

Featured Products



High density emission with the industry's narrowest width supports longer distances and higher accuracy in 3D sensing applications

75W High Power Laser Diodes for LiDAR

RLD90QZW3

- 225µm emission width is the industry's smallest in the 75W class
- Uniform intensity over the entire emission width
- Low peak wavelength temperature dependence: 0.15nm/°C
- Achieves an optical conversion efficiency (PCE) of 21% at 75W output

Complete with simulation models (SPICE models, Ray data)



* ROHM July 2021 study

Applications

Service Robots

AGVs (Automated Guided Vehicles)

Security Cameras (Presence detection, motion sensing)

Robot Vacuums

Ideal for spatial recognition and distance measurement

Supports Longer Distances and Higher Accuracy for 3D Sensing

Luminous Intensity Relative to Emission Width

Measurement Conditions
Pulse Width=50ns,
Duty Ratio=0.05%
T_c=25°C, P_o=75W

Improved luminous intensity + narrow emission width contributes to longer ranging LiDAR applications

Standard Product

ROHM [RLD90QZW3]

290µm emission width

290µm emission width

290µm emission width

290µm emission width

290µm emission width

290µm emission width

290µm emission width

Relative Luminous Intensity (a.u.)

Measurement Position (µm)

*ROHM July 2021 study

Accuracy Based on Emission Width

Lens

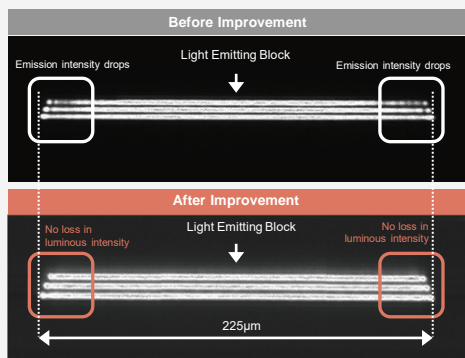
Lens

Narrower width improves LiDAR accuracy

Expands the range of spatial recognition and detection accuracy in LiDAR-equipped applications

LD Near Field Pattern (NFP)

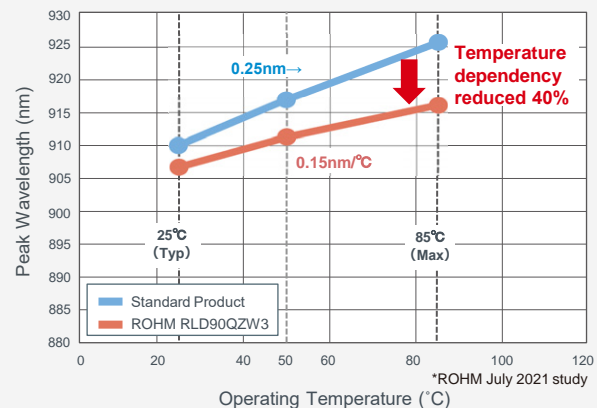
Images Near the Outputs of the Laser Diode (NFP: Near Field Pattern)



Achieves uniform intensity at both ends of the light emitting area

Peak Wavelength Temperature Dependence: 0.15nm/°C

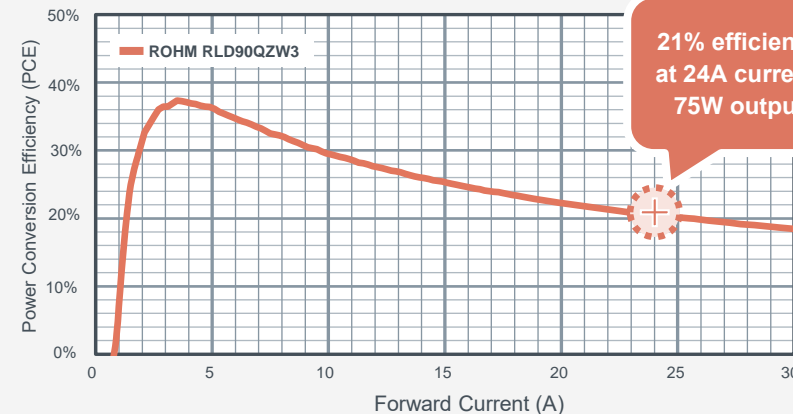
Graph of Peak Wavelength vs Operating Temperature



Provides stable performance against temperature changes

Power Conversion Efficiency (PCE): 21%

Power Optical Conversion Efficiency Graph



Achieves high power optical conversion efficiency (PCE) at 75W

Product Lineup

Part No.	Package size	Absolute Max. Rating (Tc=25°C)					Electrical-Optical Characteristics (C=25°C)				
		I _F (A)	P _D (W)	V _R (V)	Pulse Width (ns)	Operating Temp Range (°C)	I _F Conditions (A)	P _D (W)	V _F (V)	Peak Wavelength (nm)	Emission Width
RLD90QZW5	φ5.6mm CAN	9	25	2	50	-40 to +85	9	25	14	905	70
New RLD90QZW3		30	90				27	75	16		225
★ RLD90QZW8		50	145	42			120	270			

☆ Under Development

Introductory Video on Core 3D Sensing Technologies



This video introduces high power laser diodes used in high accuracy LiDAR systems along with VCSELs that contribute to driver monitoring.

<https://www.youtube.com/watch?v=Bf2bos91l8g&t>



Click here to learn more about LiDAR

Electronic Fundamentals: What is LiDAR?



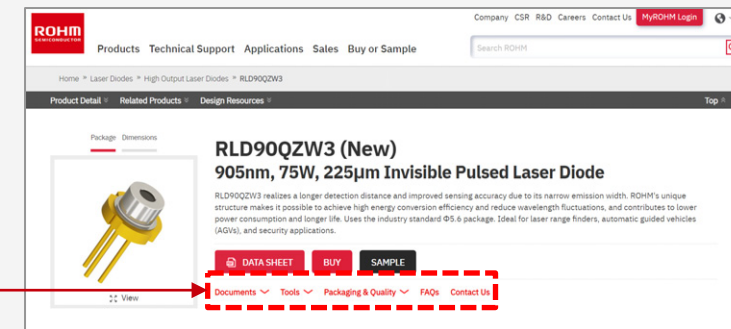
<https://www.rohm.com/electronics-basics/laser/lidar>



Comprehensive Documentation Enables Quick Market Introduction

<https://www.rohm.com/products/laser-diodes/high-power-lasers/rl90qzw3-product>

- Application note describing the design methodology of the drive circuit
- Board development data
- Simulation models (i.e. SPICE models, Ray data)



The information contained in this document is current as of July 1, 2021.



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