



# MAP-200 General Purpose Light Sources, MSRC-C2



The Multiple Application Platform (MAP) General Purpose Light Sources (mSRC-C2) is a family of stabilized, fiber coupled, fixed wavelength emitters with coverage of the key telecom / datacom wavelength bands – 850, 1300, 1310, 1490, 1550, and 1625nm. The many variants of the mSRC-C2 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.

### Features and Benefits

- " Sources at key 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
- " Simplify test system integration with Individual output connectors or pre-multiplexed
- " Enables applications requiring modulation from 150 to 2000 Hz with 1Hz resolution
- " Single Mode and Multimode with IEC complaint launch conditions

### Applications

- " Insertion loss testing
- " General power sensor or path loss calibration
- " Multimode loss testing with IEC launch conditions
- " Broadband sources for use with optical spectrum analyzers
- " CWDM components measurements
- " General purpose Interferometry applications

### Compliance

- " The MAP-200 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, July 2001

mSRC-C2 Emitter Type	Targeted Application
Fabry Perot Lasers (FP Lasers)	<ul style="list-style-type: none"> <li>" Insertion loss testing</li> <li>" General power meter or path loss calibration</li> <li>" Transient loss testing stimulus</li> </ul>
Low Power, Depolarized MM LED's	<ul style="list-style-type: none"> <li>" Multimode loss testing with IEC launch conditions</li> <li>" Path loss calibration</li> </ul>
Super Luminescent Diode (SLED)	<ul style="list-style-type: none"> <li>" Broadband sources for use with optical spectrum analyzers</li> <li>" CWDM components measurements</li> <li>" General purpose and interferometry applications</li> </ul>

mSRC-C2 emitter types and their targeted application



Dual and quad wavelength versions are available as either pre-multiplexed or individual outputs. These options are designed 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 at rates from 150 and 2000Hz which can be leveraged for synchronous detection or measurement applications.



MAP-200 LightDirect Family of modules

The mSRC-C2 has 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.



Example screen captures for the mSRC-C2 deployed in the MAP-220C

# Specifications

## Single Mode Sources

Singlemode Sources mSRC-C2 <sup>1</sup>	Basic FP sources (mSRC-C2xxxxFB)		FP sources (mSRC-C2xxxxFPx)						SLED sources (mSRC-C2xxxxSLx)					
	1310 nm	1550 nm	1310 nm	1490 nm	1550 nm	1625 nm	1310/1550 nm mux <sup>7</sup>	1310/1490/1550/1625 nm mux <sup>7</sup>	1310 nm	1490 nm	1550 nm	1625 nm	1310/1550 nm mux <sup>7</sup>	1310/1490/1550/1625 nm mux <sup>7</sup>
Peak Wavelength <sup>2</sup>	1310 nm	1550 nm	1310 nm	1490 nm	1550 nm	1625 nm	1310/1550 nm mux <sup>7</sup>	1310/1490/1550/1625 nm mux <sup>7</sup>	1310 nm	1490 nm	1550 nm	1625 nm	1310/1550 nm mux <sup>7</sup>	1310/1490/1550/1625 nm mux <sup>7</sup>
Spectral Width (FWHM)	<5 nm		<5 nm			As per individual specifications		>20 nm	>30 nm			As per individual specifications		
Output Optical Power <sup>3,8</sup>	0 dBm		0 dBm			≥ -4 dBm	≥ -8 dBm	0 dBm			≥ -4 dBm	≥ -8 dBm		
Optical Power Stability for 15 min <sup>3</sup>	±0.1 dB		±0.005 dB			±0.01 dB		±0.005 dB			±0.01 dB			
Optical Power Stability for 3 hours <sup>3</sup>			±0.05 dB			±0.1 dB		±0.005 dB			±0.01 dB			
Spectral Ripple (RB = 0.1nm)	N/A						0.35 dB							
TEC stabilized	No		Yes											
Wavelength Tolerance	±20 nm													
Optical Power Tuning Range <sup>4</sup>	≥ 10 dB													
Power Control Mode	Constant Current or Constant Power													
Modulation <sup>5</sup>	0.15 to 2.0 kHz													
Modulation Setting Resolution	1Hz													
Modulation Accuracy	±0.5Hz													
Fiber Type <sup>6</sup>	Single Mode Fiber													
Connector Type	FC/APC													

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

2. Peak wavelength was defined as per IEC 61280-1-3 2010 clause 3.1.3. Measured at 23°C

3. Measured at full power at controlled environment of 23±1°C, constant current mode with APC connector (SM) 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 multi mode fiber

7. Combined output power. Power measured with any 1 laser on full power at a time

8. Guarantee of 0dBm excluding connector losses for non-mux version

## 50 um Multimode (OM3) Sources

50um (OM3) Multimode Sources mSRC-C2 <sup>1</sup>	LED Sources (mSRC-C2xxxxLP)			Basic FP Sources (mSRC-C2xxxxFB)		
	850 nm	1300 nm	850/1300 nm mux <sup>7</sup>	850 nm	1310 nm	850/1310 nm mux <sup>7</sup>
Peak Wavelength <sup>2</sup>	850 nm	1300 nm	850/1300 nm mux <sup>7</sup>	850 nm	1310 nm	850/1310 nm mux <sup>7</sup>
Wavelength Tolerance	±20 nm					
Spectral Width (FWHM)	>40 nm			<5 nm		
Spectral Ripple (RB = 0.1nm)	N/A					
Output Launch Conditions	IEC 62614 ED1.0 July 2010					
Output Optical Power <sup>3</sup>	≥ -20 dBm	≥ -25 dBm	≥ -6.5 dBm	≥ -3.5 dBm	≥ -11 dBm (850nm) ≥ -8 dBm (1310nm)	
Optical Power Stability for 15 min <sup>3</sup>	±0.05 dB	±0.1 dB	±0.20 dB		±0.30 dB	
Optical Power Tuning Range	Fixed Output Power					
Power Control Mode	Constant Current					
TEC Stabilized	No					
Modulation <sup>5</sup>	0.15 to 2.0 kHz					
Modulation Setting Resolution	1 Hz					
Modulation Accuracy	±0.5 Hz					
Fiber Type <sup>6</sup>	OM3 MM Fiber					
Connector Type	FC/PC					

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

2. Peak wavelength was defined as per IEC 61280-1-3 2010 clause 3.1.3. Measured at 23°C

3. Measured at full power at controlled environment of 23±1°C, constant current mode with PC connector (MM) direct to power meter

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 multi mode fiber

7. Combined output power. Power measured with any 1 laser on full power at a time

Common Specs	
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

## Part Numbers

Part Number	50um (OM3) Multimode Sources		
MSRC-C21308LP-M101-MFP	Low power LED	Individual Output	850/1300nm Low power LED 50um MMF EF compliant FC/PC Connectors
MSRC-C21308LPX-M101-MFP		Single Output	850/1300nm Low power LED 50um MMF EF compliant single output FC/PC Connectors
MSRC-C21308FP-M101-MFP	FP Laser	Individual Output	850/1310nm Standard FP Laser 50um MMF EF compliant FC/PC Connectors
MSRC-C21308FPX-M101-MFP		Single Output (Mux'd)	850/1310nm Standard FP Laser Single output 50um MMF EF compliant FC/PC Connectors

Part Number	Singlemode Sources		
MSRC-C23500FB-M100-MFA	Basic FP Laser	Individual Output	1310/1550nm Basic FP laser SMF FC/APC Connectors
MSRC-C23500FP-M100-MFA	TEC'd FP Laser	Individual Output	1310/1550nm Standard FP laser SMF FC/APC Connectors
MSRC-C23456FP-M100-MFA			1310/1490/1550/1625nm Standard FP laser SMF FC/APC Connectors
MSRC-C23500FPX-M100-MFA		Single Output (Mux'd)	1310/1550nm Standard FP laser SMF Single output FC/APC Connectors
MSRC-C23456FPX-M100-MFA			1310/1490/1550/1625nm Standard FP laser SMF Single output FC/APC Connectors
MSRC-C23000SL-M100-MFA	SLED	Individual Output	1310nm SLED source SMF FC/APC Connectors
MSRC-C22500SL-M100-MFA			1550nm SLED source SMF FC/APC Connectors
MSRC-C23500SL-M100-MFA			1310/1550nm SLED source SMF FC/APC Connectors
MSRC-C23456SL-M100-MFA			1310/1490/1550/1625nm SLED source FC/APC Connectors
MSRC-C23500SLX-M100-MFA		Single Output (Mux'd)	1310/1550nm SLED source SMF Single output FC/APC Connectors
MSRC-C23456SLX-M100-MFA			1310/1490/1550/1625nm SLED source Single output FC/APC Connectors



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