



UP10-H

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



KEY FEATURES

1. **LOW POWER THERMOPILE**
Noise level of a photodetector 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

SEE ALSO

| | |
|---|------------------------|
| HOW IT WORKS | 202 |
| CALIBRATION | 8 |
| TECHNICAL DRAWINGS | 90 |
| ABSORPTION CURVES | 94 |
| COMPATIBLE DISPLAYS & PC INTERFACES | |
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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 | 2 W | 2 W | 2 W |
| EFFECTIVE APERTURE | 10 mm Ø | 10 mm Ø | 10 mm Ø | 10 mm Ø |
| COOLING METHOD | Convection | Convection | Convection | 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 | 2 mV/W | 2 mV/W | 2 mV/W |
| Calibration Uncertainty ^d | ±2.5 % | ±2.5 % | ±2.5 % | ±2.5 % |
| Repeatability | ±0.5 % | ±0.5 % | ±0.5 % | ±0.5 % |
| Energy Mode | | | | |
| Sensitivity | 2.4 mV/J | 2.4 mV/J | 2.4 mV/J | 2.4 mV/J |
| Maximum Measurable Energy ^e | 3 J | 3 J | 3 J | 3 J |
| Noise Equivalent Energy ^a | 5 mJ | 5 mJ | 5 mJ | 5 mJ |
| Minimum Repetition Period | 2 sec | 2 sec | 2 sec | 2 sec |
| Maximum Pulse Width | 63 ms | 63 ms | 63 ms | 63 ms |
| Accuracy with energy calibration option | ±5 % | ±5 % | ±5 % | ±5 % |
| DAMAGE THRESHOLDS | | | | |
| Maximum Average Power Density ^f | 36 kW/cm ² | 36 kW/cm ² | 36 kW/cm ² | 36 kW/cm ² |
| Maximum Energy Density | | | | |
| 1064 nm, 360 µs, 5 Hz | 5 J/cm ² | 5 J/cm ² | 5 J/cm ² | 5 J/cm ² |
| 1064 nm, 7 ns, 10 Hz | 1 J/cm ² | 1 J/cm ² | 1 J/cm ² | 1 J/cm ² |
| 532 nm, 7 ns, 10 Hz | 0.6 J/cm ² | 0.6 J/cm ² | 0.6 J/cm ² | 0.6 J/cm ² |
| 266 nm, 7 ns, 10 Hz | 0.3 J/cm ² | 0.3 J/cm ² | 0.3 J/cm ² | 0.3 J/cm ² |
| PHYSICAL CHARACTERISTICS | | | | |
| Effective Aperture | 10 mm Ø | 10 mm Ø | 10 mm Ø | 10 mm Ø |
| Absorber (High Damage Threshold) | H5 | H5 | H5 | 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 |
| Product Number (without stand) | 203319 | Call | 203317 | Call |

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 for long pulses (ms), less for short pulses (ns).
 f. At 1064 nm, 10 W CW.