44 mm	Ø 40 x 44 mm	Ø 40 x 44 mm	41 x 41 x 18 mm
Cable lenght - connector	1.5 m - DB15	1.5 m - DB15	1.5 m - DB15	1.5 m - DB15
Stand and Post	Light Duty Stand Included	Light Duty Stand Included	Light Duty Stand Included	Light Duty Stand Included
Notes				
(1). 2 minutes max (2). Detector centrally irradiated @50% of useful surface. (3). Damage thresholds also depend on power level. Please see damage graphs	Available with fiber adapter	Available with fiber adapter	Available with fiber adapter	Available with fiber adapter



A-02-D12-BBF A-2-D12-BBF A-2-D12-HPB

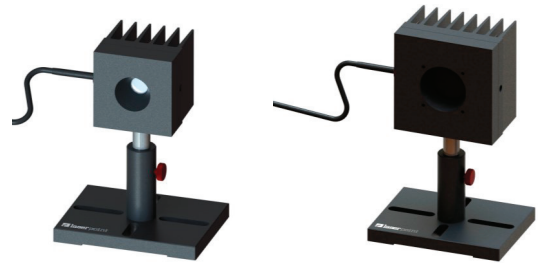
A-5-D12-BBF

Thermal Sensors for Low Power Lasers

Range: 10mW to 30W

Features:

- Very low power measurements
- Small footprints
- Broadband absorbers



Model	A-10-D12-HPB	A-10-D20-BBF	A-10-D20-HPB	A-30-D25-HPB
Power Mode				
Max. Average Power	10 W	10 W	10 W	30 W
Max. Intermittent Power ⁽¹⁾	15 W	15 W	15 W	45 W
Min. Power	10 mW	10 mW	10 mW	20 mW
Power Resolution	100 µW	100 µW	100 µW	1 mW
Noise Equivalent Power (NEP)	500 µW	600 µW	600 µW	1 mW
Response Time	0.8 sec	1 sec	1 sec	1.5 sec
Power Calibration Uncertainty	± 3%	± 3%	± 3%	± 3%
Power Linearity ⁽²⁾	± 1%	± 1%	± 1%	± 1%
Single Shot Energy Mode				
Max. Energy (with 100 ms pulse)	15 J	15 J	15 J	45 J
Min. Energy	10 mJ	10 mJ	10 mJ	50 mJ
Energy Resolution	0.1 mJ	0.1 mJ	0.1 mJ	1 mJ
Energy Calibration Uncertainty	± 5%	± 5%	± 5%	± 5%
Absorber Specs				
Aperture	12 mm	20 mm	20 mm	25 mm
Type	HPB	BBF	HPB	HPB
Absorber Spectral Range	0.19 - 11 µm	0.19 - 25 µm	0.19 - 11 µm	0.19 - 11 µm
Calibration Spectral Range	0.19 - 2.1 µm, 2.94µm, 9 - 11 µm	0.19 - 2.1 µm, 2.94µm, 9 - 11 µm	0.19 - 2.1 µm, 2.94µm, 9 - 11 µm	0.19 - 2.1 µm, 2.94µm, 9 - 11 µm
Max Power Density ⁽³⁾	18 kW/cm ² @10 W	200 W/cm ²	18 kW/cm ² @10 W	18 kW/cm ² @10 W
Max Energy Density ⁽³⁾	5ms pulse width: 36 J/cm ² 10µs pulse width: 1.2 J/cm ² 10ns pulse width: 0.3 J/cm ²	5ms pulse width: 3.6 J/cm ² 10µs pulse width: 0.2 J/cm ² 10ns pulse width: 0.1 J/cm ²	5ms pulse width: 36 J/cm ² 10µs pulse width: 1.2 J/cm ² 10ns pulse width: 0.3 J/cm ²	5ms pulse width: 36 J/cm ² 10µs pulse width: 1.2 J/cm ² 10ns pulse width: 0.3 J/cm ²
General Characteristics				
Cooling	Convection	Convection	Convection	Convection
Weight	0.3 kg	0.3 kg	0.3 kg	0.5 kg
Dimension	55 x 55 x 54 mm	55 x 55 x 54 mm	55 x 55 x 54 mm	75 x 75 x 52 mm
Cable lenght - connector	1.5 m - DB15	1.5 m - DB15	1.5 m - DB15	1.5 m - DB15
Stand and Post	Light Duty Stand Included	Light Duty Stand Included	Light Duty Stand Included	Light Duty Stand Included
Notes				
(1). 2 minutes max (2). Detector centrally irradiated @50% of useful surface. (3). Damage thresholds also depend on power level. Please see damage graphs	Available with fiber adapter	Available with fiber adapter	Available with fiber adapter	Available with fiber adapter

ABSORBERS

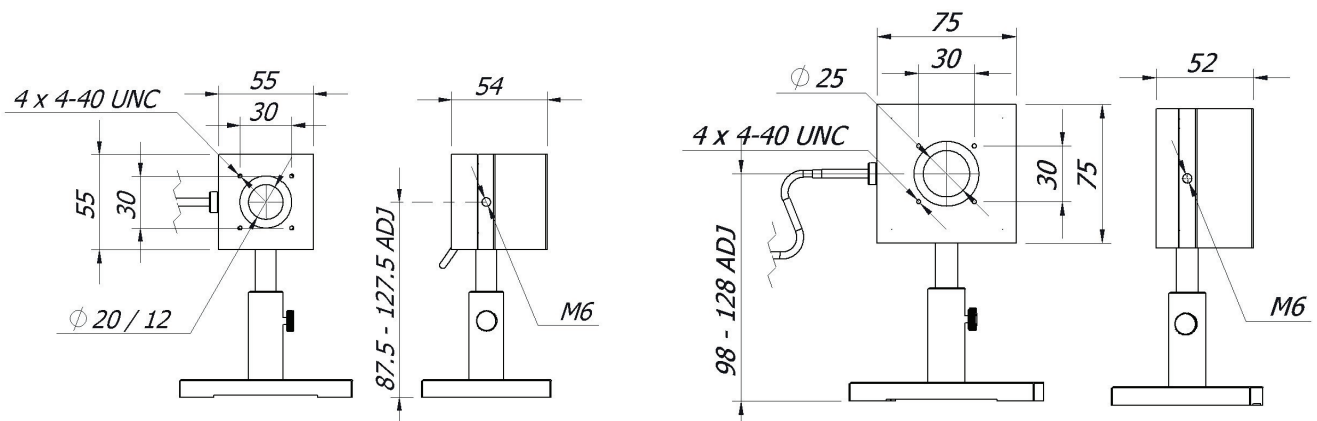
SENSORS

MONITORS & SW

USB/RS232 SENSORS

OEM SOLUTIONS

POWER PROBES



A-10-D12-HPB A-10-D20-BBF A-10-D20-HPB

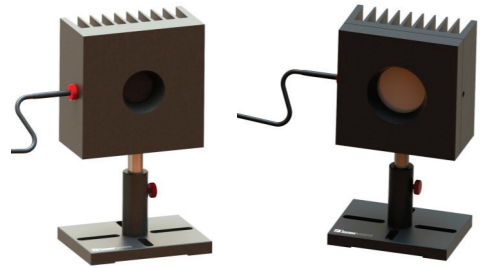
A-30-D25-HPB

Thermal Sensors for Low Power Lasers

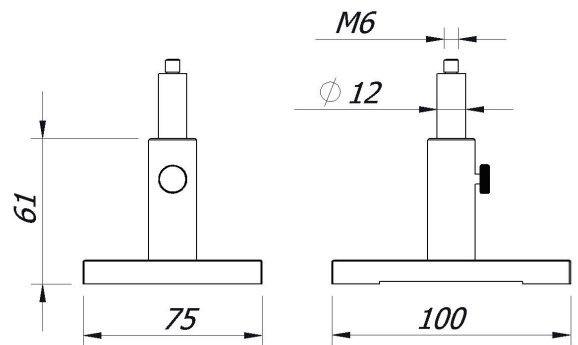
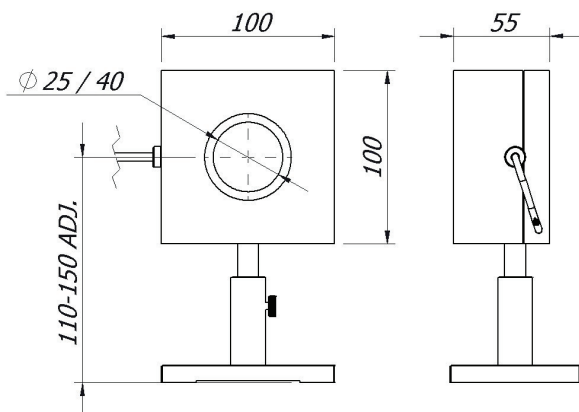
Range: 20mW to 40W

Features:

- Very low power measurements
- Small footprints
- HPB coating is also suitable for Excimer Lasers



Model	A-40-D25-BBF	A-40-D25-HPB	A-40-D40-HPB
Power Mode			
Max. Average Power	40 W	40 W	40 W
Max. Intermittent Power ⁽¹⁾	60 W	60 W	60 W
Min. Power	20 mW	20 mW	20 mW
Power Resolution	1 mW	1 mW	1 mW
Noise Equivalent Power (NEP)	1 mW	1 mW	1 mW
Response Time	1.5 sec	1.5 sec	1.8 sec
Power Calibration Uncertainty	± 3%	± 3%	± 3%
Power Linearity ⁽²⁾	± 1%	± 1%	± 1%
Single Shot Energy Mode			
Max. Energy (with 100 ms pulse)	60 J	60 J	60 J
Min. Energy	50 mJ	50 mJ	50 mJ
Energy Resolution	1 mJ	1 mJ	1 mJ
Energy Calibration Uncertainty	± 5%	± 5%	± 5%
Absorber Specs			
Aperture	25 mm	25 mm	40 mm
Type	BBF	HPB	HPB
Absorber Spectral Range	0.19 - 25 μm	0.19 - 11 μm	0.19 - 11 μm
Calibration Spectral Range	0.19 - 2.1 μm, 2.94μm, 9 - 11 μm	0.19 - 2.1 μm, 2.94μm, 9 - 11 μm	0.19 - 2.1 μm, 2.94μm, 9 - 11 μm
Max Power Density ⁽³⁾	200 W/cm ²	9 kW/cm ² @40 W	9 kW/cm ² @40 W
Max Energy Density ⁽³⁾	5ms pulse width: 3.6 J/cm ² 10μs pulse width: 0.2 J/cm ² 10ns pulse width: 0.1 J/cm ²	5ms pulse width: 36 J/cm ² 10μs pulse width: 1.2 J/cm ² 10ns pulse width: 0.3 J/cm ²	5ms pulse width: 36 J/cm ² 10μs pulse width: 1.2 J/cm ² 10ns pulse width: 0.3 J/cm ²
General Characteristics			
Cooling	Convection	Convection	Convection
Weight	0.9 kg	0.9 kg	0.9 kg
Dimension	100 x 100 x 55 mm	100 x 100 x 55 mm	100 x 100 x 55 mm
Cable lenght - connector	1.5 m - DB15	1.5 m - DB15	1.5 m - DB15
Stand and Post	Light Duty Stand Included	Light Duty Stand Included	Light Duty Stand Included
Notes			
(1). 2 minutes max (2). Detector centrally irradiated @50% of useful surface. (3). Damage thresholds also depend on power level. Please see damage graphs for more details.	Model available with fiber adapter	Model available with fiber adapter	



A-40-D25-BBF A-40-D25-HPB A-40-D40-HPB

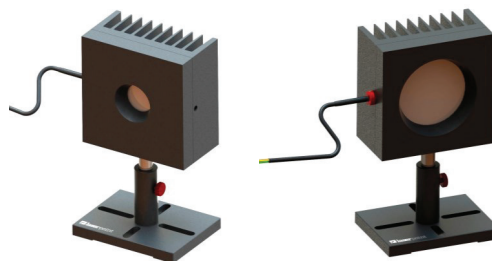
Light Duty Stand

Thermal Sensors for Medium Power Lasers

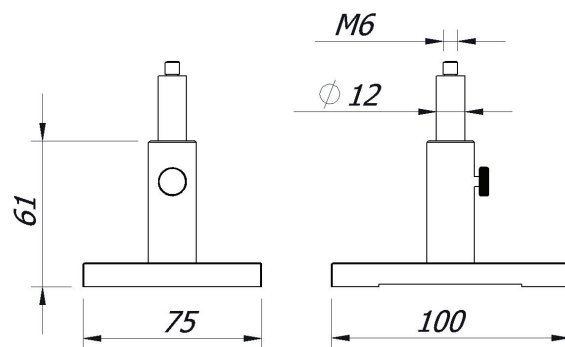
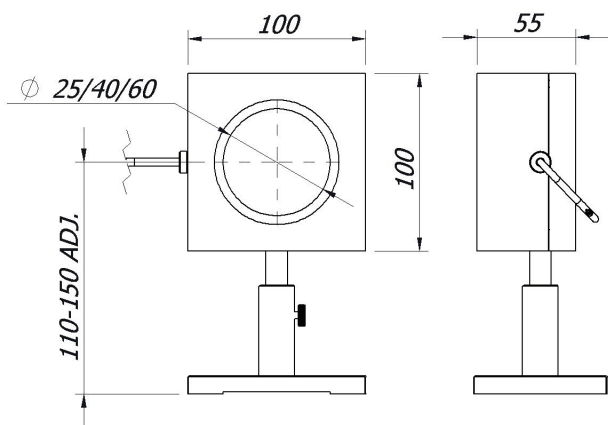
Range: 100mW to 200W

Features:

- Very low power measurements
- Small footprints
- HPB coating is also suitable for Excimer Lasers



Model	A-40/200-D25-HPB	A-40/200-D40-HPB	A-40/200-D60-HPB
Power Mode			
Max. Average Power	40 W	40 W	40 W
Max. Intermittent Power ⁽¹⁾	200 W	200 W	200 W
Min. Power	150 mW	100 mW	200 mW
Power Resolution	1 mW	1 mW	1 mW
Noise Equivalent Power (NEP)	6 mW	5 mW	10 mW
Response Time	1.7 sec	1.7 sec	3 sec
Power Calibration Uncertainty	± 3%	± 3%	± 3%
Power Linearity ⁽²⁾	± 1%	± 1%	± 1%
Single Shot Energy Mode			
Max. Energy (with 100 ms pulse)	200 J	200 J	200 J
Min. Energy	200 mJ	150 mJ	250 mJ
Energy Resolution	1 mJ	1 mJ	1 mJ
Energy Calibration Uncertainty	± 5%	± 5%	± 5%
Absorber Specs			
Aperture	25 mm	40 mm	60 mm
Type	HPB	HPB	HPB
Absorber Spectral Range	0.19 - 11 μm	0.19 - 11 μm	0.19 - 11 μm
Calibration Spectral Range	0.19 - 2.1 μm, 2.94μm, 9 - 11 μm	0.19 - 2.1 μm, 2.94μm, 9 - 11 μm	0.19 - 2.1 μm, 2.94μm, 9 - 11 μm
Max Power Density ⁽³⁾	11 kW/cm ² @40 W	11 kW/cm ² @40 W	11 kW/cm ² @40 W
Max Energy Density ⁽³⁾	5ms pulse width: 36 J/cm ² 10μs pulse width: 1.2 J/cm ² 10ns pulse width: 0.3 J/cm ²	5ms pulse width: 36 J/cm ² 10μs pulse width: 1.2 J/cm ² 10ns pulse width: 0.3 J/cm ²	5ms pulse width: 36 J/cm ² 10μs pulse width: 1.2 J/cm ² 10ns pulse width: 0.3 J/cm ²
General Characteristics			
Cooling	Convection	Convection	Convection
Weight	0.9 kg	0.9 kg	0.9 kg
Dimension	100 x 100 x 55 mm	100 x 100 x 55 mm	100 x 100 x 55 mm
Cable lenght - connector	1.5 m - DB15	1.5 m - DB15	1.5 m - DB15
Stand and Post	Light Duty Stand Included	Light Duty Stand Included	Light Duty Stand Included
Notes			
(1). 2 minutes max (2). Detector centrally irradiated @50% of useful surface. (3). Damage thresholds also depend on power level. Please see damage graphs for more details.	Model available with fiber adapter		



A-40/200-D25-HPB A-40/200-D40-HPB A-40/200-D60-HPB

Light Duty Stand



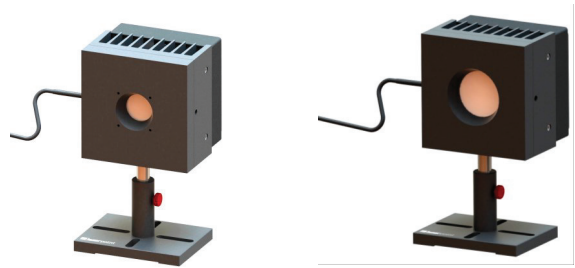
ABSORBERS
 SENSORS
 MONITORS & SW
 USB/RS232 SENSORS
 OEM SOLUTIONS
 POWER PROBES

Thermal Sensors for Medium Power Lasers

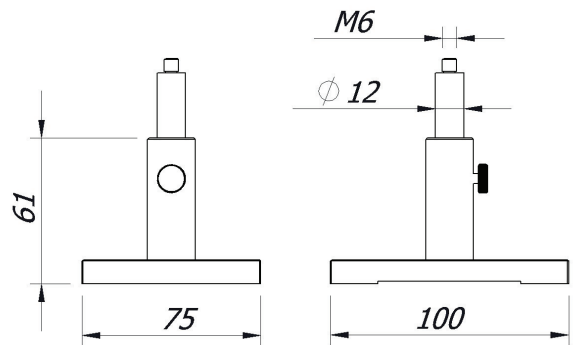
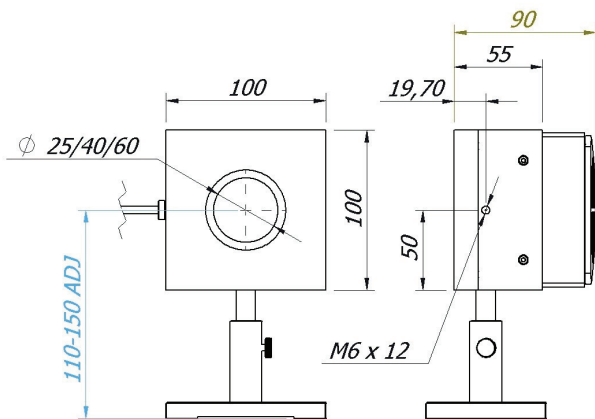
Range: 200mW to 200 W

Features:

- Highest Power Density on SHC Coating
- Small footprints
- HPB coating is suitable for Excimer Lasers



Model	A-200-D25-HPB	A-200-D25-SHC	A-200-D40-HPB	A-200-D40-SHC
Power Mode				
Max. Average Power	200 W	200 W	200 W	200 W
Max. Intermittent Power ⁽¹⁾	250 W	250 W	250 W	250 W
Min. Power	0.2 W	0.2 W	0.2 W	0.2 W
Power Resolution	10 mW	10 mW	10 mW	10 mW
Noise Equivalent Power (NEP)	10 mW	10 mW	10 mW	10 mW
Response Time	1.7 sec	1.7 sec	2 sec	2 sec
Power Calibration Uncertainty	± 3%	± 3%	± 3%	± 3%
Power Linearity ⁽²⁾	± 1%	± 1%	± 1%	± 1%
Single Shot Energy Mode				
Max. Energy (with 100 ms pulse)	250 J	250 J	250 J	250 J
Min. Energy	0.5 J	0.5 J	0.5 J	0.5 J
Energy Resolution	10 mJ	10 mJ	10 mJ	10 mJ
Energy Calibration Uncertainty	± 5%	± 5%	± 5%	± 5%
Absorber Specs				
Aperture	25 mm	25 mm	40 mm	40 mm
Type	HPB	SHC	HPB	SHC
Absorber Spectral Range	0.19 - 11 μm	0.19 - 11 μm	0.19 - 11 μm	0.19 - 11 μm
Calibration Spectral Range	0.19 - 2.1 μm, 2.94μm, 9 - 11 μm	0.25 - 1.1 μm, 9 - 11 μm	0.19 - 2.1 μm, 2.94μm, 9 - 11 μm	0.25 - 1.1 μm, 9 - 11 μm
Max Power Density ⁽³⁾	4 kW/cm ² @200 W	17 kW/cm ² @200 W	4 kW/cm ² @200 W	17 kW/cm ² @200 W
Max Energy Density ⁽³⁾	5ms pulse width: 36 J/cm ² 10μs pulse width: 1.2 J/cm ² 10ns pulse width: 0.3 J/cm ²	5ms pulse width: 115 J/cm ² 10μs pulse width: 4 J/cm ² 10ns pulse width: 1 J/cm ²	5ms pulse width: 36 J/cm ² 10μs pulse width: 1.2 J/cm ² 10ns pulse width: 0.3 J/cm ²	5ms pulse width: 115 J/cm ² 10μs pulse width: 4 J/cm ² 10ns pulse width: 1 J/cm ²
General Characteristics				
Cooling	Forced Air with Fan (a)	Forced Air with Fan (a)	Forced Air with Fan (a)	Forced Air with Fan (a)
Weight	1.2 kg	1.2 kg	1.2 kg	1.2 kg
Dimension	100 x 100 x 85 mm	100 x 100 x 85 mm	100 x 100 x 85 mm	100 x 100 x 85 mm
Cable lenght - connector	1.5 m - DB15	1.5 m - DB15	1.5 m - DB15	1.5 m - DB15
Stand and Post	Light Duty Stand Included	Light Duty Stand Included	Light Duty Stand Included	Light Duty Stand Included
Notes				
(1). 2 minutes max (2). Detector centrally irradiated @50% of useful surface. (3). Damage thresholds also depend on power level. Please see damage graphs	Available with fiber adapter (a). 12V DC Power Supply Included	Available with fiber adapter (a). 12V DC Power Supply Included	(a). 12V DC Power Supply Included	(a). 12V DC Power Supply Included



A-200-D25-HPB A-200-D25-SHC A-200-D40-HPB A-200-D40-SHC

Light Duty Stand

Thermal Sensors for Medium Power Lasers

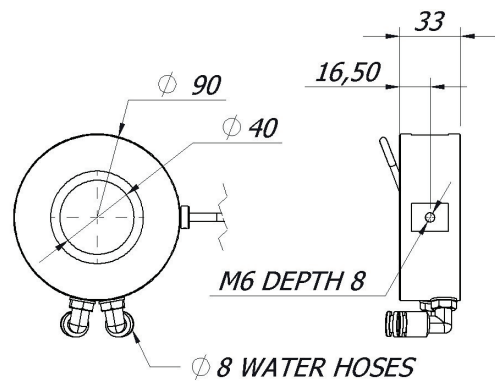
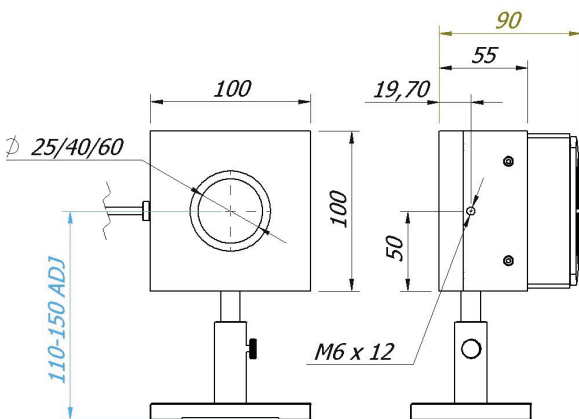
Range: 200mW to 200W

Features:

- Large Area , Air and Water Cooled Units
- Corrosion-Proof Water-Cooled Sensor
- HPB coating is suitable for Excimer Lasers



Model	A-200-D60-HPB	A-200-D60-SHC	W-200-D40-HPB	W-200-D40-SHC
Power Mode				
Max. Average Power	200 W	200 W	200 W	200 W
Max. Intermittent Power ⁽¹⁾	250 W	250 W	300 W	300 W
Min. Power	0.3 W	0.3 W	0.2 W	0.2 W
Power Resolution	10 mW	10 mW	10 mW	10 mW
Noise Equivalent Power (NEP)	15 mW	15 mW	10 mW	10 mW
Response Time	3 sec	3 sec	2 sec	2 sec
Power Calibration Uncertainty	± 3%	± 3%	± 3%	± 3%
Power Linearity ⁽²⁾	± 1%	± 1%	± 1.5%	± 1.5%
Single Shot Energy Mode				
Max. Energy (with 100 ms pulse)	250 J	250 J	300 J	300 J
Min. Energy	1 J	1 J	1 J	1 J
Energy Resolution	10 mJ	10 mJ	10 mJ	10 mJ
Energy Calibration Uncertainty	± 5%	± 5%	± 5%	± 5%
Absorber Specs				
Aperture	60 mm	60 mm	40 mm	40 mm
Type	HPB	SHC	HPB	SHC
Absorber Spectral Range	0.19 - 11 μm	0.19 - 11 μm	0.19 - 11 μm	0.19 - 11 μm
Calibration Spectral Range	0.19 - 2.1 μm, 2.94μm, 9 - 11 μm	0.25 - 1.1 μm, 9 - 11 μm	0.19 - 2.1 μm, 2.94μm, 9 - 11 μm	0.2 - 1.1 μm, 9 - 11 μm
Max Power Density ⁽³⁾	4 kW/cm ² @200 W	17 kW/cm ² @200 W	7 kW/cm ² @200 W	28 kW/cm ² @200 W
Max Energy Density ⁽³⁾	5ms pulse width: 36 J/cm ² 10μs pulse width: 1.2 J/cm ² 10ns pulse width: 0.3 J/cm ²	5ms pulse width: 115 J/cm ² 10μs pulse width: 4 J/cm ² 10ns pulse width: 1 J/cm ²	5ms pulse width: 36 J/cm ² 10μs pulse width: 1.2 J/cm ² 10ns pulse width: 0.3 J/cm ²	5ms pulse width: 115 J/cm ² 10μs pulse width: 4 J/cm ² 10ns pulse width: 1 J/cm ²
General Characteristics				
Cooling	Forced Air with Fan (a)	Forced Air with Fan (a)	Water ^(a)	Water ^(a)
Weight	1.2 kg	1.2 kg	0.6 kg	0.6 kg
Dimension	100 x 100 x 85 mm	100 x 100 x 85 mm	Ø 90 x 33 mm	Ø 90 x 33 mm
Cable lenght - connector	1.5 m - DB15	1.5 m - DB15	1.5 m - DB15	1.5 m - DB15
Stand and Post	Light Duty Stand Included	Light Duty Stand Included	Light Duty Stand Included	Light Duty Stand Included
Notes				
(1). 2 minutes max (2). Detector centrally irradiated @50% of useful surface. (3). Damage thresholds also depend on power level. Please see damage graphs for more details.	(a). 12V DC Power Supply Included	(a). 12V DC Power Supply Included	(a). Water 1.5 liter/min (@ 22° C); admissible rate of temperature variation < 1 °C/min	(a). Water 1.5 liter/min (@ 22° C); admissible rate of temperature variation < 1 °C/min



A-200-D60-HPB A-200-D60-SHC

W-200-D40-HPB W-200-D40-SHC

Thermal Sensors for Medium Power Lasers

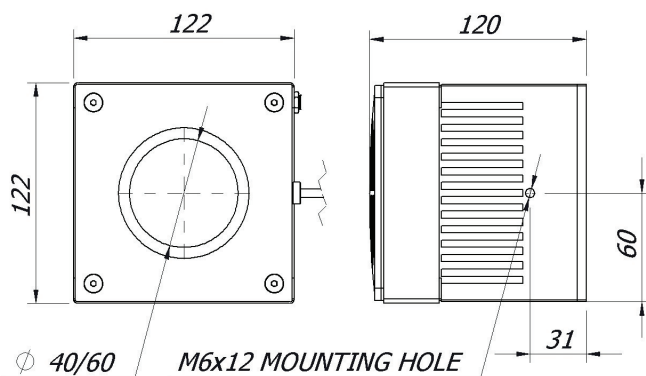
Range: 500mW to 300W

Features:

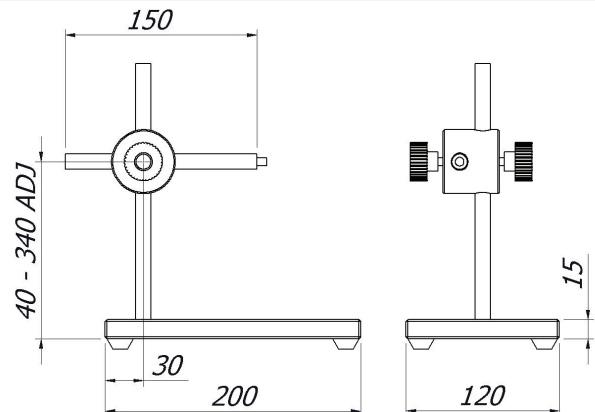
- 60mm Aperture
- Air Cooled
- HPB coating also suitable for Excimer Lasers



Model	A-300-D60-HPB
Power Mode	
Max. Average Power	300 W
Max. Intermittent Power ⁽¹⁾	400 W
Min. Power	0.5 W
Power Resolution	10 mW
Noise Equivalent Power (NEP)	25 mW
Response Time	3.5 sec
Power Calibration Uncertainty	± 3%
Power Linearity ⁽²⁾	± 1%
Single Shot Energy Mode	
Max. Energy (with 100 ms pulse)	400 J
Min. Energy	1 J
Energy Resolution	10 mJ
Energy Calibration Uncertainty	± 5%
Absorber Specs	
Aperture	60 mm
Type	HPB
Absorber Spectral Range	0.19 - 11 μm
Calibration Spectral Range	0.19 - 2.1 μm, 2.94μm, 9 - 11 μm
Max Power Density ⁽³⁾	6 kW/cm ² @200 W
Max Energy Density ⁽³⁾	5ms pulse width: 36 J/cm ² 10μs pulse width: 1.2 J/cm ² 10ns pulse width: 0.3 J/cm ²
General Characteristics	
Cooling	Forced Air with Fan (a)
Weight	2.1 kg
Dimension	122 x 122 x 120 mm
Cable length - connector	1.5 m - DB15
Stand and Post	Heavy Duty Stand Included
Notes	
(1). 2 minutes max (2). Detector centrally irradiated @50% of useful surface. (3). Damage thresholds also depend on power level. Please see damage graphs for more details.	(a). 12V DC Power Supply Included



A-300-D60-HPB



Heavy Duty Stand

Thermal Sensors for Medium Power Lasers

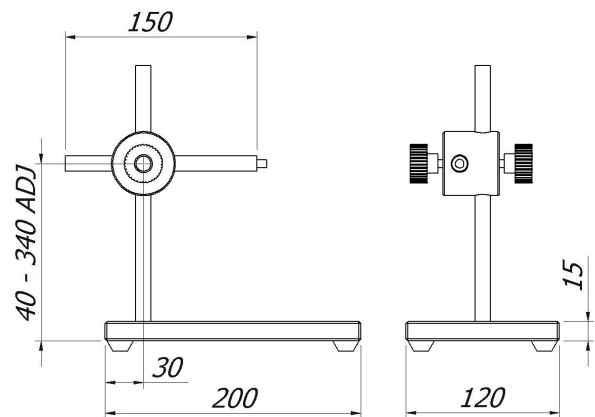
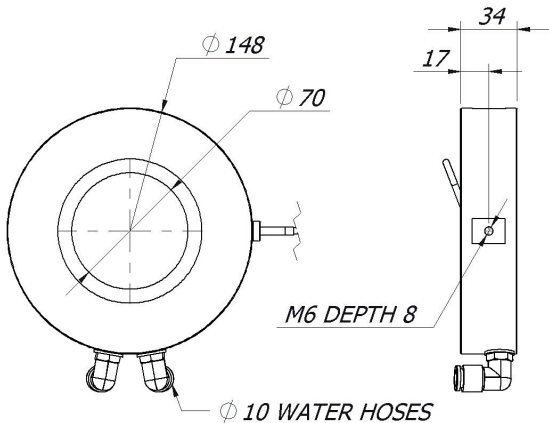
Range: 500mW to 500W

Features:

- Corrosion-Proof Water-Cooled Sensor
- Large aperture for Laser Diode Stacks
- Highest Power Density on SHC Coating



Model	W-500-D70-SHC
Power Mode	
Max. Average Power	500 W
Max. Intermittent Power ⁽¹⁾	700 W
Min. Power	0.5 W
Power Resolution	10 mW
Noise Equivalent Power (NEP)	30 mW
Response Time	4 sec
Power Calibration Uncertainty	± 3%
Power Linearity ⁽²⁾	± 1.5%
Single Shot Energy Mode	
Max. Energy (with 100 ms pulse)	700 J
Min. Energy	1 J
Energy Resolution	10 mJ
Energy Calibration Uncertainty	± 5%
Absorber Specs	
Aperture	70 mm
Type	SHC
Absorber Spectral Range	0.19 - 11 µm
Calibration Spectral Range	0.2 - 1.1 µm, 9 - 11 µm
Max Power Density ⁽³⁾	19 kW/cm ² @500 W
Max Energy Density ⁽³⁾	5ms pulse width: 115 J/cm ² 10µs pulse width: 4 J/cm ² 10ns pulse width: 1 J/cm ²
General Characteristics	
Cooling	Water ^(a)
Weight	1.9 kg
Dimension	Ø 148 x 34 mm
Cable lenght - connector	1.5 m - DB15
Stand and Post	Heavy Duty Stand Included
Notes	
(1). 2 minutes max (2). Detector centrally irradiated @50% of useful surface. (3). Damage thresholds also depend on power level. Please see damage graphs for more details.	(a). Water 3 liter/min (@ 22°C); admissible rate of temperature variation < 1 °C/min



W-500-D70-SHC

Heavy Duty Stand

Thermal Sensors for Medium Power Lasers

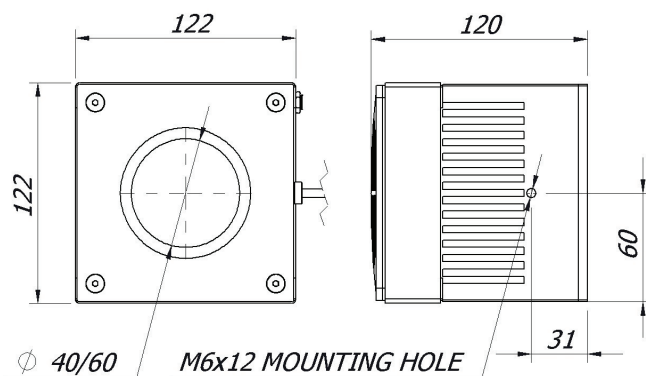
Range: 500mW to 600W

Features:

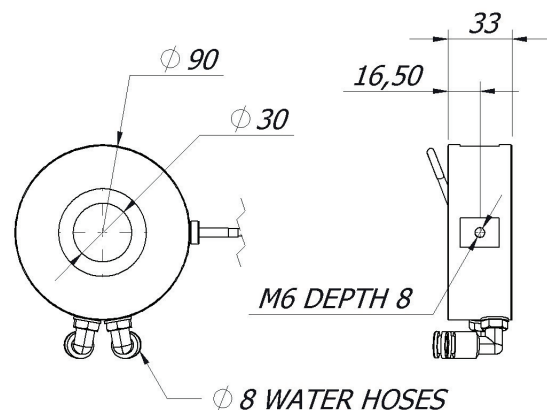
- Air and water cooled heads to 600 W
- Corrosion-Proof Water-Cooled Sensor
- Highest Power Density on SHC Coating



Model	A-600-D40-HPB	A-600-D60-SHC	W-600-D30-HPB	W-600-D30-SHC
Power Mode				
Max. Average Power	600 W	600 W	600 W	600 W
Max. Intermittent Power ⁽¹⁾	800 W	800 W	800 W	800 W
Min. Power	0.5 W	0.5 W	0.5 W	0.5 W
Power Resolution	10 mW	10 mW	10 mW	10 mW
Noise Equivalent Power (NEP)	50 mW	50 mW	25 mW	25 mW
Response Time	5 sec	4 sec	2 sec	2 sec
Power Calibration Uncertainty	± 3%	± 3%	± 3%	± 3%
Power Linearity ⁽²⁾	± 1.5%	± 1.5%	± 1.5%	± 1.5%
Single Shot Energy Mode				
Max. Energy (with 100 ms pulse)	600 J	700 J	600 J	600 J
Min. Energy	1 J	1 J	2 J	2 J
Energy Resolution	10 mJ	10 mJ	10 mJ	10 mJ
Energy Calibration Uncertainty	± 5%	± 5%	± 5%	± 5%
Absorber Specs				
Aperture	40 mm	60 mm	30 mm	30 mm
Type	HPB	SHC	HPB	SHC
Absorber Spectral Range	0.19 - 11 μm	0.19 - 11 μm	0.19 - 11 μm	0.19 - 11 μm
Calibration Spectral Range	0.19 - 2.1 μm, 2.94μm, 9 - 11 μm	0.25 - 1.1 μm, 9 - 11 μm	0.19 - 2.1 μm, 2.94μm, 9 - 11 μm	0.2 - 1.1 μm, 9 - 11 μm
Max Power Density ⁽³⁾	3 kW/cm ² @500 W	11 kW/cm ² @500 W	5 kW/cm ² @500 W	19 kW/cm ² @500 W
Max Energy Density ⁽³⁾	5ms pulse width: 36 J/cm ² 10μs pulse width: 1.2 J/cm ² 10ns pulse width: 0.3 J/cm ²	5ms pulse width: 115 J/cm ² 10μs pulse width: 4 J/cm ² 10ns pulse width: 1 J/cm ²	5ms pulse width: 36 J/cm ² 10μs pulse width: 1.2 J/cm ² 10ns pulse width: 0.3 J/cm ²	5ms pulse width: 115 J/cm ² 10μs pulse width: 4 J/cm ² 10ns pulse width: 1 J/cm ²
General Characteristics				
Cooling	Forced Air with Fan (a)	Forced Air with Fan (a)	Water ^(a)	Water ^(a)
Weight	2.2 kg	2.5 kg	0.6 kg	0.6 kg
Dimension	122 x 122 x 120 mm	122 x 122 x 120 mm	Ø 90 x 33 mm	Ø 90 x 33 mm
Cable lenght - connector	1.5 m - DB15	1.5 m - DB15	1.5 m - DB15	1.5 m - DB15
Stand and Post	Heavy Duty Stand Included	Heavy Duty Stand Included	Light Duty Stand Included	Light Duty Stand Included
Notes				
(1). 2 minutes max (2). Detector centrally irradiated @50% of useful surface. (3). Damage thresholds also depend on power level. Please see damage graphs for more details.	(a). 12V DC Power Supply Included	(a). 12V DC Power Supply Included	(a). Water 3 liter/min (@ 22°C); admissible rate of temperature variation < 1 °C/min	(a). Water 3 liter/min (@ 22°C); admissible rate of temperature variation < 1 °C/min



A-600-D40-HPB A-600-D60-SHC



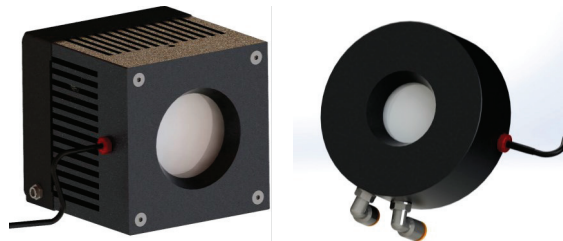
W-600-D30-HPB W-600-D30-SHC

Thermal Sensors for High Power Lasers

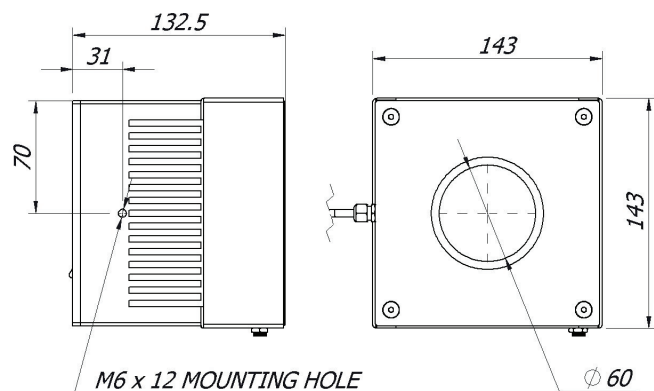
Range: 2W to 1500W

Features:

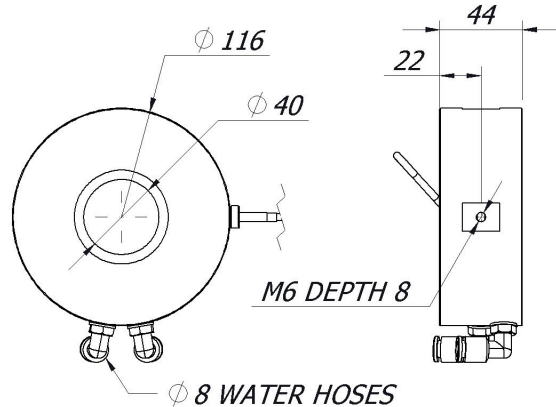
- Air cooled head to 1200 W
- Water cooled heads to 1500 W
- Corrosion-Proof Water-Cooled Sensors



Model	A-1200-D60-SHC	W-1500-D40-HPB	W-1500-D40-SHC
Power Mode			
Max. Average Power	1200 W	1500 W	1500 W
Max. Intermittent Power ⁽¹⁾	n.a.	2250 W	2250 W
Min. Power	2 W	4 W	4 W
Power Resolution	100 mW	100 mW	100 mW
Noise Equivalent Power (NEP)	100 mW	200 mW	200 mW
Response Time	4.5 sec	4 sec	4 sec
Power Calibration Uncertainty	± 3%	± 5%	± 5%
Power Linearity ⁽²⁾	± 1.5%	± 1.5%	± 1.5%
Single Shot Energy Mode			
Max. Energy (with 100 ms pulse)	1200 J	2250 J	2250 J
Min. Energy	5 J	5 J	5 J
Energy Resolution	100 mJ	100 mJ	100 mJ
Energy Calibration Uncertainty	± 5%	± 7%	± 7%
Absorber Specs			
Aperture	60 mm	40 mm	40 mm
Type	SHC	HPB	SHC
Absorber Spectral Range	0.19 - 11 μm	0.19 - 11 μm	0.19 - 11 μm
Calibration Spectral Range	0.25 - 1.1 μm, 9 - 11 μm	0.19 - 2.1 μm, 2.94μm, 9 - 11 μm	0.2 - 1.1 μm, 9 - 11 μm
Max Power Density ⁽³⁾	5 kW/cm ² @1 kW	2.4 kW/cm ² @1 kW	7 kW/cm ² @1 kW
Max Energy Density ⁽³⁾	5ms pulse width: 115 J/cm ² 10μs pulse width: 4 J/cm ² 10ns pulse width: 1 J/cm ²	5ms pulse width: 36 J/cm ² 10μs pulse width: 1.2 J/cm ² 10ns pulse width: 0.3 J/cm ²	5ms pulse width: 115 J/cm ² 10μs pulse width: 4 J/cm ² 10ns pulse width: 1 J/cm ²
General Characteristics			
Cooling	Forced Air with Fan (a)	Water ^(a)	Water ^(a)
Weight	4.4 kg	1.1 kg	1.1 kg
Dimension	143 x 143 x 132 mm	Ø 116 x 44 mm	Ø 116 x 44 mm
Cable lenght - connector	5 m - DB15	5 m - DB15	5 m - DB15
Stand and Post	Heavy Duty Stand Included	Heavy Duty Stand Included	Heavy Duty Stand Included
Notes			
(1). 2 minutes max (2). Detector centrally irradiated @50% of useful surface. (3). Damage thresholds also depend on power level. Please see damage graphs for more details.	(a). 12V DC Power Supply Included	(a). Water 4 liter/min (@ 22°C); admissible rate of temperature variation < 1 °C/min	(a). Water 4 liter/min (@ 22°C); admissible rate of temperature variation < 1 °C/min



A-1200-D60-SHC



W-1500-D40-HPB

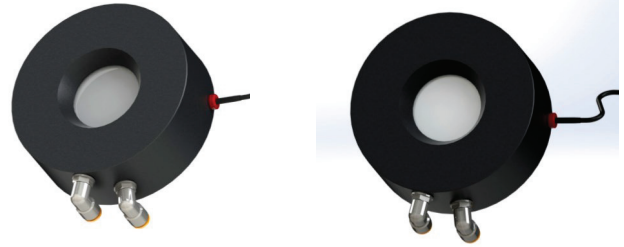
W-1500-D40-SHC

Thermal Sensors for High Power Lasers

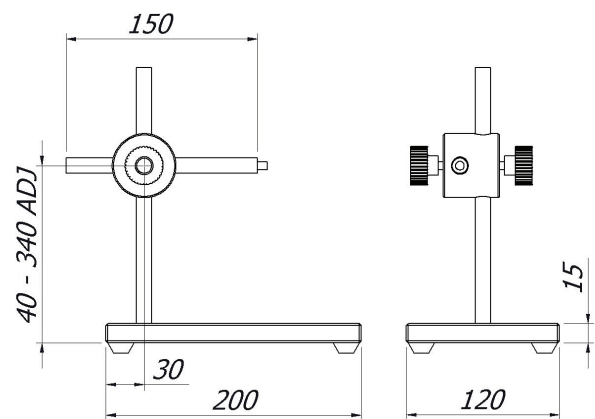
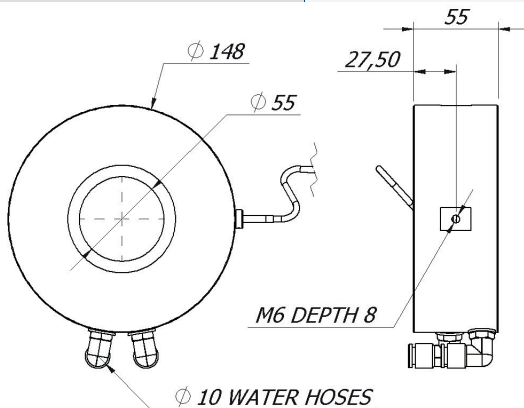
Range: 6W to 6kW

Features:

- Water cooled heads to 6000 W
- Corrosion-Proof Water-Cooled Sensors
- Highest Power Density on SHC Coating



Model	W-3000-D55-HPB	W-3000-D55-SHC	W-6000-D55-SHC
Power Mode			
Max. Average Power	3 kW	3 kW	6 kW
Max. Intermittent Power ⁽¹⁾	4.5 kW	4.5 kW	9 kW
Min. Power	6 W	6 W	15 W
Power Resolution	1 W	1 W	1 W
Noise Equivalent Power (NEP)	0.25 W	0.25 W	0.5 W
Response Time	5 sec	5 sec	3.5 sec
Power Calibration Uncertainty	± 5%	± 5%	± 5%
Power Linearity ⁽²⁾	± 2%	± 2%	± 2%
Single Shot Energy Mode			
Max. Energy (with 100 ms pulse)	4500 J	4500 J	6000 J
Min. Energy	10 J	10 J	15 J
Energy Resolution	1 J	1 J	1 J
Energy Calibration Uncertainty	± 7%	± 7%	± 7%
Absorber Specs			
Aperture	55 mm	55 mm	55 mm
Type	HPB	SHC	SHC
Absorber Spectral Range	0.19 - 11 μm	0.19 - 11 μm	0.19 - 11 μm
Calibration Spectral Range	0.19 - 2.1 μm, 2.94μm, 9 - 11 μm	0.2 - 1.1 μm, 9 - 11 μm	0.2 - 1.1 μm, 9 - 11 μm
Max Power Density ⁽³⁾	1.8 kW/cm ² @2kW	3.6 kW/cm ² @2kW	4 kW/cm ² @5kW
Max Energy Density ⁽³⁾	5ms pulse width: 36 J/cm ² 10μs pulse width: 1.2 J/cm ² 10ns pulse width: 0.3 J/cm ²	5ms pulse width: 115 J/cm ² 10μs pulse width: 4 J/cm ² 10ns pulse width: 1 J/cm ²	5ms pulse width: 115 J/cm ² 10μs pulse width: 4 J/cm ² 10ns pulse width: 1 J/cm ²
General Characteristics			
Cooling	Water ^(a)	Water ^(a)	Water ^(a)
Weight	2.3 kg	4.2 kg	4.2 kg
Dimension	Ø 148 x 55 mm	Ø 148 x 55 mm	Ø 148 x 55 mm
Cable lenght - connector	5 m - DB15	5 m - DB15	5 m - DB15
Stand and Post	Heavy Duty Stand Included	Heavy Duty Stand Included	Heavy Duty Stand Included
Notes			
(1). 2 minutes max (2). Detector centrally irradiated @50% of useful surface. (3). Damage thresholds also depend on power level. Please see damage graphs for more details.	(a). Water 5 liter/min (@ 22°C); admissible rate of temperature variation < 1 °C/ min	(a). Water 5 liter/min (@ 22°C); admissible rate of temperature variation < 1 °C/ min	(a). Water 8 liter/min (@ 22°C); admissible rate of temperature variation < 1 °C/ min



W-3000-D55-HPB W-3000-D55-SHC W-6000-D55-SHC

Heavy Duty Stand