LW-850-1000-C16-DI

1000mW infrared dot, line or cross laser module

lambdawave
laser technology

Description

LW-850-1000-C16-DI is a high power infrared semiconductor laser module which provides a stable continuous light output of 1000mW with emission wavelength of 850nm. Product incorporates a high efficiency constant current laser diode driver, allowing operation in a wide range of input voltages, while keeping the dimensions of laser module itself relatively small at the same time.

Applications

- Laboratory equipment
- Biomedical applications
- Cutting line indicator for carpentry, stone masonry, woodworking and other material processing
- Industrial positioning
- Industrial alignment
- Industrial inspection
- Assembly lines
- Night vision illumination
- Astronomy
- Metrology
- Spectral sensing
- Display systems
- Stage lighting
- Laser projection
- Laser shows
- Other applications

Features

- Small size
- Compact design
- High output power
- Integrated high efficiency constant current laser diode driver
- Wide input voltage range
- Wide operating temperature range
- Integrated overvoltage, overtemperature, reverse voltage and ESD protection
- Case connected to negative terminal
- Multi-mode semiconductor laser diode
- Externally adjustable optics
- Variant with line or cross generation optics available
- Variant with TTL modulation input available

Available accessories

- Line generation lens - 35, 45, 60, 90 and 120 degrees divergence
- Cross generation lens - 15, 45, 60, and 90 degrees divergence
- Laboratory 3-axis holder
- Power supply

Optical characteristics

Parameter	Min.	Typ.	Max.	Unit
Peak wavelength		850		nm
Light output power without lens	850	1000	1150	mW
Light output power with lens	TBD	TBD	TBD	mW
Lens power loss	-	TBD	-	%
Minimal spot size at 50mm distance	-	0.1	-	mm
Beam divergence angle	-	2	-	mrad
Beam size at output	-	2x4	-	mm
Output power temperature coefficient	-	TBD	-	%/°C
Wavelength temperature coefficient	-	TBD	-	nm/°C

Electrical characteristics

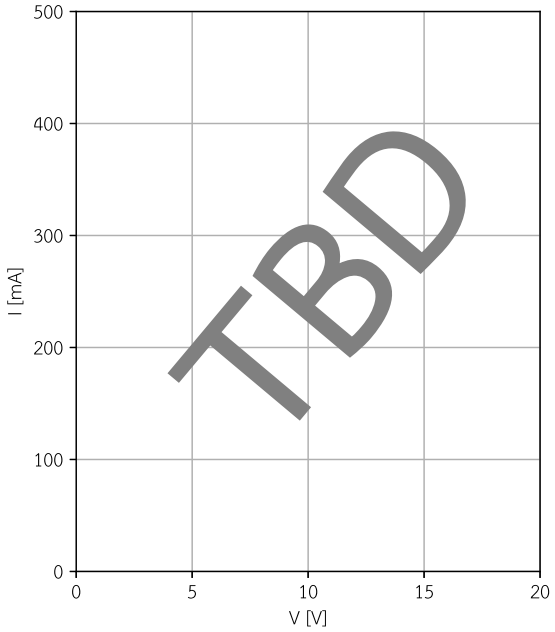
Parameter	Min.	Typ.	Max.	Unit
Supply voltage	4	-	16	V
Input current		-		mA
TTL input high level threshold	2.0	-	-	V
TTL input low level threshold	-	-	0.8	V
TTL input voltage	-0.3	-	VCC+0.3	V
TTL input impedance	10	-	-	kΩ
TTL high to output enable	-	400	-	μs
TTL low to output disable	-	100	-	μs
TTL modulation frequency	-	-	1	kHz

Other specifications

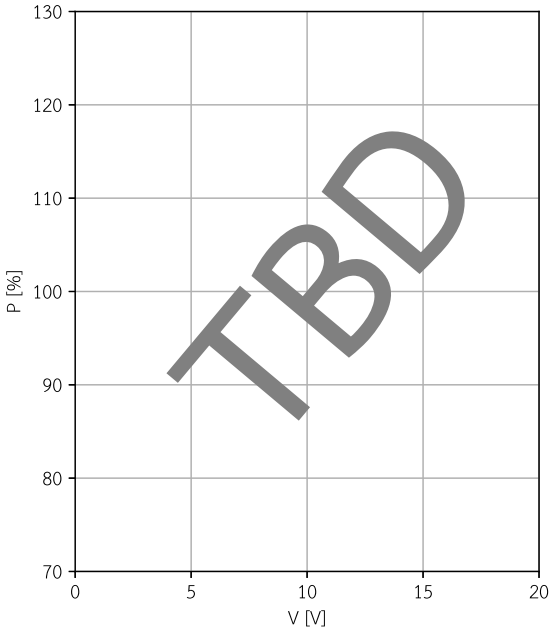
Parameter	Min.	Typ.	Max.	Unit
Operating temperature	-10	-	50	°C
Storage temperature	-40	-	85	°C
Lifetime	20000	-	-	h
Lens adjustment position	0	-	5	mm

Typical performance curves

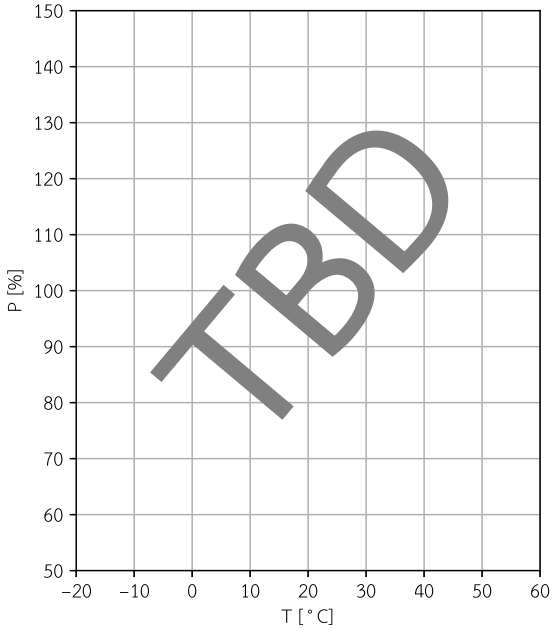
LW-850-1000-C16-DI
Input current vs. input voltage



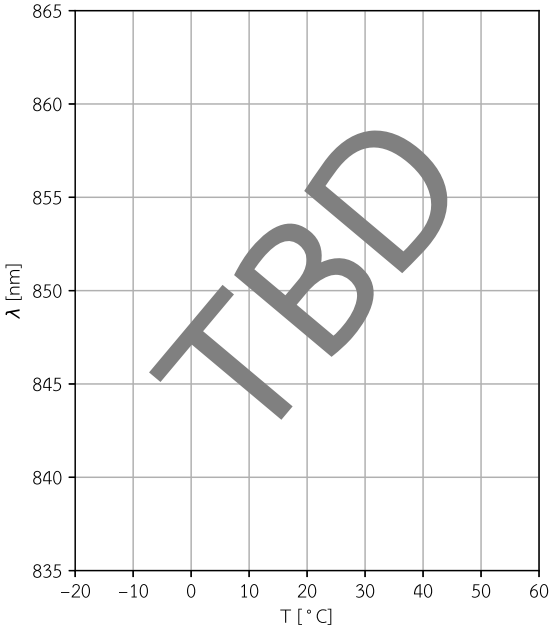
LW-850-1000-C16-DI
Relative output power vs. input voltage



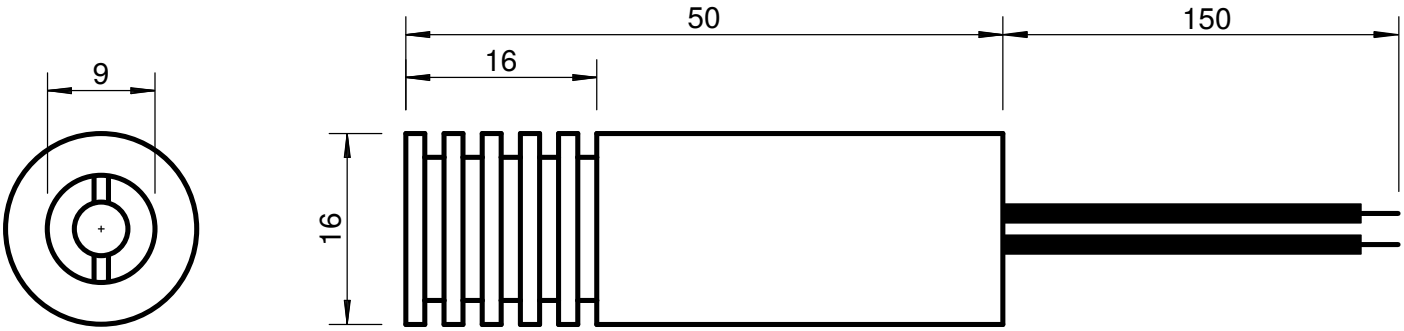
LW-850-1000-C16-DI
Relative output power vs. case temperature



LW-850-1000-C16-DI
Wavelength vs. case temperature



Technical drawing



Connection

Black - GND, red - VCC, white - TTL.

Safety

This laser module emits highly concentrated visible or invisible light which can be extremely hazardous to human eye or body causing its irreparable damage. Do not expose the eye or skin to any laser light directly or through optical lens. When handling laser equipment, wear appropriate safety glasses to prevent laser light from entering to the eye. Never look into the beam directly or through optical instruments. Take extra precautions when using the laser module indoors, paying attention to any reflective surfaces. Never point the laser beam at people, animals, vehicles or airplanes.

This laser module is classified in **class 4** of IEC 60825-1 *Safety of laser products*. Please note that even while complying with the above classifications, our laser modules itself are electronic components intended solely for incorporation or integration with final devices, and therefore are not subject of IEC 60825-1 and are not certified in accordance with IEC 60825-1.

Products incorporating our laser modules must follow the safety rules found in IEC 60825-1 or other equivalent standard in force. The way our laser modules are used in final product can change their original safety classification, therefore it is absolutely necessary to perform all required safety measurements for devices into which LAMBDAWAVE laser modules are incorporated or integrated. Ensuring compliance of the final device with the relevant standards rests solely on its integrator.

Disclaimer

The above specifications of the product are for reference purpose only and may be modified for improvement without prior notice.

Every possible effort has been made to ensure that the information described in this specification is fully accurate. However, LAMBDAWAVE is not liable for any damage resulting from inaccuracies in these specifications. The data, charts and all other information described in these materials were correct at the time this

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LAMBDAWAVE constantly strives to increase the level of its products quality and reliability. Despite these efforts, there may be situations where our products suffer from failures or other problems. Design your product so that LAMBDAWAVE products are used in the operating ranges described above. Foreseeable failures or emergency modes should be considered in designed equipment to ensure that devices containing LAMBDAWAVE products do not cause injury, fire or other damage. Extensive assessments of each individual system as a whole should be made, with the customer taking full responsibility for design decisions and possible damage caused by the system. LAMBDAWAVE is not responsible for any defects or injuries that may be caused by the equipment using LAMBDAWAVE devices.

LAMBDAWAVE prohibits the buyer from reverse engineering, disassembling or taking other steps to obtain a product design.

Products described in these specifications have been designed and manufactured for use in general electronics. Please consult LAMBDAWAVE when considering using the products described in these specifications in any critical system requiring high reliability, including aviation, military, nuclear, automotive or life support systems.

The latest version of this datasheet is available at the address given below.

https://www.docs.lambdawave.eu/datasheets/LW-850-1000-C16-DI.pdf

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