

Talisker 1000 Series

Industrial Picosecond Lasers

Picosecond lasers are established in a range of markets and applications. Their extreme high peak power pulses instantly ablate work-piece materials, leaving a cleanly machined area that does not require a post process clean. Picosecond lasers are ideal for routine processing such as cutting, drilling, patterning or engraving. They are particularly well suited to removal of thin film coatings, without substrate damage. Virtually every advanced material can be machined to a state-of-the-art quality with the appropriate wavelength selection. Talisker is perfectly suited to machining metal, plastic, glass and semiconductors. Our applications engineering team will help to identify the most appropriate Talisker for you.

The Talisker has been designed for low cost of ownership processing with the minimal need for field service intervention. The modular design allows key components to be upgraded at the end user site. For total peace of mind the product line is supported by Coherent world wide service support. We can provide a service strategy to maintain your operations to their maximum potential.



Superior Reliability & Performance

Talisker 1000 Series Features:

- **Easy plug-and-play install; equipped with auto-optimization features**
- **Excellent beam quality ($M^2 < 1.3$)**
- **Optimized for single wavelength use**
- **Excellent pulse stability, no first pulse suppression required**
- **Shock, vibration, and thermal cycling tests for every laser**
- **Smart power supply with Ethernet, USB, and RS-232 control**
- **PermAlign™ solder-bonded optics technology**
- **Ultra-long-life AAA™ (Aluminum-free Active Area) laser diode material**

Talisker 1000 Series Applications:

- **3D Microstructuring**
- **Advanced Packaging and Interconnects**
- **c-Si Dielectric Ablation**
- **Ceramic Processing**
- **Flex Circuit Machining**
- **Glass Cutting and Scribing**
- **Laser Ablation**
- **Laser Direct Patterning**

www.Coherent.com/Talisker1000

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System Specifications¹

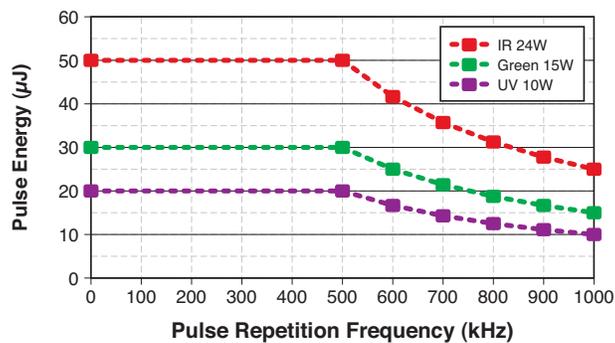
	Talisker 1000 1064-25	Talisker 1000 532-15	Talisker 1000 355-10
Wavelength (nm)	1064	532	355
Average Output Power (W at 1000 kHz)	>25	>15	>10
Pulse Width (ps)		<15	
Pulse Energy		Variable: see chart below	
Output Pulse Repetition Rate ²		Single-shot to 1000 kHz	
Bore-sight Accuracy			
Lateral		<1 mm from window center	
Angular		± 5 milli-radians	
Pointing Stability			
Angular ³ (typical)		<10 micro-radians per °C	
Pulse-to-Pulse Stability (%) (rms, 8 hours) (rms, 1σ)	<2	<3	<5
Long-term Stability (%) (rms, 8 hours)		<2	
Spatial Mode		TEM ₀₀ (M ² <1.3)	
Beam Diameter (1/e ² mm)	3.0 ± 0.6	2.2 ± 0.4	1.7 ± 0.3
Polarization Ratio		>100:1 vertical	
Beam Circularity		>85	
Warm-up Time		<60 minutes from cold start	
Ambient Temperature Range (°C)			
Operating		15 to 30; ±1	
Cooling			
Head		Closed-loop water-water or water-air recirculator	
Power Supply		Air-cooled	
Laser Power Consumption (single phase)		Max. 1.3 kW, 100 to 240 VAC, 50 to 60 Hz (auto-ranging)	
Dynamic Attenuation Range for Specified Mode (%)		0 to 90 using integrated SW controlled waveplate	
Humidity (%)		10 to 80 RH, dew point <20°C	
Weight			
Laser Head		75 kg (165 lbs.)	
Power Supply		30 kg (66 lbs.)	
HV Power Supply		15 kg (33 lbs.)	
P307 Chiller (dry weight)		47 kg (104 lbs.)	
Harmonics Controller		8 kg (18 lbs.)	

¹ All specifications at the stated pulse repetition rate.

² Using integrated AOM for SmartPulse™ control.

³ Validated using a controlled measurement method.

Pulse Energies Available to Talisker 1000 Series

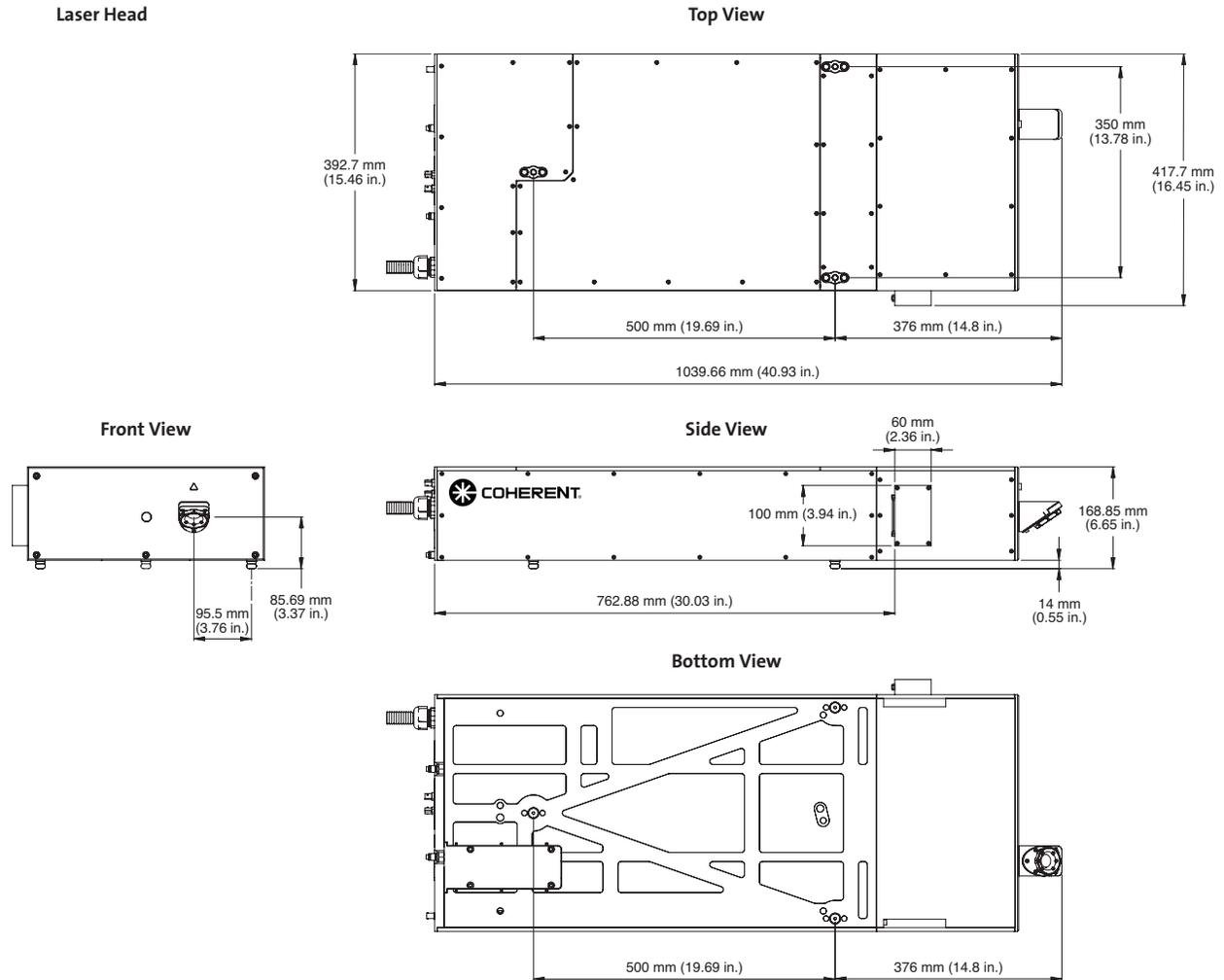


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Mechanical Specifications

Laser Head



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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 Talisker 1000 Series 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.

