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Product Specification
Optical PLC Splitter

1. Introduction

1.1 General

This specification covers the standards and requirements for the construction, properties, testing and packing of the Optical Splitter.

1.2 Description

The optical Splitter is divided uniformity optical signals from input ports to multiple outputs. The optical Splitters are used in distribution equipment like FTTH Ethernet PON System

1.3 Reference

Telcordia Technologies Generic Requirements GR-1209-CORE & GR-1221-CORE

2. Optical Specification

■ **Optical performance shows without Connector state.**

Parameter	Unit	1x2	1x4	1x8	1x16	1x32	1x64
Insertion Loss (Max) S/P	dB	≤4.0/3.8	≤7.3/7.0	≤10.5/10.2	≤13.8/13.5	≤16.8/16.5	≤20.4/20.0
Uniformity (Max) S/P		≤0.5/0.5	≤0.6/0.5	≤0.8/0.6	≤1.0/0.7	≤1.2/1.0	≤1.5/1.5
PDL (Max) S/P		≤0.2/0.15	≤0.20/015	≤0.2/0.2	≤0.25/0.2	≤0.25/0.2	≤0.3/0.2
Return Loss / Directivity		≥55					
Operating Wavelength	nm	1260 ~ 1650					
Operating Temperature	℃	-40 ~ +85					
Storage Temperature		-40 ~ +85					

- **S : Standard Grade / P : Premium Grade**

■ Optical performance shows without Connector state.

Parameter	Unit	2x2	2x4	2x8	2x16	2x32	2x64
Insertion Loss (Max) S/P	dB	≤4.4/4.1	≤7.5/7.3	≤11.0/10.5	≤14.5/14.0	≤18.0/17.5	≤21.5/21.0
Uniformity (Max) S/P		≤1.1/0.9	≤1.2/1.0	≤1.2/1.0	≤1.8/1.5	≤1.8/1.5	≤2.3/2.0
PDL (Max) S/P		≤0.25/0.2	≤0.25/0.2	≤0.25/0.2	≤0.3/0.25	≤0.3/0.25	≤0.4/0.4 ≤0.4/0.35
Return Loss / Directivity		≥55					
Operating Wavelength	nm	1260 ~ 1650					
Operating Temperature	℃	-40 ~ +85					
Storage Temperature		-40 ~ +85					

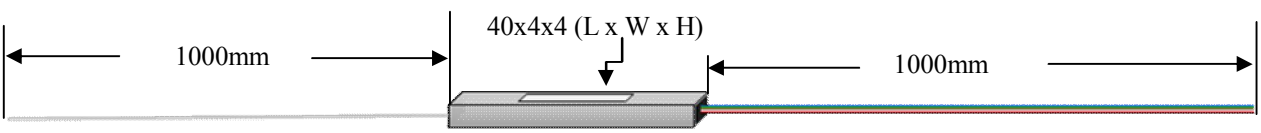
- **S : Standard Grade / P : Premium Grade**

3. Mechanical Specification

3.1. Mechanical Specification (Pigtail Type)

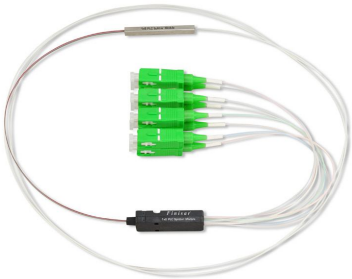
Parameter		1x2, 1x4, 1x8	1x16, 1x32	1x64
Package	Material	Stainless Steel		
	Dimension (L x W x H mm)	40 x 4 x 4	47 x 7 x 4	58 x 12 x 4

Parameter		2x2	2x4, 2x8	2x16, 2x32	2x64
Package	Material	Stainless Steel			
	Dimension (L x W x H mm)	40 x 4 x 4	55 x 7 x 4	60 x 7 x 4	70 x 12 x 4



3.1.1. Characteristics of Ribbon Fiber Color (ISO Color)

3.2. Mechanical Specification (Fan-out Type)

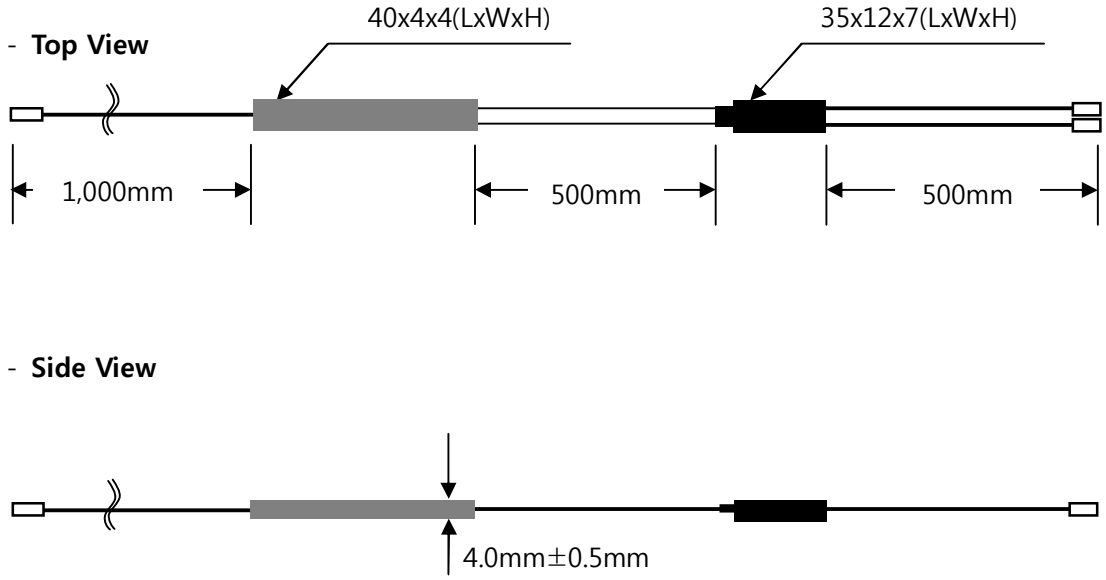


Parameter		1x2, 1x4, 1x8	1x16, 1x32	1x64
Package	Material	Stainless Steel		
	Dimension (L x W x H mm)	40 x 4 x 4	47 x 7 x 4	58 x 12 x 4
Fanout Kit	Material	Plastic		
	Dimension (L x W x H mm)	35 x 12 x 7		

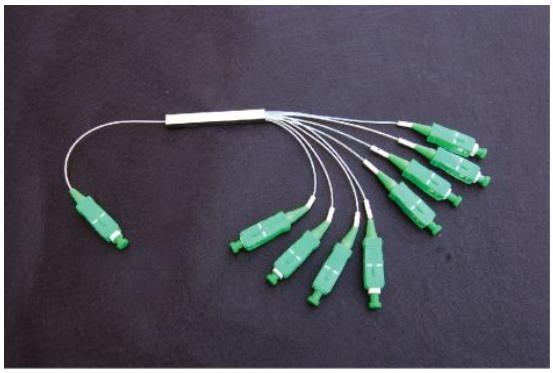
Parameter		2x2	2x4, 2x8	2x16, 2x32
Package	Material	Stainless Steel		
	Dimension (L x W x H mm)	50 x 5 x 4	55 x 7 x 4	60 x 7 x 4
Fanout Kit	Material	Plastic		
	Dimension (L x W x H mm)	35 x 12 x 7		

3.2.1. Optical Fiber Type and Length

Parameter		Description
Input	900um Tight Buffered tube	≤1.0m
Output (Ribbon Part)	4ch or 8ch Ribbon Fiber	≤1.0m
Output (Break Part)	Fanout Kit with 900um Loose Tube	≤1.0m
Optical Fiber	Bend intensive G.657A fiber	R15
Furcation Tube	900um Loose Tube	Hytrel



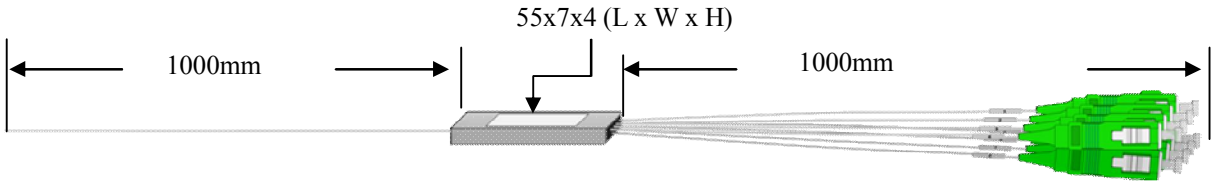
3.3. Mechanical Specification (Mini module Type)



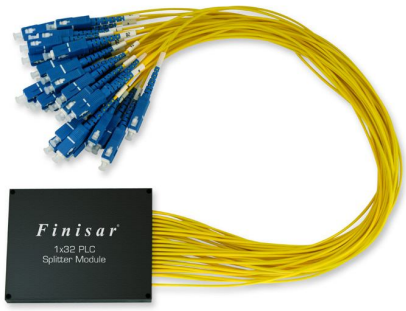
Parameter	1x2, 1x4, 1x8	2x2, 2x4, 2x8	1x16, 2x16	1x32, 2x32	1x64, 2x64
Material	SUS (only with 900um Loose tube)				
Dimension (L x W x H mm)	55 x 7 x 4	60 x 7 x 4	60 x 12 x 4	80 x 20 x 6	100 x 40 x 6

3.3.1. Optical Fiber Type and Length

Parameter		Description
Input	900um Tight Buffered tube	≤1.0m
Output (Ribbon Part)	4ch or 8ch Ribbon Fiber	≤1.0m
Output (Break Part)	900um Loose Tube	≤1.0m
Optical Fiber	Bend intensive G.657A fiber	R15
Furcation Tube	900um Loose Tube	Hytrel



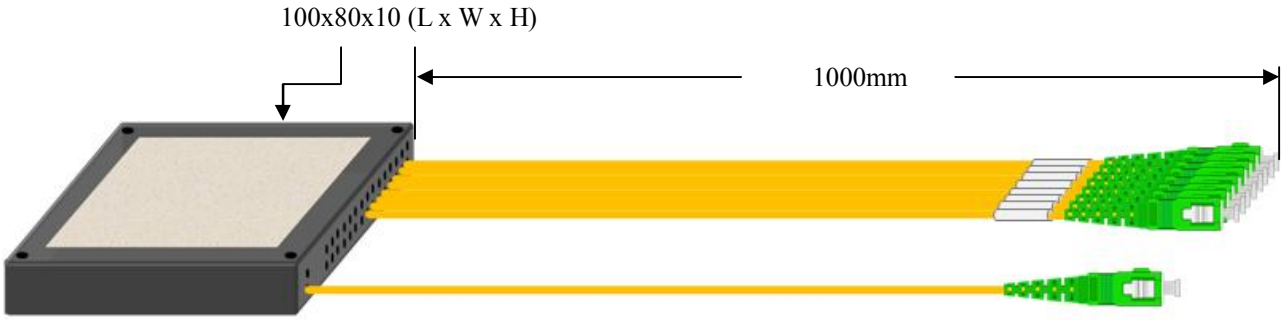
3.4. Mechanical Specification (Cascade module Type)



Parameter		1x2, 1x4, 1x8, 1x16, 1x32, 2x2, 2x4, 2x8, 2x16, 2x32	1x64, 2x64
Package	Material	Aluminum & ABS Plastic	
	Dimension (L x W x H mm)	100 x 80 x 10	100 x 80 x 20

3.4.1. Optical Fiber Type and Length

Parameter		Description
In/output	900um Loose tube or 2.0mm cord jacket	≤1.0m
Optical Fiber	Bend intensive G.657A fiber	R15
Furcation Tube	900um Loose Tube & 2.0mm cord PVC jacket	Hytrel, PVC



3.5. Mechanical Specification (Rack mountable Type)

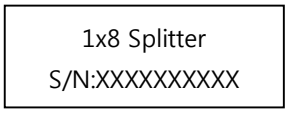
Parameter		2x2, 1x16, 1x32
Package	Material	EGI (Electrolytic Galvanized Iron)
	Dimension (L x W x H mm)	ETSI standard require (Custom design)

4. Connector Specification

Parameter	Unit	Condition	Specification
Insertion Loss	dB	Mated Pair	≤0.3
Return Loss		UPC	≥55
		APC	≥55
Ferrule Material	nm	Zirconia	

- Connector must guarantee with normal SM inspection criteria.

5. Splitter Label



<Label Sample>

6. Reliability
   - Qualification Requirement
     Compliant with following requirements and provide the qualification reports.
   1) Telcordia GR-1209, Generic Requirements for Fiber Optic Branching Components.
   2) Telcordia GR-1221, Generic Reliability Assurance Requirement for Passive Optical Components.

7. Test Report

A test report shall be provided with each module including the following measured data in a paper document;

- Insertion Loss (wavelength at 1310nm and 1550) (@25℃)
- Uniformity (@25℃)
- PDL (@25℃)
- Dimension of the protective case and length of pigtails.
- Visual inspection (Pass or Fail)
- Component packing dimensions (Pass or Fail)

8. Packing

The final shipping cartons shall be of sufficient strength and durability to protect the contents from handling during storage and shipping by air.

- Each Splitter will be conditioned by unit.
- The Splitter is maintained in the packaging and the fibers are arranged by respecting the minimum bend radius of 15mm.

- The packaging protects the Splitter from the drop.

9. Marking

The details given below shall be distinctively marked in English with a weatherproof material, on at least two sides of the shipping cartons.

- The company to be delivered
- The product item
- Country of origin
- Manufacturer's name and / or trademark
- Date of manufacture
- Other information can be present on the packaging according to the customer's request.

End of Specification

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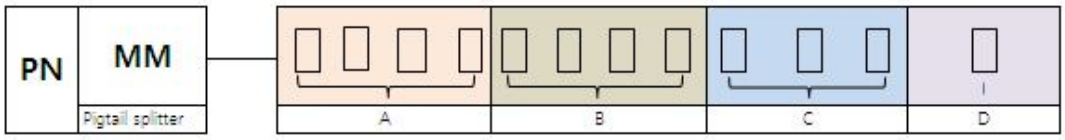
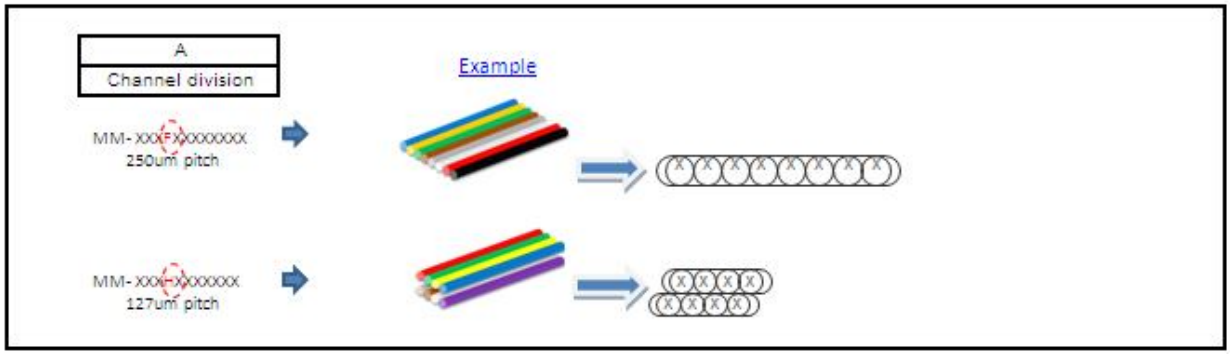
Part number Information

Pigtail splitter Part Number



▣Pigtail Splitter Part Number

		A		B				C		D	
Product division		Channel division		Splitter input fiber type		Input length		Out length		Optical properties	
Code	Item	Code	Item	Code	Item	Code	Item	Code	Item	Code	Item
MM-	Pigtail splitter	102F	1x2 250um pitch	1	250um bare fiber	010	1.0m	010	1.0m	S	Standard
		103F	1x3 250um pitch	2	900um tube	015	1.5m	015	1.5m	P	Premium
		104F	1x4250um pitch	3	4ch Ribbon	020	2.0m	020	2.0m		
		106F	1x6 250um pitch	4	8ch ribbon	025	2.5m	025	2.5m		
		108H	1x8 127um pitch	c	Customized	030	3.0m	030	3.0m		
		108F	1x8 250um pitch			035	3.5m	035	3.5m		
		112H	1x12 127um pitch			040	4.0m	040	4.0m		
		116H	1x16 127um pitch			045	4.5m	045	4.5m		
		124H	1x24 127um pitch			C00	Customized	10.7	10.7m		
		132H	1x32 127um pitch					14.0	14.0M		
		164H	1x64 127um pitch					C00	Customized		
		202F	2x2 127um pitch								
		204F	2x4 127um pitch								
		208H	2x8 127um pitch								
		216H	2x16 127um pitch								
		232H	2x32 127um pitch								
		264H	2X64 127um pitch								
		C000	Customized								



F i n i s a r

MO Part Number(Fan-out,Mini,Cascade type,Etc.)

CODE	MO	-		-		-		-		-		-		-	
Section			A		B		C		D	D'D"	E	E'	F	F'	G

Customer

Section A	
Code	Customer
XXX	Customer Identification

Product type

Section B	
Code	Type
A	PLC Splitter

Items

Section C		
Group	Code	Item
*A or NO.(2~9)	102	1×2 Splitter
	103	1×3 Splitter
	104	1×4 Splitter
	106	1×6 Splitter
	108	1×8 Splitter
	112	1×12 Splitter
	116	1×16 Splitter
	132	1×32 Splitter
	164	1×64 Splitter
	202	2×2 Splitter
	204	2×4 Splitter
	208	2×8 Splitter
	216	2×16 Splitter
	232	2×32 Splitter
	264	2x64 Splitter
	CUS	Customized

Case, Tube type

Section D			D'	D"
Code	Item	Code	Input	Output
F	Fan-out	1	0.9mm	0.9mm
MS	Mini hard SUS/AL	2	1.6mm	1.6mm
MA	Mini hard ABS	3	2.0mm	2.0mm
CS	Cascade SUS/AL	4	3.0mm	3.0mm
CA	Cascade ABS	5	250um	250um
L	LGX	C	customized	customized
T	Tray			

Length(Max)

E	E'	
Input	Output	item
05	05	0.5m
10	10	1.0m
15	15	1.5m
20	20	2.0m
25	25	2.5m
30	30	3.0m
35	35	3.5m
40	40	4.0m
XX	XX	X.XM
CC	Customized	

Connector type

	F	F'
Code	Input	Output
1	None	None
2	SC/UPC	SC/UPC
3	SC/APC	SC/APC
4	LC/UPC	LC/UPC
5	LC/APC	LC/APC
6	FC/UPC	FC/UPC
7	FC/APC	FC/APC
8	MU/UPC	MU/UPC
C	Customized	Customized

Case type

G	
Code	item
0	None
1	Rack mountable
2	wall mountable
3	closure
4	.
5	.
6	.
7	.
C	Customized

*Use Section A with XXX and inform customer name(Customer identfication will be designate to 3digits by finisar korea)
Ex)Customer- Finisar
MO-FIN-A-A102-MS11-2020-33 : PLC Splitter, 1×2 Mini hard case, 0.9mm tube 2.0meter, SC/APC
- Section C : For PLC Splitter use AXXX for product with 1 splitter, and 2XXX for product using more than 2 splitters
Ex) A102, 2102-Dual type, 4102-Quad type