

METAL OUTDOOR/INDOOR FIBER DISTRIBUTION CABINET 22U / 28U



1. Overview

Fiber distribution cabinet enables telecom operator & service providers to maintain and manage the distribution of connection in a disciplined manner for FTTX network. The cabinets are specially designed and fabricated for outdoor operations provided to bear extreme weather conditions and provide well organized and centralized distribution of the connections.

Fiber distribution cabinet is mainly used for connection, distribution and dispatching of communication optical cable from offices to optical distribution nodes, providing a safe, reliable but flexible optical fiber/cable management system for communication networks, especially for access networks.

2. General Requirements

2.1 Appearance & Structure

2.1.1 Cabinet Structure

- a. The door is connected by a hinge structure, and the door can be opened and closed 5,000 times without damage. The door lock is an anti-theft structure with good resistance to damage.
- b. The cable enters and exits from the cable holes at the base of the cabinet. The cabinet has relatively independent inlet and outlet holes, and the numbers of holes meet the requirements of full configuration.
- c. The fiber distribution cabinet is fitted with a sealing putty to facilitate sealing of the cable entry holes and prevent water and rodents from entering the chassis. The sealing putty will not flow at high temperature or solidify at low temperature, and it will expand when it encounters moisture, which can really meet the sealing requirements.
- d. The cabinet can be operated on both sides, and the device for laying and winding the fiber patch cord is designed reasonably. After the cable is introduced, it is protected by a loose tube, and there is enough area for the fiber patch cords.

2.1.2 Mechanical Moving Parts

The mechanical moving parts are flexible in rotation, moderate in insertion and removal, reliable in locking, convenient in construction and maintenance. The opening angle of the door is no less than 120° and the gap is no more than 3 mm. The structure is firm, the assembly is consistent and interchangeable, and the fasteners are not loose. The sharp edges of the exposed and operated areas are rounded.

2.1.3 Inlet Cable Bending Radius

When the optical cable enters the cabinet, the bending radius is not less than 15 times of the cable diameter.

2.1.4 Pigtail Bending Radius

The bending radius of the pigtails should be no less than 30mm no matter where it is located in the cabinet.

2.1.5 Cabinet Body

- a. The cabinet body is made of steel with double layer structure (Sandwich structure). The cabinet has excellent electrical insulation properties, mechanical properties, and aesthetic appearance. The cabinet is featured with anti-corrosion, anti-aging, high-voltage protection performance, strong electrical insulation, which can withstand the effects of dramatic climate change and extreme environment.
- b. The surface of the cabinet body is flat and smooth, the color is uniform, and it is not easy to be scratched. The defects such as nodulation, shrinkage,

blistering, pinhole, cracking, peeling, chalking, granules, sagging, exposed substrate, and dirt are not allowed. No fasteners are exposed on the surface of cabinet. After the assembly of the cabinet, the metal parts have no burrs, while the structural parts are not twisted.

2.1.6 Text, Graphics, Symbols and Signs on Structural Devices

The text, graphics, symbols and signs on the structural devices are clear, complete and error-free.

2.2 Product Specification

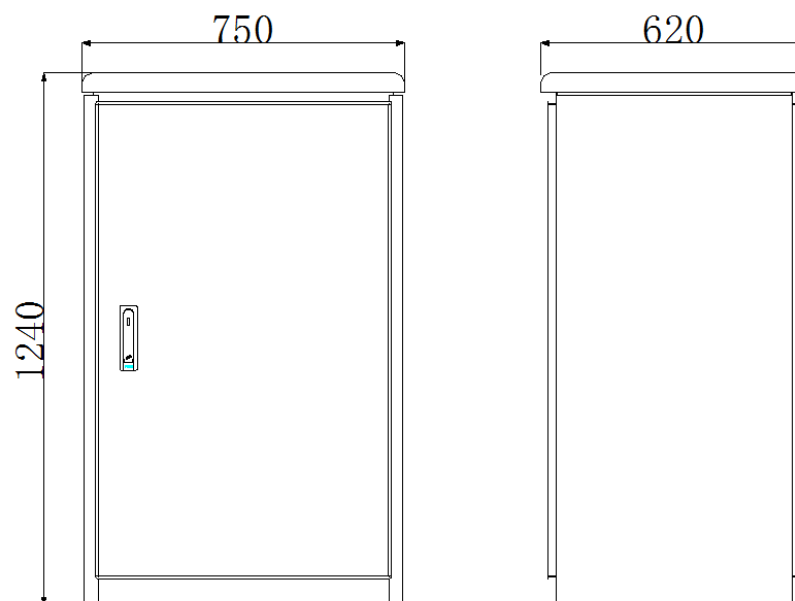
2.2.1 Cabinet Color

The surface color of the cabinet body and the spray coating color of the internal metal frames are RAL7035 (fine sand textured), and the material of cable stripping plate is SUS304 stainless steel with surface passivation treatment.

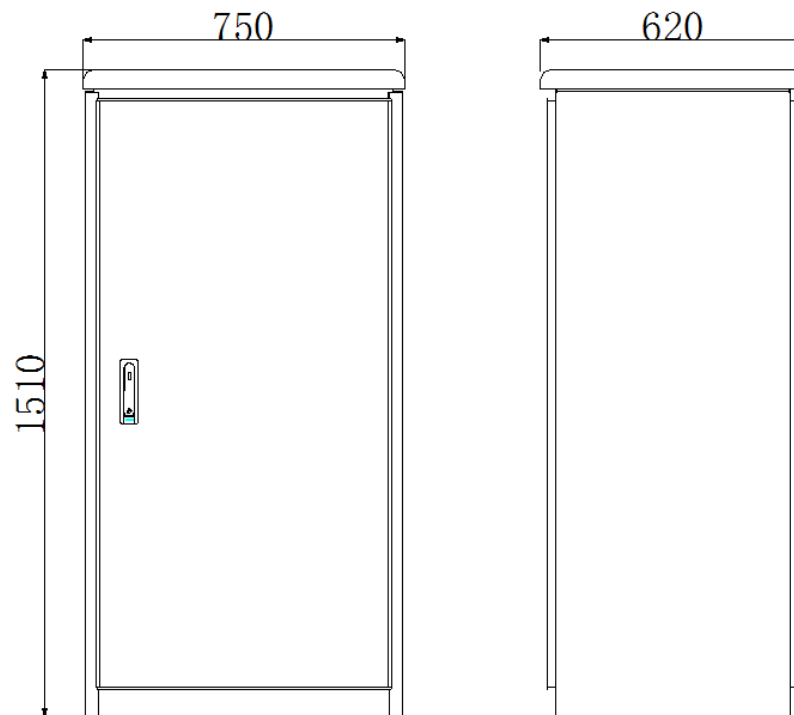
2.2.2 Mark & Logo

TE LOGO is located in the upper middle part of the cabinet door, silk screened on both front and rear sides. The height of logo is 24cm, scaled according to the TE LOGO. The Comtec Logo is located in the upper right corner of the cabinet and is black in color.

2.2.3 Cabinet Diagram & Dimensions



22U Cabinet Dimensions



28U Cabinet Dimensions

3. Technical Parameters

3.1 Cabinet Grounding

The cabinet is electrically conductive and has a complete grounding system.

3.2 High Voltage Protective Grounding Device

- 3.2.1 The high-voltage protective grounding device is connected with the metal strength member and the metal moisture-proof layer and the armor layer in the optical cable, and the cross-sectional area of the ground wire is not less than 6 mm².
- 3.2.2 The cross-sectional area of the connecting terminal of the high-voltage protective grounding device connected to the ground shall be not less than 35mm²
- 3.2.3 The high-voltage protective grounding device is insulated from the cabinet, and the insulation resistance is not less than $2 \times 10^4 \text{M}\Omega/500\text{V}$ (DC).
- 3.2.4 The withstand voltage between the high-voltage protective grounding device and the cabinet is not less than 3000V (DC), and there is no breakdown or arcing in 1 min.
- 3.2.5 The high-voltage protective grounding device should be able to be grounded reliably, and there is an obvious grounding labelling at that position.

3.3 Mechanical & Physical Performance

3.3.1 The top surface of the cabinet can withstand a vertical pressure no less than 1000N. After the door is opened, it can withstand a vertical pressure no less than 200N at the outermost end of the door. After the force is unloaded, the cabinet has no destructive marks or permanent deformation.

3.3.2 When the optical cable is led in, the optical cable should be able to withstand the axial tensile force of not less than 1000N after being fixed. After the tensile and torsion tests, check the fixing position of the optical cable, and the optical cable should be free from any looseness and damage.

3.4 Sealing Performance

Cabinet protection level of dust and water meet IP65 grade according to IEC60526.

The sealing strip used on the door is foamed EDPM, which has excellent performance of heat resistance, ozone resistance, weather resistance, hot water resistance, steam resistance, detergent resistance and polar organic solvent resistance.

3.5 Flame Retardant Performance

The burning performance test of all non-metallic structural parts (including pigtails or fiber jumpers) shall be carried out in accordance with YD/T 694-2004. After burned under the test flame with the continuous burning time, the test sample meets the following requirements:

- a) The continuous flame burning time of the test sample does not exceed 10s after leaving the fire;
- b) The burning or scorching particles falling from the test sample do not spread the combustion to the underlay placed under the test sample.

3.6 Environmental Requirements

3.6.1 Operation Environmental Conditions

- Operation Temperature: $-40^{\circ}\text{C} \sim +60^{\circ}\text{C}$
- Relative Humidity: $\leq 95\%$ ($+40^{\circ}\text{C}$)
- Atmosphere pressure: $70\text{kPa} \sim 106\text{kPa}$

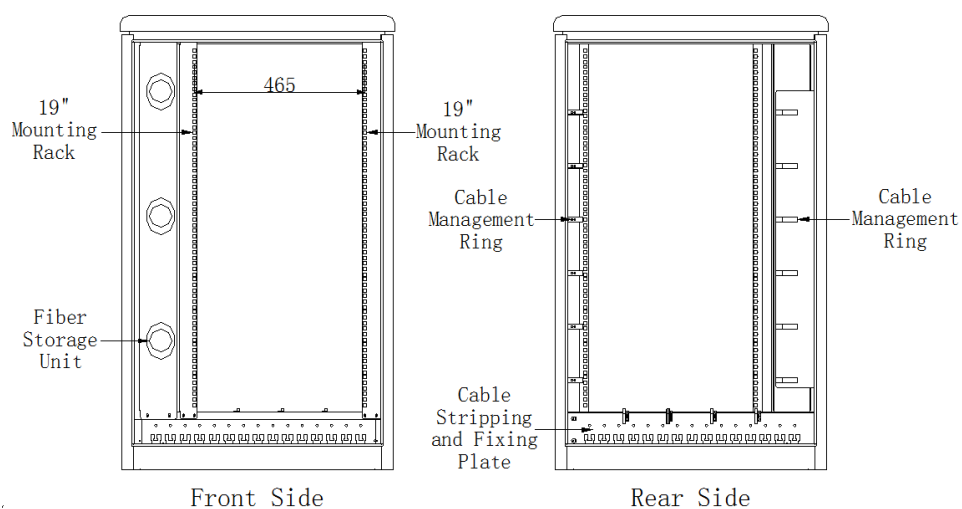
3.6.2 Storage Conditions

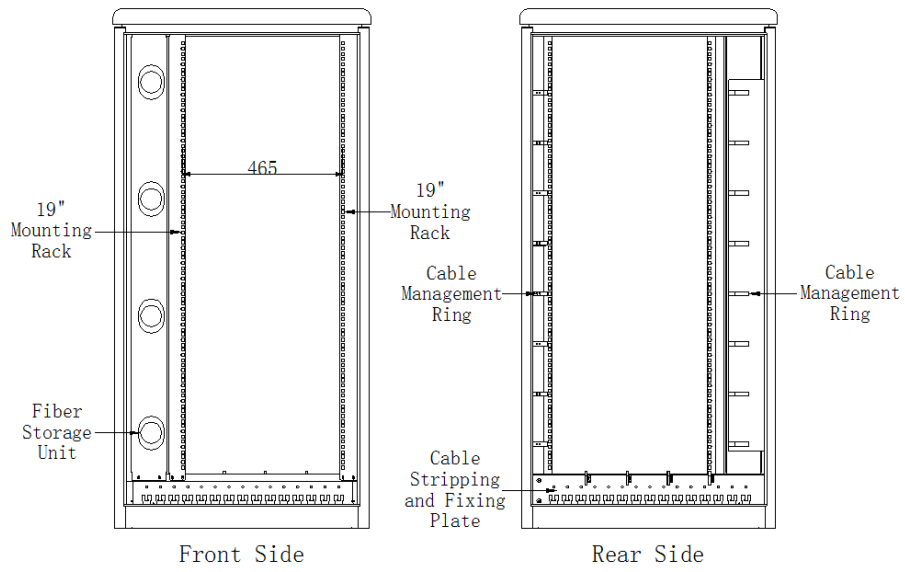
The product should be stored in a well-ventilated, dry warehouse with no corrosive gases around it. The storage temperature is $-40^{\circ}\text{C} \sim +60^{\circ}\text{C}$.

4. Functional Requirements

4.1 Cabinet Structure Layout

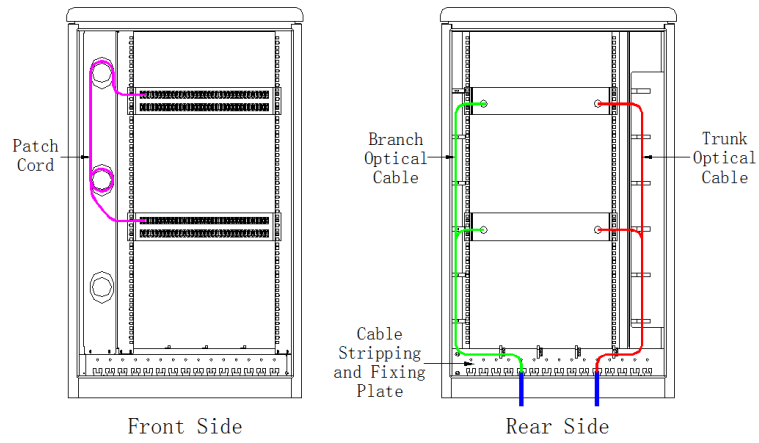
- 4.1.1 The cabinet is mainly composed of steel outer cabinet and internal metal frames. The inter metal frames mainly include: upper beam, lower beam, upper and lower beam connecting parts, fiber coiling post mounting plate, fiber coiling post, left and right fiber passway, cable stripping plate and 19-inch mounting columns. A document holder is mounted on the inside of each door.
- 4.1.2 The cabinet is suitable for 19-inch rack installation, and the installation space is not less than 22U & 28U. The thickness of the mounting columns is not less than 2.0mm. The cabinet body can withstand 240hrs salt spray test and counter abrupt climate changes and extreme environments.
- 4.1.3 The internal metal frames are made of cold rolled steel sheet, treated with electrostatic spray coating, which has better anti-corrosion performance and appearance than electro galvanizing and hot dipping galvanizing. The thickness of coating is not less than 85um and the coated metal frames can withstand 500 hours salt spray test. The coating and the substrate of internal coated metal frames shall have good adhesion, and the adhesion shall not be lower than the level 2 requirement in Table 1 of GB/T 9286. The cable stripping plate is made of SUS304 stainless steel sheet, and all screw fasteners are made of SUS304 stainless steel.



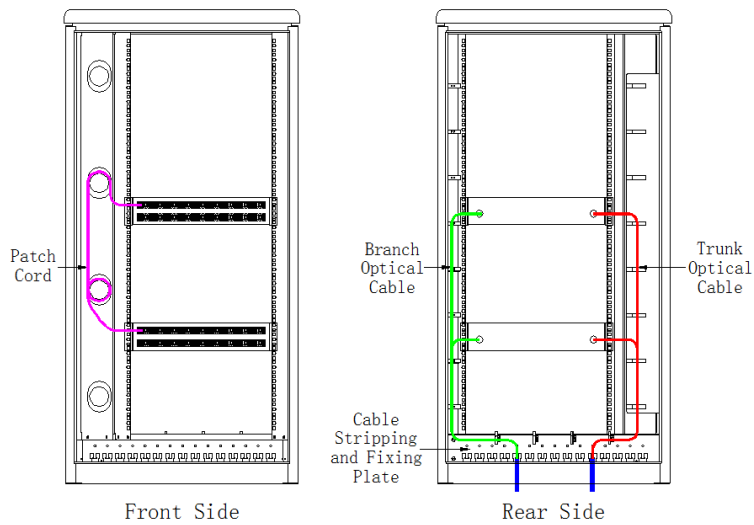


28U

4.2 Schematic Fiber Routing in Cabinet



22U



28U