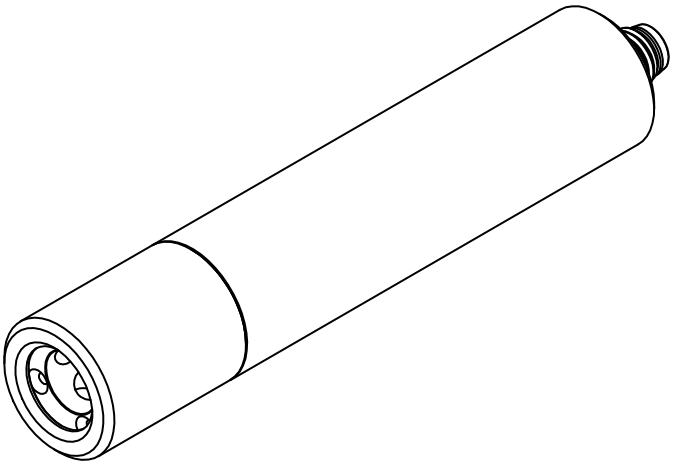
LWPRO-638-200

Professional 200mW red laser module with IP67 rating

lambdawave
laser technology



Description

LWPRO-638-200 is a professional high power red semiconductor laser module which provides a stable continuous light output of 200mW with emission wavelength of 638nm. Product incorporates a high efficiency constant current laser diode driver, allowing operation in a wide range of input voltages. The fully sealed case made of stainless steel and with an IP67 protection rating allows the use of this laser module in harsh conditions, in particular at high levels of dust and humidity. The optics made entirely of glass allows to obtain a high quality laser beam, compared to lasers with acrylic optics.

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

- Fully waterproof and dustproof with IP67 rating
- Stainless steel case
- Small size
- Compact design
- Integrated high efficiency constant current laser diode driver
- Single-mode semiconductor laser diode
- Wide input voltage range
- Wide operating temperature range
- Integrated overvoltage, overtemperature, reverse polarity and ESD protection
- Case connected to negative terminal

Output beam variants

- Point output
- Standard line output - glass rod line lens - 60 degrees (FWHM)
- Uniform line output - glass Powell line lens - 10, 30, 45, 60, 75, 90 and 110 degrees
- Uniform line output - glass sinusoidal line lens - 110 degrees
- Uniform cross output - glass sinusoidal cross lens - 110 degrees

Available accessories

- Laboratory 3-axis stand
- Machine mount
- Laser safety glasses
- M8 cable - straight and angled type - 2m, 5m and 10m
- Power supply

Customizations

This laser module can be fully customized to customer requirements. Sample adjustments may include:

- Different power connector type
- Adding of modulation input in TTL voltage standard
- Different output power
- Different output color and wavelength
- Different output beam size and divergence
- Different input voltage range
- Different case dimensions and shape
- Brand marking for OEM customers

Optical characteristics

Parameter	Min.	Typ.	Max.	Unit
Peak wavelength	633	638	643	nm
Laser diode output power	170	200	230	mW
Beam shape at output (FWHM)	0.4*0.8	1.1*1.8	2.1*3.2	mm*mm
Beam divergence angle	-	0.4	-	mrad
Output power temperature coefficient	-	-0.61	-	%/°C
Wavelength temperature coefficient	-	0.225	-	nm/°C

Electrical characteristics

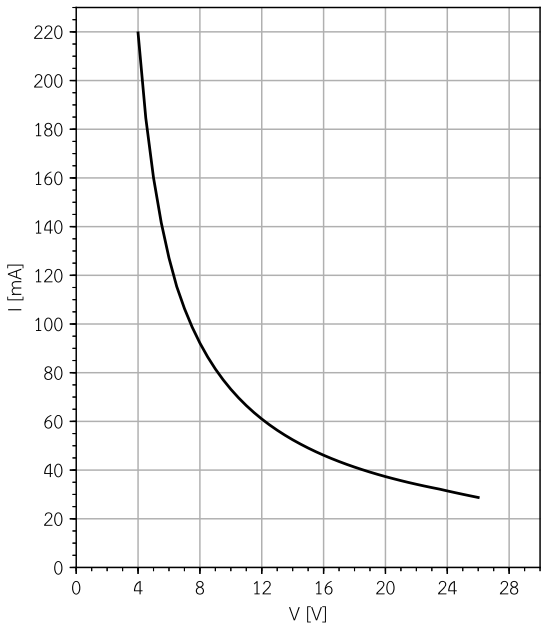
Parameter	Min.	Typ.	Max.	Unit
Supply voltage	4	-	26	V
Input current	-	-	270	mA
TTL input high level	2.0	-	-	V
TTL input low level	-	-	0.8	V
TTL input voltage	-0.3	-	VCC+0.3	V
TTL input impedance	10	-	-	kΩ
TTL high to output enable	-	400	-	μs
TTL low to output disable	-	100	-	μs
TTL modulation frequency	-	-	1	kHz

Other specifications

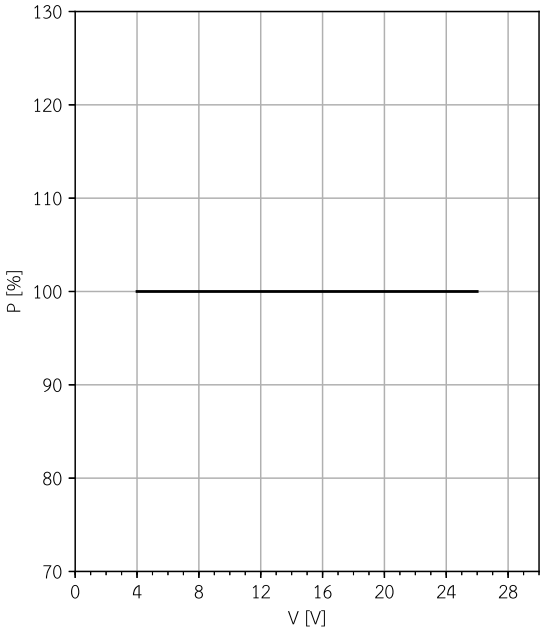
Parameter	Min.	Typ.	Max.	Unit
Operating temperature	-20	-	60	°C
Storage temperature	-40	-	85	°C
Lifetime	10000	-	-	h

Typical performance curves

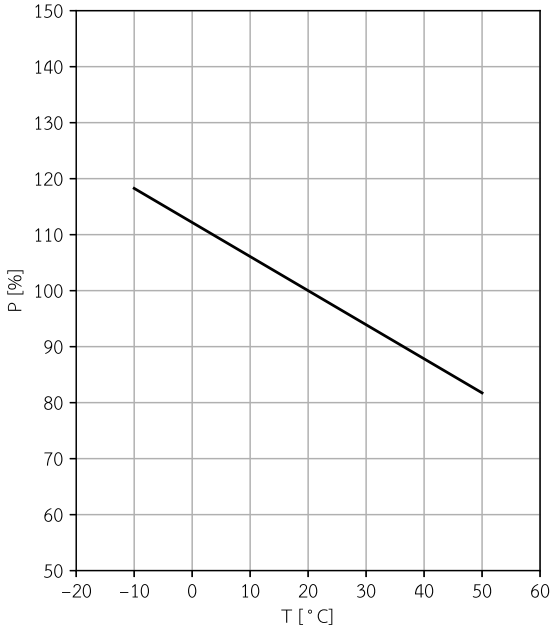
LWPRO-638-200
Input current vs. input voltage



LWPRO-638-200
Relative output power vs. input voltage



LWPRO-638-200
Relative output power vs. case temperature



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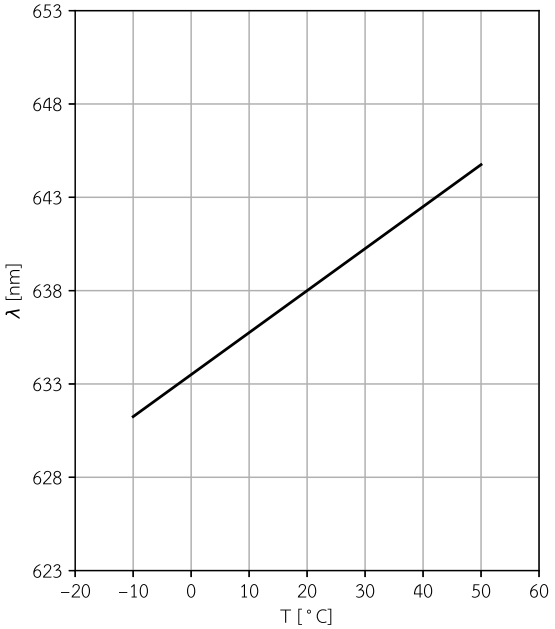
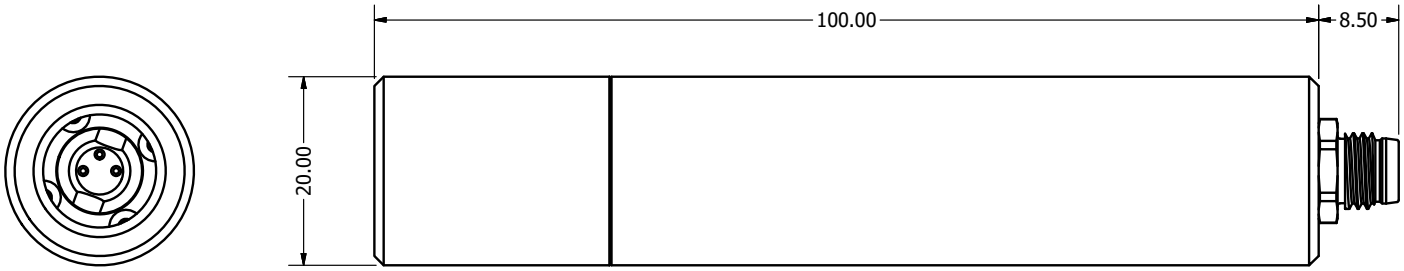
Wavelength vs. case temperature

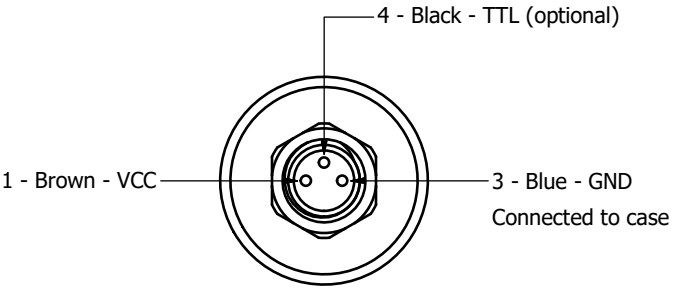


Technical drawing



Connection

This laser module uses a standardized M8 3-pin round connector, widely used in industry, automation and control systems. Detailed informations about M8 connectors are available in IEC 61076-2-104:2014.



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 3B 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 or other LAMBDAWAVE products 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.

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

https://www.docs.lambdawave.eu/datasheets/LWPRO-638-200.pdf

About LAMBDAWAVE

LAMBDAWAVE laser technology is a Polish manufacturer of laser equipment. Our goal is to allow easy use of laser technology in your products. We offer various laser solutions dedicated for use in science, industry and entertainment. Thanks to our experience in the field of electronics, optics and embedded software, we are able to meet your requirements by providing reliable and tailor-made laser solutions for your business. Our portfolio includes but is not limited to laser modules in a wide range of powers and wavelengths, laser pointers and various laser power supplies. For more information, please visit out website or write us an e-mail.

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Product photos

M8 cable sold separately