nLIGHT

HIGH-POWER SEMICONDUCTOR LASERS AND FIBERS

OPTOTOOLS™ INDUSTRIAL DL OEM MODULES

The Optotools™ industrial diode laser (DL) OEM modules are built to meet the demanding requirements of industrial environments and applications.

High-brightness modules equal the beam quality of lamp-pumped YAG lasers with significant benefits of higher reliability and more compact designs. Passive cooling and higher laser efficiency results in lower installation and operating cost.

These modules are available up to 600 W with 300 µm core fiber and 0.2NA.

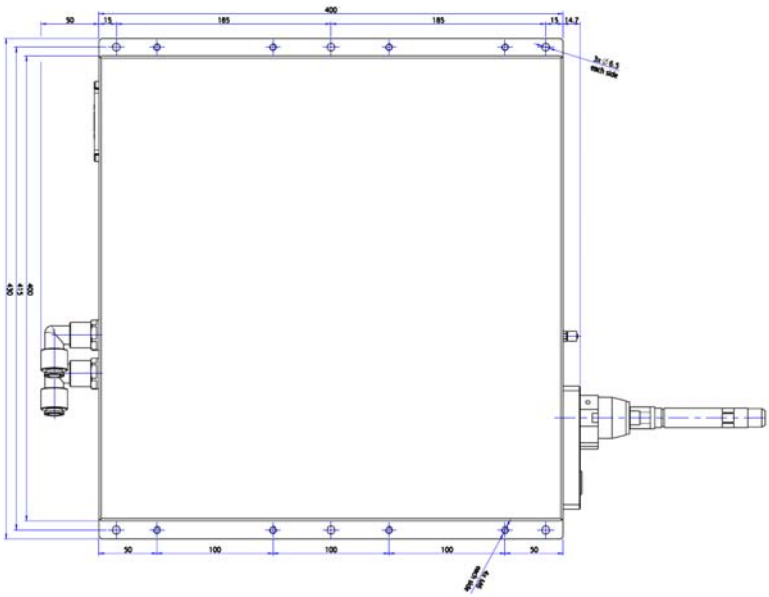
Applications

- Plastic welding
- Soft soldering
- Metal welding
- Cladding and coating
- Material heating
- Laser hardening
- Hybrid applications

Features

- Up to 600 W CW optical output power
- Up to ± 30 mm mrad beam quality
- Internal control electronics for detailed status feedback
- Optional pilot beam
- Fiber receiver options for industry standard industrial fibers
- Compatibility with common process heads
- Superior beam quality - comparable with lamp-pumped YAG lasers

Package dimensions



nLIGHT Corporation • 5408 NE 88th Street • Vancouver, WA 98665 • USA
Tel. +1 360 566 4460 • Fax. +1 360 546 1960 • industrial@nlight.net • www.nlight.net

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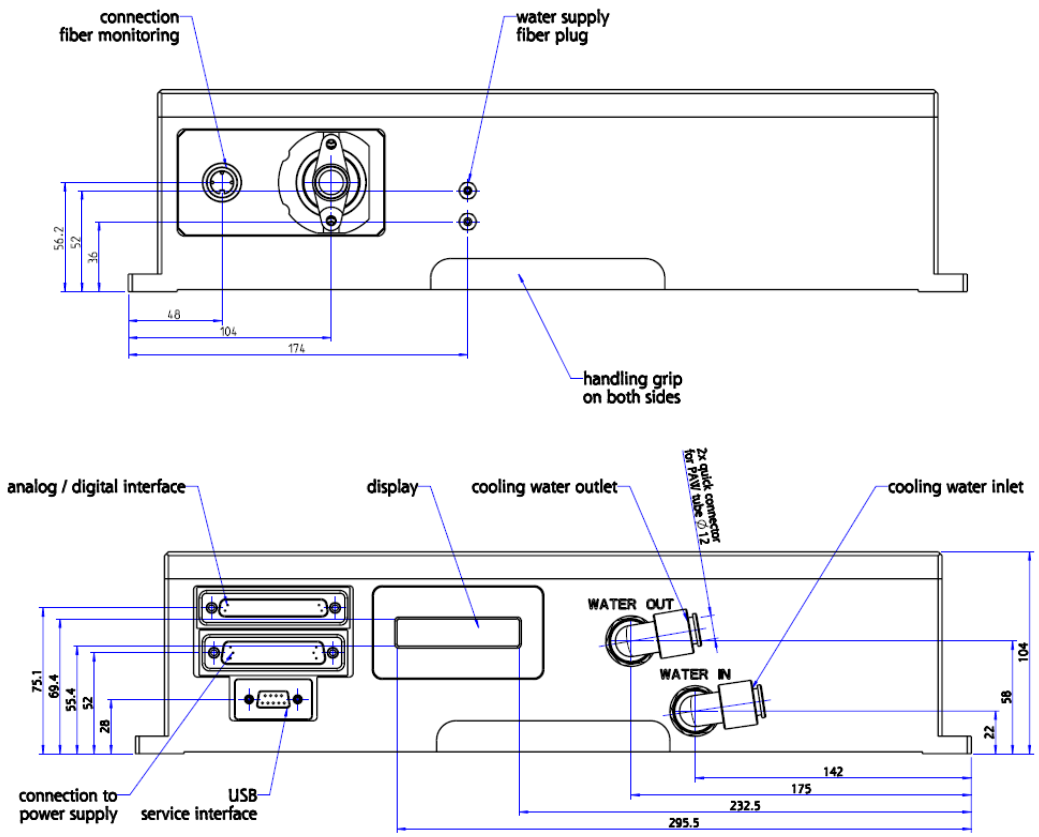

Typical device specification

		DL-OEM-0100-030-W-M	DL-OEM-0200-030-W-M	DL-OEM-0300-030-W-M	DL-OEM-0400-030-W-M	DL-OEM-0500-030-W-M	DL-OEM-0600-030-W-M
Optical							
Optical output power	W	100	200	300	400	500	600
Short term stability (On/off, < 10 sec)	%	< 5	< 5	< 5	< 5	< 5	< 5
Stability over 24 h (At same operating temp.)	%	± 1	± 1	± 1	± 1	± 1	± 1
Wavelength	nm	980	980	980	980	980	980
Wavelength tolerance	nm	± 5	± 5	± 5	± 5	± 5	± 5
Pilot laser (Option)							
Wavelength	nm	635	635	635	635	635	635
Output power	mW	< 1	< 1	< 1	< 1	< 1	< 1
Fiber							
Fiber connector		SMA 905/4 mm/LLK-LP	SMA 905/4 mm/LLK-LP	SMA 905/4 mm/LLK-LP	LLK-LP	LLK-HP	LLK-HP
Fiber length	m	5	5	5	5	5	5
Numerical aperture[1]	NA	0.2	0.2	0.2	0.2	0.2	0.2
Fiber core diameter	µm	300	300	300	300	300	300

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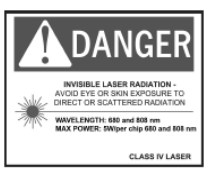
Electrical							
Operating voltage (Max. value)	V	28	56	84	112	140	168
Operating current (Max. value)	A	8	8	8	8	8	8
Power conversion efficiency (Typical)	%	> 40	> 40	> 40	> 40	> 40	> 40
Threshold current (Typical)	A	1	1	1	1	1	1
Thermal – non condensing conditions[2]							
Storage temperature	°C	-20 to 50	-20 to 50	-20 to 50	-20 to 50	-20 to 50	-20 to 50
Operating humidity	%	5 - 95	5 - 95	5 - 95	5 - 95	5 - 95	5 - 95
Cooling power (Max. value)	W	150	300	400	550	700	800
Cooling water temperature	°C	20	20	20	20	20	20
Temperature stability	°C	± 0.2	± 0.2	± 0.2	± 0.2	± 0.2	± 0.2
Pressure drop ΔP (Max. value)	psi	14.5	14.5	14.5	14.5	14.5	14.5
Flow rate (Min. value)	ltr/min	0.5	1	1.5	2.0	2.5	3.0
Particle filter size for external chiller	µm	100	100	100	100	100	100
Water quality		Clean water – distilled water recommended					
Mechanical							
Dimensions (w x h x d)	mm³	TBD					
Weight	kg	TBD					
Communication interface							
DB9		RS232					
DB44		Analog/Dig. interf.					

[1] Numerical aperture (NA) is the sine of the half-angle encircling 90% of the optical energy from the fiber.
[2] A non-condensing environment is required for storage and operation.

CFR Regulation
These components do not comply with the federal regulation (Title 21 CFR, Chapter 1, Subchapter J) as administered by the Center for Device and radiological Health. Purchaser acknowledges that their products must comply with these regulations before they can be sold to an end-user.



Notice
nLIGHT continually improves its products to provide our customers with outstanding quality and reliability. nLIGHT may make changes to specifications and product descriptions at any time, without notice. In addition, nLIGHT offers a limited warranty to ensure customer satisfaction. For complete details, please contact your nLIGHT sales representative.

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