High Power Laser Source Laser Driver

up to 30A, CW, QCW Mode

DATASHEET

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The HPLD High Power Laser Driver is engineered to deliver constant, stable laser output up to 300W, supplying currents up to 30A. Designed as a turn-key solution, it accommodates the internal mounting of laser diodes, featuring a highly efficient heat-pipe fan cooling system that eliminates the need for cumbersome water-cooling setups. The HPLD can also be configured to drive external laser diodes, offering flexibility for a variety of high-power laser applications. The driver supports three control modes to meet diverse application requirements: 1)Constant Current (CC) Mode – Provides stable, precise current regulation, ideal for applications where reliable operation and cost-effectiveness are priorities. 2)Quasi-Continuous Wave (QCW) Mode – Delivers high-repetition-rate modulation, simulating continuous wave (CW) operation while significantly reducing average power consumption and thermal load. 3)Constant Power (CP) Mode – Utilizes an integrated tap detector to monitor and maintain constant optical output power, automatically compensating for environmental fluctuations and ensuring consistent laser performance. The HPLD laser driver incorporates essential safety features, including a Safety Interlock, Key Switch, and Remote Interlock Connector, ensuring compliance with standard laser safety protocols and safeguarding both operators and equipment. In addition to the HPLD driver, we offer diode lasers and tap monitors, providing plug-and-play, high-power laser solutions tailored for demanding industrial, scientific, and medical applications.

Features

- High Power
- Low Noise
- Compliance Voltages
- Remote Operation via PC

Applications

- Medical Laser Treatment
- Biotechnology
- Others

Specifications

Parameter	Mini	Typical	Max	Unit
Laser Current	0		30	A
Resolution	0.001			A
Accuracy			0.05	%
Noise/Ripple			<100	μA rms
Voltage	5		15	V
Feedback Control Power Precision			0.1	%
QCW Frequency	0		1000	Hz
Operating Temperature	-10		55	°C
Storage Temperature	-40		80	°C
Power Voltage (switch)	110		240	V
Power Consumption			500	W

Rev 03/21/25

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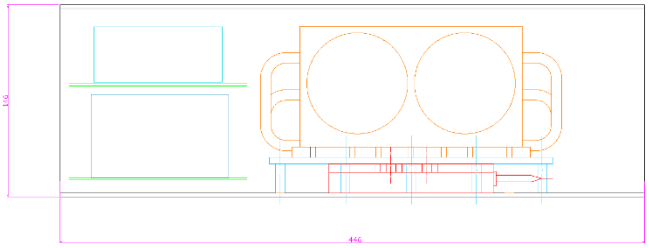
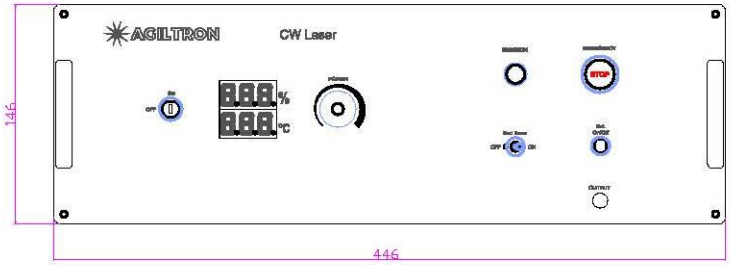
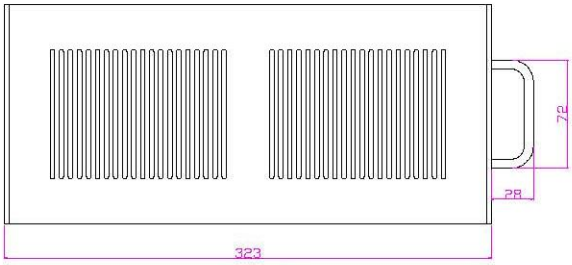
Rear View

Internal



Front and Side





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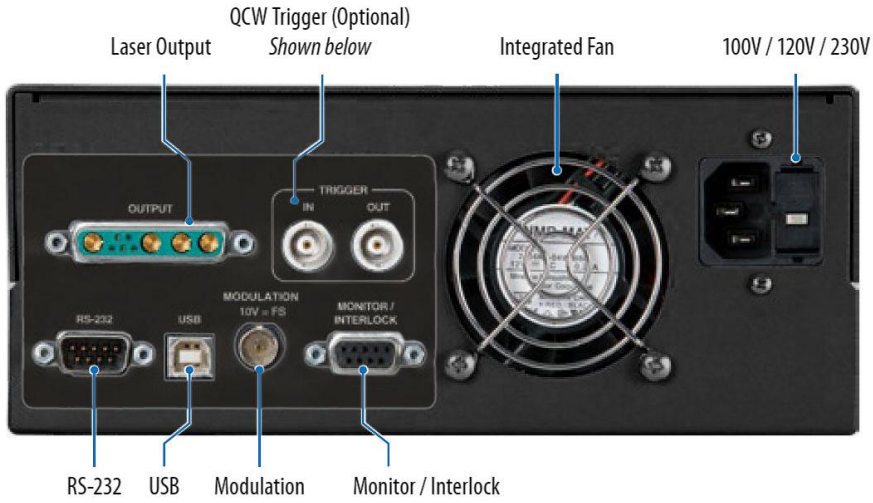

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Typical Spectrum

Ordering Information

	☐☐	☐	☐	☐	1	1	1	1
Prefix	**Power**	**Control**	**Laser Mount**	**Power Input**				
HPLD-	10W = 01 50W = 05 100W = 10 200W =20 300W =30 400W = 40 500W = 50	Constant Current = 1 QCW = 2 Constant Power = 3	Internal = 1 External = 2	110 V = 1 220 V = 2 240 V = 3				

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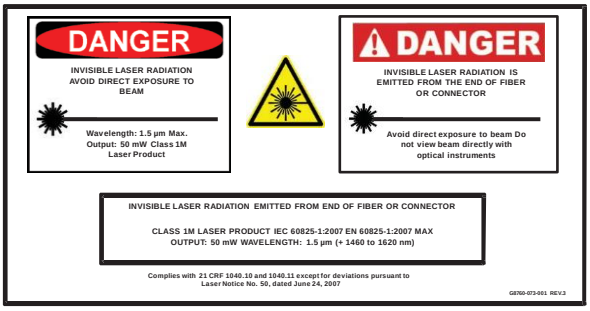
Laser Safety

This product meets the appropriate standard in Title 21 of the Code of Federal Regulations (CFR). FDA/CDRH Class 1M laser product. This device has been classified with the FDA/CDRH under accession number 0220191. All versions of this laser are Class 1M laser products, tested according to IEC 60825-1:2007 / EN 60825-1:2007. An additional warning for Class 1M laser products. For diverging beams, this warning shall state that viewing the laser output with certain optical instruments (for example eye loupes, magnifiers, and microscopes) within a distance of 100 mm may pose an eye hazard. For collimated beams, this warning shall state that viewing the laser output with certain instruments designed for use at a distance (for example telescopes and binoculars) may pose an eye hazard.

Wavelength = 1.3/1.5 µm.

Maximum power = 30 mW.



*Caution - Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
*IEC is a registered trademark of the International Electrotechnical Commission.

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