

# Paladin Compact 355-2000/4000

## Air-Cooled, Quasi-CW Modelocked UV Lasers

Paladin Compact is an air-cooled, picosecond UV laser in a compact package for highly demanding OEM applications. The quasi-cw laser pulses with high output power stability at 120 MHz are beneficial for precise imaging applications.

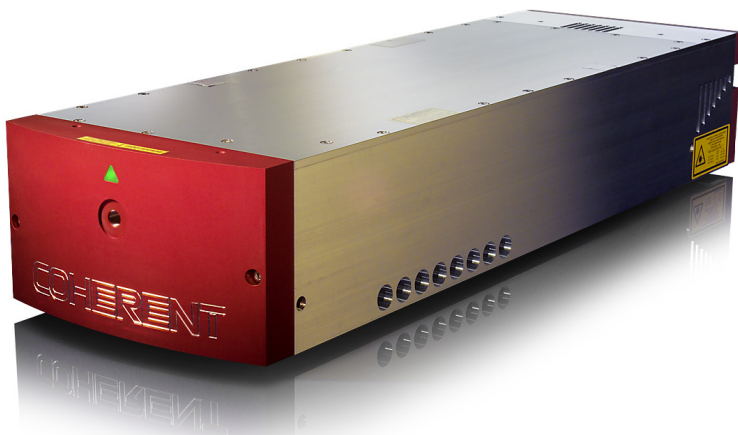
The laser is optimized for 24/7 OEM operation in demanding industrial environments. The Coherent PermAlign™ technology supports the laser's robustness and enables the field-proven long lifetime. Field exchangeable diode modules and a cleanroom-built, hermetically sealed laser cavity contribute to a long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

### FEATURES & BENEFITS

- PermAlign™ solder-bonded optics technology for ultra-robust operation in tough industrial environments
- Cleanroom-built and hermetically sealed for long-term reliability in commercial applications
- Aluminum-free Active Area (AAA™) diode material for industry-leading lifetime
- Smart power supply for complete hands-free operation
- Compact and modular laser design for easy integration
- Highest efficiency: only one pump diode

### APPLICATIONS

- Materials Processing
- Stereolithography
- Inspection



SPECIFICATIONS		Paladin Compact 355-2000/4000
Wavelength (nm)		355
Output Power (W)		
Paladin Compact 355-2000 Air-Cooled		>2
Paladin Compact 355-4000 Air-Cooled		>4
Repetition Rate (MHz)		120 ±2
Pulse Length (ps)		15 at 1064 nm
Spatial Mode		TEM <sub>00</sub>
M <sup>2</sup>		<1.2
Beam Diameter (mm)		1 ±10%
Beam Divergence (μrad) (full angle)		<550
Beam Ellipticity		0.9 to 1.1
Pointing Stability after Warm-Up (μrad/°C)		<25
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)		<30
From Cold Start (hours)		<1
Static Alignment Tolerances <sup>1</sup>		
Beam Position (mm)		<±0.5
Beam Angle (mrad)		<±2.5
UTILITY AND ENVIRONMENTAL REQUIREMENTS		
Operating Voltage (VAC)		90 to 230, 50 to 60 Hz
Power Consumption (VA)		1000 (maximum)
Ambient Temperature		15 to 35°C (59 to 95°F)
Dimensions (W x H x L)		
Laser Head		216 x 127 x 686 mm (8.5 x 5.0 x 27.0 in.)
Power Supply		482 x 177 x 505 mm (19.0 x 7.0 x 19.9 in.)
Pump Fiber's Length		4.5m (15 ft.)
Weights		
Laser Head		25 kg (55 lbs.)
Power Supply		28 kg (62 lbs.)

<sup>1</sup> All measurements, such as power and energy made at 20°C ±0.5°C coolant temperature, 80 kHz PRF, and 5 μsec PW command.

<sup>2</sup> Power Stability based on  $\pm(P_{\max}-P_{\min})/(2*P_{\max})$  average power measurement at constant duty cycle after 10-minute warmup at operating condition.

<sup>3</sup> Pulse Width and Peak Power will vary depending on operating parameters, specifically Pulse Frequency and Duty Cycle.

<sup>4</sup> Gaussian Correlation based on Spiricon Near Field Raw Beam measurement at 80 cm distance from laser output, 20°C, and steady state operation at 80 kHz PRF, and 5 μsec PW.

<sup>5</sup> Ratio based on Far Field Divergence measurement at 20°C, 80 kHz PRF, and 5 μsec PW command.

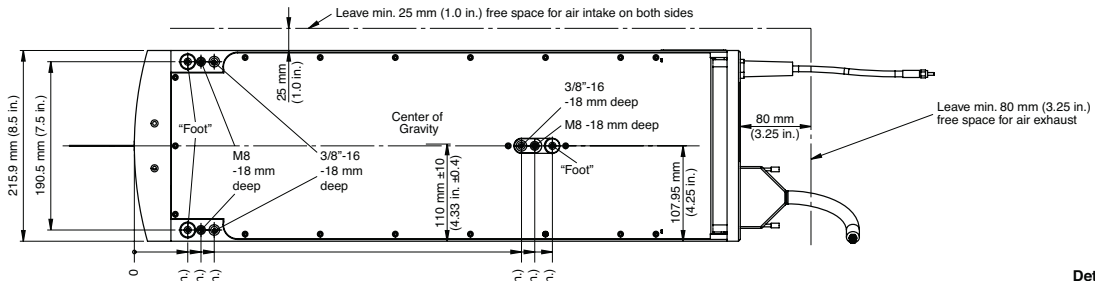
<sup>6</sup> Weight and Dimensions with Circular Polarizer or Isolator.

<sup>7</sup> OptiShield+ is a trademark of the OptiTemp.

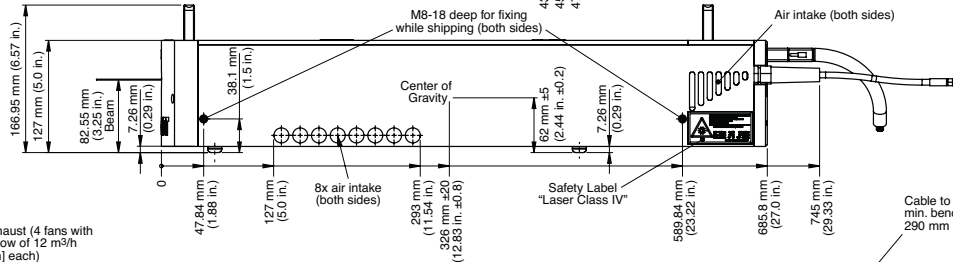
**MECHANICAL SPECIFICATIONS**

**Paladin Compact 355  
Laser Head**

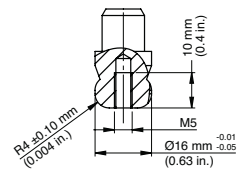
**Bottom View**



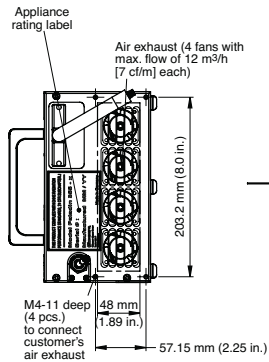
**Side View**



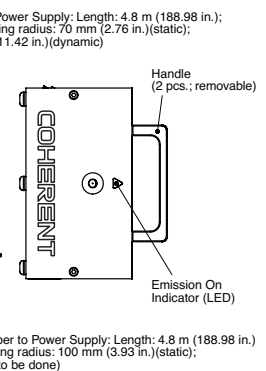
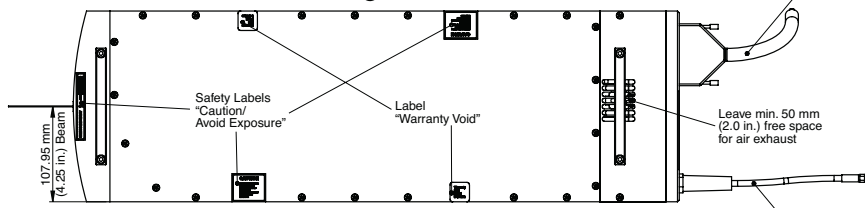
**Detail "Foot" (1:1)**



**Top View**



**Rear View**



**Front View**



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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 Compact 355 Lasers. For full details of this warranty coverage, please refer to the Service section at [www.Coherent.com](http://www.Coherent.com) or contact your local Sales or Service Representative. MC-013-06-0M0318Rev.B Copyright ©2018 Coherent, Inc.

