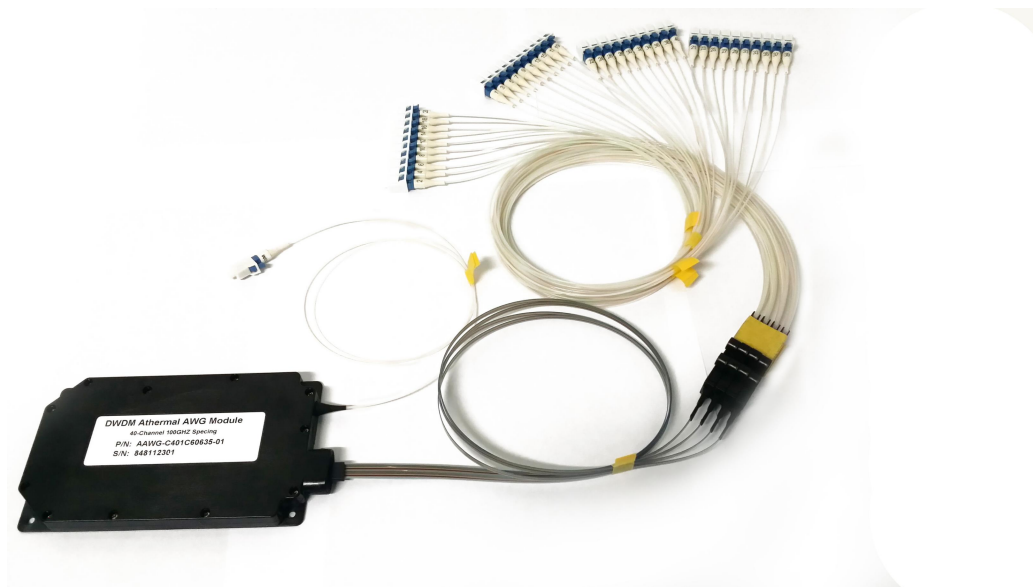


## 平顶无热 AWG/ Flat Top Athermal AWG



### Application Note

The specifications serve for C-band 40 channels Flat-top MUX/DEMUX Athermal AWG module in DWDM system.

### Optical signal transmission diagram

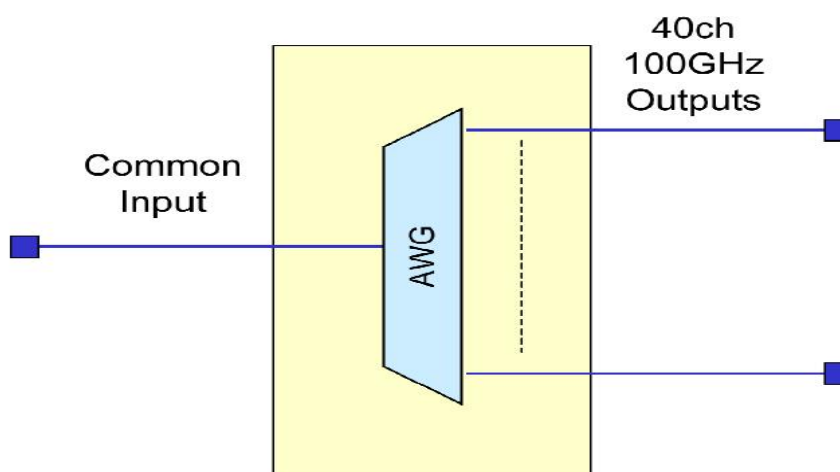


Figure 1 Optical signal transmission characteristics

## Optical Specifications

| Parameters                     | Notes                                                                                                     | Specifications |          | Units |
|--------------------------------|-----------------------------------------------------------------------------------------------------------|----------------|----------|-------|
|                                |                                                                                                           | Min            | Max      |       |
| Channels                       |                                                                                                           | 40             |          | Ch    |
| Channel Spacing                |                                                                                                           | 100            |          | GHz   |
| Reference Pass-band            | Relative to ITU Grid                                                                                      | $\pm 0.1$      |          | nm    |
| ITU Frequency                  | On ITU grid in C-band Even                                                                                | 196.00         | 192.10   | THz   |
| ITU Wavelength                 | On ITU grid in C-band Even                                                                                | 1529.553       | 1560.606 | nm    |
| ITU Frequency                  | On ITU grid in C-band ODD                                                                                 | 196.05         | 192.15   | THz   |
| ITU Wavelength                 | On ITU grid in C-band ODD                                                                                 | 1529.163       | 1560.200 | 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 across the ITU pass-band over all channels                                  |                | 5.5      | 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                                   |                | 0.5      | dB    |
| 0.5 dB Bandwidth               | 0.5 dB from min Insertion Loss, full width, worst case 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, average polarization                                           |                | 1.2      | nm    |
| 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                    |                                                                                                           | 40             |          | dB    |
| Polarization Mode Delay (PMD)  | In Reference Passband over all channels                                                                   |                | 0.5      | ps    |
| Chromatic Dispersion           | In Reference Passband over all channels                                                                   | -15            | 15       | ps/nm |

 Channels List: Passbands for 40 channel AAWG

| Channel | On ITU grid in C-band Even |                | On ITU grid in C-band ODD |                |
|---------|----------------------------|----------------|---------------------------|----------------|
|         | Frequency(THz)             | Wavelength(nm) | Frequency(THz)            | Wavelength(nm) |
| 1       | 196                        | 1529.553       | 196.05                    | 1529.163       |
| 2       | 195.9                      | 1530.334       | 195.95                    | 1529.944       |
| 3       | 195.8                      | 1531.116       | 195.85                    | 1530.725       |
| 4       | 195.7                      | 1531.898       | 195.75                    | 1531.507       |
| 5       | 195.6                      | 1532.681       | 195.65                    | 1532.290       |
| 6       | 195.5                      | 1533.465       | 195.55                    | 1533.073       |
| 7       | 195.4                      | 1534.250       | 195.45                    | 1533.858       |
| 8       | 195.3                      | 1535.036       | 195.35                    | 1534.643       |
| 9       | 195.2                      | 1535.822       | 195.25                    | 1535.429       |
| 10      | 195.1                      | 1536.609       | 195.15                    | 1536.216       |
| 11      | 195                        | 1537.397       | 195.05                    | 1537.003       |
| 12      | 194.9                      | 1538.186       | 194.95                    | 1537.792       |
| 13      | 194.8                      | 1538.976       | 194.85                    | 1538.581       |
| 14      | 194.7                      | 1539.766       | 194.75                    | 1539.371       |
| 15      | 194.6                      | 1540.557       | 194.65                    | 1540.162       |
| 16      | 194.5                      | 1541.349       | 194.55                    | 1540.953       |
| 17      | 194.4                      | 1542.142       | 194.45                    | 1541.746       |
| 18      | 194.3                      | 1542.936       | 194.35                    | 1542.539       |
| 19      | 194.2                      | 1543.730       | 194.25                    | 1543.333       |
| 20      | 194.1                      | 1544.526       | 194.15                    | 1544.128       |
| 21      | 194                        | 1545.322       | 194.05                    | 1544.924       |
| 22      | 193.9                      | 1546.119       | 193.95                    | 1545.720       |
| 23      | 193.8                      | 1546.917       | 193.85                    | 1546.518       |
| 24      | 193.7                      | 1547.715       | 193.75                    | 1547.316       |
| 25      | 193.6                      | 1548.515       | 193.65                    | 1548.115       |
| 26      | 193.5                      | 1549.315       | 193.55                    | 1548.915       |
| 27      | 193.4                      | 1550.116       | 193.45                    | 1549.715       |
| 28      | 193.3                      | 1550.918       | 193.35                    | 1550.517       |
| 29      | 193.2                      | 1551.721       | 193.25                    | 1551.319       |
| 30      | 193.1                      | 1552.524       | 193.15                    | 1552.122       |
| 31      | 193                        | 1553.329       | 193.05                    | 1552.926       |
| 32      | 192.9                      | 1554.134       | 192.95                    | 1553.731       |
| 33      | 192.8                      | 1554.940       | 192.85                    | 1554.537       |
| 34      | 192.7                      | 1555.747       | 192.75                    | 1555.343       |
| 35      | 192.6                      | 1556.555       | 192.65                    | 1556.151       |
| 36      | 192.5                      | 1557.363       | 192.55                    | 1556.959       |
| 37      | 192.4                      | 1558.173       | 192.45                    | 1557.768       |
| 38      | 192.3                      | 1558.983       | 192.35                    | 1558.578       |
| 39      | 192.2                      | 1559.794       | 192.25                    | 1559.389       |
| 40      | 192.1                      | 1560.606       | 192.15                    | 1560.200       |

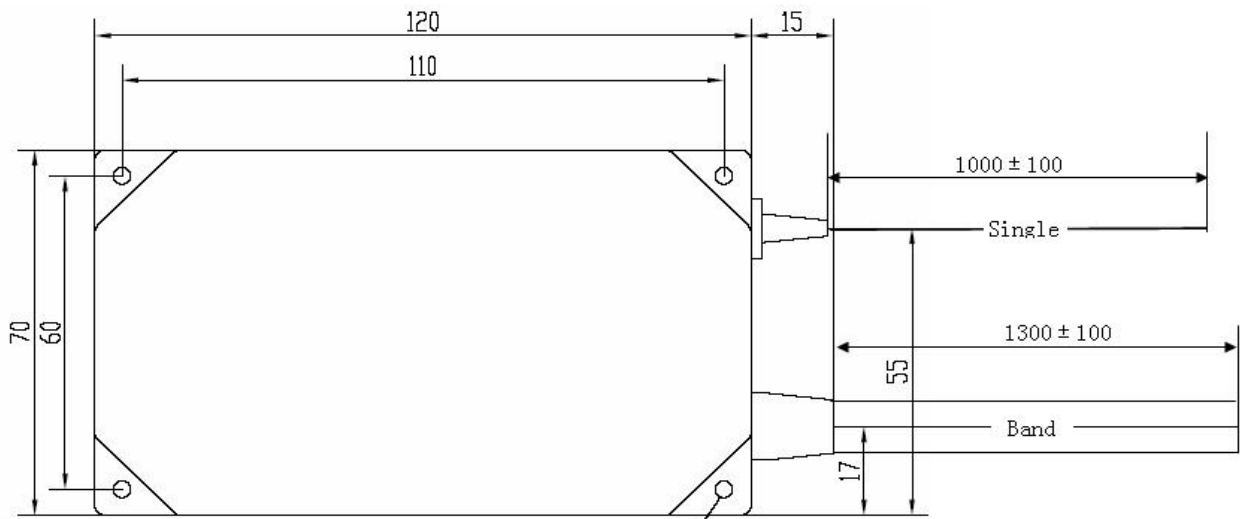
**Fiber Type:**  
SMF-28 900um compliant.

### Environmental Conditions

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

### Mechanical Dimensions

120 mm x 70 mm x 10 mm  
The screw space is 110\*60 mm.



### Ordering Information: HC - AWG- A-B-C-D-E-F-G

| A         | B        | C           | D        | E        | F        | G          |
|-----------|----------|-------------|----------|----------|----------|------------|
| 工作波段      | 通道数      | 通道间隔        | 起始通道     | 芯片类型     | 尾纤长度     | 连接头        |
| C: C-Band | 16: 16CH | 100: 100GHz | C60: C60 | FA: 平坦无热 | 05: 0.5m | 00: None   |
| X: 客户指定   | 24: 24CH | 200: 200GHz | H59: H59 | GA: 高斯无热 | 10: 1.0m | FP: FC/UPC |
|           | 32: 32CH | 050: 50GHz  | C59: C59 | X: 客户指定  | 15: 1.5m | FA: FC/APC |
|           | 40: 40CH | X: 客户指定     | H58: H58 |          | X: 客户指定  | SP: SC/UPC |
|           | 44: 44CH |             | X: 客户指定  |          |          | SA: SC/APC |
|           | 48: 48CH |             |          |          |          | LP: LC/UPC |
|           | X: 客户指定  |             |          |          |          | LA: LC/APC |
|           |          |             |          |          |          | X: 客户指定    |