

Specifications of 48ch 100GHz Flat-Top AAWG Module (Flat-top, C-Band, 100GHz)

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1. Application Note

1. The specifications serve for C-band 100GHz Flat-top MUX/DEMUX in DWDM system.
2. The AWG module is athermal.

2. Optical Specifications

2.1 Optical signal transmission diagram

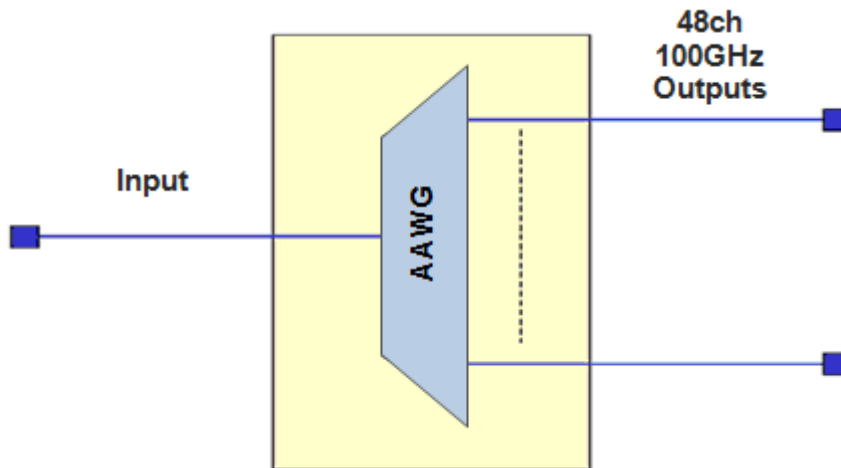


Figure 1 Optical signal transmission characteristics

2.2 Optical Specifications

Table 1 Optical Specifications

Parameters	Notes	Specifications		Units
		Min	Max	
Channels		48		Ch
Channel Spacing		100		GHz
Reference Pass-band	Relative to ITU Grid	± 0.1		nm
ITU Frequency	See Table 2 Below			THz
ITU Wavelength	See Table 2 Below			nm
Center Wavelength Accuracy	Maximum of the absolute deviation of the 3 dB center wavelength from ITU grid over all channels	-0.05	+0.05	nm
0.5dB Bandwidth	0.5dB from min Insertion Loss, full width, average polarization	0.2		nm
1dB Bandwidth	1dB from min Insertion Loss, full width, average polarization	0.4		nm
3dB Bandwidth	3 dB from min Insertion Loss, full width, average polarization	0.55		nm
20 dB bandwidth	20 dB from min Insertion Loss, full width,		1.2	nm

	average polarization			
Insertion Loss	Maximum of the insertion loss across the ITU pass-band over all channels		6.0	dB
Insertion Loss Uniformity	Maximum insertion loss variance across all channels		1.3	dB
Ripple	Maximum of the loss variance across the ITU pass-band over all channels		0.6	dB
Adjacent Channel Isolation	Ratio of peak transmission to the maximum transmission over both adjacent pass-bands	25		dB
Non-Adjacent Channel Isolation	Ratio of peak transmission in channel pass-bands to maximum transmission over all non-adjacent pass-bands	30		dB
Total Crosstalk	Ratio of power in channel to power in all other pass-bands	21		dB
Polarization Dependent Loss	Maximum ratio of transmissions over all polarization states, over the ITU pass-band		0.5	dB
Return Loss		45		dB
Polarization Mode Delay (PMD)	In Reference Passband over all channels		0.5	ps
Chromatic Dispersion	In Reference Passband over all channels	-20	20	ps/nm

Connector loss is included.

Table 2 Channel Plan

Type	First Channel Frequency (THz)	Last Channel Frequency (THz)	First Channel Wavelength (nm)	Last Channel Wavelength (nm)
EVEN	196.00	191.30	1529.553	1567.133
ODD	196.05	191.35	1529.163	1566.723

Table 3 Channels List:

EVEN					
Label	Frequency(THz)	Wavelength(nm)	Label	Frequency(THz)	Wavelength(nm)
C60	196.00	1529.553	C36	193.60	1548.515
C59	195.90	1530.334	C35	193.50	1549.315
C58	195.80	1531.116	C34	193.40	1550.116
C57	195.70	1531.898	C33	193.30	1550.918
C56	195.60	1532.681	C32	193.20	1551.721
C55	195.50	1533.465	C31	193.10	1552.524
C54	195.40	1534.250	C30	193.00	1553.329
C53	195.30	1535.036	C29	192.90	1554.134
C52	195.20	1535.822	C28	192.80	1554.940

C51	195.10	1536.609	C27	192.70	1555.747
C50	195.00	1537.397	C26	192.60	1556.555
C49	194.90	1538.186	C25	192.50	1557.363
C48	194.80	1538.976	C24	192.40	1558.173
C47	194.70	1539.766	C23	192.30	1558.983
C46	194.60	1540.557	C22	192.20	1559.794
C45	194.50	1541.349	C21	192.10	1560.606
C44	194.40	1542.142	C20	192.00	1561.419
C43	194.30	1542.936	C19	191.90	1562.233
C42	194.20	1543.730	C18	191.80	1563.047
C41	194.10	1544.526	C17	191.70	1563.863
C40	194.00	1545.322	C16	191.60	1564.679
C39	193.90	1546.119	C15	191.50	1565.496
C38	193.80	1546.917	C14	191.40	1566.314
C37	193.70	1547.715	C13	191.30	1567.133

ODD					
Label	Frequency(THz)	Wavelength(nm)	Label	Frequency(THz)	Wavelength(nm)
H60	196.05	1529.163	H36	193.65	1548.115
H59	195.95	1529.944	H35	193.55	1548.915
H58	195.85	1530.725	H34	193.45	1549.715
H57	195.75	1531.507	H33	193.35	1550.517
H56	195.65	1532.290	H32	193.25	1551.319
H55	195.55	1533.073	H31	193.15	1552.122
H54	195.45	1533.858	H30	193.05	1552.926
H53	195.35	1534.643	H29	192.95	1553.731
H52	195.25	1535.429	H28	192.85	1554.537
H51	195.15	1536.216	H27	192.75	1555.343
H50	195.05	1537.003	H26	192.65	1556.151
H49	194.95	1537.792	H25	192.55	1556.959
H48	194.85	1538.581	H24	192.45	1557.768
H47	194.75	1539.371	H23	192.35	1558.578
H46	194.65	1540.162	H22	192.25	1559.389
H45	194.55	1540.953	H21	192.15	1560.200
H44	194.45	1541.746	H20	192.05	1561.013
H43	194.35	1542.539	H19	191.95	1561.826
H42	194.25	1543.333	H18	191.85	1562.640
H41	194.15	1544.128	H17	191.75	1563.455
H40	194.05	1544.924	H16	191.65	1564.271
H39	193.95	1545.720	H15	191.55	1565.087
H38	193.85	1546.518	H14	191.45	1565.905
H37	193.75	1547.316	H13	191.35	1566.723

3. Environmental Conditions and Maximum Ratings

Table 4 Environmental conditions

Parameters	Notes	Specifications			Units
		Min	Typ	Max	
Operating Temperature		-5		+65	°C
Storage Temperature		-40		+85	°C
Relative Humidity		0		95	%

4. Mechanical Specifications

4.1. Mechanical Drawing

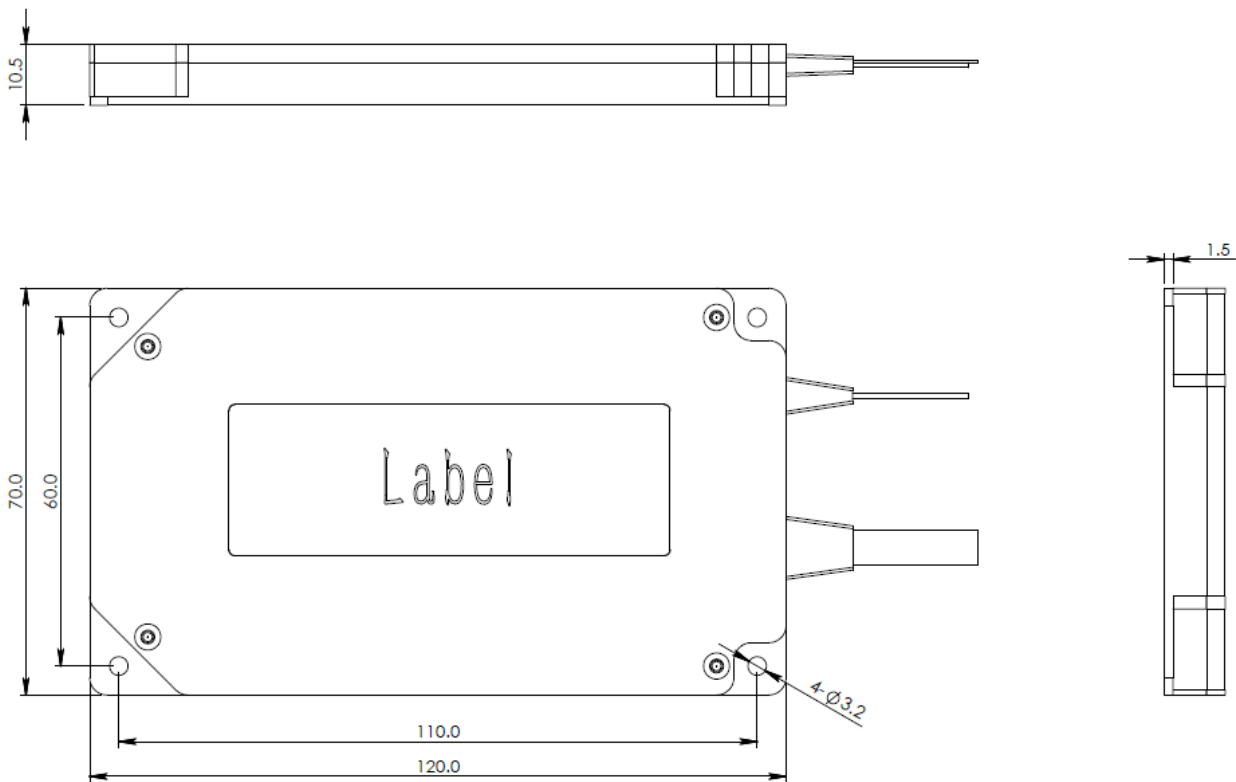


Figure 2 AAWG planar drawing

4.2. Fiber Length

Parameters	Notes	Specifications			Units
		Min	Typ	Max	
Optical Fiber Terminations		LC/UPC			

Package Size	(L*W*H)	120*70*10.5	mm ³
Housing Case		AL6061	
Common Fiber Length	Including connectors	L: 1000±50 or Customized	mm
Common Fiber Type		900μm loose tube G657A2	
Fiber from module to Fan-out	Including connectors	L1: 500±50 or Customized	mm
Fiber from Fan-out to connector	Including connectors	L2: 500±50 or Customized	mm
Channel Fiber Type		900μm loose tube G657A2	

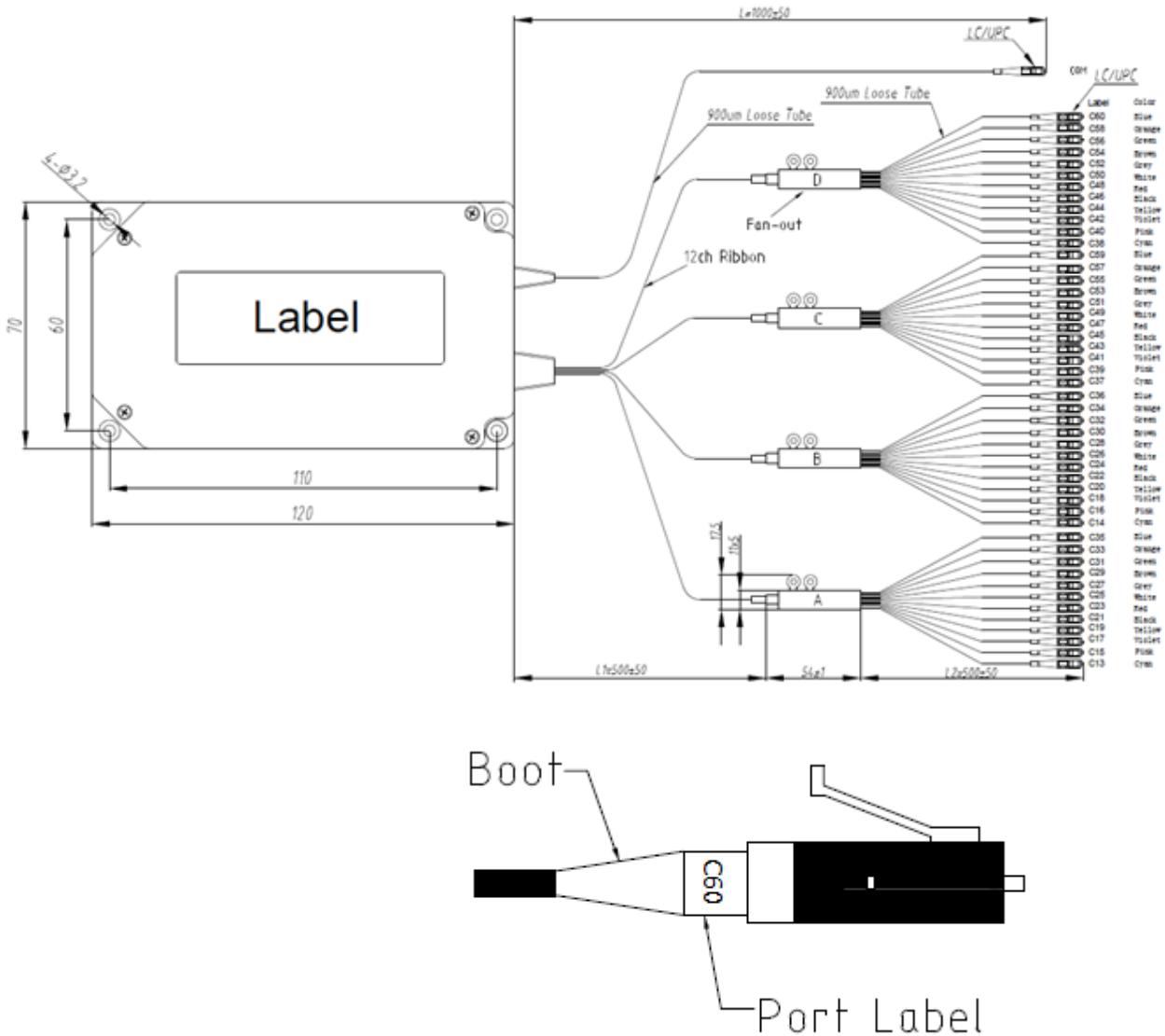


Figure 3 AAWG module structure and fiber length illustration

4.3. FANOUT BOX Drawings

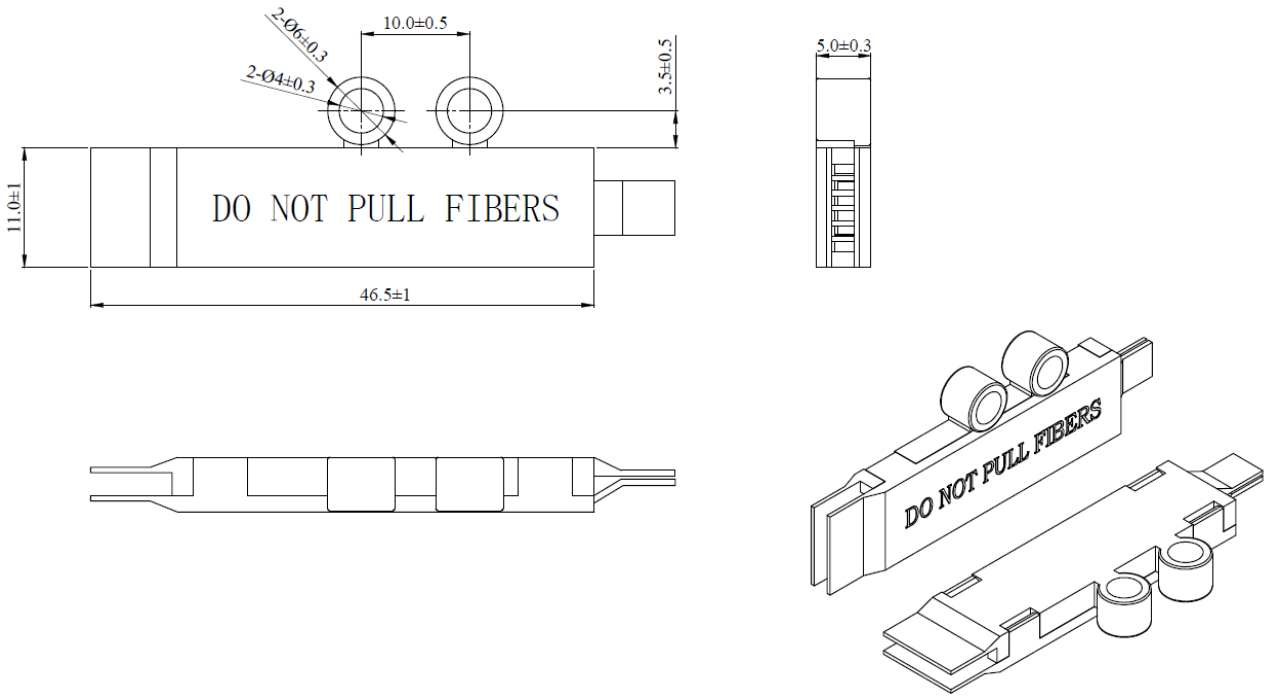


Figure 4 Fan-out planar Drawing