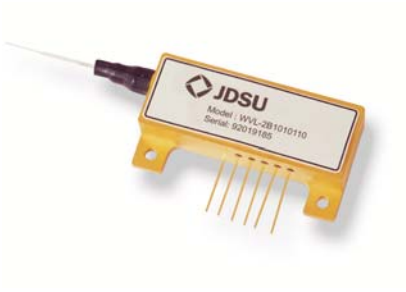
Broadband (Fabry-Perot) Wavelength Locker



Key Features

- Extremely low temperature dependence
- High accuracy
- Periodic locking covers all channels (one part number for any channel to reduce inventory)
- Temperature sensor included for better locking accuracy, if necessary
- Operation over C and L bands

Applications

- Precise laser locking for DWDM and ultra DWDM transmitter
- Wavelength monitoring
- Laser stabilization for tunable laser module
- DWDM channel frequency and optical power monitoring

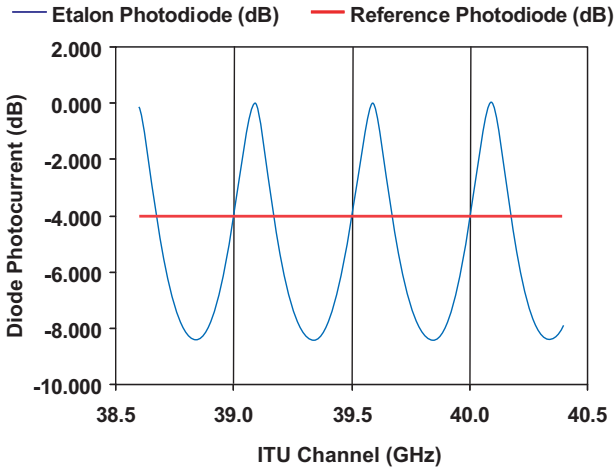
Compliance

- Telcordia 1221

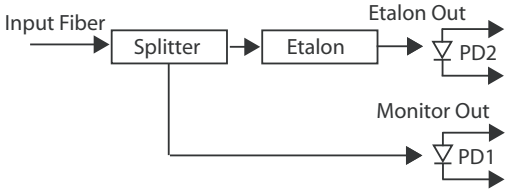
The broadband (Fabry-Perot) wavelength locker is a thermally stable, air-gapped, etalon-based device that can be used to stabilize laser sources for high-density WDM applications and tunable lasers. Our 50 GHz, free spectral range (FSR) designs are industry-standard products.

The broadband wavelength locker has a wide capture range and excellent wavelength accuracy. The temperature sensor, included with every locker, can be used to calibrate out thermal effects when even higher wavelength accuracy is required or when using a very narrow FSR locker.

Theoretical Frequency Response: 50 GHz



Optical Schematic



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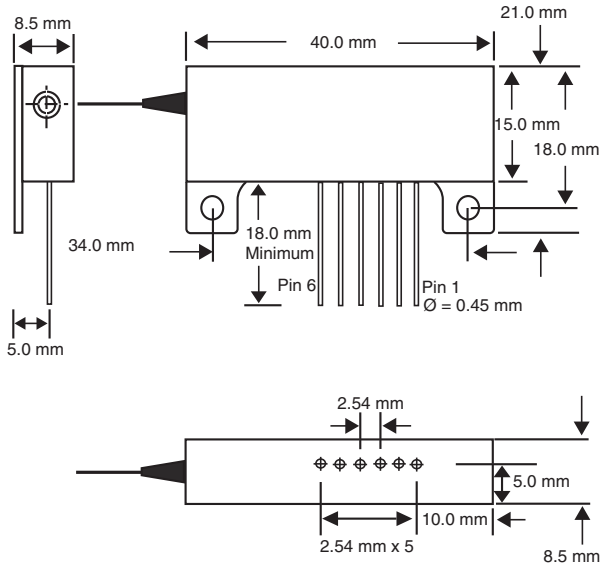
Dimensions Diagram

(Specifications in mm unless otherwise noted.)



Pinout

Pin	Description
1	Monitor PD1 anode (+)
2	Etalon PD2 anode (+)
3	PD1, PD2 cathode (-)
4	Temperature sensor supply voltage
5	Temperature sensor monitor
6	Temperature sensor ground

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Specifications

Parameter		50 GHz Free Spectral Range
Wavelength range		1520 to 1620 nm
Center wavelength		ITU grid (standard) or as specified
Center channel accuracy over temperature, polarization, and EOL[1]	Maximum	±2.5 GHz[2]
Polarization dependent channel accuracy (included in total center channel accuracy)	Maximum	0.8 GHz
Acquisition range (capture range) from nominal ITU center frequency	Typical	-30 to 12 GHz
Locking slope at ITU point	Typical	80 dB/nm
Optical operation power range (P_{in}) ~ input to module	Typical	-25 to 7 dBm
Optical return loss[3]	Minimum	50 dB
Optical input power for damage	Minimum	10 mW (CW)
Photodetector calibration offset	Maximum	±2.5 dB
Photocurrent		
Responsivity of reference (PD1)		0.16 to 0.32 A/W
Responsivity of etalon (PD2)		0.16 to 0.40 A/W
Photodetector dark current	Typical	0.3 nA at 5 V_R, 25°C
	Maximum	0.5 nA at 5 V_R, 25°C
Temperature sensor supply voltage at 130 µA		5 to 30 V
Temperature sensor monitor	Typical	10 mV/°C
Package dimensions (W x H x D)		40 x 8.5 x 21 mm
Electrical pin spacing (center to center)		2.54 mm
Fiber type		SMF-28
Operating temperature		0 to 70°C
Storage temperature		-40 to 85°C
Humidity (noncondensing)		0 to 85% RH

Note: Data for temperature sensor reported at three temperatures at one wavelength (ITU 40). All three temperatures (0, 23 and 70°C) are ±3°C.

1. Calibrated at channel of use.
2. Approaching ±1.25 GHz with temperature sensor.
3. Connected with a five percent tap coupler.

Ordering Information

For more information on this or other products and their availability, please contact your local JDSU account manager or JDSU directly at 1-800-498-JDSU (5378) in North America and +800-5378-JDSU worldwide, or via e-mail at customer.service@jdsu.com.

Sample: WVL-2B1050410

WVL-2B1050 □ □ □

Code	Fiber Type
1	250 µm fiber (SMF-28)[2]
4	900 µm tight buffer (SMF-28)

Code	Fiber Length
1	1 meter [3]

Code	Connector[1]
0	No connector
2	FC/SPC
3	FC/APC
4	SC/SPC
5	SC/APC

1. Insertion loss and return loss change depend on connector type.
2. Not available with connector.
3. Tolerance +10 cm, -0 cm

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