



Paladin Advanced 355

Quasi-CW Modelocked UV Lasers

Paladin Advanced is a high power, mode-locked UV laser with picosecond pulses at 80 MHz repetition rate. With laser models offering 8 W and 24 W output power, Paladin offers optimal power at the right price point, regardless of the application.

The laser is optimized for 24/7 OEM operation in demanding industrial environments. The Coherent PermAlign™ technology supports the laser's robustness and enables the field-proven long lifetime. Field exchangeable diode modules and a cleanroom-built, hermetically sealed laser cavity contribute to a long lifetime in the field.

FEATURES & BENEFITS

- The widest range of powers from 8 W to 24 W
- Optimal power – price package for the application
- PermAlign™ solder-bonded optics technology for permanent optimal alignment and ultra-robustness
- Aluminum-free Active Area (AAA™) pump diodes for industry-leading lifetime
- Cleanroom-built and hermetically sealed for long-term reliability
- Compact and modular laser design for easy integration
- Smart power supply for complete hands-free operation
- Highest efficiency

APPLICATIONS

- Materials Processing
- Microelectronics



SPECIFICATIONS	Paladin Advanced 355-8000	Paladin Advanced 355-10000	Paladin Advanced 355-16000	Paladin Advanced 355-24000
Wavelength (nm)	355			
Output Power ¹ (W)	>8	>10	>16	>24
Repetition Rate (MHz)	80 ±1	80 ±1	80 ±1	82 ±1
Pulse Length (ps)	>15 at 1064 nm			
Spatial Mode	TEM ₀₀			
M ²	<1.2			
Beam Diameter (mm)	1 ±15%	1 ±15%	1.35 ±15%	1.35 ±15%
Beam Divergence (μrad)	<550	<550	<480	<480
Beam Ellipticity	0.9 to 1.1			
Pointing Stability (μrad/°C)	<20			
Polarization	linear >100:1, vertical			
Noise (10 Hz to 2 MHz)	<1% (rms)			
Long-Term Power Stability (%)	<±2			
Maximum Warm-Up Time				
From Standby (minutes)	<15	<15	<15	<20
From Cold Start (hours)	<1	<1	<1	<1
Static Alignment Tolerances ²				
Beam Position (mm)	<±0.5 (x,y)			
Beam Angle (mrad)	<±2.5			
UTILITY AND ENVIRONMENTAL REQUIREMENTS				
Operating Voltage	90 to 230 VAC, 50 to 60 Hz			
Power Supply	90 to 230 VAC, 50 to 60 Hz			
Power Consumption	Maximum	Operation (typical)	Standby (typical)	
Power Supply (master & slave)	1000 VA	500 VA	200 VA	
Chiller (8 W/10 W)	1000 VA	500 VA (22°C ambient)	500 VA (22°C ambient)	
Chiller (16 W/24 W)	1600 VA	750 VA (22°C ambient)	750 VA (22°C ambient)	
Ambient Temperature ³				
Operating Conditions Standby	15 to 35°C (59 to 95°F)			
Non-Operating Conditions	-25 to 60°C (-13 to 140°F)			
Dimensions (W x H x L)				
Laser Head	305 x 200 x 1100 mm (12 x 7.9 x 43.3 in.) +300 mm for fibers & connectors			
Power Supply (master & slave)	482 x 177 x 505 mm (19 x 7 x 19.9 in.), 19 in., rack-mountable			
Chiller (8 W/10 W)	482 x 177 x 560 mm (19 x 7 x 22 in.), 19 in., rack-mountable			
Chiller (16 W/24 W)	482 x 266 x 640 mm (19 x 10.5 x 25 in.), 19 in., rack-mountable			
Pump Fiber's Length	5 m (16.4 ft.)			
Weights				
Laser Head	50 kg (110 lbs.)			
Power Supply (master & slave)	30 kg (66 lbs.)			
Chiller (8 W/10 W)	38 kg + 3 liters coolant (84 lb. + 0.7 gal.)			
Chiller (16 W/24 W)	42 kg + 3 liters coolant (92 lb. + 0.7 gal.)			

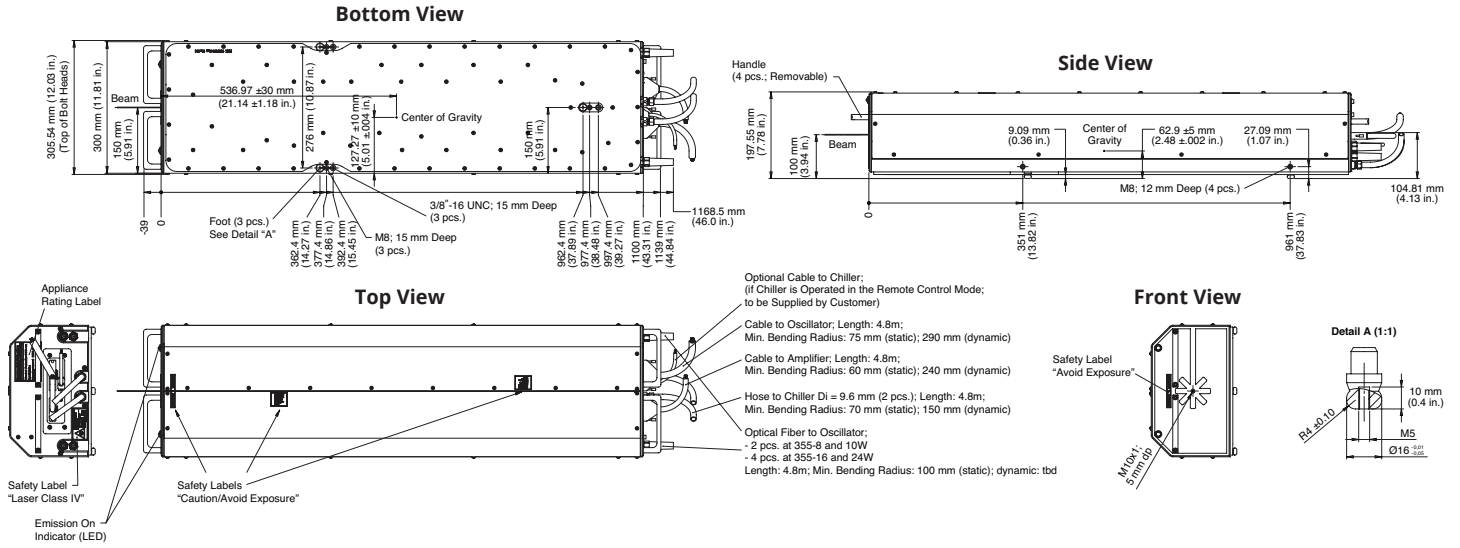
1 Fixed power.

2 Relative to laser mount.

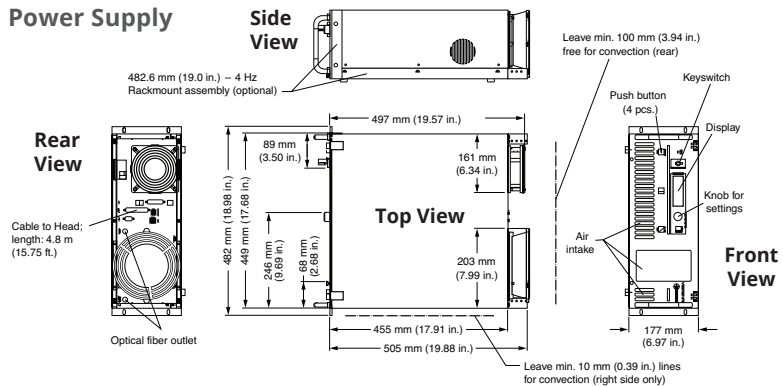
3 Head temperature is stabilized to ±0.5 35°C by the chiller.

MECHANICAL SPECIFICATIONS

Paladin Advanced 355 Laser Head



Power Supply



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Coherent follows a policy of continuous product improvement. Specifications are subject to change without notice. Coherent's scientific and industrial lasers are certified to comply with the Federal Regulations (21 CFR Subchapter J) as administered by the Center for Devices and Radiological Health on all systems ordered for shipment after August 2, 1976.

Coherent offers a limited warranty for all Paladin Advanced 355 Lasers. For full details of this warranty coverage, please refer to the Service section at www.coherent.com or contact your local Sales or Service Representative. MC-006-11-0M0720Rev.C Copyright ©2020 Coherent, Inc.

