

# 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

## AVAILABLE MODELS



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



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



UD19-150-H5  
(19 mm-150 W)



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



UD25-300-H9/H12  
(25 mm-350 W)



UD55-400-H9/H12  
(55 mm-500 W)



UD19-50-W5  
(19 mm-100 kW/cm<sup>2</sup>)

## 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.

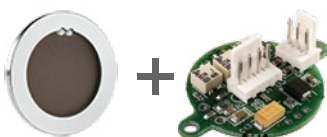
The chart below and on the next page show the various Possibilities that Gentec-EO offers to OEM users. The choice of a level of integration depends on your needs in terms of calibration, output signal level, cooling availability, etc.

1



Disk Alone  
Thermal Sensor Disk

2



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

## SEE ALSO

- HOW IT WORKS** **14**
- ABSORPTION CURVES** **92**
- LIST OF ALL ACCESSORIES** **188**

MONITORS

ENERGY DETECTORS

POWER DETECTORS

HIGH POWER SOLUTIONS

PHOTO DETECTORS

THZ DETECTORS

OEM DETECTORS

SPECIAL PRODUCTS

BEAM DIAGNOSTICS

## UD SERIES



## SPECIFICATIONS

	UD10-2-H5-L	UD12-70-H5	UD19-150-H5	UD19-200-H9	UD25-300-H9(H12)	UD55-400-H9(H12)	UD19-50-W5
<b>MAX AVERAGE POWER (CONTINUOUS / 1 MINUTE)</b>	2 W / 2 W	70 W / 110 W	150 W / 190 W	200 W / 200 W	300 W / 300 W (350 W / 350 W)	400 W / 400 W (500 W / 500 W)	50 W / 85 W
<b>EFFECTIVE APERTURE</b>	10 mm Ø	12 mm Ø	19 mm Ø	19 mm Ø	25 mm Ø	55 mm Ø	17 mm Ø
<b>MEASUREMENT CAPABILITY</b>							
Spectral Range	0.19 – 20 µm	0.19 – 20 µm	0.19 – 20 µm	0.19 – 20 µm	0.19 – 20 µm	0.19 – 20 µm	0.19 – 10 µm
Noise Equivalent Power	0.2 mW	1 mW	1 mW	3 mW	3 mW (10 mW)	5 mW (15 mW)	1 mW
Rise Time (nominal) <sup>a, b</sup>	2.7 sec	1.6 sec	2.8 sec	4.5 sec	5 sec (7.9 sec)	11 sec (18 sec)	5 sec
Sensitivity (typ into 100 kΩ load) <sup>b</sup>	2 mV/W	0.53 mV/W	0.65 mV/W	0.23 mV/W	0.23 mV/W (0.1 mV/W)	0.12 mV/W (0.06 mV/W)	0.65 mV/W
<b>Energy Mode</b>							
Sensitivity	---	0.84 mV/J	0.65 mV/J	0.23 mV/J	0.14 mV/J (0.05 mV/J)	0.028 mV/J (0.015 mV/J)	0.33 mV/J
Maximum Measurable Energy <sup>c</sup>	---	5 J	15 J	25 J	40 J	200 J	200 J
Noise Equivalent Energy <sup>a</sup>	---	20 mJ	20 mJ	60 mJ	200 mJ	250 mJ	23 mJ
<b>DAMAGE THRESHOLDS</b>							
Maximum Average Power Density	36 kW/cm <sup>2</sup>	36 kW/cm <sup>2</sup>	36 kW/cm <sup>2</sup>	45 kW/cm <sup>2</sup>	45 kW/cm <sup>2</sup>	45 kW/cm <sup>2</sup>	100 kW/cm <sup>2</sup>
<b>Pulsed Laser Damage Thresholds</b>							
1064 nm, 360 µs, 5 Hz	5 J/cm <sup>2</sup>	5 J/cm <sup>2</sup>	5 J/cm <sup>2</sup>	9 J/cm <sup>2</sup>	9 J/cm <sup>2</sup>	9 J/cm <sup>2</sup>	100 J/cm <sup>2</sup>
1064 nm, 7 ns, 10 Hz	1 J/cm <sup>2</sup>	1 J/cm <sup>2</sup>	1 J/cm <sup>2</sup>	1 J/cm <sup>2</sup>	1 J/cm <sup>2</sup>	1 J/cm <sup>2</sup>	1.1 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>	0.6 J/cm <sup>2</sup>	0.6 J/cm <sup>2</sup>	0.6 J/cm <sup>2</sup>	0.6 J/cm <sup>2</sup>	1.1 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>	0.3 J/cm <sup>2</sup>	0.3 J/cm <sup>2</sup>	0.3 J/cm <sup>2</sup>	0.3 J/cm <sup>2</sup>	0.7 J/cm <sup>2</sup>
<b>PHYSICAL CHARACTERISTICS</b>							
Absorber	H5	H5	H5	H9	H9/(H12)	H9/(H12)	W5
Dimensions	44Ø x 4D mm	36Ø x 2D mm	44Ø x 3P mm	44Ø x 3D mm	54Ø x 3D mm	85Ø x 4D mm	44Ø x 3D mm
Weight (head only)	7 g	4 g	7 g	7 g	13 g	39 g	7 g
<b>ORDERING INFORMATION</b>							
Product Name	UD10-2-H5-L	UD12-70-H5	UD19-150-H5	UD19-200-H9	UD25-300-H9	UD55-400-H9	UD19-50-W5
Product Number	202832	200382	200262	200576	200263	200264	200761
Product Name					UD25-350-H12	UD55-500-H12	
Product Number					202378	201220	

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 Ultra Series (UP) detectors will provide similar performances. See 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.
- 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).