

# UP10-H

10 mm Ø, 0.1 mW - 2 W, fast & low power thermopile



## KEY FEATURES

- > **LOW POWER THERMOPILE**  
Noise level of a photodetector with the large bandwidth and high power capacity of a thermal device
- > **HIGH PERFORMANCE**  
Fast rise time (1.4 s)  
High damage threshold (36 kW/cm<sup>2</sup>)
- > **COMPACT DESIGN**  
Only 13 mm thick (UP10P model)
- > **ENERGY MODE**  
Measure single shot energy up to 3 J

## OUTPUT OPTIONS

- > **SMART DB15 CONNECTOR**  
Contains all the calibration data
- > **integra ALL-IN-ONE-METER**  
Connects directly to a PC  
Two models available:
  - USB output (-INT)
  - RS-232 output (-IDR)

## COMPATIBLE DISPLAYS & PC INTERFACES



MIRO ALTITUDE



MAESTRO



TUNER



UNO



U-LINK and P-LINK



S-LINK and M-LINK

## ACCESSORIES



Stand with steel post



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



IR Filter  
(Mounted)



Isolation tube



Fiber adaptors & connectors  
(FC, ST and SMA)



Pelican carrying case

# UPIO-H

## Specifications

CE NIST\*  
Traceable

 VDE  
\*Also traceable to NRC-CNRC



	UPIOP-2S-H5-L-D0	UPIOK-2S-H5-L-D0
<b>MAX AVERAGE POWER</b>	2 W	2 W
<b>EFFECTIVE APERTURE</b>	10 mm $\phi$	10 mm $\phi$
<b>COOLING METHOD</b>	Convection	Convection
<b>MEASUREMENT CAPABILITY</b>		
<b>Spectral range</b>	0.19 - 20 $\mu\text{m}$	0.19 - 20 $\mu\text{m}$
<b>Calibrated spectral range <sup>a</sup></b>	0.248 - 2.1 $\mu\text{m}$	0.248 - 2.1 $\mu\text{m}$
<b>Noise equivalent power <sup>b</sup></b>	100 $\mu\text{W}$ without anticipation 30 $\mu\text{W}$ with anticipation and 2 s moving average	100 $\mu\text{W}$ without anticipation 30 $\mu\text{W}$ with anticipation and 2 s moving average
<b>Rise time (nominal) <sup>c</sup></b>	1.4 s	1.1 s
<b>Calibration uncertainty <sup>d</sup></b>	$\pm 2.5\%$	$\pm 2.5\%$
<b>Repeatability</b>	$\pm 0.5\%$	$\pm 0.5\%$
<b>Energy mode</b>		
<b>Maximum measurable energy <sup>e</sup></b>	3 J	3 J
<b>Noise equivalent energy <sup>b</sup></b>	5 mJ	5 mJ
<b>Minimum repetition period</b>	2 s	2 s
<b>Maximum pulse width</b>	63 ms	63 ms
<b>Accuracy with energy calibration option</b>	$\pm 5\%$	$\pm 5\%$
<b>DAMAGE THRESHOLDS</b>		
<b>Maximum average power density <sup>f</sup></b>	36 kW/cm <sup>2</sup>	36 kW/cm <sup>2</sup>
<b>Maximum energy density</b>		
1064 nm, 360 $\mu\text{s}$ , 5 Hz	5 J/cm <sup>2</sup>	5 J/cm <sup>2</sup>
1064 nm, 7 ns, 10 Hz	1 J/cm <sup>2</sup>	1 J/cm <sup>2</sup>
532 nm, 7 ns, 10 Hz	0.6 J/cm <sup>2</sup>	0.6 J/cm <sup>2</sup>
266 nm, 7 ns, 10 Hz	0.3 J/cm <sup>2</sup>	0.3 J/cm <sup>2</sup>
<b>PHYSICAL CHARACTERISTICS</b>		
<b>Effective aperture</b>	10 mm $\phi$	10 mm $\phi$
<b>Absorber (high damage threshold)</b>	H5	H5
<b>Dimensions</b>	46H x 46W x 13D mm	50H x 50W x 21.5D mm
<b>Weight (head only)</b>	0.13 kg	0.19 kg
<b>ORDERING INFORMATION</b>		
<b>Available output options</b>	DB15, USB or RS-232	DB15, USB, RS-232
<b>Compatible stand</b>	STAND-S-233	STAND-S-233
<b>Product page</b>		

- a. Calibrations at 2.1 to 2.5  $\mu\text{m}$  and 10.6  $\mu\text{m}$  are available on special request.  
 b. Nominal value, actual value depends on electrical noise in the measurement system.  
 c. With anticipation.  
 d. Including linearity with power.  
 e. For 360  $\mu\text{s}$  pulses. Higher pulse energy possible for long pulses (ms), less for short pulses (ns).  
 f. At 1064 nm, 10 W CW.

Specifications are subject to change without notice