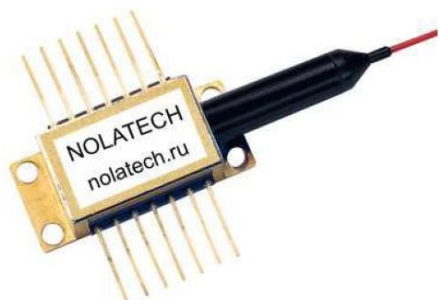


Tunable Laser Diode 650nm 10mW



TLD-650-14BF Fiber Bragg Grating laser is a stable narrow band light source with a wavelength tuning possibility in 1-2 nm range. The laser is packaged in 14-pin standard butterfly package with monitor photodiode and thermo-electric cooler (TEC).

Key Features

- Optical output: 10mW
- Narrow linewidth ($\Delta\nu < 0.1\text{MHz}$)
- Tuning range: $> 1\text{nm}$
- Wavelength: 650nm
- SM or PM fiber
- FC-APC connector
- Internal monitor PD and TEC
- 14-pin butterfly package

Optical and electrical characteristics: (T = 25°C)

Item	Symbol	Test condition	Min.	Typ.	Max.	Unit
Output Power	P_f			10		mW
Forward Voltage	V_f	$P_f=10\text{mW}$			2.5	V
Threshold Current	I_{th}		20		60	mA
Forward Current	I_f	$P_f=10\text{mW}$		100	200	mA
Center Wavelength	λ_c	$P_f=10\text{mW}$		660		nm
Spectral Width	$\Delta\lambda$	$P_f=10\text{mW}$		100		kHz
Side Mode Suppression Ratio	SMSR	$P_f=10\text{mW}$	40	45		dB
Relative Intensity Noise	RIN	$P_f=10\text{mW}$		-145		dB/Hz
Monitor Current	I_m	$P_f=10\text{mW}, V_{RD}=5\text{V}$	40		200	μA
PD Dark Current	I_d	$V_{RD}=5\text{V}$			0.1	μA
Cooler Voltage	V_c	$I_f=EOL, TC=70^\circ\text{C}$			2.7	V
Cooler Current	I_c	$I_f=EOL, TC=70^\circ\text{C}$			1.4	A
Thermal Resistance	R_o	$T_{LD}=25^\circ\text{C}, B=3900\pm 100\text{K}$	9.5	10.0	10.5	k Ω
Extinction Ratio	X_p	$P_f=10\text{mW}$	17			dB
Mode Hop Free Range	ΔI			30		mA
Tuning Range	Δf		1	1.5		nm
PZT Tuning Voltage	V_T		0		150	V
Current Tuning	$\Delta\lambda/\Delta I$			0.001		nm/mA
Temperature Tuning	$\Delta\lambda/\Delta T$			0.08		nm/ $^\circ\text{C}$

Absolute Maximum Ratings

Item	Symbol	Rating	Unit
LD Forward Current	I_f	200	mA
LD Reverse Voltage	V_r	1.8	V
PD Reverse Voltage	V_{RD}	10	V
Operation Case Temperature	T_c	-40 to +70	°C
Storage Temperature	T_{stg}	-40 to +85	°C
Cooler Current	I_c	1.4	A

PACKAGING

No.	FUNCTION	No.	FUNCTION
1	Cooler anode +	8	PZT tuning -
2	Thermistor	9	NC
3	PD anode -	10	LD anode +
4	PD cathode +	11	LD cathode -
5	Thermistor	12	NC
6	NC	13	Case
7	PZT tuning +	14	Cooler anode -

