Measu-
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Devices

VIAVI

LASER COMPONENTS

MAP General Purpose Light Sources

mSRC-C1

Multiple application (MAP) general purpose light sources (mSRC-C1) are stabilized, fiber-coupled, fixed-wavelength emitters that cover key telecom/datacom wavelength bands: 850, 1300, 1310, and 1550 nm. The many variants of the mSRC-C1 enable a broad array of applications and encompass several different emitter types. The emitter types have a specific set of spectral properties that make them ideal for different metrology applications.

Table 1: mSRC-C1 emitter types and their targeted applications

mSRC-C1 Emitter Type	Targeted Application
Fabry-Perot lasers (FP lasers)	· Insertion loss testing · General power meter or path loss calibration · Transient loss testing stimulus
Low power, depolarized-MM LEDs	· Multimode loss testing with IEC launch conditions · Path loss calibration
Super luminescent diode (SLED)	· Broadband sources for use with optical spectrum analyzers · CWDM components measurements · General purpose and interferometry applications

Single and dual wavelength versions are available as either pre-multiplexed or individual outputs to enable flexible integration into manufacturing test environments. Where available, lasers can be controlled with internal power feedback stabilization for long-term stable output power. Simple on/off modulation is available between 150 and 2000 Hz for synchronous detection and measurement applications.

Key Features

- Sources with wavelengths for all key communication windows
- Range of emitter types with specific spectral bandwidth and polarization levels
- Temperature and power feedback control for ultra-stable performance
- Simplifies test system integration with individual or pre-multiplexed output connectors
- Enables applications requiring modulation from 150 to 2000 Hz with 1 Hz resolution
- Single mode and multimode with IEC-compliant launch conditions

Applications

- Insertion loss testing
- General power sensor or path loss calibration
- Transient loss testing stimulus
- Multimode loss testing with IEC launch conditions
- Broadband sources for use with optical spectrum analyzers
- CWDM component measurements
- General-purpose interferometry applications

Compliance

The mSRC-C1, when installed in a MAP chassis, complies with CE, CSA/UL/IEC61010-1, LXI class C requirements, meets the requirements of Class 1M in standard IEC60825-1 (2007, 2nd edition), and complies with 21 CFR 1040.1 except deviations per Laser Notice No. 50, July 2001

Data Sheet

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mSRC-C1 light sources are part of the MAP-200 LightDirect basic fiber optic test tool family. LightDirect modules can be deployed in all available MAP chassis systems including the MAP-220C two-slot benchtop and rack-mount chassis.

mSRC-C1 emitters have a simple, intuitive graphical user interface for use in simple R&D environments. For large remote test automation applications, all functions can be accessed through the remote interface over Ethernet or GPIB.

Figure 1. mSRC-C1 emitters deploy in all three MAP chassis formats. MAP-220C (2-slot), MAP-230B (3-slot), and MAP-280 (8-slot)

Figure 2. Windows displaying mSRC-C1 sources deployed in a MAP-220C

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Specifications

Single-Mode Sources[1]

Class	Basic FP Sources (mSRC-C1yyyyFB)		SLED Sources (mSRC-C1yyyySLz)		
Peak wavelength[2]	1310 nm	1550 nm	1310 nm	1550 nm	1310/1550 nm mux[6]
Wavelength tolerance	±20 nm				
Spectral width (FWHM)	<5 nm		>20 nm	>50 nm	As per individual specifications
Spectral ripple (RB = 0.1 nm)	N/A		0.2 dB		
Output launch conditions	N/A				
Output optical power[3]	≥0 dBm	≥0 dBm	≥0 dBm	≥0 dBm	≥−4 dBm
Optical power stability for 15 min[3]	±0.1 dB		±0.005 dB		±0.01 dB
Optical power tuning range[4]	≥10 dB		N/A		
Power control mode	Constant current or constant power				
TEC stabilized	No		Yes		
Modulation[5]	0.15 to 2.0 kHz				
Modulation setting resolution	1 Hz				
Modulation accuracy	±0.5 Hz				
Fiber type[6]	Single-mode fiber				
Connector type	FC / APC				

50 µm (OM3) Multimode Sources[1]

Class	LED Sources (mSRC-C1yyyyLPz)			Basic FP Sources (mSRC-C1yyyyFBz)		
Peak wavelength[2]	850 nm	1300 nm	850/1300 nm mux[7]	850 nm	1310 nm	850/1310 nm mux[7]
Wavelength tolerance	±20 nm					
Spectral width (FWHM)	>40 nm			<5 nm		
Spectral ripple (RB = 0.1 nm)	N/A					
Output launch conditions	IEC 62614 ED1.0 July 2010					
Output optical power[3]	≥−20 dBm	≥−20 dBm	≥−25 dBm	≥−6.5 dBm	≥−3.5 dBm	≥−11 dBm (850 nm) ≥−8 dBm (1310 nm)
Optical power stability for 15 min[3]	±0.05 dB		±0.1 dB	±0.20 dB		±0.30 dB
Optical power turning range	Fixed output power					
Power control mode	Constant Ccurrent					
TEC stabilized	No					
Modulation[5]	0.15 to 2.0 kHz					
Modulation setting resolution	1 Hz					
Modulation accuracy	±0.5 Hz					
Fiber type	OM3 MM fiber					
Connector type	FC/PC					

1. All optical measurements were done after a minimum 30 minutes warm up.
2. Peak wavelength was defined as per IEC 61280-1-3 2010 clause 3.1.3. Measured at room temperature.
3. Measured at full power at controlled environment of ΔT = ±1°C, constant current mode with APC connector (SM) and PC (MM) direct to power meter.
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 single-mode fiber, or IEC 60793-2-10, Type A1a MM / ISO 11801 OM2 compliant multimode fiber.
7. Combined output power. Power measured with any one laser on full power at a time.

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General Specifications

Operation temperature	5 to 40°C
Operation humidity	Max 85% RH, noncondensing from 5 to 40°C
Storage temperature	–30 to 60°C
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

Ordering Information

Fiber and Connector Type	Emitter Type	Description	Part Number
Single-mode coupled with FC/APC connectors	Basic Fabry-Perot laser	1310/1550 nm SMF basic FP laser	MSRC-C13500FB
	Super luminescence diode	1310 nm SMF SLED	MSRC-C13000SL
		1550 nm SMF SLED	MSRC-C15000SL
		1310/1550 nm SMF SLED	MSRC-C13500SL
		1310/1550 nm SMF SLED — single output	MSRC-C13500SLX
50 µm MMF coupled with FC/PC connectors	Low-power LED	1300/850 nm 50 µm standard FP laser	MSRC-C11308FP
		1300/850 nm 50 µm standard FP laser — single output	MSRC-C11308FPX
	Basic Fabry-Perot laser	1310/850 nm 50 µm low power LED	MSRC-C11308LP
		1310/850 nm 50 µm low power LED — single output	MSRC-C11308LPX

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