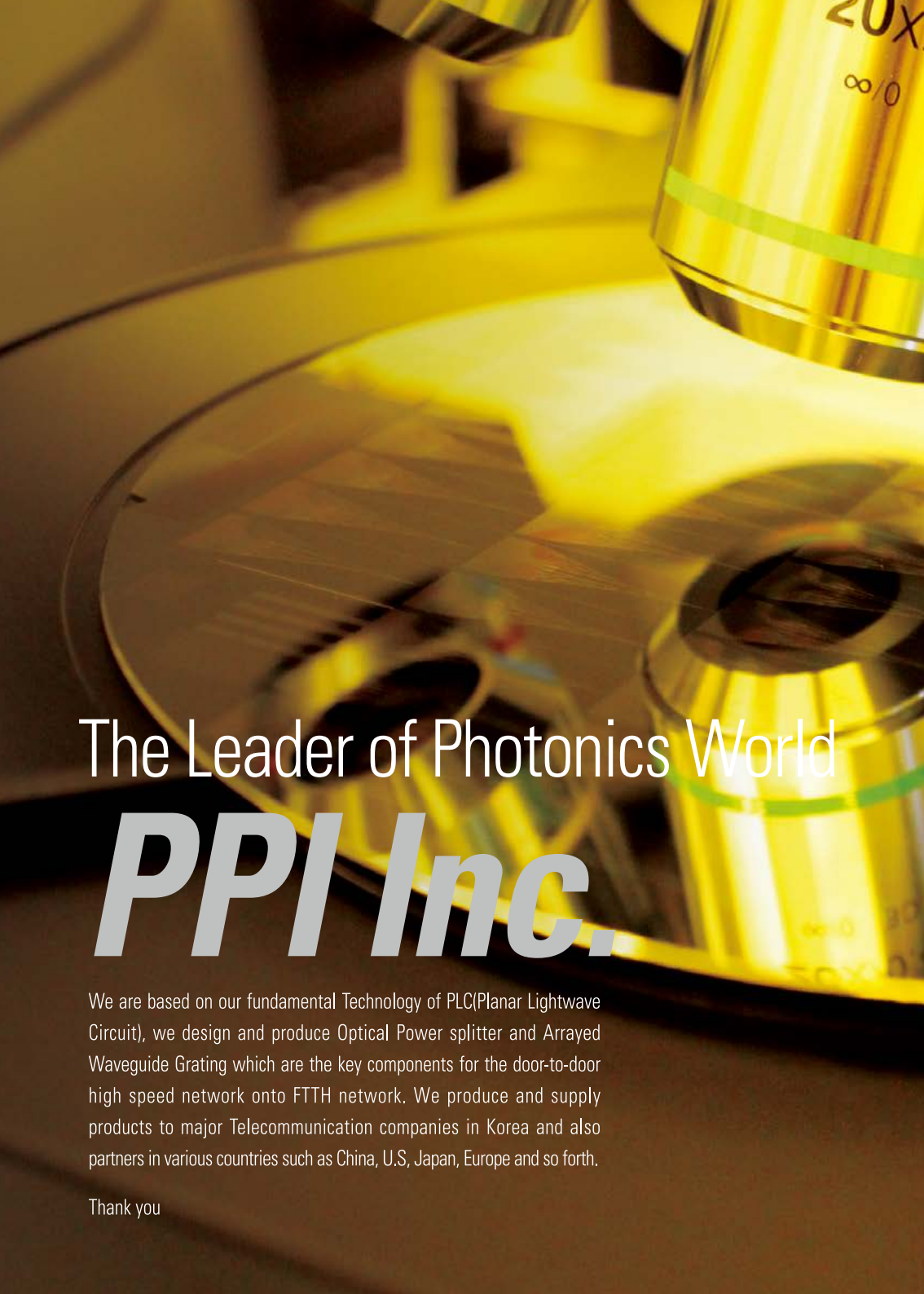




**PPI**  
**PHOTONICS PLANAR INTEGRATION**

[www.ppitek.com](http://www.ppitek.com)



# The Leader of Photonics World

# ***PPI Inc.***

We are based on our fundamental Technology of PLC(Planar Lightwave Circuit), we design and produce Optical Power splitter and Arrayed Waveguide Grating which are the key components for the door-to-door high speed network onto FTTH network. We produce and supply products to major Telecommunication companies in Korea and also partners in various countries such as China, U.S, Japan, Europe and so forth.

Thank you







*PPI*

Photonics Planar  
Integration Technology



# The Leader of Photonics World

PPI Inc. was established at Gwangju city of Korea in 1999.  
It has two factories including headquarters and laboratory and also agents in specific market areas.

PPI Inc. has superior and strong manpower working at all parts of Sales, R&D, Production, Inspection, Quality Control etc.

PPI Inc. is no.1 enterprise based on advanced technology in Korea and located in Gwangju Optical Electronics Complex where is a central place of the Korean Optical electronics Industry.

PPI Inc. has its own technology of PLC(Planar Lightwave Circuit) and produces Optical Power splitter Arrayed Waveguide Grating that those are key components of FTTH network construction which needs for a high speed transmission network to each subscribers.

PPI Inc. has various customers throughout this world in U.S, Japan, China, India, Europe markets etc. and KT, SKB, LGU+ of Domestic Telecommunication companies.

PPI Inc. produces PLC Splitter Chip (Quartz Wafer & Single Chip) and PLC Splitter Module with its own technology and we guarantee the best quality in this industry.

PPI Inc. awarded a Superior quality certificate(NEP:PLC Power Splitter) by the Ministry of Commerce Industry and Energy.

And also, the New Technology certification(NET:AWG) in 2003, Received by Minister of Commerce Industry and Energy in 2005, Received the Prime Minister Award in 2006, Designated as New enterprise with PLC Splitter products in 2006, TL 9000 Certification in 2011 and designated as the 1st Cheomdan(Cutting edge) technology company by the Ministry of Knowledge Economy

PPI Inc. makes unlimited development of Photonics Industry in this field with the highest qualified products and advanced technology power.

PPI Inc. looks for business partners who want to establish win-win business partnership in the future.

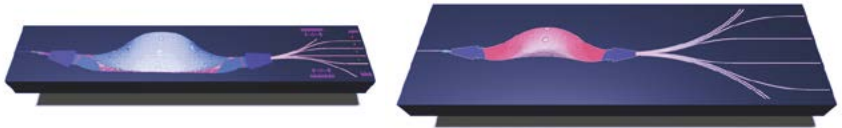
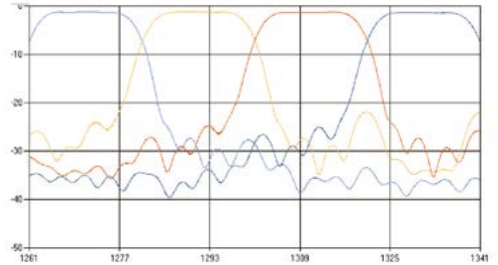
Thank you

# CWDM 4 DEMUX AWG

## CWDM 4 Channel Demux AWG for ROSA

### Features

- 100 / 200 / 400 G CWDM4 FR4
- Custom Design Available
- Flat-top Spectral Response
- Low Insertion Loss & Good uniformity



### Specifications

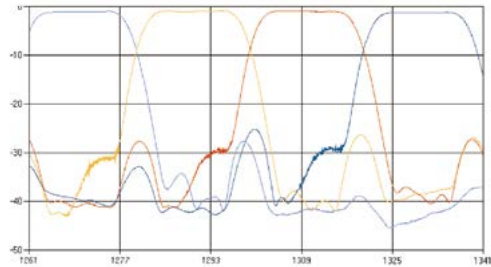
PARAMETER	UNIT	4 CH CWDM		
		MIN	TYPICAL	MAX
CHANNEL COUNT	-		4	
CHANNEL SPACING	nm		20	
CENTRAL WAVELENGTH (CWL)	L0	nm	1271	
	L1	nm	1291	
	L2	nm	1311	
	L3	nm	1331	
CWL ACCURACY @ ROOM TEMPERATURE	nm	-1		1
CLEAR PASS BAND (CPB)	nm		12	
CPB LOSS w/o FIBER COUPLING	dB			2
1-dB BANDWIDTH	nm	13		
ADJACENT CHANNEL ISOLATION	dB	18		
NON-ADJACENT CHANNEL ISOLATION	dB	30		

# CWDM 4 DEMUX AWG

## CWDM 4 Channel Demux AWG for ROSA

### Features

- 100 / 200 / 400 G CWDM4 FR4
- Custom Design Available
- Flat-top Spectral Response
- Low Insertion Loss & Good uniformity



### Specifications

PARAMETER	UNIT	4 CH CWDM		
		MIN	TYPICAL	MAX
CHANNEL COUNT	-	4		
CHANNEL SPACING	nm	20		
CENTRAL WAVELENGTH (CWL)	L0	nm	1271	
	L1	nm	1291	
	L2	nm	1311	
	L3	nm	1331	
CWL ACCURACY @ ROOM TEMPERATURE	nm	-1		1
CLEAR PASS BAND (CPB)	nm	13		
CPB LOSS w/o FIBER COUPLING	dB	2		
1-dB BANDWIDTH	nm	13		
ADJACENT CHANNEL ISOLATION	dB	21		
NON-ADJACENT CHANNEL ISOLATION	dB	30		

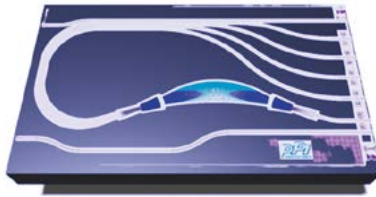
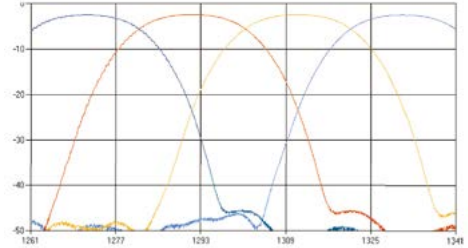


# CWDM 4 MUX AWG

## CWDM 4 Channel Mux AWG for TOSA

### Features

- 40G / 100 G CWDM4
- Custom Design Available
- Wide Gaussian Spectral Response
- Low Insertion Loss & Good uniformity



### Specifications

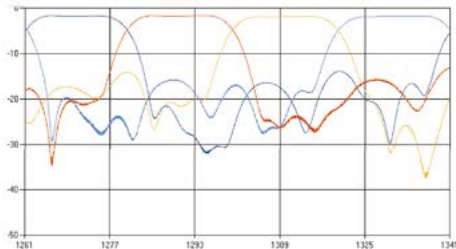
PARAMETER	UNIT	4 CH CWDM		
		MIN	TYPICAL	MAX
CHANNEL COUNT	-	4		
CHANNEL SPACING	nm	20		
CENTRAL WAVELENGTH (CWL)	L0	nm	1271	
	L1	nm	1291	
	L2	nm	1311	
	L3	nm	1331	
CWL ACCURACY @ ROOM TEMPERATURE	nm	-2		2
CLEAR PASS BAND (CPB)	nm	12		
CPB LOSS w/o FIBER COUPLING	dB	3.2		
1-dB BANDWIDTH	nm	12		

# CWDM 4 MUX MZI

## CWDM 4 Channel Mux MZI for TOSA

### Features

- 100 / 200 / 400 G CWDM4, FR4
- Custom Design Available
- Flat-top Spectral Response
- Low Insertion Loss & Good uniformity



### Specifications

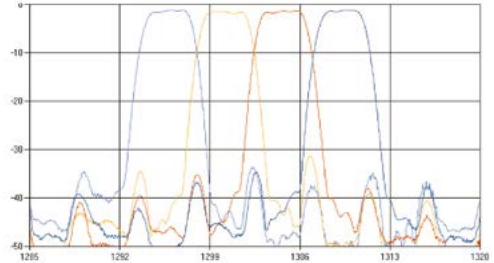
PARAMETER	UNIT	4 CH CWDM		
		MIN	TYPICAL	MAX
CHANNEL COUNT	-	4		
CHANNEL SPACING	nm	20		
CENTRAL WAVELENGTH (CWL)	L0	1271		
	L1	1291		
	L2	1311		
	L3	1331		
CWL ACCURACY @ ROOM TEMPERATURE	nm	-2		2
CLEAR PASS BAND (CPB)	nm	13		
CPB LOSS w/o FIBER COUPLING	dB	2.0		
1-dB BANDWIDTH	nm	13		

# LWDM 4 DEMUX AWG

## LWDM 4 Channel Demux AWG for ROSA

### Features

- 100/400 G LR4
- Custom Design Available
- Flat-top Spectral Response
- Low Insertion Loss & Good uniformity



### Specifications

PARAMETER	UNIT	4 CH CWDM		
		MIN	TYPICAL	MAX
CHANNEL COUNT	-	4		
CHANNEL SPACING	nm	4,5		
CENTRAL WAVELENGTH (CWL)	L0	nm	1295.56	
	L1	nm	1300.05	
	L2	nm	1304.58	
	L3	nm	1309.14	
CWL ACCURACY @ ROOM TEMPERATURE	nm	-0,3		0,3
CLEAR PASS BAND (CPB)	nm	2,8		
CPB LOSS w/o FIBER COUPLING	dB	2,0		
1-dB BANDWIDTH	nm	2,8		
ADJACENT CHANNEL ISOLATION	dB	20		
NON-ADJACENT CHANNEL ISOLATION	dB	30		

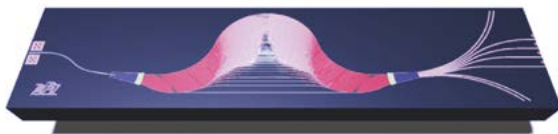
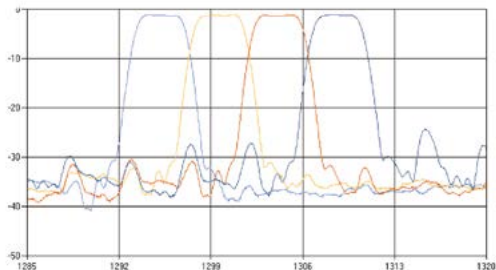


# LWDM 4 DEMUX AWG

## LWDM 4 Channel Demux AWG for ROSA

### Features

- 100/400 G LR4
- Custom Design Available
- Flat-top Spectral Response
- Low Insertion Loss & Good uniformity



### Specifications

PARAMETER	UNIT	4 CH CWDM		
		MIN	TYPICAL	MAX
CHANNEL COUNT	-	4		
CHANNEL SPACING	nm	4.5		
CENTRAL WAVELENGTH (CWL)	L0	nm	1295.56	
	L1	nm	1300.05	
	L2	nm	1304.58	
	L3	nm	1309.14	
CWL ACCURACY @ ROOM TEMPERATURE	nm	-0.3		0.3
CLEAR PASS BAND (CPB)	nm	2.8		
CPB LOSS w/o FIBER COUPLING	dB	2.0		
1-dB BANDWIDTH	nm	2.8		
ADJACENT CHANNEL ISOLATION	dB	20		
NON-ADJACENT CHANNEL ISOLATION	dB	30		

# DWDM AWG CHIP

## 100 GHz 48 Channel DWDM AWG Chip

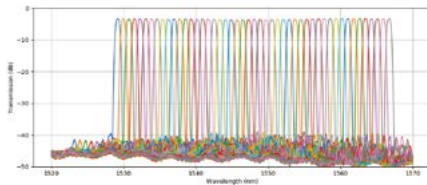
### Features

- 100GHz DWDM AWG
- Custom Design Available
- Flat-top / Gaussian or Moderate
- Low Insertion Loss & Good uniformity

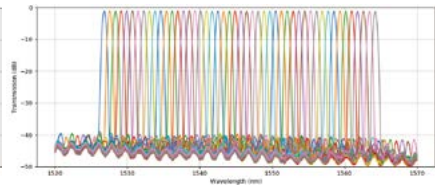


### Specifications

PARAMETER	UNIT	FLAT-TOP	GAUSSIAN
CENTRAL WAVELENGTH ACCURACY	nm	$\pm 0.04$	$\pm 0.04$
1-dB BANDWIDTH	nm	$> 0.42$	$> 0.24$
3-dB BANDWIDTH	nm	$> 0.6$	$> 0.44$
INSERTION LOSS	dB	$< 4.5$	$< 3.5$
POLARIZATION DEPENDENT LOSS	dB	$< 0.5$	$< 0.5$
ADJACENT CHANNEL ISOLATION	dB	27	27
NON-ADJACENT CHANNEL ISOLATION	dB	30	30



FLAT-TOP



GAUSSIAN

# DWDM AWG MODULE

## 50 / 100 / 200 GHz Athermal AWG Module

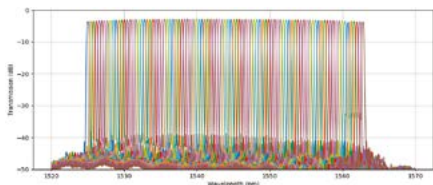
### Features

- 50 / 100 / 200 GHz DWDM AWG
- Custom Design Available
- Flat-top / Gaussian or Moderate
- Low Insertion Loss & Good uniformity

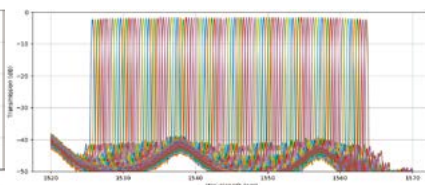


### Specifications

PARAMETER	UNIT	200 GHz		100 GHz		50 GHz	
		FLAT-TOP	GAUSSIAN	FLAT-TOP	GAUSSIAN	FLAT-TOP	GAUSSIAN
CENTRAL WAVELENGTH ACCURACY	nm	±0.07	±0.07	±0.05	±0.05	±0.04	±0.04
1-dB BANDWIDTH	nm	> 0.7	> 0.4	> 0.7	> 0.4	> 0.12	> 0.18
3-dB BANDWIDTH	nm	> 1.0	> 0.7	> 1.0	> 0.7	> 0.24	> 0.28
INSERTION LOSS	dB	< 4.5	< 3.5	< 5.5	< 3.7	< 5.5	< 4.5
POLARIZATION DEPENDENT LOSS	dB	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
ADJACENT CHANNEL ISOLATION	dB	27	27	27	27	27	27
NON-ADJACENT CHANNEL ISOLATION	dB	30	30	30	30	30	30



FLAT-TOP (50 GHz)



GAUSSIAN (50 GHz)



# WDM Filter Module

## TFF type

### Features

- Low insertion loss
- High isolation & Low PDL
- Good channel to channel uniformity
- Wide operating temperature
- Compact design & custom package
- High reliability & stability



### Applications

- LTE, 5G mobile Front & Back-haul system
- Long-haul and Metro network
- CATV links & PON networks



### Specifications

Parameter	Unit	CWDM				DWDM			
		1x2	1x4	1x8	1x16	1x2	1x4	1x8	1x16
Operating Wavelength	nm	ITU, ITU+1				C-band or custom band			
Passband	nm	ITU±6.5				ITU±0.1(100GHz), ITU±0.2(200GHz)			
Channel space	nm	20				0.8 / 16			
Insertion Loss	dB	0.7	1.4	2.0	3.5	0.7	1.4	2.0	3.5
Ripple	dB	0.3	0.4	0.5	0.5	0.3	0.4	0.5	0.5
PDL	dB	0.2							
Adjacent channel crosstalk	dB	30							
Optical Return Loss	dB	45							
Directivity	dB	50							
Maximum optical power	mW	500							
Operating Temperature	°C	-40 ~ 85							

# PON Powermeter

## PON Powermeter

### Features

- B-PON, E-PON, G-PON and 10G-EPON /XG-PON, RFoG
- 1270/1577/1310/1490/1610/1550
- USB Interface for Data Communication
- Capability of Automatic Detection
- PLC Based WDM



### Specifications

Parameter	Unit	Typical
Wavelength	nm	1270, 1577, 1310, 1490, 1610, 1550
PassZone	nm	$\pm 8$ @ 1270, 1577, 1310, 1490, 1610, 1550nm
Adjacent Isolation	dB	>25
Measurement Range	dBm	-30 ~ +10 @ 1270, 1310, 1610nm -40 ~ +10 @ 1577, 1550, 1490nm
Measurement Accuracy	dB	$\pm 1.0$
IL	dB	<2.5
Connector Type		SC/APC, SC/UPC
Display		TFT-LCD 2.8 inch Color
Measurement Unit		dB/dBm/mW
Display Resolution	dB	0.01
Dimension	mm	200 x 90 x 50
PowerSupply		3.7V, 1900mAh Li-ion Battery (changeable)

# Optical CWDM Power Meter

**Model : PPI - OCPM - 18**

## Features

- PLC Device
- Multi-wavelength & Power measurement for LTE, CWDM, PON system
- Automatic CWDM-18channel (Wavelength & Power) measurement at a time
- Quick and Easy to operate
- Less power consumption
- CWDM Scan with Color Graph
- Save and Recall about 1,000 data
- Software Provided for the self - management data
- Auto Power-Off



## Specifications

Parameter	Unit	OCPM-18(Standard)	OCPM-18(Wideband)
Channel Bandwidth	nm	8	12
Measurement Accuracy	dB	±0.5@-40dBm	±0.5@-40dBm
Number of Channels	-	18	
Operation Wavelength	nm	1270 ~ 1610	
Channel Spacing	nm	20	
Measurement Speed	Sec.	< 0.8	
Measurement Range	dBm	+10 ~ -40	
Display Resolution	dB	0.01	
Optical Connector	-	SC/PC (FC, ST, SC, LC adapter)	
Battery	-	Li-Polymer, 1600mAh/3.7V	
Battery Life	Min.	360 (Fully charged)	
Display	-	2.8" TFT-LCD	
Operating Temperature	°C		
Weight	g	330	
Dimension	mm	154,9 x 77,9 x 33,5	

# Optical CWDM Power Meter

## PPI - OCPCM - 18 Dual Mode

### Features

- Single Mode/Multimode Dual Measurement
- PLC Based WDM (Full Wavelength Auto Detection)
- Multi-wavelength & Power measurement for LTE, CWDM, PON system
- Automatic Wavelength & Power measurement at a time
- Quick and Easy to operate
- Less power consumption
- Save and Recall about 1,000 data
- Software Provided for the self-management data
- Auto Power-Off

### Specifications

Parameter	Unit	Standard	Wide Band
Channel Bandwidth	nm	8	12
Measurement Accuracy	dB	±0.5@-40dBm	±0.5@-40dBm
Number of Channels	-	18	
Operating Wavelength	nm	1270 ~ 1610	
Channel Spacing	nm	20	
Measurement Speed	Sec.	< 0.8	
Measurement Range	dBm	+ 10 ~ -40	
Display Resolution	dB	0.01	
Optical Connector	-	SC/PC (FC, ST, SC, LC Adapter)	
Battery	-	Li-Polymer, 2000mAh/3.7V	
Batter Life	Min.	420 (Fully Charged)	
Display	-	2.8" TFT-LCD	
Operating Temperature	°C	-20 ~ 55	
Weight	g	330	
Dimension	mm	155 × 78 × 34	

# Optical LAN WDM CWDM Power Meter

## PPI-LCOPM Dual Mode

### Features

- Single Mode/Multi Mode Dual Measurement
- PLC Based WDM (Full Wavelength Auto Detection)
- LAN WDM Grid for 800Gbps Application
- Automatic 4 Channel (Wavelength & Power) measurement at a time
- Quick and Easy to operate
- Less power consumption
- Save and Recall about 1,000 data
- Software Provided for the self-management data
- Auto Power-Off

### Specifications

	Parameter	Unit	Typical
LR4 (SingleMode)	Number of Channes	Ch.	4 + Total
	Channes	THz	231.4 ~ 229.0
		nm	1295.56 ~ 1309.14
	Channes Spcing	GHz	800
	Center Wavelength	nm	1295.56/1300.05/1304.58/1309.14
PM (DualMode)	Number of Channes	Ch.	8
	Wavelength	nm	850/1270/1290/1310/1330/1490/1510 /1550
	Measurement Speed	Sec.	< 0.8
	Measurement Range	dBm	10 ~ -40
	Measurement Accuracy	dB	± 0.5 @ -40dBm
	Display Resolution	dB	0.01
	Optical Connector	-	LC/PC (SM / MM-LWDM PON)
	Battery	-	Li-ion, 1900mAh/3.7V
	Battery Life	Min.	400 (Full Charged)
	Display	-	2.8" TFT-LCD
	Operating Temperature	°C	-20 ~ 55
	Weight	g	460
	Dimension	mm	193 × 100 × 41

# Optical DWDM Power Meter

**Model : PPI - ODPM - 48**

## Features

- PLC Device
- DWDM (48channel) Measurement Solution
- Automatic DWDM-48channel (Wavelength & Power) measurement at a time
- Quick and Easy to operate
- Less power consumption
- DWDM Scan with Color Graph
- Save and Recall about 300 data
- Software Provided for the self - management data
- Auto Power-Off



## Specifications

Parameter	Unit	Typical
Number of Channels	-	48
Channel Frequency	THz	196.4 ~ 191.7
	nm	1526.44 ~ 1563.86
Channel Spacing	GHz	100
Measurement Speed	Sec.	3 (all 48ch.)
Measurement Range	dBm	+10 ~ -40
Measurement Accuracy	dB	±1.0@-30dBm
Display Resolution	dB	0.01
Optical Connector	-	SC/PC (FC, ST, SC, LC adapter)
Battery	-	Li-Polymer, 1600mAh/3.7V
Battery Life	Min.	360 (Fully charged)
Display	-	2.8" TFT-LCD
Operating Temperature	°C	-20 ~ +55
Weight	g	330
Dimension	mm	154.9 x 77.9 x 33.5

# Optical DWDM Power Meter

**Model : PPI - ODPM - 96**

## Features

- PLC Device
- DWDM (96channel) Measurement Solution
- Automatic DWDM- 96channel (Wavelength & Power) measurement at a time
- Quick and Easy to operate
- Less power consumption
- DWDM Scan with Color Graph
- Save and Recall about 300 data
- Software Provided for the self - management data
- Auto Power-Off



## Specifications

Parameter	Unit	Typical
Number of Channels	-	96
Channel Frequency	THz	196.45 ~ 191.70
	nm	1526.05 ~ 1563.86
Channel Spacing	GHz	50
Measurement Speed	Sec.	4(all 96ch.)
Measurement Range	dBm	+10 ~ -40
Measurement Accuracy	dB	± 1.0@-40dBm
Display Resolution	dB	0.01
Display Unit	-	dB, dBm, nm, THz
Maximum Total Input Power	mW	500
	dBm	27
Optical Connector	-	SC/PC Standard
Battery	-	Li-Polymer, 4800mAh/3.7V
Battery Life	Min.	620 (Fully charged)
Current Consumption	A	Max. 0.25
Electricity Consumption	W	0.925
Display	-	3.5" TFT-LCD
Operating Temperature	°C	-20 ~ +55
Weight	g	610
Dimension	mm	195.5 x 95.0 x 40.0



# Optical DWDM Power Meter

**Model : PPI-ODPMN-XX**

## Features

- PLC Device
- DWDM(48,96ch) Measurement Solution
- Automatic DWDM (Wavelength & Power) Measurement at a time
- Quick and Easy to operate
- Less Power consumption
- DWDM Scan with Color Graph
- Save and Recall about 300 data
- Software Provided for the self – measurement data
- Auto Power-Off



## Specifications

Parameter	Unit	Typical
Number of Channel	-	48, 96
Channel Frequency	Thz	196.4 ~ 191.7
	nm	1526.44 ~ 1563.86
Channel Spacing	Ghz.	100, 50
Measurement Speed	Sec.	3(48), 4(96)
Measurement Range	dBm	+12 ~ -50
Measurement Accuracy	dB	± 1.0@-50dBm
Display Resolution	dB	0.01
Display Unit	-	dB, dBm, nm, THz
Maximum Total Input Power	mW	500
	dBm	27
Optical Connector	-	PC, LC
Battery	-	3.6V Li-ion (3350mAh) x 2
Battery Life	Min	800
Display	-	3.5" TFT-LCD
Operating Temperature	°C	-20 ~ +55

# Optical DWDM Power Meter + PON

**Model : PPI-OPON-48XG**

## Features

- B-PON, E-PON, G-PON and 10G-EPON or XG-PON
- C-BAND DWDM + 1270/1557/1310/1460/1550
- Software provide for data management
- Capability automatically detects
- Pass-through mode for ONT/ONU verification

## Applications

- Single-layer PON service activation
- Multi-layer PON service activation
- Insertion loss testing
- Multiple PON technologies supported on a single unit:
  - BPON (ITU-T G983.3)
  - GPON (ITU-T G984.2)
  - EPON (IEEE 802.3)
  - XG(S)-PON (ITU-T G987.2)



## Specifications

Parameter	Unit	Typical
Wavelength	nm	1270, 1577, 1310, 1490, 1550
Pass Zone	nm	±10nm
Adjacent Isolation	dB	>30 ~ 40
Measurement Range	-	-40 ~ +10,(1550nm : -40 ~ +20)
Connatural Uncertainty	dB	±1.0
Linearity	dB	±0.1
IL	dB	<1.5
Connector Type	-	SC/APC, SC/UPC
Display	-	LCD 3.5 inch
Measurement Unit	-	dB / dBm / mW
Resolution	dB	0.1
Power Supply	-	3.6V, 3350mAh Li-ion Battery x 2

# Touch Panel Power Meter

## Model : PPI-Touch Panel PM

### Features

- PLC device
- 50GHz, 100GHz channel spacing (according to ITU-T)
- Auto-wavelength recognition
- 7 inches full touch screen LCD
- Wifi, Bluetooth and USB connectivity
- Single mode output
- Wide dynamic range



### Specifications

Parameter	Unit	Typical
Number of Channels	-	48
Channel Frequency	Thz	196.4 ~ 191.7
	nm	1526.44 ~ 1563.86
Channel Spacing	Ghz.	100
Measurement Speed	Sec.	1(all 48ch.)
Measurement Range	dBm	+12 ~ -50
Measurement Accuracy	dB	±1.0@-50dBm
Display Resolution	dB	0.01
Optical Connector	-	SC/APC(FC, ST, SL / PC, UPC)
Battery	-	18650 Li-Ion, 3350mAh/3.6V
Display	-	800 x 480 pixels, 7", Capacitive Touch Screen
Operating Temperature	°C	-20 ~ +55
Weight	g	800
Dimension	mm	115 x 200 x 45

# Optical LAN WDM Power Meter

**Model : PPI - OLWPM-8**

## Features

- PLC Device
- LAN WDM Grid for 800Gbps Application
- Automatic 8 Channel (Wavelength & Power) measurement at a time
- Quick and Easy to operate
- Less power consumption
- Scan with Color Graph
- Save and Recall about 1,000 data
- Software Provided for the self-management data
- Auto Power-Off



## Specifications

Parameter	Unit	Typical
Number of Channels	-	8
Channel Frequency	THz	233.0 ~ 227.4
	nm	1286.66 ~ 1318.35
Channel Spacing	GHz	800
Measurement Speed	Sec.	<0.8
Measurement Range	dBm	10 ~ -40
Measurement Accuracy	dB	±0.5@-40dBm
Display Resolution	dB	0.01
Optical Connector	-	SC/PC (FC, ST, SC, LC adapter)
Battery	-	Li-Polymer, 1600mAh/3.7V
Battery Life	Min.	360 (Fully charged)
Display	-	2.8" TFT-LCD
Operating Temperature	°C	-20 ~ +55
Weight	g	330
Dimension	mm	154.9 x 77.9 x 33.5

# Optical LAN WDM Power Meter

**Model : PPI-OLWPM-8NW**

## Features

- PLC Device
- LAN WDM Grid for 800Gbps Application
- Automatic 4 Channel (Wavelength & Power) measurement at a time
- Quick and Easy to operate
- Less power consumption
- Scan with Color Graph
- Save and Recall about 1,000 data
- Software Provided for the self-management data
- Auto Power-Off



## Specifications

Parameter		Unit	Typical
LR-4	Number of Channels	Ch.	4 + Total
	Channels	Thz	231.4 ~ 229.0
		nm	1295.56 ~ 1309.14
	Channel spacing	Ghz	800
	Center wavelength	nm	1295.56 / 1300.05 / 1304.58 / 1309.14
PM	Number of Channels	Ch.	3
	Wavelength	nm	850 / 1310 / 1550
	Measurement Speed	Sec.	<0.8
	Measurement Range	dBm	10 ~ -40
	Measurement Accuracy	dB	±0.5@-40dBm
	Display Resolution	dB	0.01
	Optical Connector	-	LC / PC (SM / MM-LWDM PON)
	Battery	-	Li-Polymer, 1600mAh/3.7V
	Battery Life	Min.	360 (Fully charged)
	Display	-	2.8" TFT-LCD
	Operating Temperature	°C	-20 ~ +55
	Weight	g	330
	Dimension	mm	154.9×77.9×33.5

# Optical MPO Power Meter

Model : PPI-MPO-12/24

## Features

- Quick and Easy to operate
- Less power consumption
- Scan Color Graph
- Save and Recall about 1,000 data
- Software provided for Data management
- Auto Power-Off
- Using MPO connector



## Specifications

Parameter	Unit	Typical	
Number of Channels	Ch.	12	24
Display Units	-	dB, dBm	
Operating Wavelength	nm	850, 1310, 1550	
Measurement Speed	sec.	<0.8	
Measurement Range	dBm	+10 ~ -40	
Measurement Accuracy	dB	±0.5 @ -40dBm	
Display Resolution	dB	0.01	
Optical Connector	-	MPO connector	
Battery	-	Li-Polymer, 1600mAh/3.7V	
Battery life	min.	360 (Fully charged)	
Display	-	2.8" TFT-LCD	
Operating Temperature	°C	-20 ~ +55	
Weight	g	260	
Dimension	mm	154.9 x 77.9 x 33.5	

# Optical MPO Light Source

**Model : PPI - MP012/24-OLS**

## Features

- Quick and easy to operate
- Displaying the remaining battery charge
- CW, Internal modulation modes
- Provides a high-resolution display
- Compact, Lightweight and cost-effective



## Specifications

Parameter	Unit	Specification		
Number of Channel	Ch.	12		24
Operating Wavelength	nm	850, 1310	1310, 1550	1310, 1550
Fiber Type	-	MM	SM	SM
Output Power	dBm	> -10		
Output Stability	dB	± 0.1(15min), ± 0.2(8hours)		
Mode	Hz	CW, 270Hz, 1KHz, 2KHz		
Operating Time	hours	> 5		
Battery	-	Li-Polymer, 1600mAh/3.7V		
Display	-	2.8 inch TFT-LCD		
Operating Temperature	°C	- 20 ~ +55		
Weight	g	260		
Dimension	mm	154.9 x 77.9 x 33.5		



# Optical MPO Light Source (Polarity Test)

**Model : PPI-MP012-LS2**

## Features

- Quick and easy to operate
- Displaying the remaining battery charge
- CW, internal modulation modes
- Provides a high-resolution display
- Polarity detection function

## Applications

- FTTx application
- Data Center application
- MPO Production Line



## Specifications

Parameter	Unit	Typical
Operation Wavelength	nm	Dual (850/1310 or 1310/1550) or Single
Output Power	dBm	>-10(SM), >-15(MM)
Output Stability	dB	$\pm 0.1(15\text{min})$ , $\pm 0.2(8\text{hours})$
Battery life	hours	>10
Mode	Hz	CW, 270Hz, 1KHz, 2KHz
Fiber Type	-	SM or MM
Optical Interface	-	MPO(12CH) PC, APC
Battery type	-	Lithium polymer battery
Dimensions	mm	95 x 195.5 x 40 (W x L x H)

# MPO Bench Top System (Polarity Test)

## Model : MPO Bench top system

### Features

- Quick and Easy to operate
- Polarity detection function (A, B, C Type)
- Bench Top Type
- AC 110~240 Input Volt



### Specifications

Parameter	Unit	Typical
Number of Channel	-	12
Operating Wavelength	nm	1310, 1550
Measurement Speed	Sec.	<0.8
Measurement Range	dBm	+10 ~ -40
Measurement Accuracy	dB	± 0.5~40dBm
Display Resolution	dB	0.01
Display Unit	-	dB, dBm
Optical Connector	-	MPO(12CH) connector, Non Contact
LD TYPE	-	DFB
Output Power	dBm	>-10
Mode	Hz	CW, 270Hz, 1KHz, 2KHz
Polarity Check Speed	Sec	>5
Fiber Type	-	SM
Display	-	5.0" TFT-LCD 480 x 272
Operating Temperature	°C	-20 ~ +55
Dimensions	W x H x D (mm)	250 x 132.5 x 300

# Automatic Wavelength Power Meter (WPM)

## Model : PPI - WPM - 16

### Features

- Automatic Wavelength & Power Detection
- Rugged, Shock & Water proof for field use
- Compact, Light & Cost-effective
- Quick and easy to operate



### Specifications

Parameter	Unit	Typical	Note
Operation Wavelength	nm	1270~1610 (excluding 1370, 1390)	16ch Wavelength for CWDM
Measurement Range	dBm	-50 ~ +4	-
Resolution	dB	0.01	-
Accuracy	-	±0.5dB @-20dBm	-
Display Unit	-	nm, dB, dBm	-
Fiber Type	-	9/125 <sub>μm</sub>	-
Optical Interface	-	SC/PC, FC/APC	Selectable
Battery	Type	Li-ion Polymer Rechargeable	
	Power	3.7	-
	Life	25	Continuous usage
	Charging Time	4	-
Accessories	-	5V AC adapter Operation Manual	
Operating Temperature	°C	-10 ~ 50	-
Storage Temperature Unit	°C	-30 ~ 60	-
Data Storage	-	300records	-
Dimensions	mm	138 x 73 x 30	-
Weight	g	205	-



## Model : PPI - IL - OPM - 6

### Specifications

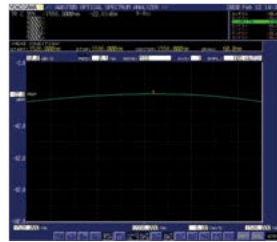
Parameter	Unit	Typical	Note
Operation Wavelength	nm	850, 1300, 1310, 1490, 1550, 1625	-
Detector	Type	InGaAs	-
	Accuracy	0.01	@-3dBm
	Power range	800/1300 : +5 ~ -50, 1310/1490/1550/1625 : +5 ~ -60	-
Display unit	-	dB, dBm, uW	-
Optical adaptor type	-	FC, SC, ST	-
Auto off Time	min	10	-
Battery	Power	Alkaline Battery(two AAA 1.5V batteries)	
	Life	150	-
Display	-	16 by 2 LCD module	
Operating temperature	°C	-20 ~ +75	-
Storage temperature	°C	-40 ~ +85	-
Dimensions	mm	77.8 x 112.9 x 22.1	-

# C-Band Broad Band Light Source

## Model : C-Band BLS

### Features

- Broadband Emission Centered at 1550 nm
- Low spectral ripple, Broad bandwidth
- Built-in TEC and monitoring photo diode
- Easy operation with three buttons and LCD
- Output power control
- Single mode output



### Specifications

Parameter	Unit	Typical
Operating Wavelength Range	nm	1530 ~ 1570
Center Wavelength	nm	1550
AWE Power	mW	10
Full Width at Half Maximum	nm	40
Threshold Current	mA	80
Operating Current	mA	400
TEC Set Temperature	°C	15 ~ 35
Display	-	16 x 2 Character LCD, 64.6 x 16
Optical connector	-	FC / APC
AC Input	-	100 ~ 240 VAC, 50 ~ 60Hz
Operating Temperature	°C	-20 ~ 70
Storage Temperature	°C	-30 ~ 80
Dimension	mm	320 x 88.1 x 300

# Optical Power Monitor

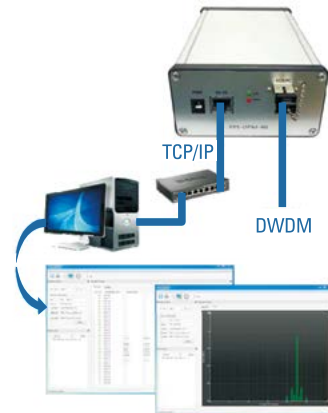
**Model : PPI-OPM-48**

## Features

- Automatic Detection of Power & Wavelength
- Support SNMP v1.0
- LOS detection & Alarm
- Real time power monitoring

## Applications

- Remote management of DWDM
- Real-time remote monitoring optical facilities
- Fault isolation of optical lines
- Remote monitoring of system turn-up



## Specifications

Parameter	Unit	Typical
Number of Channels	-	48
Channel Spacing	GHz	100
Channel Frequencies	THz	fc 196.4 ~ 191.7
	nm	1526.44 ~ 1563.86
Optical Power Display	dBm	+ 0.01 ~ -40
Optical Power Accuracy	dB	± 0.5 @ -40dBm
Optical Power Resolution	dB	0.01
Optical Connector	-	SC/PC
Power Supply	V	DC 5V
Power Consumption	W	Max. 1.75
Communication Interface	-	Mini-USB, RJ-45(Ethernet 10/100Mbps)
Operating Temperature	°C	-5 ~ 55
Dimensions	mm	105 x 166 x 55

# Remote Optical Line Protection Switch

## Features

- Remote Optical Power monitoring and switching
- Power redundancy (220 VAC, -48VDC)
- Switch mode selectable (Auto / Manual)
- Dual Ethernet port of individual IP
- Normal / Alarm status LED
- Support extra line between OLT and ONT



## Applications

- FTtx application
- Auto & remote access application



## Specifications

Parameter	Condition	Min	Typ	Max	Units
Wavelength		All Wavelengths			nm
Insertion loss	Main port			2	dB
Power range	Tap monitor port	-27		23	dBm
Absolute monitoring power accuracy	Power range +23 ~ -27dBm			±1	dB
Display resolution		0.01			dB
Input voltage	AC		220		V
	DC		-48		V
Current consumption				7	A
Power consumption				10	W
Switching time	Port1 ↔ Port2			50	ms
Switching durability		107			cycles
Connection limit				4	clients
Interface	Ethernet 10/100Mbps		2		port
	Serial (RS232)		1		port

# Multi Channel Power Meter

**Model : PMP-1000**

## Features

- Optical power measurement
- Remote control on TCP/IP
- Sync. with external triggering signals
- Real time power monitoring
- Simultaneous measurement up to 32ch



## Applications

- Optical power level measurement system
- Real time optical power monitoring system

## Specifications

Parameter	Unit	Typical
Number of Channels	-	2 ~ 32 (1~16 slots selectable)
Wavelength Range	nm	1260 ~ 1360, 1520 ~ 1565
Measurement Range	dBm	10dBm ~ -60dBm
Measurement Accuracy	dB	±0.5@-40dBm
External Trigger In	-	TTL level
Optical Connector	-	FC/APC (selectable)
Power Supply	-	240VAC, 50/60 Hz
Power Consumption	w	Max. 6.25
Communication Interface	-	RJ-45(Ethernet 10/100Mbps)
Dimensions	mm	434 x 400 x 88 19inches 2U Rack Size
Weight	kg	10
Operating Temperature	°C	10 ~ 40
Storage Temperature	°C	0 ~ 60



# Distributed Temperature Sensing System

## Model : PPI-DTS

### Features

- Distribute Temperature Sensor System
- Programmable alarms functionality
- Specialized optical sensor solutions available
- Real time temperature monitoring



### Applications

- Temperature stream monitoring system
- Utility tunnels

### Specifications

Parameter	Unit	Typical
Fiber Type	-	Multi-mode fiber 50/125um or 62.5/125um
Measurement Time	s	20
Distance Range	km	< 10
Spatial Resolution	m	1
Sample interval	m	1
Location Accuracy	m	1
Temperature Resolution	°C	0.01
Temperature Accuracy	°C	<±0.5 / <±0.1 (after calibration)
Channel's	-	2
Power Supply	-	90V-240V, 50Hz-60Hz
Interface	-	Ethernet
Storage Temperature	°C	-15 ~ +100
Operation Temperature	°C	0 ~ 40

# Optical Channel Monitor

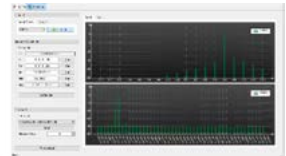
**Model : XX-OCM-CD-66**

## Features

- Remote monitoring
- Dual interface (Ethernet, RS232 TTL)
- Selectable dual individual IP
- CWDM & DWDM (50GHz or 100GHz) wavelength monitor
- Embedded firmware upgrade instructions
- High accuracy in power and wavelength measurements
- Wide dynamic range in power monitoring

## Applications

- LTE, 5G mobile Front & Back-haul system
- Long-haul and Metro DWDM network supervision
- Reliable long-term WDM network operation
- Real-time Optical Channel Monitoring of CWDM & DWDM Networks
- Real-time System Error Warning and Alarming



## Specifications

Parameter	Condition	Min	Typ	Max	Units
Module Size		180 x 110 x 17			mm
Power Display range		-43		10	dBm
Absolute power accuracy	@-40dBm	±1			dB
Adjacent channel isolation		-25			dB
Display resolution		0.01			dB
Input voltage			5		V
Current consumption	DC			2	A
Power consumption				10	W
Scanning time	All Wavelengths			1	S
Interface Connector	Power, Interface	2 x 10 Pin 2.54 pitch Box Header			
Fiber & Connector type		9/125 single-mode, LC/APC, LC/PC			

# V-MUX Module

## VOA-Integrated AWG module : 100GHz V-MUX

### Features

- Low Insertion Loss & PDL
- Low driving power consumption
- Compact packaging size
- High reliability
- High crosstalk
- Wide dynamic range
- Custom design available



### Applications

- Channel balancing at MUX
- Channel balancing at optical add/drop
- Wavelength routed WDM network design

### Specifications

Parameter	Unit	Specification		
		Min.	Typical	Max.
Channels	-	10	-	48
Channel Spacing	GHz	-	100	-
Center Wavelength Accuracy	nm	-0.05	-	0.05
Channel 1 dB Bandwidth	nm	0.4	-	-
Channel 3 dB Bandwidth	nm	0.6	-	-
Insertion Loss	dB	-	-	6.0
Insertion Loss Uniformity	dB	-	-	1.5
Polarization Dependent Loss @ 0dB Atten.	dB	-	-	0.5
Adjacent Channel Crosstalk	dB	-	-	27
Non-Adjacent Channel Crosstalk	dB	-	-	30
Optical Return Loss	dB	40	-	-
Attenuation Range	dB	20	-	-
Attenuation Resolution	dB	-	0.1	-
Power Requirements	W	-	10	15
Operating Temperature	°C	0	-	70

# Remote Monitoring MUX/DEMUX

**Model : PPI-RMUX/DEMUX**

## Features

- Remote monitoring in real-time
- Support SNMP v1.0
- LOS detection & alarm
- Mux & Demux C-band 40 channel signal



## Applications

- Automated trouble reporting over the WAN
- Long haul, Metro DWDM networks

## Specifications

Parameter	Unit	Typical
Number of Channels	-	40
Channel Spacing	GHz	100
Channel Frequencies	THz	fc 195.90 ~ 192.00 (1530.33 ~ 1561.42nm) - Other bands available -
Optical Power Display	dBm	+23 ~ -27
Optical Power Accuracy	dBm	±1.0@-27dBm
Optical Power Resolution	dB	0.01
Optical Connector	-	LU/UPC
Power Supply	V	DC 5V
Power Consumption	W	Max. 1.75
Communication Interface	-	Mini-USB, FJ-45(Ethernet 10/100Mbps)
Dimensions	mm	434 x 250 x 44.5

# Remote V-MUX

## Model : PPI-RVMUX

### Features

- Remote Auto Power Balancing
- Support SNMP v1.0
- LOS(Loss Of Singal) detection & alarm
- Real time power monitoring
- Mux & Demux C-band 40 channel signal



### Applications

- Mux and Demux in DWDM system
- ROADM Add/Drop nodes
- Real time power monitoring

### Specifications

Parameter	Unit	Typical
Number of Channels	-	40
Channel Spacing	GHz	100
Channel Frequencies	THz	fc 192.10 ~ 196.00 - Other bands available -
Attenuation Range	dB	Max. 20
Attenuation Accuracy	dB	$\pm 0.75@0-10$ dB Attenuation $\pm 1.5@10-20$ Attenuation
Attenuation Resolution	dB	0.1
Optical Connector	-	LC/UPC
Power Supply	v	DC 5V
Power Consumption	W	Max. 6.25
Communication Interface	-	Mini-USB, RJ-45(Ethernet 10/100Mbps)
Dimensions	mm	430 x 250 x 44.5

# OTDR

## Model : PPI-OTDR-350

### Features

- 2m Event dead zone
- 32dB Dynamim range
- User interface : LCD, Keypad
- Hand held type, small size
- 650nm VFL function
- Support OTDR application software

### Applications

- PON application
- Field installation and maintenance



### Specifications

Parameter	Condition	Min	Typ	Max	Units
Wavelength			1310/1550/1625 ±20		nm
Pulse width			20ns,100ns, 1us, 10us		
Distance			5, 10, 20, 50		km
Event dead zone	@ 10ns pulse width		2		m
Dynamic range	@ 10ns pulse width		32/30		dB
VFL			650nm FP-LD		
Optical Connector			FC/APC, SC/APC		
Fiber			9/125um single mode fiber		
Battery			Li-Po 3.7V 4800mAh		
Battery life		420			min
Display			3.5" TFT-LCD, 16bit color, 320 x 240		
Operation temperature		-20		+55	°C
Dimension			97 x 196 x 56		mm

# Fire Detection and Reasoning System (OTDR)

## Model : OTSS-1000

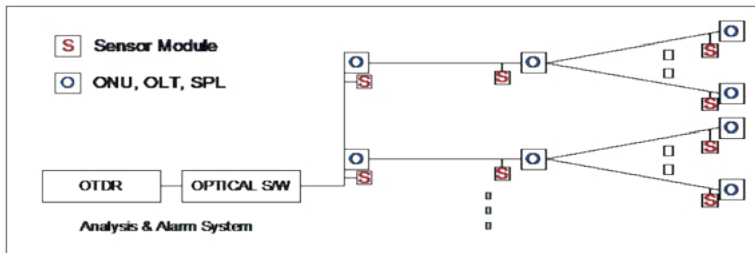
### Features

- Fire Detection
- OTDR + S/W + Sensing
- No power required
- Extremely small
- Intrinsically safe.
- Suitable for extreme environments
- Fast response time.
- Fast, simple, repeatable installation.
- Calibrated for high absolute accuracy.
- Supports multiplexing of many sensors on one fiber.
- Low failure rate
- Low operating costs
- The reduction of the implementation costs.
- Long distance transmission.
- No power supply, no induction.
- High bandwidth



### Applications

- ONU, OLT



### Specifications

Parameter	Unit	Typical
Fiber Type	-	MM / SM
Wavelength	nm	1650
Sensor Module Dimension	nm	120 x 70 x 12.3



# Reflected Optical Wavelength Scanning System

**Model : AWMS-96**

## Features

- Automatic wavelength monitoring
- Remote Temperature/Strain monitoring
- Include ASE source
- Optimized FBG Sensor

## Applications

- FBG reflection wavelength monitoring
- Temperature / Strain sensing system
- DWDM wavelength power monitoring



## Specifications

Optical DWDM powermeter			
Parameter	Unit	VALUE	
Number of Channe	ch	96	
Channel Frequency	THz	196.45 ~ 191.70	
	nm	1526.05 ~ 1563.86	
Measurement Speed	sec.	4(all 96ch.)	
Measurement Range	dBm	+10 ~ -40	

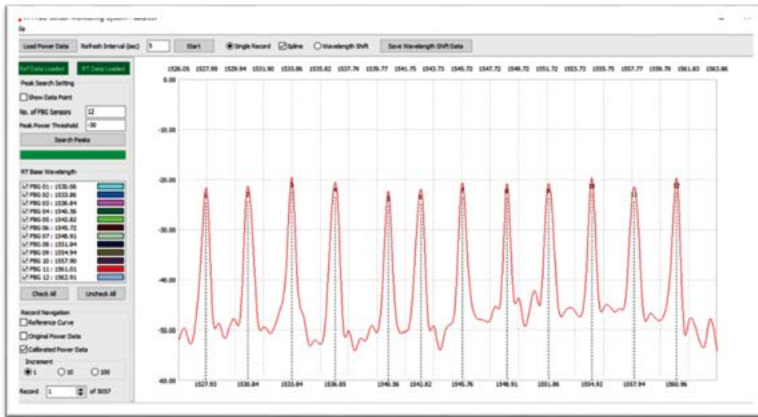
Optical wavelength monitor			
Parameter	Unit	VALUE	
Wavelength Resolution	nm	0.01	
Monitoring Tool		PC/Note book	
Source Type		Amplified Spontaneous Emission (ASE)	
Output Power	dBm	>5	

Environment Specifications			
Parameter	Unit	VALUE	
Dimmension	nm	195.5 x 95.0 x 57.0	
Optical Connector	-	SC/PC (FC, ST, LC adapter)	
Operating Temperature	°C	0 ~ +55	

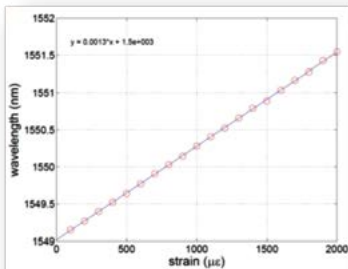
# Reflected Optical Wavelength Scanning System

Model : AWMS-96

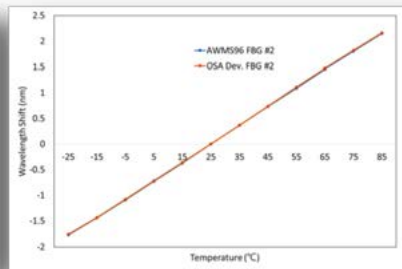
12ch. FBGs spectrum analyzer



## Peak wavelength monitoring Application



Strain



Temperature

# Quantum Cryptography

## MICHELSON INTERFEROMETER

### Features

- Based on Planar Light-wave Circuit
- Compact Packaging size
- Simple Electronic Design
- High Reliability
- Custom design available



### Applications

- Quantum Cryptography
- Quantum Key Distribution(QKD)
- Optical Sensor system



### Specifications

Parameter	Unit	Min.	Typical	Max.
Operating Wavelength	nm		1550 nm	
Insertion Loss*	dB	-	4.5 dB	
Time delay 1)	ns		2	
Time delay 2)	ns		1	
Time delay 3)	ns		0.5	

Notes:

1. \* Insertion loss don't include connectors and the polarization dependence is not included.
2. Temperature dependence should be compensated with heater / Peltier cooler.

# Quantum Cryptography

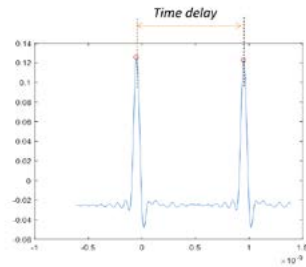
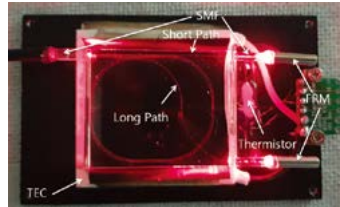
## MICHELSON INTERFEROMETER

### Features

- Based on Planar Light-wave Circuit
- Compact Packaging size
- Simple Electronic Design
- High Reliability
- Custom design available

### Applications

- Quantum Cryptography
- Quantum Key Distribution(QKD)
- Optical Sensor system



### Specifications

Parameter	Unit	Min.	Typical	Max.
Operating Wavelength	nm	1310 or 1550nm		
Insertion Loss*	dB	-	5	6
Time delay 1)	ns	-	1.97	2
Time delay 2)	ns		1	1.01
Optical Return Loss	dB	45	-	-

#### Notes:

1. Insertion loss & Return loss don't include connectors. The insertion loss of one pair of connector is less than 0.25 dB
2. For product customization or special requirement , please contact our sales representative.

# Optical Switch System

## Features

- Low Insertion Loss & PDL
- Compact packing size
- Simple operating control design
- High reliability, High crosstalk
- Custom design available
- Support of PC control program



## Applications

- Optical cross connector (OXC)
- Optical monitoring systems
- Optical communication systems
- Optical component test systems

## Specifications

		Typical	Note
Structure*	-	19" 5U Rack type	-
Operating Wavelength	nm	1270 - 1610	-
Switch Type	Ch.	n x m (m=64, 128, 144)	n=1, 2, 4, 6, 8, 10, 16
Insertion Loss	dB	< 2.5	@ 1310, 1550 nm
Return Loss	dB	> 50	@ 1310, 1550 nm
Polarization Dependent Loss	dB	< 0.2	@ 1310, 1550 nm
Repeatability	dB	± 0.2	@ 1310, 1550 nm
Crosstalk	dB	> 60	@ 1310, 1550 nm
Power Supply	V	220	-
Fiber Type	Min.	SMF - 28	-
Interface	-	RS-232, USB	-
Switching Time	ms	30	-
Adaptor Type	-	SC, FC, LC	-

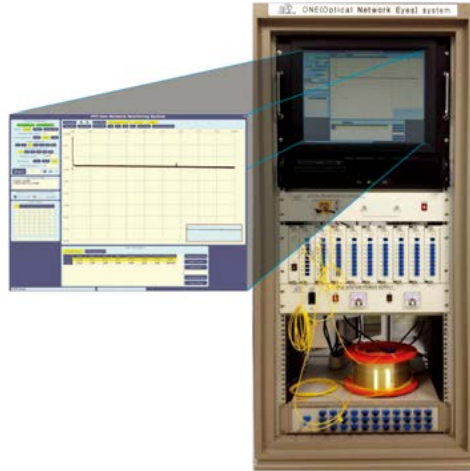
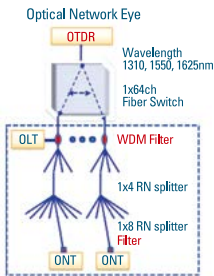
\* There is a difference of size by the adaptor type

# Optical Network Smart Monitoring System

## Features

- Monitoring system for Optical network lines
- In-line service monitoring
- Display of events on fiber lines

## Configuration



## Specifications

Display & Control panel	
Structure	19" 8U type
Display	17" TFT LCD(1280x1024)
Mount Type	VESA Standard Mount
CPU	Intel core 2Quad-Q9500(2.83GHz)
Board	Mainboard 5PCI, 3ISA
RAM	DDR3-4GB
Hard Disk	SATAHD250GB
ODD	DVD-ROM
Power Supply	ATX500W
Network&Port	2GigaLAN, 6USB, D-sub(VGA), 8COM
Etc.	Mouse(USBtype), Keyboard(USB-type)
Operating System	WindowsXP Professional

Optical Switching System	
Structure	19" 5U type
Insertion Loss	< 2.5dB
Return Loss	> 50dB
Crosstalk	< -60dB
Switching Time	≤ 20ms
Reliability	≥ 10million
Fiber Connector Port	SC/PC
Temperature Range	-40 ~ 80°C
Number of Port(Max.)	128
Operating State	LCD Display

OTDR	
Structure	19" 2U type
Wavelength	1310nm, 1550nm, 1625nm
Dynamic Range	42dB/1310nm, 40dB/1550nm, 39dB/1625nm
Light Source	Pulsed FP LD, >40mWV(@25°C)
Dead Zone	3m/Event, 10m/Attenuation
Sampling Resolution	0.25, 0.5 meter
Distance Accuracy	± 5m/100km
Averaging Time	5-600sec
Distance Range(Max)	240km
Pulse Width	10ns, 30ns, 100ns, 300ns, 1us, 3us, 10us, 20us, Auto
Operating System	WindowsXP Professional

Power supply	
Structure	19" 2U type
Power	± 48V, AC240VAC, 50/60Hz
Temperature Range	-40 ~ 80°C
Output	Dual output
Etc.	2 Volt panel meter

# PLC OPTICAL POWER SPLITTER

## 1 x N WAFER & CHIP SPECIFICATION

### Features

- PLC Splitter Chip is a main part of PON system to cover many subscribers for receiving light signals at the same time by distributing delivered light signals into number. In addition to Splitter Chip can be operated in reverse direction with combination of one or two optical fiber(s).

### Applications

- Applications are FTTH, FITB, FTTC, CATV Networks System, PON(Passive Optical Network)System, Fiber Optic Equipment and Systems, etc.



### Specifications

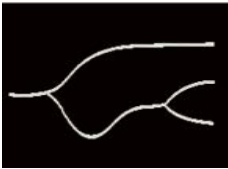
Type	Operation Wavelength (nm)	Test Wavelength (nm)	IL max (dB)	IL Uniformity (dB)	PDL (dB)	Output Port Pitch (um)
1x2	1260~1650	1310 & 1550	3.5	0.3	0.12	250
1x4			6.7	0.5	0.12	250
1x8			9.8	0.6	0.15	127
1x16			13.0	0.8	0.2	127
1x24			15.1	1.1	0.2	127
1x32			16.2	1.0	0.2	127
1x64			19.5	1.5	0.25	127
1x128			23	2.0	0.3	127

# PLC OPTICAL POWER SPLITTER

## 1 x 3 WAFER & CHIP SPECIFICATION

### Applications

- Applications are FTTH, FITB, FTTC, CATV Networks System, PON(Passive Optical Network)System,
- Fiber Optic Equipment and Systems, etc.



1  
2  
3

❖ Ch No.1 → 97%, ~ 80%, 70%, 60%, 30%

❖ Ch No.2~3 → 3%, ~ 20%, 30%, 40%, 70%

### Specifications

Type	Operation Wavelength (nm)	Test Wavelength (nm)	IL max Channel 1 (dB)	IL max Channel 2~3 (dB)	IL Channel 2~3 Uniformity (dB)	PDL (dB)	OutputPort Pitch (um)
1X3 (97%:3%)	1260 ~1650	1310 & 1550	0.45	21.35	0.85	0.3	250
1X3 (95%:5%)			0.5	17.85	0.85		
1X3 (93%:7%)			0.6	16.95	0.85		
1X3 (90%:10%)			0.8	14.65	0.85		
1X3 (85%:15%)			1	12.65	0.6	0.2	
1X3 (80%:20%)			1.3	11.25	0.6		
1X3 (70%:30%)			1.8	9.45	0.6		
1X3 (60%:40%)			2.5	8.15	0.6		
1X3 (45%:55%)			3.9	6.65	0.6		
1X3 (30%:70%)			5.8	5.45	0.6		



# PLC OPTICAL POWER SPLITTER

## 1 x 5 WAFER & CHIP SPECIFICATION

### Applications

- Applications are FTTH, FITB, FTTC, CATV Networks System, PON(Passive Optical Network)System,
- Fiber Optic Equipment and Systems, etc.



1  
2  
3  
4  
5

❖ Ch No.1 → 97%, ~ 80%, 70%, 60%, 30%

❖ Ch No.2-5 → 3%, ~ 20%, 30%, 40%, 70%

### Specifications

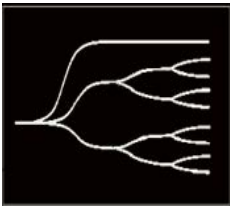
Type	Operation Wavelength (nm)	Test Wavelength (nm)	IL max Channel 1 (dB)	IL max Channel 2~5 (dB)	IL Channel 2~5 Uniformity (dB)	PDL (dB)	OutputPort Pitch (um)
1X5 (70%:30%)	1260 ~1650	1310 & 1550	1.4	15.4	0.6	0.2	250
1X5 (5%:95%)			16	7.2	0.6		
1X5 (93%:7%)			0.6	20.35	1.25	0.3	
1X5 (90%:10%)			0.8	18.05	1.25		
1X5 (85%:15%)			1	16.05	0.6	0.2	
1X5 (80%:20%)			1.3	14.65	0.6		
1X5 (70%:30%)			1.8	12.85	0.6		
1X5 (60%:40%)			2.5	11.55	0.6		
1X5 (45%:55%)			3.9	10.05	0.6		
1X5 (30%:70%)			5.8	8.85	0.6		

# PLC OPTICAL POWER SPLITTER

## 1 x 9 WAFER & CHIP SPECIFICATION

### Applications

- Applications are FTTH, FITB, FTTC, CATV Networks System, PON(Passive Optical Network)System,
- Fiber Optic Equipment and Systems, etc.



1  
2  
3  
4  
5  
6  
7  
8  
9

❖ Ch No.1 → 97%, ~ 80%, 70%, 60%, 30%

❖ Ch No.2~9 → 3%, ~ 20%, 30%, 40%, 70%

### Specifications

Type	Operation Wavelength (nm)	Test Wavelength (nm)	IL max Channel 1 (dB)	IL max Channel 2~9 (dB)	IL Channel 2~9 Uniformity (dB)	PDL (dB)	OutputPort Pitch (um)
1X9 (70%:30%)	1260 ~1650	1310 & 1550	1.9	15.9	0.8	0.3	127
1X9 (93%:7%)			0.7	24.3	1.35		
1X9 (85%:15%)			1.00	19.4		0.2	
1X9 (80%:20%)			1.30	18.0			
1X9 (70%:30%)			1.80	16.2			
1X9 (60%:40%)			2.50	14.9			
1X9 (45%:55%)			3.90	13.4			
1X9 (30%:70%)			5.80	12.2			

# PLC OPTICAL POWER SPLITTER

## 1 x 3, 6, 12 WAFER & CHIP SPECIFICATION

### Applications

- Applications are FTTH, FITB, FTTC, CATV Networks System, PON(Passive Optical Network)System,
- Fiber Optic Equipment and Systems, etc.



### Specifications

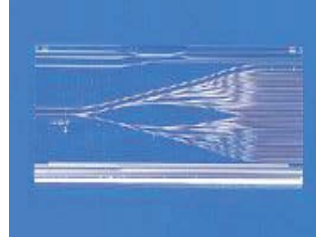
Type	Operation Wavelength (nm)	Test Wavelength (nm)	IL max Channel (dB)	IL Uniformity Channel (dB)	PDL (dB)	Output Port Pitch (um)
1x3	1260 ~1650	1310 & 1550	5.8	0.5	0.12	250
1x6	1260 ~1650	1310 & 1550	8.8	0.6	0.12	250
1x12	1260 ~1650	1310 & 1550	11.8	0.8	0.15	127

# PLC OPTICAL POWER SPLITTER

## 2 x N WAFER & CHIP SPECIFICATION

### Applications

- Applications are FTTH, FITB, FTTC, CATV Networks System, PON(Passive Optical Network)System,
- Fiber Optic Equipment and Systems, etc.



### Specifications

Type	Operation Wavelength (nm)	Test Wavelength (nm)	IL max (dB)	IL Uniformity (dB)	PDL (dB)	Output Port Pitch (um)
2x2	1260 ~1650	1310 & 1550	3.7	0.8	0.2	250
2x4			7.0	0.9	0.2	250
2x8			10.2	1	0.2	127
2x16			13.5	1.2	0.25	127
2x32			16.7	1.5	0.25	127
2x64			20	1.5	0.3	127
2x128			23.5	2.5	0.35	127

# PLC Splitter Chip

## PPI PLC Splitter Chip

PLC Splitter Chip is a main part of PON system to cover many subscribers for receiving light signals at the same time by distributing delivered light signals into number. In addition to Splitter Chip can be operated in reverse direction with combination of one or two optical fiber(s).



## Applications

Applications are FTTH, FTTB, FTTC, CATV Networks System, PON(Passive Optical Network)System, Fiber Optic Equipment and Systems, etc.

## 1 x N type

Type	Wavelength Range (nm)	IL max (dB)	IL Uni (dB)	PDL (dB)	Dimensions		Polishing Angle	Output Port Pitch (um)	
					Width	Height			
1x2	1260 - 1650	3.5	0.3	0.12	2.3	2.575	9.6	0° R8	250
1x3		5.8	0.5	0.12	2.3	2.575	9.6	0° R8	250
1x4		6.7	0.5	0.12	2.3	2.575	9.6	0° R8	250
1x6		8.8	0.6	0.12	2.5	2.575	13.2	0° R8	250
1x8(f)		9.8	0.6	0.15	2.5	2.575	11.7	0° R8	250
1x8(h)		9.8	0.6	0.15	2.3	2.575	9.9	0° R8	127
1x12		11.8	0.8	0.15	2.3	2.575	14.7	0° R8	127
1x16		12.9	0.8	0.15	2.65	2.575	13.3	0° R8	127
1x24		15.1	1.1	0.15	3.9	2.575	20.3	0° R8	127
1x32		16.2	1.0	0.2	4.7	2.575	16.9	0° R8	127
1x64		19.5	1.2	0.2	8.85	2.575	22.0	0° R8	127
1x128		22.5	1.5	0.3	17.0	2.575	27.6	0° R8	127

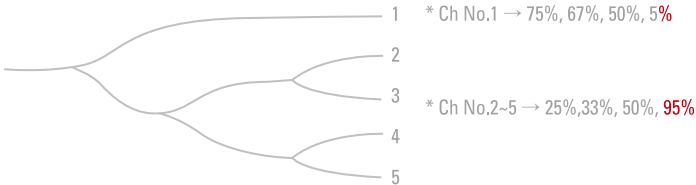
# PLC Splitter Chip

## 2 x N type

Type	Wavelength Range (nm)	IL max (dB)	IL Uni (dB)	PDL (dB)	Dimensions (mm)			Angle	OutputPort Pitch (um)
					Width	Height	Length		
2x2	1260 - 1650	3.7	0.8	0.2	2.3	2.575	10.9	08 R8	250
2x4		7.0	1.0	0.2	2.3	2.575	14.0	08 R8	250
2x8		10.2	1.0	0.2	2.3	2.575	15.0	08 R8	127
2x16		13.5	1.2	0.25	2.7	2.575	18.3	08 R8	127
2x32		16.7	1.5	0.25	4.7	2.575	21.8	08 R8	127
2x64		20.0	1.8	0.3	8.85	2.575	26.8	08 R8	127
2x128		22.8	2.0	0.3	17.0	2.575	32.8	08 R8	127

## Special type: 1x5ch

Type	Wavelength Range (nm)	IL max(dB) (Channel1)	IL max(dB) (Channel2-5)	IL Uni(dB) (Channel2-5)	PDL(dB)	Return Loss(dB)	Directivity (dB)	Dimensions (mm)		
								Width	Height	Length
1x5 (25%:75%)	1260 - 1650	1.6	14.5	0.6	0.2	55	55	2.3	2.575	13.2
1x5 (33%:67%)		2.2	12.8	0.6	0.2					
1x5 (50%:50%)		3.6	10.2	0.6	0.2					
1x5 (95%:5%)		16.0	7.2	0.6	0.2					



\* All products available at Customized Specification.

# PLC Splitter Module

## PPI PLC Splitter Module

The Optical Power Splitter, one of the main products of our company, is a component used in FTTH to separately transmit the signals that are sent from the telephone office or the cable stations through a single optical cable to multiple membership locations (apartments and houses), thereby constituting a key component of the optical membership network. The capability of PPI to manufacture such products, ranging from the chip to the module in production scale quantities is recognized in Korea and abroad as being on the top rank worldwide.

## Applications

- CATV, FTTH, ROADM, LAN, WAN systems.
- Signal, Network monitoring, Live line monitoring system.

## Features

- Telecordia GR-1209 & GR-1221 qualified
- Compact Package
- Low Insertion Loss, PDL
- High Uniformity

Splitter Module (Ribbon type)



Splitter Module (Connector type)



Fan-out type



900um Blockless

## Ordering information

1	X	XX	XX	X	XX	X
<b>Input Channel</b>	<b>Input Fiber Type</b>	<b>Input Fiber Length</b>	<b>Output Channel</b>	<b>Output Fiber Type</b>	<b>Output Fiber Length</b>	<b>Connector Type</b>
1 : 1Channel 2 : 2Channel	B : Bare Fiber T : 900 $\mu$ m	XX : Customized ex)12:1.2m	XX : Customized ex)02-64ch	R : Ribbon Fiber L : 900 $\mu$ m Loose Tube	XX : Customized ex)12:1.2m	0 : None 1 : SC/APC 2 : SC/PC 3 : FC/APC 4 : FC/PC 5 : Customized

\* All products available at Customized Specification.

# PLC Splitter Module

## 1xN type

Type	Wavelength Range (nm)	IL max (dB)	IL Uni (dB)	PDL (dB)	Dimensions (mm)		
					Width	Height	Length
1x2	1260 - 1650	3.8	0.6	0.2	4	4	40
1x3		6.6	0.6	0.2	4	4	40
1x4		7.4	0.6	0.2	4	4	40
1x6		9.6	0.8	0.2	4	4	40
1x8		10.5	0.8	0.2	4	4	40
1x9		11.4	1.0	0.3	7	4	55
1x12		12.5	1.0	0.3	7	4	55
1x16		13.6	1.0	0.3	7	4	55
1x24		16.2	1.3	0.3	7	4	55
1x32		17.0	1.3	0.3	7	4	55
1x64		20.5	2.0	0.3	12	4	60

## 2xN type

Type	Wavelength Range (nm)	IL max (dB)	IL Uni (dB)	PDL (dB)	Dimensions (mm)		
					Width	Height	Length
2x2	1260 - 1650	4.4	0.8	0.3	7	4	55
2x4		7.6	1.0	0.3	7	4	55
2x8		11.0	1.0	0.3	7	4	55
2x16		14.3	1.5	0.3	7	4	60
2x32		17.5	1.8	0.3	7	4	60
2x64		21.2	3.0	0.4	12	4	65

## Special type : Nx(1x2)ch. Array Tap Splitter ( $1 \leq N \leq 8$ )

Type	Ratio (%)	Wavelength Range (nm)	Mainport IL max. (dB)	Tap port IL max. (dB)	IL Uni. (dB)	PDL (dB)
1x2	50:50	1260 - 1650	<3.8	<3.8	<1.0	<0.2
	70:30		<3.0	5-7	<1.0	<0.2
	80:20		<2.6	7-9	<1.0	<0.2
	90:10		<1.8	9-12	<1.0	<0.2
	95:05		<1.2	12-15	<1.0	<0.2
	98:02		<1.0	15-18	<1.0	<0.2

Type	Wavelength Range (nm)	IL max. (dB)	WDL (dB)	IL Uni. (dB)	PDL (dB)	Dimensions (mm)		
						Width	Height	Length
1x2	1260 - 1650	≤3.8	<1.0	<0.6	≤0.2	4	4	40
4x(1x2)		≤4.1	<1.0	<0.8	≤0.3	7	4	55
8x(1x2)		≤4.3	<1.0	<1.0	≤0.3	7	4	55
16x(1x2)		≤4.5	<1.0	<1.0	≤0.3	7	4	55

ITEM	Unit	Specification
Directivity	dB	≥55
Return Loss	dB	≥55
Fiber Type	-	SMF-28e(for equivalent)
Storage Temperature	°C	-40→+85
Operating Temperature	°C	-40→+85



# 1XN PM Splitters

## Polarization Maintaining Planar Optical Splitter Module

### Features

- Compact package
- High Channel Counts and Extinction Ratio
- Wide Band and Operating Temperature
- Splitting or Combining Output Power of Transmitters Using Polarization Maintaining Fiber



### Specifications

Parameter	Unit	Specification		
Ports	-	1x2	1x4	1x8
Operational Wavelength	nm	1310 or 1550		
Max. Insertion Loss (IL)	dB	4	8	11
Polarization Extinction Ratio	dB	≥20		
Return Loss / Directivity	dB	≥55		
Operation Temperature	°C	-10 ~ 70		
Storage Temperature	°C	-40 ~ 85		
Fiber Type	-	PM Panda Fiber		
Axis	-	Slow or Fast		

\* Insertion loss & Return loss don't include connectors

Parameter	Unit	Specification						
Ports	-	2x2	1x3					
Operational Wavelength	nm	1310 or 1550						
Power Ratio. 1	dB	50:50	40:20:40		30:40:30		25:50:25	
Power Ratio. 2	dB	50	40	20	30	40	25	50
Max. Insertion Loss (IL)	dB	≤4.0	≤4.9	≤7.9	≤6.4	≤4.9	≤7.3	≤3.9
Polarization Extinction Ratio	°C	≥20						
Return Loss / Directivity	°C	≥55						
Operation Temperature	-	-10 ~ 70						
Storage Temperature	-	-40 ~ 85						
Fiber Type	-	PM Panda Fiber						
Axis	-	Slow or Fast						

\* Insertion loss & Return loss don't include connectors

# Multimode Splitters

## Multimode PLC Splitter Module

### Features

- Compact package
- Mode Insensitive
- High Reliability and Stability

### Applications

- Data Center
- Multimode Communication Systems
- Fiber Sensor Systems



### Specifications

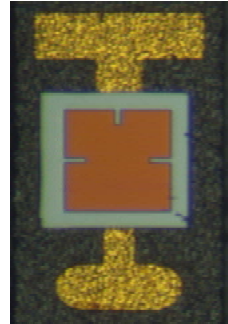
Parameter	Unit	Specification		
Ports		1 x 2	1 x 4	1 x 8
Operational Wavelength	nm	850 / 1310		
Max. Insertion Loss (IL)	dB	5	8.5	12
PDL	dB	≤0.5		
Return Loss	dB	≥40		
Directivity	dB	≥50		
Operation Temperature	°C	-40 ~ +85		
Storage Temperature	°C	-40 ~ +85		
Fiber Type	-	OM1/OM2/OM3/OM4		
Package Size: H x W x L	mm	Customized		

\* Insertion loss & Return loss don't include connectors

# 25Gbps InGaAs Avalanche Photo Diode

## Features

- InGaAs absorption and InAlAs multiplication
- Operating wavelength 1210nm~1610nm
- Back-side illuminated and flip-chip bonded
- Typical 60fF for high speed operation
- High sensitivity -18dBm
- 20mV/°C temperature dependence



## Applications

- 5G wireless front-haul
- High speed telecom
- Long-haul networks
- 100G base-ER4

## Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Forward Current	I <sub>f</sub>	3	mA
Reverse Current	I <sub>r</sub>	2	mA
Optical Input Power[1]	P <sub>max</sub>	-5	dBm
Operating Temperature	T <sub>o</sub>	-40~85	°C
Storage Temperature	T <sub>s</sub>	-40~10	°C

[1] Optical input power must not be exceeded the maximum. It can cause permanent damage to the device

## Optical characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Wavelength	$\lambda$	1210		1610	nm	
Responsivity	R		0.7		A/W	$\lambda=1550\text{nm}$
Dark Current	I <sub>D</sub>			200	nA	
Capacitance	C			70	fF	0.9V <sub>br</sub>
Breakdown Voltage	V <sub>br</sub>	-20		-30	V	0.9V <sub>br</sub>
Temperature Coefficient[2]	dV/dT		0.02		V/°C	10 $\mu$ A
O/E Bandwidth[3]	BW		15		GHz	

[2] The temperature coefficient is based on the change in breakdown voltage

[3] The frequency response is measured at 10 $\mu$ W optical input power

# Tap PD Array

## Monitoring PD on PLC type : 10, 12, 24 Ports

### Features

- Low insertion loss
- Based on Planar Light-wave Circuit
- Compact Packaging size
- Simple Electric Design
- High Reliability
- Wide Wavelength range
- Custom design available



### Applications

- Optical Power Monitoring
- Compact Optical Powermeter
- ROADM/Monitoring System

### Specifications

Parameter	Unit	Min.	Typical	Max.
Operating Wavelength	nm	1310nm or 1550nm		
Main Port Insertion Loss	dB	-	0.8	1
Photosensitivity(2% Tap Port)	mAW	10	15	30
Directivity	dB	50	-	-
Return Loss	dB	40	-	-
Dimension[LxWxH]	mm	40 x 35 x 6 (10, 12 ports), 50 x 40 x 6 (24 ports)		

#### Notes:

1. Insertion loss & Return loss don't include connectors. The insertion loss of one pair of connector is less than 0.25dB
2. For product customization or special requirement , please contact our sales representative.

# 24ch Photodiode Array Monitor

## 2.5G InGaAs Photodiode

### Features

- Compact design
- Easily Mounting on PCB
- Low Dark Current
- High Reliability
- Hermetic Seal

### Applications

- Optical Monitoring System
- Multi Channel Monitoring
- Optical Performance Monitor
- WDM Monitoring
- Portable Optical Power Meter



### Specifications

Parameter		Specification			Unit
		Min.	Typical	Max.	
Wavelength Range			1310 / 1550		nm
Polarization Dependence Loss				0.1	dB
Adjacent Crosstalk			45		dB
Forward Current				10	mA
Reverse Voltage				20	V
Capacitance ( $V_{r}=2V$ )				1.5	pF
Dark Current ( $V_{r}=5V$ )				5	nA
Responsibility	1310 nm		0.8		4.8 / 2.5
	1550 nm		0.8		
Operating Temperature			-5 ~ 85		A/W
Storage Temperature			-40 ~ 100		°C
Optical Return Loss				-45	dB
Size (Include Lead Frame 3 mm)			15 x 14 x 4		mm

# Silica Variable Optical Attenuator

## Silica PLC type : 10, 12 Ports

### Features

- Low insertion loss/PDL
- Based on Planar Light-wave Circuit
- Compact Packaging size
- Simple Electric Design
- High Reliability
- Wide dynamic range
- Custom design available



### Applications

- Mux / Demux Channel Equalization
- Polarity checking of the MPO powermeter

### Specifications

Parameter	Unit	Min.	Typical	Max.
Operating Wavelength	nm	C band		
Insertion Loss	dB	-	1	1.5
Attenuation Range	dB	-	5	20.0
PDL (10dB Attenuation)	dB	-	-	0.4
PDL (15dB Attenuation)	dB	-	-	0.5
Driving Voltage	V	-	-	5
Power Consumption	mW/ch	-	-	270
Response Time	ms	-	-	20
Operating Temperature	-C	-5	-	70
Optical Return Loss	dB	40	-	-
Optical Crosstalk	dB	20	-	-

#### Notes:

1. Insertion loss & Return loss don't include connectors. The insertion loss of one pair of connector is less than 0.25dB
2. For product customization or special requirement , please contact our sales representative.

# Optical Switch

## Hybrid Silica PLC type - 1x2, 2x2 Switch module & Arrayed module

### Features

- Low Insertion Loss / PDL
- Low driving power consumption
- Based on Planar Light-wave Circuit
- Compact Packaging size
- Simple Electronic Design
- High Reliability
- High Crosstalk
- Custom design available

### Applications

- Redundancy switching
- Optical Cross Connector (OXC)
- Optical monitoring systems
- Optical Add-Drop multiplexer



### Specifications

Parameter	Unit	1x2	2x2
Operating Wavelength	nm	C&L band, Specific WL	
Insertion Loss	dB	<1.5	<2.0
Extinction Ratio	dB	>35	>35
Polarization Dependent Loss	dB	<0.2	<0.2
Driving Voltage	V	<5.0	<5.0
Power Consumption	mW	<150	<250
Response Time	ms	<15	<15
Operating Temperature	°C	-5 ~ 70	
Optical Return Loss	dB	>55	

# Optical Mode Conversion Adapter (MCA)

## PPI Optical Mode Conversion Adapter (MCA)

The Mode Converter is a device of transferring the light(incident from single mode optical fiber) to multi mode optical fiber or transferring the light (incident from multi mode optical fiber) to single mode optical fiber. And also, it is mainly used to the area installed with multi mode optical fiber at existing apartment.

## Features

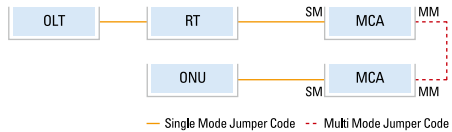
- Easy to use and carry
- Easy to connect with PLC Splitter
- MCA converts Multi mode into Single mode
- Bidirectional Communication (Multi mode ↔ Single mode)



## Specifications

	Multi Mode → Single Mode	Single Mode → Multi Mode
IL	<2.0dB	<0.5dB
PDL	<1.0dB	<0.2dB
RL		>40dB

## Block Diagram



## Feature



Multi mode jumper code



MCA



SC/PC adaptor



Single mode jumper code

1. Connect SC/PC adaptor with single mode's SC/PC connector.

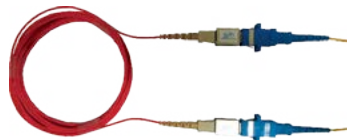


2. Connect MCA's single mode part with SC/PC adaptor.



3. Connect MCA's multi mode part with multi mode jumper code.

4. Completion





# Plug in cut-off Filter

## 1650nm (1625nm) Cut-off

### Features

- Easy to use and Carry
- The Design enables two-way communication
- Easy to connect with Splitter
- Real time Network Monitoring

### Applications

- Optical Network Observation



### Specifications

Parameter	Unit	Pass	Cut-off
Operation Wavelength	nm	1310/1490/1550	1625, 1650
Insertion Loss	dB	< 0.7	-
Reflection Loss	dB	-	-
PDL	dB	< 0.2	-
Operating Temperature	°C	-50 ~ 70	

# Plug in Reflection Filter

## 1650nm(1625nm)Reflection

### Features

- Easy to use and Carry
- The Design enables two-way communication
- Easy to connect with Splitter
- Real time Network Monitoring

### Applications

- Optical Network Observation



### Specifications

Parameter	Unit	Pass	Reflection
Operation Wavelength	nm	1310/1490/1550	1625, 1650
Insertion Loss	dB	< 0.7	-
Reflection Loss	dB	-	< 1.5
PDL	dB	< 0.2	-
Isolation	dB	-	>15
Operating Temperature	°C	-50 ~ 70	



All information contained herein is believed to be accurate and is subject to change without notice. No responsibility is assumed.

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# PHOTONICS PLANAR INTEGRATION TECHNOLOGY

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