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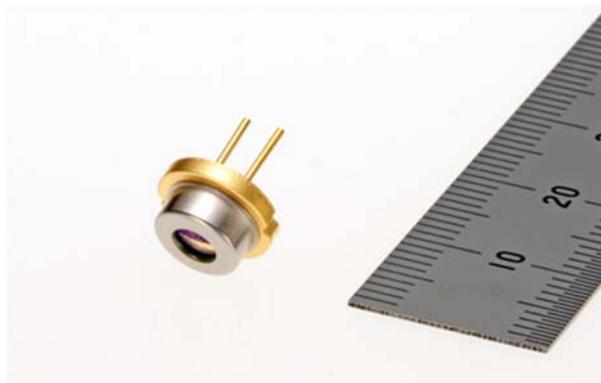
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Mitsubishi Electric to Launch High-power 638nm Red Laser Diode for Projectors

Unprecedented 3.0W pulse-light output power will lead to extra-bright and miniaturized projectors

TOKYO, December 19, 2018– [Mitsubishi Electric Corporation](http://www.mitsubishielectric.com) (TOKYO: 6503) announced today that it will launch the ML562G86 pulse laser diode (LD) for projectors, featuring a vibrant 638-nanometer (nm) red light, world-record output power of 3.0W under pulse operation and mean time to failure¹ (MTTF) of over 20,000 hours, on April 1, 2019. The ML562G86's high output power and wide operating temperature range will contribute to enhanced projector luminance and miniaturization. Sample sales will begin on January 11, 2019.

¹ Standard evaluation of reliability



High-power 638nm-wavelength red-laser diode (ML562G86)

Product Features

1) *Unprecedented pulse-light output power of 3.0W and extended MTTF of over 20,000 hours*

- World's top output power of 3.0W, which is 20% greater than that of the company's conventional model (ML562G84)
- MTTF of over 20,000 hours thanks to improvements in LD chip structure and manufacturing processes
- High output power and high-luminosity 638nm laser light achieve 145 lumens per LD

2) *Wide operating temperature range will lead to projector miniaturization and cost reduction*

- Wide operating temperature range of 0 to 45 degrees Celsius at 3.0W pulse operation thanks to a large 9.0mm-diameter transistor-outline can (TO-CAN) package with excellent heat dissipation
- World-leading 2.1W pulse-light output power at case temperature of 55 degrees Celsius
- Wide operating temperature range allows simplified cooling structure, contributing to projector miniaturization and reduced cost of cooling units

Main Specifications

	Specification
Model number	ML562G86
Lasing mode	Lateral multi-mode
Threshold current	690mA ($T_C^2 = 25\text{ }^\circ\text{C}$, Pulse duty ratio ³ = 30%)
Pulse peak output power	3.0W ($T_C = 25\text{ }^\circ\text{C}$, $I_{op}^4 = 3.1\text{A}$, Pulse duty ratio = 30%)
Operating voltage	2.4V ($T_C = 25\text{ }^\circ\text{C}$, $I_{op} = 3.1\text{A}$, Pulse duty ratio = 30%)
Wavelength	638nm ($T_C = 25\text{ }^\circ\text{C}$, $I_{op} = 3.1\text{A}$, Pulse duty ratio = 30%)
Operating case temperature	$T_C = 0\text{ }^\circ\text{C}$ to $45\text{ }^\circ\text{C}$ ($P_o^5 = 3.0\text{W}$, Pulse duty ratio = 30%) $T_C = 45\text{ }^\circ\text{C}$ to $55\text{ }^\circ\text{C}$ ($P_o = 2.1\text{W}$, Pulse duty ratio = 30%)
Package	ϕ 9.0mm TO-CAN

² T_C : case temperature

³ Pulse duty ratio: time ratio of light output power

⁴ I_{op} : pulse peak current

⁵ P_o : pulse peak output power

Projector light sources are shifting from mercury lamps to solid-state light sources that offer wall-plug efficiency, a wide color gamut, and highly reliable operation. LDs achieve the best wall-plug efficiency among solid-state light sources, thereby contributing to lower power consumption, and thus are viewed as the most promising new light source for projectors. Mitsubishi Electric expects to use LDs to develop not only superior projectors but also advanced laser TVs capable of more vibrant images than liquid-crystal TVs.

In September 2015, Mitsubishi Electric released its ML562G84 high-power red LD, which achieved 2.5W output under pulse operation as a red LD in three RGB light sources for projectors. With conventional LDs, extended operation at 3.0W output power causes the laser's light-emitting surface crystals to melt, making it difficult to achieve an MTTF of 20,000 hours. In response, Mitsubishi Electric has developed the technology required to suppress degradation of the light-emitting surface even at 3.0W, leading to the newly announced ML562G86 red LD that achieves unprecedented 3.0W output power.

Environmental Awareness

This product is compliant with the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) directive 2011/65/EU.

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About Mitsubishi Electric Corporation

With nearly 100 years of experience in providing reliable, high-quality products, Mitsubishi Electric Corporation (TOKYO: 6503) is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. Embracing the spirit of its corporate statement, Changes for the Better, and its environmental statement, Eco Changes, Mitsubishi Electric endeavors to be a global, leading green company, enriching society with technology. The company recorded consolidated group sales of 4,444.4 billion yen (in accordance with IFRS; US\$ 41.9 billion*) in the fiscal year ended March 31, 2018. For more information visit:

www.MitsubishiElectric.com

*At an exchange rate of 106 yen to the US dollar, the rate given by the Tokyo Foreign Exchange Market on March 31, 2018