4600 nm Quantum Cascade Laser, 600 mW

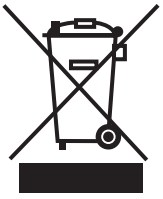
QF4600C2

Description

The QF4600C2 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 QF4600C2 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

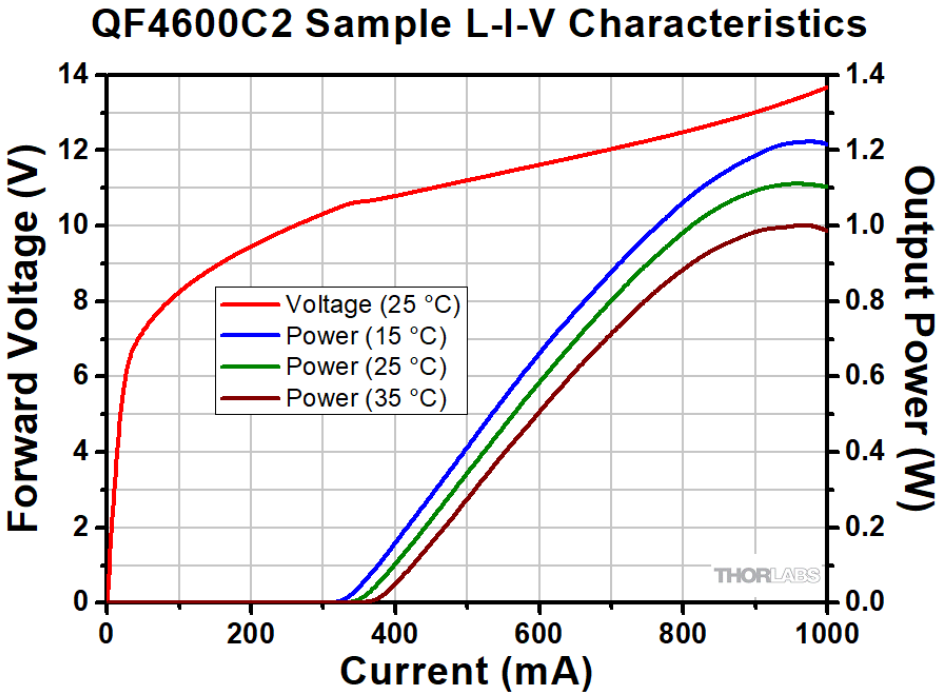
QF4600C2	
LD Reverse Voltage (Max)	1 V
PD Reverse Voltage (Max)	N/A
Absolute Max Current	1.0 A
Absolute Max Output Power	1.4 W
Operating Temperature[a]	15 to 50 °C
Storage Temperature[a]	-40 to 85 °C

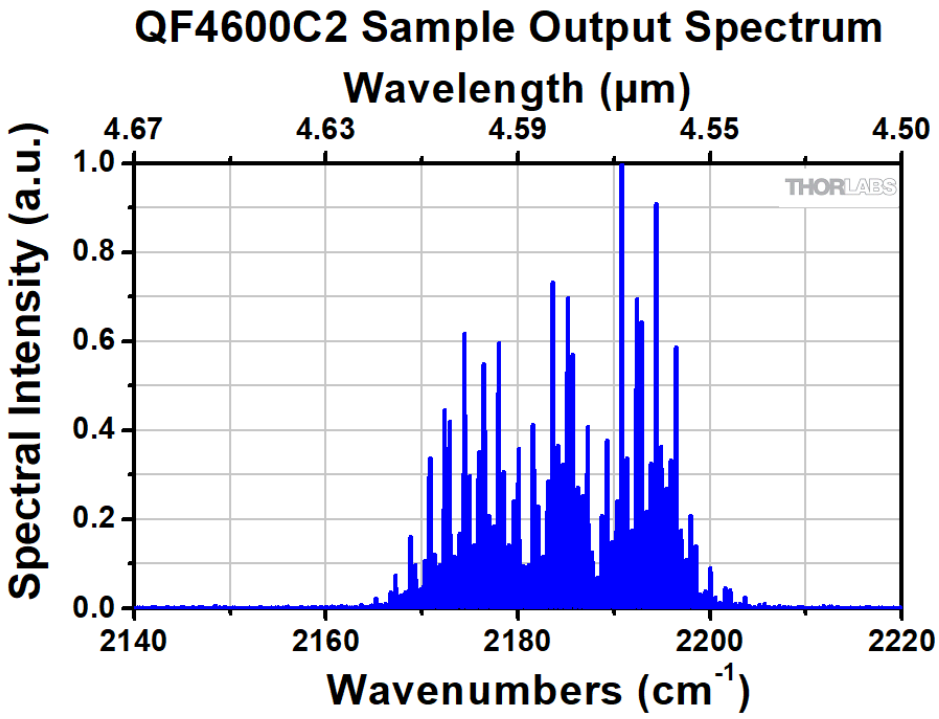


a. Non-Condensing Environment

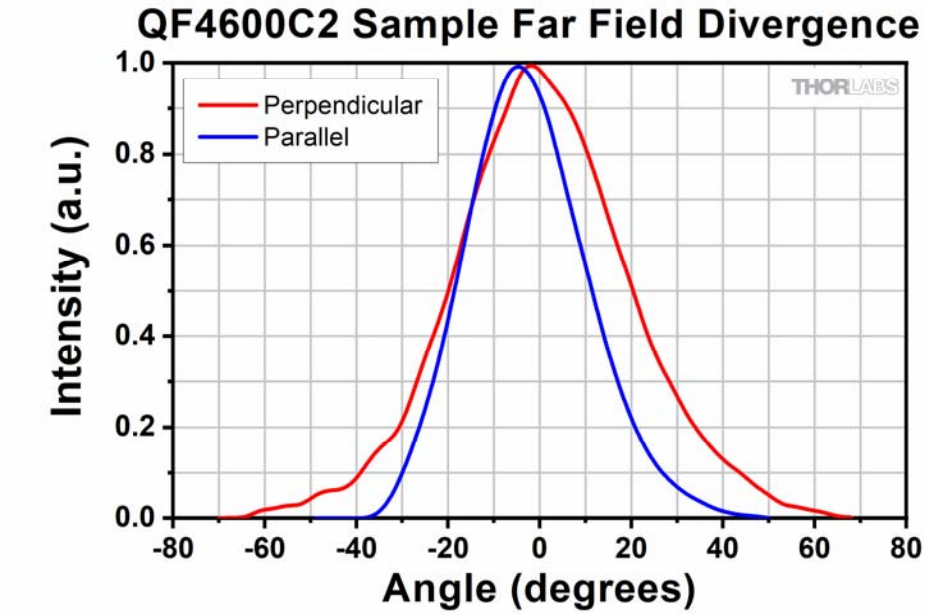
QF4600C2 Specifications, T_{case} = 25 °C, CW Current Operation				
	Symbol	**Min**	**Typical**	**Max**
Center Wavelength	λ_C	4.50 µm	4.60 µm	4.70 µm
Spectral Bandwidth (5% - 95% Integrated Power)	$\Delta\lambda$	-	80 nm	-
Output Power	P_{out}	600 mW	-	-
Operating Current	I_{op}	-	600 mA	800 mA
Threshold Current	I_{TH}	-	300 mA	-
Forward Voltage	V_F	-	12 V	14 V
Slope Efficiency	$\Delta P/\Delta I$	-	2.5 W/A	-
Divergence Angle, Perpendicular (FWHM)	$\theta_\perp$	-	42°	-
Divergence Angle, Parallel (FWHM)	$\Theta_\parallel$	-	30°	-

Sample Performance Plots





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 QF4600C2