Ver. 2.4en

DWDA-1000 (100GHz)

VOA DWDM with EDFA

With VOA, EDFA Dense WDM

Technical index

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1.0 PRODUCT DESCRIPTION

Huatai DWDA-1000 series is integrated by DWDM, VOA and EDFA module in a 1RU or 3D rack. Each channel of DWDM with a high-resolution factor electronic control adjustable optical attenuator will adjust and equilibrium the power. The insertion loss, power loss because of the channel equilibrium of DWDM will be amplified and compensation by the build-in gain flatness EDFA. Compact and simple device structure, thereby reducing the connections between devices to improve the index and reliability of the system. Can be used in DWDM system power equilibrium, optical add and drop multiplexed (OADW) flexible and expediently.

Each of the DWDA-1000 has a optical output power monitor, inspect precision $\leqslant \pm 0.1$dB. It can be set auto power control mode. According to different network application DWDA-1000 has MU, DE, DM and AD four types optical electric mode and configure relevant EDFA (PA, LA, BA and MSA) available. RS232 and RJ45 provide communicate and network management interface, LCD in front panel provide the working parameter and fault alarm of the whole unit. All of the optical ports can be installed in front panel; also can choose the back panel.

DWDA-1000: 100GHz channel spacing.

DWDA-2000: 200GHz channel spacing (Optional).

2.0 Product feature

- ⩽0.1dBhigh resolution voltage-controlled adjustable attenuator.
- ⩾20dB attenuation dynamic range, option⩾30dB.
- Attenuation value set accuracy⩽±0.2dB.
- Power value set accuracy⩽±0.1dB.
- Automatic power controlled (APC) mode can be set.
- Based on mature tech of think film>16CH Optional PLC.
- 100Ghz channel space, optional 200Ghz channel space (DWDA-2000).
- Four types of optical line mode, configure relevant PA, BA, LA or MSA, suitable with different network application.
- High channel isolation.
- Loss insertion loss, low polarization dependence loss.
- LCD displays working status and parameters.
- Perfect RS232 and SNMP.
- High stability, high reliability.
- Structure compact.
- Excellent P/P ratio.
-

3.0 Main application

- DWDM system channel power adjust and equilibrium.
- OADM
- CATV
- FTTx PON
- Satellite L-Band fiber link
- Lab application

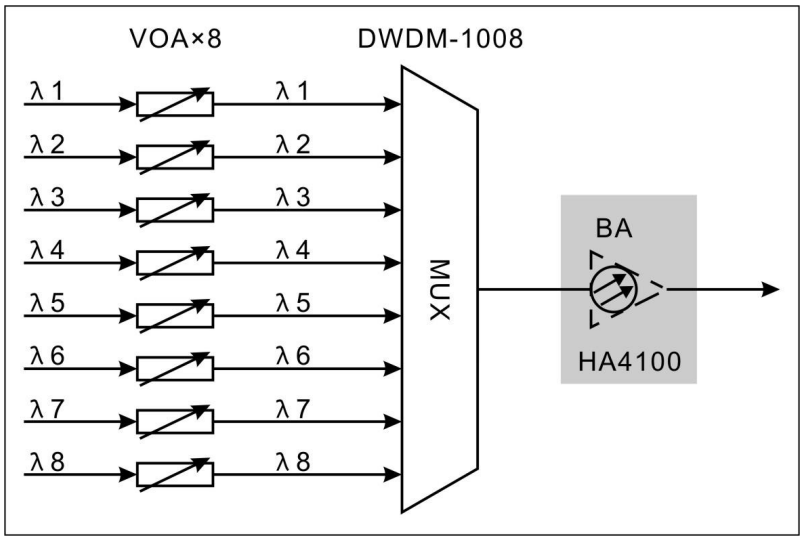
4.0 Technical index

Performance				Index			Supplement
				Min.	Typ.	Mzx.	
DWDM feature	Operating wavelength		(nm)	1528		1564	
	Center wavelength		(nm)		ITU-T		
	Center wavelength accuracy		(nm)	-0.03		+0.03	
	Channel spacing		(GHz)		100		DWDA-1000
					200		DWDA-2000
	Channel pass band (@-0.5dBbandwidth)		(nm)	0.22			DWDA-1000
				0.5			DWDA-2000
	In-band ripple		(dB)			0.5	
	Insertion loss		(dB)	4		8	
	Insertion loss disuniformity		(dB)			1.5	
	Isolation	Adjacent	(dB)	30			
		Non-adjacent		40			
	Polarization dependence loss		(dB)			0.15	
	Polarization mode dispersion		(ps)			0.1	
VOA feature	Resolution		(dB)			0.1	
	Insertion loss		(dB)		0.7	1.2	
	Dynamic range		(dB)	20			
				30			
	VOA setting accuracy		(dB)	-0.2		+0.2	
	Optical power setting accuracy		(dB)	-0.1		+0.1	
	Wavelength dependence ripple		(dB)			0.2	
	Polarization dependence loss		(dB)			0.2	
	Polarization mode dispersion		(ps)			0.1	
EDFA feature	Operating wavelength		(nm)	1528		1564	
	Input power	BA	(dBm)	-13		+12	
		LA		-25		+7	
		PA, MSA		-35		+3	
	Output power		(dBm)	13		25	

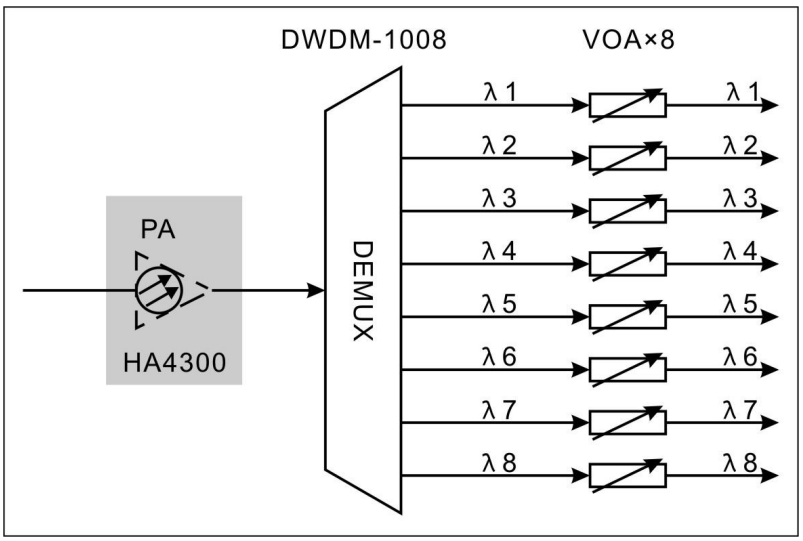
	Noise figure	(dB)	3.8		5.8	Pin=0dBm
	Gain flatness	(dB)	-0.5		+0.5	
	Polarization dependence loss	(dB)			0.3	
	Polarization mode dispersion	(ps)			0.3	
	Input/output isolation	(dB)	30			
	Pump optical leakage	(dBm)			-30	
	Return loss	(dB)	40			UPC
			55			APC
General feature	SNMP network management interface		RJ45			
	Serial interface		RS232			
	Power supply	(V)	90		265	
			30		72	
	Power consume	(W)			50	
	Operating temp.	(℃)	0		65	
	Storage temp.	(℃)	-40		80	
	Relative humidity	(%)	5		95	
	Size(W)×(D)×(H)	(")	19×14.5×1.75			1RU (19")

5.0 Optical path drawing

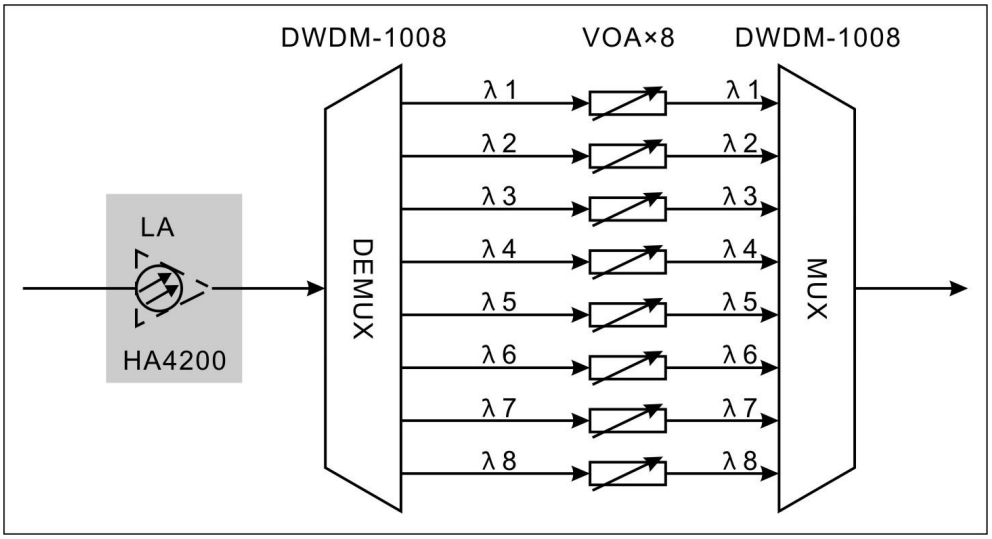
5.1 DWDA-1000MU-100 (MU+BA)



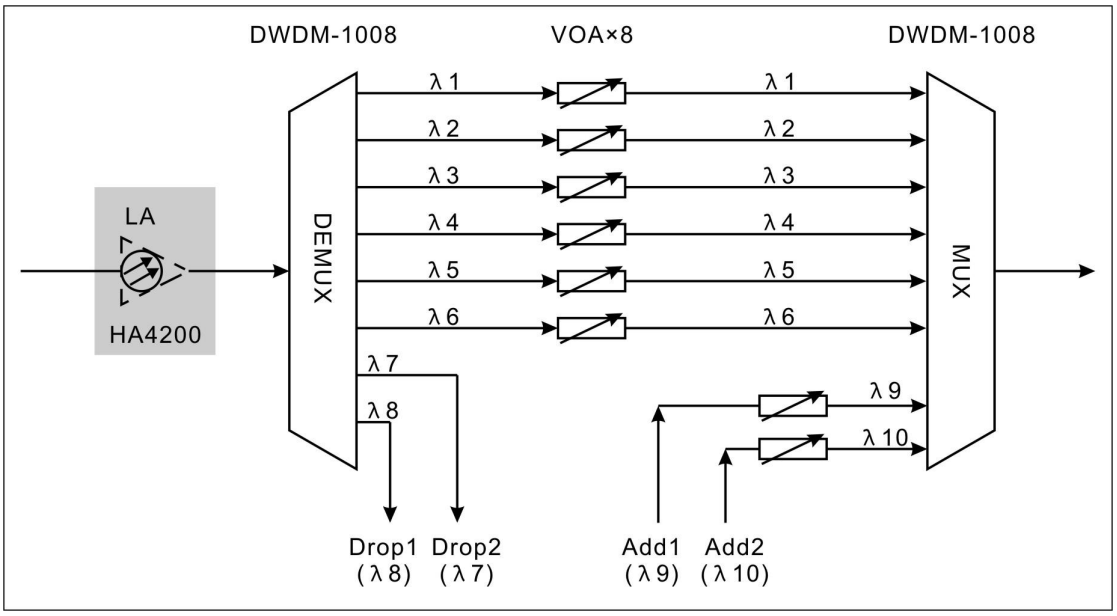
5.2 DWDA-1008DE-330 (DE+PA)



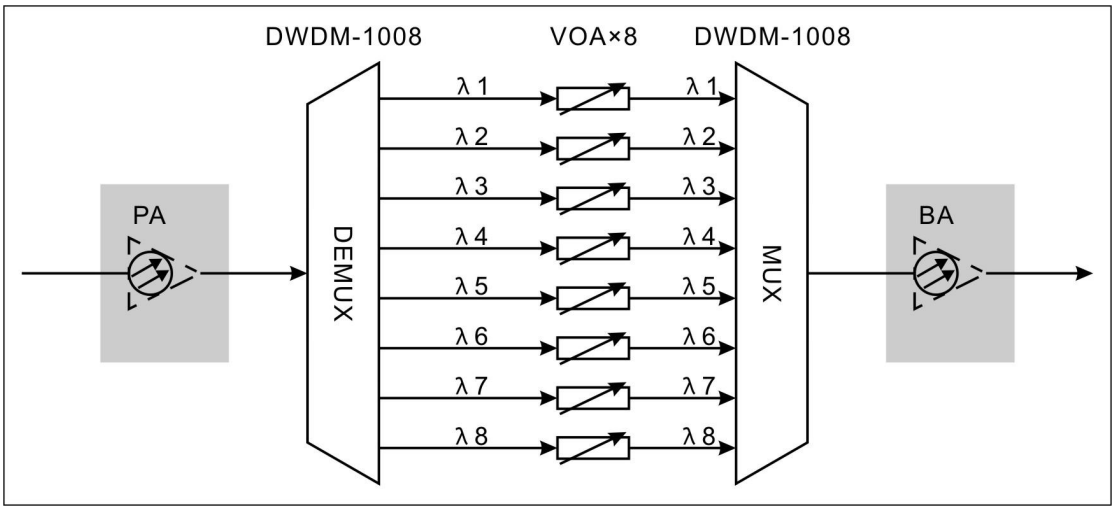
5.3 DWDA-1000DM2-200 (DM2+LA)



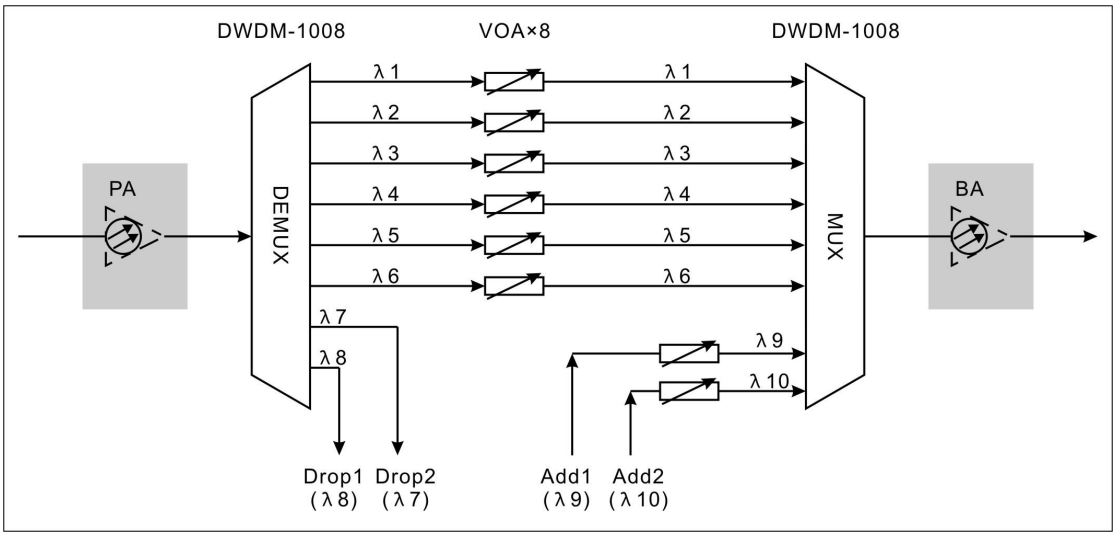
5.4 DWDA-1000AD2-200 (AD2+LA)



5.5 DWDA-1000DM2-700 (DM2+MSA)



5.6 DWDA-1000AD2-700 （AD2+MSA）



6.0 Product series

Model	Channel spacing	Number of channels	EDFA type	Output power	VOA dynamic range
DWDA-1004MU-116-20	100GHz	4CH	BA	16dBm	20dB
DWDA-1008MU-119-20		8CH		19dBm	
DWDA-1016MU-122-20		16CH		22dBm	
DWDA-1032MU-125-20		32CH		25dBm	
DWDA-1004DE-314-20	100GHz	4CH	PA	14dBm	20dB
DWDA-1008DE-314-20		8CH		14dBm	
DWDA-1016DE-314-20		16CH		14dBm	
DWDA-1032DE-314-20		32CH		14dBm	
DWDA-1004DM1-216-20	100GHz	4CH	LA	16dBm	20dB
DWDA-1008DM1-219-20		8CH		19dBm	
DWDA-1016DM2-222-20		16CH		22dBm	
DWDA-1032DM2-225-20		32CH		25dBm	

DWDA-1004AD1-216-20	100GHz	4CH	LA	16dBm	20dB
DWDA-1008AD1-219-20		8CH		19dBm	
DWDA-1016AD2-222-20		16CH		22dBm	
DWDA-1032AD2-225-20		32CH		25dBm	
DWDA-1008DM2-719-20	100GHz	8CH	MSA	19dBm	20dB
DWDA-1016DM2-722-20		16CH		22dBm	
DWDA-1032DM2-725-20		32CH		25dBm	
DWDA-1008AD2-719-20	100GHz	8CH	MSA	19dBm	20dB
DWDA-1016AD2-722-20		16CH		22dBm	
DWDA-1032AD2-725-20		32CH		25dBm	

Remark: 1. Channel spacing optional 200GHz (DWDA-2000).

2. Attenuate dynamic range can choose≥30dB.

3. EDFA type and output power can be user-defined.

4. Diagram mode can be chose by users.

7.0 Model explanation

DWDA – 10 □□ □□ – □ □□ – 20 – 1U – F / SA – 22

Product series		Channel spacing		Number of channel		Optical path mode		EDFA type		Output power		Attenuator range		Exterior		Optical port position		Connector		Power supply	
DWDA	With VOA & EDFA DWDM	10	100GHz	04	4 channels	MU	Multiplexing	1	Booster	14	14dBm	20	20dB	1U	19" 1RU	F	Front panel	FA	FC/APC	22	220VAC
		20	200GHz	08	8 channels	DE	Demultiplexing	2	Line-Amplifier	16	16dBm	30	30dB	ML	Modulator	B	Back panel	FP	FC/UPC	11	110VAC
DWDM	DWDM			16	16 channels	DM	DEMUX/MUX	3	Pre-Amplifier	19	19dBm			OEM	Appearance user customized			SA	SC/APC	48	-48VDC
DWDV	With VOA DWDM			32	32 channels	AD	OADM	7	MSA	22	22dBm							SP	SC/UPC		
										25	25dBm							LA	LC/APC		
																		LP	LC/UPC		