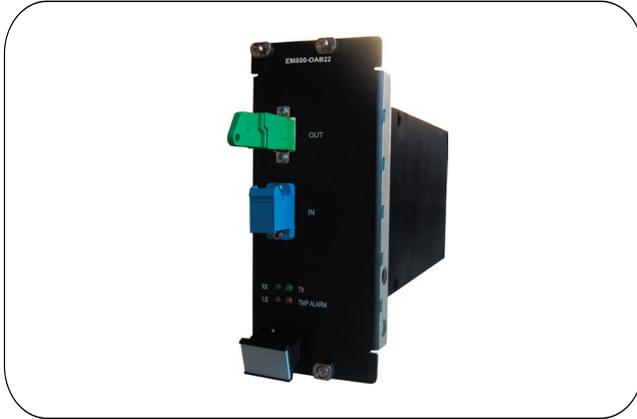# LambdaDriver® - Tunable Gain EDFA Optical Amplifier (EM800 - OABT/OAIT)

Optical Amplifier

Features
○ Variable gain setting
○ Up to +24dBm output power
○ Extensive monitoring and alarms
○ Low noise figure
○ Power monitoring
○ Gain flatness
○ Wide input power range

Applications
○ Optical amplification with "in service" gain control and adjustment
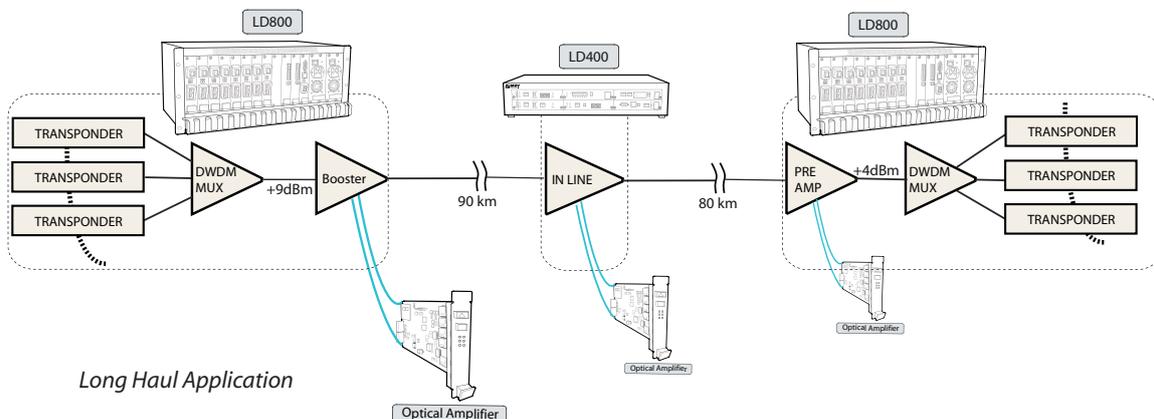
The LambdaDriver® Optical Amplifier modules are a family of EDFA (Erbium Doped Fiber Amplifier) devices frequently used in DWDM Metro and Long-Haul applications where optical signals amplification is required in order to cover long span transmission.

The optical design, coupled with sophisticated control circuitry, allows these Optical Amplifiers to operate in a flexible and user configurable variable gain mode.

Accordingly, the same module can be used either as a Booster OA or an In-Line OA making the WDM network design an easier task. A significant advantage of this type of OA is the capability to adjust the optical gain in a live network without compromising gain flatness over the entire C-band.

Gain settings can be done remotely via the Lambda Driver management module and NMS platform.
Monitoring of input and output signal levels as well as temperature and signal level alarms are provided.

Several models of Tunable Gain Optical amplifiers are provided with optical output power ranging from +17dBm to +24 dBm and also with integrated mid-stage interface options for Dispersion Compensation Module (DCM) insertion.

Long Haul Application

Environment Specifications

Operating Temperature	-5 ºC - 45 ºC
Storage Temperature	-10 ºC - 70 ºC
Relative Humidity	85% maximum, non-condensing
Dimensions (W x H x D) EM800 Type	54.18 mm (2.13 in) x 130.7 mm (5.14 in) x 227 mm (8.956 in) (2 slot wide)
EM1600 Type	54.18 mm (2.13 in) x 263.4 mm (10.37 in) x 227 mm (8.956 in) (2 slot wide)
Weight EM800 Type	1.016 Kg (2.24Lb)
EM1600 Type	1.305 Kg (2.47Lb)
Connectors + 17 dBm & 20 dBm Type	SC/UPC input and ouput
+24 dBm	SC/UPC input , E2000APC output
Power consumption +17 dBm & 20 dBm Type	10 Watt
+24 dBm	20 Watt

Technical Specifications

Parameter	Value			Units
	Minimum	**Typical**	**Maximum**	
Wavelength Range	1528		1563	nm
Maximum Output power				
EM800/EM1600-OAIT17			+17	dBm
EM800/EM1600-OAIT20			+20	
EM800/EM1600-OABT24			+24	
Input power Range				
EM800/EM1600-OAIT17	-23		+3.5	dBm
EM800/EM1600-OAIT20	-25		+5	
EM800/EM1600-OABT24	-16		+10	
Input/Output Isolation (Min)	30			dB
Signal Gain Range				
EM800/EM1600-OAIT17	12.5		23.5	dB
EM800/EM1600-OAIT20	10		25	
EM800/EM1600-OABT24	7.5		22.5	
Gain Flatness at Specified Gain with GFF		+/-0.5	+/-1.0	dB
Noise Figure for Gain = 20 dB		5.0	5.5	dB
Noise Figure for Gain = 15 dB		8.0	9.0	dB
Optical Return Loss (at Input and Output ports)	40			dB
Polarization Mode Dispersion		0.3	0.5	dB
Polariziation Dependent Gain		+/-0.2	+/-0.5	dB
Transient Overshoot (10 dB Drop)		0.5	1.0	dB
Transient Suppression Time (10 dB Drop)			< 32	µs

Management

LEDs	WDM transmission laser status, Temperature status, Port reception status, Port transmission status
Monitoring	Input power, Output power, Gain, Temperature
Alarm	Input power, Output power, Temperature

Ordering Information		
	EM800-OABT24	Optical Booster Amplifier with tunable gain for the Lambda Driver-800 with +24dbm output
	EM800-OABT24M	Optical Booster with tunable gain and Mid Stage for the Lambda Driver-800 +24dbm output
	EM800-OAIT20	Optical In Line Amplifier with tunable gain for the Lambda Driver-800 with +20dbm output
	EM800-OAIT20M	Optical In Line Amplifier with tunable gain and Mid Stage for the Lambda Driver-800 with +20dbm output
	EM800-OAIT17	Optical In Line Amplifier with tunable gain for the Lambda Driver-800 with +17dbm output
	EM800-OAIT17M	Optical In Line Amplifier with tunable gain and Mid Stage for the Lambda Driver-800 with +17dbm output
	EM1600-OABT24	Optical Booster Amplifier with tunable gain for the Lambda Driver-1600 with +24dbm output
	EM1600-OABT24M	Optical Booster with tunable gain and Mid Stage for the Lambda Driver-1600 +24dbm output
	EM1600-OAIT20	Optical In Line Amplifier with tunable gain for the Lambda Driver-1600 with +20dbm output
	EM1600-OAIT20M	Optical In Line Amplifier with tunable gain and Mid Stage for the Lambda Driver-1600 with +20dbm output
	EM1600-OAIT17	Optical In Line Amplifier with tunable gain for the Lambda Driver-1600 with +17dbm output
	EM1600-OAIT17M	Optical In Line Amplifier with tunable gain and Mid Stage for the Lambda Driver-1600 with +17dbm output