



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, 1490, 1550, and 1625 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)	<ul style="list-style-type: none"> • Insertion loss testing • General power meter or path loss calibration • Transient loss testing stimulus
Low power, depolarized-MM LEDs	<ul style="list-style-type: none"> • Multimode loss testing with IEC launch conditions • Path loss calibration
Super luminescent diode (SLED)	<ul style="list-style-type: none"> • 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 1Hz 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 3B requirements, meets the requirements of Class 3B in standard IEC60825-1 (2002), and complies with 21 CFR 1040.1 except deviations per Laser Notice No. 50, July 2001

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)

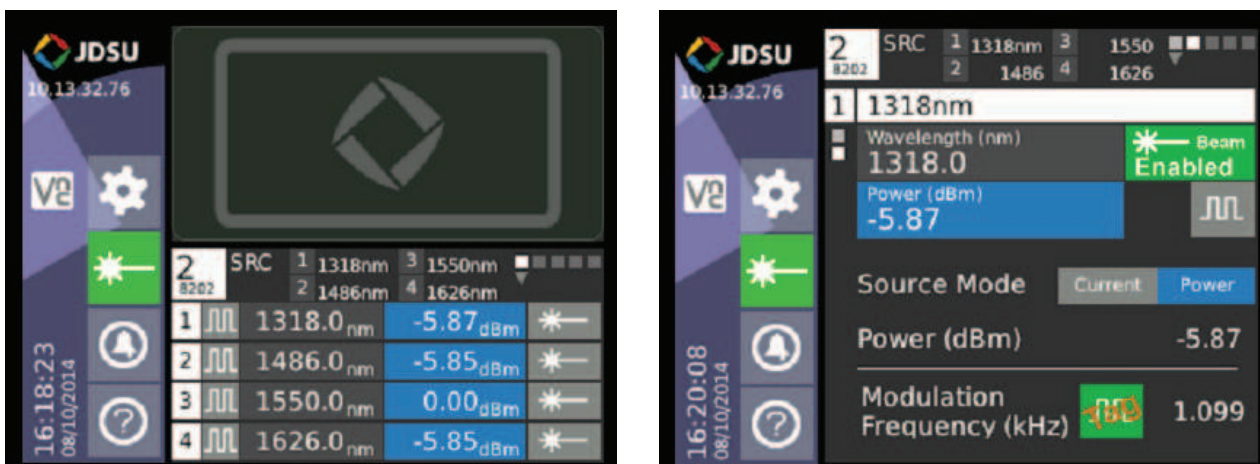


Figure 2. Windows displaying mSRC-C1 sources deployed in a MAP-220C

Specifications

Single Mode Sources¹

Class	Basic FP Sources (mSRC-C1yyyyFB)		SLED Sources (mSRC-C1yyyySL or mSRC-C1yyyySLX)		
	1310 nm	1550 nm	1310 nm	1550 nm	1310/1550 nm mux ⁶
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 turning 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 Sources¹

Class	LED Sources (mSRC-C1yyyyLP / mSRC-C1yyyyLPX)			SBasic FP Sources (mSRC-C1yyyyFB / mSRC-C1yyyyFBX)		
	850 nm	1300 nm	850/1300 nm mux ⁷	850 nm	1310 nm	850/1310 nm mux ⁷
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	≥-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.

General Specifications

Operation temperature	5 to 40°C
Operation humidity	Max 85% RH, non-condensing 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
50 μ m MMF coupled with FC/PC connectors	Low-power LED	1300/850 nm 50 μ m standard FP laser	MSRC-C11308FP
		1300/850 nm 50 μ m standard FP laser — single output	MSRC-C11308FPX
	Basic Fabry-Perot laser	1300/850 nm 50 μ m low power LED	MSRC-C11308LP
		1300/850 nm 50 μ m low power LED — single output	MSRC-C11308LPX



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