

# HP

Up to 125 x 125 mm, 100 W – 15 000 W



## KEY FEATURES

- 1. HIGH POWER HANDLING**  
Handles up to 15 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 other high power water-cooled meters on the market
- 3. LARGE APERTURE**  
Our standard HP models (4KW, 12KW and 15KW) have very large effective apertures of 100 mm Ø and 125 x 125 mm to accommodate large laser beams. Larger apertures with various shapes are available upon request (See SUPER HP)
- 4. AVAILABLE WITH YAG AND CO<sub>2</sub> CALIBRATIONS**  
All HP Models can be calibrated at YAG and CO<sub>2</sub> wavelengths with a calibration uncertainty of ± 5%
- 5. DIRECT USB CONNECTION TO A PC**  
Each head comes with both a DB-15 connector (for use with a Gentec-EO monitor) and a USB output for direct connection to a PC
- 6. TRACK WATER PARAMETERS**  
Water flow and temperature are monitored in real time and displayed continuously

## AVAILABLE MODELS



HP100A-4KW-HE and  
HP100A-12KW-HD  
(4000W and 12000W-Water-Cooled)



HP125A-15KW-HD  
(15000W-Water-Cooled)



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

### NOW AVAILABLE!



### TUBE EXTENSION TO REDUCE BACK REFLECTIONS

The 4KW and 12KW models can be fitted with a 70 mm aperture water-cooled absorbing TUBE to reduce the back reflections below 4%. The TUBE extension is backward compatible so you can send your already purchased HP detector to be retrofitted\*.

\* The HP detector needs to be sent back to be retrofitted and recalibrated (Calibration is included)

## ACCESSORIES



Stand with Steel Post  
(Model Number: 201102)



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



5 m USB Cable  
(Included)



Water Filter  
(Metric: 202984, Imperial: 202990)



Pelican Carrying Case

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Watch the Introduction video available on our website at [www.gentec-eo.com](http://www.gentec-eo.com)

\* A USB Power Adaptor will be necessary if the HP is used with a DB-15 Extension Cable.

HP



\*Also traceable to NRC-CNRC

## SPECIFICATIONS

	HP100A-4KW-HE		HP100A-12KW-HD		HP125A-15KW-HD		HP60A-10KW-GD	
<b>MAX AVERAGE POWER</b>	4 000 W		12 000 W		15 000 W		10 000 W High Average Power up to 10 kW/cm <sup>2</sup>	
<b>EFFECTIVE APERTURE</b>	100 mm Ø (70 mm Ø with tube)		100 mm Ø (70 mm Ø with TUBE)		125 x 125 mm		60 mm Ø with cone reflector	
<b>COOLING METHOD</b>	Water-Cooled		Water-Cooled		Water-Cooled		Water-Cooled	
<b>MEASUREMENT CAPABILITY</b>								
Spectral Range	0.19 – 20 µm		0.19 – 20 µm		0.19- 20 µm		0.8 – 12 µm	
Noise Equivalent Power <sup>a</sup>	±3 W		±10 W		± 15 W		±10 W	
Minimum Average Power <sup>b</sup>	100 W		300 W		500 W		300 W	
Rise Time (nominal)	7 sec		9 sec		15 sec		11 sec	
Back Reflections	Alone	with TUBE	Alone	with TUBE	Alone	TUBE	Alone	TUBE
	10-15%	<4%	10-15%	<4%	10-15%		N/A	
Sensitivity (typ into 100 kΩ load)	0.4 mV/W		0.15 mV/W		0.13 mV/W		0.2 mV/W	
Calibration Uncertainty	±5 % @ 1064 nm		±5 % @ 1064 nm		±5 % @ 1064 nm		±5 % @ 1064 nm	
Repeatability	±2 %		±2 %		±2 %		±2 %	
Linearity with Power	±1.5 %		±1.5 %		±2 %		±2 %	
Linearity vs Beam Diameter	±1 %		±1 %		±1 %		< 35 mm Ø: ±0.5 % > 35 mm Ø: ±1.5 %	
Linearity vs Beam Position	±1.7 % <sup>c</sup>		±1.7 % <sup>c</sup>		±1.0 % <sup>c</sup>		±3 % <sup>c</sup>	
<b>DAMAGE THRESHOLDS</b>								
Maximum Average Power Density <sup>d</sup>								
500 W	10 kW/cm <sup>2</sup>		16 kW/cm <sup>2</sup>		16 kW/cm <sup>2</sup>		---	
4 kW	4 kW/cm <sup>2</sup>		---		---		---	
5 kW	---		6.5 kW/cm <sup>2</sup>		6.5 kW/cm <sup>2</sup>		---	
10 kW	---		3.5 kW/cm <sup>2</sup>		3.5 kW/cm <sup>2</sup>		< 35 mm Ø: 10 kW/cm <sup>2</sup> > 35 mm Ø: 3.5 kW/cm <sup>2</sup>	
15 kW	---		---		1.5 kW/cm <sup>2</sup>		---	
<b>PHYSICAL CHARACTERISTICS</b>								
Effective Aperture	Alone	with TUBE	Alone	with TUBE	Alone	TUBE	Alone	TUBE
	100 mm Ø	70 mm Ø	100 mm Ø	70 mm Ø	125 x 125 mm		60 mm Ø (Optimized for 35 mm Ø)	
Absorber (High Damage Threshold)	HE		HD		HD		GD (cone reflector)	
Required Cooling Flow	(4 - 6) LPM < ±1 LPM/min <sup>e</sup>		(6 - 10) LPM < ±1 LPM/min <sup>e</sup>		(8 - 10) LPM < ±1 LPM/min <sup>e</sup>		(6 - 10) LPM < ±1 LPM/min <sup>e</sup>	
Cooling Water								
Temperature Range	15 – 25 °C		15 – 25 °C		15 – 25 °C		15 – 25 °C	
Rate of Temperature Change	< ±3°C/min		< ±3°C/min		< ±3°C/min		< ±3°C/min	
Maximum Water Pressure (input)	413 kPa (60 psi)		413 kPa (60 psi)		413 kPa (60 psi)		413 kPa (60 psi)	
Output Connectors	DB-15 cable & USB port		DB-15 cable & USB port		DB-15 cable & USB port		DB-15 cable & USB port	
PCB Electrical Supply	Through USB or Gentec-EO monitors <sup>f</sup>		Through USB or Gentec-EO monitors <sup>f</sup>		Through USB or Gentec-EO monitors <sup>f</sup>		Through USB or Gentec-EO monitors <sup>f</sup>	
Maximum Output Signal	2 V <sup>g</sup>		2 V <sup>g</sup>		2 V <sup>g</sup>		2 V <sup>g</sup>	
Dimensions	Alone	with TUBE	Alone	with TUBE	Alone	TUBE	Alone	TUBE
	127H x 127W x 74D mm	127H x 127W x 234D mm	127H x 127W x 70D mm	127H x 127W x 230D mm	153H x 153W x 70D mm		127H x 127W x 90D mm	
Weight (head only)	1.8 kg		3.3 kg		5 kg		5 kg	
<b>ORDERING INFORMATION</b>								
Product Name	Alone	with TUBE	Alone	with TUBE				
	HP100A-4KW-HE	-TUBE-D0	HP100A-12KW-HD	-TUBE-D0	HP125A-15KW-HD		HP60A-10KW-GD	
Product Number (without stand)	202207		203151		201328		202687	
					202631		201305	

Specifications are subject to change without notice // Compatible stand: P/N 201102

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 20% of the aperture area, moved across 80% of the aperture area.

d. At 1064 nm, 1.07-1.08 µm and 10.6 µm.

e. &gt; 1 min. contact gentec-EO for deionized water cooling module option.

f. A USB power adaptor will be necessary if the hp is used with a db-15 extension cable.

g. 12 V maximum output signal available upon request