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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 uniformly 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	≤0.20/0.15	≤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	°C	-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	°C	-40 ~ +85					
Storage Temperature		-40 ~ +85					

- S : Standard Grade / P : Premium Grade

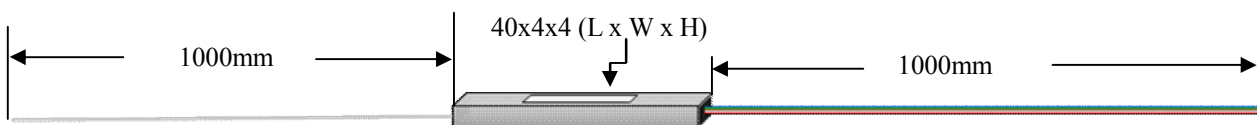
3. Mechanical Specification

3.1. Mechanical Specification (Pigtail Type)



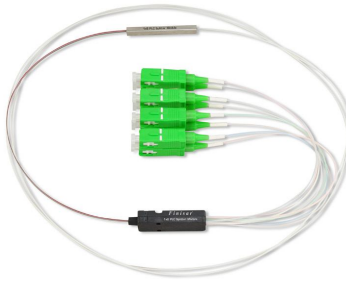
Parameter		1x2, 1x4, 1x8	1x16, 1x32	1x64
Package	Material	Stainless Steel		
	Dimension (L x W x H mm)	40 x 4 x 4	47 x 7 x 4	58 x 12 x 4

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)



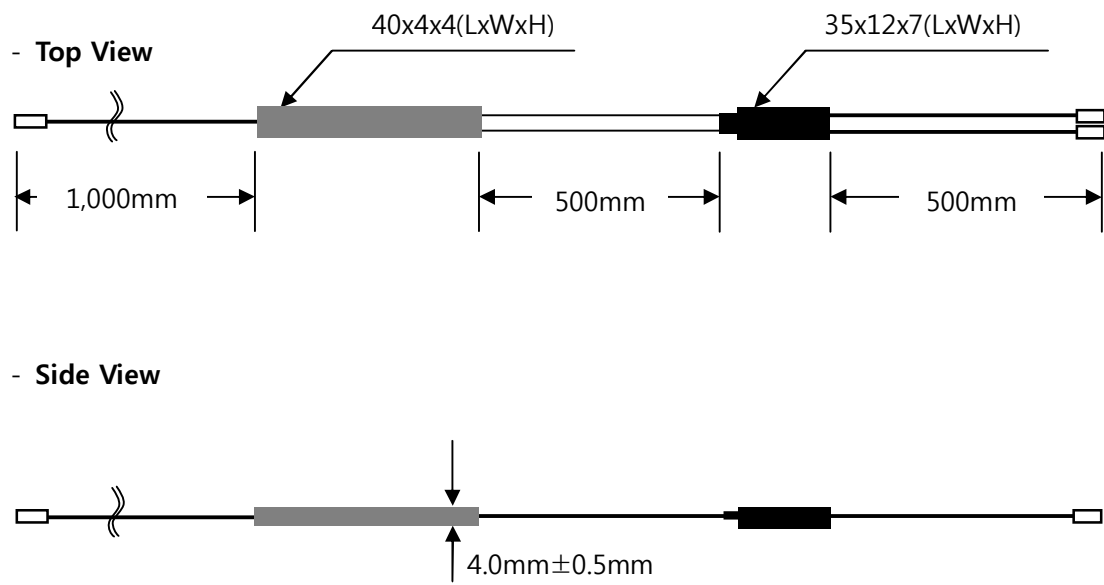
Parameter		1x2, 1x4, 1x8	1x16, 1x32	1x64
Package	Material	Stainless Steel		
	Dimension (L x W x H mm)	40 x 4 x 4	47 x 7 x 4	58 x 12 x 4
Fanout Kit	Material	Plastic		
	Dimension (L x W x H mm)	35 x 12 x 7		

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		

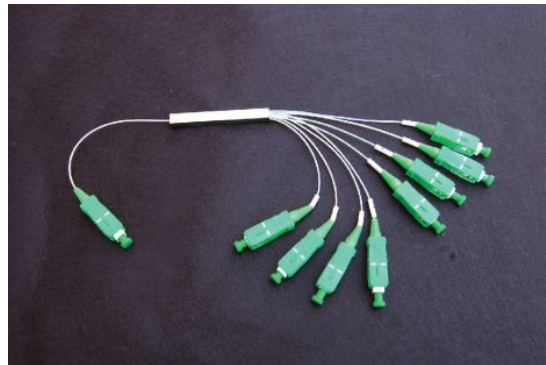
3.2.1. Optical Fiber Type and Length

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	Hytel

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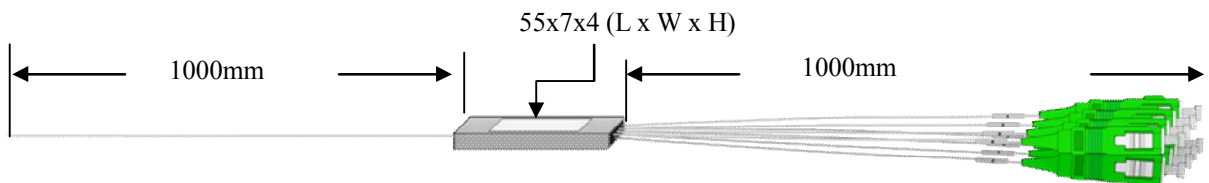
3.3. Mechanical Specification (Mini module Type)



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



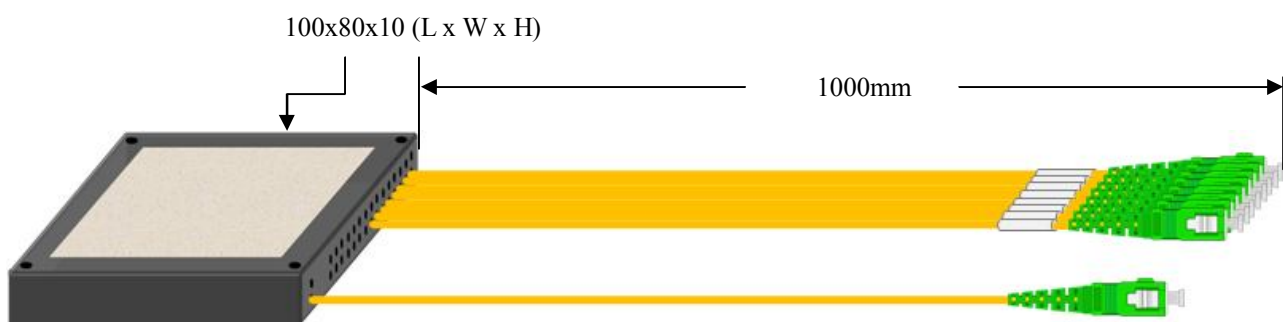
3.4. Mechanical Specification (Cascade module Type)



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

1x8 Splitter S/N:XXXXXXXXXX

<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°C)
- Uniformity (@25°C)
- PDL (@25°C)
- 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.

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- The packaging protects the Splitter from the drop.

9. Marking

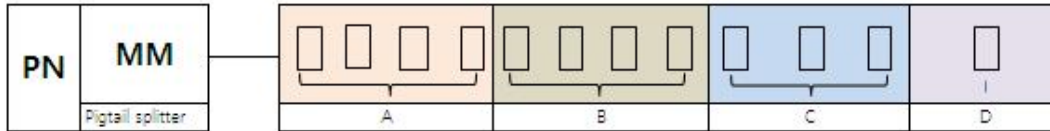
The details given below shall be distinctively marked in English with a weatherproof material, on at least two sides of the shipping cartons.

- 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

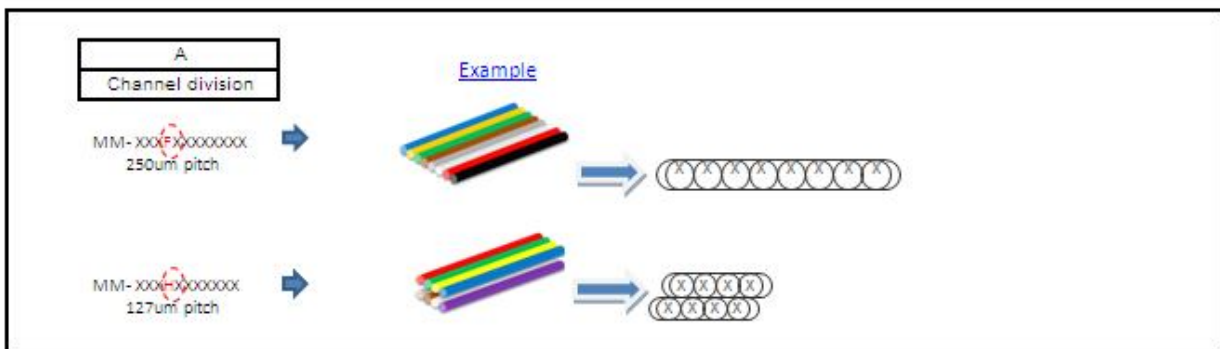
Part number Information

Pigtail splitter Part Number

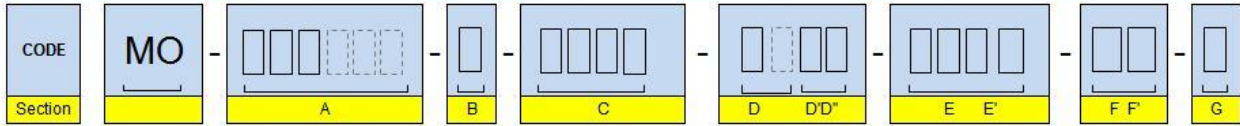


■ Pigtail Splitter Part Number

Product division		A Channel division		B Splitter input fiber type		C input length		D 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	1x4 250um pitch	3	4oh Ribbon	020	2.0m	020	2.0m			
		106F	1x6 250um pitch	4	8oh ribbon	025	2.5m	025	2.5m			
		108H	1x8 127um pitch	0	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			000	Customized	10.7	10.7m			
		132H	1x32 127um pitch					14.0	14.0M			
		164H	1x64 127um pitch					000	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									
		0000	Customized									



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



Customer		Product type		Items		Case, Tube type			Length(Max)			Connector type		Case type					
Section A		Section B		Section C		Section D		D'	D''	E	E'	F		G					
Code	Customer	Code	Type	Group	Code	Item	Code	Input	Output	Input	Output	item	Code	Input	Output	Code	item		
XXX	Customer Identification	A	PLC Splitter	*A or NO.(2~9)	102	1x2 Splitter	F	Fan-out	1	0.9mm	0.9mm	05	05	0.5m	1	None	None	0	None
					103	1x3 Splitter	MS	Mini hard SUS/AL	2	1.6mm	1.6mm	10	10	1.0m	2	SC/UPC	SC/UPC	1	Rack mountable
					104	1x4 Splitter	MA	Mini hard ABS	3	2.0mm	2.0mm	15	15	1.5m	3	SC/APC	SC/APC	2	wall mountable
					106	1x6 Splitter	CS	Cascade SUS/AL	4	3.0mm	3.0mm	20	20	2.0m	4	LC/UPC	LC/UPC	3	closure
					108	1x8 Splitter	CA	Cascade ABS	5	250um	250um	25	25	2.5m	5	LC/APC	LC/APC	4	.
					112	1x12 Splitter	L	LGX	C	customized	customized	30	30	3.0m	6	FC/UPC	FC/UPC	5	.
					116	1x16 Splitter	T	Tray				35	35	3.5m	7	FC/APC	FC/APC	6	.
					132	1x32 Splitter						40	40	4.0m	8	MU/UPC	MU/UPC	7	.
					164	1x64 Splitter						XX	XX	X, XM	C	Customized	Customized	C	Customized
					202	2x2 Splitter						CC	Customized						
					204	2x4 Splitter													
					208	2x8 Splitter													
					216	2x16 Splitter													
					232	2x32 Splitter													
					264	2x64 Splitter													
					CUS	Customized													

*Use Section A with XXX and inform customer name(Customer identification will be designate to 3digits by finisar korea)
 Ex)Customer- Finisar
 MO-FIN-A-A102-MS11-2020-33 : PLC Splitter, 1x2 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