

UD SERIES

Thermal Sensor Disks, 10 - 55 mm Ø, 200 µW - 500 W



KEY FEATURES

- 1. **DESIGNED FOR INTEGRATION**
With a broad bandwidth and high power densities
- 2. **VERY THIN PROFILES**
Starting at only 2 mm deep
- 3. **VARIOUS APERTURE SIZES**
Choose your aperture from 10 mm Ø to 55 mm Ø
- 4. **2 LEVELS OF INTEGRATION**
 - Disk alone
 - Disk + PCB
- 5. **CUSTOM PRODUCTS**
Contact us for more options!

AVAILABLE MODELS



UD10-2-H5-L
(10 mm-2 W)



UD12-70-H5
(12 mm-70 W)



UD19-50-W5
(19 mm-100 kW/cm²)



UD19-200-H9
(19 mm-200 W)



UD25-350-H12
(25 mm-350 W)



UD55-700-HD
(55 mm-700 W)

HOW TO USE SENSOR DISKS

The Ultra Disks were designed for integration into laser systems. They are the solution if you are engineering the cooling and signal processing into your system already.

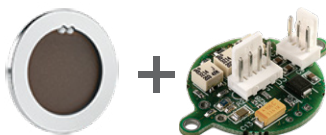
The chart below and on the next page show the various Possibilities that Gentec-EO offers to OEM users. The choice of a level of integration depends on your needs in terms of calibration, output signal level, cooling availability, etc.

1



Disk Alone
Thermal Sensor Disk

2



Disk + PCB
• Thermal Sensor Disk
• Amplification - Anticipation - Filtering

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SPECIFICATIONS

	UD10-2-H5-L	UD12-70-H5	UD19-50-W5	UD19-200-H9	UD25-350-H12	UD55-700-HD
MAX AVERAGE POWER (WATER-COOLED / FAN-COOLED)	2 W / 2 W	70 W / 30 W	50 W / 50 W	200 W / 110 W	350 W / 250 W	700 W / 400 W
EFFECTIVE APERTURE	10 mm Ø	12 mm Ø	19 mm Ø	19 mm Ø	25 mm Ø	55 mm Ø
MEASUREMENT CAPABILITY						
Spectral Range	0.19 – 20 µm	0.19 – 20 µm	0.19 – 10 µm	0.19 – 20 µm	0.19 – 20 µm	0.19 – 10 µm
Noise Equivalent Power	0.1 mW	1 mW	1 mW	3 mW	10 mW	45 mW
Rise Time (nominal) ^{a, b}	3.0 sec	1.6 sec	5 sec	4.5 sec	7.9 sec	14 sec
Sensitivity (typ into 100 kΩ load) ^b	2 mV/W	0.53 mV/W	0.65 mV/W	0.23 mV/W	0.1 mV/W	0.03 mV/W
Energy Mode						
Sensitivity	2.4 mV/J	0.84 mV/J	0.33 mV/J	0.23 mV/J	0.05 mV/J	0.008 mV/J
Maximum Measurable Energy ^c 3 J		5 J	200 J	25 J	40 J	200 J
Noise Equivalent Energy ^a	5 mJ	20 mJ	23 mJ	60 mJ	200 mJ	250 mJ
DAMAGE THRESHOLDS						
Maximum Average Power Density	36 kW/cm ²	36 kW/cm ²	100 kW/cm ²	45 kW/cm ²	45 kW/cm ²	45 kW/cm ²
Pulsed Laser Damage Thresholds						
1064 nm, 360 µs, 5 Hz	5 J/cm ²	5 J/cm ²	100 J/cm ²	9 J/cm ²	9 J/cm ²	9 J/cm ²
1064 nm, 7 ns, 10 Hz	1 J/cm ²	1 J/cm ²	1.1 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	1.1 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	0.7 J/cm ²	0.3 J/cm ²	0.3 J/cm ²	0.3 J/cm ²
PHYSICAL CHARACTERISTICS						
Absorber	H5	H5	W5	H9	H12	HD
Dimensions	44Ø x 3D mm	36Ø x 2D mm	44Ø x 3D mm	44Ø x 3D mm	54Ø x 3D mm	85Ø x 4D mm
Weight (head only)	7 g	4 g	7 g	7 g	13 g	180 g
ORDERING INFORMATION						
Product Name	UD10-2-H5-L	UD12-70-H5	UD19-50-W5	UD19-200-H9	UD25-350-H12	UD55-700-HD
Product Number	Call	200382	200761	200576	202378	Call

Specifications are subject to change without notice

a. These characteristics depend on the thermal management and electronics provided by the user. Packaging, cooling and electronics similar to our UP Series detectors will provide similar performances. See c. For 360 µs pulses. Higher pulse energy possible when customized for long pulses (ms), less for short pulses (ns).

b. Without anticipation algorithm or circuitry.

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

UP Series specifications sheets for more details. Actual performance depends on the tradeoffs in a user's design. It may be possible to enhance some performance parameters at the expense of others.