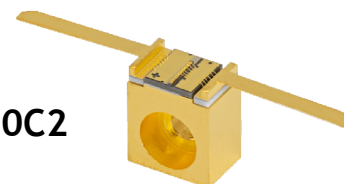


QF4050C2



Description

The QF4050C2 is a single spatial mode, Fabry-Perot Quantum Cascade Laser designed and manufactured by Thorlabs. This laser operates in Continuous Wave (CW) mode at room temperature. The QF4050C2 is mounted on an open heatsink C-mount package. The laser cathode is electrically isolated from the heatsink base. This discrete semiconductor laser is a compact light source suited to many applications. There is no monitor photodiode.

Specifications

QF4050C2	
LD Reverse Voltage (Max)	1 V
Absolute Max Current	700 mA
Absolute Max Output Power	600 mW
Operating Temperature ^a	15 to 50 °C
Storage Temperature ^a	-40 to 85 °C

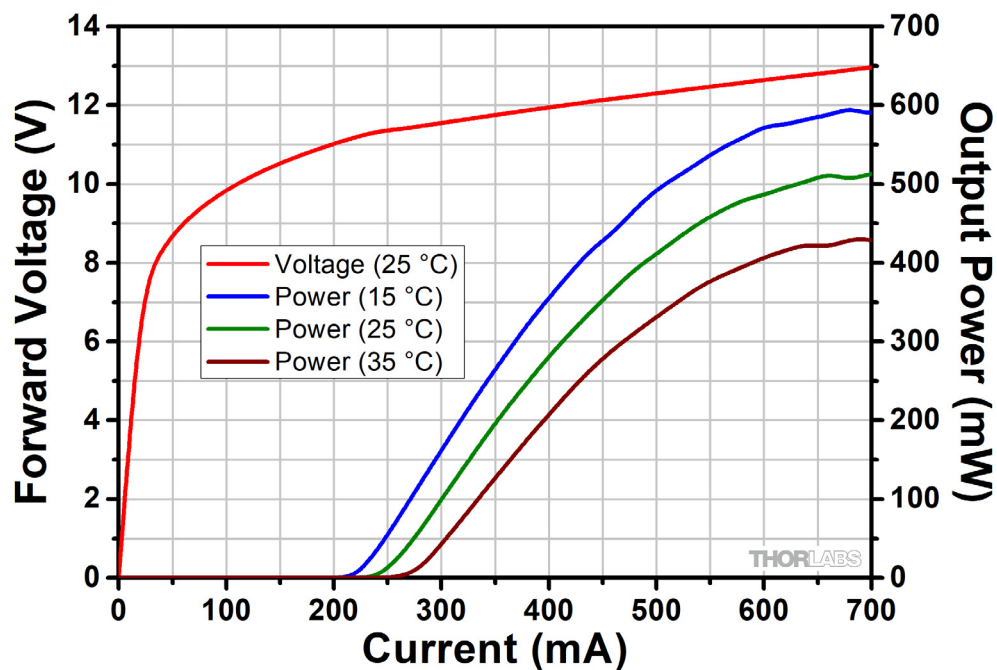


a. Non-Condensing Environment

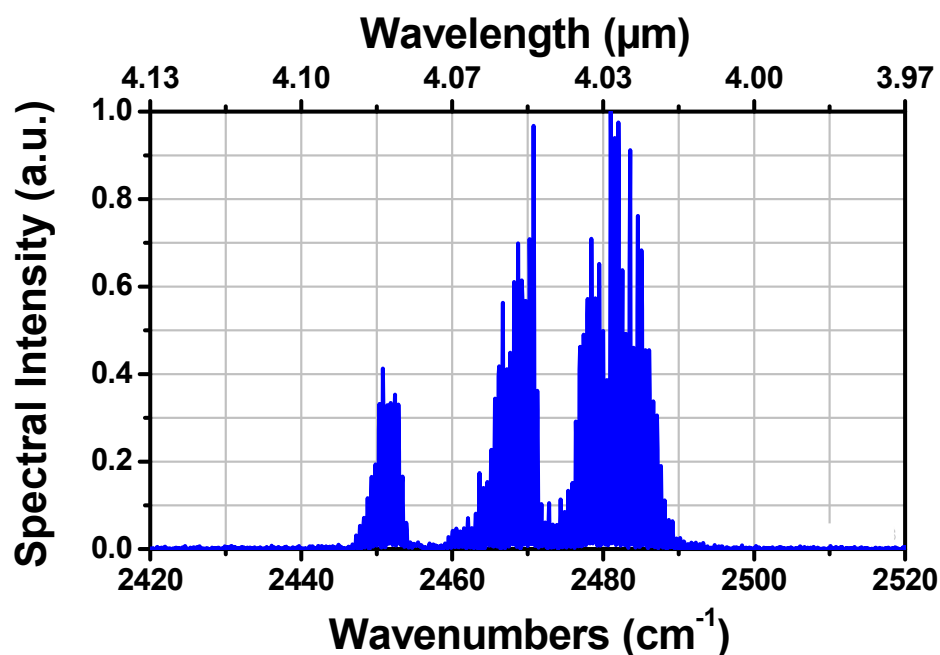
QF4050C2 Specifications, T _{case} = 25 °C, CW Current Operation				
	Symbol	Min	Typical	Max
Center Wavelength	λ_c	3.90 μm	4.05 μm	4.20 μm
Spectral Bandwidth (5% - 95% Integrated Power)	$\Delta\lambda$	-	60 nm	-
Output Power	P _{out}	300 mW	-	-
Operating Current	I _{op}	-	400 mA	500 mA
Threshold Current	I _{TH}	-	250 mA	-
Forward Voltage	V _F	-	12 V	14 V
Slope Efficiency	$\Delta P / \Delta I$	-	2.0 W/A	-
Divergence Angle, Perpendicular (FWHM)	$\theta_{\perp}$	-	42°	-
Divergence Angle, Parallel (FWHM)	$\theta_{\parallel}$	-	30°	-

Sample Performance Plots

QF4050C2 Sample L-I-V Characteristics

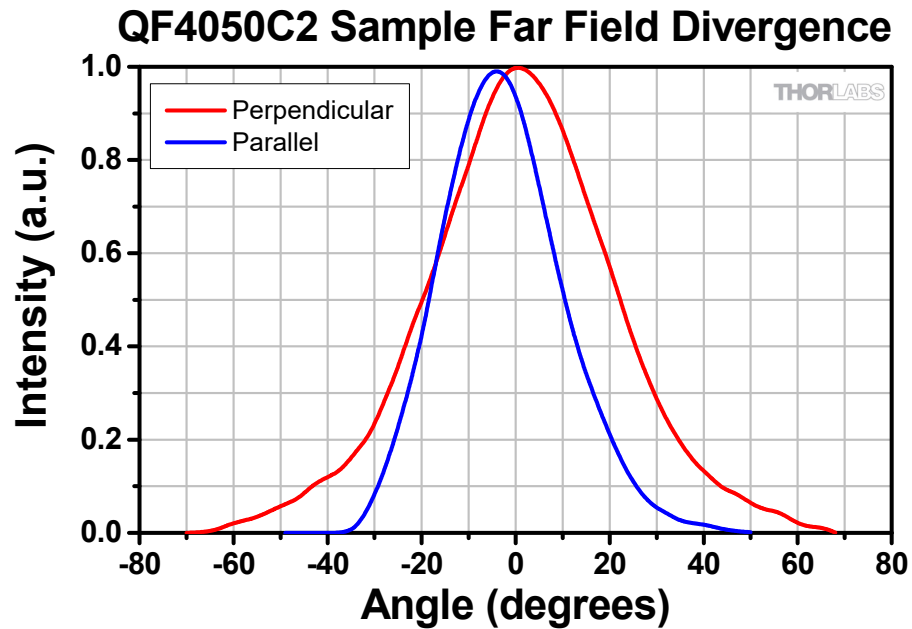


QF4050C2 Sample Output Spectrum



The spectrum above shows the fine structure of the Fabry-Perot modes. Please note that the resolution bandwidth of this measurement is 0.125 cm⁻¹ (3.75 GHz).

Performance Plots (Cont.)



Far field divergence values are measured at 25 °C and at a distance of 89.4 mm from the laser. The detector's aperture is Ø10 mm, and the sampling step size is 3°. The angle subtended by the detector is 6.4°.

Drawings for QF4050C2

