Photonics Industries International, Inc.

DMX YAG Green Series Lasers

www.photonix.com

Overview

Owing to its intra-cavity patented technologies, the DMX YAG Green Series diode pumped laser has the simplest, most efficient design in a monolithic platform, while producing high power at 532 nm (up to 200W from single head and up to 400W from dual head) at kHz repetition rates.

In addition to its simple, efficient design, the outstanding thermal management allows the user to change repetition rate from 1 to 30kHz on lower power models and 1 to 50kHz on higher power models as desired. It is the best choice for high repetition rate pumping Ti:sapphire laser amplifiers and Particle Image Velocimetry (PIV) applications. The single head DMX lasers offer a dual pulse feature and have proprietary driving electronics to control pulse separation and delay. In addition, the laser can be configured in the dual head option for sub µs pulse separations and even higher output powers.

Features – *The Advantage of Photonics Industries*

- Power from **60 W to 200 W**
- **Compact form factor**, consolidated controls within the laser head for ultimate ease-of-use operability via a **GUI software**
- **Ideally sized power supply** allows for ideal 19" **rack-mount configurations** (optional flange kit available)
- Simplest, **high performance**, monolithic laser head, with the driver contained in the laser head for the **greatest efficiency**.
- Pulse repetition rates from **1 to 50 kHz**
- Proprietary **twin pulse option****
- **Dual head option** available*, including GUI software **adjustable turning mirrors**, eliminating the need for manual adjustment
- Uniform beam profile
- Superior pulse to pulse stability

Applications

- Particle Image Velicometry (PIV)
- Annealing or "Bleaching" (changing of material properties without material removal)
- Pumping Ti:Sa Ultrafast Amplifier Systems
- High Power or High Pulse Energy Drilling or Cutting of Hard Materials

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* All models can be configured as Dual Head, please see DMX Dual Head Series Brochure.

** PI's patented twin pulse mode provides double pulses from a single trigger signal from the single laser head. Energy ratio of the twin pulses and pulse separation between the twin pulses is user programmable

System Specifications

Specifications	Model			
	DMX60-532	DMX100-532	DMX150-532	DMX200-532
Output Characteristics				
Wavelength (nm)	532			
Average Power (W) at 10kHz	60	100	150	200
Pulse Energy (mJ) at 10kHz	6	10	15	20
Pulse Width (ns) at 10kHz	~150	~190	~200	~120
Repetition Rate*	1 to 30 kHz		1 to 50 kHz	
Pulse to Pulse Stability	< 1.0% rms			< 1.5% rms
Long Term Stability	< 0.5% rms			
Beam Characteristics				
Polarization Ratio	Horizontal; 100:1			
Beam Diameter (nominal)	2.0 mm		5.0 mm	
Beam Divergence	< 10 mrad			
Beam Circularity	> 85%			
Spatial Mode (M2)	~15	20-25**	15-20	
Beam Pointing Stability	< 25 urad			
Operating Specifications				
Interface	RS 232 / External TTL Triggering / GUI Software included			
Warm-up Time	< 5 min from standby or cold start			
Electrical Requirement	200-240 V			
Line Frequency	50 to 60 Hz			
Power Consumption***	1.1 kW	1.5 kW	2.1 kW	2.5 kW
Ambient Temperature	15 to 30 °C			
Physical Characteristics				
Dimensions of Laser Head	6.5 in x 26 in x 4.6 in† (WxLxH)		12 in x 26 in x 4.6 in†	
Dimensions of Power Supply	10.2 in†† x 15 in x 3.5 in (2U) (WxLxH)			
Weight of Laser Head	49 lbs		84 lbs	
Weight of Power Supply	13.7 lbs			
Umbilical Length	3 m			

* For rep rates below 1kHz, the current must be reduced to cap the max pulse energy
** M2 ~ 15 option is available
*** Excluding chiller unit
† Includes height of desiccant (0.35'')
†† Not including rack mount option (total width w/ rack mount option = 19.0")

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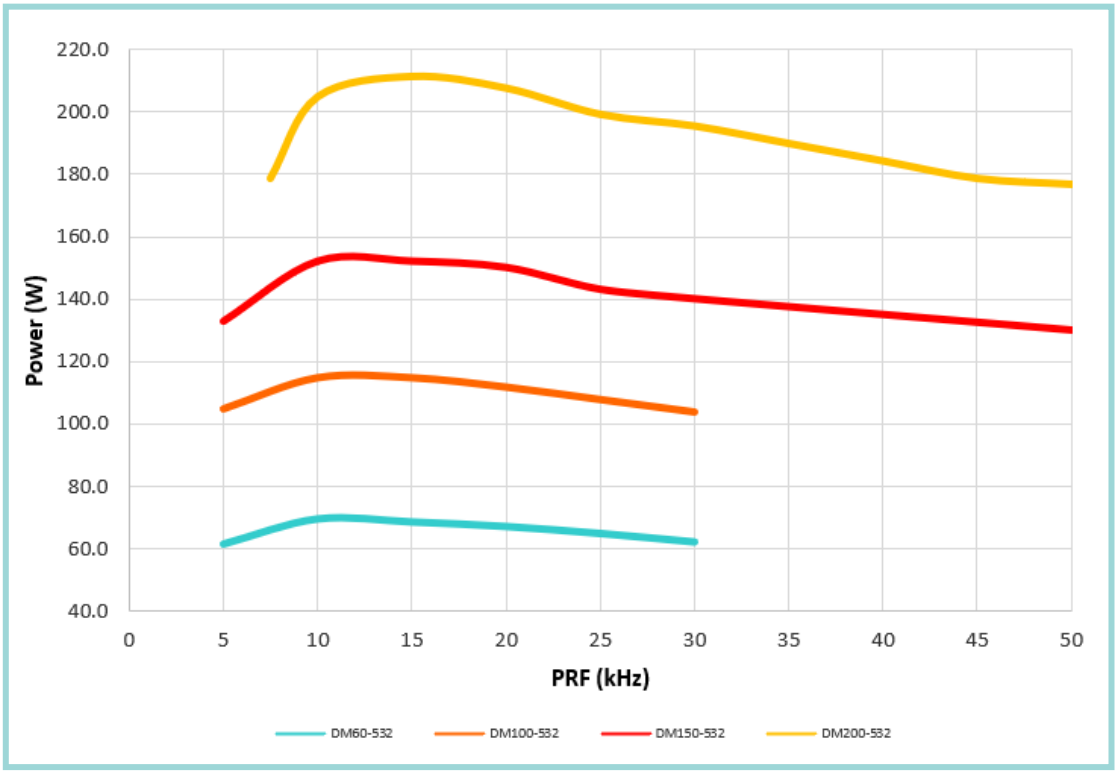
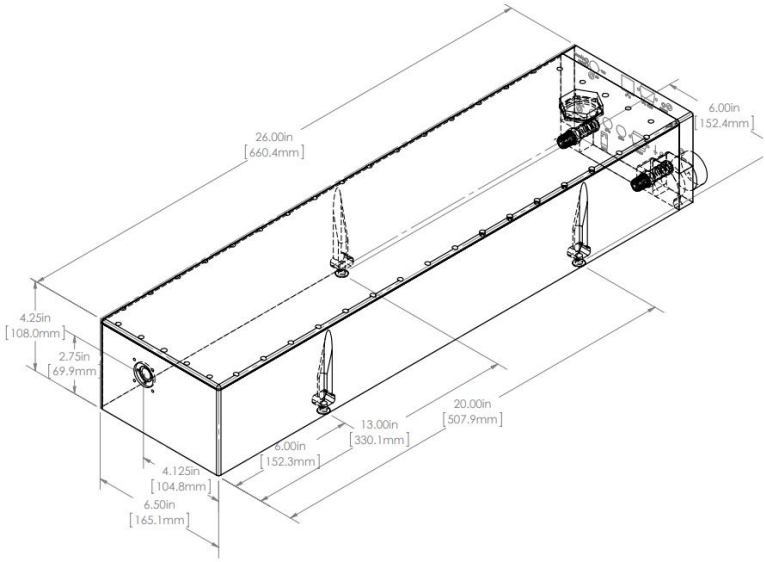
Performance Curves

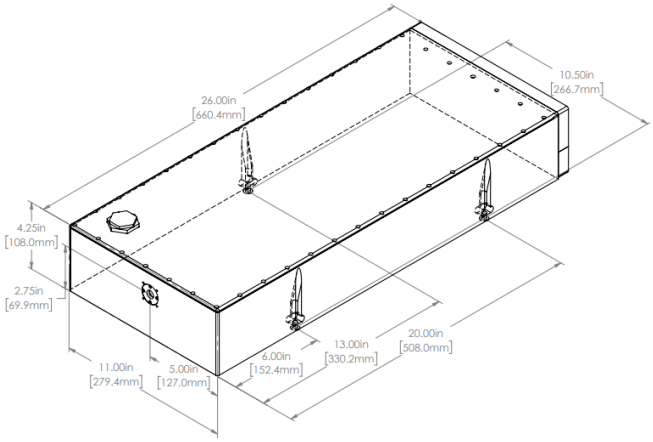


Dimensional Drawings

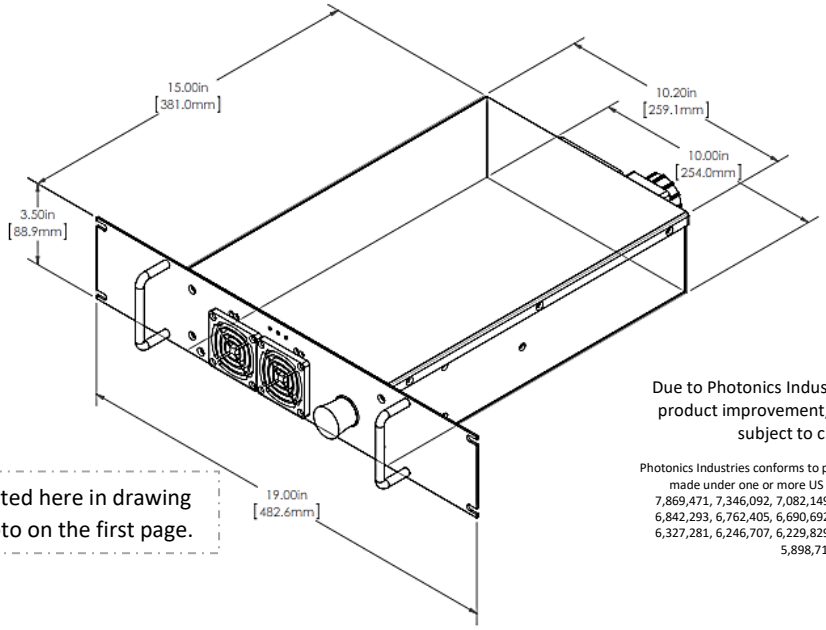
DMX60 & 100-532 Laser Head



DMX150 & 200-532 Laser Head



DMX60, 100, 150 & 200-532 Power Supply



19” mount option depicted here in drawing and not depicted in photo on the first page.

Due to Photonics Industries’ commitment to continuous product improvement, specifications and drawings are subject to change without notice.

Photonics Industries conforms to provisions of US 21 CFR 1040.10 & 1040.11 and is made under one or more US patents listed below: 9,531,147, 8,817,831, 7,869,471, 7,346,092, 7,082,149, 7,079,557, 6,999,483, 6,980,574, 6,961,355, 6,842,293, 6,762,405, 6,690,692, 6,587,487, 6,584,134, 6,366,596, 6,356,578, 6,327,281, 6,246,707, 6,229,829, 6,108,356, 6,061,370, 6,028,620, 5,936,983, 5,898,717 and Pending Patents

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Photonics Industries International is the pioneer of intracavity harmonic lasers and is at the forefront of developing, manufacturing and marketing a wide range of nanosecond, sub-nanosecond, picosecond and femtosecond lasers for industrial, scientific, defense, and medical industries. Check out our products and see how we can help you apply our lasers to your needs!

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