

OTEA-CL Series

LaserLite: 1550nm Optical Amplifier

4 to 24 OUTPUTS 1550nm EDFAs for VERY LARGE DISTRIBUTION APPLICATIONS



Features

- Single channel booster EDFA with 4 to 24 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 (EM or DM) without an intermediate driver
- Coolerless pump lasers reduce overall power consumption and increase reliability
- Optical output can be adjusted up to 3dB below rated power via RS-232 port
- 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 OTEA-CL series 1550nm Erbium Doped Fiber Amplifier (EDFA) is a rackmount 1RU or 2RU EDFA package providing 4 to 24 optical outputs at +18 to +22dBm each. It is engineered to meet the requirements for a high-density solution for the very large-scale distribution of broadband CATV video and/or wideband multi-channel L-Band video. The OTEA-CL series has a number of versatile features. For instance, the optical output power can be adjusted from 0 to 3dB below the rated power by the user via the RS-232 serial port.

The Model OTEA-CL-Series eliminates the traditional requirement of converting the optical signal 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) or directly modulated (DM) 1550nm transmitter (i.e. the Olson Model OTOT-870-FF or FQ) can costeffectively replace large quantities of standard 1310nm DFB transmitters without compromising system performance.

This rugged, low-profile, high-efficiency EDFA design provides up to eight optical outputs in the 1RU chassis and 24 optical outputs in the 2RU package over a wide operating temperature range, with low power consumption. The Model OTEA-CL-Series also incorporates P-controlled electrical control circuitry, and is stabilized with 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 preset output power level. The 1RU package can deliver a total of 800mW/+29dBm. The 2RU package is used for total power levels above 800mW/+29dBm.

The LaserLite Model OTEA-CL-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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Specifications

OPTICAL PARAMETERS:

Wavelength	1540nm to 1560nm
Port-to-Port Variation	4 Outputs ± 0.50 dB 8-24 Outputs ± 0.75 dB
Noise Figure	4.5 dB (typical); 5.0 dB (max) @ +6dBm Input
Analog CNR Degradation	1dB Typical
Composite Second Order (CSO)	-75dBc
Composite Triple Beat (CTB)	-80dBc
Optical Input Range	0dBm to +10dBm (+6dBm typical)
Per Port Optical Output Power *	+16dBm to +22dBm * (per appropriate OTEA-CL-Series Model#)

ELECTRICAL, ENVIRONMENTAL & MECHANICAL PARAMETERS:

Dimensions	483mm x 311mm x 44 / 88 mm (1RU / 2RU)
Operating Temperature Range	-10°C to +50°C (+14°F to +122°F)
Storage Temperature Range	-40°C to +65°C (-40°F to +149°F)
Humidity Range	15% to 85% non-condensing
AC Input Range (Standard)	85-265 VAC (@47-63 Hz)
DC Input Range (Optional)	-36 to -60VDC
Power Consumption	55W (1RU Package), 70W (2RU Package) Typical

EDFA INTERFACES:

Optical Connectors	Shuttered SC/APC
RS232 Control Interface (DB-9)	Commands, report alarms, set alarms limits & monitor functions
LED Indicators (Red/Yellow/Green)	SUPPLY, PWR IN, PUMP, MODE, EQUIP, PWR OUT, FANS (See manual for detailed description)
Laser Enable/Disable	Key Switch (key not removable in the "on" position)

Ordering Information:

Model Number	Description
OTEA-CL-B-nyy-zz-pp	EDFA; 1RU/2RU Booster, 4 to 24 outputs at +18dBm to +22dBm Valid combinations are; 18x18dBm, 24x18dBm, 4x21dBm, 8x21dBm, 16x21dBm, 18x21dBm, 20x21dBm, 4x22dBm, 8x22dBm, & 16x22dBm
Where	
n	Number of outputs (4, 8, 16, 20, 24)
yy	Optical power per port (dBm)
zz	Optical connector type; SA = Shuttered SC/APC
pp	Power; AC = AC power (universal AC), DC = DC power (48V _{DC})