

LaserLite: 1550nm Optical Amplifier (OTEB-CL-B Series)

4 to 64 OUTPUTS 1550nm EDFAs for VERY LARGE DISTRIBUTION APPLICATIONS

Features / Benefits

- Single channel booster EDFA with **4 to 64 optical outputs @+18 to +22dBm each**
- Specifically for **distribution of 1550nm video/data** in HFC, PON or FTTH systems
- Takes direct input from a 1550nm transmitter without an intermediate driver
- Coolerless pump lasers reduce overall power consumption and increase reliability
- Optical output can be adjusted up to 6dB below rated power via software control
- Front-Panel and RS-232 serial interface for monitoring and control of EDFA
- 110/220 V_{AC} and -48 V_{DC} powering options



The **Olson Technology, Inc. Model OTEB-CL-B** series 1550nm Erbium Doped Fiber Amplifier (EDFA) is a rackmount 1RU or 2RU EDFA package providing 4 to 64 optical outputs at +18 to +22dBm each. It meets the requirements for very large-scale distribution of broadband CATV video and/or wideband multi-channel L-Band video. The OTEB-CL-B Series eliminates the requirement of converting to 1310nm for “last mile” distribution, facilitating the design of robust end-to-end optical transport networks directly from the head-end to large numbers of remote node or premise locations without O-E-O conversions.

The combination of this EDFA and a 1550nm transmitter, such as an externally modulated (EM) 1550nm transmitter (i.e. the Olson **Model OTOT-EM55X or XL**) 1550nm or a low-cost Direct-Mod 1550nm transmitter (i.e. the Olson **Model OTOT-1000C-FF**) can cost-effectively replace large quantities of standard 1310nm DFB transmitters without compromising system performance.

This rugged, low-profile, high-efficiency EDFA design provides up to sixteen optical outputs in the 1RU chassis and 64 optical outputs in the 2RU package over a wide operating temperature range, with low power consumption. The **Model OTEB-CL-B** series incorporates microprocessor-controlled electrical control circuitry, and is stabilized with Automatic Power Control (APC). This includes photodiodes for monitoring the optical input and output power through tap couplers. The pump laser diode input current is determined by a feedback circuit in order to minimize the difference between the detected output power level and pre-set output power level. The 1RU package can deliver a total of 1,000mW/+30dBm. The 2RU package is used for total power levels up to 5,000mW/+37dBm and high fiber counts (*up to 64 LC/APC connectors*).

The **LaserLite Model OTEB-CL-B** series erbium-doped fiber amplifier is the perfect companion to Olson’s **LaserPlus**, **LaserLite** and **SATELLitePlus** families of 1550nm EM and DM transmitters and the **MetroNode**, **PremiseNode** and **SATELLitePlus** families of receiver/nodes. It is also designed to operate seamlessly with optical transmitters, receivers and nodes from most leading manufacturers.

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Quality / Engineering / Innovation

Specifications

OPTICAL PARAMETERS:

Wavelength	1540nm to 1560nm
Port-to-Port Variation	4-16 Outputs $\pm 0.50\text{dB}$ 20-36 Outputs $\pm 0.75\text{dB}$
Noise Figure	4.5dB Typical, 5.0dB Maximum
Analog CNR Degradation	1dB Typical
Optical Input Range	-7dBm to +7dBm (+3dBm to +6dBm typical)
Per Port Optical Output Power *	+18dBm to +22dBm * (per appropriate OTEA-CL-B Series Model#)

ELECTRICAL, ENVIRONMENTAL & MECHANICAL PARAMETERS:

Dimensions	483mm x 363/373mm x 44/89mm (1RU/2RU)
Operating Temperature Range	-5°C to +65°C (+32°F to +131°F)
Storage Temperature Range	-40°C to +80°C (-40°F to +149°F)
Humidity Range	5% to 95% non-condensing
AC Input Range (Standard)	85-265V _{AC} (47-63Hz)
DC Input Range (Optional)	-36 to -60V _{DC}
Power Consumption	150W Max.

EDFA INTERFACES:

Optical Connectors	Shuttered SC/APC. (Optional LC/APC. Contact factory).
RS232(DB-9)/RJ45 control interface	Commands, report alarms, set alarms limits & monitor functions
LED Indicators (Red/Yellow/Green)	Pump, Input, Output, Unit-temp, Power, Link (See manual for detailed description)
Laser Enable/Disable	On/Off Switch



ORDERING INFORMATION:

Description

EDFA; 1RU/2RU Booster, 4 to 36 outputs at +18dBm to +22dBm
Valid combinations are; 18x18dBm, 24x18dBm, 32x18dBm, 36x18dBm
4x21dBm, 8x21dBm, 16x21dBm, 18x21dBm, 20x21dBm,
4x22dBm, 8x22dBm, 16x22dBm & 20x22dBm
(Combinations in *Italics* are 2RU size. All others are 1RU)

Model Number

OTECL-B-nyy-zz-pp

Where	n	Number of outputs (4, 8, 16, 20, 24, 32, 36)
	yy	Optical power per port (dBm)
	zz	Optical connector type; SA = Shuttered SC/APC (Optional LA - LC/APC Connectors)
	pp	Power; AC = AC power (universal AC), DC = DC power (48V _{DC})

Other output port counts up to 64 are possible (LC/APC connectors are usually the only option above 36 connectors) and output powers may be feasible. Contact factory for details.

All specifications are subject to change without notice

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