# MAP Tunable DBR Laser

**(mTLG-C1)**

The Multiple Application Platform (MAP-200) Tunable Distributed Bragg Reflector (DBR) Laser (mTLG-C1) is a next-generation tunable laser that is ideal for DWDM testing that requires changing the wavelength on demand over the C- and L-band with 50 GHz spacing.

The MAP-200 is the first photonic layer lab and manufacturing platform that complies with LAN Extensions for Instrumentation (LXI), bringing the full power of Ethernet connectivity and easy interchangeable virtual instrument (IVI) driver use to the optical test environment. The MAP-200 platform's industry-leading density and configurability meets specific application requirements within the smallest footprint.

The new mTLG-C1 is based on a Sampled Grating Distributed Bragg Reflector (SG-DBR) laser with an integral wavelength locker. Wavelength and output power settings can be controlled using the MAP-200 local interface or automation interfaces. The integrated wavelocker and automatic power control loop provide stable operation.

The MTLG-C1 is a member of 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 chassis. The MAP-220C is ideal for bench use or small test automation projects, and it features a local touch screen as well as Ethernet or GPIB automation. The second slot is ideal for an optical power meter or variable optical attenuators. The MAP-230B (three-slot) or MAP-280 (eight-slot) is ideal for large deployments and is the most compact optical test solution on the market.

Example of an mTLG screen

### Key Features

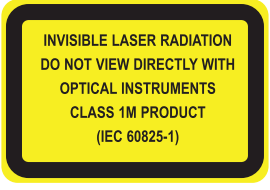
- Single, dual, or quad channel configurations are available
- C- or L-band tunability
- 42 nm C-band wavelength tuning range (38 nm L-band)
- 50 GHz channel spacing
- Narrow linewidth <5 MHz
- >12 dBm C-band output power (>10.5 dBm L-band)
- SMSR 40 dB min

### Applications

- Optical amplifier testing
- Tunable laser grids
- DWDM transmission testing
- Fiber characterization
- Transmitter and receiver testing

### Compliance

- The MAP Tunable DBR Laser, when installed in a MAP chassis, complies with CE, CSA/UL/IEC61010-1, plus LXI class C requirements and meets the standard IEC 60825-1 class 1M requirements



## Specifications

| Parameter | C-band | L-band |
|---|---|---|
| ***Wavelength*** | | |
| Tuning range | 191.0 to 196.25 THz, 1527.60 to 1569.59 nm | 186.35 to 190.90 THz, 1570.42 to 1608.76 nm |
| Accuracy[1,2,3] | ±2 GHz (±0.016 nm) | |
| Stability 15 minutes [1,2,3] | ±0.005 nm typical | |
| Stability 24 hours[1,2,3] | ±0.01 nm typical | |
| Channel spacing | 50 GHz | |
| ***Power*** | | |
| Setting range[4] | 7 to 13 dBm | 7 to 10.5 dBm |
| Stability 15 minutes[1,2,3] | ±0.005 dB typical | |
| Stability 24 hours[1,2,3] | ±0.03 dB typical | |
| Resolution | <0.1 dB typical | |
| ***Spectral properties*** | | |
| Linewidth[5] | ≤5 MHz | |
| RIN | –140 dB/Hz typical; –135 dB/Hz max | |
| SMSR | 40 dB min | |
| ***Other*** | | |
| Fiber type | Polarization maintaining fiber; polarization aligned to slow axis and connector | |
| Warm-up time [2] | 1 hour | |
| Supported connectors | FC/APC | |
| Humidity | <80% RH, 10 to 40°C noncondensing | |
| Operating temperature | 10 to 40°C | |
| Dimension | 4.06 x 13.26 x 37.03 cm (1.6 x 5.22 x 14.58 in) | |
| Weight | 1.3 kg (2.95 lb) maximum (varies with configuration) | |

1. At full power
2. After 1-hour warm up
3. Constant temperature within 25 ±3°C
4. Power at max setting: >12 dBm for C-band and >10.5 dBm for L-band
5. Natural (instantaneous) linewidth of the laser; with self-homodyne measurements indicated linewidth is typically 50 to 100 MHz

## Ordering Information

| Description | Part Number |
|---|---|
| C-band single laser | MTLG-C1C10 |
| C-band dual density per module | MTLG-C1C20 |
| C-band quad density per module | MTLG-C1C40 |
| L-band single laser | MTLG-C1L10 |
| L-band dual density per module | MTLG-C1L20 |
| L-band quad density per module | MTLG-C1L40 |
| C- and L-band dual density per module | MTLG-C1C1L1 |

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