

DMX YLF Green Series Lasers

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Overview

Owing to its patented technologies, the DMX Series Nd: YLF diode pumped laser has the simplest, most efficient design in a monolithic platform, while producing the highest pulse energy at 527 nm (100 mJ/pulse from single head and up to 200mJ from dual head) at kHz repetition rate. In addition to its simple, efficient high pulse energy design, the outstanding thermal management allows the user to change repetition rate from 1 to 10kHz as desired, in contrast to the competition, where the user must select a single repetition rate at purchase. With 6 standard models available, it is the most competitive product on the market, and the best choice for pumping Ti:sapphire laser amplifiers and Particle Image Velocimetry (PIV) applications. In addition to its technological superiority, its reliability has been verified by less than 1% service call request during the warranty period in the latest 24 months statistics.

For even higher pulse energy or sub microsecond pulse separation PIV applications, each of these 6 models can be built into a dual head laser which will produce twice as much pulse energy as its single head counterpart.



Features – The Advantage of Photonic Industries

- ▶ Patented **highest pulse energy** green laser
- ▶ **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**.
- ▶ Diode lifetime of greater than **10,000 hours**
- ▶ Optimized for pumping **PIV** and **Ti:Sapphire amplifiers**
- ▶ Pulse energy up to **100 mJ**
- ▶ Proprietary **twin pulse option****
- ▶ **Dual head option** available*, including GUI software **adjustable turning mirrors**, eliminating the need for manual adjustment
- ▶ Uniform beam profile
- ▶ Excellent pulse to pulse stability (~0.5% RMS)

Applications

- ▶ Particle Image Velocimetry (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

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

** 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					
	DMX20-527	DMX30-527	DMX40-527	DMX50-527	DMX60-527	DMX100-527
Output Characteristics						
Wavelength (nm)	527					
Average Power (W) at 3kHz	30	45	60	75	90	150
Pulse Energy (mJ) at 1kHz	20	30	40	50	60	100
Pulse Width (ns) at 1kHz	180	170	130	120	110	100
Repetition Rate*	Single shot to 10 kHz					
Pulse to Pulse Stability	< 0.5% rms					
Long Term Stability	< 0.5% rms					
Beam Characteristics						
Polarization Ratio	Vertical; 100:1					
Beam Diameter (nominal)	5.0 mm					
Beam Divergence	8.0 mrad \pm 15%					
Beam Circularity	> 85%					
Spatial Mode (M2)	~10 to 16					
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 to 240 V					
Line Frequency	50 to 60 Hz					
Power Consumption**	0.8/1.0/1.6 kW		1.7/1.8 kW		2.3 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

** Excluding chiller unit

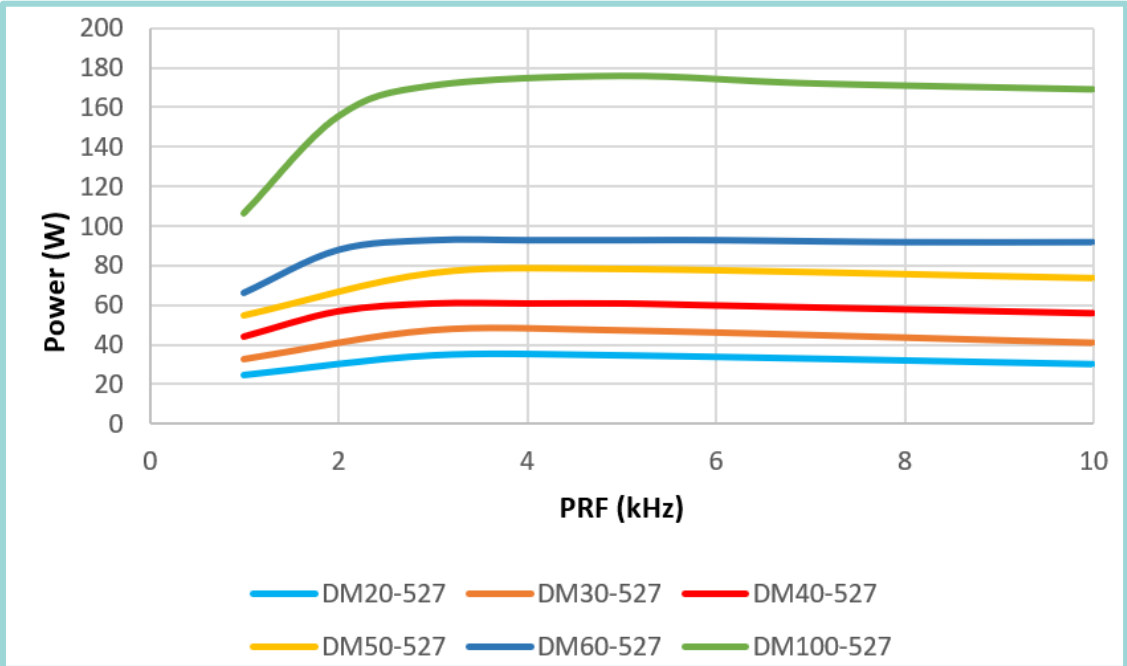
† Includes height of desiccant (0.35")

†† Not including rack mount option (total width w/ rack mount option = 19.0")



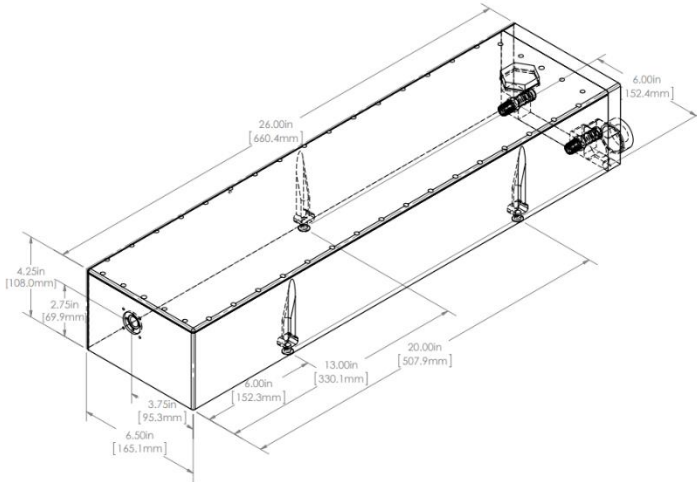
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Performance Curves

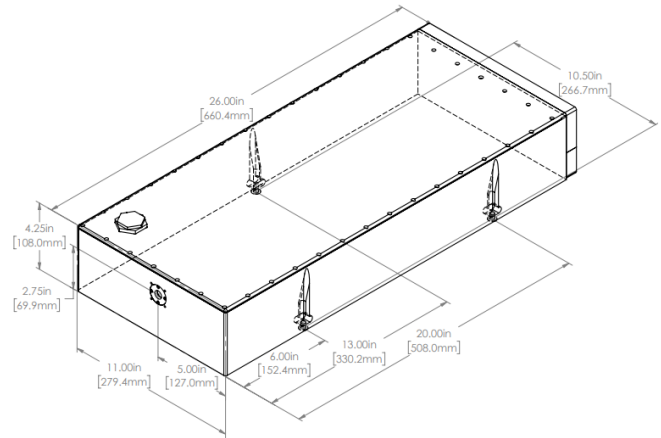


Dimensional Drawings

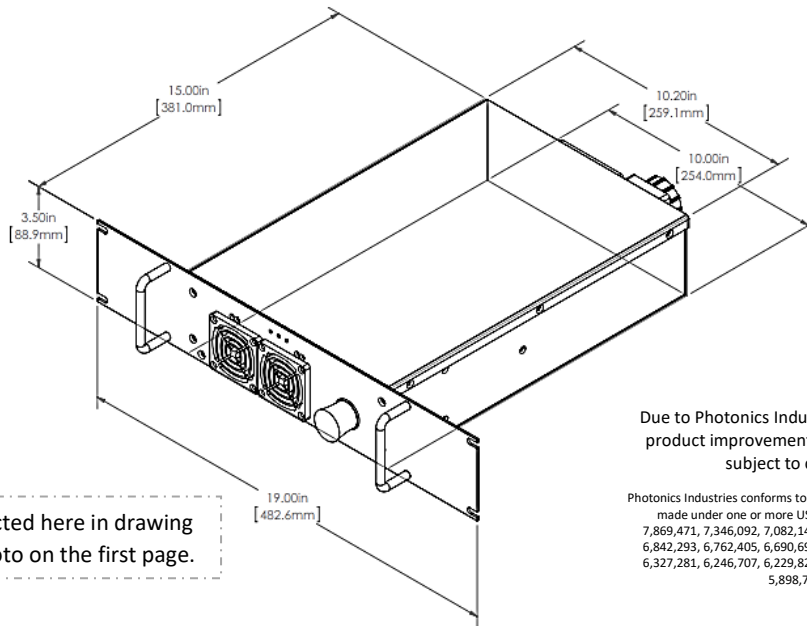
DMX20/30/40, 50/60-527 Laser Head



DMX100-527 Laser Head



DMX20/30/40, 50/60 & 100-527 Power Supply



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

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