GAIA-I

Flashlamp-Pumped Nd:YAG Series

FEATURES

- High M^2 and Low M^2 version
- 12 J at 1064 nm
- 8 J at 532 nm
- 6 J at 355 nm
- Up to 5 Hz repetition rate
- Very high beam quality
- Compact and rugged industrial design
- Easy maintenance
- Computer control

APPLICATIONS

- Laser shock processing
- Silicon annealing
- Large area ablation
- Satellite ranging

8 J at 532 nm with a Top Hat beam profile

GAIA-I laser pushes forward the limits of output energy reachable at high repetition rates with high reliability and pulse stability. This Nd:YAG laser, specifically ruggedized for industrial applications, delivers 8J at 532 nm in a single beam with repetition rates up to 5Hz.

Now available in high M^2 version, GAIA-I is perfectly adapted to beam shaping optics (refractive or diffractive). Thanks to its very low spatial coherence the shaped laser beam can reach outstanding low spatial modulations.

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

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Specifications

Version	Low M²			High M²		
Wavelength (nm)	1064	532	355	1064	532	355
Repetition rate	Up to 5 Hz			Up to 5 Hz		
Energy per pulse	10 J	8 J	6 J	8 J	6 J	4 J
Pulse to pulse energy stability (% rms)	1.0	1.2	1.5	0.5	0.5	1
Pulse duration FWHM	7 – 10 ns			7 – 10 ns		
Time jitter (ns)	+ / - 1			+ / - 1		
Polarization	Linear			Linear		
Beam diameter (mm)	22			22		
M²	< 5			On Request		
Beam pointing stability(µrad)	+/- 50			+/- 50		
Spatial beam profile (near field)	Top hat			Top hat		
Power Consumption (@ 5 Hz)	10 kW			10 kW		

Utilities and environment requirements

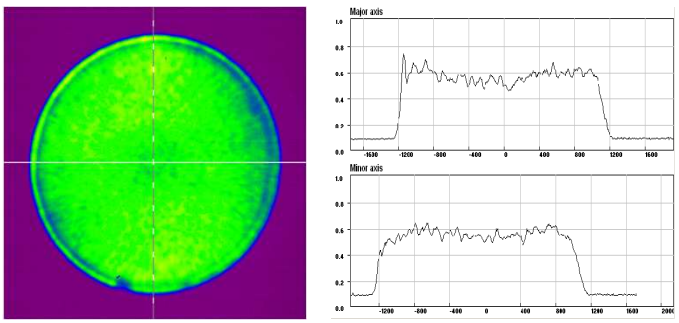
Voltage		208 – 230 VAC +/-5% single ϕ	
Frequency		50 – 60 Hz	
Water	Flow	> 15 L/min	> 4 gal /min
	Static pressure	3-5 bars	43.5-72 psi
	Temperature	10-20 C	
Operating systems		Windows 98, 2000, NT, XP	

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

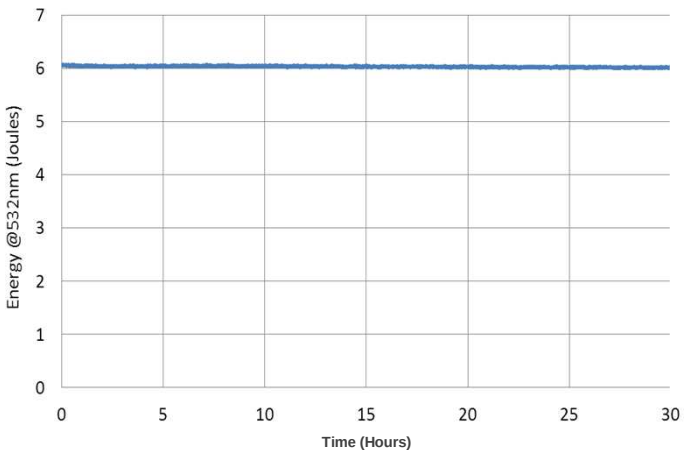
Power supply	100 (39.4) x 56 (22) x 78 (30.7)
Cooling unit	60 (23.6) x 44.5 (17.5) x 83 (32.7)
Laser Head	34 (13.4) x 57 (22.4) x 117 (46.1)

*Dimensions are given in cm (in)

Near field beam profile @ 532 nm (High M² version)



Long term stability over 30 hours (High M² version)



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