FTBx-2850
μITLA TUNABLE LIGHT SOURCE

Modular, continuous wave (CW), tunable laser with a high-power output, narrow linewidth and high-resolution tunability for coherent/OFDM transmission and WDM network emulation.

KEY FEATURES AND BENEFITS

- Up to 32 lasers in one LTB-8 platform
- Narrow linewidth of less than 100 kHz
- 1 pm tuning resolution
- Up to 15 dBm of output power
- Remote PC control via VXI-11 (Ethernet)

RELATED PRODUCT

- Rackmount platform LTB-8
- Benchtop optical kit LTK-1
INTEGRATED TUNABLE LASER ASSEMBLY

The FTBx-2850 is a modular, continuous wave (CW), tunable laser with a high-power output, narrow 100 kHz linewidth and 1 pm resolution tunability over the C or L bands. This laser is a cost-effective and versatile solution for various applications, including coherent/OFDM transmission and WDM network emulation.

The LTB-8 rackmount platform can host FTBx-2850 modules and operate them using a dedicated software. Other FTBx modules from EXFO’s optical family of products (e.g., FTBx-3500 variable attenuator, FTBx-1750 high-performance power meter, ...) are handled using ToolBox software.

Up to eight FTBx-2850 modules can be inserted into an LTB-8 platform, for a total of 32 lasers. Multiple LTB-8 platforms can be cascaded and individually controlled.

EASY-TO-USE SOFTWARE

The FTBx-2850 light sources are locally controlled using software. Using the software application, operators can easily control multiple lasers and its graphical interface allows for fast and easy access to the system status and control of lasers.

Users can control each laser individually, or control multiple lasers to create tilt over a wavelength range and automatically spread the lasers over the entire C band for example.

![Figure 1. Unit view](image)
## SPECIFICATIONS

### Wavelength tuning

**C band**
- Operating wavelength range: 1527.605 nm – 1565.496 nm
- Operating frequency range: 191.50 THz – 196.25 THz

**L band**
- Operating wavelength range: 1568.772 nm – 1611.787 nm
- Operating frequency range: 186.0 THz – 191.1 THz

### Laser type
- Thermally tuned external cavity diode laser (ECDL)

### Frequency tuning resolution (wavelength)
- 100 MHz (1 pm)\(^b\)

### Tuning time
- < 30 s

### Spectral characteristics

- Linewidth (FWHM), instantaneous\(^d\) < 100 kHz
- Side-mode suppression ratio: 40 dB (55 dB typical)
- Frequency uncertainty (wavelength): ± 2.5 GHz (± 22 pm)\(^b, c\)
- Frequency stability (wavelength): ± 0.3 GHz (± 3 pm)\(^b\) over 24 hours

### Optical power

- Maximum optical output power:
  - S: ≥ 12.5 dBm (C-band) ≥ 13.0 dBm (L-band)
  - H: ≥ 15 dBm (C-band only)
- Minimum optical output power:
  - S: ≤ 8 dBm (C-band) ≤ 9.5 dBm (L-band)
  - H: ≤ 11 dBm (C-band only)
- Optical power uncertainty after calibration\(^a\) ± 0.6 dB
- Power stability ± 0.1 dB over 24 hours (2\(\sigma\))
- Output power tuning resolution: 0.01 dB
- Power flatness, peak-to-peak: 0.5 dB over entire wavelength range
- Polarization extinction ratio: > 18 dB at the polarization maintained fiber output
- Relative intensity noise RIN (for 13 dBm): −140 dB/Hz (10 MHz – 40 GHz)
- Power monitoring: Built-in

### Notes

- Specifications are valid at 23 °C ± 3 °C.
- Varies slightly according to wavelength.
- Frequency uncertainty includes frequency linearity.
- The laser uses a small FM dithering as part of its wavelength-locking mechanism. The instantaneous linewidth is measured with a 1 ms integration time.
- At maximum output power.

### GENERAL SPECIFICATIONS

- Dimensions (H x W x D): 25 mm X 159 mm X 187 mm (1 in x 6 1/4 in x 7 5/16 in)
- Weight\(^a\): 0.5 kg (1.1 lb)
- Temperature
  - Operating: 0 °C to 40 °C (32 °F to 104 °F)
  - Storage: −40 °C to 70 °C (−40 °F to 158 °F)
- Relative humidity: 0% to 80% non-condensing
- LTB-8 operation: Windows 10, customized software only compatible with FTBx-2850 modules. ToolBox, EXFO Connect and Multilink are unavailable. Other FTBx modules are not compatible with this LTB-8 software configuration.

### Note

- Maximum weight for quad lasers; other configurations will be lighter.
**ORDERING INFORMATION**

**FTBx-2850-1-XX-XX-XX**

- **Number of Lasers**
  - 2 = 2 lasers
  - 4 = 4 lasers

- **Wavelength Band**
  - C = C band
  - L = L band
  - CL = C&L band

- **Connector Type**
  - EA-EUI-89 = APC/FC narrow key, polarization maintained fiber output
  - EI-EUI-89 = UPC/FC narrow key, polarization maintained fiber output
  - EI-EUI-91 = UPC/SC, polarization maintained fiber output

- **Output Power**
  - S = Standard (13 dBm)
  - H = High (15 dBm)

Example: FTBx-2850-1-2-C-S-EA-EUI-89

**Notes**

- a. Available for C-band models only.
- b. Available for 2 lasers configuration only.

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**LASER SAFETY**

**INVISIBLE LASER RADIATION**

Viewing the laser output with certain optical instruments designed for use at a distance (for example, telescopes and binoculars) may pose an eye hazard.

**ENVIRONMENTAL LASER RADIATION**

Laser radiation with certain optical instruments designed for use at a distance (for example, telescopes and binoculars) may pose an eye hazard. Viewing the laser output through telescopic optical instruments (for example, telescopes and binoculars) may pose an eye hazard and thus the user should not direct the laser beam into such instruments.

**CLASS 1M LASER PRODUCT**

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= In case of discrepancy, the Web version takes precedence over any printed literature.