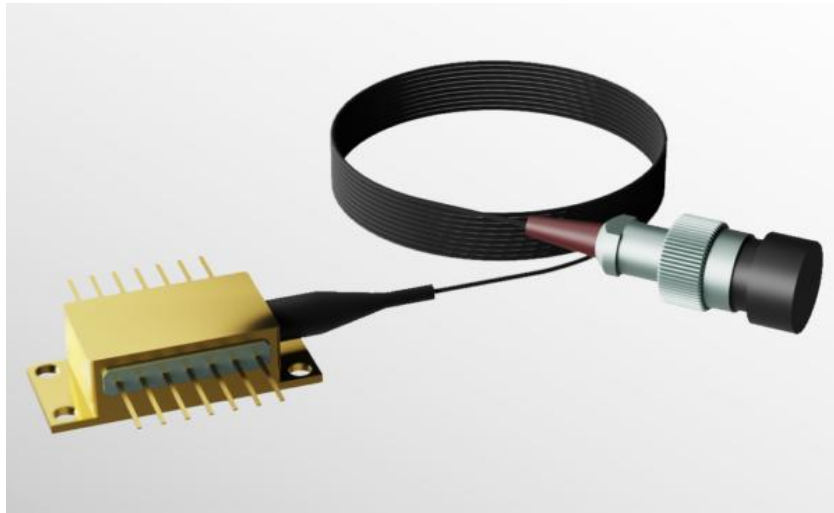


730nm DBR laser diode



- **Product Description**

The 730 nm DBR series high-performance edge-emitting laser diodes are based on advanced monolithic single-frequency GaAs laser technology. This laser series delivers a single spatial mode beam and features end-face passivation processing to ensure high reliability. Devices in the 730 nm DBR series are widely used for frequency doubling, ytterbium atomic spectroscopy, and Raman applications.

- **Product features**

Single longitudinal mode output; ultra-narrow linewidth; high side-mode suppression ratio

● Part Number

MP-DBR-730-40-14BF-PA

● Application area

Atomic / Molecular Physics | High-Resolution Spectroscopy | Biomedical

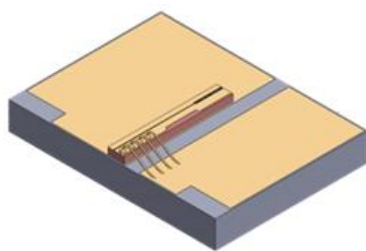
Imaging | Quantum Technology

● Core parameters

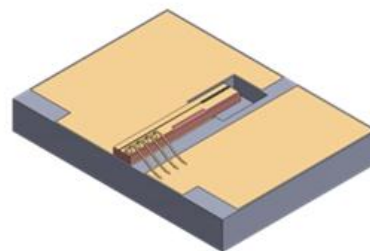
Central Wavelength
730 ± 0.6nm

● General Parameters

Specifications



Chip on Submount (CoS)



CoS + Mode-Hop Free (MHF)



730nm DBR Chip-on-Submount (CoS) Characteristics

Chip Configuration

Parameter	Value
Nominal Wavelength	730 ± 0.6 nm
Power Range	40–80 mW
Max Operating Current (CW & Pulsed)	200 mA
Optical Power at Max Current	80 mW
Nominal Slope Efficiency	0.8 W/A
Nominal Threshold Current	80 mA

Notes

All characteristics are measured at case temperature $T_C=25^\circ\text{C}$ unless otherwise noted. Operation beyond these parameters will void the warranty.

Hermetically packaged devices may contain Chip- on- Submount (CoS) with wavelength deviation of $\pm 1.2\text{ nm}$ from the nominal value.

Available Free-Space Packaging Add-Ons



TO-8



C-Mount



Transmitter Optical Subassembly (TOSA)

Laser Diode Parameters

Parameter	Unit	Min.	Typ.	Ma x.
Storage Temperature	°C	0	-	70
Case Operating Temperature	°C	5	-	70
Laser Chip Operating Temperature ¹	°C	5	-	45
Laser Series Resistance	Ω	-	2	-
Laser Forward Voltage @ LIV Current	V	-	2	-
Laser Linewidth (Typ. @ LIV Current)	kHz	-	500	-
Beam Divergence @ FWHM ($\theta \times \theta_{\perp}$)	°		6 × 28	8 × 32
Side Mode Suppression Ratio (SMSR)	dB	-	-40	-



Polarization Extinction Ratio	dB	-17	-20	-
Laser Polarization	-	-	TM	-
Mode Structure	-	-	Fundamental Mode	-
Temperature Tuning Rate	nm/°C	-	0.06	-
Current Tuning Rate	nm/mA	-	0.002	-
Laser Reverse Voltage	V	-	-	0

Operation below dew point is not recommended unless hermetically packaged.

Free-Space Package Additional Components

Parameter	Unit	Min.	Typ.	Max.
Photodiode Forward Current	mA	-	-	10
Photodiode Reverse Voltage	V	-	-	50
TEC Current (TOSA)	A	-1.1	-	1.1
TEC Voltage (TOSA)	V	-3.0	-	3.0
TEC Current (TO-8)	A	-1.8	-	1.8



TEC Voltage (TO-8)	V	-2.2	-	2.2
Thermistor Resistance	kΩ	-	10	-

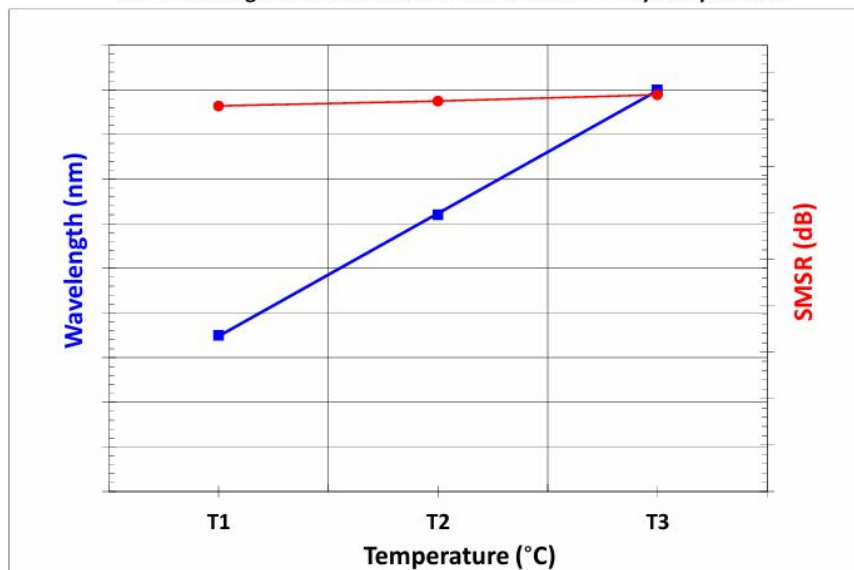
These devices are sensitive to electrostatic discharge (ESD).

When handling the modules, use a grounded work area and an anti-static wrist strap.

For storage, always keep them in an anti-static container with all leads short-circuited.



Air Wavelength Characteristics at Constant Current by Temperature





LIV Characteristics by Current

