

# Continuously Tunable Laser Source (mTLS-C2)

## MAP Series C/L-band and O-band Continuously Tunable Laser

The MAP Series Tunable Laser Source (mTLS-C2) three-slot cassette offers a long-term reliable, low noise output with a wide tuning range in the C/L band or the O-band.

The mTLS-C2 is continuously tunable high-power laser source for general purpose applications across DWDM, optical amplifier and silicon photonic test applications. As part of the MAP family, the tunable laser is ideal for use in R&D, NPI and volume manufacturing and is easily integrated into a diverse set of applications alongside the over 15 modules currently offered in the MAP.



### Key Benefits

- C/L-band and O-band variant continuously tunable source cassettes
- Mode-hop free
- PM-fiber coupled output
- 1 MHz linewidth
- 3-Slot cassette compatible with MAP-300 chassis
- High output power of 11.5 dBm with low ASE noise floor
- Sweeping and setting operation
- LXI compliant with IVI drivers

### Applications

- Optical amplifier testing (Gain and noise figure)
- Channel monitor calibration
- DWDM components testing
- Circuit pack path loss calibration
- Silicon photonic waveguide loss measurements

### Safety Information

Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice 50, dated June 24, 2007. Class 1M Laser Product (IEC 60825-1)

INVISIBLE LASER RADIATION  
DO NOT VIEW DIRECTLY WITH  
OPTICAL INSTRUMENTS  
CLASS 1M PRODUCT  
(IEC 60825-1)

## Functional Description

The 3-slot module can be housed in the MAP-330 or MAP-380 chassis. In a standalone application, the MAP-330 is ideal and delivers premium performance in one of the smallest footprints on the market. In a MAP-380 there are 5 additional application slots for use with optical switches, power meters, optical spectrum analyzers and a full host of signal conditioning modules.

The laser can be tuned with picometer resolution across the full wavelength range from 1480 nm to 1635 nm and 1255 to 1350 nm. Unlike models that used current tuning to set the output power, precision power control is achieved using an embedded VOA to ensure maximum stability (Figure 1) and guarantees low ASE (Figure 2) performance across all power and wavelength ranges. High output power with PM fiber coupling makes it ideal for waveguide characterization without the need for additional polarization controllers.

Housed in an LXI compliant MAP Series chassis, test automation can be accomplished quickly and efficiently. It is a complimentary module to the high density mTLG-C2 grid tunable laser and is differentiated by its ability to tune continuously across the wavelength range.

An intuitive graphic user interface (GUI) is optimized for use in either a laboratory or a manufacturing environment. Efficient transition between summary widgets (Figure 3) allow users to operate at a system level or access the full power of a module (Figure 4). A full SCPI command line interface is available along with IVI compliant drivers if required.

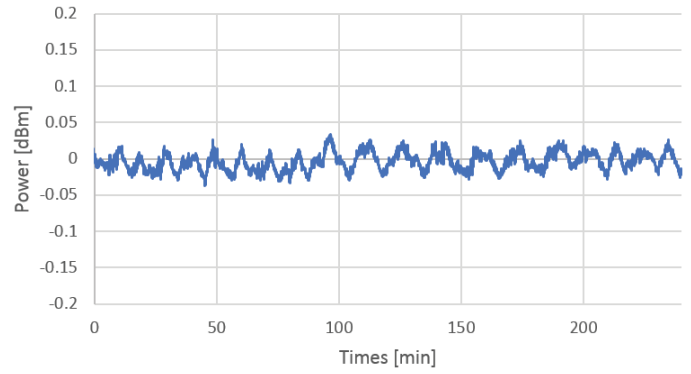


Figure 1: C/L-band mTLS-C2 Power Stability

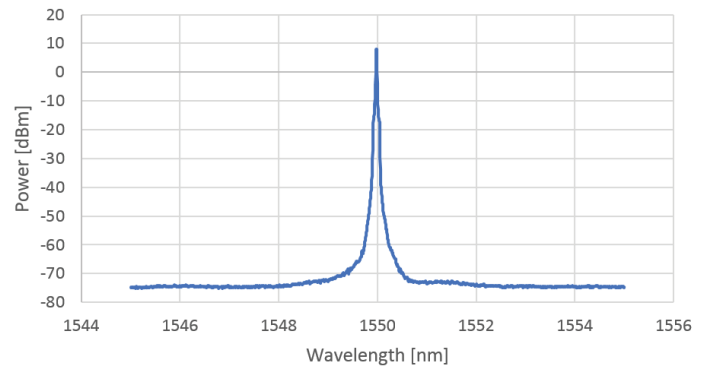


Figure 2: C/L-band mTLS-C2 Noise Level

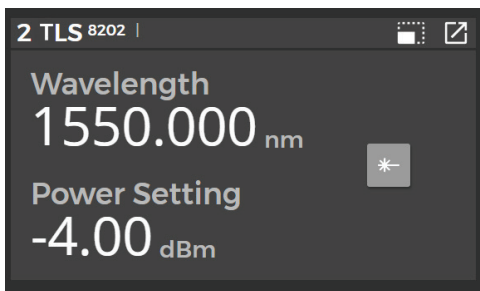


Figure 3: mTLS MAP-300 summary view GUI

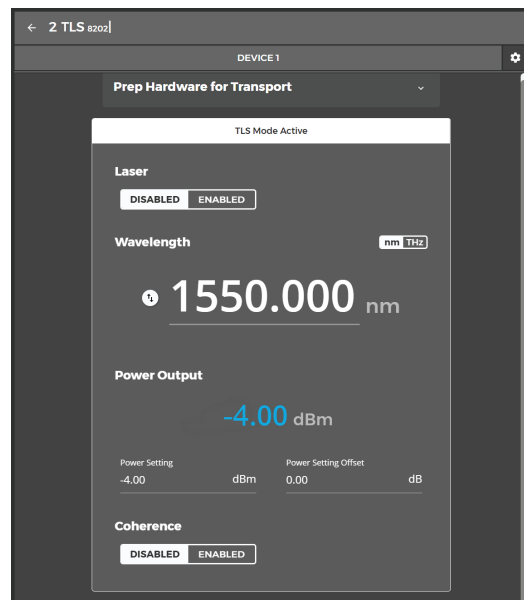


Figure 4: mTLS MAP-300 Detail view GUI

## 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 mTLS 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 mTLS is compatible with all current MAP-300 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](http://viavisolutions.com/contacts).

Parameter	C/L band mTLS-C2 Specification	O-band mTLS-C2 Specification
Wavelength		
Tuning Range	1480 to 1635 nm	1255 to 1350 nm
Accuracy	±100 pm (measure at 9.5 dBm at 1500- 1635 nm)	±100 pm (measured at 9 dBm in Operating temperature)
	±500 pm (measure at 7.5 dBm at 1480- 1500 nm)	±30 pm (measured at 9 dBm at 25°C)
Stability 1 Hour <sup>1</sup>	±5 pm (measured at 9 dBm)	
Wavelength Resolution	1.0 pm	
Power		
Maximum Output Power	> 11.5 dBm (1519 to 1635 nm)	≥ 11 dBm peak (Operating temperature)
	> 9.5 dBm (1500 to 1635 nm)	≥ 9 dBm full tuning range (Operating temperature)
	> 7.5 dBm (full range)	≥ 12 dBm peak (25°C)
	> 15 dBm typical (@ 1580 nm)	≥ 9 dBm for 1260-1350 nm (25°C)
Stability 15 Minutes	±0.01 dB	
Setting Resolution	0.01 dBm	
Spectral Properties		
Linewidth	< 2 MHz	≤ 1000 kHz (Coherence Control OFF)
		≥ 30 MHz (Coherence Control ON)
SMSR	> 75 dB	
RIN <sup>2</sup>	< -135 dB/Hz	
Power Flatness		
Under Stepping	±0.25dB	
Polarization Extinction Ratio <sup>3</sup>	Minimum: > 17 dB	Minimum: > 17 dB
	Typical: > 20 dB	
Calibration Period	1 year	
Laser Safety Class	1M	
Physical/Environment		
Fiber Type <sup>4</sup>	PMF; Polarization aligned to slow axis	
Connector Type(s)	FC/APC	
Warm-Up Time	< 1 hour	
Operating Temperature	15°C to 40°C	
Operating Humidity	<80% RH, non-condensing	
Storage Temperature	-35°C to 70°C	
Dimensions (W x H x D)	12.2 x 13.0 x 34.8 cm	
Weight	6.065 kg	

<sup>1</sup>± 0.5°C

<sup>2</sup>0.1 GHz to 2.5 GHz at 1575 nm or at 1305 nm for O-band source

<sup>3</sup>At all powers and wavelengths

<sup>4</sup>Polarization aligned to slow axis and connector

## Ordering Information

### Available Configurations

Description	Part Number
MTLS-C2CL1-M103-MFA	C- and L-band Continuously Tunable Laser, PMF FC/APC
MTLS-C23A-M103-MFA	MAP-Series O-band Continuously Tunable Laser PMF

### Accessories

Accessories (Optional)	Product and Description	
Inspection and cleaning tools	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 and 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](http://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](http://viavisolutions.com/contacts).

## VIAVI Care Support Plans

### Increase your productivity for up to 5 years with optional VIAVI Care Support Plans:

- Maximize your time with on-demand training, priority technical application support and rapid service.
- Maintain your equipment for peak performance at a low, predictable cost.

Plan availability depends on product and region. Not all plans are available for each product or in every region. To find out which VIAVI Care Support Plan options are available for this product in your region, contact your local representative or visit: [viavisolutions.com/viavicareplan](https://viavisolutions.com/viavicareplan)

### Features

\*5-year plans only

Plan	Objective	Technical Assistance	Factory Repair	Priority Service	Self-paced Training	5 Year Battery and Bag Coverage	Factory Calibration	Accessory Coverage	Express Loaner
 BronzeCare	Technician Efficiency	Premium	✓	✓	✓				
 SilverCare	Maintenance & Measurement Accuracy	Premium	✓	✓	✓	✓*	✓		
 MaxCare	High Availability	Premium	✓	✓	✓	✓*	✓	✓	✓



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