

UP19K-H



19 mm Ø, 1 mW - 190 W



Key Features

1

Modular Concept

Increase the power capability of your detector : 5 different cooling modules

2

High Performance

- . Fast Rise Time (0.6 sec)
- . High Damage Threshold (45 kW/cm²)

3

Compact Design

Only 21 mm thick (15S model)

4

Energy Mode

Measure single shot energy up to 15 J

5

High Quality Stand

Post threaded on both sides to allow extension

6

Smart Interface

Containing all the calibration data

See also

| | |
|------------------------------|-------|
| . How it works | 14 |
| . Calibration | 6 |
| . Detailed dimensions | 74-75 |
| . Spectral absorption | 107 |
| . OEM Custom detectors | 80 |
| . Compatible monitors | |
| SOLO 2 | 20 |
| UNO | 22 |
| S-LINK-2 | 24 |
| P-LINK | 26 |



UP19K-110F-H9

UP19K-15S-H5



Accessories

» Fiber Optic Adapters (FC, SMA, SC)

Variety of fiber adapter options to give you the most flexibility in using our power detectors with your fiber coupled lasers.



» Isolation Tube for low powers

This tube increases the performance of the UP19K detectors in the low mW range.

» Extension Cables (4, 15, 20 and 25 m)






For some OEM, manufacturing and laboratory applications.

» Pelican Carrying Case

We offer a robust hard shell polymer carrying case.



SPECIFICATIONS

| Models | UP19K-15S-H5 | UP19K-30H-H5 | UP19K-50L-H5 | UP19K-110F-H9 | UP19K-150W-H5 |
|--------------------------------|---|---|--|---|---|
| |  |  |  |  |  |
| Max Average Power (continuous) | 15 W | 30 W | 50 W | 110 W | 150 W ^f |
| Max Average Power (1 minute) | 30 W | 60 W | 90 W | 150 W | 190 W ^f |

| MEASUREMENT CAPABILITY | 15S | 30H | 50L | 110F | 150W |
|---|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Spectral Range | 0.19 – 20 μm | 0.19 – 20 μm | 0.19 – 20 μm | 0.19 – 20 μm | 0.19 – 20 μm |
| Noise Equivalent Power ^a | 1 mW | 1 mW | 1 mW | 3 mW | 1 mW |
| Rise Time (nominal) ^b | 0.6 sec | 0.6 sec | 0.6 sec | 1.5 sec | 0.6 sec |
| Sensitivity (typ into 100 k Ω load) ^c | 0.65 mV/W | 0.65 mV/W | 0.65 mV/W | 0.23 mV/W | 0.65 mV/W |
| Calibration Uncertainty ^d | $\pm 2.5\%$ | $\pm 2.5\%$ | $\pm 2.5\%$ | $\pm 2.5\%$ | $\pm 2.5\%$ |
| Repeatability | $\pm 0.5\%$ | $\pm 0.5\%$ | $\pm 0.5\%$ | $\pm 0.5\%$ | $\pm 0.5\%$ |
| Energy Mode | | | | | |
| Sensitivity | 0.65 mV/J | 0.65 mV/J | 0.65 mV/J | 0.23 mV/J | 0.65 mV/J |
| Maximum Measurable Energy ^e | 15 J | 15 J | 15 J | 25 J | 15 J |
| Noise Equivalent Energy ^a | 0.02 J | 0.02 J | 0.02 J | 0.06 J | 0.02 J |
| Minimum Repetition Period | 4 sec | 4 sec | 4 sec | 4 sec | 4 sec |
| Maximum Pulse Width | 88 ms | 88 ms | 88 ms | 88 ms | 88 ms |
| Accuracy with energy calibration option | $\pm 5\%$ | $\pm 5\%$ | $\pm 5\%$ | $\pm 5\%$ | $\pm 5\%$ |

DAMAGE THRESHOLDS

| Maximum Average Power Density ^g | 36 kW/cm ² | 36 kW/cm ² | 36 kW/cm ² | 45 kW/cm ² | 36 kW/cm ² |
|--|--|-----------------------|-----------------------|--|-----------------------|
| Pulsed Laser Damage Thresholds | Max Energy Density | | | Peak Power Density | |
| 1064 nm, 360 μs , 5 Hz | 5 J/cm ² (H5), 9 J/cm ² (H9) | | | 14 kW/cm ² (H5), 25 kW/cm ² (H9) | |
| 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 Diameter | 19 mm \emptyset | 19 mm \emptyset | 19 mm \emptyset | 19 mm \emptyset | 19 mm \emptyset |
| Absorber (High Damage Threshold) | H5 | H5 | H5 | H9 | H5 |
| Dimensions | 50H x 50W x 20.6D mm | 50H x 50W x 56.3D mm | 76.2H x 76.2W x 74.7D mm | 54.2H x 54.2W x 55.6D mm | 50H x 50W x 33D mm |
| Weight (head only) | 0.16 kg | 0.21 kg | 0.48 kg | 0.25 kg | 0.24 kg |

ORDERING INFORMATION

| | | | | | |
|----------------------------------|--------------|--------------|--------------|---------------|---------------|
| Full Product Name | UP19K-15S-H5 | UP19K-30H-H5 | UP19K-50L-H5 | UP19K-110F-H9 | UP19K-150W-H5 |
| Product Number (including stand) | 200173 | 200174 | 200175 | 200996 | 200177 |

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

b. With Gentec-EO SOLO, UNO, P-LINK and S-LINK-2 monitors.

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. Minimum cooling flow 0.5 liters/min, water temperature $\leq 22^\circ\text{C}$, 1/8 NPT compression fittings for 1/4 inch semi-rigid tube. Contact Gentec-EO for clean deionized water cooling module option.

g. At 1064 nm, 10 W CW.

Specifications are subject to change without notice