



UP10-H

10 mm Ø, 0.1 mW - 2 W - Fast & Low Power Thermopile



KEY FEATURES

- 1. LOW POWER THERMOPILE**
Noise level of a photo detector with the large bandwidth and high power capacity of a thermal device
- 2. HIGH PERFORMANCE**
Fast Rise Time (1.4 sec)
High Damage Threshold (36 kW/cm²)
- 3. COMPACT DESIGN**
Only 13 mm thick (UP10P model)
- 4. IR FILTER (UPF10 MODELS)**
Removes unwanted IR interference
- 5. ENERGY MODE**
Measure single shot energy up to 3 J
- 6. SMART INTERFACE**
Containing all the calibration data
- 7. *integra* OPTIONS**
 - Standard: USB Output (-INT)
 - In Option: RS-232 Output (-IDR)

AVAILABLE MODELS



UP10P-2S-H5-L



UPF10P-2S-H5-L



UP10K-2S-H5-L



UPF10K-2S-H5-L

ACCESSORIES



Stand with Steel Post
(Model Number: 200160)



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



IR Filter
(Mounted)



Isolation Tube
(Model Number: 101449)



Fiber Adaptors & Connectors
(FC, ST and SMA)



Pelican Carrying Case

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APPLICATION NOTE

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

UP10-H



*Also traceable to NRC-CNRC

SPECIFICATIONS

	UP10P-2S-H5-L	UPF10P-2S-H5-L	UP10K-2S-H5-L	UPF10K-2S-H5-L
MAX AVERAGE POWER	2 W			
EFFECTIVE APERTURE	10 mm Ø			
COOLING METHOD	Convection			
MEASUREMENT CAPABILITY				
Spectral Range *	0.19 – 20 µm	0.28 - 2.1 µm	0.19 – 20 µm	0.28 - 2.1 µm
Noise Equivalent Power ^a	100 µW without anticipation / 30 µW with anticipation and 2 sec moving average			
Rise Time (nominal) ^b	1.4 sec	1.4 sec	1.1 sec	1.1 sec
Sensitivity (typ into 100 kΩ load) ^c	2 mV/W			
Calibration Uncertainty ^d	±2.5 %			
Repeatability	±0.5 %			
Energy Mode				
Sensitivity	2.4 mV/J			
Maximum Measurable Energy ^e	3 J			
Noise Equivalent Energy ^a	5 mJ			
Minimum Repetition Period	2 sec			
Maximum Pulse Width	63 ms			
Accuracy with energy calibration option	±5 %			
DAMAGE THRESHOLDS				
Maximum Average Power Density ^f	36 kW/cm ²			
Pulsed Laser Damage Thresholds	Max Energy Density		Peak Power Density	
1064 nm, 360 µs, 5 Hz	5 J/cm ²		14 kW/cm ²	
1064 nm, 7 ns, 10 Hz	1 J/cm ²		143 MW/cm ²	
532 nm, 7 ns, 10 Hz	0.6 J/cm ²		86 MW/cm ²	
266 nm, 7 ns, 10 Hz	0.3 J/cm ²		43 MW/cm ²	
PHYSICAL CHARACTERISTICS				
Effective Aperture	10 mm Ø			
Absorber (High Damage Threshold)	H5			
Dimensions	46H x 46W x 13D mm	46H x 46W x 21.4D mm	50H x 50W x 21.5D mm	50H x 50W x 30D mm
Weight (head only)	0.13 kg	0.14 kg	0.19 kg	0.13 kg
ORDERING INFORMATION				
Product Name	UP10P-2S-H5-L-D0	UPF10-2S-H5-L	UP10K-2S-H5-L-D0	UPF10K-2S-H5-L
Product Number (without stand)	202873	Call	202872	Call
Add Extension for INTEGRA (USB)	-INT	-INT	-INT	-INT
Product Number (without stand)	203033	Call	203035	Call
Add Extension for INTEGRA (RS-232)	-IDR	-IDR	-IDR	-IDR
Specifications are subject to change without notice // Compatible stand: P/N 200160				

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

- a. Nominal value, actual value depends on electrical noise in the measurement system.
 b. With anticipation.
 c. Maximum output voltage = sensitivity x maximum power.
 d. Including linearity with power.
 e. For 360 µs pulses. Higher pulse energy possible when customized for long pulses (ms), less for short pulses (ns).
 f. At 1064 nm, 10 W CW.