



TECHNICAL DATASHEET FOR

LOOSE TUBE OPTICAL FIBER CABLE

AERIAL Installation

Single Jacket All Dielectric Fig-8 Cable

ITU-T G.652D, 48F

Catalog: "Fig-8 48F 6 fibre/tube

Type: 48 8(8T+0F) 6 10.3X18.1 177 4,000 7,000

Customer : XXXXXXXXXX
Date : Feb. 24, 2011
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SAMSUNG ELECTRONICS HAINAN FIBEROPTICS



1. Scope

- 1.1. This document details single jacket all dielectric Fig-8 cables generally for installation in aerial environment.
- 1.2. The cable shall contain 48 optical fibers cables.

2. Fibers

- 2.1 Fibers supplied against this specification must meet the requirements of ITU-T recommendation G.652.D (WidePass™¹) fibers.

2.2 G.652.D (WidePass™)

2.2.1 Optical specifications

Parameters	Unit	Specifications	
Attenuation	1310 nm	≤ 0.36	
	1383 ± 3 nm	≤ 0.36	
	1550 nm	≤ 0.22	
Attenuation uniformity	1310 & 1550nm	≤ 0.10	
Point Discontinuities	1310 & 1550 nm	≤ 0.05	
Attenuation Vs Wavelength	1285 ~ 1330 nm	≤ 0.05	
	1525 ~ 1575 nm	≤ 0.03	
Mode Field Diameter	1310 nm	9.2 ± 0.4	
	1550 nm	10.4 ± 0.5	
Cable Cutoff Wavelength (λ _{cc})		≤ 1260	
	1285 ~ 1330 nm	≤ 3.5	
	1550 nm	≤ 18	
Dispersion	Zero dispersion wavelength	nm	
	Zero dispersion slope	ps/(nm ² .km)	≤ 0.092
PMD ₀ (Link Design Value)	1550 nm	ps/km ^{1/2}	≤ 0.2

¹ WidePass™ is a trademark of SAMSUNG Electronics (Hainan) Fiberoptics Co., Ltd.



2.2.2 Dimensional Specifications

Parameters	Unit	Specifications
Cladding Diameter	um	125.0 ± 1.0
Cladding Non-circularity	%	≤ 1.0
Core/Cladding Concentricity Error	um	≤ 0.6
Coating Diameter [Uncolored]	um	245 ± 5
Coating Outer Non-Circularity	%	≤ 6.0
Coating Concentricity Error	um	≤ 12.5

2.2.3 Mechanical and Environmental Specifications

Parameters	Unit	Specifications
Proof Test Level	GPa (Kpsi)	≥ 0.7 (≥ 100)
Coating Strip Force	N	1.3 ~ 8.9
Dynamic Tensile Strength (Gauge Length: 0.5m)	GPa	Mean value ≥ 4.0 (RH 50%)
Temperature Dependence (-60°C ~ +85°C)	dB/km	≤ 0.05 @1310nm & 1550nm
Temp.-Humidity Cycling (-10°C ~ +85°C, 98% RH)	dB/km	≤ 0.05 @1310nm & 1550nm
Water Immersion @ 23 ± 2°C	dB/km	≤ 0.05 @1310nm & 1550nm
Hot Aging @ 85 ± 2°C	dB/km	≤ 0.05 @1310nm & 1550nm

2.2.4 Typical Performance Characteristics

Parameters	Unit	Specifications
Effective Group Index of Refraction	1310 nm	1.4690
	1550 nm	1.4695



3. Cable construction

3.1 A typical cable construction can be seen in Appendix 1.

3.2 Fiber and tube color code

No.	1	2	3	4	5	6
Color	Blue	Orange	Green	Brown	Slate	White
No.	7	8	9	10	11	12
Color	Red	Black	Yellow	Violet	Rose	Aqua

3.3 Cable sheath marking

3.3.1 Marking legend²

201X SAMSUNG Sky Tel Fig.8 48F 6Fiber G652D = XXXX M =

- 201X : Manufacturing year (For example: 2011)
- SAMSUNG : Manufacturer name
- Fig. 8 : Cable type (Aerial Cable)
- XX : Number of optical fiber
- XXXX : The figure of meter
- The marking is printed every 1 meter

3.3.2 The color of marking is white, but if the marking is printed wrong, the golden color marking shall be printed newly on different position.

3.4 Both ends of cable are sealed with heat shrinkable end cap to prevent ingress of water.

² Outer sheath marking legend can be changed according to user's requests.



4. Cable Properties

4.1 Mechanical & Environmental properties

- 4.1.1 Cable bending radius: 15 x cable diameter (during operation)
 20 x cable diameter (during installation)
- 4.1.2 Operating temperature range : -10°C to + 70°C
 Storage/Transport temperature range : -20°C to + 70°C
 Installation temperature range : -10°C to + 70°C

4.2 Mechanical & Environmental Requirements

No	Item	Test Specification	Test Method	Specification
1	Tensile Test	IEC 60794-1-2-E1	- Load: See table in appendix 1 - Sample length: 100 meters - Time: 10 minutes	- Attenuation change: ≤ 0.1 dB at 1550nm During the test
2	Crush Resistance	IEC 60794-1-2-E3	- Load : 2,000 N - Time : 5 minute - Plate dimension: 100mmx100mm	- Attenuation change: ≤ 0.1 dB at 1550nm after the test
3	Impact test	IEC 60794-1-2-E4	- Impact Energy: 2.94J - Radius: 300 mm - Impact points: 3 - Impact times: 1	- Attenuation change: ≤ 0.1 dB at 1550nm after the test
4	Cable Bend	IEC 60794-1-2-E11	- Bend Radius: 20 x OD* - Number of Turn : 4 - Number of cycles: 10	- Attenuation change: ≤ 0.1 dB at 1550nm after the test
5	Temp. Cycling test	IEC 60794-1-2-F1	- Temperature step: +20°C \rightarrow -10°C \rightarrow +70°C \rightarrow +20°C - Time per each step: 12hrs - Number of cycles: 2 cycles	- Attenuation change: ≤ 0.1 dB/km at 1550nm
6	Water penetration	IEC 60794-1-2-F5B	- Water height: 1 m - Sample length: 3m - Duration of test: 24 hrs	- No water leakage at the end of the sample

* OD is the cable outer diameter

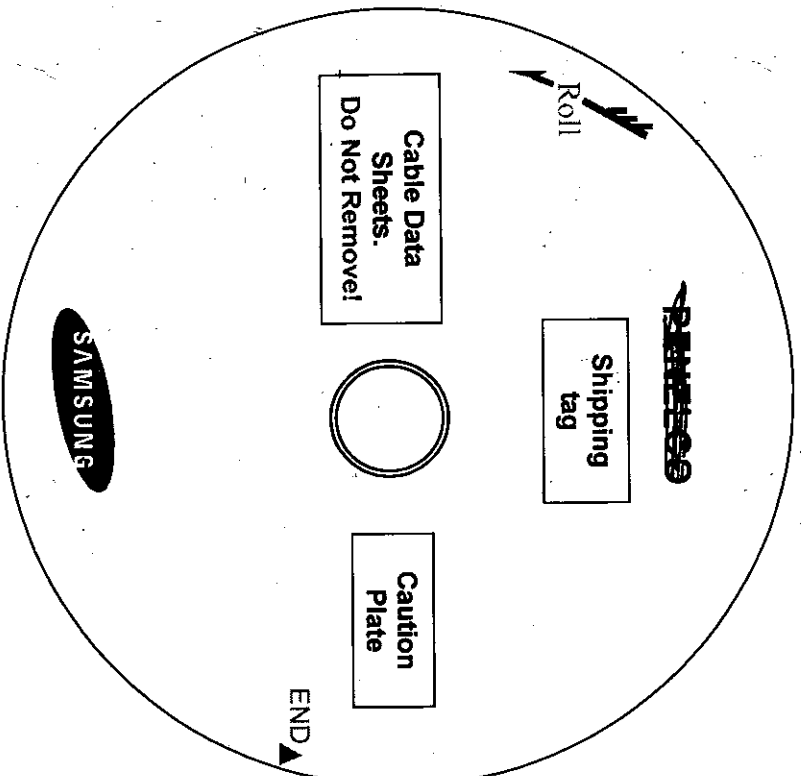
** In case of the test No. 2, 3, 4 and 6 for Fig-8 cable, specimen for testing shall be removed support strand prior testing



5. Packing and Shipping Tag

5.1 Packing

- 5.1.1 Non-returnable wooden drum
- 5.1.2 Strong wooden batten protection
- 5.1.3 Spindle hole diameter: 110 mm



< Wooden Drum >

5.2 Shipping Tag

- 5.2.1 All information which is indicated in the tag is expressed with the bar code.
- 5.2.2 Information in the tag could be changeable upon mutual agreement.
- 5.2.3 The tag is weatherproof with plastic coating.
- 5.2.4 The tag will be attached on both side of a drum.

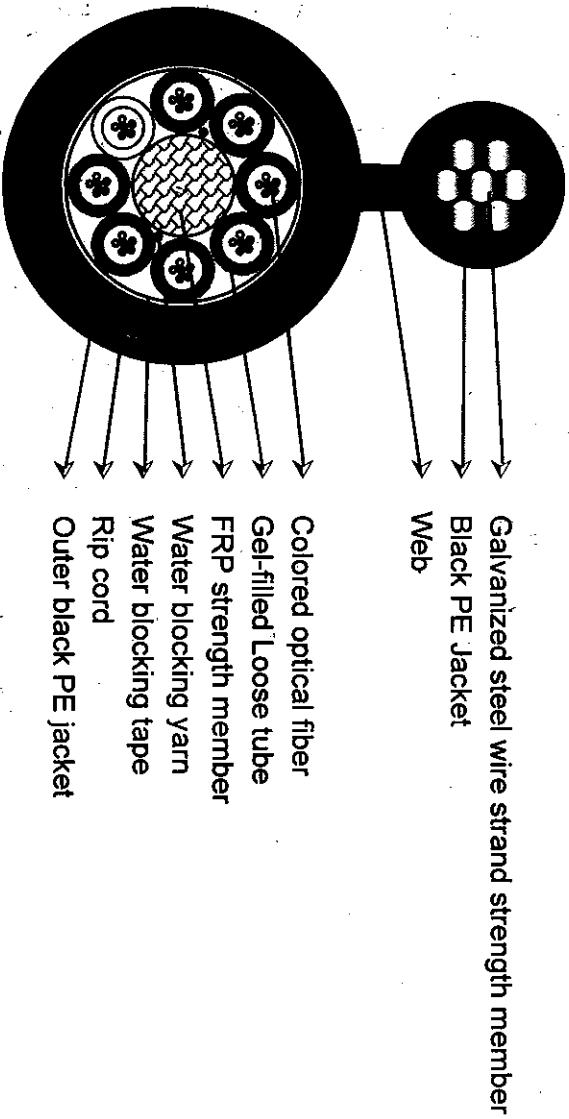
DRUM NO:		SHIP TO: DELIVERY ADDRESS	
BAR CODE			
*PO NO:	*SHIP FROM	*SITE FOR:	
BAR CODE	SAMSUNG Electronics Hainan Fiberoptics P.R.C.570218 C02-C08	ATTN:	
	Haikou Free Trade Zone, Hainan Avenue 100, Haikou City, Hainan Province, China		
*QUANTITY/DM		*ISE:	m
BAR CODE	m	*OSE:	m
		*ACT:	m
*CUSTOMER PART NO		*WEIGHT (NET/GROSS):	
BAR CODE		/	
*MANUFACTURER'S PART NO	*FO CABLE: CABLE TYPE	*KGS	
	XX F dia.	mm	

< Shipping Tag >

Appendix 1

1. Cable construction

1.1 Aerial Cable Drawing of 48 Fibers Non-Armored Figure-8 Cable



1.2 Weights and dimensions

Fiber Count	Number of Total Unit (Tube + Filler)	Number of Fibers per tube	Outer Diameter x Height (Nominal)		Weight (Nominal) kg/km	Nominal Delivery Length per Reel ³ m	Tensile Strength N
			mm				
48	8(8T + 0F)	6	10.3	18.1	180	4,000	7,000

1.3 Installation Condition:

- Max. Span length : 70m
- Initial sag : 1.0% of span length
- Worst case loading condition: Max.250km/hr Wind speed (69.4m/s), 0 ice

³ Cable delivery length can be changed under mutual agreement.

Revision History

DATE	AUTHOR	REVISION	PAGE	COMMENTS
Feb. 18, 2011	MinLi Fu	-	-	Initial Release
Feb.24, 2011	MinLi Fu	Rev.01	4 All	Revise Sheath marking content Delete ADSS and other Fig-8 cable spec.

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