Laser Diode/TEC Controllers–Module

up to 10A laser current, constant current/power mode, up to 2A TEC current, ultra-stable feedback control

DATASHEET

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The Agiltron LDCM series laser source module is designed for OEM applications, featuring all-in-one high reliability and highly stable laser output. The LDCM contains high-precision, low-noise, auto-feedback laser diode drive electronics to ensure constant output power or constant driving current, along with an integrated temperature controller that maintains optimal operating conditions. An optional fiber optical isolator can be integrated to prevent reflection-induced laser emission instability, which is essential for achieving highly stable lasers. Agiltron produces isolators from 370nm to 2600nm. The system provides up to 1A driving current and up to 2A TEC cooling current. Each unit features a single FC/APC connector output and two front rotating knobs for independent setting of laser output power and temperature. A toggle switch allows selection between constant current control mode and feedback constant output power mode.

Features

- All-In-One Compact Format
- Easy to User
- LD Current up to 1A
- Compatible with All Laser Types
- Adjustable Laser Diode Current
- Constant Current or Constant Power
- Ultra-Stable Feedback Control

Applications

- Laser Modules
- Laboratory Use
- Systems

CE

Specifications

Parameter		Min	Typical	Max	Unit
Output Laser Control Current			1	5	A
Noise Ripple			150	180	µA RMS
Stability [1]	1hr	0.08			%
	24hr	0.04			
Slow Start Ramp		15			mA/ msec
External Modulation Bandwidth [1]		DC		500	kHz
External Modulation Depth [2]		97			%
External Modulation Rise/Fall [3]		300		-	ns
Power Supply Voltage		4.5	5	6	V
Power Supply Current			6	25	A
Internal Power Dissipation [4]			2	5	W
Operating Temperature		-40		80	°C
Storage Temperature		-60		85	°C
TEC Control Current				2.2	A
Lase Temperature Stability [4]		0.02		0.3	°C

Notes:

[1] Constant current

[2] 100kHz since wave

[3] laser current 500 mA

[4] 25°C

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.

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Operation Manual

- Connect to the accompanied power supply
- Turn on the power switch
- Laser light should be out with manufacturing settings meeting the part number specifications
- To adjust the settings, follows the manual that is downloadable

Ordering Information

	☐	☐	☐	☐☐	2	☐☐	☐
Prefix	**Configuration**	**Laser Current**	**TEC Current**	**Type**	**Package**	**Power Supply**	**Laser Mount**
LDCM-	Standard = 1 Special = 0	1A = 1 3A = 3 5A = 5	2.2A = 1 Special = 0	Standard = 11 Special = 00	Standard = 2 Special = 0	Non = 22 Yes = 11	None = 2 TOCAN A = 1 Butterfly A = 2 Butterfly B = 3 Butterfly C = 4 TOCAN B = 5

Red is non-standard specially made at a higher cost

Caution Extremely 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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Typical Laser Output Stability (butterfly package with temperature control)