

**1550nm CATV Erbium Doped Fiber
Amplifier • HA5400B Series**

Technical Specification

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1.0 PRODUCT DESCRIPTION

HA5400B (2RU) series is a high power multi-ports optical amplifier with gain spectrum band within 1540~1563nm. It is mainly designed for the application of CATV or 1~8 continuous banding channel (ITU wavelength). It offers a flexible and low-cost solution for CATV large area coverage of metropolises and medium-sized cities.

HA5400B optical amplifier adopts the world's top class pump laser and active optical fiber. Perfect APC, ACC and ATC control, excellent design in the ventilation and heat-dissipation ensure the long life and high reliable work of pump laser.

HA5400B has extremely low noise figure, the entire unit adopts twin-stage amplification, and the pre-amplifier adopts low noise EDFA, output cascade adopts high power EDFA. When input optical power $P_{in}=0\text{dBm}$, the noise figure of unit is $\leq 5.5\text{dB}$ Unlike other kind of product which need high optical power input to maintain lower noise figure.

HA5400B LCD at the front panel offers the work index of all equipment and warning alarms. The laser will switch off automatically if optical power is missing, which offers security protection for the laser. RS232 and RJ45 offer serial commutation and SNMP network management port. All the optical port of optical amplifier can be installed in the front panel or back panel.

HA5400B optional two-way optical input (built-in 2x1 optical switch), can be used for self-healing ring network or redundant backup network.

HA5400B with carrier-class reliability and network security management, high quality, high reliability and excellent cost performance and is ideal for system integrators and system operator.

HA5400B: 19" 2RU rack, The total maximum output power of 41dBm (13000mW), optional output port up to 128 optional port.

2.0 PRODUCT FEATURE

- Total output power optional 2000~13000mW (33~41dBm)
- 19" 2RU rack, Optional Output port up to 128 optional port.
- Built-in low noise pre-amplifier, not necessary EDFA cascade, extremely lower the CNR, MER degradation of the system
- Low noise figure $\leq 5.5\text{dB}$
- Perfect RS232, SNMP
- Telecom level safety reliability and network management.
- Simplified machine-room links, improve the system reliability.
- Simple and reliable in construction/maintenance
- Optional dual optical input, built-in 2×1 optical switch
- Dual power supply optional, 1+1 backup
- Can reduce the 98% device space usage
- Can reduce the 85% device purchase cost
- Can reduce 95% power consumption
- The best cost performance in industry.

3.0 MAIN APPLICATION

- AM CATV
- Digital CATV
- DBS & MMDS
- FTTx PON

4.0 Technique index

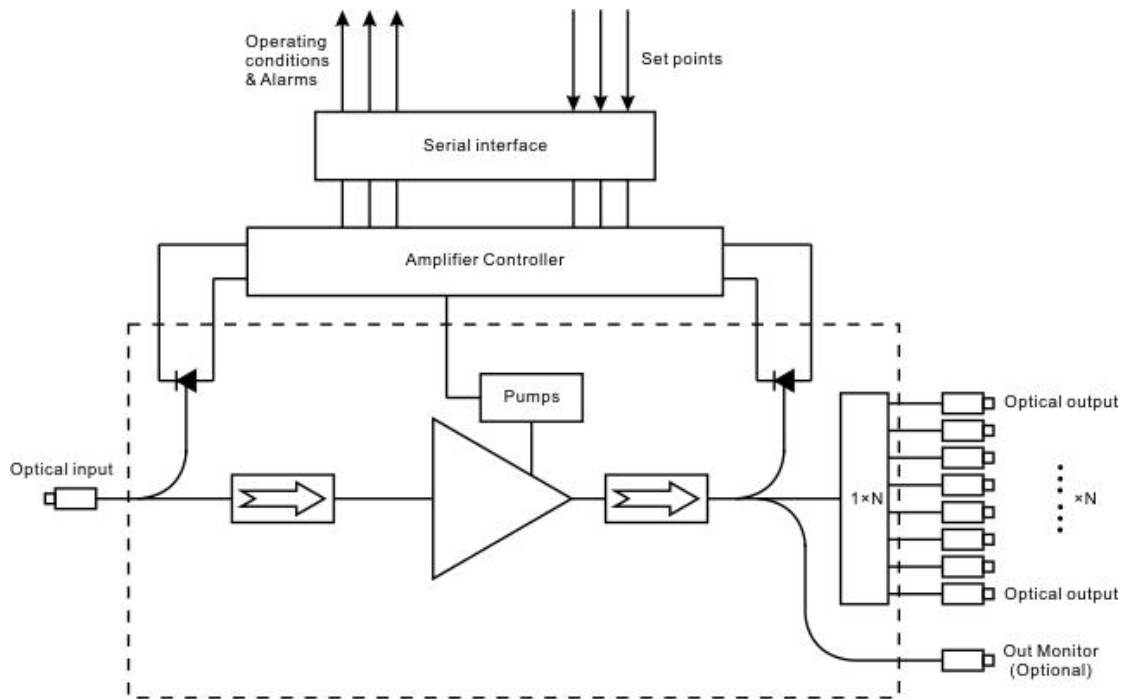
Performance		Index			Supplement	
		Min.	Typ.	Max.		
Optical feature	Operating wavelength range	(nm)	1540		1563	CATV
	Input power	(dBm)	-10		+10	
	Total output power ¹⁾	(dBm)			41	
	Number of output ports				128	
	Each output power	(dBm)	0		22	
	Difference of output power	(dB)	-0.5		+0.5	
	Output optical power monitoring	(dB)		-20		Optional
	Output power adjustable range	(dBm)	-6		0	Optional
	Noise figure (Pin=0dBm)	(dB)		4.5	5.5	HA5400B-1x □□□
				5.0	6.0	HA5400B-2x □□□
	Switch time	(ms)			8.0	HA5400B-2x □□□
	Polarization dependence loss	(dB)			0.3	
	Polarization dependence gain	(dB)			0.4	
	Polarization mode dispersion	(ps)			0.3	
	Input/output isolation	(dB)	30			
Pump power leakage	(dBm)			-30		
Echo loss	(dB)	55			APC	
General feature	Network management interface		RJ45		SNMP	
	Series interface		RS232			
	Power supply	(V)	90		265	220VAC
			30		72	-48VDC
	Power consume	(W)			84	
	Operating temp.	(°C)	-5		65	
	Storage temp.	(°C)	-40		80	
Relative humidity	(%)	5		95		

Size (W)×(D)×(H)	(")	19 × 14.7 × 3.5 (")	2RU (19")
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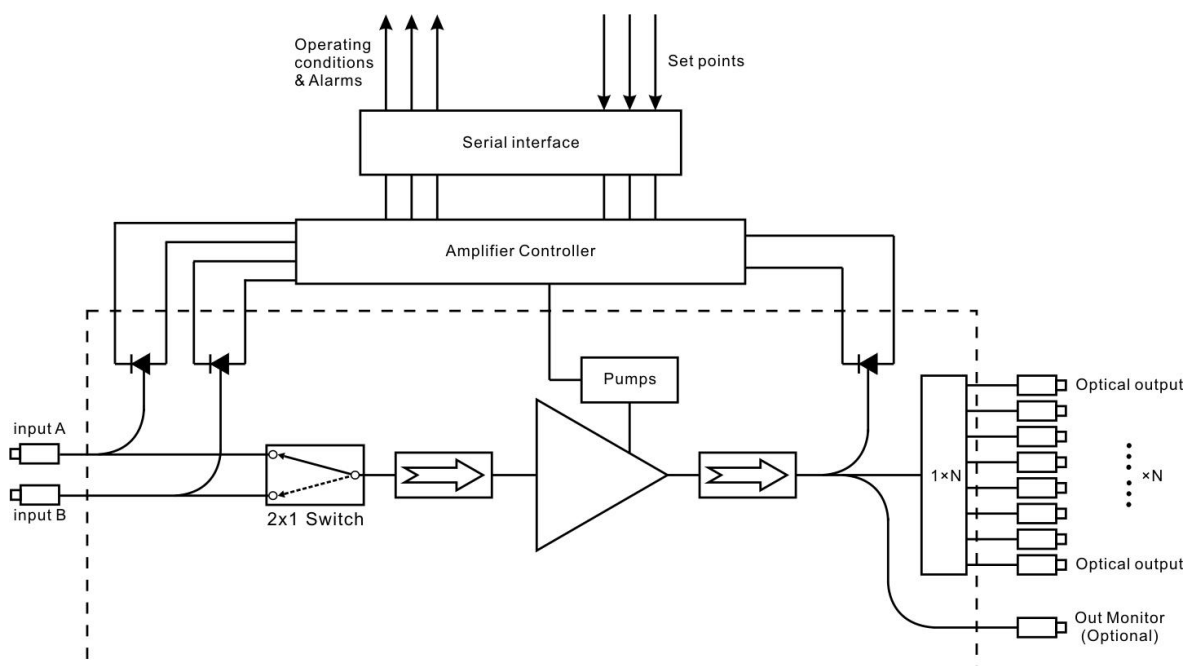
Remark: Output power can be customized by user.

5.0 OPTIC/ELECTRICAL SCHEMA

5.1 HA5400B-1x □□□ (conventional)

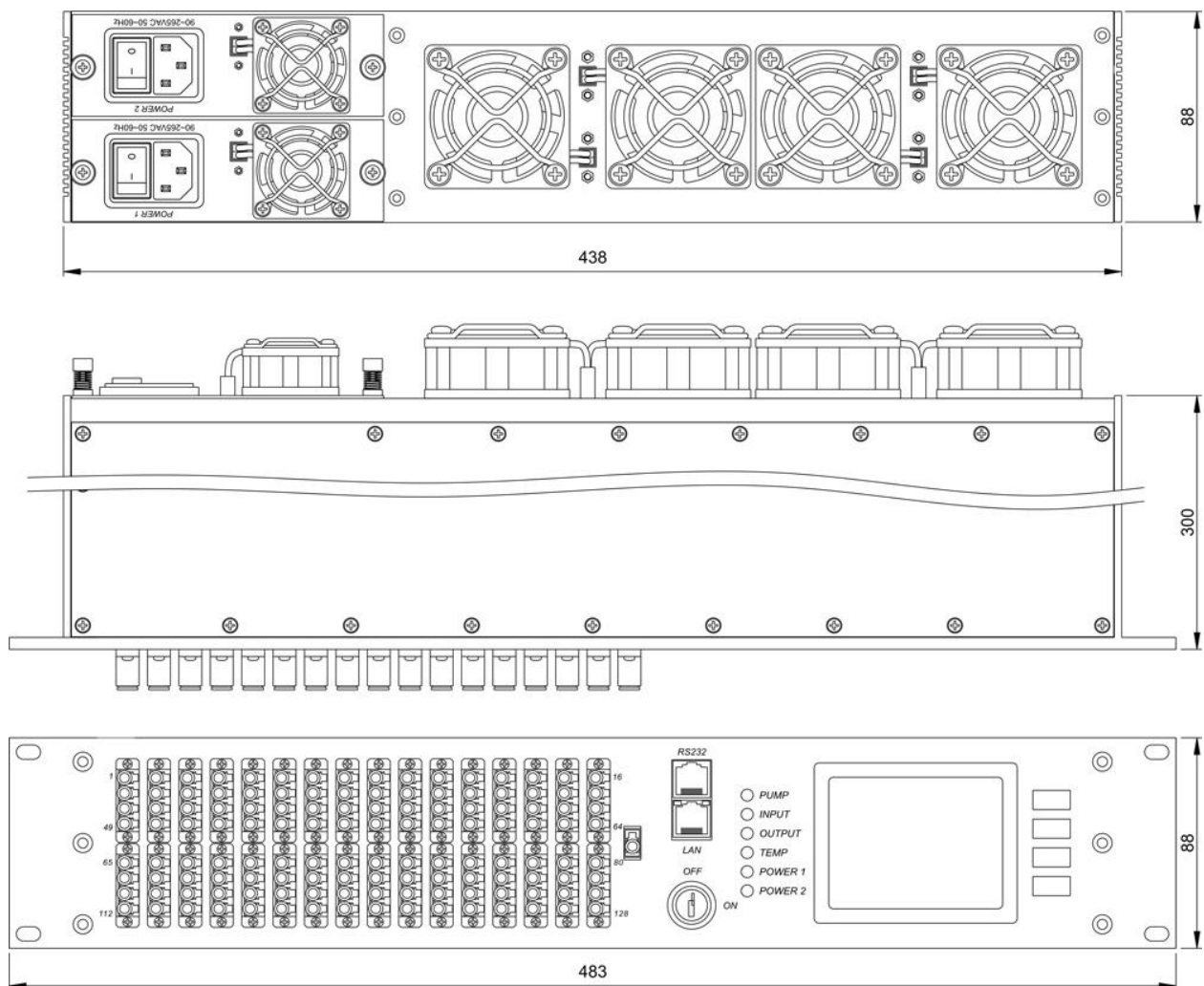


5.2 HA5400B-2x □□□ (Built-in Optical Switch)

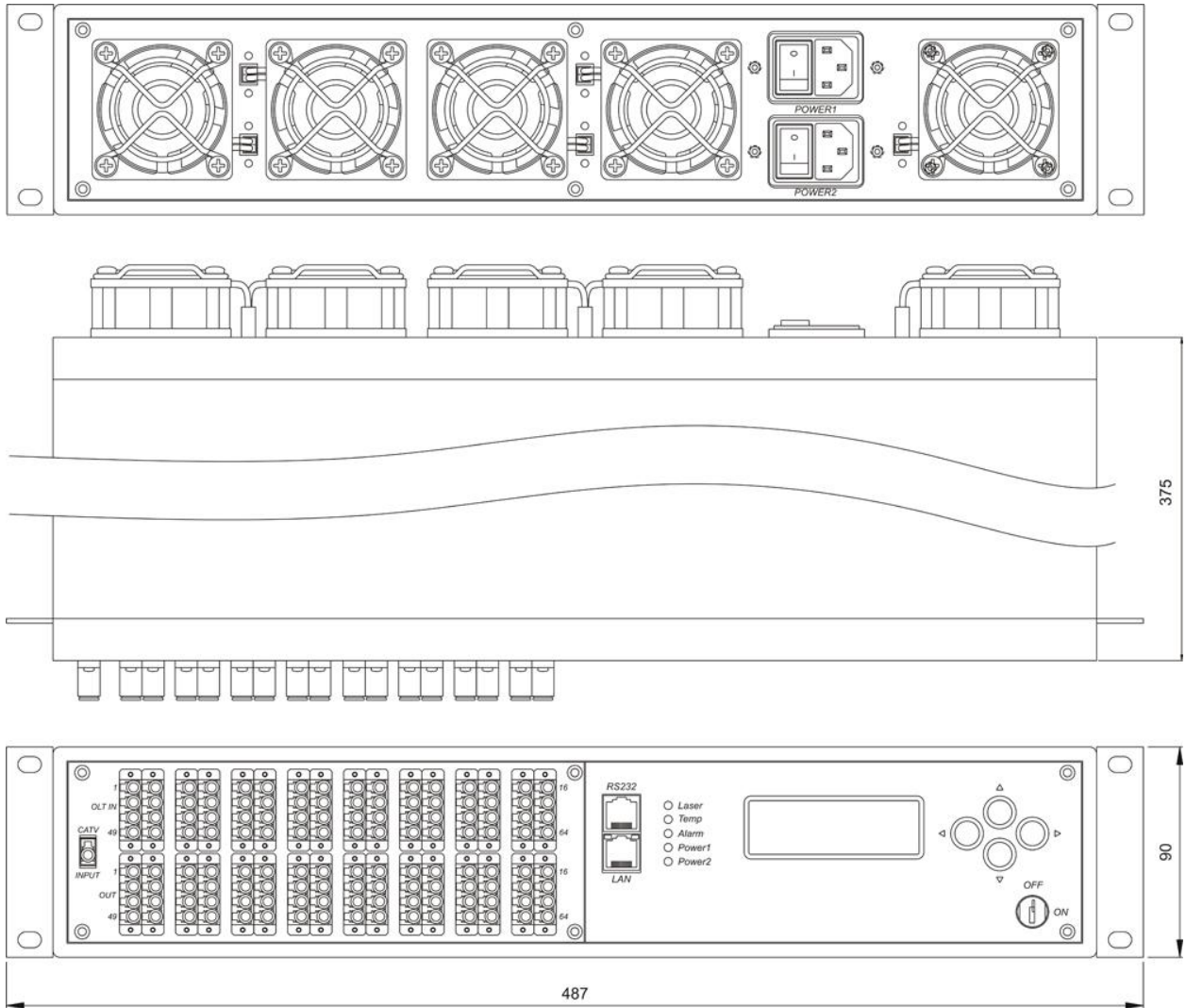


6.0 Chassis size chart

6.1 2U hot plug frame



6.2 2U Frame



7.0 Product series

Model number	Total output power	Number of output port	Each port output power	Connector
HA5433B-1×032	33dBm(2000mW)	32	15.5	SC/APC, LC/APC
HA5433B-2×032				
HA5434B-1×032	34dBm(2500mW)	32	16.5	SC/APC, LC/APC
HA5434B-2×032				
HA5435B-1×032	35dBm(3200mW)	32	17.5	SC/APC, LC/APC
HA5435B-2×032				
HA5436B-1×032	36dBm(4000mW)	32	18.5	SC/APC, LC/APC
HA5436B-2×032		64	15.0	SC/APC, LC/APC
HA5436B-1×064				
HA436B-2×064				
HA5437B-1×032	37dBm(5000mW)	32	19.5	SC/APC, LC/APC
HA5437B-2×032		64	16.0	SC/APC, LC/APC
HA5437B-1×064				
HA5437B-2×064				
HA5438B-1×032	38dBm(6300mW)	32	20.5	SC/APC, LC/APC
HA5438B-2×032		64	17.0	SC/APC, LC/APC
HA5438B-1×064				
HA5438B-2×064				
HA5439B-1×032	39dBm(8000mW)	32	21.5	SC/APC, LC/APC
HA5439B-2×032		64	18.0	SC/APC, LC/APC
HA5439B-1×064				
HA5439B-2×064				
HA5440B-1×064	40dBm(10000mW)	64	19.0	SC/APC, LC/APC
HA5440B-2×064		128	15.5	LC/APC
HA5440B-1×128				
HA5440B-2×128				
HA5441B-1×064	41dBm(13000mW)	64	20.0	SC/APC, LC/APC
HA5441B-2×064		128	16.5	LC/APC
HA5441B-1×128				
HA5441B-2×128				

8.0 Model explanation

HA 5 4 □□ B - □ □ × □□□ - □□ - □ / □□ - M□□

Product series	Operating Wavelength		Product type	Total Output Power(dBm)		Exterior		Function		Enter the port number	The output port number		Connector		Power mode		Power supply		Output Optical port Monitoring			
Amplifier of communication class	5	1540~1563nm	4	High-output Multi-port output	33	33	B	2RU	O	Without	1	Single input (Without Switch)	016	16 ports	LA	LC/APC	S	Single PS	22	220VAC	00	Without
					34	34	A	1RU	P	Optical power adj.			032	32 ports	LP	LC/UFC	D	Dual PS	48	-48VDC		
					35	35	C	3RU			2	Dual input (With Switch)	064	64 ports	SA	SC/APC	P	Dual PS Hot plug	42	-48VDC & 220VAC	MO	With output optical port monitoring
				36	36	E	5RU			128			128 ports	SP	SC/UFC							
					37	37																
					38	38																
					39	39																
					40	40																
					41	41																