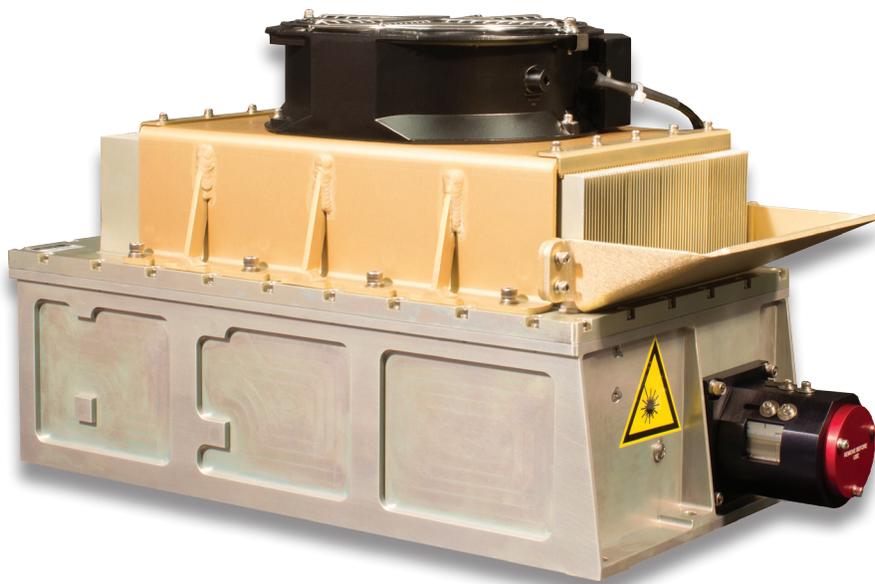


### > FEATURES AND BENEFITS

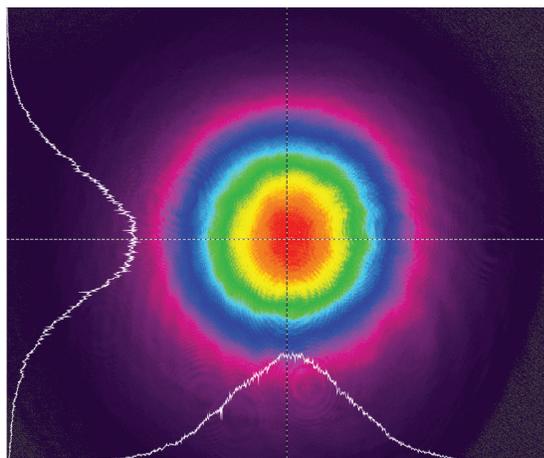
### DPSS LASER SYSTEM



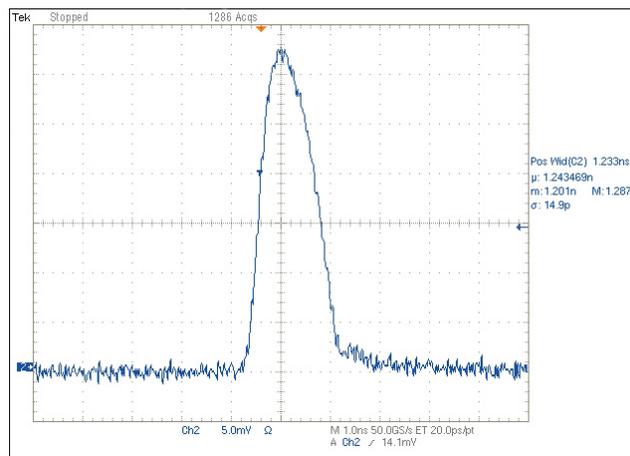
- Designed & ruggedized for airborne applications
  - LIDAR
  - Mapping
  - Bathymetry
- Pulse width < 1.5 nsec
- $TEM_{00}$ ,  $M^2 < 1.5$
- Jitter < 100 psec
- 28 VDC aircraft power compatible
- 532 nm or 1064 nm available
- Air-cooled & liquid cooled models

The HLS Series diode pumped solid state (DPSS) laser system combines Northrop Grumman's proprietary stable, short-pulse laser 'front-end' with Yb-doped fiber and Nd:YVO<sub>4</sub> amplifiers to achieve mJ level pulse energies with excellent beam quality at laser repetition rates of 10 kHz and above. The laser's stable short-pulse front end produces < 1.5 nsec pulses with a smooth temporal profile that remains stable and consistent from shot to shot with excellent timing jitter of < 100 psec.

These systems are designed and ruggedized for operation on airborne platforms over a wide range of environmental conditions. Laser control is through an Ethernet interface making these systems well suited for remote operation. The combination of short pulse durations, fixed pulse shape, excellent beam quality, low timing jitter, and mJ level pulse energies make these systems ideal for applications such as LIDAR, mapping and bathymetry.



Near Field Beam Profile\*



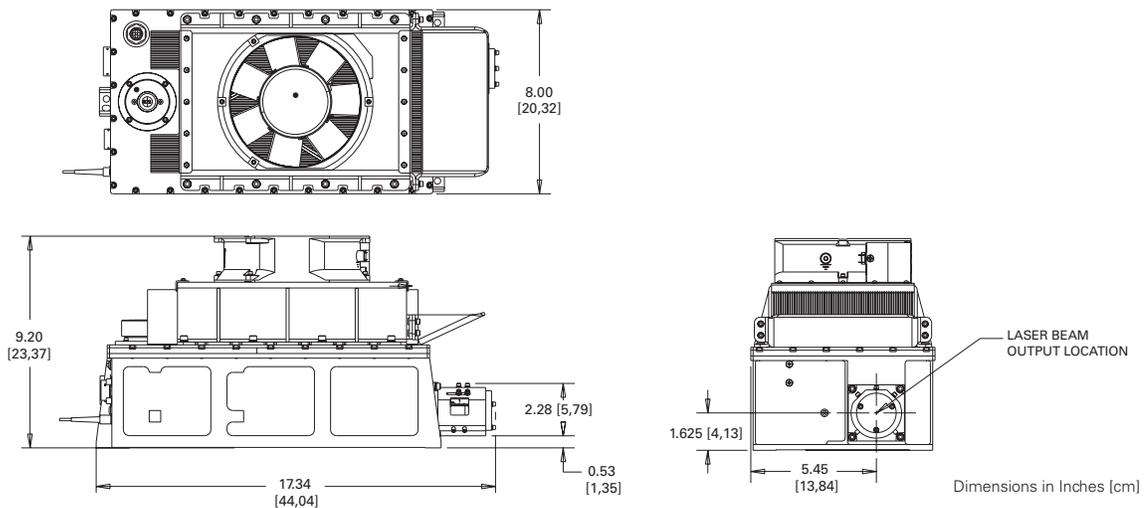
Pulse Width Measurement (1.2 nsec)\*

\*Example data from HLS-002-PMG

**SPECIFICATIONS**

Specifications				
Parameter	Configurations			
Model	HLS-002-PMG	HLS-004-PMI	HLS-020-PMG	HLS-040-PMI
Laser Type	DPSS Fiber / Nd:YVO			
Wavelength	532 nm	1064 nm	532 nm	1064 nm
Repetition Rate	10 to 50 kHz			
Pulse Energy <sup>1</sup>	0.2 mJ	0.4 mJ	2.0 mJ	4.0 mJ
Average Power <sup>1</sup>	2 W	4 W	20 W	40 W
Pulse Width <sup>2</sup>	< 1.5 nsec	< 1.5 nsec	< 1.5 nsec	< 1.5 nsec
Spatial Mode	TEM <sub>00</sub> / M <sup>2</sup> < 1.5			
Beam Diameter	4 ± 0.5 mm			
Beam Divergence	< 0.5 mrad	< 0.5 mrad	< 0.5 mrad	< 0.5 mrad
Polarization	100:1	100:1	100:1	100:1
Energy Stability	< 2% (100k pulses, 1σ)			
Jitter (External Trigger)	< 100 psec	< 100 psec	< 100 psec	< 100 psec
Cooling	Air Cooled	Air Cooled	EGW	EGW
Warm-up Time	< 20 Min	< 20 Min	< 20 Min	< 20 Min
Temperature Range (Operating)	-23°C to +40°C (non-condensing)		+5°C to +40°C (non-condensing)	
Temperature Range (Storage)	-28°C to +50°C (non-condensing)		-20°C to +60°C (non-condensing)	
Input Voltage	28 VDC			
Maximum Input Power	≤ 750 W	≤ 750 W	≤ 1,000 W	≤ 1,000 W
Laser Dimensions	17.3" x 8" x 9.2" (LxWxH)			
Laser Controller Dimensions	4U Rack Mount			
Laser Cables	14'			
External Control Interface	Ethernet			

(1) Measured at 10 kHz. (2) Customer can specify pulse width between 1 - 3 nsec. (3) Due to continuous product improvements, specifications may change without notice.



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This Product is covered by one or more of the following Patents: 5,898,211 5,985,684 5,913,108 6,310,900 Other US and Foreign Patents Pending.

**DANGER**

**VISIBLE LASER RADIATION**

\*AVOID EYE OR SKIN EXPOSURE TO DIRECT OR SCATTERED RADIATION.

Type	Wavelength	Energy	Pulsewidth	PRF
YVO <sub>4</sub>	1064 nm	5 mJ	1.5 ns	10-50 kHz
YVO <sub>4</sub>	532 nm	3 mJ	1.5 ns	10-50 kHz

**CLASS IV LASER PRODUCT**

ISO 9001:2008 REGISTERED  
Rev. A 01/15  
15-0136 1/2015