OSICS DFB CWDM

DISTRIBUTED FEEDBACK LASER

SPEC SHEET

The OSICS DFB modules are based on high-performance distributed feedback laser diodes.

KEY FEATURES

- Internal and external modulation
- +10 dBm optical power
- Internal wavelength calibration for 30 pm accuracy
- Wavelength can be finely tuned over 1.8 nm (typ.) with the internal temperature control
- Front-panel control

KEY FEATURES

Internal and external modulation

+10 dBm optical power coupled in a polarization maintaining fiber with a remarkable 5 pm wavelength stability over one hour.

The internal wavelength calibration yields a 30 pm accuracy and the wavelength can be finely tuned over 1.8 nm (typ.) with the internal temperature control.

Each module can be controlled from the front panel of the mainframe or through the remote interface. The modules and the mainframe offer a full suite of internal and external modulation capabilities.

20 CHANNELS

EXFO's module covers all CWDM channels from 1270 nm to 1610 nm plus two additional channels: the first at 1625 nm and the second at 1650 nm. The channel center of a DFB is located at ±3 nm from the grid wavelength.

APPLICATIONS

CWDM

Coarse wavelength division multiplexing is finding its way in many short-haul applications such as transmission between antennas. The OSICS DFB CWDM modules can fully load the system for testing at maximum capacity.

OSC

The optical supervisory channel is commonly used for communication between optical amplifiers. The 1510 nm or the 1625 nm channels are most used for this application.

OTDR

Optical time domain reflectometry uses widely spaced lasers. It is noted that 1625 nm or 1650 nm can be used when a line is in operation without disturbing traffic.

SPECIFICATIONS

			OSICS DFB CWDM SMF	OSICS DFB CWDM PM13	OSICS DFB CWDM PM15
Models [a]	Channels		See channel grid in the Ordering Information table below		
	Grid wavelength of the first channel		1270 nm	1310 nm	1450 nm
	Grid wavelength of the last channel		1650 nm		1650 nm
Wavelength	Channel center [b]		Wavelength grid ±3 nm		
	Tuning range		1.6 nm (1.8 nm typ.)		
	Accuracy [c]		±0.03 nm		
	Stability over 1 hour [c, d, e]		±0.005 nm		
	Stability over 24 hours [c, d, e]		±0.005 nm typ.		
Power	Maximum		10 mW (for channels from 1270 nm to 1570 nm) 8 mW (for channels from 1590 nm to 1650 nm)		
	Stability over 1 hour [c, d, e]		±0.01 dB		
	Stability over 24 hours [c, d, e]		±0.01 dB typ.		
	Optical isolation		> 30 dB		
	RIN (Relative intensity noise) [f]		< −140 dB/Hz		
Spectrum	Laser linewidth		< 10 MHz		
	SMSR [c]		> 30 dB (40 dB typ.)		
Modulations	TTL (internal and external)		1 Hz to 890 kHz		
	Analog (external / front panel)		150 Hz to 150 MHz		
	SBS suppression (internal) [g]	Waveform	sine		
		Frequency range	10 kHz to 100 kHz		
		Modulation depth	0 to 15 %		
Interfaces on module front panel [h]	Enable key with status LED		Power up laser		
	Optical fiber		SMF	PM13	PM15
	Optical connector		FC/APC narrow key		
	Fiber alignment to connector key		n/a	Slow axis	
	PER (polarization extinction ratio)		n/a	> 17 dB	
	Electrical connector (analog modulation)		Coaxial SMB – 50 Ω		
Others	Laser safety		Class 1 M		
	Dimensions (W x H x D)		35 mm x 128 mm x 230 mm		
	Weight		1.1 kg		

Notes

a. See the table on following page for complete overview of selectable channels for order.

b. Location of channel center: lower boundary of the range + 0.4 nm < channel center < upper boundary of the range - 0.4 nm.

c. After warm-up and at maximum power.

d. At a constant temperature.

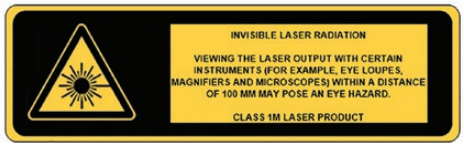
e. Measured with an APC terminated jumper on a power meter.

f. RIN within the range 100 MHz–20 GHz measured at 10 dBm output power with RBW = 30 kHz.

g. SBS = Stimulated Brillouin scattering.

h. See OSICS mainframe datasheet for details on OSICS common specifications and interfaces on the rear panel.

LASER SAFETY



ORDERING INFORMATION

	Model selection																			
Ch. N°	001	002	003	004	005	006	007	008	009	010	011	012	013	014	015	016	017	018	019	020
	Wavelength (nm)																			
Grid	1270	1290	1310	1330	1350	1370	1390	1410	1430	1450	1470	1490	1510	1530	1550	1570	1590	1610	1625	1650
SMF	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
PM13			√																	
PM15										√	√	√	√	√	√	√	√	√	√	√

ORDERING INFORMATION

OS-DFB-C-XX-XX-XX-58

Wavelength band
F = SMF28 singlemode output fiber
O = PM13 polarization maintaining fiber
SCL = PM15 polarization maintaining fiber

Channel number
Wavelength = 1250 + 20 nm x Channel number
001-009 = Available for “F” and “O” wavelength bands.
Check availability if other than 003 for “O” wavelength band
010-020 = Available for “F” band and “SCL” wavelength bands

Connector
58 = FC/APC

Output fiber
00 = SMF28 singlemode output fiber
(only with “F” wavelength band)
P = Polarization maintaining fiber
(only with “O” or “SCL” wavelength bands)

Example: OS-DFB-C-F-011-00-58

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