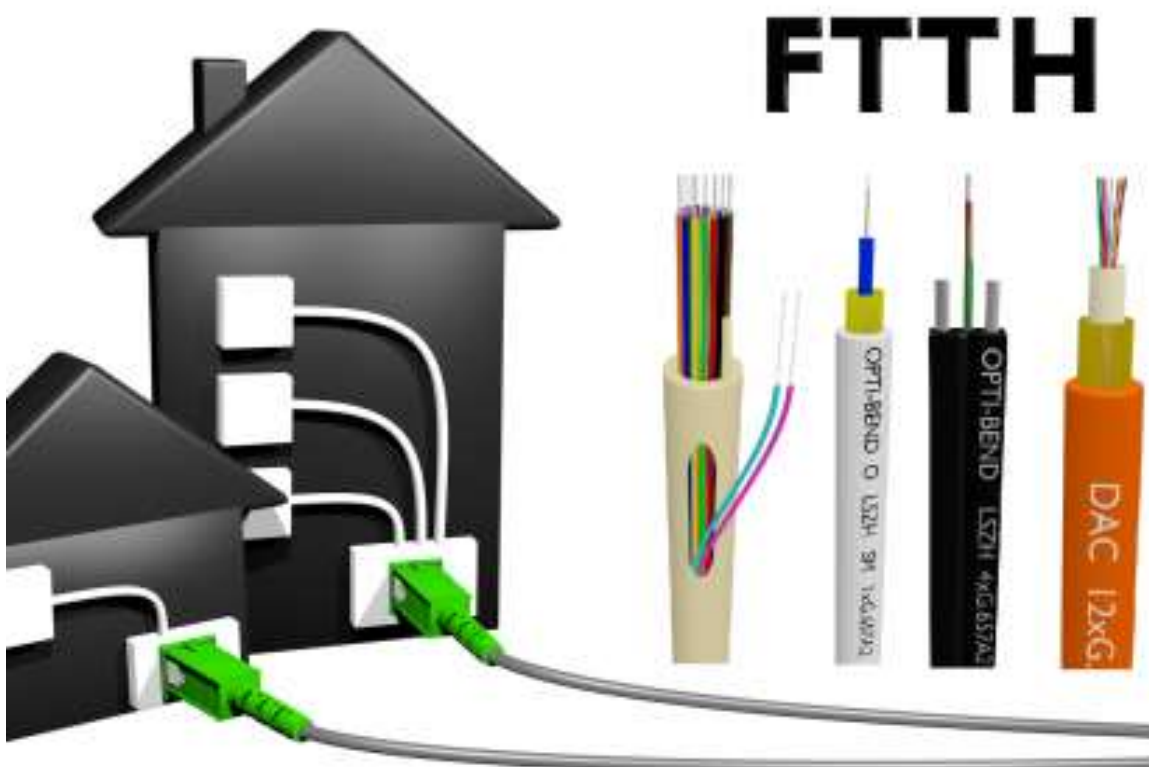


# FORTE

*Well connected*



## Products **Fiber Optic** catalogue 2022/2023



Contents	Page Number
Who we are?	3
Why Forte?	4
Fiber Optic Cables	5
Closures – Dome / inline / Mechanical	24
FTB – Fiber Termination Boxes	30
Splitters	35
Fiber Drop Box	41
Connectivity (adapters + pigtails)	43
Patch cords	48
Street Cabinets	52
ODF	55
Instruments	59
Accessories	66
FO Cleaner	67
FO Basic Tester	68
FO Advanced Tester	69
FO polish & cleaner	70
Tools	71
Copper tools and testers	72
Quality assurance	73

# WE ARE THE **!FORTE**

Founded in 2009, **!FORTE** is a global high-tech product providing high-speed communication network solutions and services to several industries. **!FORTE** Offers a variety of standard telecommunication products and is also able to customize products based on individual needs. We drive our industry by supplying efficiency, high quality, continuous innovation, and ease of access to all our customers.

Our customers are telecommunication ISP's, government entities, education centers, finance establishments, medical institutions, transportation hubs, and technology clusters. Customers are able to access all services online through their personal computer or mobile device.

## Guaranteed Quality

**!FORTE** Partners with many top-tier manufacturers who emphasize cutting edge production techniques, technology innovations, and management ability. After production, items are inspected in our state-of-the-art testing facility. Every item is tested by a skilled technician for compatibility and stability before being placed in an order. **!FORTE** Products are backed by international certifications such as ISO, ROHS, CE, FCC, and more.



## Intelligent Digital Platform

**!FORTE** Provides a vast inventory and multiple options to customize products. Each product is listed with in-depth specifications, installation guides, software, configuration protocols, behavior analysis, and frequently asked questions. Additionally, after placing an order, customers have access to order status, customization details, account preferences, and live support.



## Worry-Free Service

Ensures products will be available quickly with several methods of delivery. **!FORTE** Warehouses support next day shipping and the use of a personal shipping account. Provides a personal account manager, free professional technical support, and 24/7 live customer service to each customer.



# WHY **!FORTE**

## Find out how we assure our product quality

With strict supplier evaluation and selection, and our constant investing into the improvement and upgrading of our facilities and equipment, **!FORTE** always assures top-notch products that qualified by a great range of industry credentials.

### Strict Supplier Management

We strictly identify, select and qualify suppliers of all materials used in the product manufacture process, and we are partnered with those famous companies of the industry, to ensure product performance for you to stay competitive in business.

### Professional Testing Facilities and Process

All the products are tested based on real application scenarios in our testing center that equipped with state-of-the-art facilities. We will continue to invest in product R&D, equipment and our team to ensure we are providing the best products.

### Accreditation Programs

Our products are accredited with industry certifications such as ISO 9001:2015, RoHS, CE, FCC, REACH, CB, FDA and other international QM certificates for quality management.

### We are here to provide you worry-free services

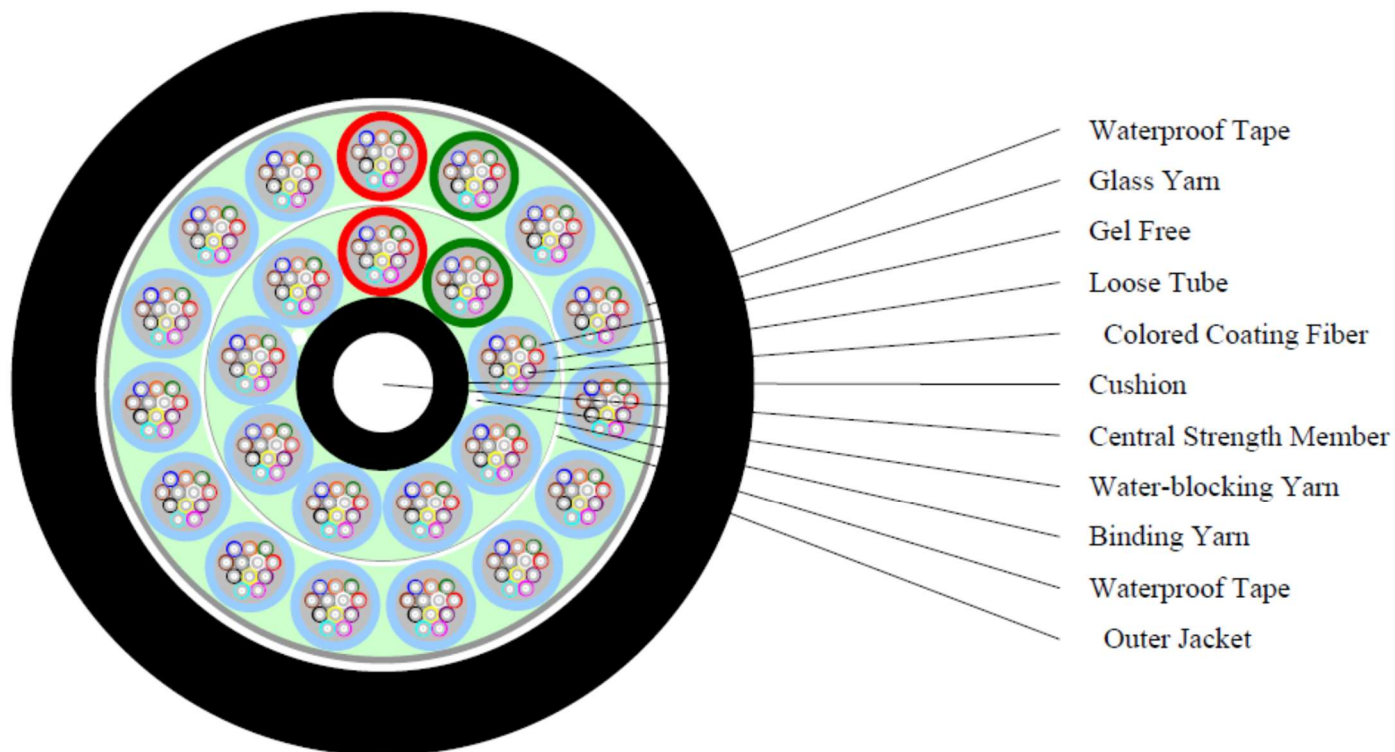
The combination of fast delivery, professional technical support and one-on-one quick response showcases the **!FORTE** commitment to excellent services.



## Fiber Optic Cables



## Duct Cables 12/24/48/96/144/288 –cores



### Fiber Parameters

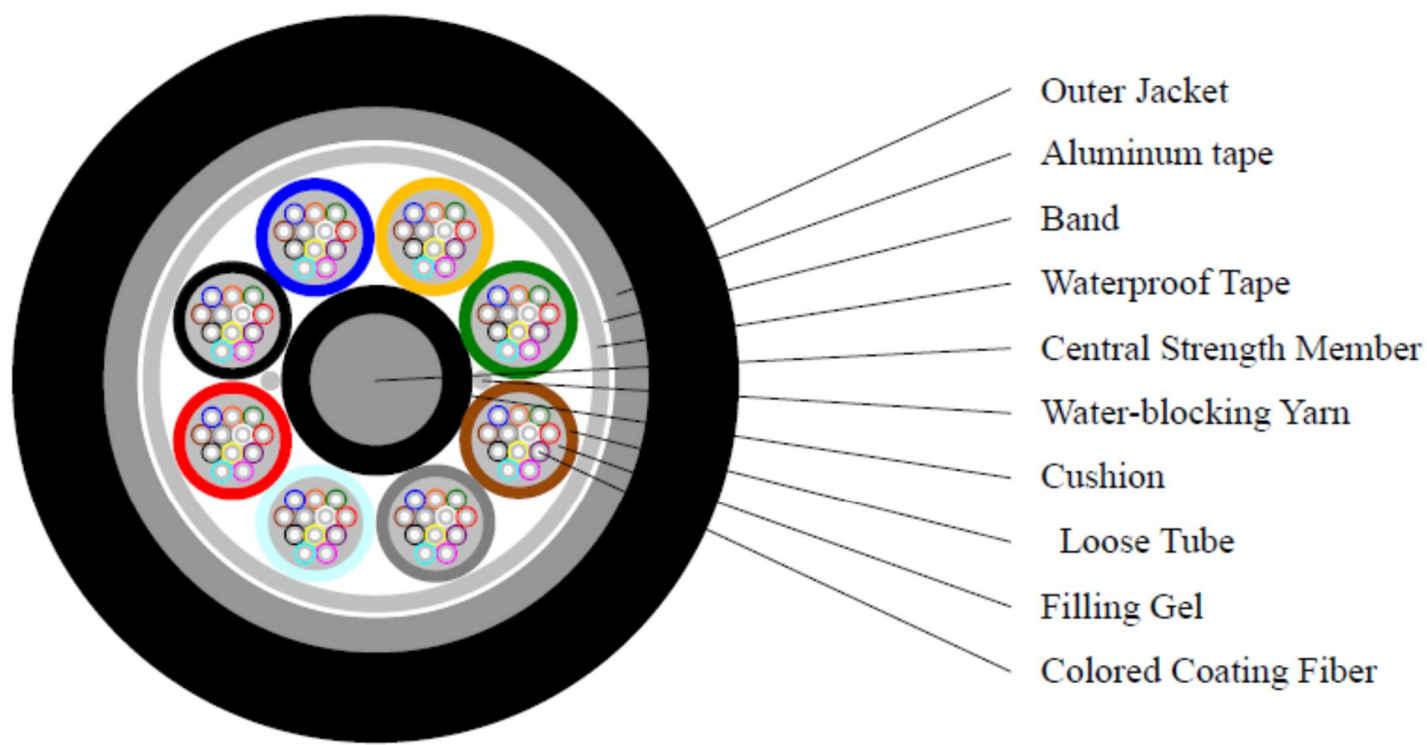
No.	Items		Unit	Specification
				G.652D
1	Mode Field Diameter	1310nm	μm	9.2±0.4
		1550nm	μm	10.4±0.5
2	Cladding Diameter		μm	124.8±0.7
3	Cladding Non-Circularity		%	≤0.7
4	Core-Cladding Concentricity Error		μm	≤0.5
5	Coating Diameter		μm	245±5
6	Coating Non-Circularity		%	≤6.0
7	Cladding-Coating Concentricity Error		μm	≤12.0
8	Cable Cutoff Wavelength		nm	$\lambda_{cc} \leq 1260$
9	Attenuation(max.)	1310nm	dB/km	≤0.36
		1550nm	dB/km	≤0.25

Colored Coating Fiber	Dimension	250μm±15μm
	Color	Blue、Orange、Green、Brown、 Grey、Natural、Red、Black、 Yellow、Purple、Pink、Aqua
Loose Tube	Dimension	1.95mm±0.05mm
	Material	PBT
	Color	Inner(Red、Green、Natural、Natural、 Natural、Natural、Natural、Natural、Natural) Outer (Red、Green、Natural、Natural、Natural、Natural、 Natural、Natural、Natural、Natural、Natural、Natural、 Natural、Natural、Natural、Natural)
Central Strength Member	Diameter	2.0mm
	Material	FRP
Cushion	Dimension	3.8mm±0.1mm
	Material	LSZH
	Color	Black
Outer Jacket	Dimension	16.5mm±0.5mm
	Material	LSZH
	Color	Black

## Mechanical and Environmental Characteristics

Items	Unite	Specifications
Tension (Long Term)	N	600
Tension (Short Term)	N	1500
Crush (Long Term)	N/10cm	300
Crush (Short Term)	N/10cm	1000
Min. Bend Radius (Dynamic)	mm	20D
Min. Bend Radius (Static)	mm	10D
Installation Temperature	□	-20～+60
Operating Temperature	□	-40～+70
Storage Temperature	□	-40～+70

## Duct Cables –Armored- 12/24/48/96/144/288 –cores



### Fiber Parameters

No.	Items		Unit	Specification
				G.652D
1	Mode Field Diameter	1310nm	μm	9.2±0.4
		1550nm	μm	10.4±0.5
2	Cladding Diameter		μm	124.8±0.7
3	Cladding Non-Circularity		%	≤0.7
4	Core-Cladding Concentricity Error		μm	≤0.5
5	Coating Diameter		μm	245±5
6	Coating Non-Circularity		%	≤6.0
7	Cladding-Coating Concentricity Error		μm	≤12.0
8	Cable Cutoff Wavelength		nm	$\lambda_{cc} \leq 1260$
9	Attenuation(max.)	1310nm	dB/km	≤0.36
		1550nm	dB/km	≤0.22

## Cable Parameters

Items		Specifications
Fiber Count		96 or 48
Colored Coating Fiber	Dimension	250μm±15μm
	Color	Blue、Orange、Green、Brown、Grey、本 Natural、Red、Black、Yellow、Purple、Pink、Aqua
Loose Tube	Dimension	2.15mm±0.1mm
	Material	PBT
	Color	Blue、Orange、Green、Brown、Grey、Natural、Red、Black、

Central Strength Member	Diameter	3.6mm
	Material	FRP
Outer Jacket	Dimension	13.3mm±0.3mm
	Material	HDPE
	Color	Black

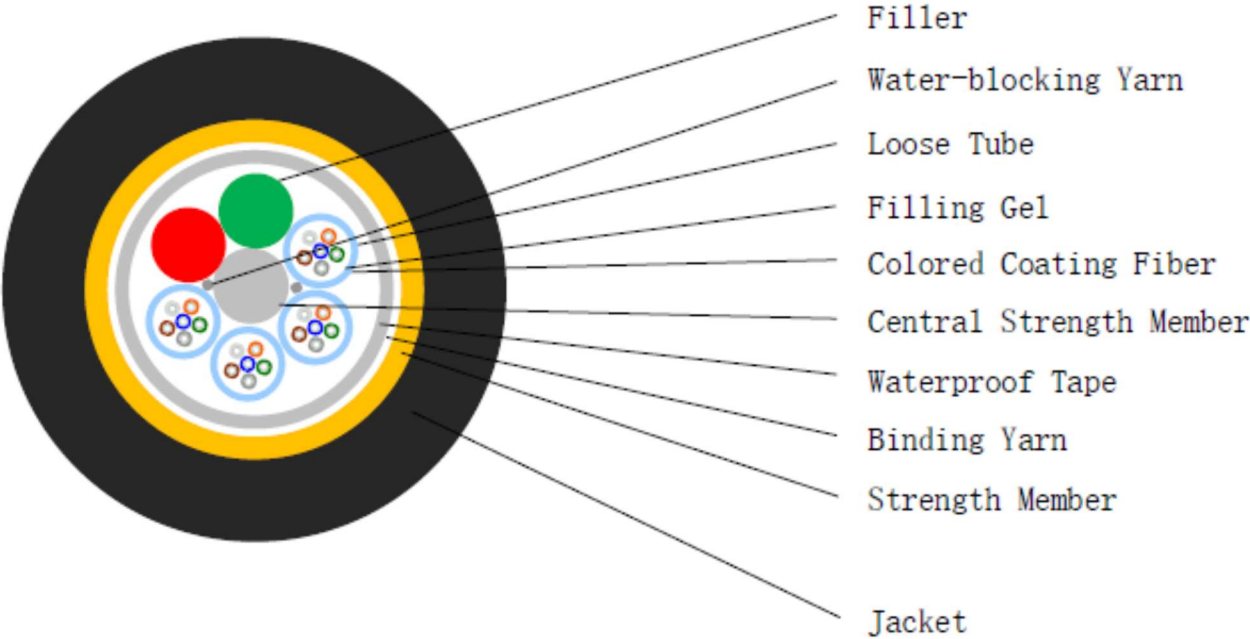
## Mechanical and Environmental Characteristics

Items	Unite	Specifications
Tension (Long Term)	N	1500
Tension (Short Term)	N	3000
Crush (Long Term)	N/10cm	1000
Crush (Short Term)	N/10cm	2000
Min. Bend Radius (Dynamic)	mm	20D
Min. Bend Radius (Static)	mm	10D
Installation Temperature	°C	-20~+60
Operating Temperature	°C	-40~+70
Storage Temperature	°C	-40~+70



# Aerial Cables (ADSS) - 12/24/48/96/144/288 –cores & its accessories

ADSS Aerial dry core loose tube Self supporting aerial or duct installation.



Fiber Parameters

No.	Items		Unit	Specification
				G.652D
1	Mode Field Diameter	1310nm	μm	9.2±0.4
		1550nm	μm	10.4±0.5
2	Cladding Diameter		μm	124.8±0.7
3	Cladding Non-Circularity		%	≤0.7
4	Core-Cladding Concentricity Error		μm	≤0.5
5	Coating Diameter		μm	245±5
6	Coating Non-Circularity		%	≤6.0
7	Cladding-Coating Concentricity Error		μm	≤12.0
8	Cable Cutoff Wavelength		nm	λ <sub>cc</sub> ≤1260
9	Attenuation(max.)	1310nm	dB/km	≤0.36
		1550nm	dB/km	≤0.25



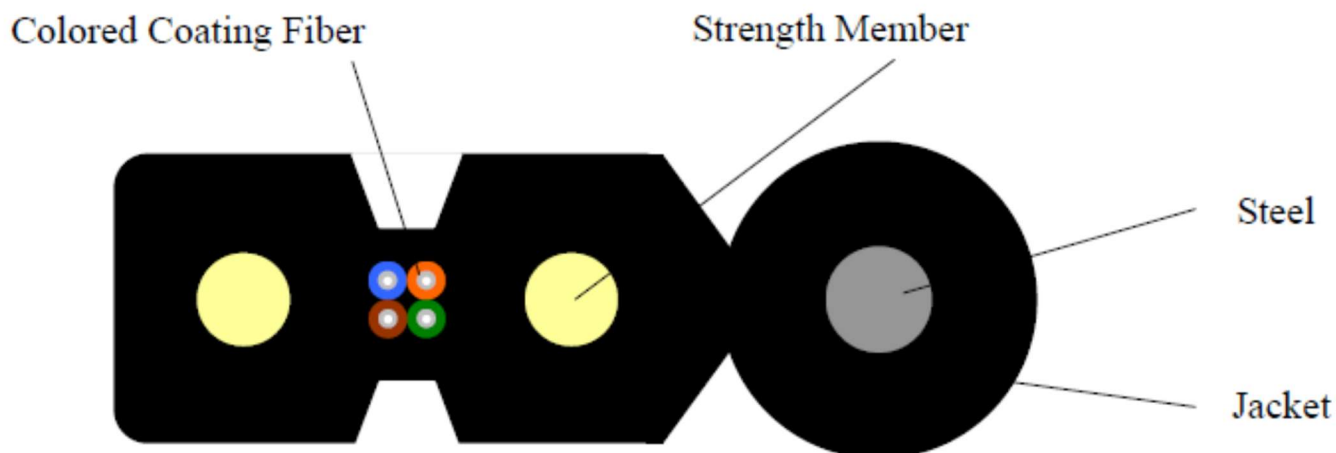
## Cable Parameters

Items		Specifications
Fiber Count		12/24/48
Colored Coating Fiber	Dimension	250μm±15μm
	Color	24*: 蓝 Blue、橙 Orange、绿 Green、棕 Brown、 灰 Grey、白 White 48*: 蓝 Blue、橙 Orange、绿 Green、棕 Brown、 灰 Grey、白 White 、红 Red、黑 Black
Loose Tube	Dimension	2.0mm±0.05mm
	Material	PBT
	Color	24*: 本 Natural、本 Natural、本 Natural、本 Natural 48*: 红 Red、绿 Green、本 Natural、本 Natural、 本 Natural、本 Natural
Filler	Dimension	2.0mm±0.05mm
	Material	PP
	Color	24*: 红 Red、绿 Green
Central Strength Member	Diameter	2.0mm
	Material	FRP
Strength Member	Material	Aramid Yarn
Outer Jacket	Dimension	10.0mm±0.4mm
	Material	PE
	Color	Black

## Mechanical and Environmental Characteristics

Items	Unite	Specifications
RTS	N	6000
MAT	N	2400
EDS	N	1500
Crush (Long Term)	N/10cm	300
Crush (Short Term)	N/10cm	1000
Min. Bend Radius (Dynamic)	mm	25D
Min. Bend Radius (Static)	mm	12.5D
Installation Temperature	°C	-20~+60
Operating Temperature	°C	-40~+70
Storage Temperature	°C	-40~+70

## ADSS –self supporting covered drop cable



### Fiber Parameters

No.	Items		Unit	Specification
				G.657A1
1	Mode Field Diameter	1310nm	$\mu\text{m}$	$8.6 \pm 0.4$
		1550nm		$9.8 \pm 0.5$
2	Cladding Diameter		$\mu\text{m}$	$125.0 \pm 0.7$
3	Cladding Non-Circularity		%	$\leq 0.7$
4	Core-Cladding Concentricity Error		$\mu\text{m}$	$\leq 0.5$
5	Coating Diameter		$\mu\text{m}$	$242 \pm 5$
6	Coating Non-Circularity		%	$\leq 6.0$
7	Cladding-Coating Concentricity Error		$\mu\text{m}$	$< 12.0$
8	Cable Cutoff Wavelength		nm	$\lambda_{cc} \leq 1260$
9	Attenuation(max.)	1310nm	dB/km	$\leq 0.35$
		1550nm		$\leq 0.20$
10	Macro-Bending Loss	1turn $\times$ 10mm radius @1550nm	dB	$\leq 0.5$
		1turn $\times$ 10mm radius @1625nm	dB	$\leq 1.5$

## Cable Parameters

Items		Specifications
Fiber Count		4
Colored Coating Fiber	Dimension	250±15μm
	Color	Blue,Orange,Green & Brown
Strength Member	Dimension	0.45mm
	Material	steel
Self-Supporting Member	Dimension	1.2mm
	Material	Steel
Jacket	Dimension	5.2±0.2mm×2.1±0.1mm
	Material	LSZH
	Color	Black

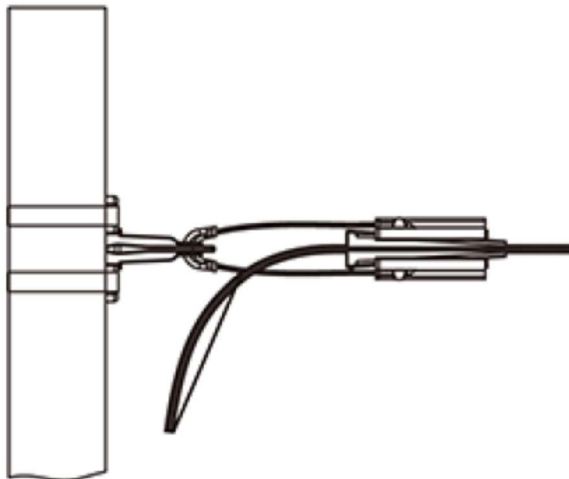
## Mechanical and Environmental Characteristics

Items	Unite	Specifications
Tension (Long Term)	N	300
Tension (Short Term)	N	600
Crush (Long Term)	N/10cm	1000
Crush (Short Term)	N/10cm	2200
Min. Bend Radius (Dynamic)	mm	20D
Min. Bend Radius (Static)	mm	10D
Installation Temperature	°C	-20~+60
Operating Temperature	°C	-40~+70
Storage Temperature	°C	-40~+70



## ADSS Accessories

Anchor  
brackets



### Product information:

The universal bracket YK-01 is made from galvanized steel by cold stamping production method. Also called FTTH hook (pole bracket for FTTH).

Can be attached on wooden, metal, concrete poles or buildings by stainless steel strap or bolts. Galvanized materials guarantee long time of usage. Fixed by stainless steel band (20-10 mm) or 4 bolts up to 4 mm diameter.

Optical fiber fixation hook apply with tension installing on dead end route. Fiber optic bracket YK-01 allows withstand with small load with anchor clamp. Usually applied for anchoring FTTH cable, drop wire of different diameters and spans.

Dead-end  
clamp



### Product information:

Drop wire clamps, also called flat cable clamps, can be used with telephone drop wire cable, and optical fiber cable in FTTH, FTTX, FTTB solutions.

Drop tension clamp is equipped with perforated shim, which increase the tension load on drop wire.

The stainless steel wire bail allows installations of ODWAC drop wire clamps on the buildings, poles, strand with drive hooks, pole brackets, SS hooks and other drop wire fittings and hardware. That can be supplied either separately or together as assembly with FTTH-CLAMP.

Drop wire anchoring clamps and drop wire mounting fittings are available in R&M product range. Optical fiber drop wire clamps are easily to be pick up according to mechanical resistance and diameter of cables' wire of messenger.

Tension clamp



**Product information:**

The ADSS tension clamp consists of self-adjusting plastic wedges, which clamp the optical cable without damaging. Wide range of gripping capacities archived by different types of wedges ADSS anchor clamp. The stainless steel bail allows installations of clamps on a pole brackets or hooks at seaside areas. ADSS tension available either separately or together as assembly with ADSS FO cable brackets and stainless steel band. Materials: stainless steel bail, fiberglass reinforced, UV resistant Plastic. Analogs: ACADSS8, ACADSS10, ACADSS12, ACADSS14, ACADSS16, ACADSS18, PA 69 200

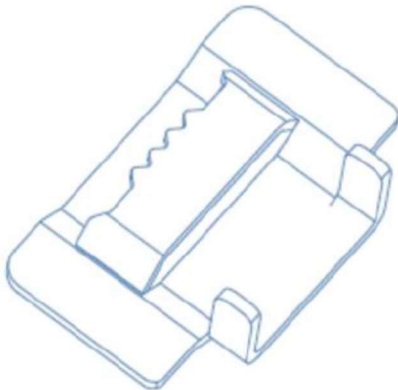
Stainless-steel straps



**Product information:**

The stainless steel banding can guarantee extended service life; and attaching under significant mechanical loads. Minimal breaking load is also different depends on the grade of steel. Stainless steel straps are available in different sizes to assist your strapping needs of securing with heavy loads.

Stainless-steel buckle



**Product information:**

Stainless Steel buckles, other called stainless steel clips, used to attach pole fittings, anchor clamps, suspension fittings and other fittings or accessories together with stainless steel band. The areas of usage of reinforced buckles are passive optical networks, marine and railway transportation, enclosure mounting, pole fastening, mining, oil and gas industries, pole hardware, road signs, traffic signals, underground cables, emergency labels, power line poles, telecommunications, brake line LV ABC cable fittings, fiber optic cable accessories, fiber optic splice closures, dead-end guy grips etc. can be installed



PCS bracket



Suspension clamp



by buckle HC-20-T with stainless steel bandings

Stainless steel buckle LC has max size for band – 20 mm and appropriate for insertion of three coils of band strapping

**Product information:**

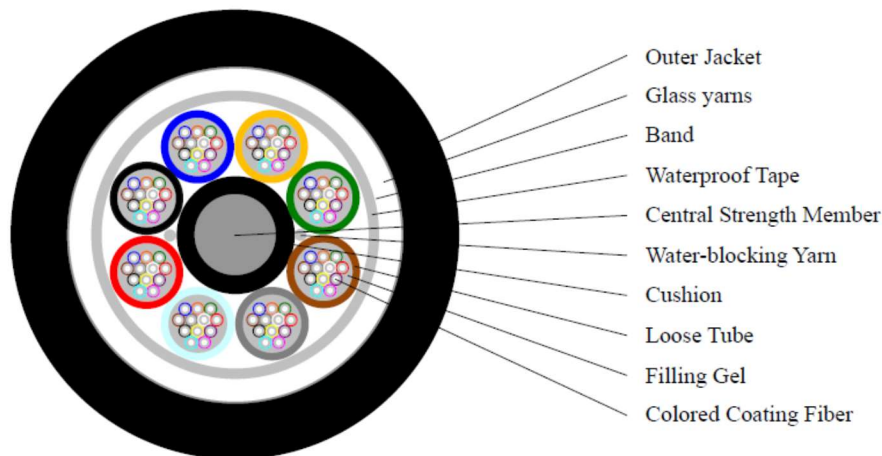
The universal bracket UPB is made from aluminum by the die casting technology. The installation can be proceed on the poles of walls, wooden, metal concrete material made, by using stainless steel band or bolts. Stainless steel materials guarantee long time of usage. Fixed to the pole by 2 stainless steel band (20 mm) or 1 bolts 14, 16 mm diameter. The bracket apply with tension and suspension clamps installing on different routes and angles. Provide the principal of all in one device, by offering up to 5 clamping points.

Fiber optic bracket UPB's design allows withstand a sufficient load without anchor clamp slip or break.

**Product information:**

Suspension clamps HC designed to suspend ADSS round optical fiber cable during construction of transmission line. The clamp consists of plastic insert, which clamp the optical cable without damaging. A wide range of gripping capacities and mechanical resistance archived by wide product range, with different sizes of neoprene inserts. The metal hook of HC suspension clamp allows installation on the pole by using stainless steel band and pigtail hook or brackets. The hook of ADSS clamp can be produced form stainless steel materials according to you request.

## Blown Fiber Cables



### Fiber Parameters

No.	Items		Unit	Specification
				G.652D
1	Mode Field Diameter	1310nm	μm	9.2±0.4
		1550nm	μm	10.4±0.5
2	Cladding Diameter		μm	124.8±0.7
3	Cladding Non-Circularity		%	≤0.7
4	Core-Cladding Concentricity Error		μm	≤0.5
5	Coating Diameter		μm	245±5
6	Coating Non-Circularity		%	≤6.0
7	Cladding-Coating Concentricity Error		μm	≤12.0
8	Cable Cutoff Wavelength		nm	$\lambda_{cc} \leq 1260$
9	Attenuation(max.)	1310nm	dB/km	≤0.36
		1550nm	dB/km	≤0.22

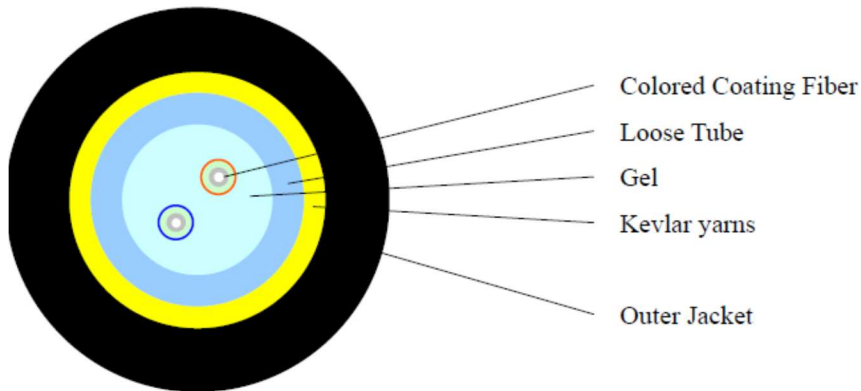
## Cable Parameters

Items		Specifications
Fiber Count		96
Colored Coating Fiber	Dimension	250μm±15μm
	Color	Blue、Orange、Green、Brown、Grey、Natural、Red、Black、Yellow、Purple、Pink、Aqua
Loose Tube	Dimension	2.15mm±0.1mm
	Material	PBT
	Color	Blue、Orange、Green、Brown、Grey、Natural、Red、Black、
Central Strength Member	Diameter	3.6mm
	Material	2.5mmFRP+PE
Outer Jacket	Dimension	12.8mm±0.3mm
	Material	HDPE
	Color	Black

## Mechanical and Environmental Characteristics

Items	Unite	Specifications
Tension (Long Term)	N	1500
Tension (Short Term)	N	3000
Crush (Long Term)	N/10cm	1000
Crush (Short Term)	N/10cm	2000
Min. Bend Radius (Dynamic)	mm	20D
Min. Bend Radius (Static)	mm	10D
安装温度 Installation Temperature	°C	-20~+60
工作温度 Operating Temperature	°C	-40~+70
储存温度 Storage Temperature	°C	-40~+70

## Blown Fiber Cables – 2/4 cores



### Fiber Parameters

No.	Items		Unit	Specification
				G.657A2
1	Mode Field Diameter	1310nm	$\mu\text{m}$	$8.8 \pm 0.4$
		1550nm	$\mu\text{m}$	$9.8 \pm 0.5$
2	Cladding Diameter		$\mu\text{m}$	$124.8 \pm 0.7$
3	Cladding Non-Circularity		%	$\leq 0.7$
4	Core-Cladding Concentricity Error		$\mu\text{m}$	$\leq 0.5$
5	Coating Diameter		$\mu\text{m}$	$245 \pm 5$
6	Coating Non-Circularity		%	$\leq 6.0$
7	Cladding-Coating Concentricity Error		$\mu\text{m}$	$\leq 12.0$
8	Cable Cutoff Wavelength		nm	$\lambda_{cc} \leq 1260$
9	Attenuation(max.)	1310nm	dB/km	$\leq 0.4$
		1550nm	dB/km	$\leq 0.3$
10	Macro-Bending Loss	1turn $\times$ 7.5mm radius @1550nm	dB	$\leq 0.5$
		1turn $\times$ 7.5mm radius @1625nm	dB	$\leq 1.0$

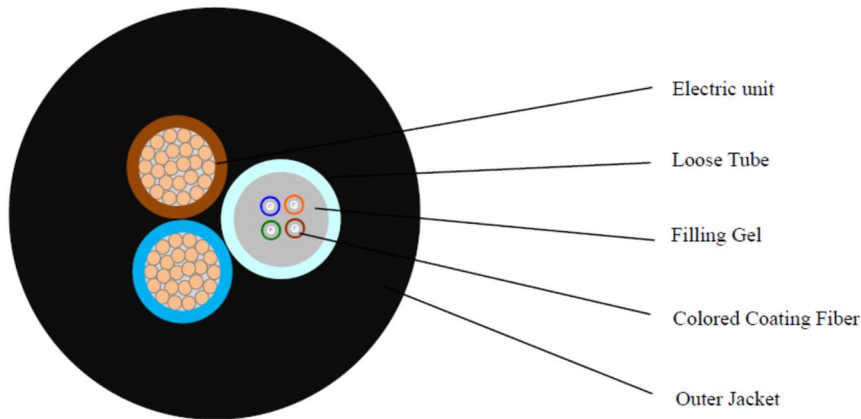
## Cable Parameters

Items		Specifications
Fiber Count		2
Colored Coating Fiber	Dimension	250μm±15μm
	Color	Blue、Orange
Loose Tube	Dimension	1.8mm±0.05mm
	Material	PBT
	Color	Natural
Outer Jacket	Dimension	2.3mm±0.2mm
	Material	HDPE
	Color	Black

## Mechanical and Environmental Characteristics

Items	Unite	Specifications
Tension (Long Term)	N	100
Tension (Short Term)	N	200
Crush (Long Term)	N/10cm	100
Crush (Short Term)	N/10cm	200
Min. Bend Radius (Dynamic)	mm	20D
Min. Bend Radius (Static)	mm	10D
Installation Temperature	°C	-20~+60
Operating Temperature	°C	-40~+70
Storage Temperature	°C	-40~+70

## Hybrid Cables 2 /4 cores SM fiber+1pair electrical (hybrid) cables



### Fiber Parameters

No.	Items		Unit	Specification
				G.652D
1	Mode Field Diameter	1310nm	μm	9.2±0.4
		1550nm	μm	10.4±0.5
2	Cladding Diameter		μm	124.8±0.7
3	Cladding Non-Circularity		%	≤0.7
4	Core-Cladding Concentricity Error		μm	≤0.5
5	Coating Diameter		μm	245±5
6	Coating Non-Circularity		%	≤6.0
7	Cladding-Coating Concentricity Error		μm	≤12.0
8	Cable Cutoff Wavelength		nm	$\lambda_{cc} \leq 1260$
9	Attenuation(max.)	1310nm	dB/km	≤0.36
		1550nm	dB/km	≤0.22



## Cable Parameters

Items		Specifications
Fiber Count		4
Colored Coating Fiber	Dimension	250μm±15μm
	Color	蓝 Blue、橙 Orange、绿 Green、棕 Brown
Loose Tube	Dimension	1.8mm±0.1mm
	Thickness	0.3±0.05mm
Electrical unit	Model	2*BV1.5mm <sup>2</sup>
Outer Jacket	Dimension	6.5mm±0.3mm
	Thickness	1.4mm±0.2mm
	Material	PE
	Color	Black

## Mechanical and Environmental Characteristics

Items	Unite	Specifications
Tension (Long Term)	N	500
Tension (Short Term)	N	1000
Crush (Long Term)	N/10cm	300
Crush (Short Term)	N/10cm	1000
Min. Bend Radius (Dynamic)	mm	20D
Min. Bend Radius (Static)	mm	10D
Installation Temperature	°C	-10~+50
Operating Temperature	°C	-20~+60
Storage Temperature	°C	-20~+60

# Closures



# Dome Closures – up to 288 splices –Mechanical.

## Specification:

- Designed based on the FTTH applications
- Dome material can resist corrosion and aging and also provide ultra-violet protection.
- Support single & ribbon fiber optic cables.
- Base-to-dome seals on enclosure are heat-shrinkable for ease of installation;
- Compatible with most cable construction: loose tube, central core, slotted core, modular;
- High stable and reliability performance.
- Be used for underground, manhole, hand hole, pole mount, wall mount and aerial applications.

## Parameter:

- Closure Dimensions : 470mm\*Φ235mm
- Closure body materials: Molded plastic ( high strength plastic alloy)
- Cable ports : 1 in 4 out.
- Main cable diameter: D9~16mm, Distribution cable diameter: D5~11mm
- Closure Capacity: 96 cores for single fiber
- Tray capacity: 24 cores for single fusion
- Number of trays : 4 trays and 6 trays
- Fiber bending radius:  $\geq 37.5$  mm, Supporting single and ribbon fiber
- Standards compliance: ITU-T L13 2003, YD/T 814, I-2004, RoHS 2002/95/EC and 2011/65/EU
- Protection degree: IP68

## Features

- May be used for cut, uncut and taut sheath applications.  
May be used for all fiber optic cable.
- Sheath retention & central strength member fasten system included.
- Closure construction and lightweight plastic provides strength and resistance to chemical and U.V attack
- Installation and reentry with a minimum of tools
- All hardware are included



# Dome Closure accessories

## Mechanical Sealing Kits for Oval Port



- Oval port closing kits M2-22mm
- Up to 2 cables
- Maximum diameter of cables Ø 22 mm



## Drop Cable Sealing Kits for Round Port



- Round port closing kit M4-9mm
- Round Port Ø 30 mm
- Up to 4 drop cables
- Maximum diameter of cables Ø 9 mm



- Round port closing kit M8-6mm
- Round Port Ø 30 mm
- Up to 8 drop cables
- Maximum diameter of cables Ø 6 mm



## Cable Sealing Kits for Round Port



- Round port closing kit M9-6mm
- Round Port Ø 30 mm
- One cable entry
- Maximum diameter of cables Ø 6 mm / 8 mm / 9 mm



## In Line Closures –Horizontal type



### Specification:

- Good designed I for fiber joint;
- The main body is made of superior engineering plastic-polycarbonate materials;
- External structural components and fastening components are made of stainless steel
- with good anti-erosion and anti-aging performance;
- The entry and exit points of optical cables are equipped with airtight seals to ensure
- airtight performance;
- Suitable for laying direct and breakout splice of overhead, pipe bulletin, and underground
- pipe also protect the connector;
- With multiplexing and expansion function;

### Parameter:

- Closure Dimensions : 430mm\*190\*140mm
- Closure body materials: Molded plastic ( high strength plastic alloy)
- Cable ports : 2 in 2 out.
- Main cable diameter: D7~18mm; Distribution cable diameter: D5~11mm
- Closure Capacity: 96 cores for single fiber
- Tray capacity: 24 cores for single fusion
- Number of trays : 4trays
- Fiber bending radius:  $\geq 37.5$  mm, Supporting single and ribbon fiber
- Standards compliance: ITU-T L13 2003, YD/T 814, I-2004, RoHS 2002/95/EC and 2011/65/EU;
- Protection degree: IP68

## Un-cut Horizontal closure



### Specification:

- Designed based on the I FTTh applications;
- Fiber cable connection, distribution and drop cable applications;
- Support single & ribbon fiber optic cables;
- 2 main cables entry ports (un-cut lose tube cables are supported);
- 12 cable distribution out ports;
- High stable/scaling performance;
- Be used for underground, manhole, hand hole, pole mount, wall mount and
- aerial applications;

### Parameter:

- Closure Dimensions: 434x196x119mm
- Closure body materials: Molded plastic (high strength plastic alloy)
- Cable ports : 14 ports (2 main cable port and 12 distribution cable port) at one end\_ Additional 8 distribution cable ports on the other end.
- Main cable diameter: D9~16mm; Distribution cable diameter: D5~11mm
- Closure Capacity: 96-cores for single fiber
- Tray capacity: 24-cores for single fusion
- Number of trays: 4 trays
- Fiber bending radius:  $\geq 37.5$  mm, Supporting single and ribbon fiber
- Standards compliance: ITU-T L13 2003, YD/T 814, I-2004, RoHS 2002/95/EC and 2011/65/EU
- Protection degree: IP68

## Fiber Access Terminal Closure (FATC)

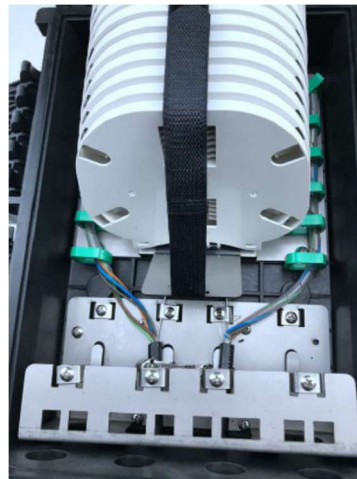




Designed to seal without screws. The compact size and flip-over cover bring easy operation as well as complete function. The splice trays are jointed with a hinge at one side, which makes the operation in each tray easier. It is designed to prevent from operation damage.

## Specification

Dimension (mm)	395×245×130
Max. capacity(Single fiber)	288
Weight (kg)	5
Sealing type	Mechanical
Cable ports	1 input cable port for un-cut cable from diameter from 10~17.5mm. 6 output cable ports for cable diameter from 8~17.5mm.
Single splice tray capacity (Single fiber)	24
Splice tray quantity	1~12
Environmental temperature	-40°C~+65°C
Optical performance	No significant additional attenuation
IP	IP68
This equipment	is moisture-proof and earthquake-proof



## FTB – Fiber Termination Boxes



# FTB- 16-96 cores

## Fiber Access Terminal

### Description

- Fiber access termination box is able to hold up to 16 subscribers.
- It is used as a termination point for the feeder cable to connect with drop cable in FTTx network system. It integrates fiber splicing, splitting, distribution, storage and cable connection in one solid protection box.

### Features

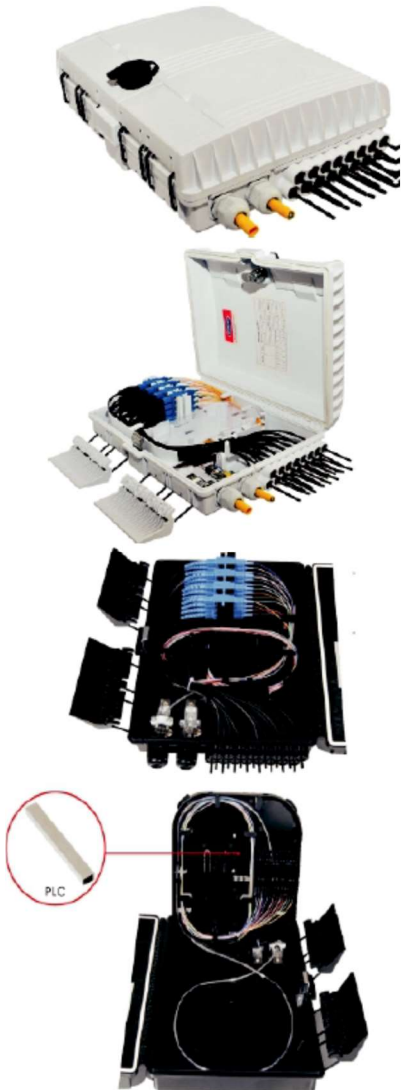
- Water-proof design with IP-66 Protection level. Integrated with splice cassette and cable management rods.
- Manage fibers in a reasonable fiber radius condition.
- Easy to maintain and extend the capacity.
- Fiber bend radius control more than 40mm.
- Suitable for the fusion splice or mechanical splice.
- 1\*16 Splitter can be installed as an option.
- Efficient cable management.
- 16 ports cable entrance for drop cable.

### Standard Accessories

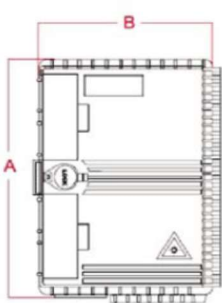
- Splice cassette and cable management tool, installation nuts and bolts, protection sleeves, hose clamp, rubber steal for cable entrance.

### Optional Accessories

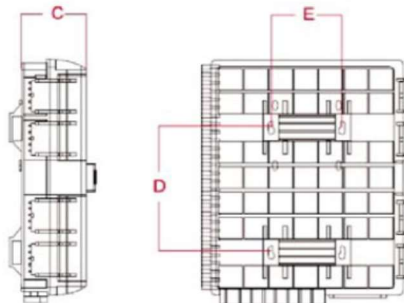
- Pole ring, Extra lock and key



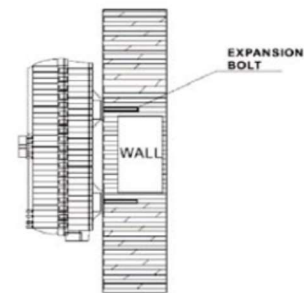
Material	Size	Max Capacity		Installation size	Weight	Color
PC +ABS	A*B*C(mm) 292*218*83	SC 16 Ports	PLC 1x16(SC)	D*E (mm) 154*82	1.4kg	White/Black



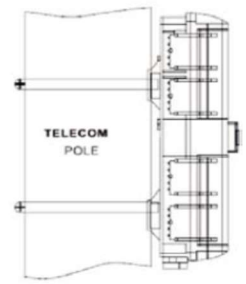
Pic 1 Box Size



Pic 2 Installation Size



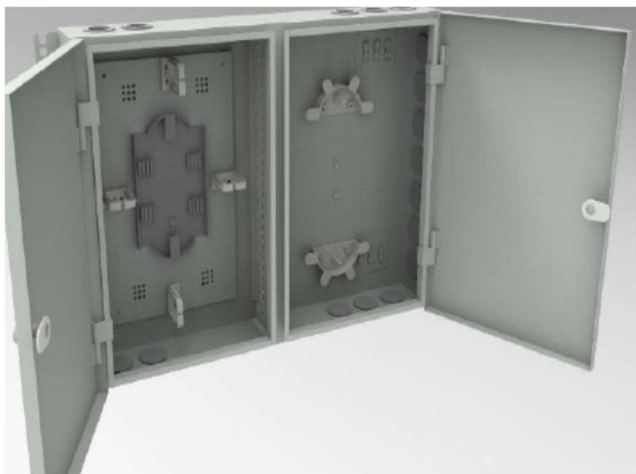
Wall mounted installation



Pole ring installation



# FTB- 12/24/48/96-cores –FDH-W for splitter implementations (in/out-door)



## Features

- Compact and thin design
- 2 lockable door (Splice and patching section separate)
- Front plate modular
- Cable Entry (Installation and drop), from top, side or bottom equipped with grommets
- Separate storage area for drop cables
- Strength Member for Cable support
- Inside fixing holes or outside fixing with brackets
- Universally compatible (e.g. ETSI standard compliant)



## Scope of Supply

- Indoor wall mount termination box with pre-mounted adapters.
- >30mm Splice tray, Pre-assembled with Pigtails SCAPC
- Outside fixing brackets, Splice protection cable ties.
- Cable entry with Grommets.

## Technical Data

Protection class IP	IP 42 –ability to IP55.
Number of connectors (A)	12/24/48/96
Assembly	fully populated
Connector type	SC
Polishing plug	APC
Connector color	Green
Sleeve material	ceramic
Version	Splice & Patch
Fiber	G657A2
Conductor type	semi-tight buffer, dry
Fiber diameter	E9 / 125 µm

## Mechanical Details

W x H x D	450 mm x 400mm x 100mm
Color Code	RAL 7035
Material	Sheet Steel

## FTB- 12/24/48/96-cores (Indoor –House applications)

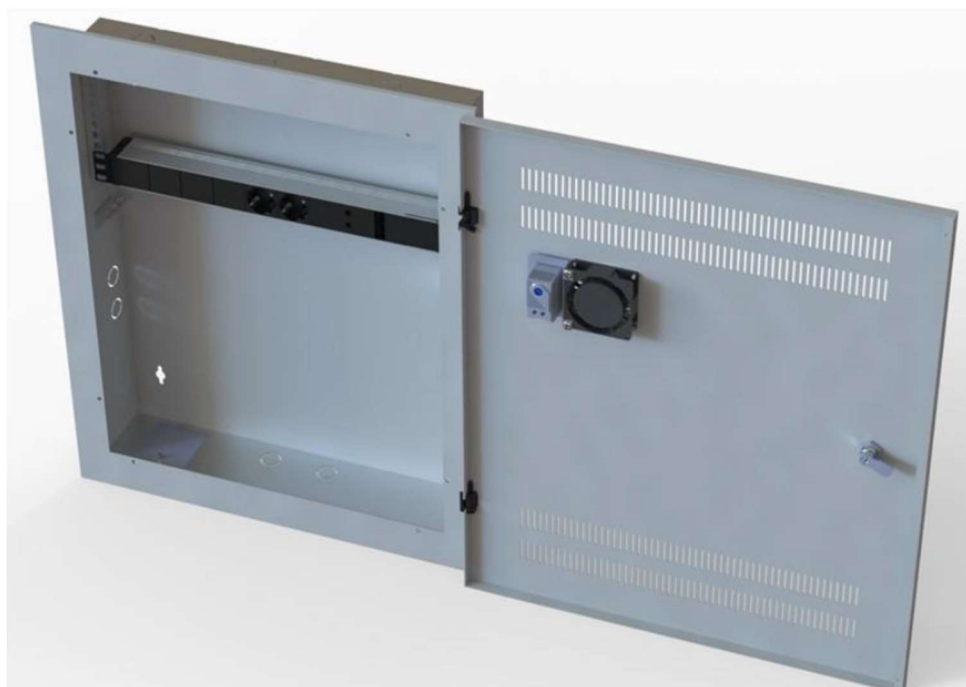


### Features

- 12U Flush-Mount cabinet
- Perforated front door , lockable and removable
- 1 way ventilation (fan) unit with thermostat
- 2-way PDU with on/off switch –UK/Chucko type.
- Grounding screws are fixed on all parts for continuity and the grounding wires are included.
- 4+1U mounting angels.
- Excellent solution for home/small office applications for horizontal segments.
- Hassle-free cable-management.
- Consolidation point for all your cabling wires and devices.
- Ability to decorate the front door with so many colors.

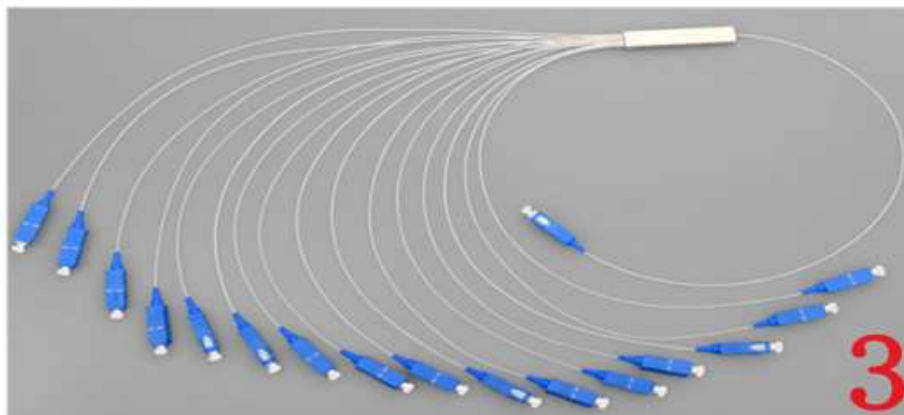
### Technical specifications

	600 x 500 x 128.30
Dimensions HxWxD in mm	
Height in U	12 (4+1U usable mounting rails)
Color code RAL	RAL 7035
Color	Light Gray
Standards	ISO9001 :2000 IEC 60917 and IEC 60297 (TSE)
Compliances	ISO9001 :2000 IEC 60917 and IEC 60297 (TSE)
Material	Galvanized Sheet Steel
Inside Height (mm)	598
Outside Height (mm)	600 Main Body (680mm flush frame)
Load Carrying Capacity	50kg





## Splitters – PLC and modular splitters –FTTh



## Modular Splitters -19" 1U Rack splitter



### Features

- One or multiple splitters Packaged into a Cassette, High packing density of 10 pcs mountable on to a 1U frame.
- 32 subscribers per cassette , allows to serve a maximum of 320 subscribers in 1U mounting space
- Application areas are FTTx systems, CATV connections, wide area networks (WANs) and analog, digital passive optical networks (PONs)
- Metallic, light weight cassette .
- Snap-in type, easy mounting and dismounting.
- Bend-optimized fiber and ruggedized 1.6mm cables 2 meter long, for patching to ODF.
- Strain relief boots on outputs protects against bending
- Easy identification of cables, heat shrink labels near the connector end.
- Connector ends with Cable identifiers – Numbering ferule.
- Label holder on the front plate for customer identification.

### Technical specifications

Box Material	Aluminum
Dimension (mm)	115 L x 86W x 18 D mm
Colour	NCS 2502–B Medium Grey
Tube material	1.6mm aqua LSZH, output 1.6mm blue LSZH
Connector	2mm SC PC connector with mini boot
Fiber Type	G.657A
Fan-out Length	2.0 mtr
Print on cable Jacket	“R&M SM-ITU-T-G657A Optical Fiber Cable”
Testing & Packing	Foam Box, Testing Report (IL,RL and PDL Unidirectional Test, taken at two wavelength : 1310 & 1550nm) Included

### Performance specifications

Parameters <sup>1</sup>	1x32 (1 Values taken @ room temperature @1310 and 1550 nm )
Operating Wavelength range (nm)	1260 ~1650
Insertion Loss Max (dB)	≤16.8 dB
Uniformity Max (dB)	≤1.5 dB
PDL Max (dB)	≤0.3 dB
Return Loss Min (dB)	≥55
Directivity Min (dB)	≥55
Temperature Stability (-40 ~ 85 °C)(dB)	0.5
Operating Temperature (°C)	-40°C ~ +85 °C
Storage Temperature (°C)	-40 °C ~ +85 °C

#### Notes:

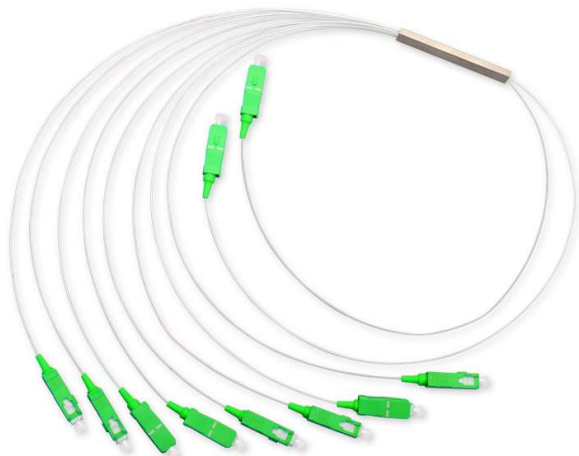
1. IL, PDL, Uniformity values are for “Without connectors”
2. Add an additional 0.15dB loss per connector

## PLC Splitter –Cassette



<b>Package Style</b>	ABS Module	<b>Configuration Type</b>	1:2, 1:4, 1:8, 1:16, 1:32, 1:64, 2:8, 2:16, 2:32, 2:64
<b>Fiber Grade</b>	G.657A1	<b>Fiber Mode</b>	Single mode
<b>Connector Type</b>	SC/APC	<b>Split Ratio</b>	50/50
<b>Input/Output Fiber Diameter</b>	2.0mm	<b>Input/Output Fiber Length</b>	1.5m
<b>Insertion Loss</b>	≤17.0dB	<b>Return Loss</b>	≥55dB
<b>Loss Uniformity</b>	≤1.5dB	<b>Directivity</b>	≥55dB
<b>Polarization Dependent Loss</b>	≤0.3dB	<b>Temperature Dependent Loss</b>	≤0.5dB
<b>Wavelength Dependent Loss</b>	≤0.5dB	<b>Operating Bandwidth</b>	1260~1650nm
<b>Dimensions (HxWxD)</b>	0.71"x4.72"x3.15" (18x120x80mm)	<b>Temperature</b>	Operating -40 to 85°C (-40 to 185°F) Storage -40 to 85°C (-40 to 185°F)

# Mini-Splitter



<b>Package Style</b>	Steel Tube, Bare Fiber	<b>Configuration Type</b>	1:2, 1:4, 1:8, 1:16, 1:32, 2:8, 2:16, 2:32
<b>Fiber Grade</b>	G.657A1	<b>Fiber Mode</b>	Singlemode
<b>Connector Type</b>	SC/APC	<b>Split Ratio</b>	50/50
<b>Fiber Type</b>	Ribbon Fiber	<b>Steel Tube Dimensions (HxWxD)</b>	0.16"x1.57"x0.16" (4x40x4mm)
<b>Input/Output Fiber Diameter</b>	250μm	<b>Input/Output Fiber Length</b>	1.5m
<b>Insertion Loss</b>	≤7.1dB	<b>Return Loss</b>	≥55dB
<b>Loss Uniformity</b>	≤0.6dB	<b>Directivity</b>	≥55dB
<b>Polarization Dependent Loss</b>	≤0.2dB	<b>Temperature Dependent Loss</b>	≤0.5dB
<b>Wavelength Dependent Loss</b>	≤0.3dB	<b>Operating Bandwidth</b>	1260~1650nm
<b>Operating Temperature</b>	-40 to 85°C (-40 to 185°F)	<b>Storage Temperature</b>	-40 to 85°C (-40 to 185°F)

# Modular 19" 1U Rack Mount Splitter



Package Style	Rack Mount	Configuration Type	1:8, 1:16, 1:32, 1:64, 2:8, 2:16, 2:32, 2:64
Fiber Grade	G.657A1	Fiber Mode	Singlemode
Connector Type	SC/APC	Split Ratio	50/50
Insertion Loss	≤17.0dB	Return Loss	≥55dB
Loss Uniformity	≤1.5dB	Directivity	≥55dB
Polarization Dependent Loss(PDL)	≤0.3dB	Temperature Dependent Loss	≤0.5dB
Wavelength Dependent Loss	≤0.5dB	Operating Bandwidth	1260~1650nm
Dimensions (HxWxD)	1.73"x19.00"x9.84" (44x482.6x250mm)	Temperature	Operating -40 to 85°C (-40 to 185°F) Storage -40 to 85°C (-40 to 185°F)



## FTTh Face Plate





## Features

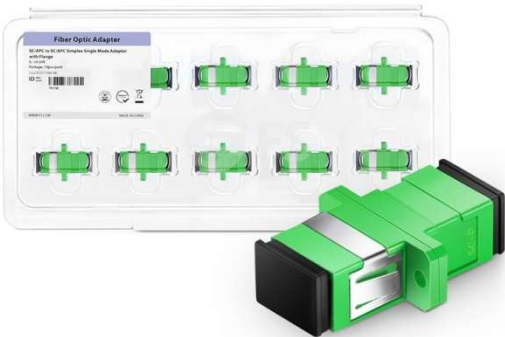
- Shuttered WM-Ftth face plate
- Dimensions: 86x86mm
- Equipped with 2xSC/APC adapters and 2xSC/APC pigtails G.657A –ready for splicing, splice holder for 2 shrink splices, cable tie & splice protection.
- IP protection:20
- Materials: Plastic

Color : white

**FTTh – Faceplate 86x86 mm –wall mounted.**

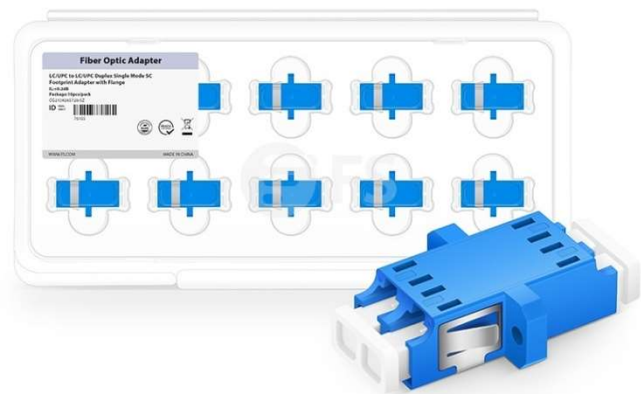
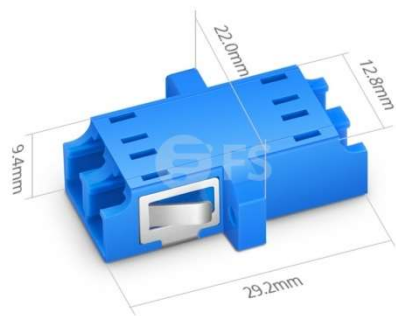
Connectivity (Adapters & pigtails)

Adapters: SC/APC to SC/APC Simplex Single Mode Fiber Optic Adapter/Coupler with Flange



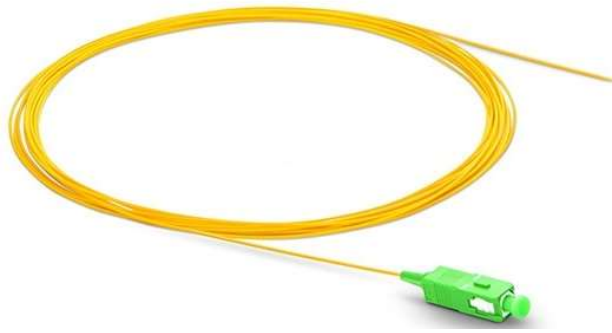
Connector Type	SC-SC	Body Style	Simplex
Polish Type	APC	Fiber Mode	Singlemode
Insertion Loss	≤0.2dB	Durability	1000 times
Mounting Type	Full flanged	Alignment Sleeve Material	Ceramic
Color	Green	Flammability Rate	UL94-V0
Package Quantity	10	RoHS Compliancy Status	Compliant

# Adapters: LC/UPC to LC/UPC Duplex Single Mode SC Footprint Plastic Fiber Optic Adapter/Coupler



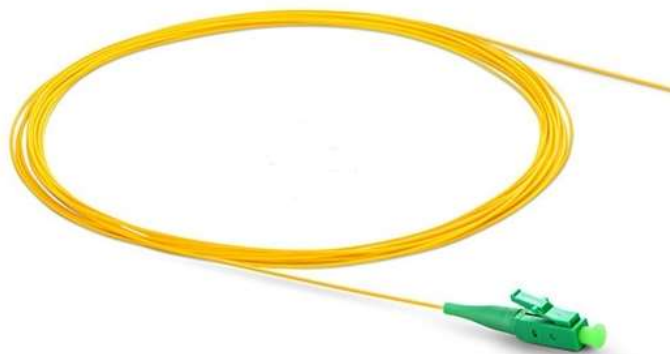
Connector Type	LC-LC	Body Style	Duplex
Polish Type	UPC	Fiber Mode	Singlemode
Insertion Loss	≤0.2dB	Durability	1000 times
Mounting Type	Full Flanged	Alignment Sleeve Material	Ceramic
Color	Blue	Flammability Rate	UL94-V0
Package Quantity	10	RoHS Compliancy Status	Compliant
Operating Temperature Range	-25 to 70°C(-13 to 158°F)	Storage Temperature Range	-25 to 70°C(-13 to 158°F)

## Pigtails: SC APC Simplex OS2 Single Mode PVC (OFNR) 0.9mm Fiber Optic Pigtail



Connector A	SC	Fiber Mode	9/125 $\mu\text{m}$
Fiber Count	Simplex	Fiber Grade	G.657.A1
Minimum Bend Radius	30 mm	Polish Type	APC
Cable Diameter	0.9 mm	Cable Jacket	PVC
Jacket Color	Yellow	Wavelength	1310 nm/1550 nm
Durability	500 Times	Insertion Loss	$\leq 0.3$ dB
Interchangeability	$\leq 0.2$ dB	Return Loss	$\geq 60$ dB
Vibration	$\leq 0.2$ dB	Operating Temperature	-40~75°C

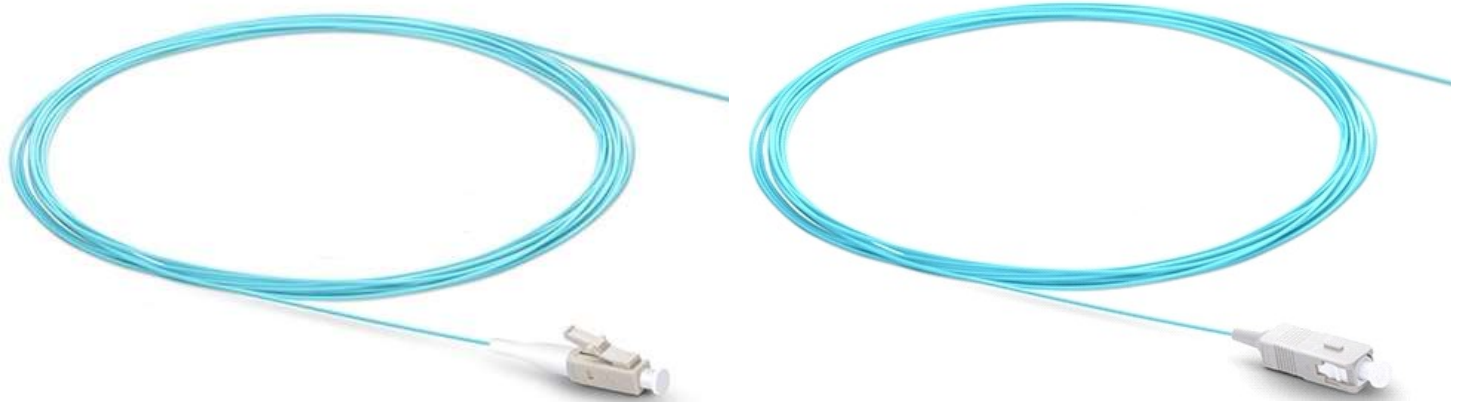
## Pigtails: LC APC Simplex OS2 Single Mode PVC (OFNR) 0.9mm Fiber Optic Pigtail



Connector A	LC	Fiber Mode	9/125 $\mu\text{m}$
Fiber Count	Simplex	Fiber Grade	G.657.A1
Minimum Bend Radius	30 mm	Polish Type	APC
Cable Diameter	0.9 mm	Cable Jacket	PVC
Jacket Color	Yellow	Wavelength	1310 nm/1550 nm
Durability	500 Times	Insertion Loss	$\leq 0.3$ dB
Interchangeability	$\leq 0.2$ dB	Return Loss	$\geq 60$ dB
Vibration	$\leq 0.2$ dB	Operating Temperature	-40~75°C



## **Pigtails:** LC / SC UPC Simplex OM3 /OM4 Multimode PVC (OFNR) 0.9mm Fiber Optic Pigtail

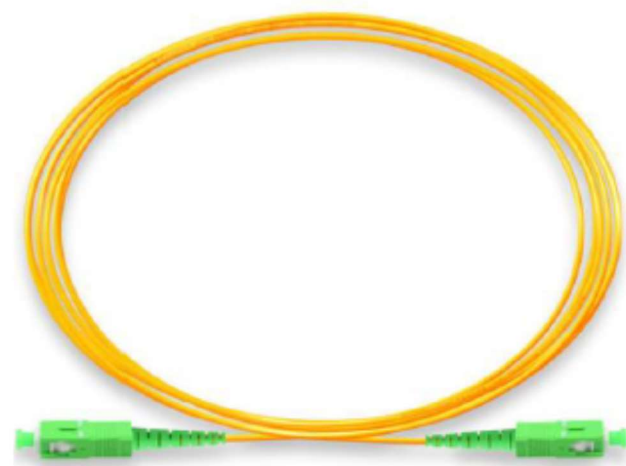


<b>Connector A</b>	LC or SC	<b>Fiber Mode</b>	50/125 $\mu$ m
<b>Fiber Count</b>	Simplex	<b>Fiber Grade</b>	Bend Insensitive
<b>Minimum Bend Radius</b>	7.5 mm	<b>Polish Type</b>	UPC
<b>Cable Diameter</b>	0.9 mm	<b>Cable Jacket</b>	PVC
<b>Jacket Color</b>	Aqua	<b>Wavelength</b>	850 nm/1300 nm
<b>Durability</b>	500 Times	<b>Insertion Loss</b>	$\leq 0.3$ dB
<b>Interchangeability</b>	$\leq 0.2$ dB	<b>Return Loss</b>	$\geq 20$ dB
<b>Vibration</b>	$\leq 0.2$ dB	<b>Operating Temperature</b>	-40~75°C



# Patch Cords

## SC/APC-SC/APC , G657.A2



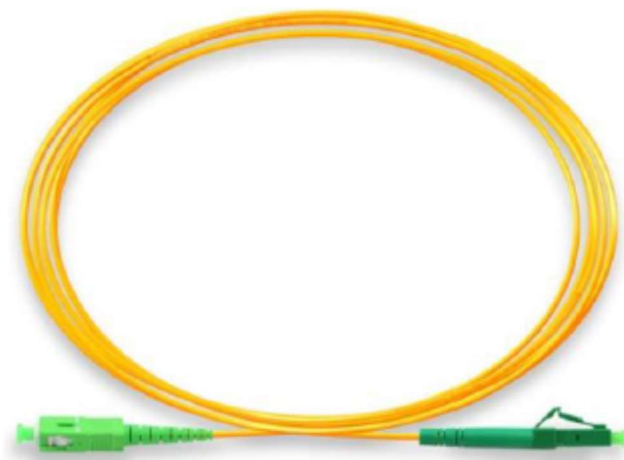
- Both sides fitted with SC APC 8° connector.
- Fiber: SM E9/125 G.657A2
- Cable: Ø 2.0/3.0 mm, yellow.
- Patch cord with LSZH jacket, Ø 2.0/3.0 mm, yellow, singlemode acc. to G.657.A1, A2 and B2 plus OS1 and OS2 (backward compatible to G.652.A - D), 9/125 µm, length.

Patch Cord SC APC - SC APC, green/yellow, G.657 A2, C/1, Ø 2.0mm, 1 m  
Patch Cord SC APC - SC APC, green/yellow, G.657 A2, C/1, Ø 2.0mm, 2 m  
Patch Cord SC APC - SC APC, green/yellow, G.657 A2, C/1, Ø 2.0mm, 3 m  
Patch Cord SC APC - SC APC, green/yellow, G.657 A2, C/1, Ø 2.0mm, 5 m  
Patch Cord SC APC - SC APC, green/yellow, G.657 A2, C/1, Ø 2.0mm, 7 m  
Patch Cord SC APC - SC APC, green/yellow, G.657 A2, C/1, Ø 2.0mm, 10 m  
Patch Cord SC APC - SC APC, green/yellow, G.657 A2, C/1, Ø 2.0mm, 15 m  
Patch Cord SC APC - SC APC, green/yellow, G.657 A2, C/1, Ø 2.0mm, 20 m  
Patch Cord SC APC - SC APC, green/yellow, G.657 A2, C/1, Ø 2.0mm, 25 m

Technical Data DESCRIPTION [UNIT]	VALUE/VALUE RANGE
Protection class IP	IP 20
Connector class	connector
Protection class IP (A)	IP 20
Number of connectors (A)	1
Protection class IP (B)	IP 20
Number of connectors (B)	1
Cable type	patch cord
Jacket material	LSZH
Cable jacket characteristics	Cable, metal-free , Zero-halogen, Flame-retardant
Cable overall diameter	Ø 2.0 mm (±0.15)
Connector type (A)	SC
Polishing plug (A)	APC 8°
Return loss grade RL (A)	1
Connector color (A)	green
Connector type (B)	SC

Polishing plug (B)	APC 8°
Return loss grade RL (B)	1
Connector color (B)	green
Fiber type	Single mode (SM)
Conductor type	tight buffer
Fiber diameter	E9 / 125 μm
Patch cord type	simplex

# SC/APC-LC/APC , G657.A2



- One side fitted with SC APC 8° & other side fitted with LC APC connector.
- Fiber: SM E9/125 G.657A2
- Cable: Ø 2.0/3.0 mm, yellow.
- Patch cord with LSZH jacket, Ø 2.0/3.0 mm, yellow, single mode acc. to G.657.A1, A2 and B2 plus OS1 and OS2 (backward compatible to G.652.A - D), 9/125 µm, length XXm.

Patch Cord LC APC - SC APC, green/yellow, G.657 A2, C/1, Ø 2.0mm, 1 m  
Patch Cord LC APC - SC APC, green/yellow, G.657 A2, C/1, Ø 2.0mm, 2 m  
Patch Cord LC APC - SC APC, green/yellow, G.657 A2, C/1, Ø 2.0mm, 3 m  
Patch Cord LC APC - SC APC, green/yellow, G.657 A2, C/1, Ø 2.0mm, 5 m  
Patch Cord LC APC - SC APC, green/yellow, G.657 A2, C/1, Ø 2.0mm, 7 m  
Patch Cord LC APC - SC APC, green/yellow, G.657 A2, C/1, Ø 2.0mm, 10 m  
Patch Cord LC APC - SC APC, green/yellow, G.657 A2, C/1, Ø 2.0mm, 15 m  
Patch Cord LC APC - SC APC, green/yellow, G.657 A2, C/1, Ø 2.0mm, 20 m  
Patch Cord LC APC - SC APC, green/yellow, G.657 A2, C/1, Ø 2.0mm, 25 m

Technical Data DESCRIPTION [UNIT]	VALUE/VALUE RANGE
Protection class IP	IP 20
Connector class	connector
Protection class IP (A)	IP 20
Number of connectors (A)	1
Protection class IP (B)	IP 20
Number of connectors (B)	1
Cable type	patch cord
Jacket material	LSZH
Cable jacket characteristics	Cable, metal-free , Zero-halogen, Flame-retardant
Cable overall diameter	Ø 2.0 mm (±0.15)
Connector type (A)	LC
Polishing plug (A)	APC 8°
Return loss grade RL (A)	1
Connector color (A)	green
Connector type (B)	SC
Polishing plug (B)	APC 8°
Return loss grade RL (B)	1
Connector color (B)	green
Fiber type	Single mode (SM)

Conductor type  
Fiber diameter  
Patch cord type

tight buffer  
E9 / 125 µm  
simplex



# SC/PC-SC/APC , G657.A2



- One side fitted with SC PC & other side with SC APC 8° connector.
- Fiber: SM E9/125 G.657A2
- Cable: Ø 2.0 / 3.0 mm, yellow.

Patch Cord SC PC - SC APC, bl/green/yellow, G.657 A2, C/2, Ø 2.0mm, 1 m  
Patch Cord SC PC - SC APC, bl/green/yellow, G.657 A2, C/2, Ø 2.0mm, 2 m  
Patch Cord SC PC - SC APC, bl/green/yellow, G.657 A2, C/2, Ø 2.0mm, 3 m  
Patch Cord SC PC - SC APC, bl/green/yellow, G.657 A2, C/2, Ø 2.0mm, 5 m  
Patch Cord SC PC - SC APC, bl/green/yellow, G.657 A2, C/2, Ø 2.0mm, 7 m  
Patch Cord SC PC - SC APC, bl/green/yellow, G.657 A2, C/2, Ø 2.0mm, 10 m  
Patch Cord SC PC - SC APC, bl/green/yellow, G.657 A2, C/2, Ø 2.0mm, 15 m  
Patch Cord SC PC - SC APC, bl/green/yellow, G.657 A2, C/2, Ø 2.0mm, 20 m  
Patch Cord SC PC - SC APC, bl/green/yellow, G.657 A2, C/2, Ø 2.0mm, 25 m

Technical Data DESCRIPTION [UNIT]	VALUE/VALUE RANGE
Protection class IP	IP 20
Connector class	connector
Protection class IP (A)	IP 20
Number of connectors (A)	1
Protection class IP (B)	IP 20
Number of connectors (B)	1
Cable type	patch cord
Jacket material	LSZH
Cable jacket characteristics	Cable, metal-free , Zero-halogen, Flame-retardant
Cable overall diameter	Ø 2.0 mm (±0.15)
Connector type (A)	SC
Polishing plug (A)	PC
Return loss grade RL (A)	2
Connector color (A)	blue
Connector type (B)	SC
Polishing plug (B)	APC 8°
Return loss grade RL (B)	1
Connector color (B)	green
Fiber type	Single mode (SM)
Conductor type	tight buffer

Fiber diameter  
Patch cord type

E9 / 125  $\mu\text{m}$   
simplex

# LC/PC-SC/APC G657.A2



- One side fitted with SC APC 8° & other side fitted with LC PC connector.
- Fiber: SM E9/125 G.657A2
- Cable: Ø 2.0 mm, yellow.

Patch Cord LC PC - SC APC, bl/green/yellow, G.657 A2, C/2, Ø 2.0mm, 1 m  
Patch Cord LC PC - SC APC, bl/green/yellow, G.657 A2, C/2, Ø 2.0mm, 2 m  
Patch Cord LC PC - SC APC, bl/green/yellow, G.657 A2, C/2, Ø 2.0mm, 3 m  
Patch Cord LC PC - SC APC, bl/green/yellow, G.657 A2, C/2, Ø 2.0mm, 5 m  
Patch Cord LC PC - SC APC, bl/green/yellow, G.657 A2, C/2, Ø 2.0mm, 7 m  
Patch Cord LC PC - SC APC, bl/green/yellow, G.657 A2, C/2, Ø 2.0mm, 10 m  
Patch Cord LC PC - SC APC, bl/green/yellow, G.657 A2, C/2, Ø 2.0mm, 15 m  
Patch Cord LC PC - SC APC, bl/green/yellow, G.657 A2, C/2, Ø 2.0mm, 20 m  
Patch Cord LC PC - SC APC, bl/green/yellow, G.657 A2, C/2, Ø 2.0mm, 25 m

Technical Data DESCRIPTION [UNIT]	VALUE/VALUE RANGE
Protection class IP	IP 20
Connector class	connector
Protection class IP (A)	IP 20
Number of connectors (A)	1
Protection class IP (B)	IP 20
Number of connectors (B)	1
Cable type	patch cord
Jacket material	LSZH
Cable jacket characteristics	Cable, metal-free , Zero-halogen, Flame-retardant
Cable overall diameter	Ø 2.0 mm (±0.15)
Connector type (A)	LC
Polishing plug (A)	PC
Return loss grade RL (A)	2
Connector color (A)	blue
Connector type (B)	SC
Polishing plug (B)	APC 8°
Return loss grade RL (B)	1
Connector color (B)	green
Fiber type	Single mode (SM)
Conductor type	tight buffer
Fiber diameter	E9 / 125 µm
Patch cord type	simplex

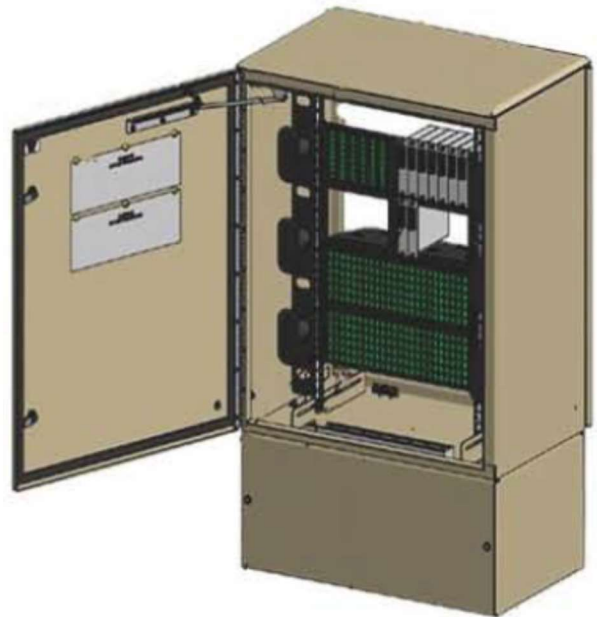
## Street Cabinets (single / double layer)





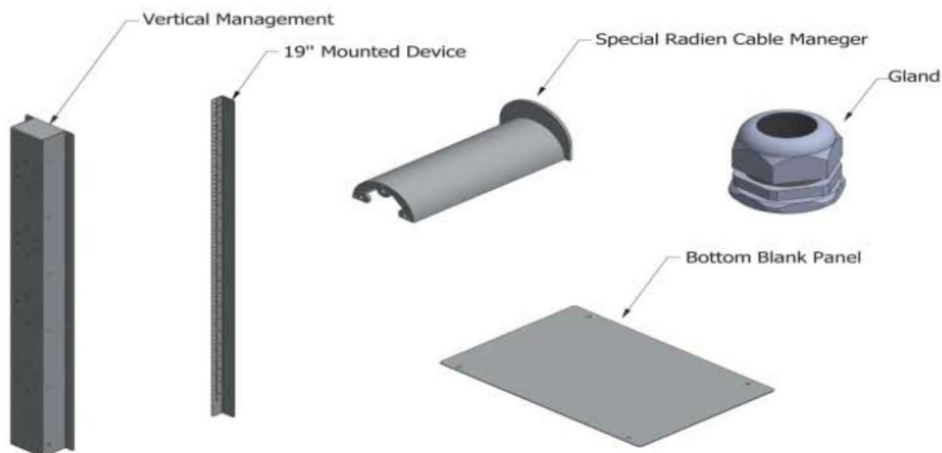
## Features

- IP66 Ingress protection based on ISO/IEC 60529
- Sturdy aluminum 3mm material
- Powder-coated finish.
- Net depth of cabinet is 472mm
- 22U installation height
- 19" profile for mounting the panels.
- Plinth/base with a height of 400mm with front access (816x317mm) with fixing from inside
- Removable cable entry plate with 9 x PG21 IP66 cable glands
- Removable maintenance plate to ensure base frame access.
- Gasket between base and cabinet for maximum IP66 protection for the stability of cabinet
- 1U blind cover on top and bottom for better access
- Cylindrical side cable management with patch cable deposits, 5 nos each side
- 3-point locking mechanism with swing handle



Technical specifications	
Outside Size	W=900, H=1100mm, D=500mm
Material, Colour & Finish	Aluminium 3mm, (chromated, powder-coated), RAL 7035
Construction	Doors, side panels and top are all single skin and welded construction Anti-vandal structure Open 180° with adjustable locking device and 3-point lock on front Hinged front door Canopy in the top Grounding bar- 6 way 2 Pcs. of 19" mounting rails – 22 U usable Plate in the bottom – Cable Glands 9xPG21
Protection Class	IP66 dust and waterproof
Plinth	H=400mm, Material is Aluminium with 3mm thickness
Coating Thickness	60-80 micron

## Cabinet Accessories

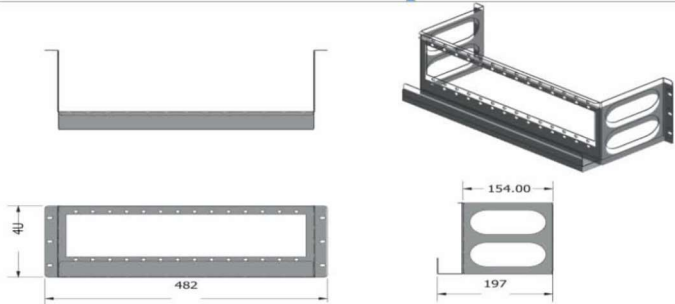




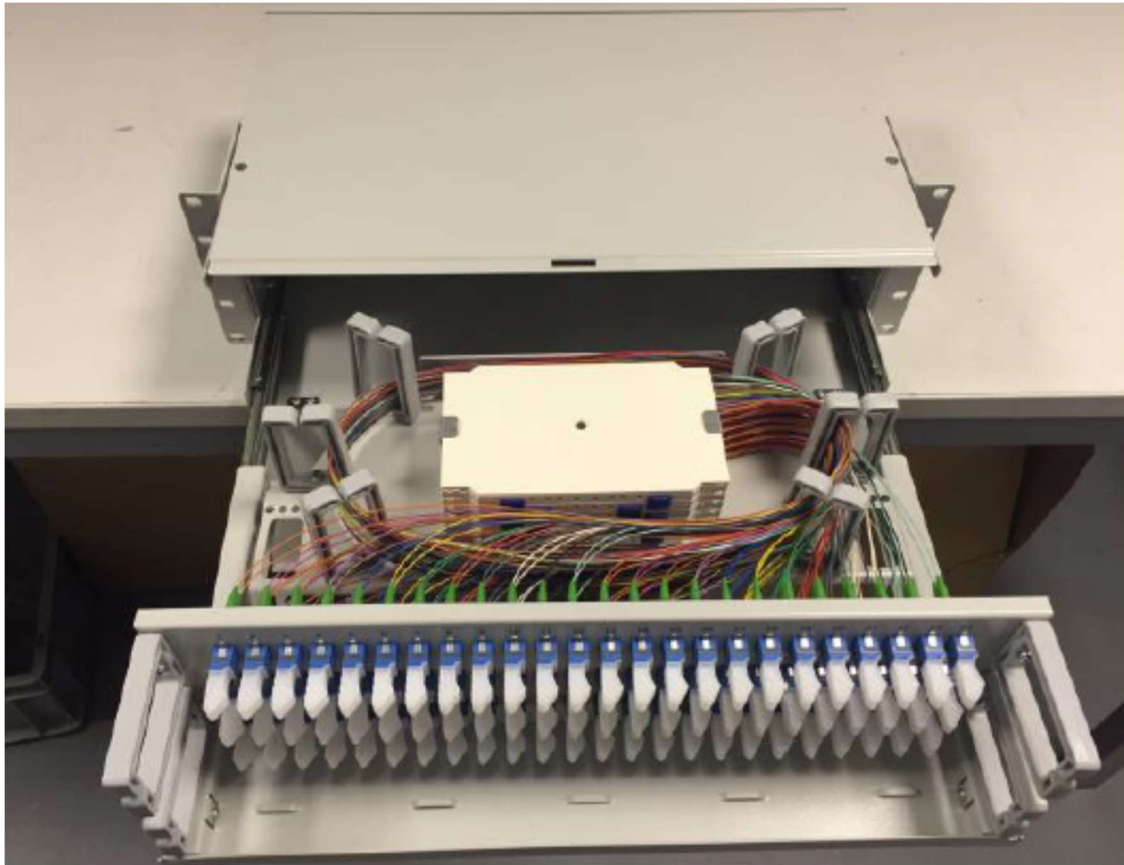
ODF Fiber Optic Patch Panel:1U and 2U



Splitter holder with PLC Splitter



## Optical Distribution Frame (ODF)



# ODF -192- 5U 19" SC/PC or APC G657.A2 – Drawer



## Features

- Up to 192 SC adapters on four height unit (5U)
  - Equipped with 192 SC Adaptors & pigtails
  - Front panel equipped with patch cord manager
  - ODF housing with front hinged door
  - Simply patch panel mounting and dismounting
  - Little mounting depth of 230mm
  - Universally compatible (e.g. ETSI standard compliant)
  - Guaranteed bending radius R30
  - Separated storage levels for loose tubes and pigtails on the same unit
  - Cable entry from the rear or from the side
  - Dimension (WxDxH): 480x230x222mm
- 
- 19" 5U slide-in unit on a telescopic drawer, splice tray plate with 16 splice trays radius 30 mm, fastening material, labeling strips and installation manual
  - Front panel equipped with adapters and pigtails

## Technical specifications

Fastening (inch):	19"
Height Units (U):	5
Rack mounting version:	Patch Panel
Version:	Splice
Capacity (ports):	192
Connector type (A):	SC
Protection class (IP) connector (A):	20
Polishing connector (A):	PC /APC
Fiber class: G.657A2 (OS2)	
Tube / Wire type: semi-tight buffer, dry	
Fiber- / Conductor diameter: E9/125 µm	
Fiber type: Single mode (SM)	

# ODF -96 SCPC /APC G657.A2-Drawer



## Features

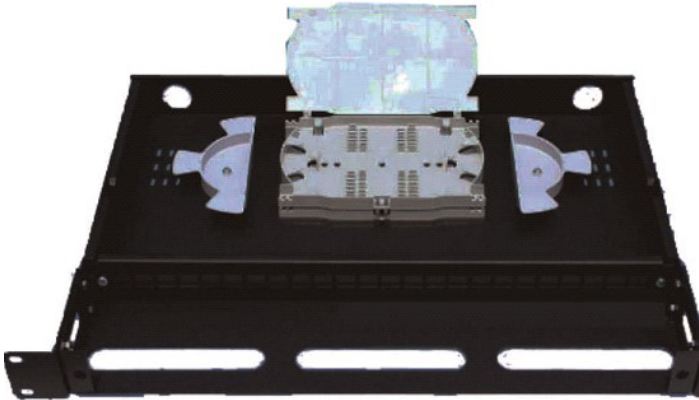
- Up to 96 SC adapters on four height unit (3U)
  - Equipped with 96 SC Adaptors & pigtails
  - Front panel equipped with patch cord manager
  - ODF housing with front hinged door
  - Simply patch panel mounting and dismounting
  - Little mounting depth of 230mm
  - Universally compatible (e.g. ETSI standard compliant)
  - Guaranteed bending radius R30
  - Separated storage levels for loose tubes and pigtails on the same unit
  - Cable entry from the rear or from the side
  - Dimension (WxDxH): 480x195x135mm
- 
- 19" 3U slide-in unit on a telescopic drawer, splice tray plate with 8 splice trays radius 30 mm, fastening material, labeling strips and installation manual
  - Front panel equipped with adapters and pigtails

## Technical specifications

Fastening (inch):	19"
Height Units (U):	3
Rack mounting version:	Patch Panel
Version:	Splice
Capacity (ports):	96
Connector type (A):	SC
Protection class (IP) connector (A):	20
Polishing connector (A):	PC /APC
Fiber class: G.657A2 (OS2)	
Tube / Wire type: semi-tight buffer, dry	
Fiber- / Conductor diameter: E9/125 µm	
Fiber type: Single mode (SM)	

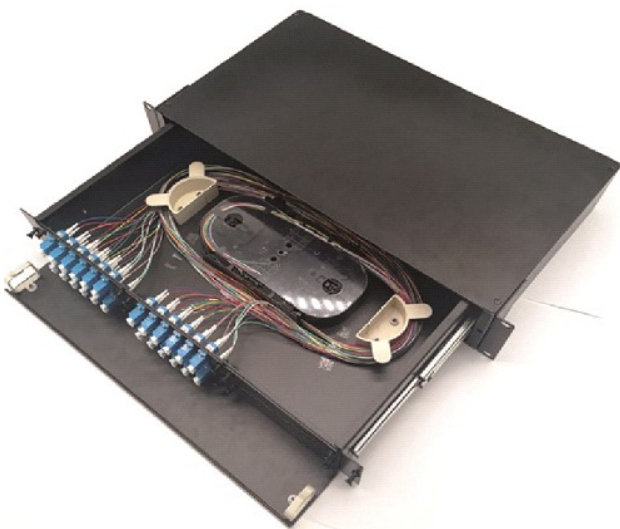
## ODF -24/48- 1U 19" SC/PC or APC G657.A2 – Drawer

### 1U 19" ODF



- 1U 19" ODF drawer
- Dimension (WxDxH): 480x320x44mm
- Capacity: 12SC or 24/48LC
- Suitable for : SC, LC, ST and FC types
- Complete with splice cassette, adapters and pigtails
- Plug and play –ready for installation.
- Galvanized sheet
- RAL 7035 or RAL 9004

### 2U 19" ODF –

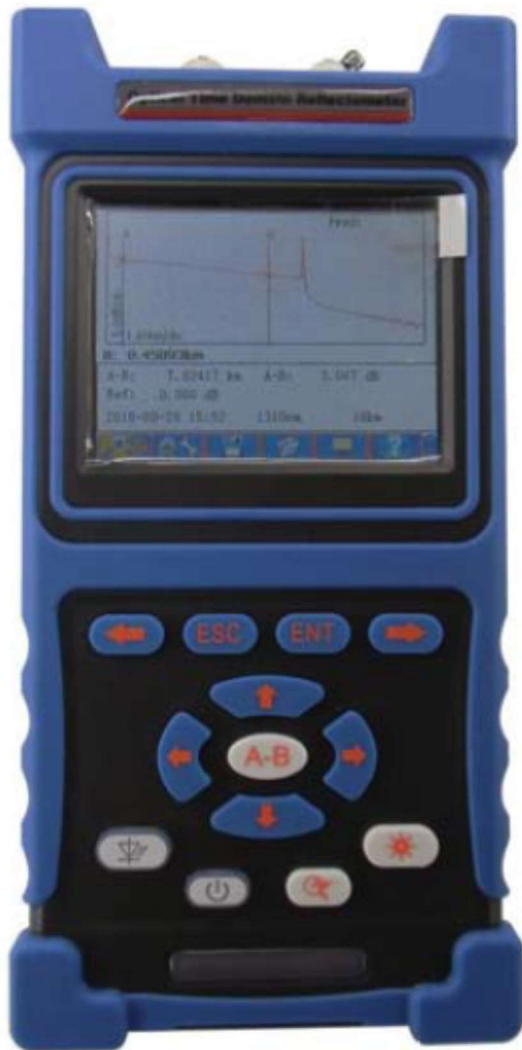


- 2U 19" ODF drawer
- Dimension (WxDxH): 480x320x88mm
- Capacity: 96SC or 144LC
- Suitable for : SC, LC, ST and FC types
- Complete with splice cassette, adapters and pigtails
- Plug and play –ready for installation.
- Galvanized sheet
- RAL 7035 or RAL 9004



# Instruments

## Handheld OTDR



### Live Optical Signal Check Function

To have live Optical Signal Check Function, before a test pulse, First check test whether any of the optical fiber live communication optical signals and display the results. It can effectively protect test instrument and communications equipment.

### Complete software support

Single page single tracing line or single page more tracing line can choose the print mode;

Batch change and batch print function;

Waveform difference contrast function;

Can be in the same window open multiple tracing line at the same time, the differences between the tracing line in the same window display and more easily compare such as optical fiber aging caused by the reasons changing parameters;

### Specification:

1. With 650 nm visible light source(optional)
2. Quick start :< 5 seconds
3. Unique hotkey design: Key operation integrated hotkey function analysis of events
4. USB/RS-232 data interface
5. 1000 test records storage
6. Optimization design of power supply:  
Built-in NiMH rechargeable battery charge once can support 8 hours measurement
7. Multiple languages: CN/EN
8. Dust-shock proof (2m drop test)



Wavelength(nm) (±20nm)	1310/1550
Dynamic Range(dB)	32/30
Test distance(km)	100
Touch Screen	YES
Fiber Type	Single Mode Fiber
Display Type	Colorful
touch screen control	Yes
Emitter Type	LD
Connector Type	FC/PC(InterchangeableSC, ST)
Measurement Time	15s、30s、1min、2min、3min
Attenuation dead zone	<5m
Event dead zone	<2m
Distance Measurement Accuracy	$\pm(1\text{ m} + 5 \times 10^{-5} \times \text{measurement distance} + \text{sample space})$
Attenuation Detect Accuracy	$\pm 0.05\text{ dB/ dB}$
Reflection Detect Accuracy	$\pm 4\text{ dB}$
Date storage	1000 the test curve
Date transmission	RS-232/USB
VFL output power(dBm)	$\geq -3$
VFL measurement distance (km)	5km
Power Supply	NiMH chargeable battery/ AC adapter
Operating Temperature	0°C ~ 50°C
Storage Temperature	-20°C ~ 70°C
Relative Humidity	0~95%(non-condensing)

## Duct Rudder



### Specification:

1. Equipped with brake device, handle is convenient for using;
2. Guide roller and fixed ring: fix the rod end; protect the rod jacket from being scratched;
3. Fiber glass rod inner: Extruded process made of E-fiberglass and high quality resin at high temperature;
4. Fiber glass rod outer: developed polymer;
5. Rolling bearing cage for mobility is strong and easy to use;
6. Feed device allows rod in and out smoothly;
7. Rustproof bull-nose pulling tips with diverse accessories;
8. Light weight, durable, good resistance to chemical and corrosion;
9. High tensile strength and bending properties to make it go through narrow pipes easily;
10. Good temperatures adaptability, it will not soften in hot weather nor become brittle in cold weather;
11. Meter marks: available
12. Rod colors: yellow
13. Rod Diameter: 14mm
14. Rod Length (m): 250M / 300M / 350M

## Power Meters



### FOPM-205 PON Optical Power Meter

As the industry's advanced PON-specific power meter, FOPM-205 PON Power Meter is specifically intended for FTTH and FTTP systems. It is capable to measure all three signals (1310nm, 1490nm and 1550nm) that carry voice, data and video, so-called triple-play applications along a single fiber. It is an essential and ideal tool for the construction and maintenance of the PON projects.

<b>Measurement Range*</b>	-30dBm to +10dBm	<b>Calibrated Wavelengths</b>	1310/1490/1550nm
<b>Insertion Loss</b>	1.5 dB	<b>Accuracy</b>	±0.5 dB
<b>Linearity</b>	±0.2 dB	<b>Date Storage</b>	1000 records
<b>Optical Connector</b>	FC/SC/ST	<b>Cable Type</b>	SMF
<b>Display</b>	2.8 inch TFT LCD	<b>Refresh Rate of Display</b>	2.5Hz
<b>Auto-off Function</b>	Supported	<b>Pass/fail Function</b>	Supported
<b>Threshold Setting</b>	10sets	<b>Power Supply</b>	2xNi-MH AA (2500mAh) & USB Cable
<b>Operating Temperature</b>	-10°C to 50°C	<b>Relative Humidity</b>	0~95% (non-condensing)
<b>Dimensions (HxWxD)</b>	7.5"x4.1"x2.2"(190x105x55mm)	<b>Weight</b>	700g



### FOPM-107 MPO Optical Power Meter

FOPM-107 MPO Optical Power Meter is special for testing MPO fiber. The product can test the insertion loss of MPO fibers and polarity with only one key, and also supports data storage, threshold analysis, data export and other applications. Compared with traditional instruments, the testing efficiency of FOPM-107 is more than 10 times. It is the best choice for field application of MPO room test, calibration of production line, and determination of polarity.

<b>Wavelength Range</b>	850~1700nm	<b>Detector Type</b>	InGaAs
<b>Calibration Wavelength</b>	850/1300nm or 1310/1550nm	<b>Measurement Range</b>	-50dBm to +3dBm
<b>Insertion Loss Accuracy</b>	<0.2s/channel	<b>Resolution</b>	0.01 dB
<b>Linearity</b>	±0.2 dB (-50dBm to +5dBm)	<b>System Control</b>	USB
<b>Interface Type</b>	SM/MM MPO/PC 12 fibers female	<b>Continuons Working Hours</b>	>10h
<b>Operating Temperature</b>	-5°C to +40°C	<b>Storage Temperature</b>	-5°C to +40°C
<b>Dimensions(HxWxD)</b>	220x110x70mm	<b>Weight</b>	850g

# Laser source



## FHOM-201 Power Meter + Laser Source Handheld Optical Multimeter

FHOM-201 Optical Multimeter is the integration of power meter and light source, optical multimeter is used to measure the optical power loss of the fiber link. The Optical Power Multimeter is the necessary tool for all technicians. It is widely used in fiber-optic line project construction, testing and maintenance, such as digital data network, telecommunication network and cable television.

<b>OPM Calibrated Wavelengths</b>	850/1300/1310/1490/1550/1625nm	<b>OPM Measurement Range</b>	-50dBm to +26dBm
<b>OPM Resolution</b>	0.01dB	<b>OPM Accuracy</b>	±0.2dB
<b>Linearity</b>	±2%	<b>Detector Type</b>	InGaAs
<b>OLS Wavelengths</b>	1310/1550nm	<b>OLS Output Power</b>	> - 6.0dBm
<b>OLS Emitter Type</b>	FP	<b>OLS Modulation</b>	270Hz / 1KHz / 2KHz
<b>OPM Connector</b>	FC/SC/ST & 2.5mm UPP	<b>OLS Connector</b>	FC
<b>Cable Type</b>	OLS@ SMF / OPM@ SMF & MMF	<b>Auto-off Function</b>	Supported
<b>Power Supply</b>	2xAA Batteries	<b>Relative Humidity</b>	< 90% (non-condensing)
<b>Operating Temperature</b>	-10°C to +50°C	<b>Storage Temperature</b>	-20°C to +60°C

# Media Converters, Extenders



**Mini Unmanaged 1x 10/100/1000Base-T RJ45 to 1x 1000Base-X SFP Slot Gigabit Ethernet Media Converter, American Plug Standard**



**Mini Unmanaged 1x 10GBase-X to 1x 10GBase-X 2SFP+ Slots 10Gigabit Fiber Media Converter, American Plug Standard**



**Mini 1x 10/100/1000Base-T RJ45 to 1x 100/1000Base-X Single Mode SC 1310nm 10km Gigabit Ethernet Media Converter, American Plug Standard**



**Mini 1x 10/100/1000Base-T RJ45 to 1x 100/1000Base-X Multimode SC 850nm 220/550m Gigabit Ethernet Media Converter, American Plug Standard**



**12 Slots 10/100M and 10/100/1000M Mini Media Converter Chassis, 1U Rack Mount, Dual Power AC 220V**



**Mini 1 Channel Unidirectional HD-SDI over Optical Fiber Transmitter and Receiver Set**



**4 Channel Unidirectional HD-SDI over Optical Fiber Transmitter and Receiver Set**



**16 Channel Unidirectional HD-SDI over Optical Fiber Transmitter and Receiver Set**



# Accessories

## Transceivers

**100/200/400/800G Transceivers**  
**10/16/32G Transceivers**  
**Industrial Transceivers**  
**25/40/50G Transceivers**  
**SFP Transceivers**

## MTP®/MPO Cable Assemblies

MTP®/MPO Trunk Cables  
MTP®/MPO-LC Breakout Cables  
MTP® PRO Trunk Cables  
MTP® PRO Field Tool  
MTP®/MPO Adapters  
MTP®/MPO Cleaners  
Customized MTP®/MPO Cables

## Passive Components, Termination

PLC Splitters  
Optical Attenuators  
Fiber Connectors  
FWDM Filters  
Fiber Splice Accessories  
Fiber Optic Wall Plates

## Active Optical Cables Direct Attach Cables

### DAC/AOC Breakout Cables

40G DAC Breakout Cables  
100G DAC Breakout Cables  
200G DAC Breakout Cables  
400G DAC Breakout Cables  
40G AOC Breakout Cables  
100G AOC Breakout Cables

### Fiber Optic Panels<sup>†</sup>

### Fiber Optic Cassettes<sup>†</sup>

### Fiber Optic Enclosures<sup>†</sup>

### MTP®/MPO-LC Breakout Cassettes<sup>†</sup> Cable Management<sup>†</sup>

## Racks & Cabinets

## Cat5e/Cat6/Cat7/Cat8 Patch Cables<sup>†</sup>

### Pre-terminated Trunk Cables<sup>†</sup>

### Bulk Cables<sup>†</sup>

Cat5e Bulk Ethernet Cables  
Cat6 Bulk Ethernet Cables  
Cat6a Bulk Ethernet Cables  
Cat7 Bulk Ethernet Cables  
Outdoor Bulk Ethernet Cables  
RJ45 Connectors & Jacks  
**Patch Panels<sup>†</sup>**  
**Cable Management<sup>†</sup>**  
**Copper Tools & Testers**

# Fiber Optic Cleaning

NEOCLEAN Pen One-Push Cleaner



NEOCLEAN-M MTP/MPO-8/12/24 One-Push Cleaner (600+ Times)



**NEOCLEAN-R2 Fiber Optic Cassette Cleaner for LC/SC/FC/ST/MU/MTP/MPO Connectors (400+ Times)**



US Conec IBC™ Brand Cleaner MPO II, for 8/12/24 Fibers MPO Connectors



NEOCLEAN-E Pen Replacement Cartridge for 2.5mm SC/FC/ST/LSH



Fiber Cleaning Wipes Delicate Task Wipers 8.07" x 4.33" 280/Box



# Basic Fiber Testing

Pen Shape Visual Fault Locator, 1mW



EasyGet Fiber Endface Microscope with Wifi  
Wireless for LC/SC/FC



AutoGet Intelligent Fiber Endface Microscope  
with HD Touchscreen for LC/SC/FC Connectors



FHOM-202 Optical Power Meter + Visual Fault  
Locator with 2.5mm



400X Handheld Fiber Optic Inspection Probe  
Microscope with USB Cable for LC/SC/FC  
Connectors



Handheld Fiber Optical Light Source, 1310/1550nm



# Advanced Fiber Testing

Handheld OTDR 1310±20nm/1550±20nm



Single Mode Optical Fiber Identifier FOFI-201



AOT600 Optical Talk Set



Fiber Optic OTDR Launch Cable Box, Singlemode



# Fiber Polish & Cleaver

High Precision Fiber Optic Cleaver FS-08C



Replacement Blade/Cutting Wheel for FS-08C Fiber Cleavers



Fiber Optic Polishing Machine FS-20A Square Pressurized Polisher



Polishing Fixture/Holder for ST/UPC 20 Connectors (ST/UPC-20 Connector Jig)



# Fiber Optic Tools

Field Tool for MTP® PRO Connectors to Change Polarity and Pins



Fiber Optic Cleaning Kit with 1.25mm&2.5mm Hand Held Fiber Microscope



Fiber Optic Fusion Splicing Tool Kit FOTK-704



Fiber Optic Construction Tool Kit FOTK-702



Fiber Optical Stripper with Three Holes



Miller Fiber/Copper Optic Connector Insertion & Extraction Tool





## Copper Tools & Testers

## All-in-one Dovetail Clip Wire Stripping tool

RJ45/RJ12/RJ11/Cat5/Cat5e/Cat6/Cat6a/Cat7

## Stripper/Cutter/Crimper



## All-in-one Wire Stripping tool

RJ45/Cat5/Cat5e/Cat6

## Stripper/Cutter/Crimper



## Network Installation Tool Kit NF-1301



## LSA-PLUS Insertion/Punch Down Tool



# Quality Certifications

At FORTE, our Quality Commitment lies in all aspects of processes, resources, and methods that enable us to build superior networks for our customers. Through quality policy focusing on continuous improvement of products and services, we're able to achieve the highest levels of satisfaction for our customers. To that end, every FORTE employee is accountable for contributing to the value of the products and services we deliver.

## Quality Assurance in All Ways

### Advanced Test Environment

To ensure the best quality, reliability and interoperability of its products, FORTE maintains a most advanced and comprehensive testing environment including an in-house testing labs, running real applications to verify "end-to-end" performance of products.

### Customer Focus

FORTE is dedicated to build our growth through close and long-lasting relationships with our customers. Attaching great importance to customer satisfaction, we're committed to providing our customers with the best solutions and guaranteeing their satisfaction. Personalized solution is provided; every suggestion and feedback is valued by us.

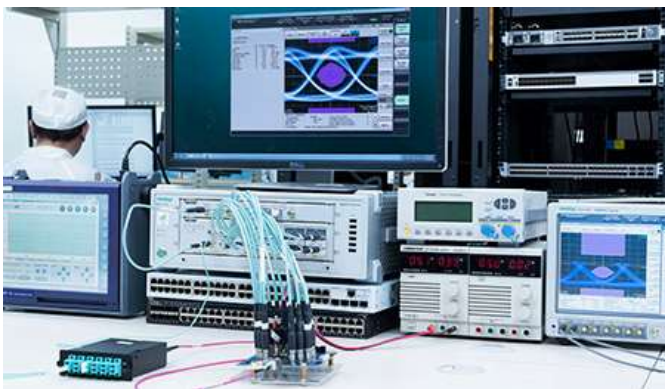
### Sustainable Management

FORTE focuses on growth and strives for sustainable profitability that secures our future. Under the guidance of quality and continuous improvement culture, FORTE implements the business philosophy of sustainable development, giving high priority to various aspects of sustainability - economic, environmental and societal.

- **Quality Control Benchmarked to Best Industrial Standards**

Quality is FORTE's highest priority. We achieve this goal by standardized quality assurance procedures and continuously monitoring and supervising the production process to ensure that our customers receive high quality components. In our in-house testing labs, application tests on large varieties of products are going on every day. Using the world's most advanced analytical equipment;

"end-to-end" performance of products will be verified in different application situations and recorded in test report.



### Where we are manufacturing?

As FORTE we are manufacturing our products in a certified factories in China , such factories are certified with all/some of the below certificates –depend on the factory policy- and procedures, but what we can assure you is that, All FORTE products are fully manufactured and tested as per FORTE testing procedure and international standards and subject to the manufacturer standard warranty.



### **ISO 9001:2015**

*These quality management standards maintained by the International Organization of Standardization (ISO), provide a number of business process requirements for consistent product manufacturing and delivery to meet customers' expectations.*



### **ISO 14001:2015**

*This product is in conformity with ISO 14001. It is intended for use by an organization seeking to manage its environmental responsibilities in a systematic manner that contributes to the environmental pillar of sustainability.*



### **RoHS**

*RoHS restricts the use of hazardous substances in electrical and electronic equipment in European Union markets. The directive (EU) 2015/863 of RoHS specifies maximum levels for the following 10 restricted substances: Cadmium, Lead, Mercury, Hexavalent Chromium, Polybrominated Biphenyls, Polybrominated Diphenyl Ethers, Bis (2-Ethylhexyl) phthalate, Benzyl butyl phthalate, Dibutyl phthalate, Diisobutyl phthalate.*



### **CE**

*The CE marking is a mandatory European marking for certain product groups to indicate conformity with the essential health and safety requirements set out in European Directives. FS products are produced under the requirements of CE to indicate conformity with the essential health and safety.*



## FCC

*The FCC is a certification mark employed on electronic products manufactured or sold in the United States, which certifies that the electromagnetic interference from the device is under limits approved by the Federal Communications Commission. FS's products are fully accord with the FCC, which aims to manage the radio wave and magnetic fields more reasonably.*

# !FORTE®

*Well connected*