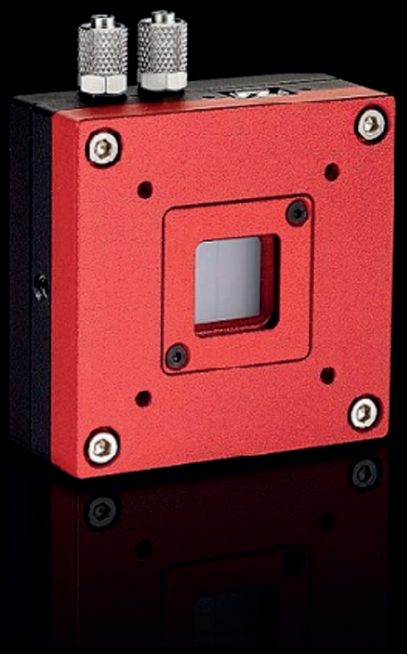
BLINK

THE NEW GENERATION
OF HIGH SPEED LASER SENSORS

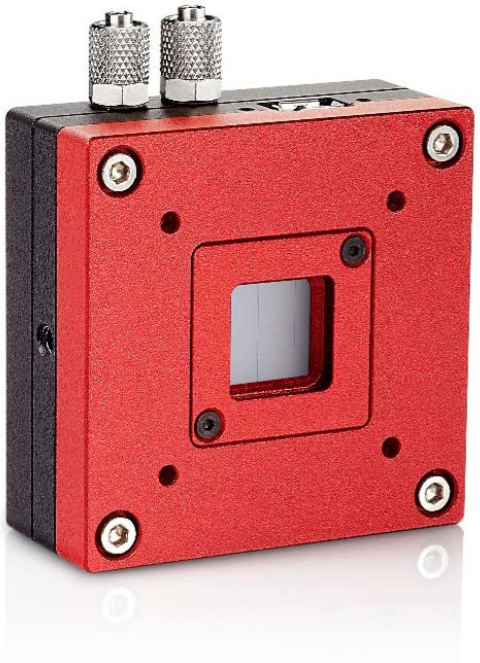
BLINK HS



LASERPOINT

THE POINT OF DIFFERENCE IN PHOTONICS

BLINK HS



- Repetition Rate up to 1 MHz
- Electronics with sampling rate up to 500 MSample/s
- Max. Active Area: 14 mm x 14 mm
- Wavelength range: 0.355 μm, 0.532 μm, 1.07 μm, 10.6 μm

DESIGN FOR OEM AND LABORATORY ULTRAFAST APPLICATIONS

Blink HS is the latest LaserPoint's achievement specifically developed to measure ultrafast lasers with pulse duration down to femtoseconds. The ultimate solution for whatever application requiring: accurate energy measurements for ultrafast pulsed laser, monitoring of fast manufacturing process in production lines and detection of fast instabilities in ultrafast lasers.

Blink HS' patented technology, based on thermopile design, makes this product the fastest laser power and energy sensor currently available in the market. This technology allows to combine the fast response speed of a photodiode with the broadband and high power operation of a thermopile. Blink HS can detect and measure the energy of CO_2 pulsed laser sources. Laser applications requiring high speed measurements can take advantage of the nanosecond response time; this Blink HS' feature allows to measure the energy of each pulse emitted by laser sources with repetition rates up to 1 MHz, pulse duration down to fs and average power up to 50W, characteristics that cannot be present all together in pyroelectric or photodiode sensors. Moreover, its high damage threshold and efficient cooling allows to withstand energies up to 20mJ. Blink HS can be deployed by laser manufacturers to detect fast instabilities in laser sources as well as by system integrators to monitor fast processes in production lines. Combining all advantages present in photodiodes, pyroelectric and thermal detectors, Blink HS is a very versatile product, suited to measure most of the laser sources commercially available, from ultrashort pulse to CW lasers. Models with Amplification and Enhanced sensitivity are also available, enabling energy measurements down to 0.25 μJ.

High speed electronics (High Speed Meter – HSM) is also available with a sampling rate up to 500 MSample/s to provide a precise energy measurement of each single ultrashort pulse. The instrument is supplied with Giotto Software, a user-friendly GUI. Leveraging the unprecedented speed of Blink HS, the new Pulse Controller System allows the detection of Missing Pulses or Pulses with energy lower than a user specified threshold, for laser process optimization through Pulse-to-Pulse Energy measurement.

BLINK HS - TECHNICAL SPECIFICATIONS

	Blink HS with Absorber T Standard Energy Density				Blink HS with Absorber B High Energy Density			
Ordering Code	BM-A-5W-14-T	BM-A-8W-14-T	BM-A-15W-14-T	BM-W-20W-14-T	BM-A-5W-10-B	BM-A-10W-10-B	BM-A-25W-10-B	BM-W-50W-10-B
Available Cooling systems	Conduction[f]	Conduction[f]	Forced Air[f]	Water[e]	Conduction[f]	Conduction[f]	Forced Air[f]	Water[e]
Power Mode								
Max Average Power	5 W	8 W	15 W	20 W	5 W	10 W	25 W	50 W
Energy mode								
Min Measurable Energy	10 μJ[a] 250 μJ[b]				30 μJ[a] 600 μJ[b]			
Max. Energy	2 mJ[a] 10 mJ[b]				5 mJ[a] 20 mJ[b]			
Energy resolution	0.25 μJ				0.5 μJ			
Calibration Uncertainty	± 5 %				± 5 %			
Absorber Specs								
Aperture	14 mm x 14 mm				10 mm x 10 mm			
Type	T				B			
Spatial Uniformity[1]	± 5 %				± 5 %			
Absorber Spectral range	0.2 - 11 μm				0.5 - 1.1 μm			
Calibration Spectral range	0.355 μm, 0.532 μm, 1.07 μm, 10.6 μm[c] [d]				0.532 μm, 1.07 μm[d]			
Max. Power Density[2]	0.1 kW/cm^2				5 kW/cm^2			
Max. Energy Density[3]	35 mJ/cm^2				120 mJ/cm^2			
General Characteristics								
Dimensions (mm)	60x60x16.5	60x60x41.6	60x60x66	60x60x25.7	60x60x16.5	60x60x41.6	60x60x66	60x60x25.7
Max Weight	130 g	240 g	380 g	170 g	130 g	240 g	380 g	170 g
Cable length - Connector	2 m - Hirose IX				2 m - Hirose IX			
Notes								
(1) 3mm beam diameter, scanning 80% of active area (2) Damage Thresholds depends also on power level (3) Single Shot	(a) wavelength 1064nm, pulse duration < 10 ns (b) wavelength 1064nm, pulse duration = 10 μs (c) 10.6 μm sensor reflectivity 70% (d) other wavelengths on request (e) Water: min. 1 l/min, Max. 4 l/min @ 10-25°C. Admissible rate or water temperature variation < 1°C/min; (f) Recommended ambient temperature: 10 - 35 °C (forced air); 10 - 30 °C (conduction)							

AMPLIFIED BLINK HS - TECHNICAL SPECIFICATIONS

Amplified Blink HS sensors has been developed to measure lower energies, down to 1 μJ. This is achieved thanks to a highly linear, built-in amplifier, allowing for a larger sensitivity.

	Amplified Blink HS			
Ordering Code	BM-A-5W-14-TX	BM-A-8W-14-TX	BM-A-15W-14-TX	BM-W-20W-14-TX
Available Cooling systems	Conduction[f]	Conduction[f]	Forced Air[f]	Water[e]
Power Mode				
Max Average Power	5 W	8 W	15 W	20 W
Energy mode				
Min Measurable Energy	1 μJ[a] 40 μJ[b]			
Max. Energy	40 μJ[a] 1000 μJ[b]			
Energy resolution	0.01 μJ			
Calibration Uncertainty	± 5 %			
Absorber Specs				
Aperture	14 mm x 14 mm			
Type	T			
Spatial Uniformity[1]	± 5 %			
Absorber Spectral range	0.2 - 11 μm			
Calibration Spectral range	0.355 μm, 0.532 μm, 1.07 μm, 10.6 μm[c] [d]			
Max. Power Density[2]	0.1 kW/cm^2			
Max. Energy Density[3]	35 mJ/cm^2			
General Characteristics				
Dimensions (mm)	60x60x16.5	60x60x41.6	60x60x66	60x60x25.7
Max Weight	130 g	240 g	380 g	170 g
Cable length - Connector	2 m - Hirose IX			
Notes				
(1) 3mm beam diameter, scanning 80% of active area (2) Damage Thresholds depends also on power level (3) Single Shot	(a) wavelength 1064nm, pulse duration < 10 ns (b) wavelength 1064nm, pulse duration = 10 μs (c) 10.6 μm sensor reflectivity 70% (d) other wavelengths on request (e) Water: min. 1 l/min, Max. 4 l/min @ 10-25°C. Admissible rate or water temperature variation < 1°C/min; (f) Recommended ambient temperature: 10 - 35 °C (forced air); 10 - 30 °C (conduction)			

BLINK HS ENHANCED (ENH) - TECHNICAL SPECIFICATIONS

BLINK HS-ENH (Enhanced) is a measurement SYSTEM specifically developed for ultrafast lasers with low energy per pulse, down to 0.25 µJ. Such a low energy, combined with the high repetition rate, requires a dedicated signal amplification and an accurate calibration procedure, performed on the complete system made by the High Speed sensor Blink HS and its High Speed Meter (HSM). HSM is specifically developed to connect Blink HS sensor to PC via Ethernet, to acquire and display data of laser pulse trains and perform statistics on many laser parameters such as pulse energy, power, repetition rate, peak energy. HSM is able to provide a precise energy measurement of each single ultrashort pulse up to MHz range repetition rate. It is suitable for ultrashort pulsed lasers down to femtosecond pulse duration.
The instrument is supplied with Giotto Software, a user-friendly GUI that allows working at different Gain levels, necessary for accurately measure low energy values.

	Blink HS ENH with Absorber T Standard Energy Density				**Blink HS ENH with Absorber B High Energy Density**			
Ordering Code	BM-A-5W-14-T-ENH	BM-A-8W-14-T-ENH	BM-A-15W-14-T-ENH	BM-W-20W-14-T-ENH	BM-A-5W-10-B-ENH	BM-A-10W-10-B-ENH	BM-A-25W-10-B-ENH	BM-W-50W-10-B-ENH
Available Cooling systems	Conduction[f]	Conduction[f]	Forced Air[f]	Water[e]	Conduction[f]	Conduction[f]	Forced Air[f]	Water[e]
Power Mode								
Max Average Power	5 W	8 W	15 W	20 W	5 W	10 W	25 W	50 W
Energy mode								
Min Measurable Energy	1 µJ[a] 50 µJ[b]				3 µJ[a] 100 µJ[b]			
Max. Energy	2 mJ[a] 10 mJ[b]				5 mJ[a] 20 mJ[b]			
Energy resolution	0.05 µJ				0.1 µJ			
Calibration Uncertainty	± 5 %				± 5 %			
Absorber Specs								
Aperture	14 mm x 14 mm				10 mm x 10 mm			
Type	T				B			
Spatial Uniformity[1]	± 5 %				± 5 %			
Absorber Spectral range	0.2 - 11 µm				0.5 - 1.1 µm			
Calibration Spectral range	0.355 µm, 0.532 µm, 1.07 µm, 10.6 µm[c] [d]				0.532 µm, 1.07 µm[d]			
Max. Power Density[2]	0.1 kW/cm^2				5 kW/cm^2			
Max. Energy Density[3]	35 mJ/cm^2				120 mJ/cm^2			
General Characteristics								
Dimensions (mm)	60x60x16.5	60x60x41.6	60x60x66	60x60x25.7	60x60x16.5	60x60x41.6	60x60x66	60x60x25.7
Max Weight	130 g	240 g	380 g	170 g	130 g	240 g	380 g	170 g
Cable length - Connector	2 m - Hirose IX				2 m - Hirose IX			
Notes								
(1) 3mm beam diameter, scanning 80% of active area (2) Damage Thresholds depends also on power level (3) Single Shot	(a) wavelength 1064nm, pulse duration < 10 ns (b) wavelength 1064nm, pulse duration = 10 µs (c) 10.6 µm sensor reflectivity 70% (d) other wavelengths on request (e) Water: min. 1 l/min, Max. 4 l/min @ 10-25°C. Admissible rate or water temperature variation < 1°C/min; (f) Recommended ambient temperature: 10 - 35 °C (forced air); 10 - 30 °C (conduction)							

	Enhanced-Amplified Blink HS			
Ordering Code	BM-A-5W-14-TX-ENH	BM-A-8W-14-TX-ENH	BM-A-15W-14-TX-ENH	BM-W-20W-14-TX-ENH
Available Cooling systems	Conduction[f]	Conduction[f]	Forced Air[f]	Water[e]
Power Mode				
Max Average Power	5 W	8 W	15 W	20 W
Energy mode				
Min Measurable Energy	0,25 µJ[a] 20 µJ[b]			
Max. Energy	40 µJ[a] 1000 µJ[b]			
Energy resolution	0.01 µJ			
Calibration Uncertainty	± 5 %			
Absorber Specs				
Aperture	14 mm x 14 mm			
Type	T			
Spatial Uniformity[1]	± 5 %			
Absorber Spectral range	0.2 - 11 µm			
Calibration Spectral range	0.355 µm, 0.532 µm, 1.07 µm, 10.6 µm[c] [d]			
Max. Power Density[2]	0.1 kW/cm^2			
Max. Energy Density[3]	35 mJ/cm^2			
General Characteristics				
Dimensions (mm)	60x60x16.5	60x60x41.6	60x60x66	60x60x25.7
Max Weight	130 g	240 g	380 g	170 g
Cable length - Connector	2 m - Hirose IX			
Notes				
(1) 3mm beam diameter, scanning 80% of active area (2) Damage Thresholds depends also on power level (3) Single Shot	(a) wavelength 1064nm, pulse duration < 10 ns (b) wavelength 1064nm, pulse duration = 10 µs (c) 10.6 µm sensor reflectivity 70% (d) other wavelengths on request (e) Water: min. 1 l/min, Max. 4 l/min @ 10-25°C. Admissible rate or water temperature variation < 1°C/min; (f) Recommended ambient temperature: 10 - 35 °C (forced air); 10 - 30 °C (conduction)			

HIGH SPEED METER - HSM

HSM is a high speed electronics specifically developed to connect High Speed Sensor Blink HS to PC via Ethernet, to acquire and display data of laser pulse trains and perform statistics on many laser parameters as energy, power, repetition rate, peak power. HSM is able to sample data with a sampling rate up to 500 Msamples/s to provide a precise energy measurement of each single ultrashort pulse up to 1 MHz repetition rate. HSM can be supplied as Pulse Controller, for detection of missing or low energy pulses, below a user specified energy threshold.

INNOVATION
IS OUR DNA

At LaserPoint innovation means providing smarter solutions to customer requirement: that's why we never stand still, constantly investing in innovation and technology. LaserPoint is an independent Company that employs physicists, engineers and technicians with solid background in laser technologies, R&D and manufacturing. The results of our work are the several patents on laser measurement devices from 2011 to 2022 and our ISO 9001 certification on our entire development and manufacturing process.

Achievements first introduced by LaserPoint in the market:

- Broadband, High-Speed laser sensors (Blink)
- Pulse Controller System for detection of missing and low energy pulses
- Touch Screen Power and Energy Meter
- Super Hard Coating
- Detectors with USB/RS connectivity

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LASERPOINT

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