

# Technical Specification

## Planar Optical Splitter Module PLC Splitter Module (1\_2xN ISO Color)



## 1. Document History

| Rev. | Approve Date  | Originator | Change Description     |
|------|---------------|------------|------------------------|
| 01   | Aug. 24, 2010 | LGI        | Initial                |
| 02   | Jan. 16, 2013 | KMW        | Optical Specifications |
| 03   | Mar. 16, 2014 | OSI        | Re - specifications    |

## 2. General Description

This document details specifications of 1xN / 2xN PLC splitter modules manufactured by



## 3. Optical Characteristic

### 3.1 Specification (without Connector)

| Rev.                        | Unit                                | Specifications |      |       |       |       |       |
|-----------------------------|-------------------------------------|----------------|------|-------|-------|-------|-------|
|                             |                                     | 1x2            | 1x4  | 1x8   | 1x16  | 1x32  | 1x64  |
| Insertion loss (max., S/P)  | dB                                  | ≤4.0           | ≤7.2 | ≤10.5 | ≤13.8 | ≤17.2 | ≤21.0 |
| Loss uniformity (max., S/P) | dB                                  | ≤0.6           | ≤0.7 | ≤1.0  | ≤1.2  | ≤1.5  | ≤1.8  |
| PDL (max., S/P)             | dB                                  | ≤0.2           | ≤0.2 | ≤0.2  | ≤0.3  | ≤0.3  | ≤0.35 |
| Return loss (min)           | dB                                  | ≥ 55.0         |      |       |       |       |       |
| Directivity (min)           | dB                                  | ≥ 55.0         |      |       |       |       |       |
| Case type                   | According to customer's requirement |                |      |       |       |       |       |

Measured at room temperature, and wavelength of 1260nm & 1620nm

### 3.2 Specification (without Connector)

| Rev.                        | Unit                                | Specifications |      |      |       |       |       |
|-----------------------------|-------------------------------------|----------------|------|------|-------|-------|-------|
|                             |                                     | 2x2            | 2x4  | 2x8  | 2x16  | 2x32  | 2x64  |
| Insertion loss (max., S/P)  | dB                                  | ≤4.5           | ≤7.6 | ≤11  | ≤14.5 | ≤17.5 | ≤21.5 |
| Loss uniformity (max., S/P) | dB                                  | ≤0.8           | ≤1.0 | ≤1.2 | ≤1.5  | ≤1.8  | ≤2.0  |
| PDL (max., S/P)             | dB                                  | ≤0.2           | ≤0.2 | ≤0.3 | ≤0.4  | ≤0.4  | ≤0.4  |
| Return loss (min)           | dB                                  | ≥ 55.0         |      |      |       |       |       |
| Directivity (min)           | dB                                  | ≥ 55.0         |      |      |       |       |       |
| Case type                   | According to customer's requirement |                |      |      |       |       |       |
| Connector                   | dB                                  | SC/FC/LC       |      |      |       |       |       |

Measured at room temperature, and wavelength of 1260nm & 1620nm

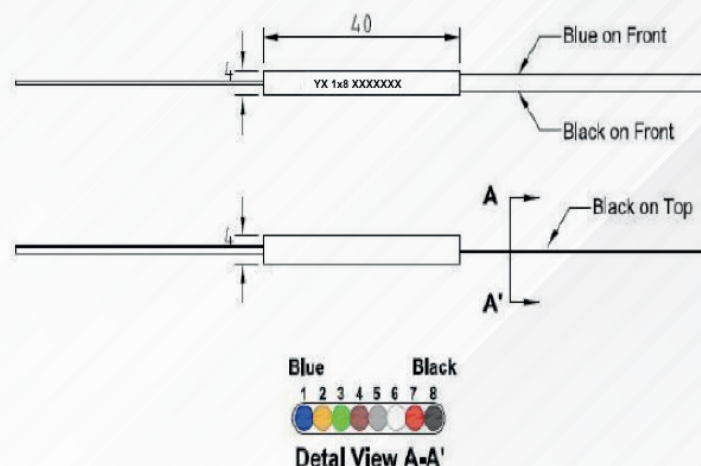
### 3.3 PLC splitter (Component packing dimensions)

| No. | Parameter     | Unit   | Specifications |     |     |      |      |      |
|-----|---------------|--------|----------------|-----|-----|------|------|------|
|     |               |        | 1x2            | 1x4 | 1x8 | 1x16 | 1x32 | 1x64 |
| 1   | Module type   | Width  | mm             | 4   |     | 7    | 7    | 12   |
|     |               | Height |                | 4   |     | 4    | 4    | 4    |
|     |               | Lenght |                | 40  |     | 55   | 55   | 60   |
| 2   | ABS type      | Width  | mm             | 80  |     |      | 80   | 114  |
|     |               | Height |                | 10  |     |      | 18   | 18   |
|     |               | Lenght |                | 100 |     |      | 120  | 140  |
| 3   | Minicase type | Width  | mm             | 7   |     | 12   | 20   | 40   |
|     |               | Height |                | 4   |     | 4    | 6    | 6    |
|     |               | Lenght |                | 55  |     | 60   | 80   | 100  |

## 4. Module type Splitter

### 4.1.1. 1x8 PLC Splitter (Module type)

Color coding of 1x8 PLC splitter module with full pitch output V-groove



| Port Number | Ribbon 1 | 1    | 2      | 3     | 4     | 5     | 6     | 7   | 8     |
|-------------|----------|------|--------|-------|-------|-------|-------|-----|-------|
| Fiber Color |          | Blue | Orange | Green | Brown | Slate | White | Red | Black |

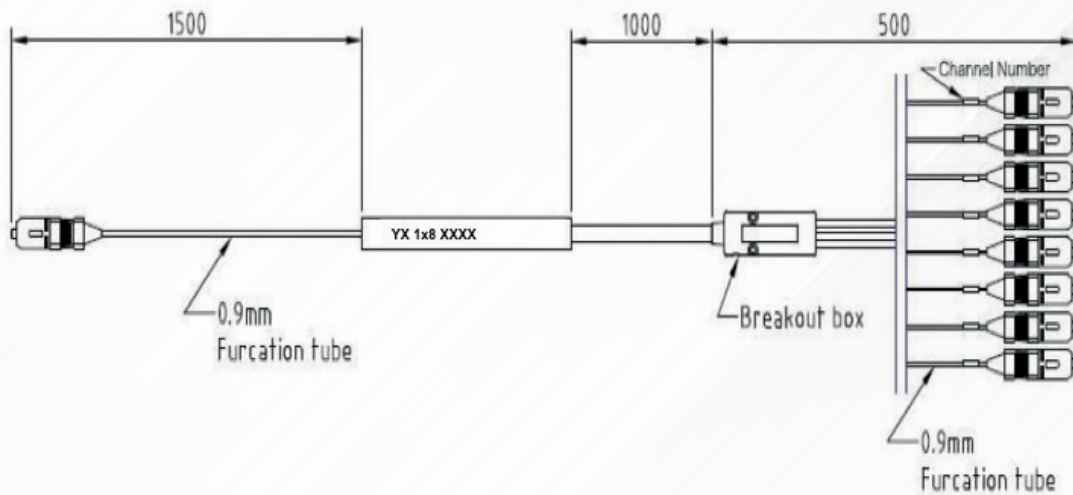
## 4.2. Input & Output leads

### Specifications

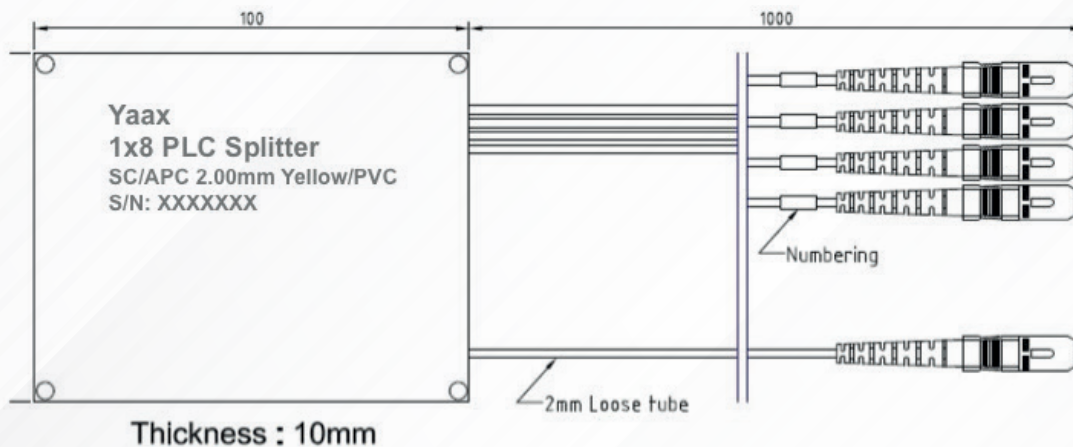
| Parameter     | 2x2                                                    | 2x4 | 2x8 | 2x16 | 2x32 | 2x64 |
|---------------|--------------------------------------------------------|-----|-----|------|------|------|
| Input lead*   | 0.25mm Bare Fiber or 0.9mm Loose & Tight Buffer        |     |     |      |      |      |
| Output leads* | 0.25mm Ribbon Fibers or 0.9mm Loose & Tight Buffer     |     |     |      |      |      |
| Fiber Type    | single mode fibers in accordance with ITU-T 657A/G657B |     |     |      |      |      |
| Length        | According to customer's requirement                    |     |     |      |      |      |

## 5. PLC Splitter with Connector

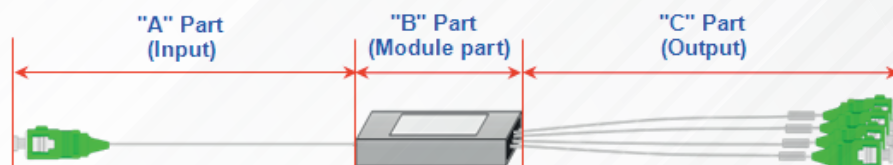
### 5.1. Type A (Fan-out type Splitter)



### 5.2 Type B (Cascade type Splitter)



## 5.3 Type C (Minicase type Splitter)



## 6. Operating and Storage Conditions

| Parameter              | Specifications    |
|------------------------|-------------------|
| Operating Temperature* | -40°C ~ 85°C      |
| Operating Wavelength*  | 1260 nm ~ 1650 nm |
| Storage Temperature    | -40°C ~ 85°C      |
| Storage Humidity       | 30 ~ 85% RH       |

## 7. Reliabilities

Yaax PLC splitters are fully compliant with Telcordia GR-1209 and GR1221 reliability stipulations.

## 8. Test Reports

1) Data sheet shipped with PLC splitter reports the following test results:

- Insertion loss
- Polarization dependent loss
- Loss uniformity

2) The following data is provided on a statistical sampling basis:

- Return loss

|                        |                   |                    |         |         |             |                 |         |             |           |           |
|------------------------|-------------------|--------------------|---------|---------|-------------|-----------------|---------|-------------|-----------|-----------|
| <div>Test Report</div> |                   |                    |         |         |             |                 |         |             |           |           |
| Product Name           |                   | 1x4 Splitter       |         |         |             |                 |         |             |           |           |
| Inspection Date        |                   | 09/19/12           |         |         |             |                 |         |             |           |           |
| QA RESULTS             |                   | Pass               |         |         |             |                 |         |             |           |           |
| Serial Number          |                   | F123456789         |         |         |             |                 |         |             |           |           |
| Function               | Item              | Insertion Loss(dB) |         | PDL(dB) |             | Return Loss(dB) |         | Directivity |           | Pass/Fail |
|                        | Wavelength(nm)    | 1310               | 1550    | 1310    | 1550        | 1310            | 1550    | 1310        | 1550      |           |
|                        | Specification(dB) | <= 7.40            | <= 7.40 | <= 0.2  | <= 0.2      | >= 55.0         | >= 55.0 | >= 55.0     | >= 55.0   |           |
|                        | Port 1            | 7.20               | 7.00    | 0.02    | 0.01        | >=55.0          | >=55.0  | >=55.0      | >=55.0    | Pass      |
|                        | Port 2            | 7.30               | 7.10    | 0.03    | 0.01        | >=55.0          | >=55.0  | >=55.0      | >=55.0    | Pass      |
|                        | Port 3            | 7.10               | 7.20    | 0.04    | 0.10        | >=55.0          | >=55.0  | >=55.0      | >=55.0    | Pass      |
|                        | Port 4            | 7.20               | 7.30    | 0.05    | 0.01        | >=55.0          | >=55.0  | >=55.0      | >=55.0    | Pass      |
|                        | Uniformity(dB)    | <= 0.60            | 0.20    | 0.30    |             | -               | -       | -           | -         | Pass      |
| Dimension              | Item              | Specification      |         |         | Measurement |                 |         |             | Pass/Fail |           |
|                        | Housing           | Length(mm)         |         |         |             |                 |         |             | Pass      |           |
|                        |                   | Width(mm)          |         |         |             |                 |         |             | Pass      |           |
|                        |                   | Height(mm)         |         |         |             |                 |         |             | Pass      |           |
|                        | 1ch Length(mm)    |                    |         |         |             |                 |         | Pass        |           |           |
|                        | 4ch Length(mm)    |                    |         |         |             |                 |         | Pass        |           |           |
| Visual inspection      | Item              | Description        |         |         |             |                 |         |             |           | Pass/Fail |
|                        | Housing           |                    |         |         |             |                 |         |             | Pass      |           |
|                        | Optical Fiber     |                    |         |         |             |                 |         |             | Pass      |           |
|                        | Color Code        |                    |         |         |             |                 |         |             | Pass      |           |
|                        | Connector Type    |                    |         |         |             |                 |         |             |           |           |