96ch Flat-top Athermal AWG Module

(Flat-top, C-Band, 50GHz, 96ch)

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1. Application Note

The specifications serve for C-band 96 channels Flat-top MUX/DEMUX Athermal AWG module in DWDM system.

2. Optical Specifications

2.1. Optical signal transmission diagram

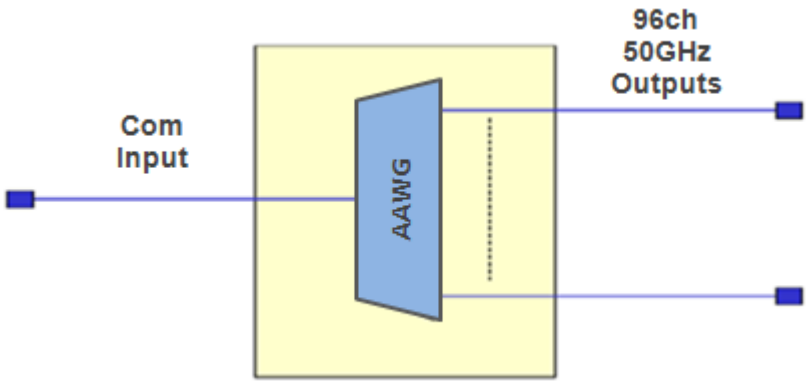

Figure 1 Optical signal transmission characteristics

2.2. Optical Specifications

Table 1 Optical Specifications

Parameters	Notes	Specifications		Units
		Min	Max	
Channels		96		Ch
Channel Spacing		50		GHz
Reference Pass-band	Relative to ITU Grid	± 6.25		GHz
ITU Frequency	See Table 2 Below			THz
ITU Wavelength	See Table 2 Below			nm
Center Frequency Accuracy	Maximum of the absolute deviation of the 3 dB center wavelength from ITU grid over all channels	-0.05	+0.05	nm
Insertion Loss	Maximum of the insertion loss at the ITU wavelength over all channels		6.0	dB
Insertion Loss Uniformity	Maximum insertion loss variance across all channels		1.5	dB
Ripple	Maximum of the loss variance across the ITU pass-band over all channels		0.5	dB
1dB Bandwidth	1dB from min Insertion Loss, full width, average polarization	0.2		nm
3dB Bandwidth	3 dB from min Insertion Loss, full width,	0.26		nm

	average polarization			
20 dB bandwidth	20 dB from min Insertion Loss, full width, average polarization		0.7	nm
Adjacent Channel Isolation (Insertion loss @ITU)	Maximum insertion loss difference between the highest power channel and two adjacent channels overall operating conditions such as temperature, average polarization at ITU.	25		dB
Non-Adjacent Channel Isolation (Insertion loss @ITU)	Maximum insertion loss difference between the highest power channel and non-adjacent channels overall operating conditions such as temperature, average polarization at ITU.	30		dB
Total Crosstalk (Insertion loss @ITU)	Total cumulative average insertion loss difference between the highest power channel and all other channels overall operating conditions such as temperature, average polarization at ITU.	21		dB
Polarization Dependent Loss	Maximum ratio of transmissions over all polarization states, over the ITU pass-band		1.0	dB
Polarization Mode Delay	In Reference Passband over all channels		0.5	ps
Chromatic Dispersion	In Reference Passband over all channels	-20	20	ps/nm
Directivity		45		dB
Return Loss		45		dB
Continuousoptical power			500	mW

Connector is included.

Table 2 Channel Plan

First Channel Frequency (THz)	Last Channel Frequency (THz)	First Channel Wavelength (nm)	Last Channel Wavelength (nm)
196.10	191.35	1528.773	1566.723

Table 3 Channels List: Passbands for 96 channel AAWG

Label	Frequency(THz)	Wavelength(nm)	Label	Frequency(THz)	Wavelength(nm)
C61	196.10	1528.773	C37	193.70	1547.715
H60	196.05	1529.163	H36	193.65	1548.115
C60	196.00	1529.553	C36	193.60	1548.515
H59	195.95	1529.944	H35	193.55	1548.915

C59	195.90	1530.334	C35	193.50	1549.315
H58	195.85	1530.725	H34	193.45	1549.715
C58	195.80	1531.116	C34	193.40	1550.116
H57	195.75	1531.507	H33	193.35	1550.517
C57	195.70	1531.898	C33	193.30	1550.918
H56	195.65	1532.290	H32	193.25	1551.319
C56	195.60	1532.681	C32	193.20	1551.721
H55	195.55	1533.073	H31	193.15	1552.122
C55	195.50	1533.465	C31	193.10	1552.524
H54	195.45	1533.858	H30	193.05	1552.926
C54	195.40	1534.250	C30	193.00	1553.329
H53	195.35	1534.643	H29	192.95	1553.731
C53	195.30	1535.036	C29	192.90	1554.134
H52	195.25	1535.429	H28	192.85	1554.537
C52	195.20	1535.822	C28	192.80	1554.940
H51	195.15	1536.216	H27	192.75	1555.343
C51	195.10	1536.609	C27	192.70	1555.747
H50	195.05	1537.003	H26	192.65	1556.151
C50	195.00	1537.397	C26	192.60	1556.555
H49	194.95	1537.792	H25	192.55	1556.959
C49	194.90	1538.186	C25	192.50	1557.363
H48	194.85	1538.581	H24	192.45	1557.768
C48	194.80	1538.976	C24	192.40	1558.173
H47	194.75	1539.371	H23	192.35	1558.578
C47	194.70	1539.766	C23	192.30	1558.983
H46	194.65	1540.162	H22	192.25	1559.389
C46	194.60	1540.557	C22	192.20	1559.794
H45	194.55	1540.953	H21	192.15	1560.200
C45	194.50	1541.349	C21	192.10	1560.606
H44	194.45	1541.746	H20	192.05	1561.013
C44	194.40	1542.142	C20	192.00	1561.419
H43	194.35	1542.539	H19	191.95	1561.826
C43	194.30	1542.936	C19	191.90	1562.233
H42	194.25	1543.333	H18	191.85	1562.640
C42	194.20	1543.730	C18	191.80	1563.047
H41	194.15	1544.128	H17	191.75	1563.455
C41	194.10	1544.526	C17	191.70	1563.863
H40	194.05	1544.924	H16	191.65	1564.271
C40	194.00	1545.322	C16	191.60	1564.679
H39	193.95	1545.720	H15	191.55	1565.087
C39	193.90	1546.119	C15	191.50	1565.496
H38	193.85	1546.518	H14	191.45	1565.905
C38	193.80	1546.917	C14	191.40	1566.314

H37	193.75	1547.316	H13	191.35	1566.723

3. Environmental Conditions

Table 4 Environmental conditions

Parameters	Notes	Specifications			Units
		Min	Typ	Max	
Operating Temperature		-5		+65	°C
Storage Temperature		-40		+85	°C
Relative Humidity		0		90	%

4. Mechanical Dimensions

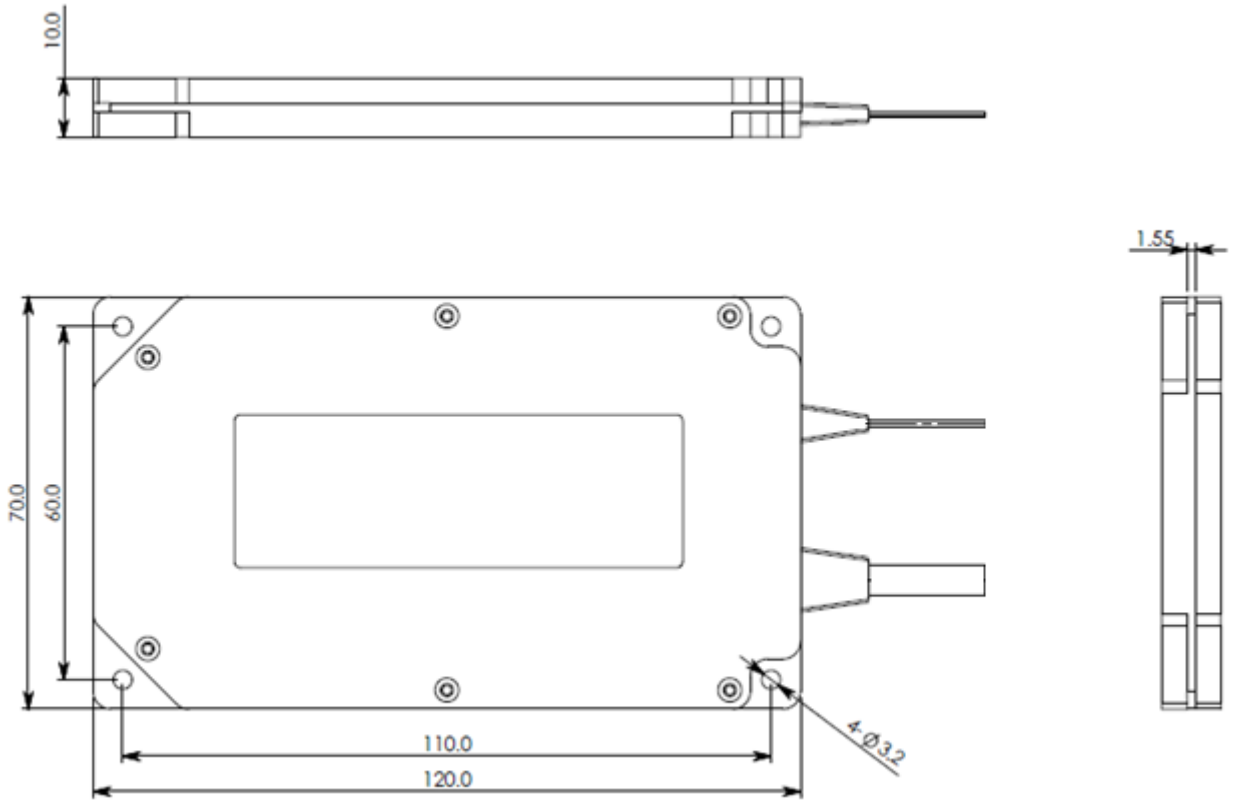

Figure 2 AAWG planar drawing

4.1. Fiber Length

Parameters	Notes	Specifications			Units
		Min	Typ	Max	
Optical Fiber Terminations			LC/UPC		
Package Size	(L*W*H)		120*70*10		mm^3
Common Fiber Length	Including connector		L:1000±50		mm
Common Fiber Type			900μm loose tube G652D		
Fiber from module to fan-out			L1: 500±50		mm
Fiber from fan-out to connectors	Including connectors		L2: 500±50		mm
Channel Fiber Type			900μm loose tube G652D		

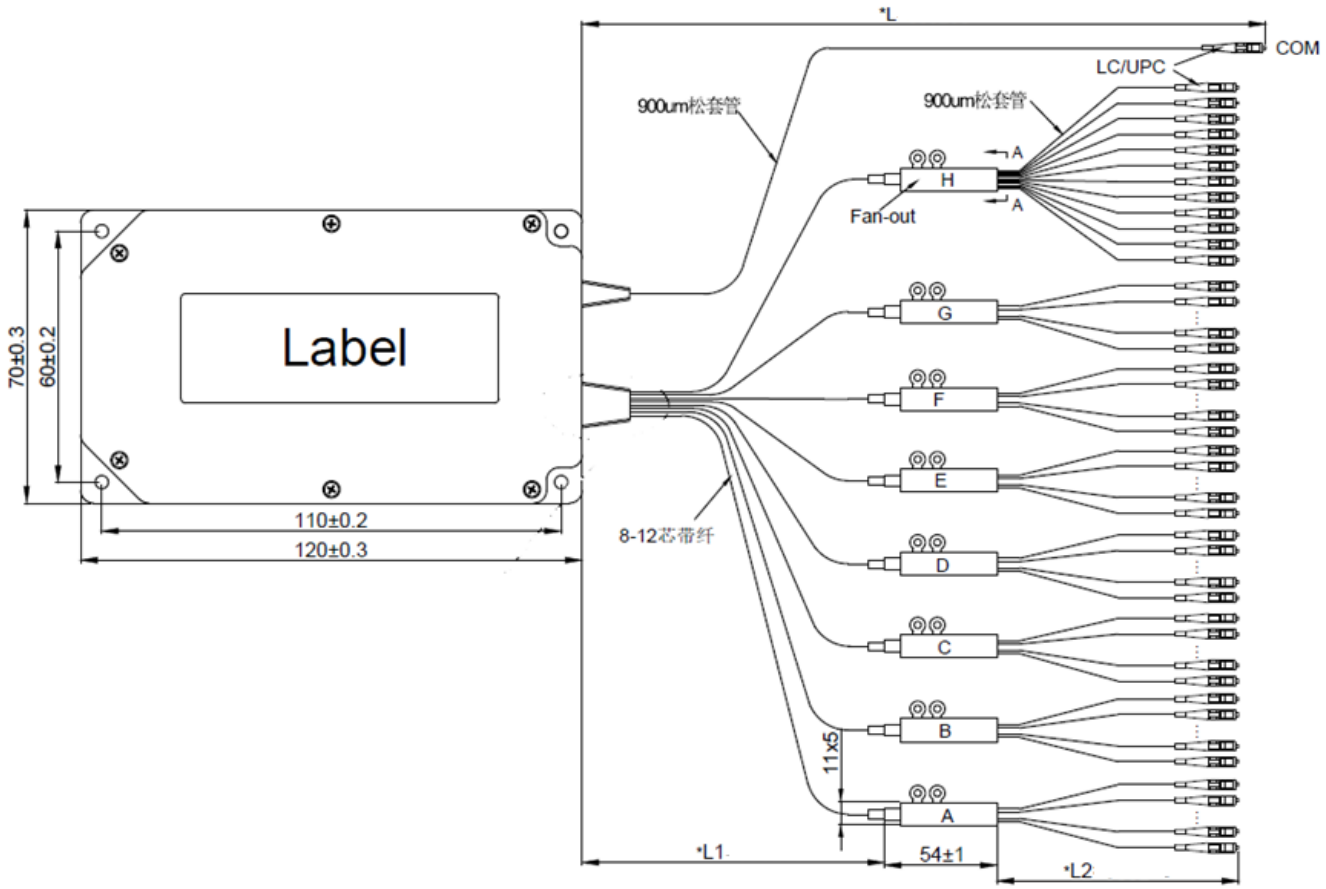

Figure 3 AAWG module structure and fiber length illustration

4.2. FANOUT BOX Drawings

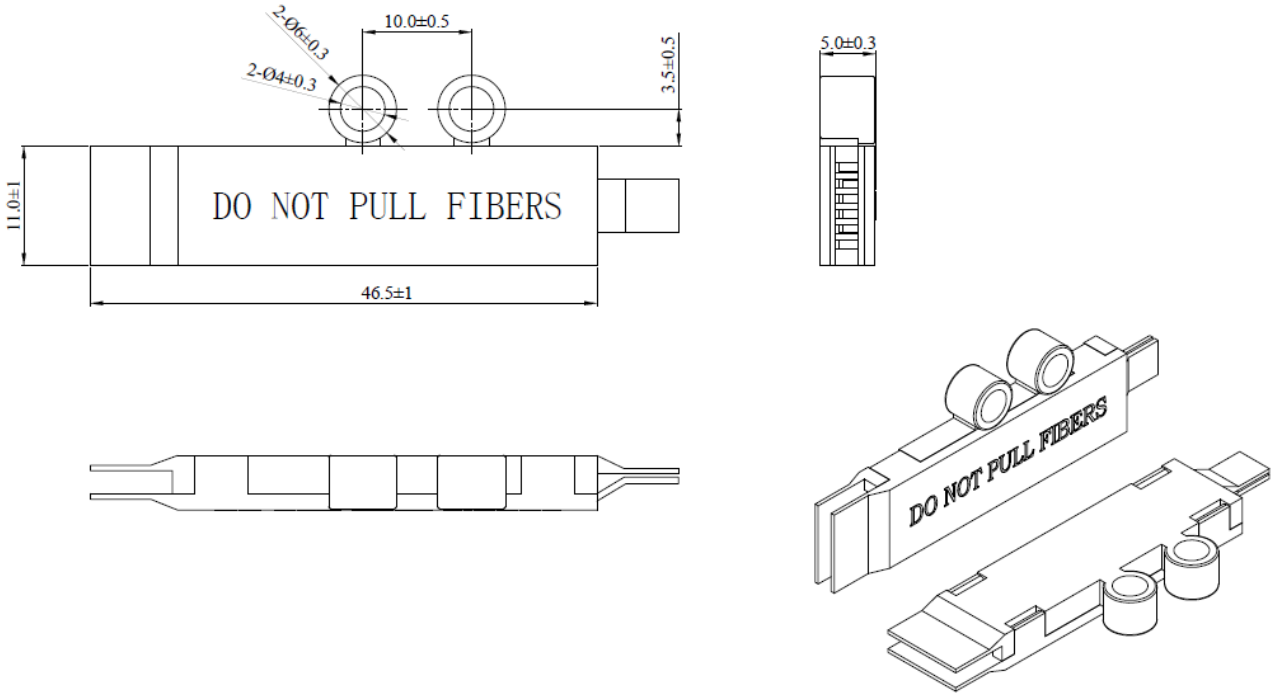

Figure 4 Fan-out planar Drawing