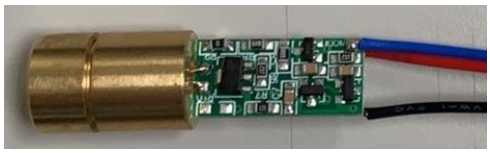
DTC-RD18 30K_Random Dots Laser Module

650nm TO-Can laser module with DOE and Circuit

Description

The 650nm TO-Can laser module can integrate with different collimating types of DOE. The lens which is in front of LD is adjustable. The default is set as collimating condition.



Features

- Low distortion and high uniform pattern
- Flexible package for R&D evaluation
- Distance tunable projection
- PWM drivable
- IEC 60825 eye safety standards

Applications

- Structure Light for 3D sensing
- Machine vision

Office : +886-3-355-1635 Email: linus.chang@digigram.com.tw Website: www.digigram.com.tw

Electrical Optical Specifications

ABSOLUTE MAXIMUM RATINGS (Note 1)

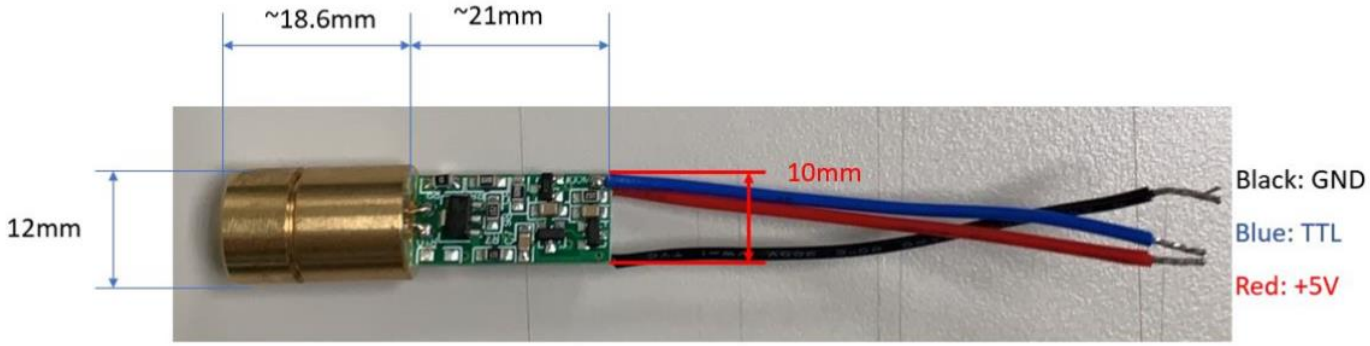
Symbol	Parameter	Conditions	Ratings	Unit
Po	Light output power	CW	**200**	mW
		Pulse(Note 2)	**290**	
VRL	Reverse voltage	-	**2**	V
Tc	Case temperature	-	**-10 ~ +75**	°C
Tstg	Storage temperature	-	**-40 ~ +100**	°C

Note1: The maximum rating means the limitation over which the laser should not be operated even instant time. This does not mean the guarantee of its lifetime. As for the reliability, please refer to the reliability report issued by Quality Assurance Section, HF & Optical Semiconductor Division, Mitsubishi Electric Corporation.

Note2: TARGET SPEC /Condition Duty Cycle: less than 35%, pulse width: less than 30ns

ELECTRICAL/OPTICAL CHARACTERISTICS (Tc=25°C)

Symbol	Parameter	Test conditions	Min.	Typ.	Max	Unit
Ith	Threshold current	CW	-	**80**	-	mA
Iop	Operating current	CW, Po=120mW	-	**290**	-	mA
Vop	Operating voltage	CW, Po=120mW	-	**2.6**	**3.0**	V
η	Slope efficiency	CW, Po=120mW	-	**0.95**	-	mW/mA
λp	Peak wavelength	CW, Po=120mW	**654**	**660**	**664**	nm
θ//	Beam divergence angle (parallel)	CW, Po=120mW	**7**	**10**	**12**	°



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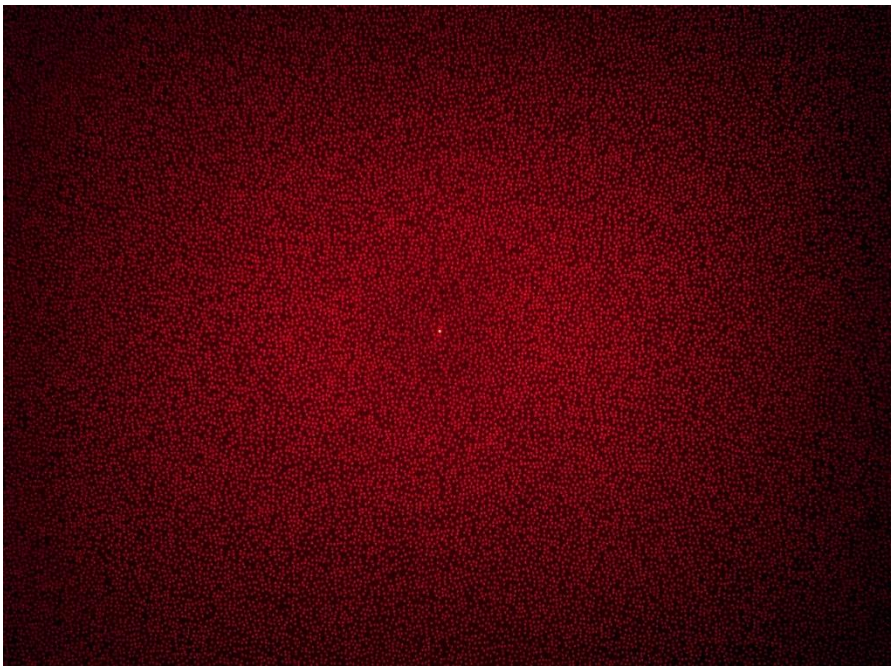
Optical Specifications

Total dots	30,000
Field of View (FOV)	80° × 64°(HxV)
Contrast[1]	≧2
Uniformity[2] in FOV at 1m	≧35%
Zero order[3]	≦0.55%

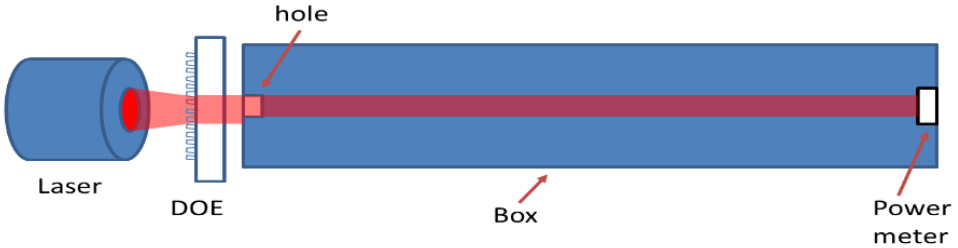
Projecting Pattern



[1] **Contrast**: in the defined area, the ratio of the 95th percentile of the grayscale value over the median grayscale value of the background, $C=I_{95\%}/I_{median}$

[2] **Uniformity**: the ratio of the grayscale value of the area at a given location to the grayscale value of the area in the center of the pattern, $U=I_{each\ area}/I_{max\ of\ each\ area}$

[3] **Zero Order**: (Power meter reading with DOE / Power meter reading without DOE) X 100%



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Cautions

1. Treat heat dissipation before setting the module to full power.
2. Avoid touching the emitting area or optical components of the module.
3. Never look directly at the light from the emitting area.

Disclaimer

1. Semiconductor devices generally fail due to intrinsic characteristics. A DTC module includes an laser chip and a laser diode. Hence, a customer's product needs to be designed with full regard to safety which includes incorporating features to take care of redundancy, fire hazards, and human errors such that any problems or errors arising from the DTC module, does not cause any accidents resulting in injury, death, fire, or property damage. In case the customer uses the module in a system requiring a higher safety level, the customer is responsible to review the conditions for consistency of the entire system to make sure it meets all safety concerns. The DTC is not liable to the user for any losses, costs, damages or expenses incurred arising directly or indirectly from any misuse or unintended use of the product.
2. According to the above specs as provided, DTC reserves the rights to modify, to insert, and/or to withdraw any part of the rules specified herein.

About Digigram

Digigram Technology Co., Ltd., established in 2017, is a leading advanced Diffractive Optical Elements (DOE) manufacturer based in Taiwan. The shareholders of Digigram have more than two decades of experience in diffractive optical design, illumination design and optical system integration for industrial applications. Digigram has close ties with many industrial corporations as well as research institutes in Taiwan through collaborative projects and joint developments, with special emphasis on diffractive optical elements and optical technology. Digigram has state-of-the-art technology and can offer customers the best DOE solution.

Digigram looks forward to hearing from you.

Digigram Technology Co., Ltd
No.88, Ln. 1434, Chunri Rd., Taoyuan Dist.,
Taoyuan City 33051, Taiwan
Phone: +886-3-355-1635
Email: Echo@digigram.com.tw