

Peak Power Ultras

Ultra performance now extends to pulsed lasers with high peak power. You get the same compact and versatile detector as the rest of the Ultra family. This is the choice for pulsed lasers that deliver high peak power density that is too much for the robust Ultra surface absorbers. These detectors combine a broad-band high-energy volume absorber with our new Ultra disk technology. The result is a detector you can use from Deep UV to NIR that can handle peak powers up to 100 GW/cm². It is perfect for low repetition rate Q-switched lasers with high power pulses. With the fast ultra disk this detector responds faster than almost all other volume absorbing detectors on the market. It has the same mounting flexibility as all other Ultras. In addition, it comes with an NIST traceable wavelength correction that is measured uniquely for each detector. In calorimeter mode it is excellent for high energy single-shot lasers. All models can be equipped with fiber adapters and can be used with any Gentec-EO monitor.

OEM Ultras

The large Ultra family, including these high peak power detectors, accommodates a wide range of OEM requirements. Use a Gentec-EO monitor or your own electronics (requires our internal circuit board). We offer several output signal options and several output connector options. Contact Gentec-EO for more information on the OEM versions. If we don't already have what you need we will provide you with a custom solution.

Replacement Volume Absorbers

Volume absorbers can withstand from hundreds of MW/cm² to GW/cm² of peak power density by spreading the energy through a volume rather than on a surface. Too much average power though, (repetition rate too high for example) can crack the material. Irregular and non-circular beams can have spikes of energy that may also damage the glass. Accidentally hitting the aperture with a tool might damage it. Whatever the reason, we know how important it is for you to have as little downtime as possible. We provide replacement absorbers to give you the option to replace the absorber in the field.



UP19K-30H-VM



UP19K-15S-VM

POWER DETECTORS

High Peak Power

- Compact size
- Full NIST traceability
- Peak Power Density to 100 GW/cm²
- Suitable for OEM applications
- Smart Interface



HIGH PEAK POWER ULTRA SERIES SPECIFICATIONS

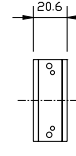
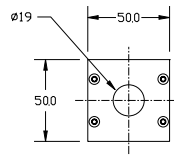
TYPICAL LASERS

- AgF, ArF
- KrCl, KrF
- Q-switched Nd: YAG harmonics
- Flash lamp pulsed YAG
- XeCl, XeF
- Pulsed Dye lasers
- Ruby
- Alexandrite

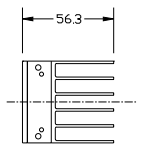
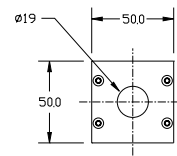
COMMON APPLICATIONS

- Gynecology
- Ophthalmology
- Oncology
- Angioplasty
- Dentistry
- Plastic Surgery
- Laser cleaning, restoration
- Photolithography
- UV Micromachining
- Annealing
- Seam welding
- Microelectronics soldering
- Resistor trimming
- Photodeposition

15S-VM



30H-VM



All dimensions in mm

15S-VM

30H-VM

MEASUREMENT CAPABILITY

	15S-VM	30H-VM
Spectral range	0.19 -2.5 μm	0.19 -2.5 μm
Maximum Measurable Power	15 W	30 W
Minimum Measurable Power	20 mW	20 mW
Minimum Detectable Power ^a	1 mW	1 mW
Rise Time (nominal) ^b	1.8 sec	1.8 sec
Sensitivity ^c	0.8 mV/W	0.8 mV/W
Calibration Uncertainty ^d	$\pm 2.5\%$	$\pm 2.5\%$
Repeatability	$\pm 0.5\%$	$\pm 0.5\%$
Power Resolution	$\pm 0.5\%$	$\pm 0.5\%$
Calorimeter Mode		
Sensitivity	0.26 mV/J	0.26 mV/J
Maximum Measurable Energy ^e	28 J	28 J
Minimum Measurable Energy	550 mJ	550 mJ
Minimum Repetition Period	8 sec	8 sec
Maximum Pulse Width	300 ms	300 ms
Accuracy with energy calibration option	$\pm 5\%$	$\pm 5\%$
Beam Size Dependence ^f	$\pm 0.5\%$	$\pm 0.5\%$

DAMAGE THRESHOLDS

	15S-VM	30H-VM
Max Average Power (continuous)	15 W	30 W
Max Average Power (2 minutes)	23 W	40 W
Maximum Average Power Density ^g	110 W/cm ²	
Pulsed Laser Damage Thresholds	Max Energy Density	Peak Power Density
1.064 μm , 360 μs , 10 Hz	11 J/cm ²	30 kW/cm ²
1.064 μm , 7 ns, 10 Hz	4 J/cm ²	571 MW/cm ²
532 nm, 7 ns, 10 Hz	3 J/cm ²	428 MW/cm ²
266 nm, 7 ns, 10 Hz	1 J/cm ²	143 MW/cm ²
Maximum Peak Power Density ^h	100 GW/cm ²	100 GW/cm ²

PHYSICAL CHARACTERISTICS

	15S-VM	30H-VM
Effective aperture diameter	18 mm \emptyset	
Absorber	High Peak Power – VM	
Dimensions	50 H x 50 W x 20.6 D mm	50 H x 50 W x 56.3 D mm
Weight (head only)	0.16 kg	0.21 kg
Effective Area	2.54 cm ²	2.54 cm ²

a. Nominal value, actual value depends on electrical noise in the measurement system.
 b. With Gentec-EO TPM 300CE, DUO or SOLO monitor.
 c. Maximum output voltage = sensitivity x maximum power
 d. Including linearity with power.

e. At 1.064 μm , 360 μs , 10 Hz. Higher pulse energy possible when customized for long pulses (ms), less for short pulses (ns). Contact Gentec-EO.
 f. Beam centered.
 g. At 1064 nm.
 h. For picosecond and femtosecond pulses.

Specifications subject to change without notice



GENTEC ELECTRO-OPTICS INC.
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