



## High Capacity Fiber Optic Solutions

Part Number AM-ID-01

### Application

- Extend range of DWDM fiber links
- Amplification of 1531, 1551 and 1571 nm CWDM wavelengths
- Combine with intermediate reach XFP's to reduce DWDM system cost
- Single or multi-wavelength applications
- Suitable for pre-amp, line amp and booster applications

### Features

- Automatic Gain Control (AGC) to deliver a constant output power
- Supervision via Ethernet interface
- Remote monitoring of temperature, input and output levels

### Transfer Characteristics

Parameter	Min	Max	Unit	Notes
Output Power	+10.0		dBm	Single or multiple wavelength. Controlled by AGC.
Power Gain		30	dB	Maximum recommended gain for system design. AGC will control output to +10 dBm.
Working Wavelength	1526	1568	nm	Entire C-Band DWDM
Gain Flatness	-0.5	+0.5	dB	
Pump Leakage		-30	dBm	at 980 nm
Input Signal Level per Wavelength	-27	+3	dBm	
Total Input Signal (all wavelengths combined)	-20	+3	dBm	At levels below -20 dBm output noise may increase.
Input Return Loss	40		dB	
Output Return Loss	40		dB	
Noise Figure		5.5	dB	Measured at -10 dBm input.

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### Environmental Characteristics

Parameter	Min	Max	Unit	Notes
Storage Temperature Range	-40	+80	°C	
Operating Temperature Range	-5	+65	°C	
Humidity	5	95	%	

### Electrical Characteristics

Parameter	Min	Max	Unit	Notes
Power Consumption		25	W	
Input Voltage (AC Version)	90	265	VAC	Nominal 120 VAC
Line Frequency (AC Version)	50	60	Hz	
Input Voltage (DC Version)	30	72	VDC	Nominal 48 VDC

### Physical Characteristics

Parameter	Value	Unit	Notes
Input Connector	APC SC		(others available on request)
Output Connector	APC SC		(others available on request)
Management Interface	RJ-45		Ethernet
Dimensions	19	inch	
Width	(483)	(mm)	
Height	1.75	inch	
	(133)	(mm)	
Depth	14.5	inch	
	(368)	(mm)	

### Management Characteristics

Interface Description	IP V4 / Ethernet
Software	Windows 7 or XP management application included
SNMP Support	
Monitored variable	Input optical power
	Output optical power
	MAC address
	Pump bias current
	Pump temperature

## Application Information

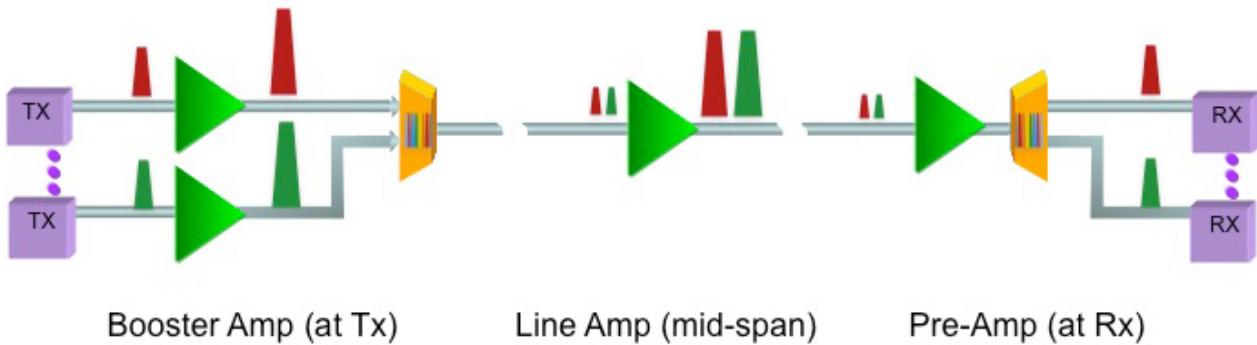


Figure 1 - Amplifier Applications

The AM-IP-01 is suitable for general purpose duty, including use as a pre-amplifier, line amplifier and booster amplifier (post amp). These configuration options are shown in Figure 1.

### Operational Notes:

- When using with multiple wavelengths (Line Amp and Pre-Amp situations) one value of gain applies to all wavelengths, with the +10 dBm output power being divided across the wavelengths. For example, an eight wavelength system will have each wavelength at +1 dBm on average, with the level varying by the gain flatness (typically  $\pm 0.4$  dB).
- It is prudent to pad the output of a pre-amp so that a single wavelength at +10 dBm is within the input range of your specific optical receiver (typically an SFP or XFP). This will prevent any wavelength loss situation (such as all wavelengths but one) from overdriving the optical receiver of the down-stream equipment.
- When using the AM-ID-01 as either a Line Amp or Pre-Amp be sure that the input signal is above -27 dBm or the noise generated in the amplifier may dominate the system noise. (When using cascaded amplifiers call Nebula for assistance in determining your system SNR levels).

### Wavelength Multiplexer Compatibility

Ch Code	Wavelength	Nebula Compatible Multiplexers							
		V-DWM16	V-DWDM8	V-CWDM16	V-CWDM8	V-CWDM4	V-4WM	V-WDM	V-CWDM14
<b>CWDM Channels</b>									
57	1571 nm			√	√	√			√
55	1551 nm			√	√	√	√(1)	√(2)	√
53	1531 nm			√	√	√			√
<b>DWDM Channels</b>									
54 - 61	195.4 - 196.1 THz		√						
26 - 41	192.6 - 194.1 THz	√							

- (1) V-4WM 1550 nm band is wide and encompasses the entire DWDM band. Use this device to mix DWDM with legacy transport (1310 nm) and two additional CWDM channels.
- (2) The V-WDM 1550 nm band is wide and encompasses the entire DWDM band. Use this device to mix DWDM with legacy transport (1310 nm).