Fiber Coupled Laser Multimode High Power

976nm, 0.4nm linewidth, 60W, 105/125µm Fiber

DATASHEET

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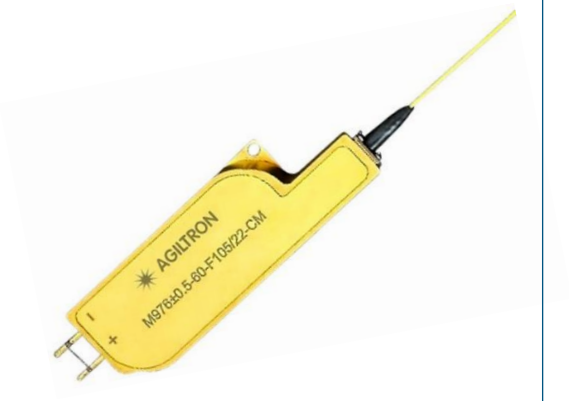

The FCMH series diode lasers deliver up to 60 W of power through a 105 µm fiber, offering high brightness with simplified thermal management by distributing the diodes for reliable, consistent performance. A turn-key benchtop unit is available, fully integrated with power supply, fan-based cooling, power control, and built-in safety shut-off features for convenient and safe operation.

Features

- 915-976nm Single Emitting laser
- Up to 900W High Output Power
- 200µm 0.22NA Fiber
- RoHS Compliance

Applications

- OCT
- Medical care
- Printing
- Material processing
- Pump source

Specifications

Parameter	Min	Typical	Max	Unit
Operating output power	200		300	W
Range of available wavelength	975	976	977	nm
Spectral width @ FWHM		0.4		nm
Threshold current		0.55		A
Operating current		9.5	10	A
Operating voltage		12.55	12.6	V
Power conversion efficiency		50		%
Wavelength temperature coefficient		0.3		nm/℃
Slope efficiency		6.7		W/A
Fiber bend radius	50			mm
Fiber core diameter		105		µm
Fiber numerical aperture	0.2	0.22	0.24	
Beam numerical aperture (95% power)		0.18		NA
Fiber length		1		m
Loose tube		0.9		mm
Lead soldering temperature			250 (5sec.)	℃
Reverse Humidity	5%		95%	
Operating temperature range	15	25	50	℃
Storage temperature range	-40		80	℃

Note: The specifications provided are for general applications with a cost-effective approach. If you need to narrow or expand the tolerance, coverage, limit, or qualifications, please [click this link]:
*The contact resistance between the diode and the heat sink is less than 1cm2 K/W.

Warning: The device can be damaged by a spike in applying voltage. Do not touch by hand or use a regular power supply. The device mounted on PCB is a cost-effective OEM module for professional system integration only, not intended for laboratory use, which be a protected turn-key boxed package. Information is believed to be accurate and is subject to change without notice. Some specific combinations of options may not be available. The user assumes all risks and liability in connection with the use of a product or its application.

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Mechanical Dimensions (mm) 200W

*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Ordering Information

	976	05	B	1	1	2	1
Prefix	**Wavelength**	**Output Power**	**Package**	**Fiber Type**	**Fiber Buffer**	**Fiber Length**	**Connector**
FCMH-	976nm = 976	3W = 03 10W = 01 20W = 02 50W = 05 100W = 10 200W = 20 250W = 25 300W = 30 320W = 32 340W = 34 550W = 55 900W = 90		200 µm = 2 400 µm = 4 135 µm = 1	0.9mm Tube = 1 3mm Tube = 3 Armor = A	0.5m = 1 1m = 2 1.5m = 3	Non = 1 SMA = 2

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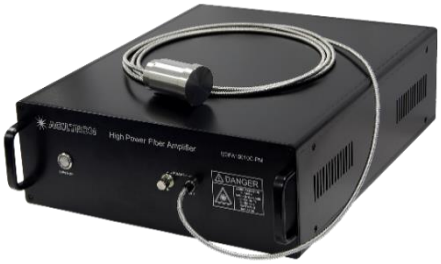
Benchtop Turnkey Unit



The HPML series High Power Fiber Coupled Laser Source is a turn-key unit, featuring ease of use and low cost with a manual or USB/GUI control. These all-in-one benchtop lasers integrate a laser, output tap monitor, controller, and heat dissipator, providing a convenient and reliable high-power laser source. The control has three options: low-cost constant current mode, and feedback constant output mode (having an output monitor). The unit can generate pulse output via modulating the laser directly (power and duration are settable via USB interface). Moreover, we offer a red-laser integrated fiber output for visual aid as well as a collimator at the fiber end options. A safety interlock is provided at the back. For power below 50W, the unit is cooled with internal fans. For higher power water cooling is required. We further offer matching chiller.

For details please click: https://agiltron.com/product/high-power-fiber-coupled-laser-source-multimode/

Ordering Information

	☐	☐☐☐	☐	☐	☐	☐	☐	☐	☐	☐
Prefix	**Wavelength**	**Power**	**Feedback ***	**Red Laser ****	**Cooling**	**Modulation**	**Fiber Core**	**Fiber Length**	**Connector**	**Collimator *****
HPML-	980nm = 9 880nm = 8 808nm = 7 650nm = 6 532nm = 5 455nm = 4 355nm = 3 967nm = B 915nm = A Special = 0	5W = AA5 8W = AA8 10W = A10 22W = A12 ... 100W = 100 ... 200W = 200 280W = 280 500W = 500	No = 1 Yes = 2	No = 1 Yes = 2	Fan = 1 Water = 2	No = 1 Yes = 2	135µm = 1 200µm = 2 105µm = 5 400µm = 4 Special = 0	0.25m = 1 0.5m = 2 1m = 3 1.5m = 4 2m = 5 Special = 0	No = 1 SMA = 2 Special = 0	No = 1 Yes = 2

* Feedback control automatically maintains a constant laser power $2350

** This option provided visual of the laser spot. $980

*** Collimator selections go to https://agiltron.com/product/high-power-fiber-optic-collimator/

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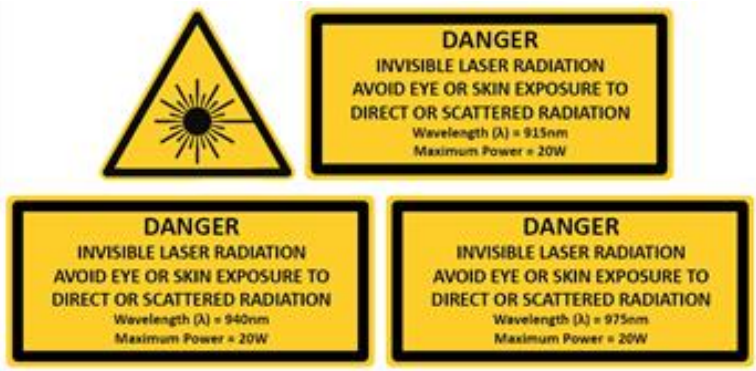
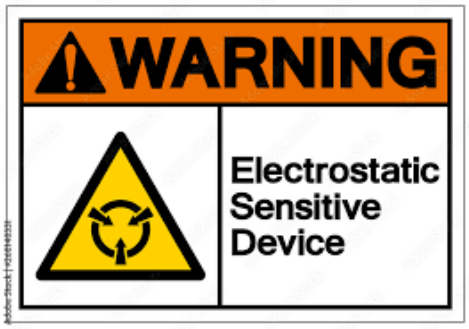
Laser Safety

- Laser Safety: Avoid direct exposure to the fiber output or the collimated beam along its optical axis while the device is in operation. Always wear proper laser safety eyewear.
- Maximum Ratings: Absolute maximum ratings should only be applied to the device for short periods. Extended exposure or operation beyond these ratings may result in damage or reduced reliability. Ensure power supplies are configured so that the maximum peak optical power is not exceeded.
- Thermal Management: A proper heatsink must be used with the device to ensure sufficient heat dissipation. Thermal conductance to the heatsink must be maintained for reliable operation.
- Operating Conditions: The device is an open-heatsink diode laser, suitable for operation in a cleanroom atmosphere or dust-protected housing. Ensure controlled operating temperature and humidity to avoid condensation on laser facets. Contamination or contact with the laser facets must be avoided.
- ESD Protection: Electrostatic discharge (ESD) is a leading cause of product failure. Use wrist straps, grounded work surfaces, and strict antistatic measures when handling the device.
- Regulatory Compliance: This product complies with Title 21 of the Code of Federal Regulations (CFR) and is classified as an FDA/CDRH Class 1M laser product under accession number 0220191. It has been tested according to IEC 60825-1:2007 / EN 60825-1:2007 standards. For Class 1M lasers, viewing the laser output with certain optical instruments (such as eye loupes, magnifiers, or microscopes) within 100 mm may pose an eye hazard. Similarly, viewing collimated beams with instruments designed for distance (e.g., telescopes or binoculars) may also pose an eye hazard.



Electrostatic Sensitivity



- Never touch laser diode and the module using hands
- Always use protections when handle a laser diode
- Recommend mounting the laser diode using an ionic gun and ESD finger cots

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