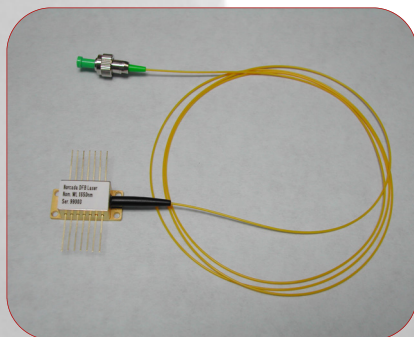
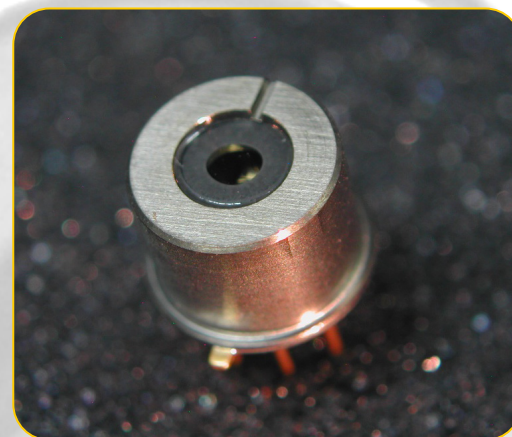


Near-IR DFB Lasers

NORCADA designs and manufactures single mode semiconductor distributed feedback (DFB) lasers for industrial sensing and environmental monitoring applications. Our DFB lasers come with two main styles of hermetic packaging configurations designed for excellent temperature stability and wavelength tuning.

Product Features

- Integrated DFB grating provides single frequency operation
- Frequency tuning can be accomplished by adjusting either laser drive current or temperature.
- Tuning range up to 6 nm without mode hopping
- Temperature tuning control: 0.1 nm / °C
- Drive current tuning control: 0.04 nm / mA
- Output Power: 10-20 mW
- Narrow linewidth <2 MHz



Packaging Options

- TO-39 package
- Window with 7° slope
- Hermetically sealed
- Integrated thermoelectric cooler (TEC)
- Mounted lens for collimation
- Butterfly package with fibre coupled output

Available Wavelengths

1300nm—1670nm

Applications

- Molecular spectroscopy
- Industrial gas sensing (TDLAS)
- Environmental monitoring

Typical wavelengths for trace gas sensing applications

λ (nm)	1321	1390	1512	1542	1576	1578	1653
Gas	HF	H ₂ O	NH ₃	HCN	H ₂ S	CO / CO ₂	CH ₄

Norcada DFB Laser Diodes at 1653nm

Norcada's near-IR DFB lasers are well suited for TDLAS based sensing applications for a wide variety of gas molecules that exhibit characteristic absorption lines in the near infrared region. An excellent example of this is our 1653nm DFB laser, which is ideal for sensing of trace level methane that has several strong absorption peaks near 1653nm.

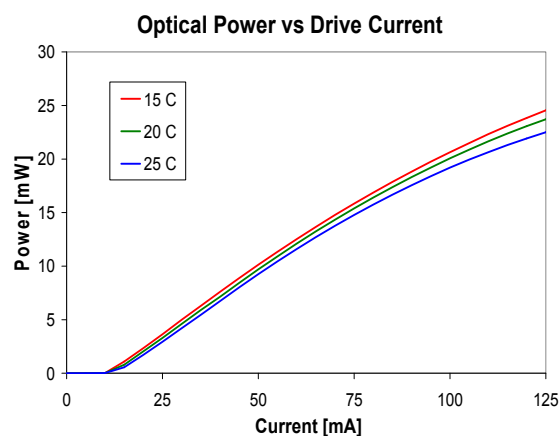


Fig. 1 LV curve for 1653nm DFB laser

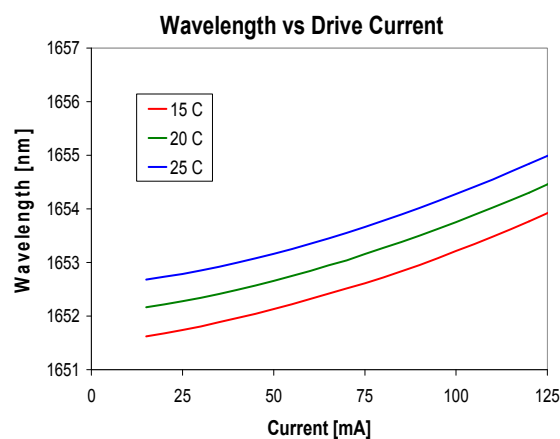


Fig. 2 Wavelength vs current for 1653nm DFB laser

Fig. 1 and Fig. 2 show the laser characteristics at 1653nm wavelength. Other wavelengths in the 1300-1670nm range all have similar performance characteristics.

Please contact Norcada for further details about our Near-IR DFB lasers.

General Ratings and Operating Conditions for 1653nm DFB Laser Diodes

Parameters (T = 25°C)	Units	Min.	Typ.	Max.
Threshold Current	mA	10	10	15
Optical power	mW	8	12	16
Center Wavelength	nm	1652	1653	1654
Temperature Tuning	nm/°C		0.1	
Current Tuning	nm/mA	0.03	0.04	0.06
Beam profile (slow axis)	degrees		18	
Beam profile (fast axis)	degrees		25	
Side mode suppression (SMSR)	dB	30		
Storage Temperature	°C	-40		80
Case (Instrument) Operating Temperature	°C	-20		50
Laser Diode Forward Current	mA			125