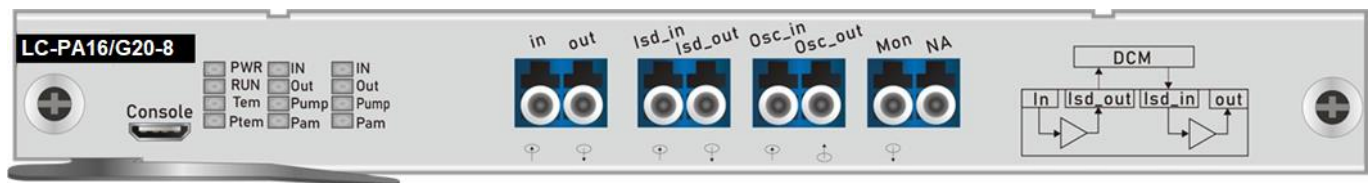


Middle Stage Access Optical Amplifier Board EDFA

With the application of long-distance systems becoming more and more extensive, DWDM.ME's middle stage access (MSA) EDFA can effectively solve the insertion loss caused by DCM and OADM, offset the DCM and OADM bands. The resulting insertion loss reduces the additional degradation of the system OSNR.



Function

- C-band optical signal overall amplification
- Covering the wavelength range of 1528 ~ 1565nm
- Support systems to achieve different cross-section radio repeater transmission

Highlight

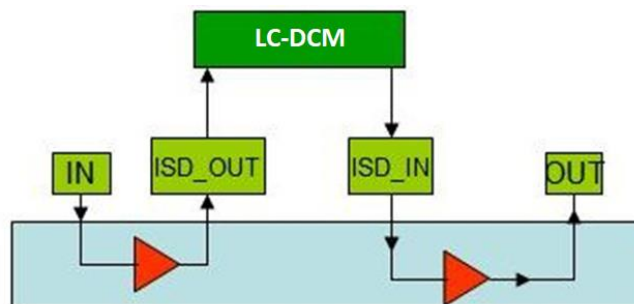
- Wide operating wavelength range:1528nm~1565nm
- Low noise figure: typ 5dB
- Excellent gain flatness
- Multiple operating modes:
 - AGC adjustable Gain
 - APC output is adjustable
 - ACC voltage adjustable
- Mid-stage access for DCM or OADM
- Offset the insertion loss introduced by DCM
- Reduce the additional degradation of system OSNR
- Optional OSC channel for remote management
- MON port, on-line monitoring optical power and OSNR

Middle stage access (MSA) Optical Amplifier Board EDFA models include an additional mid-stage port designed for insertion of a Dispersion Compensation Management (DCM) unit without its inherent insertion loss.

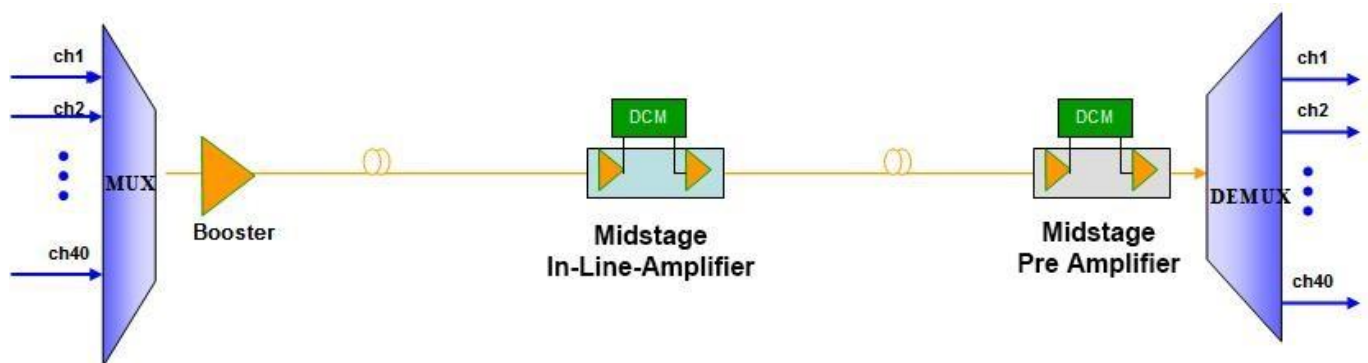
The design of these models maximizes the DCM benefits to increase deployment flexibility. New placement options require fewer amplifiers in the link, and they can open the door to applications that were not possible with older technology.

Performance Parameter

Parameter		Min.	Typical	Max.	Unit
Operating Wavelength		1528		1565	nm
Output Power				22	dBm
Gain		8		33	dB
Input Power	BA	-10		Max.Output -Gain	dBm
	PA/LA	(Max.input-29)		Max.Output -Gain	
Noise Figure			5.0		dB
Gain Flatness			1.0		dB
Input Threshold		-34		Can be adjusted	dBm
Polarization Dependence Loss				0.3	dB
Polarization Dependence Gain				0.4	dB
Polarization Mode Dispersion				0.5	ps
Pump Power Leakage				-29	dBm
Return Loss		45			dB
EDFA Size		191 (W) x 253 (D) x 20 (H)			mm
Environment	Operating Temperature	-10°C ~ 60°C			°C
	Storage Temperature	-40°C ~ 80°C			°C
	Relative Humidity	5% ~ 95% Non-condensing			
Power Consumption		≤15			W



Midline stage access (MSA) EDFA



Common Module

Model	Description	Gain dB	Max.Output dBm	Min.Input dBm	Max.Input dBm	Typ.NF dB
Booster						
LC-BA16/G12	Booster, Max.Output 16dBm, Gain 12dB, With OSC	12dB	16dBm	-10dBm	4dBm	5dB
LC-BA16/G12NS	Booster, Max.Output 16dBm, Gain 12dB, Without OSC	12dB	16dBm	-10dBm	4dBm	5dB
LC-BA20/G12	Booster, Max.Output 20dBm, Gain 12dB, With OSC	12dB	20dBm	-10dBm	8dBm	5dB
LC-BA20/G12NS	Booster, Max.Output 20dBm, Gain 12dB, Without OSC	12dB	20dBm	-10dBm	8dBm	5dB
Bidi Booster						
LC-BA16/G12B	Bidi Booster, Max.Output 16dBm, Gain 12dB, With OSC, Pass 1528~1543 (Blue) , Reflection 1547~1561nm (Red)	12dB	16dBm	-10dBm	4dBm	5dB
LC-BA16/G12NSB	BidiBooster, Max.Output 16dBm, Gain 12dB, Without OSC, Pass 1528~1543 (Blue) , Reflection 1547~1561nm (Red)	12dB	16dBm	-10dBm	4dBm	5dB
LC-BA20/G12B	BidiBooster, Max.Output 20dBm, Gain 12dB, With OSC, Pass 1528~1543 (Blue) , Reflection 1547~1561nm (Red)	12dB	20dBm	-10dBm	8dBm	5dB
LC-BA20/G12NSB	BidiBooster, Max.Output 20dBm, Gain 12dB, Without OSC, Pass 1528~1543 (Blue) , Reflection 1547~1561nm (Red)	12dB	20dBm	-10dBm	8dBm	5dB
LC-BA16/G12R	BidiBooster, Max.Output 16dBm, Gain 12dB, With OSC, Pass 1547~1561nm (Red) , Reflection 1528~1543 (Blue)	12dB	16dBm	-10dBm	4dBm	5dB
LC-BA16/G12NSR	BidiBooster, Max.Output 16dBm, Gain 12dB, Without OSC, Pass 1547~1561nm (Red) , Reflection 1528~1543 (Blue)	12dB	16dBm	-10dBm	4dBm	5dB
LC-BA20/G12R	BidiBooster, Max.Output 20dBm, Gain 12dB, With OSC, Pass 1547~1561nm (Red) , Reflection 1528~1543 (Blue)	12dB	20dBm	-10dBm	8dBm	5dB
LC-BA20/G12NSR	BidiBooster, Max.Output 20dBm, Gain 12dB, Without OSC, Pass 1547~1561nm (Red) , Reflection 1528~1543 (Blue)	12dB	20dBm	-10dBm	8dBm	5dB
Pre-Amplifier						
LC-PA16/G20	Pre-Amplifier, Max.Output 16dBm, Gain 20dB, With OSC	20dB	16dBm	-29dBm	-4dBm	4.5dB
LC-PA16/G20NS	Pre-Amplifier, Max.Output 16dBm, Gain 20dB, Without OSC	20dB	16dBm	-29dBm	-4dBm	4.5dB
LC-PA16/G20-8	Midstage access Pre-Amplifier, Max.Output 16dBm, Gain 20dB, With OSC, Mid-access loss 8dB	20dB	16dBm	-29dBm	-4dBm	5dB
LC-PA16/G20NS-8	Midstage access Pre-amplifier, Max.Output 16dBm, Gain 20dB, Without OSC, Mid-access loss 8dB	20dB	16dBm	-29dBm	-4dBm	5dB
LC-PA16/G25	Pre-Amplifier, Max.Output 16dBm, Gain 25dB, With OSC	25dB	16dBm	-29dBm	-9dBm	4.5dB
LC-PA16/G25NS	Pre-Amplifier, Max.Output 16dBm, Gain 25dB, Without OSC	25dB	16dBm	-29dBm	-9dBm	4.5dB
LC-PA16/G25-8	Midstage access Pre-Amplifier, Max.Output 16dBm, Gain 25dB, With OSC, Mid-access loss 8dB	25dB	16dBm	-29dBm	-9dBm	5dB
LC-PA16/G30-8	Midstage access Pre-Amplifier, Max.Output 16dBm, Gain 30dB, With OSC, Mid-access loss 8dB	30dB	16dBm	-29dBm	-14dBm	5dB

LC-PA16/G25NS-8	Midstage access Pre-Amplifier, Max.Output 16dBm, Gain 25dB, Without OSC, Mid-access loss 8dB	25dB	16dBm	-29dBm	-9dBm	5dB
LC-PA16/G30NS-8	Midstage access Pre-Amplifier, Max.Output 16dBm, Gain 25dB, Without OSC, Mid-access loss 8dB	30dB	16dBm	-29dBm	-14dBm	5dB
In-Line-Amp						
LC-LA16/G20	In-Line-Amp, Max.Output 16dBm, Gain 20dB, With OSC	20dB	16dBm	-29dBm	-4dBm	5dB
LC-LA16/G20NS	In-Line-Amp, Max.Output 16dBm, Gain 20dB, Without OSC	20dB	16dBm	-29dBm	-4dBm	5dB
LC-LA16/G20-8	Midstage access In-Line-Amp, Max.Output 16dBm, Gain 20dB, With OSC, Mid-access loss 8dB	20dB	16dBm	-29dBm	-4dBm	6dB
LC-LA16/G20NS-8	Midstage access In-Line-Amp, Max.Output 16dBm, Gain 20dB, Without OSC, Mid-access loss 8dB	20dB	16dBm	-29dBm	-4dBm	6dB
LC-LA20/G20	In-Line-Amp, Max.Output 20dBm, Gain 20dB, With OSC	20dB	20dBm	-29dBm	0dBm	5dB
LC-LA20/G20NS	In-Line-Amp, Max.Output 20dBm, Gain 20dB, Without OSC	20dB	20dBm	-29dBm	0dBm	5dB
LC-LA20/G20-8	Midstage access In-Line-Amp, Max.Output 20dBm, Gain 20dB, With OSC, Mid-access loss 8dB	20dB	20dBm	-29dBm	0dBm	6dB
LC-LA20/G20NS-8	Midstage access In-Line-Amp, Max.Output 20dBm, Gain 20dB, Without OSC, Mid-access loss 8dB	20dB	20dBm	-29dBm	0dBm	6dB
LC-LA16/G25	In-Line-Amp, Max.Output 16dBm, Gain 25dB, With OSC	25dB	16dBm	-29dBm	-9dBm	5dB
LC-LA16/G25NS	In-Line-Amp, Max.Output 16dBm, Gain 25dB, Without OSC	25dB	16dBm	-29dBm	-9dBm	5dB
LC-LA16/G25-8	Midstage access In-Line-Amp, Max.Output 16dBm, Gain 25dB, With OSC, Mid-access loss 8dB	25dB	16dBm	-29dBm	-9dBm	6dB
LC-LA16/G25NS-8	Midstage access In-Line-Amp, Max.Output 16dBm, Gain 25dB, Without OSC, Mid-access loss 8dB	25dB	16dBm	-29dBm	-9dBm	6dB
LC-LA20/G25	In-Line-Amp, Max.Output 20dBm, Gain 25dB, With OSC	25dB	20dBm	-29dBm	-5dBm	5dB
LC-LA20/G25NS	In-Line-Amp, Max.Output 20dBm, Gain 25dB, Without OSC	25dB	20dBm	-29dBm	-5dBm	5dB
LC-LA20/G25-8	Midstage access In-Line-Amp, Max.Output 20dBm, Gain 25dB, With OSC, Mid-access loss 8dB	25dB	20dBm	-29dBm	-5dBm	6dB
LC-LA20/G25NS-8	Midstage access In-Line-Amp, Max.Output 20dBm, Gain 25dB, Without OSC, Mid-access loss 8dB	25dB	20dBm	-29dBm	-5dBm	6dB



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