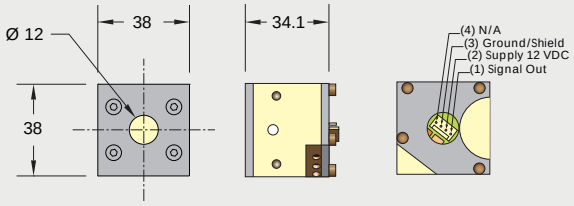
PRESENTATION

PRODUCT CHARACTERISTICS

Gentec-EO offers OEM customers the highest flexibility so that you make no compromise. Whether you want a different housing, a specific sensitivity or another output connector, we have a solution for you. We will customize existing models or design a whole new detector to meet your needs.

COMPACTNESS

As an OEM, we know space is often a constraint. This is why we offer very compact detectors to ease the integration inside machines. We have built our expertise on detector compactness on our exclusive modular design. Users can mix and match existing detectors and cooling modules from a large set of combinations, thus obtaining the smallest detector possible.



PERFORMANCE

If you select an Ultra Disk (UD Series), you can use our external PCB for signal anticipation, amplification and filtering. We can also integrate a PCB inside complete detectors. See the UP SERIES WITH PCB (Page 122) for details.

Anticipation	Amplification	Filtering
0-95% of the signal in as quickly as 0.3 sec with the small UD12-70-H5 and in 0.6 sec with the UD19-200-H5 using our external PCB.	Adjust your disk sensitivity to get the perfect voltage for your acquisition system. Disks can be adjusted from 0.6 to 2 V/W.	Eliminate the high frequency noise coming from the environment with the integrated low-pass filter of our PCB.

CONNECTIVITY

Gentec-EO offers you several types of output connectors, from the more standard DB-15, BNC and Molex to any exotic type you may need.

DB-15	BNC	Molex
This connector contains an EEPROM with custom calibration data for both Power and Energy Detectors.	The BNC output gives you fast, easy installation and the best EMI noise shielding. Perfect for the sensitive Energy Detectors.	With the Molex connector and pigtail, you join the power and signal wires of the pigtail to your system. Easy to unplug for service.

PRESENTATION

OVERVIEW OF THE DIFFERENT MODELS

Almost anything you see in our product line can be turned into an OEM unit! We also offer standard OEM products, at different levels of integration: from the simple thermopile disk to a complete head with internal PCB for signal anticipation and amplification.

See page 118

UD SERIES

- Thermal Sensor Disks
- Designed for Integration
- Many Sizes and Absorber Choices:
  - 12, 19, 25, and 55 mm Ø Apertures
  - Broadband or High Damage Threshold Coatings

THERMAL SENSOR DISKS

See page 120

UP SERIES

- Complete Thermal Heads with Cooling Modules
- Several Sizes, Coolings and Absorber Choices:
  - 12, 19, 25, 50 and 55 mm Ø Apertures
  - Broadband or High Damage Threshold Coatings
  - Convection, Fan or Water-Cooled
- BNC, Molex or DB-15 Connectors

THERMAL SENSOR HEADS

See page 122

UP SERIES WITH PCB

- Complete Thermal Heads with Cooling Modules
- Internal PCB for Amplification, Anticipation and Filtering
- Several Sizes, Coolings and Absorber Choices:
  - 12, 19, 25, 50 and 55 mm Ø Apertures
  - Broadband or High Damage Threshold Coatings
  - Convection, Fan or Water-Cooled
- BNC, Molex or DB-15 Connectors

THERMAL SENSOR HEADS WITH PCB

T 418.651.8003 1888 5GENTEC F 418.651.1174 www.gentec-eo.com info@gentec-eo.com

UD SERIES

Thermal Sensor Disks, 12 - 55 mm Ø, 1 mW - 400 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 12 mm to 55 mm

4 2 Levels of Integration
- Disk alone
- Disk + PCB

AVAILABLE MODELS

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

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

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

UD25-300-H9
(25 mm-300 W)

UD55-400-H9
(55 mm-400 W)

UD19-50-W5
(19 mm-100 kW/cm²)

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 avaibility, etc.

1

Disk Alone
- Thermal Sensor Disk

2

+

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

SEE ALSO

LIST OF ALL ACCESSORIES 174

UD SERIES

SPECIFICATIONS

MODELS	UD12-70-H5	UD19-150-H5	UD19-200-H9	UD25-300-H9	UD55-400-H9	UD19-50-W5
MAX AVERAGE POWER (CONTINUOUS / 1 MINUTE)	70 W / 110 W	150 W / 190 W	200 W / 200 W	300 W / 300 W	400 W / 400 W	50 W / 85 W
EFFECTIVE APERTURE	12 mm Ø	19 mm Ø	19 mm Ø	25 mm Ø	55 mm Ø	17 mm Ø
MEASUREMENT CAPABILITY						
Spectral Range	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	1 mW	1 mW	3 mW	3 mW	5 mW	1 mW
Rise Time (nominal) [a, b]	1.6 sec	2.8 sec	4.5 sec	5 sec	11 sec	5 sec
Sensitivity (typ into 100 kΩ load) [b]	0.53 mV/W	0.65 mV/W	0.23 mV/W	0.23 mV/W	0.12 mV/W	0.65 mV/W
Energy Mode						
Sensitivity	0.84 mV/J	0.65 mV/J	0.23 mV/J	0.14 mV/J	0.03 mV/J	0.33 mV/J
Maximum Measurable Energy [c]	5 J	15 J	25 J	40 J	200 J	200 J
Noise Equivalent Energy [a]	20 mJ	20 mJ	60 mJ	0.2 J	0.25 J	23 mJ
DAMAGE THRESHOLDS						
Maximum Average Power Density	36 kW/cm²	36 kW/cm²	45 kW/cm²	45 kW/cm²	45 kW/cm²	100 kW/cm²
Pulsed Laser Damage Thresholds						
1064 nm, 360 µs, 5 Hz	5 J/cm²	5 J/cm²	9 J/cm²	9 J/cm²	9 J/cm²	100 J/cm²
1064 nm, 7 ns, 10 Hz	1 J/cm²	1 J/cm²	1 J/cm²	1 J/cm²	1 J/cm²	1.1 J/cm²
532 nm, 7 ns, 10 Hz	0.6 J/cm²	0.6 J/cm²	0.6 J/cm²	0.6 J/cm²	0.6 J/cm²	1.1 J/cm²
266 nm, 7 ns, 10 Hz	0.3 J/cm²	0.3 J/cm²	0.3 J/cm²	0.3 J/cm²	0.3 J/cm²	0.7 J/cm²
PHYSICAL CHARACTERISTICS						
Absorber	H5	H5	H9	H9	H9	W5
Dimensions	36Ø x 2D mm	44Ø x 3D mm	44Ø x 3D mm	54Ø x 3D mm	85Ø x 4D mm	44Ø x 3D mm
Weight (head only)	4 g	7 g	7 g	13 g	39 g	7 g
ORDERING INFORMATION						
Full Product Name	UD12-70-H5	UD19-150-H5	UD19-200-H9	UD25-300-H9	UD55-400-H9	UD19-50-W5
Product Number (Including stand)	200382	200262	200576	200263	200264	200761

* Other Sizes Available Upon Request

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).

Specifications are subject to change without notice

T 418.651.8003 1888 5GENTEC F 418.651.1174 www.gentec-eo.com info@gentec-eo.com

UP SERIES

Thermal Sensor Heads, 12 - 55 mm Ø, 1 mW - 400 W

KEY FEATURES

1 Fully Integrable Thermopile Sensor Heads
OEM Sensors designed to integrate easily into existing systems

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

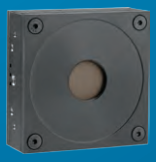
3 Very High Damage Thresholds
Up to 100 kW/cm² in average power density

4 Choice of connectors
DB-15, BNC, Molex

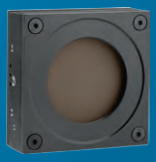
AVAILABLE MODELS

UP12E
(12 mm Ø-Up to 110 W)

UP19K-H
(19 mm Ø-Up to 200 W)



UP25N(M)
(25 mm Ø-Up to 350 W)



UP55N(M)
(55 mm Ø-Up to 500 W)

UP19K-W5
(18 mm Ø-100 kW/cm²)

UP50N(M)-W9
(50 mm Ø-100 kW/cm²)

LEVELS OF INTEGRATION

1

Head Only
- Thermal Sensor Head (with natural response)
- Connector

2

Head with PCB & Connector
- Thermal Sensor Head
- Amplification - Anticipation - Filtering
- Connector

3

Head & Display
- Thermal Sensor Head
- Connector
- Display

SEE ALSO

UP SERIES

SPECIFICATIONS

CE NIST* Traceable WEEE RoHS COMPLIANT

*Also traceable to NRC-CNRC

MODELS	UP12E	UP19K-H	UP25N-H	UP55N-H	UP19K-W5	UP50N-W9
MAX AVERAGE POWER (CONTINUOUS / 1 MINUTE)	70 W / 110 W	200 W / 200 W	350 W / 350 W	500 W / 500 W	50 W / 85 W	50 W / 85 W
EFFECTIVE APERTURE	12 mm Ø	19 mm Ø	25 mm Ø	55 mm Ø	17 mm Ø	50 mm Ø
MEASUREMENT CAPABILITY						
Spectral Range	0.19 – 20 µm	0.19 – 20 µm	0.19 – 20 µm	0.19 – 20 µm	0.19 – 10 µm	0.19 – 10 µm
Available Cooling Modules (Max. Power)						
Standalone (S)	10 W	15 W	40 W	40 W	15 W	40 W
Heatsink (H)	20 W	30 W	100 W	100 W	30 W	50 W
Large Heatsink (L)	–	50 W	–	–	50 W	–
Fan (F)	–	110 W	250 W	300 W	50 W	50 W
Water (W)	70 W	150 W	350 W	500 W	50 W	50 W
Water (W)	–	200 W	–	700 W	–	–
Noise Equivalent Power	1 mW	1-3 mW	3-10 mW	5-15 mW	1 mW	5 mW
Rise Time (nominal)	1.6 sec	2.8-4.5 sec	5-7.9 sec	11-18 sec	5 sec	16 sec
Sensitivity (typ into 10 MΩ load)	0.53 mV/W	0.23-0.65 mV/W	0.1-0.23 mV/W	0.06-0.12 mV/W	0.65 mV/W	0.12 mV/W
Maximum Average Power Density [b]	36 kW/cm²	36-45 kW/cm²	45 kW/cm²	45 kW/cm²	100 kW/cm²	100 kW/cm²
PHYSICAL CHARACTERISTICS						
Effective Aperture	12 mm Ø	19 mm Ø	25 mm Ø	55 mm Ø	17 mm Ø	50 mm Ø
Absorber	H5	H5/H9	H9/H12	H9/H12/HD	W5	W9
Dimensions [c]	38H x 38W x 14D mm	50H x 50W x 20.6D mm	89H x 89W x 32D mm	89H x 89W x 32D mm	50H x 50W x 20.6D mm	89H x 89W x 32D mm
Weight [c]	130 g	160 g	680 g	620 g	160 g	620 g
ORDERING INFORMATION						
Full Product Name (Standalone)	UP12E-10S-H5-DO	UP19K-15S-H5-DO	UP25N-40S-H9-DO	UP55N-40S-H9-DO	UP19K-15S-W5-DO	UP50N-40S-W9-DO
Product Number	200383	200142	200195	200215	200282	200803
Full Product Name (Heatsink)	UP12E-20H-H5-DO	UP19K-30H-H5-DO	UP25N-100H-H9-DO	UP55N-100H-H9-DO	UP19K-30H-W5-DO	UP50N-50H-W9-DO
Product Number	200385	200143	200199	200219	200284	200897
Full Product Name (Large Heatsink)	–	UP19K-50L-H5-DO	–	–	UP19K-50L-W5-DO	–
Product Number	–	200164	–	–	200331	–
Full Product Name (Fan)	–	UP19K-110F-H9-DO	UP25N-250F-H12-DO	UP55N-300F-H12-DO	UP19K-50F-W5-DO	UP50N-50F-W9-DO
Product Number	–	200994	201151	201157	200334	200894
Full Product Name (Water)	UP12E-70W-H5-DO	UP19K-150W-H5-DO	UP25M-350W-H12-DO	UP55M-500W-H12-DO	UP19K-50W-W5-DO	UP50M-50W-W9-DO
Product Number	200389	200194	201893	201882	200300	201887
Full Product Name (Water)	–	UP19K-200W-H9-DO	–	UP55M-700W-HD-DO	–	–
Product Number	–	200582	–	201908	–	–

* Other Sizes Available Upon Request

a. For model with the most efficient cooling module available.
b. At 1064 nm, 10 W CW.
c. For standalone version. Ask gentec-EO for dimensions of other versions.

Specifications are subject to change without notice

T 418.651.8003 1888 5GENTEC F 418.651.1174 www.gentec-eo.com info@gentec-eo.com

UP SERIES + PCB

Thermal Sensor Heads with Internal PCB, 12 - 55 mm Ø, 1 mW - 400 W

KEY FEATURES

1 Fully Integrable Thermopile Sensor Heads
OEM Sensors designed to integrate easily into existing systems

2 With Internal PCB
Integrated amplification, anticipation and filtering

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

4 Very High Damage Thresholds
Up to 100 kW/cm² in average power density

5 Largest Choice of connectors
DB-15, BNC, Molex or custom

AVAILABLE MODELS

- UP12E — 12 mm Ø, 10 W, With Rear Molex Output
- UP19K-H — 19 mm Ø, 15-30-50-110-150 W, Standard Broadband Coating (H5 or H9)
- UP25N — 25 mm Ø, 40-100-250-300 W, Standard Broadband Coating (H9 or H12)
- UP55N — 55 mm Ø, 40-100-300-400 W, Standard Broadband Coating (H9 or H12)
- UP19K-W5 — 17 mm Ø, 15-30-50 W, High Damage Threshold 100 kW/cm² Coating (W5)
- UP50N-W9 — 50 mm Ø, 40-50 W, High Damage Threshold 100 kW/cm² Coating (W9)

LEVELS OF INTEGRATION

1

Head Only
- Thermal Sensor Head (with natural response)
- Connector

2

Head with PCB & Connector
- Thermal Sensor Head
- Amplification - Anticipation - Filtering
- Connector

3

Head & Display
- Thermal Sensor Head
- Connector
- Display

SEE ALSO

UP SERIES + PCB

SPECIFICATIONS

CE NIST* Traceable WEEE RoHS COMPLIANT

*Also traceable to NRC-CNRC

MODELS	UP12E	UP19K-H	UP25N	UP55N	UP19K-W5	UP50N-W9
MAX AVERAGE POWER (CONTINUOUS / 1 MINUTE)	70 W / 110 W	200 W / 200 W	350 W / 350 W	700 W / 700 W	50 W / 85 W	50 W / 85 W
EFFECTIVE APERTURE	12 mm Ø	19 mm Ø	25 mm Ø	55 mm Ø	17 mm Ø	50 mm Ø
MEASUREMENT CAPABILITY						
Spectral Range	0.19 – 20 µm	0.19 – 20 µm	0.19 – 20 µm	0.19 – 20 µm	0.19 – 10 µm	0.19 – 10 µm
Available Cooling Modules (Max. Power)						
Standalone (S)	10 W	15 W	40 W	40 W	15 W	40 W
Heatsink (H)	–	30 W	100 W	100 W	30 W	50 W
Large Heatsink (L)	–	50 W	–	–	50 W	–
Fan (F)	–	110 W	250 W	300 W	50 W	–
Water (W)	–	150 W	350 W	500 W	50 W	85 W
Water (W)	–	200 W	–	700 W	–	–
Noise Equivalent Power	0.2 mW	0.2 mW	1-10 mW	2-15 mW	0.2 mW	3 mW
Rise Time (anticipated)	0.3 sec	0.5 sec	1.3 sec	2 sec	1.4 sec	3.5 sec
Sensitivity (typ into 10 MΩ load)	400 mV/W	30-400 mV/W	24-150 mV/W	15-150 mV/W	400 mV/W	120-150 mV/W
Maximum Average Power Density [b]	36 kW/cm²	36-45 kW/cm²	45 kW/cm²	45 kW/cm²	100 kW/cm²	100 kW/cm²
PHYSICAL CHARACTERISTICS						
Effective Aperture	12 mm Ø	19 mm Ø	25 mm Ø	55 mm Ø	17 mm Ø	50 mm Ø
Absorber	H5	H5/H9	H9/H12	H9/H12/HD	W5	W9
Dimensions [b]	38H x 38W x 28.6D mm	50H x 50W x 25.6D mm	89H x 89W x 32D mm	89H x 89W x 32D mm	50H x 50W x 25.6D mm	89H x 89W x 32D mm
Weight [b]	200 g	200 g	680 g	620 g	200 g	620 g
ORDERING INFORMATION [c]						
Full Product Name (Standalone)	UP12E-10S-H5-MT-B	UP19K-15S-H5-MT	UP25N-40S-H9-MT	UP55N-40S-H9-MT	UP19K-15S-W5-MT	UP50N-40S-W9-MT
Product Number	200919	200150	200197	200217	200290	200904
Full Product Name (Heatsink)	–	UP19K-30H-H5-MT	UP25N-100H-H9-MT	UP55N-100H-H9-MT	UP19K-30H-W5-MT	UP50N-50H-W9-MT
Product Number	–	200151	200201	200221	Call	200905
Full Product Name (Large Heatsink)	–	UP19K-50L-H5-MT	–	–	UP19K-50L-W5-MT	–
Product Number	–	200166	–	–	Call	–
Full Product Name (Fan)	–	UP19K-110F-H9-MT	UP25N-250F-H12-MT	UP55N-300F-H12-MT	UP19K-50F-W5-MT	–
Product Number	–	200640	201153	201159	Call	–
Full Product Name (Water)	–	UP19K-150W-H5-MT	UP25M-350W-H12-MT	UP55M-500W-H12-MT	UP19K-50W-W5-MT	UP50M-50W-W9-MT
Product Number	–	200152	201899	201918	Call	201919
Full Product Name (Water)	–	UP19K-200W-H9-MT	–	UP55M-700W-HD-MT	–	–
Product Number	–	200585	–	202144	–	–

* Other Sizes Available Upon Request

a. For model with the most efficient cooling module available.
b. For standalone version. Ask gentec-EO for dimensions of other versions.
c. For Molex connector version (-MT). Contact Gentec-EO for other types.

Specifications are subject to change without notice

T 418.651.8003 1888 5GENTEC F 418.651.1174 www.gentec-eo.com info@gentec-eo.com