Fiber Coupled Laser Multimode High Power

915nm, 940nm, 976nm, up to 900W, 200µm 0.22NA Fiber

DATASHEET

Return to the Webpage

The FCMH series diode lasers deliver up to 500 W of power through a 200 µm fiber. They provide high brightness and simplified thermal management by distributing the diodes (heat sources), allowing for a water-cooled architecture with reliable, predictable performance. A turn-key benchtop unit is available, integrating the power supply, water cooling, power control, and safety shut-off features.

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 (915nm, up to 300W, 200µm 0.22NA Fiber)

Parameter	Min	Typical	Max	Unit
Operating output power	200		300	W
Range of available wavelength	905	915	925	nm
Spectral width @ FWHM		4.5	6	nm
Threshold current		1.5	2.5	A
Operating current at Pout		28	30	A
Operating voltage at Pout		15.5	16.5	V
Power conversion efficiency		50		%
Wavelength temperature coefficient		0.3		nm/℃
Slope efficiency		7.0		W/A
Fiber bend radius	50			mm
Fiber core diameter		200		µm
1064ISO		30		dB
Fiber numerical aperture	0.2	0.22	0.24	
Beam numerical aperture (95% power)		0.18		NA
Fiber length	1.0	1.5		m
Loose tube		0.9		mm
Connector type		Null, SMA905		
Lead soldering temperature			250 (5sec.)	℃
Reverse Humidity	5%		95%	
Operating temperature range	15		55	℃
Storage temperature range	-30		70	℃

Specifications (940nm, up to 320W, 200µm 0.22NA Fiber)

Parameter	Min	Typical	Max	Unit
Center Wavelength λ	930	940	950	nm
Output Power		320		W
Back Reflection Isolation Range	1040		1200	nm
Fiber Core Diameter		200		µm
Fiber Numerical Aperture		0.22		NA
Fiber Connector				
Fiber Length	1.5		2	m
Operating Current		22		A
Threshold Current		1.0		A
Operating Voltage		31		V
Operating Temperature	15		55	℃
Storage Temperature	-30		70	℃

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.

Rev 03/03/25

P +1 781-935-1200 E sales@photonwares.com W www.agiltron.com

Fiber Coupled Laser Multimode High Power

915nm, 940nm, 976nm, up to 900W, 200µm 0.22NA Fiber

DATASHEET

Specifications (976nm, up to 900W, 200µm 0.22NA Fiber)

Parameter	Min	Typical	Max	Unit
Center Wavelength λ	966	976	986	nm
Output Power		900		W
Working mode		CW		
Fiber Core Diameter		200		µm
Fiber Numerical Aperture		0.22		NA
Fiber Connector		Bare end		
Fiber Length		1		m
Operating Current Lop			30	A
Threshold Current Lth		2.0		A
Operating Voltage Vop		60		V
Operating Temperature		25		℃
Storage Temperature	-30		70	℃

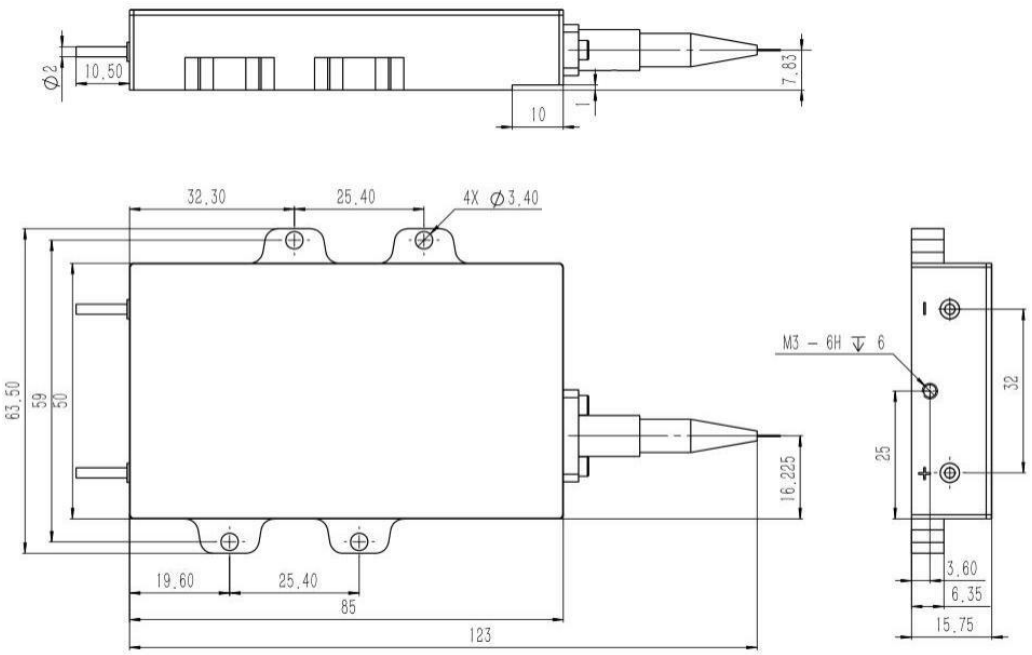
P +1 781-935-1200 E sales@photonwares.com W www.agiltron.com

Fiber Coupled Laser Multimode High Power

915nm, 940nm, 976nm, up to 900W, 200µm 0.22NA Fiber

DATASHEET

Mechanical Dimensions (mm) 200W



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

Ordering Information

	□□□	□□	□	□	□	□	□
Prefix	**Wavelength**	**Output Power**	**Package**	**Fiber Type**	**Fiber Buffer**	**Fiber Length**	**Connector**
FCMH-	915nm = 915 940nm = 940 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	A = A	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

P +1 781-935-1200 E sales@photonwares.com W www.agiltron.com

Fiber Coupled Laser Multimode High Power

915nm, 940nm, 976nm, up to 900W, 200µm 0.22NA Fiber

DATASHEET

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/

Fiber Coupled Laser Multimode High Power

915nm, 940nm, 976nm, up to 900W, 200µm 0.22NA Fiber

DATASHEET

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

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

P +1 781-935-1200 E sales@photonwares.com W www.agiltron.com