

HP

Up to 100 mm Ø, 100 W – 12 000 W



KEY FEATURES

1. **HIGH POWER HANDLING**
Handles up to 12 kW of continuous power with our standard models. Custom models available for higher powers (See SUPER HP)
2. **STABLE READING**
Less sensitive to variations in water cooling temperature than any other high power water-cooled meter on the market
3. **LARGE APERTURE**
Our standard HP models (4kW and 12kW) have a very large effective aperture of 100 mm Ø to accommodate large laser beams. Larger apertures with various shapes are available upon request (See SUPER HP)
4. **SPECIAL MODEL FOR SMALL BEAMS**
10 kW model with reflective cone available. Perfect for small beams (with Avg Power Densities up to 10 kW/cm² @ 10 kW)
5. **AVAILABLE WITH YAG AND CO₂ CALIBRATIONS**
All HP Models can be calibrated at YAG and CO₂ wavelengths with a calibration uncertainty of ± 2.5%
6. **DIRECT USB CONNECTION TO A PC**
Each head comes with both a DB-15 connector (for use with a Gentec-EO monitor) and a USB2.0 output for direct connection to a PC

AVAILABLE MODELS



HP100A-4KW-HE
(4000W-Water-Cooled)



HP100A-12KW-HD
(12000W-Water-Cooled)



HP60A-10KW-GD
(10000W-Small Beams)

ACCESSORIES



Stand with Steel Post
(Model Number: 201102)



Extension Cables
(4, 15, 20 or 25 m)



5 m USB Cable
(Included)



Pelican Carrying Case

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MONITORS

ENERGY DETECTORS

POWER DETECTORS

HIGH POWER SOLUTIONS

PHOTO DETECTORS

THZ DETECTORS

OEM DETECTORS

SPECIAL PRODUCTS

BEAM DIAGNOSTICS

HP



*Also traceable to NRC-CNRC

SPECIFICATIONS

	HP100A-4KW-HE	HP100A-12KW-HD	HP60A-10KW-GD
MAX AVERAGE POWER (CONTINUOUS / 2 MINUTES)	4 000 W / 4 500 W	12 000 W / 12 000 W	10 000 W / 10 000 W High Average Power up to 10 kW/cm ²
EFFECTIVE APERTURE	100 mm Ø	100 mm Ø	60 mm Ø with cone reflector
COOLING METHOD	Water-Cooled	Water-Cooled	Water-Cooled
MEASUREMENT CAPABILITY			
Spectral Range	0.19 – 20 µm	0.19 – 20 µm	0.8 – 12 µm
Noise Equivalent Power ^a	±3 W	±10 W	±10 W
Minimum Average Power ^b	100 W	300 W	300 W
Rise Time (nominal)	7 sec	9 sec	11 sec
Sensitivity (typ into 100 kΩ load)	0.4 mV/W	0.15 mV/W	0.2 mV/W
Calibration Uncertainty	±5 % @ 1064 nm	±5 % @ 1064 nm	±5 % @ 1064 nm
Repeatability	±2 %	±2 %	±2 %
Linearity with Power	±1.5 %	±1.5 %	±2 %
Linearity vs Beam Diameter	±1 %	±1 %	< 35 mm Ø: ±0.5 % > 35 mm Ø: ±1.5 %
Linearity vs Beam Position	±1.5 %	±1.5 % ^c / ±3 % ^d	±3 %
DAMAGE THRESHOLDS			
Maximum Average Power Density ^e			
500 W	10 kW/cm ²	16 kW/cm ²	---
4 kW	4 kW/cm ²	---	---
5 kW	---	6.5 kW/cm ²	---
10 kW	---	3.5 kW/cm ²	< 35 mm Ø: 10 kW/cm ² > 35 mm Ø: 3.5 kW/cm ²
PHYSICAL CHARACTERISTICS			
Effective Aperture	100 mm Ø	100 mm Ø	60 mm Ø (Optimized for 35 mm Ø)
Absorber (High Damage Threshold)	HE	HD	GD (cone reflector)
Required Cooling Flow	(4 - 6) LPM < ±1 LPM/min ^f	(6 - 10) LPM < ±1 LPM/min ^f	(6 - 10) LPM < ±1 LPM/min ^f
Temperature of Cooling Water	(15 - 25) °C < ±3°C/min ^f	(15 - 25) °C < ±3°C/min ^f	(15 - 25) °C < ±3°C/min ^f
Output Connectors	DB-15 cable & USB port	DB-15 cable & USB port	DB-15 cable & USB port
PCB Electrical Supply	Through USB or Gentec-EO monitors	Through USB or Gentec-EO monitors	Through USB or Gentec-EO monitors
Maximum Output Signal	2 V	2 V	2 V
Dimensions	127H x 127W x 74D mm	127H x 127W x 70D mm	127H x 127W x 90D mm
Weight (head only)	1.8 kg	3.3 kg	5 kg
ORDERING INFORMATION			
Product Name	HP100A-4KW-HE	HP100A-12KW-HD	HP60A-10KW-GD
Product Number (Including stand)	202208	201329	201306

Specifications are subject to change without notice

- a. Nominal value, actual value depends on electrical noise in the measurement system.
 b. For lower powers, call your Gentec-EO representative.
 c. For a beam size of 10% of the aperture area, moved across 40% of the aperture area.
 d. For a beam size of 20% of the aperture area, moved across 80% of the aperture area.
 e. At 1064 nm, 1.07-1.08 µm and 10.6 µm.
 f. > 1 min. Contact Gentec-EO for clean deionized water cooling module option.