



# XLP12

12 mm Ø, 0.5 µW - 3 W – Low Power Thermopile



## FEATURES

- 1. LOW POWER THERMOPILE**  
Noise level of a photo detector with the large bandwidth and high power capacity of a thermal device
- 2. MINIMAL THERMAL DRIFT**  
Only 6 µW/°C (with the IR filter)
- 3. HIGH SENSITIVITY**  
200 mV/W (without the IR filter)
- 4. SPECIAL MODEL FOR ULTRASHORT PULSES**  
VP (Volume Absorber) version is perfect for low power lasers with ultrashort pulses (ps and fs)
- 5. IR FILTER (XLPF12 MODEL)**  
Removes unwanted IR interference
- 6. ISOLATION TUBE**  
Eliminates power fluctuations created by air turbulence
- 7. SMART INTERFACE**  
Containing all the calibration data

## AVAILABLE MODELS



XLP12-3S-H2  
(3W-Broadband)



XLPF12-3S-H2  
(3W-Broadband-IR Filter)



XLP12-3S-VP  
(3W-Volume Absorber)

## ACCESSORIES



Stand with Steel Post  
(Model Number: 200160)



Extension Cables  
(4, 15, 20 or 25 m)



IR Filter  
(Mounted)



Fiber Adaptors & Connectors  
(FC, SC, ST and SMA)



Pelican Carrying Case

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## APPLICATION NOTE

MEASURING LASER POWER WITH A THERMOPILE DETECTOR: THE BASICS! [202175](#)

## XLP12



\*Also traceable to NRC-CNRC

## SPECIFICATIONS

	XLP12-3S-H2	XLPF12-3S-H2	XLP12-3S-VP			
<b>MAX AVERAGE POWER (CONTINUOUS / 1 MINUTE)</b>	3 W / 3 W Broadband Absorber	3 W / 3 W Broadband Absorber, with IR Filter	3 W / 3 W Volume Absorber			
<b>EFFECTIVE APERTURE</b>	12 mm Ø	12 mm Ø	12 mm Ø			
<b>COOLING METHOD</b>	Convection	Convection	Convection			
<b>MEASUREMENT CAPABILITY</b>						
Spectral Range	0.19 – 20 µm *	0.28 – 2.1 µm <sup>a</sup>	0.25 – 20 µm *			
Noise Equivalent Power <sup>b</sup>	0.5 µW	0.5 µW	0.5 µW			
Thermal Drift <sup>c</sup>	12 µW/°C	6 µW/°C	12 µW/°C			
Rise Time (nominal) <sup>d</sup>	2.5 sec	2.5 sec	3 sec			
Sensitivity (typ into 100 kΩ load) <sup>e</sup>	200 mV/W	180 mV/W	220 mV/W			
Calibration Uncertainty <sup>f</sup>	±2.5 %	±2.5 %	±2.5 %			
Repeatability	±0.5 %	±0.5 %	±0.5 %			
<b>Energy Mode</b>						
Sensitivity	25 mV/J	22.5 mV/J	---			
Maximum Measurable Energy <sup>g</sup>	5 J	5 J	---			
Noise Equivalent Energy <sup>b</sup>	12 µJ	12 µJ	---			
Minimum Repetition Period	16 sec	16 sec	---			
Maximum Pulse Width	300 ms	300 ms	---			
Accuracy with energy calibration option	±5 %	±5 %	---			
<b>DAMAGE THRESHOLDS</b>						
Maximum Average Power Density <sup>h</sup>	1 kW/cm <sup>2</sup>	1 kW/cm <sup>2</sup>	30 W/cm <sup>2</sup> @ 1064 nm 8 W/cm <sup>2</sup> @ 532 nm 4 W/cm <sup>2</sup> @ 355 nm			
<b>Pulsed Laser Damage Thresholds</b>						
	Max Energy Dens.	Peak Power Dens.	Max Energy Dens.	Peak Power Dens.	Max Energy Dens.	Peak Power Dens.
1064 nm, 360 µs, 5 Hz	5 J/cm <sup>2</sup>	14 kW/cm <sup>2</sup>	5 J/cm <sup>2</sup>	14 kW/cm <sup>2</sup>	---	---
1064 nm, 7 ns, 10 Hz	1 J/cm <sup>2</sup>	143 MW/cm <sup>2</sup>	1 J/cm <sup>2</sup>	143 MW/cm <sup>2</sup>	4 J/cm <sup>2</sup>	571 MW/cm <sup>2</sup>
532 nm, 7 ns, 10 Hz	0.6 J/cm <sup>2</sup>	86 MW/cm <sup>2</sup>	0.6 J/cm <sup>2</sup>	86 MW/cm <sup>2</sup>	3 J/cm <sup>2</sup>	429 MW/cm <sup>2</sup>
355 nm, 7 ns, 10 Hz	---	---	---	---	1 J/cm <sup>2</sup>	143 MW/cm <sup>2</sup>
266 nm, 7 ns, 10 Hz	0,3 J/cm <sup>2</sup>	43 MW/cm <sup>2</sup>	0,3 J/cm <sup>2</sup>	43 MW/cm <sup>2</sup>	---	---
<b>PHYSICAL CHARACTERISTICS</b>						
Effective Aperture	12 mm Ø	12 mm Ø	12 mm Ø	12 mm Ø	12 mm Ø	12 mm Ø
Absorber (High Damage Threshold)	H2	H2	H2	H2	VP (Volume Absorber)	VP (Volume Absorber)
Dimensions	73H x 73W x 20D mm (72D mm with tube)	73H x 73W x 28D mm (80D mm with tube)	73H x 73W x 28D mm (80D mm with tube)	73H x 73W x 28D mm (80D mm with tube)	73H x 73W x 20D mm (72D mm with tube)	73H x 73W x 20D mm (72D mm with tube)
Weight (head only)	0.31 kg	0.32 kg	0.32 kg	0.32 kg	0.32 kg	0.32 kg
<b>ORDERING INFORMATION</b>						
Product Name	XLP12-3S-H2	XLPF12-3S-H2	XLP12-3S-VP	XLP12-3S-VP	XLP12-3S-VP	XLP12-3S-VP
Product Number (Including stand)	201035	201078	202228	202228	202228	202228
Add Extension for INTEGRA	-INT	-INT	-INT	-INT	-INT	-INT
Product Number (Including stand)	202608	202610	202610	202610	202610	202610

Les spécifications peuvent être modifiées sans préavis

\* For the calibrated spectral range, see the user manual.

a. This spectral range refers to the calibration traceability. For details, please contact us at: info@gentec-eo.com.

b. Nominal value, actual value depends on electrical noise in the measurement system.

c. With Gentec-EO MAESTRO.

d. With Gentec-EO MAESTRO, UNO, P-LINK, TUNER and S-LINK monitors.

e. Maximum output voltage = sensitivity x maximum power.

f. Including linearity with power.

g. For 360 µs pulses. Higher pulse energy possible when customized for long pulses (ms), less for short pulses (ns).

h. At 1064 nm, 1 W CW.