

HP100

Up to 125 x 125 mm, 100 W - 15 kW



KEY FEATURES

- > **HIGH POWER HANDLING**
Handles up to 15 kW of continuous power with our standard models. Custom models available for higher powers (See SUPER HP)
- > **LARGE APERTURE**
Our standard HP models have very large effective apertures to accommodate large laser beams. Larger apertures with various shapes are available upon request (See SUPER HP)
- > **AVAILABLE WITH YAG AND CO₂ CALIBRATIONS**
All HP Models can be calibrated at YAG and CO₂ wavelengths with a calibration uncertainty of $\pm 5\%$
- > **DIRECT USB CONNECTION TO A PC**
Each head comes with both a DB15 connector (for use with a Gentec-EO display device) and a USB output for direct connection to a PC
- > **TRACK WATER PARAMETERS**
Water flow and temperature are monitored in real time and displayed continuously

OUTPUT OPTIONS

- > **SMART DB15 CONNECTOR**
Contains all the calibration data
- > **USB PORT**
 - Connects directly to a PC
 - Included in all HP models
- > **CUSTOM OPTION: RS-232**
Contact your Gentec-EO representative to configure your available connectors

COMPATIBLE DISPLAYS & PC INTERFACES



MAESTRO



TUNER



UNO

ACCESSORIES



Stand with steel post



Extension cables
(4, 15, 20 or 25 m)*



5 m USB cable
(included)



Water filter
(Metric: 202984, Imperial: 202990)



Pelican carrying case

*A USB power adaptor will be necessary if the HP is used with a DB15 extension cable.



	HP100A-4KW-HE	HP100A-4KW-HE-TUBE	HP100A-12KW-HD	HP100A-12KW-HD-TUBE	HP125A-15KW-HD	HP125A-15KW-HD-TUBE
MAX AVERAGE POWER	4000 W	4000 W	12 000 W	12 000 W	15 000 W	15 000 W
EFFECTIVE APERTURE	100 mm ϕ	70 mm ϕ	100 mm ϕ	70 mm ϕ	125 x 125 mm	70 mm ϕ
COOLING METHOD	Water-cooled	Water-cooled	Water-cooled	Water-cooled	Water-cooled	Water-cooled

MEASUREMENT CAPABILITY

Spectral range	0.19 - 20 μ m	0.19 - 20 μ m	0.19 - 20 μ m	0.19 - 20 μ m	0.19 - 20 μ m	0.19 - 20 μ m
Calibrated spectral range ^a	0.248 - 2.1 μ m	0.248 - 2.1 μ m	0.248 - 2.1 μ m	0.248 - 2.1 μ m	0.248 - 2.1 μ m	0.248 - 2.1 μ m
Noise equivalent power ^b	± 3 W	± 3 W	± 10 W	± 10 W	± 15 W	± 15 W
Minimum average power ^c	100 W	100 W	300 W	300 W	500 W	500 W
Rise time (nominal)	7 s	7 s	9 s	9 s	15 s	15 s
Back reflections	10-15%	< 4%	10 - 15%	< 4%	10 - 15%	2 - 4%
Calibration uncertainty ^d	± 5	$\pm 5\%$	$\pm 5\%$	$\pm 5\%$	$\pm 5\%$	$\pm 5\%$
Repeatability	$\pm 2\%$	$\pm 2\%$	$\pm 2\%$	$\pm 2\%$	$\pm 2\%$	$\pm 2\%$
Linearity with power	$\pm 1.5\%$	$\pm 1.5\%$	$\pm 1.5\%$	$\pm 1.5\%$	$\pm 2\%$	$\pm 2\%$
Linearity vs beam diameter	$\pm 1\%$	$\pm 1\%$	$\pm 1\%$	$\pm 1\%$	$\pm 1\%$	$\pm 1\%$
Linearity vs beam position ^e	$\pm 1.7\%$	$\pm 1.7\%$	$\pm 1.7\%$	$\pm 1.7\%$	$\pm 1.0\%$	$\pm 1.0\%$

DAMAGE THRESHOLDS

Maximum average power density ^f

500 W	10 kW/cm ²	10 kW/cm ²	16 kW/cm ²	16 kW/cm ²	16 kW/cm ²	16 kW/cm ²
4 kW	4 kW/cm ²	4 kW/cm ²	---	---	---	---
5 kW	---	---	6.5 kW/cm ²	6.5 kW/cm ²	6.5 kW/cm ²	6.5 kW/cm ²
10 kW	---	---	3.5 kW/cm ²	3.5 kW/cm ²	3.5 kW/cm ²	3.5 kW/cm ²
15 kW	---	---	---	---	1.5 kW/cm ²	1.5 kW/cm ²

PHYSICAL CHARACTERISTICS

Effective aperture	100 mm ϕ	70 mm ϕ	100 mm ϕ	70 mm ϕ	125 x 125 mm	70 mm
Absorber (high damage threshold)	HE	HE	HD	HD	HD	HD
Cooling water						
Required cooling flow ^g	(4 - 6) LPM < ± 1 LPM/min	(4 - 6) LPM < ± 1 LPM/min	(6 - 10) LPM < ± 1 LPM/min	(6 - 10) LPM < ± 1 LPM/min	(8 - 10) LPM < ± 1 LPM/min	(8 - 10) LPM < ± 1 LPM/min
Temperature range	15 - 25 $^{\circ}$ C	15 - 25 $^{\circ}$ C	15 - 25 $^{\circ}$ C	15 - 25 $^{\circ}$ C	15 - 25 $^{\circ}$ C	15 - 25 $^{\circ}$ C
Rate of temperature change	< $\pm 3^{\circ}$ C/min	< $\pm 3^{\circ}$ C/min	< $\pm 3^{\circ}$ C/min	< $\pm 3^{\circ}$ C/min	< $\pm 3^{\circ}$ C/min	< $\pm 3^{\circ}$ C/min
Maximum water pressure (input)	413 kPa (60 psi)	413 kPa (60 psi)	413 kPa (60 psi)	413 kPa (60 psi)	413 kPa (60 psi)	413 kPa (60 psi)
Dimensions	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	153H x 153W x 272D mm
Weight (head only)	1.8 kg	6.0 kg	3.3 kg	7.5 kg	5 kg	10 kg

ORDERING INFORMATION

Available output options	DB15 & USB	DB15 & USB	DB15 & USB	DB15 & USB	DB15 & USB	DB15 & USB
Compatible stand	STAND-S-443-C	2x STAND-S-443-C	STAND-S-443-C	2x STAND-S-443-C	2x STAND-S-443-C	3x STAND-S-443-C
Product page						

- a. Calibrations at 2.1 to 2.5 μ m and 10.6 μ m are available on special request.
b. Nominal value, actual value depends on electrical noise in the measurement system.
c. For lower powers, call your Gentec-EO representative.
d. At 1064 nm and 1070 nm.
e. For a beam size of 20 % of the aperture area, moved across 80 % of the aperture area.
f. At 1064 nm, 1.07-1.08 μ m and 10.6 μ m.
g. > 1 min. Contact Gentec-EO for deionized water cooling module option.