LUMENTUM

Air-Cooled, Direct-Diode Laser System

IDL Series

Data Sheet

IDL Series air-cooled, direct-diode laser systems combine our high-reliability L4 diode lasers with a unique fused-fiber individual-emitter architecture and novel health-monitoring system to yield an extremely reliable and scalable product that performs in the most demanding industrial manufacturing environments. Providing up to 180 watts of multimode laser output, these products are ideally suited for plastics welding, selective soldering, and heat treating, handling a greater diversity of materials and reducing costs while increasing throughput in existing operations.

Unlike bar-based diode-laser products, IDL Series fused-fiber, individual-emitter architecture offers exceptional thermal isolation between emitters, eliminating severe thermal reliability issues. Modulated operation does not shorten product lifetime. The fused-fiber construction further eliminates sources of contamination, ensuring uninterrupted, reliable performance for the lifetime of the laser. Additionally, the individual-emitter construction enables individual device monitoring, control, and simple, low-cost serviceability.

A multipoint health-monitoring system incorporates a product-wide approach to operational assurance. A routinely updated system health log file is available through the front-panel-mounted USB port for easy retrieval and review. The log includes individual diode output status and critically important electrical and environmental parameter monitoring information. The RS232 interface and front-panel-mounted visual indicators provide active health monitoring. Careful management of any soft system errors affords operators the time to correct electrical or environmental issues while the device remains online and operational.

Designed for ease of integration and operation, these air-cooled systems require only standard wall-plug power. Both analog and RS232 ports offer system control. A flexible armored cable with an industry-standard SMA905 optical connector allows quick connection with commercially available beam-delivery optical packages.

Key Features

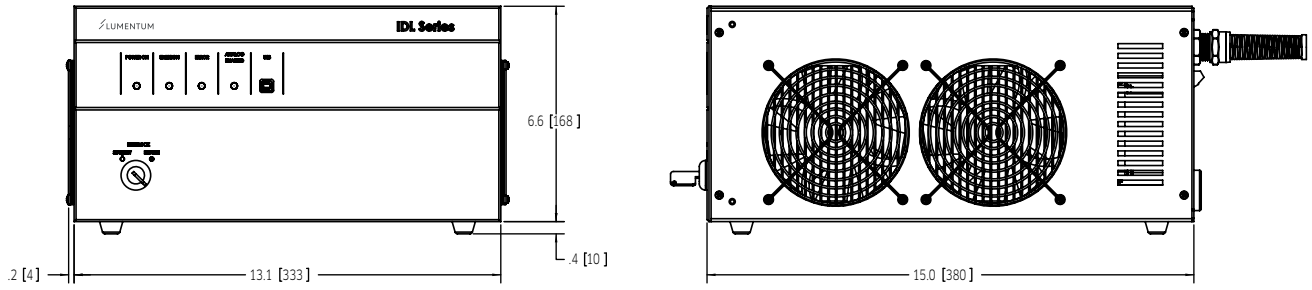
- High-reliability, individual-emitter architecture
- Multipoint health monitoring
- Best-in-class top-hat beam profile
- 600 µm, 0.22 NA output available
- Armored fiber delivery

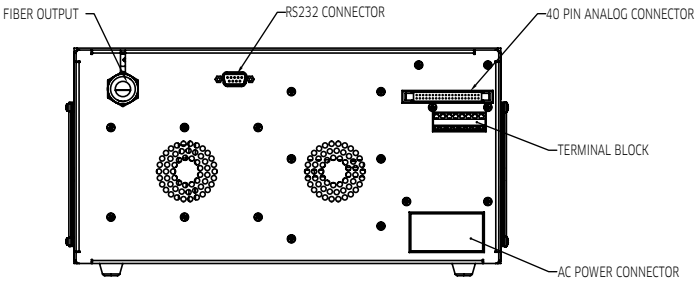
Applications

- Plastic welding
- Selective soldering
- Heat treatment
- Brazing
- Thin-metal welding

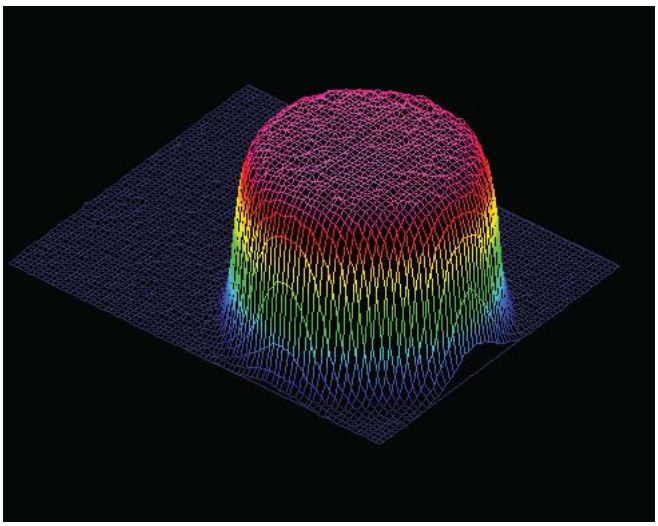
Dimensions Diagram

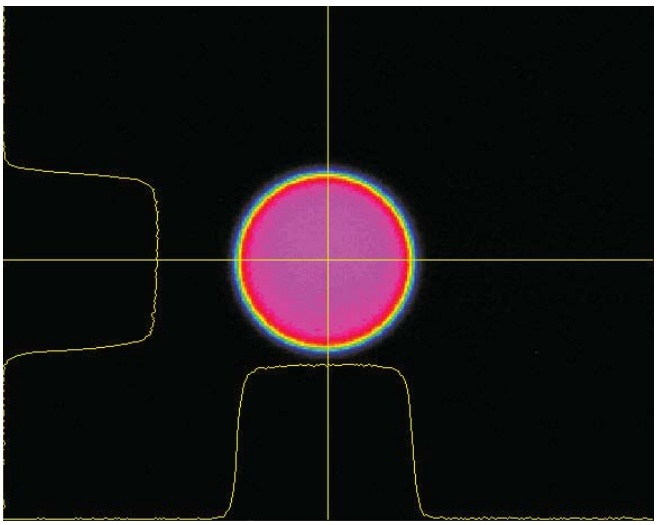
(Specifications in inches [mm] unless otherwise noted.)





Typical Beam Profile





Specifications

Parameter	IDL90S	IDL180S
Optical		
Output power, CW	90 W	180 W
Wavelength	940±10 nm	
Spectral width, FWHM at full power	<6 nm	
Rise time/fall time (10% – 90%)	<250 µs	
Output Cable		
Connector type	SMA 905	
Armor type	Braided stainless steel	
Cable length	6.7 m (22 ft.) typical	
Minimum bend radius	99 mm	
Beam quality	60 mm-mrad nominal	
Fiber core diameter	600 µm	
Fiber NA	<0.22	
Pilot laser Wavelength Output power	 635±10 nm 0.8 mW nominal	
Electrical		
Input power	100 to 240 VAC, 1 kW (Max.) 50 to 60 Hz	
Control ports	RS232, Analog (0 – 10 V), TTL	
Mechanical		
Weight	25 kg (55 lbs) typical	
Dimensions (W x H x D)	333 x 168 x 380 mm (13.1 x 6.6 x 15.0 inches)	
Cooling	Internal fan. At least 80 mm (3") clearance all sides	
Environmental		
Operating temperature range	5 to 35°C	
Operating humidity (noncondensing)	5 to 85%	
Storage temperature	-20 to 55°C	
Storage humidity (noncondensing)	5 to 95%	
Compliance	RoHS, CE, TUV	

Ordering Information

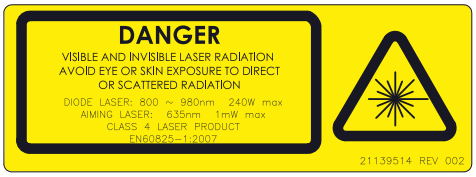
For more information on this or other products and their availability, please contact your local Lumentum account manager or Lumentum directly at customer.service@lumentum.com.

Sample: IDL180S-940-600 (180 W rated output power, 940 nm wavelength, 600 µm fiber core diameter)

User Safety

Safety and Operating Considerations

The IDL Series products emit Class IV radiation, which is invisible, and Class II radiation that is visible. Direct or scattered radiation can be harmful to the human eye. Proper laser safety eyewear must be worn during operation.



LUMENTUM

Your contact

D-A-CH
Laser 2000 GmbH
82234 Wessling
Phone +49 8153 405-0
E-Mail info@laser2000.de
www.laser2000.de

NORDICS
Laser 2000 GmbH
112 51 Stockholm
Phone +46 8 555 36 235
E-Mail info@laser2000.se
www.laser2000.se

FRANCE – Photonic
Laser 2000 SAS
33600 Pessac
Phone +33 5 57 10 92 80
E-Mail info@laser2000.fr
www.laser2000.fr

FRANCE – Telecom
Laser 2000 SAS
78860 Saint-Nom la Bretèche
Phone +33 1 30 80 00 60
E-Mail info@laser2000.fr
www.laser2000.fr

IBERIA
Laser 2000 SAS
28034 Madrid
Phone +34 650 529 806
E-Mail info@laser2000.es
www.laser2000.es