

VIAVI

Distributed Feedback (DFB) Source Module

Part of the MAP Series General Purpose mSRC-C2 family

The Multiple Application Platform (MAP) Distributed Feedback (DFB) lasers are stabilized fixed wavelength light sources with coverage of O-, C- and L-band telemetry wavelengths at 1310, 1510, 1610, 1625 and 1653 nm.



VIAVI offers a range of DFB lasers as part of the general purpose light source modules (mSRC) in the MAP portfolio. DFB lasers are offered at the standard O, C and L-band telemetry wavelengths, plus the common out-of-band OTDR sensing wavelengths at 1625 and 1653nm.

DFB lasers are narrow-linewidth lasers that use a grating to define the output wavelength very precisely. They also offer good side-band suppression and are inherently mode-hop free. They are typically used for applications where wavelength and power stability are key.

Functional Description

DFB lasers are similar to Fabry-Perot cavity, but with grating above active layer. The main advantage of a distributed feedback (DFB) laser is to sharpen up the output of regular Fabry-Perot lasers.

VIAVI DFB laser modules have excellent output power stability ($\pm 0.025\text{dB}$), figure 1. Optical isolators eliminate stability effects caused by back reflection from dirty or open connectors.

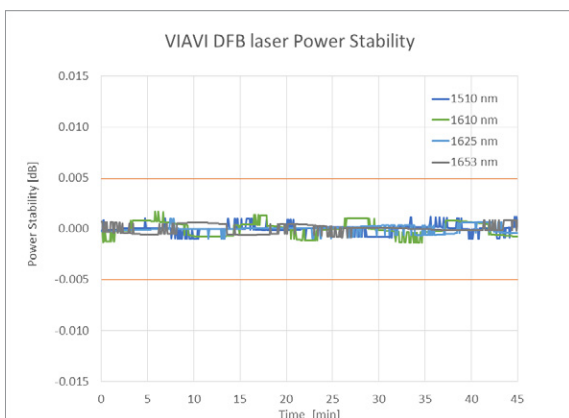


Figure 1 -DFB Source Stability over three hours at constant current mode and at room temperature

Key Features

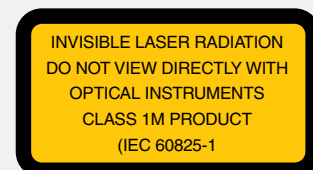
- One, two or four individual outputs
- Single Mode variant
- Compatible with all MAP-300 series and MAP-220

Applications

- 1310nm source enables R&D tests in Silicon-Photonic applications
- Channel monitoring in DWDM systems
- DFB sources for system telemetry channels
- Loss and power meter calibration
- Enabling 400GE manufacturing test.
- Spectroscopy, metrology and atomic physics
- Wavelength grid matched to LANWDM channels with power adjustment of at least 10dB

Compliance

- The MAP series mSRC-C2 module, when installed in a MAP chassis, complies to CE, CSA/ UL/IEC61010-1, LXI Class C requirements, meets the requirements of Class 1M in standard IEC 60825-1 (2014), and complies with 21 CFR 1040.1 except deviations per Laser Notice No. 50.



An intuitive graphic user interface (GUI) is optimized for use in either a laboratory or a manufacturing environment. Efficient transition between summary and detailed views allows users to operate at a system level or access the full power of a module.

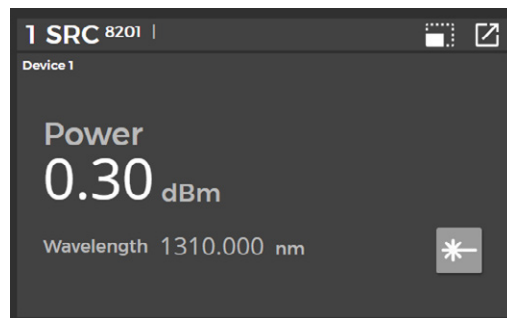


Figure 2 – mSRC-C2 MAP-300 summary view GUI

Options and Configurations

The VIAVI DFB sources are offered in multiple individual output cassette or a single output.

Source	Target Applications
1310	Generalized O-band source
1510	C-band telemetry
1610	L-band telemetry
1625	OTDR sensing channel
1653	Out-of-band OTDR sensing channel

Chassis and Modular Family

The VIAVI Multiple Application Platform (MAP) is a modular, rack mountable or benchtop, optical test and measurement platform with chassis' that can host 2, 3 or 8 application modules. The LightDirect family of modules are characterized by their simple control and single function nature. Individually or together they form the foundation of a diverse array of optical test applications. The web enabled multiuser interface is simple and intuitive. LXI compliant with a full suite of SCPI based automation drivers and PC based management tools, the VIAVI MAP is optimized for both the lab to manufacturing environments.

The mSRC is part of the LightDirect module family. Alongside the many other modules, such as optical attenuators, polarization scramblers, power meters, and spectrum analyzers, the MAP series is the ideal, modular platform for photonic system and module testing.

The mSRC-C2 is compatible with all current MAP-300 and MAP-200 chassis.



Light Direct

Specifications

For more information on this or other products and their availability, please contact your local VIAVI account manager or VIAVI directly at 1-844-GO-VIAVI (1-844-468-4284) or to reach the VIAVI office nearest you, visit viavisolutions.com/contacts.

Optical Parameters ¹	Single Mode DFB Source						
Peak Wavelength ²	1310nm	1510nm	1610nm	1625nm	1653nm	1310/1510nm	1510/1610/1625/1653nm
Spectral Width (FWHM)	<0.03nm						
Output Optical Power	≥ 6dBm						
Optical Power Stability (15 minutes) ³	±0.005 dB						
Optical Power Stability (3 hours) ³	±0.025 dB						
TEC Stabilized	Yes						
Wavelength Tolerance	±3nm						
Optical Power Turning Range ⁴	≥ 10dB						
Power Control Mode	Constant Current or Constant Power						
Modulation ⁵	0.15 to 2kHz						
Modulation Setting Resolution	1Hz						
Modulation Accuracy	±0.5Hz						
Fiber Type ⁶	Singlemode Fiber						
Connector Type	FC/APC						

1. All optical measurements were done after minimum 30 minutes warming up

2. Center wavelength was defined as per IEC 61280-1-3 2010 clause 8.2.

3. Measured at constant temperature of 23±5°C, at full power.

4. From maximum power down

5. Modulation duty cycle is fixed at 50%. Modulation depth is fixed at 100%

6. For IEC 60793-2-50 Type B1.3/ ISO 11801 OS2 compliant fiber, i.e. Corning SMF-28e

General Specifications

Parameter	Specification
Operating Temperature	10 to 40 °C (50 to 104 °F)
Storage Temperature	-30 to 60 °C (-22 to 140 °F)
Operating Humidity	Maximum 85% Relative Humidity, non-condensing from 10 to 40 °C/50 to 104 °F
Dimensions (W x H x D)	4.06 x 13.26 x 37.03 cm (1.6 x 5.22 x 14.58 in)
Weight	1.3 kg (2.86 lb)
Warranty	3 years

Ordering Information

Part Number	DFB Single Mode Source	
MSRC-C23000DF-M100-MFA	Single Output	1310nm DFB TEC laser SMF FC/APC Connectors
MSRC-C2C000DF-M100-MFA		1510nm DFB TEC laser SMF FC/APC Connectors
MSRC-C2D000DF-M100-MFA		1610nm DFB TEC laser SMF FC/APC Connectors
MSRC-C26000DF-M100-MFA		1625nm DFB TEC laser SMF FC/APC Connectors
MSRC-C2E000DF-M100-MFA		1653nm DFB TEC laser SMF FC/APC Connectors
MSRC-C23C00DF-M100-MFA	Multiple Individual Outputs	1310/1510nm DFB TEC laser SMF FC/APC Connectors
MSRC-C2CD6EDF-M100-MFA		1510/1610/1625/1653nm DFB TEC laser SMF FC/APC Connectors

Accessories

Accessories (Optional)	Product and description	
Inspection and cleaning tool	CleanBlastPRO	The patented VIAVI Solutions® CleanBlastPRO fiber end-face cleaning system provides a fast, effective, and cost-efficient solution for removing dirt and debris from connectors in most common applications.
	FiberChek probe microscope	One-button FiberChek Probe delivers a reliable, fully autonomous, handheld inspection solution for every fiber technician.
	P5000i fiber microscope	Automated Fiber Inspection & Analysis Probe provides PASS/FAIL capability to PC, laptops, mobile devices and VIAVI test solutions.

A wider range of inspection tools are available at VIAVI. More information about the products and accessories can be accessed through our website at www.viavisolutions.com. For further assistance please contact your local VIAVI account manager or VIAVI directly at 1-844-GO-VIAVI (1-844-468-4284) or to reach the VIAVI office nearest you, visit viavisolutions.com/contacts.



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