

# HOMOGENIZED PUMP ENGINE



Leonardo's homogenized pump engine has a modular internal design that can be custom-configured to meet your requirements. Pulsed and CW operation, wavelengths ranging from 760 nm-1100 nm or 1400 nm-1700 nm, rectangular or hexagonal output beam shape, different beam sizes, and different integration levels are just some of the factors that can be adjusted.

## KEY FEATURES

- Homogenized rectangular output beam
- Integrated sensors and firmware
- Pulsed operation, up to 1.2% duty cycle
- Integrated micro-optics, drive electronics, firmware

## KEY BENEFITS

- Constant beam output and spectral performance
- Ideal homogeneous pump source for gain disks
- Provisions to monitor system health remotely with built-in sensors and firmware

## LASER SYSTEM COMPONENTS

### Control System

Compatible with EPICS protocol  
Graphical user interface  
Control of all components

### Power Supplies

Converts line AC to operate diode drivers  
Capable of driving two optical units

### Cooling System

Cooling for optical units  
Cooling for power supplies

### Trigger Unit

Internal trigger  
2x external trigger input  
10x programmable external trigger outputs

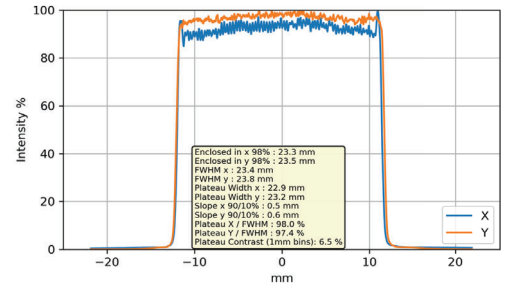
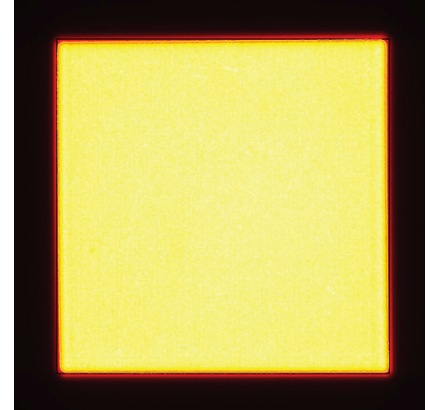
### Pilot Laser

Collinear red alignment laser

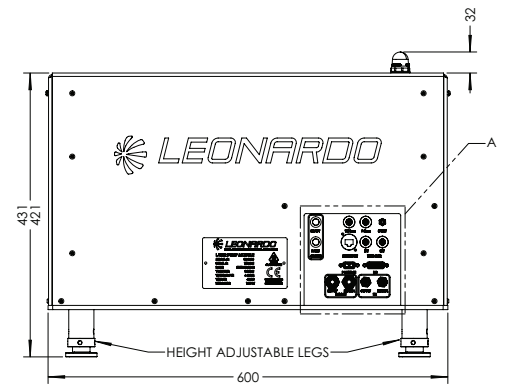
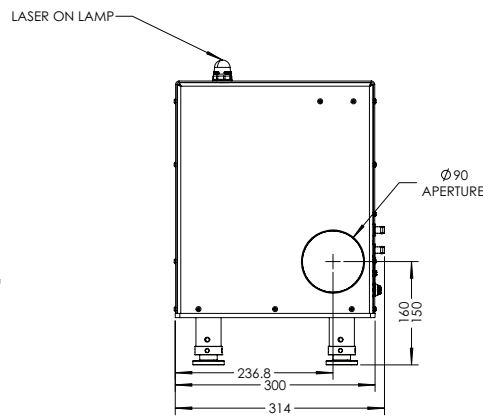
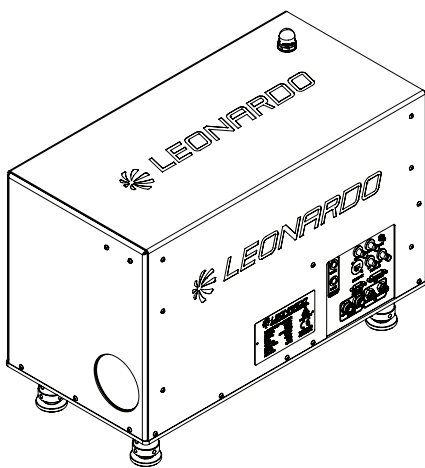
# TYPICAL HOMOGENIZED PUMP ENGINE SPECIFICATIONS

Typical Parameters	Units	Typical Value
<b>Optical</b>		
Peak Output Power	kW	29, 43, 57
Center Wavelength	nm	940
Spectral Width	nm	>76% Power in +/-2.5 nm
Power Conversion Efficiency	%	45
Emission Area	mm	24 x 24
Vertical Beam Divergence	°	4.5
Horizontal Beam Divergence	°	4.5
Beam Shape & Homogenization		Homogenized >97% of Plateau Slope <3% of Diameter
<b>Electrical</b>		
DC Current Supply	A	105
DC Voltage Supply	V	96
Pulse width	µs	200 to 1,200
Rise and Fall Time	µs	<40
Pulse to Pulse Energy Variation	%	<1
Maximum Duty Cycle	%	1.2
<b>Thermal</b>		
Wavelength Temperature Coefficient	nm/°C	0.3
<b>Cooling Fluid</b>		
Operating Temperature (non-condensing)	°C	20
Filtered Particle Size	µm	10
Flow Rate	lpm	8, 12, 16
Pressure	psi	90

## FAR FIELD BEAM PROFILE



## MECHANICAL SPECIFICATIONS



Leonardo Electronics US Inc.  
7775 N. Casa Grande Highway  
Tucson, AZ - 85743 - USA  
520 744 5700  
sales@leonardo.us

LDO\_LEI25\_00630 01-25



leonardo.us

