



## GAIA HP

Flashlamp-Pumped Nd:YAG Series

### FEATURES

- 24 J at 1064 nm
- 16 J at 532 nm
- Up to 5 Hz repetition rate
- Unmatched beam profile
- 1 or 2 beams
- Easy maintenance
- Computer control
- Single box compact design

### APPLICATIONS

- Ideal pump laser for ultrafast TW and PW systems
- Laser shock processing
- Si annealing
- Large area ablation



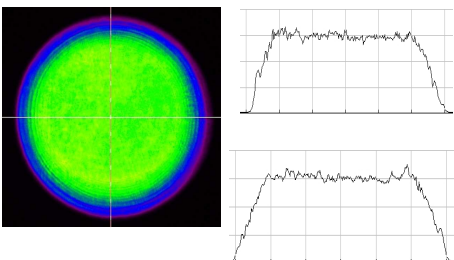
### 15 J at 532 nm, 5 Hz: the best Nd:YAG technology available

GAIA HP pushes forward the limits of output energy reachable at high repetition rates. This Nd:YAG laser delivers indeed more than 24J at 1064 nm and 16J at 532 nm in a single beam with repetition rates of 5Hz.

Thanks to its high efficiency, GAIA HP is compact and offers easy operation and maintenance.

It combines the best characteristics for many industrial applications: short pulse duration and high energy to offer high intensity pulses, very low modulations to have a uniform stress, high repetition rate for a faster process, unprecedented energy stability and excellent beam pointing stability.

GAIA HP was also specially designed for high energy Ti:Sa amplifiers pumping and offers a unique solution for ultrafast Terawatt and Petawatt systems. It demonstrates a top-hat beam profile with very low peak-to-valley spatial modulations, reproducible beam profile, a very limited beam distortion along propagation and a short pulse duration to avoid pre-lasing in the Ti:Sa amplifiers and to limit ASE.



Typical GAIA HP beam profile at 532 nm

# GAIA HP

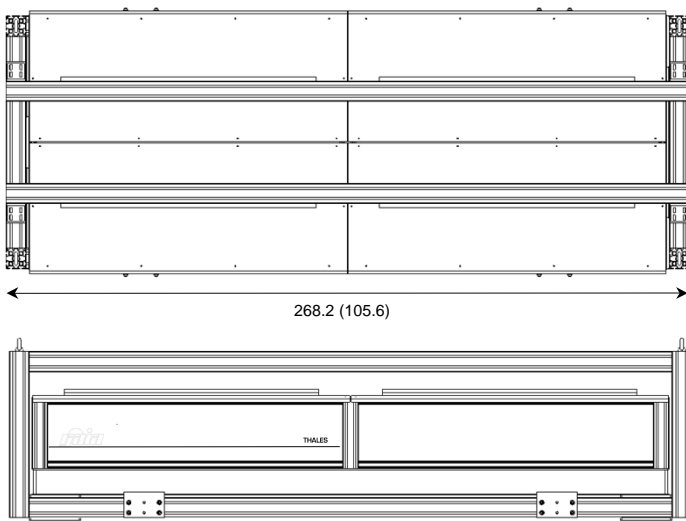
## Flashlamp-Pumped Nd:YAG Series

### Specifications

Wavelength (nm)	1064*	532*
Repetition rate	Up to 5 Hz	Up to 5 Hz
Energy per pulse	24 J	16 J
Pulse to pulse energy stability (% rms)	1%	1.2%
Pulse duration FWHM	2 pulses of 7-10 ns	2 pulses of 7-10 ns
Time jitter (ns)	+/- 1	+/- 1
Polarization	50% Vertical 50% Horizontal	Vertical
Beam diameter (mm)	~ 23	~ 23
Divergence (mrad) **	0.15	0.15
Beam pointing stability (μrad)	+/- 50	+/- 50
Spatial beam profile (near field)	Top hat	Top hat
Power consumption (@ 5Hz)	23.5 kW	23.5 kW

\* Available option: 2 output beams // \*\* High M<sup>2</sup> version on request

### Physical characteristics (Size\*: H x W x L)



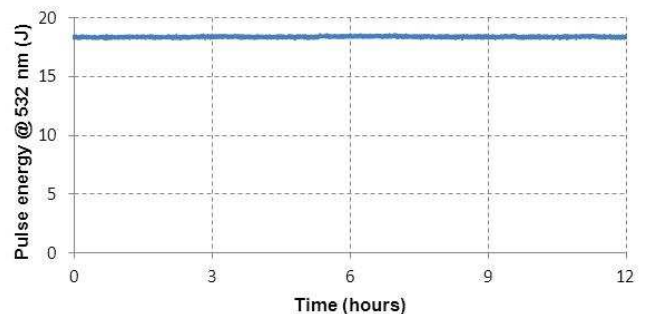
Power supply	182 (71.6) x 56 (22) x 78 (30.7)
Cooling unit	60 (23.6) x 44.5 (17.5) x 83 (32.7)
Laser Head	66 (26) x 103 (40.6) x 268.2 (105.6)

\* Dimensions are given in cm (in)

### Utilities and environment requirements

Voltage	208 – 230 VAC +/-5% single φ	
Frequency	50 – 60 Hz	
Water Flow	> 15 L/min	> 4 gal /min
	Static pressure	3-5 bars 43.5-72 psi
Temperature	10-20 C	
Operating systems	Windows 98, 2000, NT, XP	

### Long term stability @ 18J of GAIA HP green over 12 hours



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