

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

Compliance

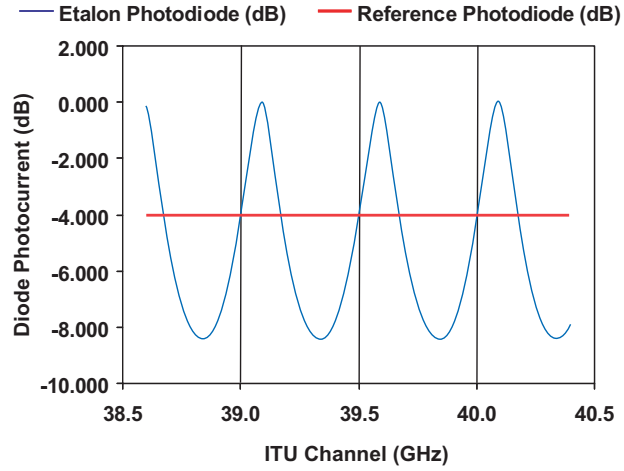
- Telcordia 1221

The Broadband (Fabry-Perot) Wavelength Locker is a thermally stable, air-gapped etalon-based device. It can be used to stabilize laser sources for high-density WDM applications and tunable lasers. 50 GHz and 100 GHz FSR designs are the standard products available. These two FSR models are available with offsets of 25 GHz and 50 GHz, respectively, in order to support interleaved architectures. All FSR and ITU offset variations come in the same industry standard package.

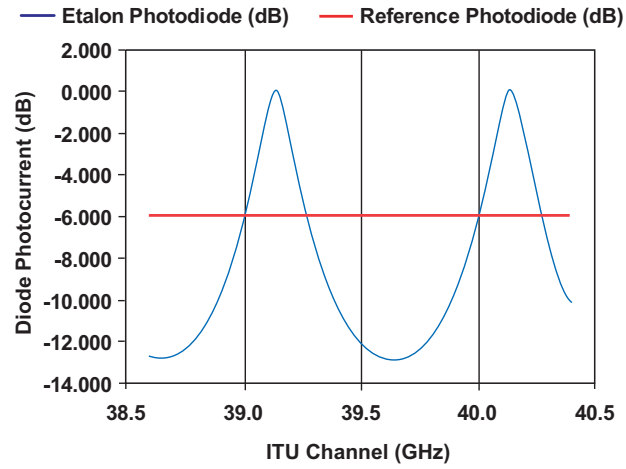
The Broadband Wavelength Locker has a wide capture range and excellent wavelength accuracy. The temperature sensor, included with every locker, can be used to calibrate out thermal effects when even higher wavelength accuracy is required or when using a very narrow FSR locker.

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Theoretical Frequency Response: 50 GHz



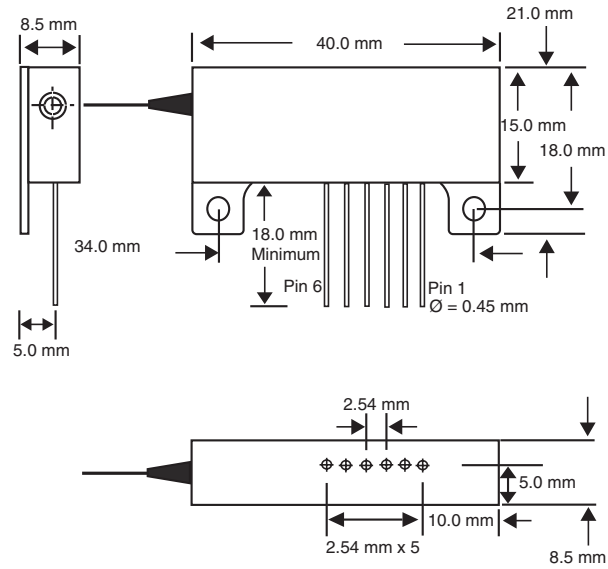
Theoretical Frequency Response: 100 GHz



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Dimensions Diagram

(Specifications in mm unless otherwise noted.)



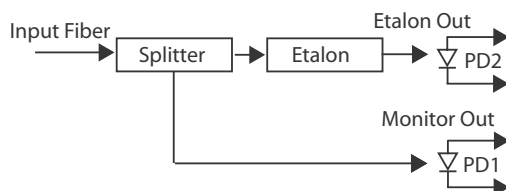
Pinout

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

Optical Schematic



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Specifications

Parameter		50 GHz Free Spectral Range	100 GHz Free Spectral Range
Wavelength range		1520 to 1620 nm	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	-65 to 25 GHz
Locking slope at ITU point	Typical	80 dB/nm	55 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	0.08 to 0.16 A/W
Responsivity of etalon (PD2)		0.16 to 0.40 A/W	0.08 to 0.28 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 (non-condensing)			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 5% 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-2B1010410
WVL-2B10


Code	Channel Alignment
10	100 GHz on ITU grid
20	100 GHz with 50 GHz offset to ITU grid
50	50 GHz on ITU grid
60	50 GHz with 25 GHz offset to ITU grid



Code	Fiber Type
1	250 μ m fiber (SMF-28) ²
4	900 μ m 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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