

Accessories Fiber Optic Cable



PT VOKSEL ELECTRIC Tbk.



Certificate ID03/00208



Certificate ID10/1456



Certificate ID10/1457



Optical Distribution Network



INTRODUCTION

PT Voksel Electric Tbk. is committed to developing integrated cabling systems and has a complete production and operation system. PT Voksel Electric Tbk. has build up a complete optical communication industry chain, from optical cables to optic devices. PT Voksel Electric tbk. has maintain its advantage in optical cables, with a full range of products used in consumer electronics, data transmission and railway networks.

Along with the promotion of worldwide optical network cities, domestic FTTx scale construction has been started thoroughly, and the core of optical fiber network construction has been developed from the a long distance to a short distance. Therefore, operators pay more and more attention to household pipeline construction. ODN network, that is optical distribution network, is not only an important revolution for optical fiber system integration, but also an important measure for completion of all-optical network.

Rely on strong R D platform and scientific team in communication field, PT Voksel Electric Tbk. Provide integral solution and supply all-around FTTx optical fiber distribution network (ODN) product.

And PT Voksel Electric Tbk. has obtained optical cables and optical device certificates from the Laboratory Infrastructure Quality Assurance of PT. Telkom Indonesia CIQS.



OPTICAL DISTRIBUTION POLE

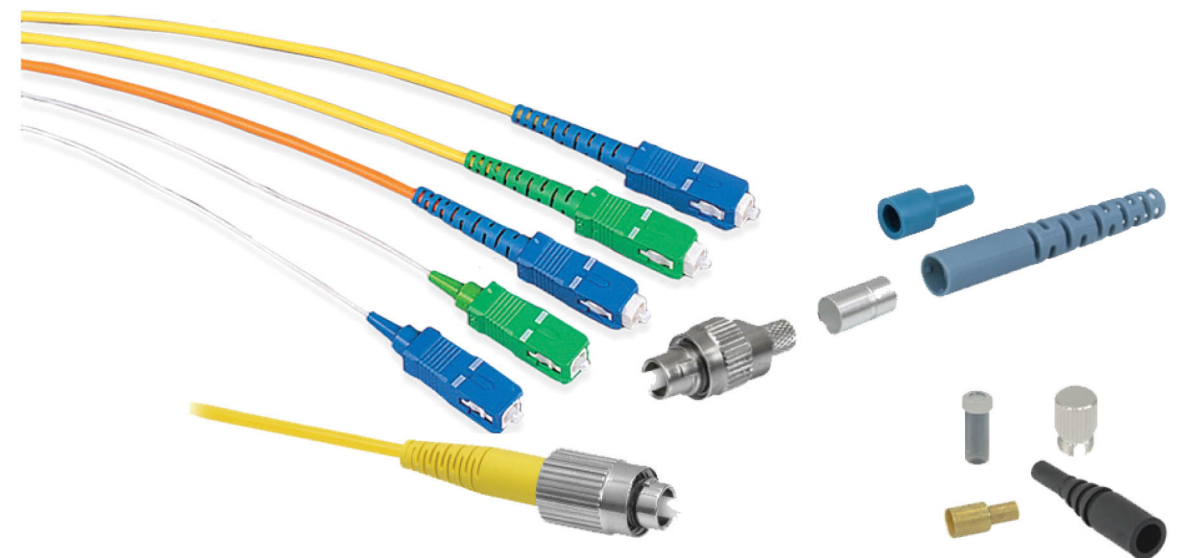


Standard Specification STEL L-057-2012 Ver. 1.1

ODP Pole		
Cabinet main body material	PC + ABS	
Item	Capacity	Remark
	ODP Pole/Outdoor wall	
Using Area	Outdoor	
Configuration	Pole/Outdoor wall	Accessories for wall mount
Number of cable entry	Input 2, Output for drop 16	
Number of splitter	Max 16	Input port splice
Number of SC Adapter	Max 16	
Dimension (mm)	H320xW240xD100	Approximate
Weight	2 kg	Approximate
Item Number	Description	
	ODP Kap. 8-1	
	ODP Kap. 8-2	
	ODP Kap. 16-1	
	ODP Kap. 16-2	

ODP adalah perangkat terminasi sebagai titik koneksi antara kabel distribusi optik dan kabel drop optik ke pelanggan, yang ditempatkan di tiang (pole), berbentuk kotak dan dilengkapi dengan splitter

PATCHCORD



Standard Specification STEL K060-2013 Ver1.1

Tipe Konektor	LC, SC, ST, FC, MU, MPO, SC / APC, FC / APC, LC / APC
jenis Serat	9 / 125um (Single mode) 50 / 125um, 62.25 / 125um (Multi-mode)
Tipe Kabel	Simplex, Duplex (Kabel Zip) Φ 3.0 mm, Φ 2.0 mm, Φ 1.8 mm, Φ 1.6 mm PVC atau LSZH Φ 0.9 mm, 0.6 mm buffered fiber PVC atau LSZH
Insertion Loss	= 0.1dB (Untuk Master Mode Tunggal); = 0.25dB (Untuk Master Mode Tunggal); = 0.25dB (Untuk Multi Mode); Diuji oleh JDS RM 3750
Return Loss	UPC = 50dB SPC = 55db APC = 60dB
Suhu Operasional	-40 °C sampai 85 °C

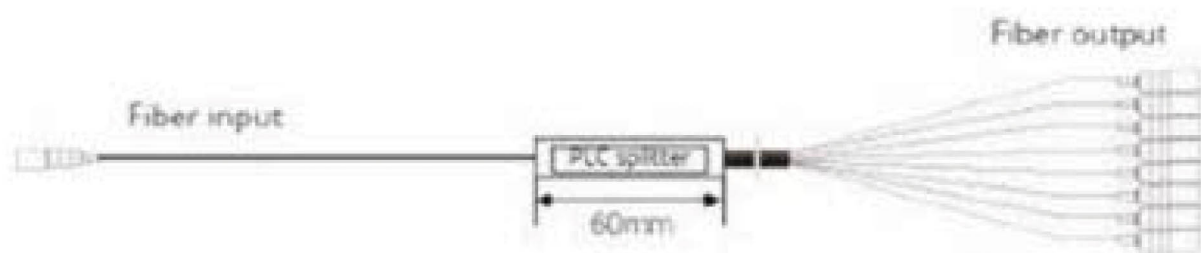
Patch cord adalah kabel fiber optic yang pada dua sisi ada konektor. Patch cord digunakan untuk menghubungkan device atau dikenal juga dengan optic jumper.

SPLITTER



Standard Specification STEL L-047-2008 Ver. 1.0

Parameter	1 x 2	1 x 4	1 x 8	1 x 16	1 x 32	1 x 64	1 x 128
Operasi Panjang Gelombang (nm)	1260 ~ 1650						
Fiber Jenis	G657A1 atau pelanggan tertentu						
Penyisipan Rugi (dB) (P/S Grade)	3.8 / 4.0	7.2 / 7.4	10.3 / 10.7	13.5 / 13.7	16.5 / 16.9	20.5 / 21.0	23.8 / 24.2
Rugi Keceragaman (dB)	0.4	0.6	0.8	1	1.5	2	2.5
Polarisasi Dependent Rugi (dB)	0.1	0.1	0.1	0.2	0.25	0.3	0.4
Kembali Rugi (dB) (P/S Grade)	55/50	55/50	55/50	55/50	55/50	55/50	55/50
Directivity (dB)	55	55	55	55	55	55	55
Panjang Gelombang Dependent Rugi (dB)	0.3	0.3	0.3	0.3	0.5	0.5	0.5
Stabilitas Suhu (-40~85 °C) (dB)	0.4	0.4	0.4	0.5	0.5	0.5	0.5
Suhu Operasional (°C)	40~80						
Suhu Penyimpanan (°C)	40~85						
Perangkat Dimensi (mm)	40x4x4	40x4x4	40x4x4	50x7x4	50x7x4	60x12x4	N/A
Modul Dimensi (mm)	100x80x10			120x80x18	141x115x18		
Mini- Modul Dimensi (mm)	60x4x4	60x7x4	60x7x4	60x12x4	80x20x6	100x40x6	N/A



Splitter merupakan komponen pasif yang dapat memisahkan daya optik dari satu input serat ke dua atau beberapa output serat

PRE-CONNECTORIZED



Standard Specification STEL K040-2015 Ver1.0

Aerial Drop cable Construction

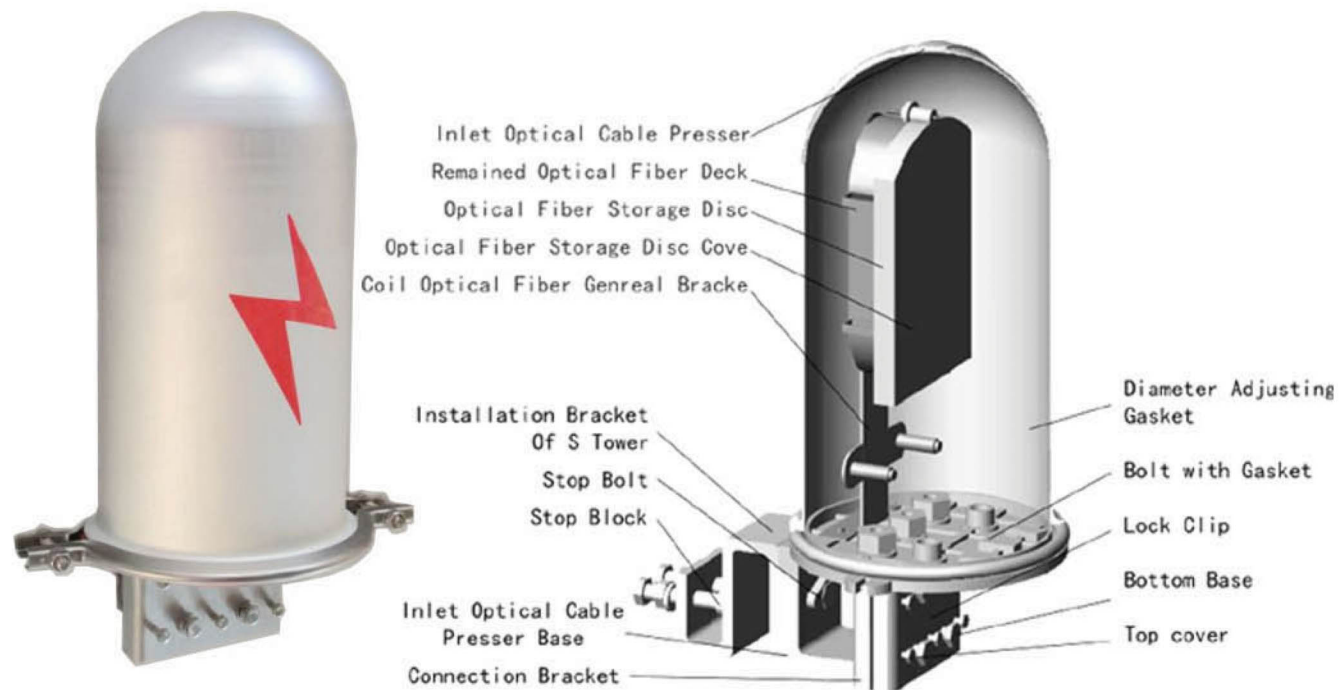
Characteristic	Propose
Number of Fiber	Core
Central Strength Member	
- Material	Glass Reinforced Plastic
- No of Strength Member	2 pcs
- Diameter	0.5 mm
Messenger Wire	
- Material	Steel Wire
- No of Strength Member	1
- Diameter Strength Member	1.2 ± 0.1 mm
- Zinc coating	20 g/m ²
- Elongation	2.00%
- Tensile Strength	1450 Mpa
Outer sheath	
- Material	LSZH/LSOH Sheath
Cable Outer dimension	
- Width (Nominal)	2 - 2.5 mm
- Height (Nominal)	5 - 5.5 mm
12. Length marking	Shall be held within a limit of ± 1%
13. Identification	Voksel-2015 2 Core G.657.A DROP KABEL OPTIK
14. Packing Length (mm)	1000, 2000
21. Test result of Mechanical	
Characteristic	
- Tensile Strength	≥130 N
- Impact	Load + 0.3 Kg. H= 1 mtr
- Crush Resistance	≥1.2 KN/100 mm
- Repeated bending	± 90 °C , 25 times
- Water penetration	Cable immersed in a tub containing salt water solution
- Operating temperature / humidity range	- 10 °C ~ + 50 °C

Assembly parts Technical Requirements

Type	Bend Protector Color	Connector Case Color	Dust Cap Color
SC/ UPC	blue	blue	Translucent

Pre-connectorized Drop Cable adalah kabel serat optik penanggal atas tanah yang sudah dilengkapi dengan fabricated connector di kedua ujungnya, dikemas dalam panjang tertentu, dan digunakan untuk menyalurkan sinyal optik dari titik distribusi optik (Optical Distribution Point/ODP) ke OTP (Optical Termination Premise) di rumah pelanggan

DOME CLOSURE OPGW / ADSS



PRODUCT PARAMETER

Radius of optical cable	$\geq 47\text{mm}$
Added loss of optical cable wheel	$\leq 0.01\text{Db}$
Applicable temperature scope	$-40 \sim +80^{\circ}\text{C}$
Physical dimensions (mm)	470(H) x 200(Φ)
Length of the wheeled optical cable	$\geq 1.5\text{m}$
Max.capacity of optical cable	≤ 144 core
Anti side pressure	$\geq 2000\text{N}$
Weight	6.3 kg

Closure Dome OPGW - ADSS digunakan sebagai penyambung kabel optic dimana kegunaan nya sebagai koneksi langsung / sebagai pembagi kabel optic yang terpasang pada menara tegangan tinggi (Tower SUTT/SUTET).

OPTICAL DISTRIBUTION SOLID



Panel Distribusi Optik dengan solid splitter 8-16 core adalah pembaruan dari ODP sebelumnya, ODP tipe ini memiliki dua panel yang memisahkan area splitter dan ruang kabel, ODP ini dengan kapasitas 8 hingga 16 Drop point. ODP dengan solid splitter menggunakan SC / UPC dan SC / APC, dapat menampung 2 buah splitter 1:8 hingga 1 buah 1:16 splitter.

Spesifikasi

- Berat : 3 Kg
- Unit : 1 Set
- Dimensi : [275mm X 345mm X 75mm]

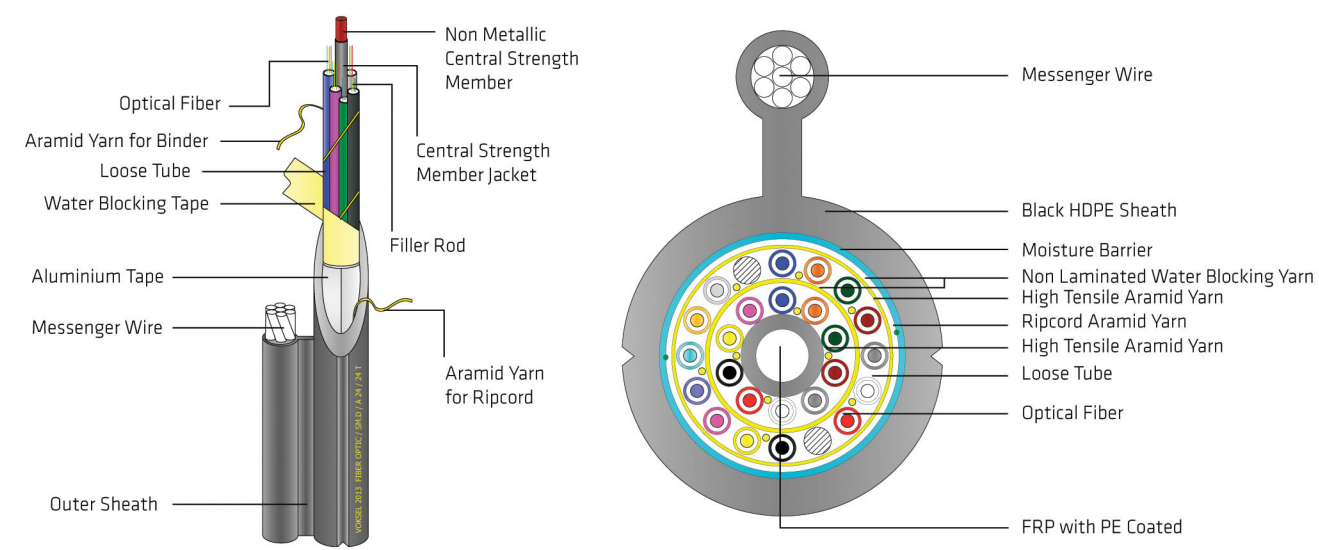
OPTICAL FIBER CABLE FOR AERIAL (SINGLE CORE PER TUBE) INSTALLATION



In fiber optic, Single Core Per Tube is one type of cable used to capture one or more optical fiber for the FTTH (Fiber to The Home) Distribution cable. With design easier to split the fiber core and connecting to termination box as well as the loose tube type is compatible in humidity temperature capacity 8 – 24 Core. There are two kind type cable FTTH (Aerial Application Cable and Duct Application Cable)

Standard Specification STEL QA – K – 036 –2012 (AERIAL)

CONSTRUCTION SINGLE CORE PER TUBE AERIAL CABLE



TYPICAL SPECIFICATION

Type Specification Single Core Per Tube Aerial

Item	Number of Fiber				
	8	10	12	18	24
Loose Tubes Number	8	10	12	18	8
Fiber Number per Loose Tube	1	1	1	1	1
Max. Cable Outer Diameter (mm)	10.6	11.6	12.5	13.5	15

Mechanical Characteristic

Fiber Count	Number of Fiber					Unit
	8	10	12	18	24	
Tensile strength	> 2850	> 2850	> 2850	> 2850	> 2850	N
Crush Resistant	≥ 2,2	≥ 2,2	≥ 2,2	≥ 2,2	≥ 2,2	KN/100mm
Max. Weight	± 185	± 200	± 210	± 215	± 240	Kg/Km
Min. Bending	20 X OD	20 X OD	20 X OD	20 X OD	20 X OD	mm
Temperature Storage : Installation : Operating :	- 40 to +70 - 30 to +60 - 40 to +70	- 40 to +70 - 30 to +60 - 40 to +70	- 40 to +70 - 30 to +60 - 40 to +70	40 to +70 - 30 to +60 - 40 to +70	40 to +70 - 30 to +60 - 40 to +70	°C

Characteristic	Value	Unit
Proof Test	1	%
Additional Loss	< 0.1	dB
Radius	30	mm
Number of Turn	100	-

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Accessories

Fiber Optic Cable



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