

GENERIC SPECIFICATION

OPTICAL DISTRIBUTION (RACK & WALL MOUNT)



Optical Distribution Rack & Wall Mount

General

This specification covers the minimum standards and requirements for the construction, properties, testing and packing of optical fiber distribution frame to be used as an interconnection between the central office equipment and the distribution access in the telecommunication network.

Description

The optical fiber distribution frame (OFD) is installed for terminating optical fiber cables and patch cord. The distribution frame should include the metallic casing, adapter plate, splice tray, and other necessary materials for the termination of optical fiber cable. Therefore it should be designed properly for the fiber splicing and distribution. Separate storage shelf and distribution shelf can be offered if required.

The OFD shall be of corrosion resistance and robust construction; and shall allow both top or bottom entry for access to the splice trays. Specific selection of the entry points shall be made at the time of installation. The OFD shall be installed on the international standard (ETSI 19”) equipment rack or cabinet rack.

Reliability

Through qualification test of this product, we ensure product reliability. Several qualification tests are carried to assure the product's performance and durability while operation.

OFD Shelf

General

The main purpose of the OFD is to terminate the OSP cables coming into splicing units with short pigtails and connect those pigtails to fiber distribution frames. Distributed fibers will be connected to the central office equipment by using patch

cords to the next central office to form a Fiber Ring.

The optical fiber distribution frame shall completely restore the sheath integrity of the cables and provide secure storage for the fiber splices.

OFD is a splice and distribution shelf and OFS-1/2 is a storage shelf.

The fiber distribution frames (OFD) shall include all necessary parts to complete the joint

The optical fiber distribution frames shall include all necessary parts to complete the joint. This will comprise all components to protect and store the spliced fiber; and provide sheath continuity. The distribution frame shall be designed with enough spare capacity for fiber splices. The distribution frame shall be made from fabricated mild steel not less than 1.2mm thick or equivalent and painted in good condition.

The design of the fiber distribution frame shall allow minor deviations from the described installation procedures without any harm to the fibers and the long-term performance of the installation.

The shelf and the connection between shelves shall be designed to maintain minimum bending radius of 30mm. The front cover shall be transparent for easy and quick connector identification.

The dimension specification of optical fiber distribution frames shall be shown in the following Table-1

Table-1

Items	Dimension (W X D x H)	Max. Capacity	Note
OFD-A-1	520 X 310 X 44.4 mm	12 ports & splice	Round Type
OFD-A-2	520 X 320 X 44.4 mm	12/24 ports & splice	Drawer Type
OFD-A-2	520 X 320 X 88.5 mm	36/48 ports & splice	
OFD-B-1	520 X 310 X 132.5 mm	24 ports & splice	Round Type With storage module
OFD-B-2	520 X 310 X 222 mm	48 ports & splice	Fixed Type With storage module
OFD-C-1	520 X 310 X 178 mm	96 ports & splice	Fixed Type
OFD-C-2	520 X 310 X 222 mm	144 ports & splice	Without storage module

Distribution Module

□ Adapter Plate

The adapter plate located in the OFD shelf consists of adapter panels to provide

mounting for SC and other adapters. The adapter panel shall be designed for easy routing of the patch cord.

Optical adaptors shall be used for connections and be connected with optical attenuators if needed.

□ Adapter

The adapter designed to be used in the fiber distribution frame shall be able to connect pigtailed from the splice tray with patch cord to the central office system.

Splice Module

□ Construction of Splice Tray

A splice tray attached on the rear of OFD shall have the capacity to secure 24 fiber splices each. A splice tray shall have two separate storage sections. Splice trays shall be stacked up for higher splice capacity and be easily detached again. Fibers shall be completely retained within the splice tray with no possibility of trapping, pinching or other damage to the fibers during installation and arrangement. The splice tray shall include a mechanism to secure the loose tubes or protection tubes, and the retaining mechanism shall be resistant to vibration.

The splice tray can hold loose tube or ribbon fiber splices. A splice tray shall accommodate maximum 24 sleeves for loose tube connection and 12 sleeves for ribbon connection.

□ Optical Characteristics

The design of the splice tray shall ensure that the fiber shall not bent to a radius $\leq 30\text{mm}$.

The splice protector shall restore the mechanical integrity of the fiber and shall not create any residual forces in the fiber.

The splice protector may be a suitable plastic heat shrinkable material with an internal stainless steel rod for tension relief.

Storage Module

□ Construction of Storage

An independent storage shelf, OFS-1/2 shall be used for proper surplus cable

arrangement and consists of 8 individual storage modules. Each storage module has the capacity of 12 cords storing. Connections between modules shall not have any effect on fiber property or data transmission and shall be designed to maintain required bend radius.

Components

□ Cable Clamp

The cable clamp shall be required to secure the outside plant cables to the distribution frame and can clamp the cable diameters from 8mm to 32mm.

□ Ground Kit

A grounding kit shall be provided for grounding cable with metallic sheath and metallic strength member.

□ Mounting Bracket

The mounting bracket should be used to secure the fiber distribution frame to the 19" equipment rack or cabinet rack

□ Patch cord Shield

The patch cord shield should be offered for protecting and guiding central office system patch cord when using equipment rack only if required.

Test Certification

General

This section specifies the fiber distribution frame and its material physical, chemical environmental and mechanical requirements and the tests to be applied for the determination of compliance to these requirements.

The materials of the fiber distribution frame shall be compatible with all cable components and splicing materials.

Workmanship

All components of the frame shall be high quality design, workmanship, and finish.

All components shall be free of pinholes, cracks, sharp edges or other defects which may detract from the service requirements of the frame.

All metal and plastic welds shall be a high standard of workmanship.

Materials

The components of the fiber distribution frame and its accessories shall not contain any hazardous or toxic materials.

All the components shall be stainless steel or metal with equivalent corrosion resistance. The OFD shall have a robust construction.

Tests of Assembled Fiber Distribution Frame

□ Temperature Cycling

The sample shall be subjected to 10 continuous test cycles. Each test cycle shall be:

Temp cycle: 20→2→50 (Relative Humidity 80%) →

20→2→50 (Relative Humidity 80%) →20℃

Temp variation rate: 1℃/min

Cycle period: 2hr

On completion, neither corrosion nor deformation shall be occurred on the sample.

□ Vibration Test

The cables connected to the sample shall be rigidly clamped 500mm from the distribution frame. The distribution frame shall be vibrated at a frequency of

10~55~10Hz and an amplitude of 0.35mm for a period of 1 hour. The cycle takes 10 minutes and vibrates in a perpendicular way. On completion, neither separation of components nor damage shall be occurred.

Packing and Marking

Packing

The fiber distribution frame shall be packed as a complete kit containing all components necessary for installation.

Each item is to be covered with a protective material to prevent scratching or damage during shipping or storage.

Complete assembly and installation instructions in English shall be provided with each packaged unit.

The final shipping cartons shall be of sufficient strength and durability to protect the contents from handling during storage and shipping by land, sea, or air.

Marking

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

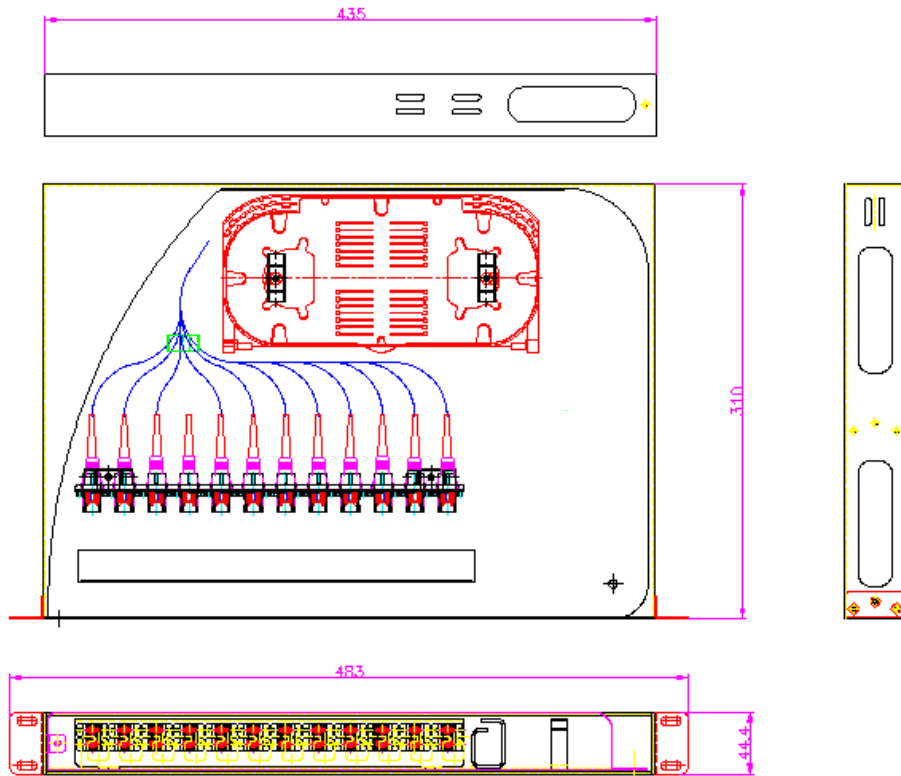
- ❖ The company to be delivered
- ❖ The product item
- ❖ Country of origin
- ❖ Manufacturer's name and/or trademark
- ❖ Date of manufacture
- ❖ Caution mark

Each fiber distribution frame shall be marked with the company, the month and year of manufacture

and the trademark and/or name of manufacturer in legible color.

Spec No.	NWC-OFD-A-1	Assembly Overview (OFD-A-1)
Code No.	Fig - 1	
Initial	2006. 02. 21	
Revised		

Unit : mm
Tolerance : 1/100

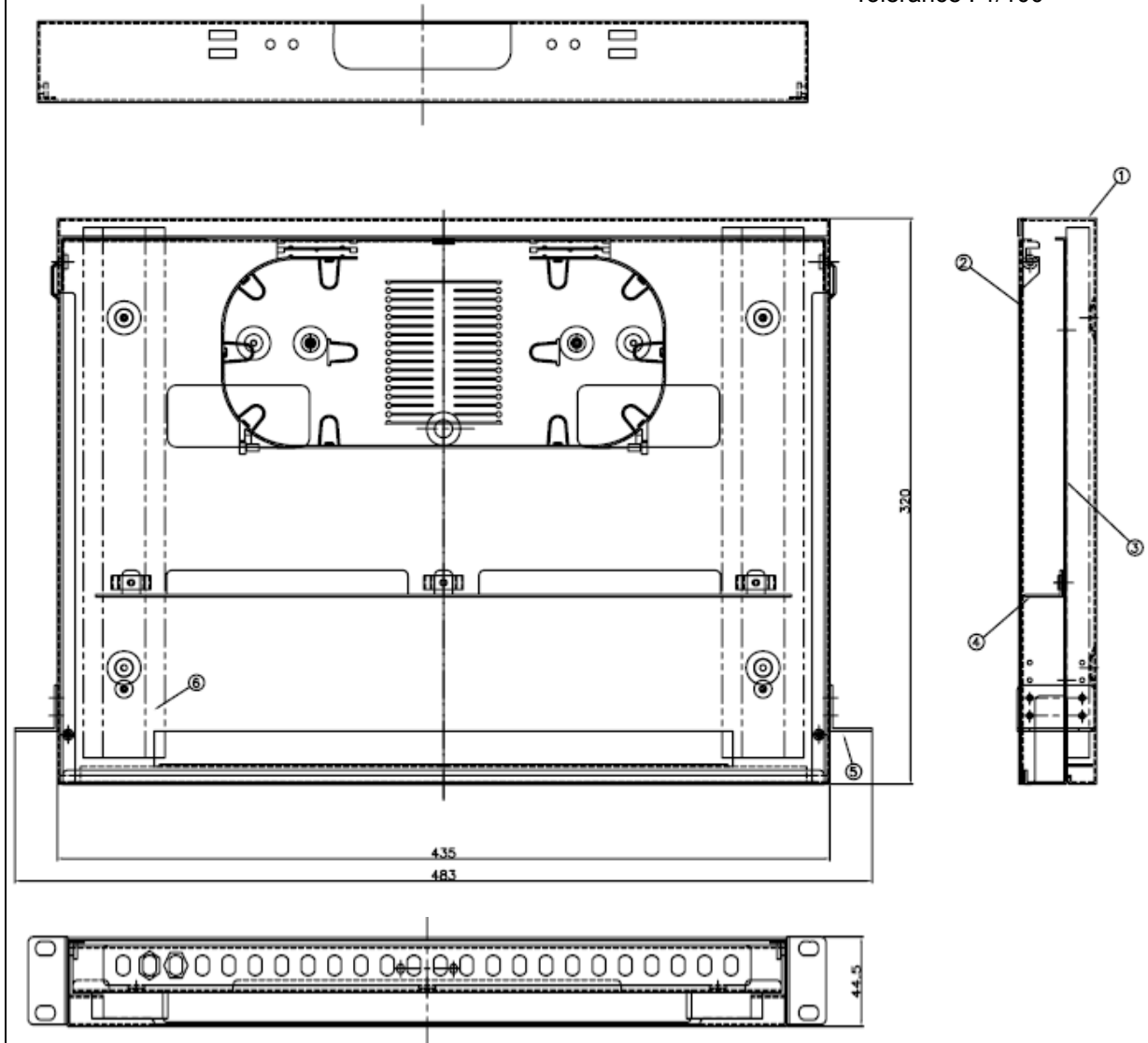


No.	Item	Material	Qty	Remark
1	Assembly overview	SPCC or Aluminum	1	

Spec No.	NWC-OFD-A-2	Assembly Overview (OFD-A-2) 24CORE
Code No.	Fig - 1	
Initial	2006. 02. 21	
Revised		

Unit : mm

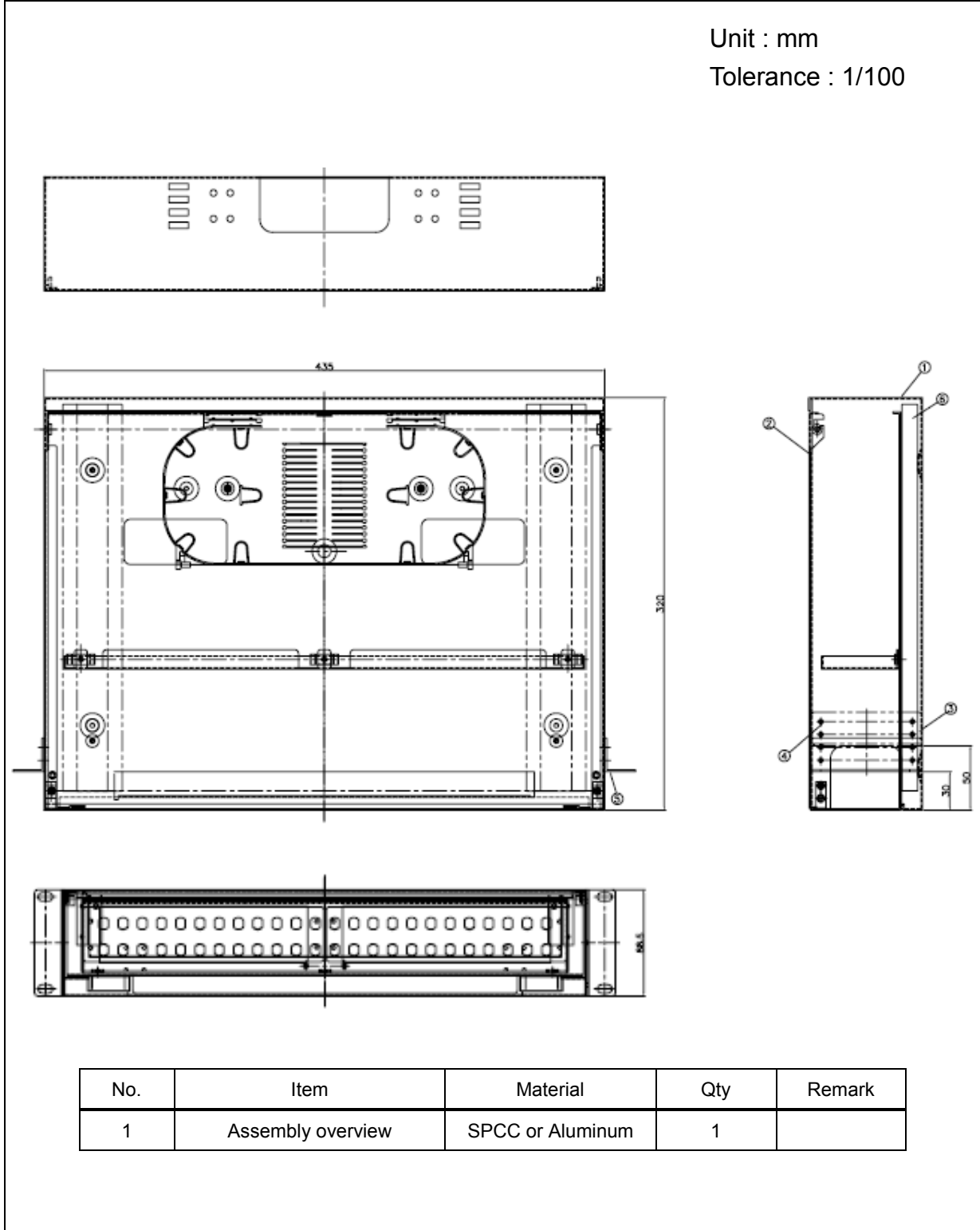
Tolerance : 1/100



No.	Item	Material	Qty	Remark
1	Assembly overview	SPCC or Aluminum	1	

Spec No.	NWC-OFD-A-2	Assembly Overview (OFD-A-2) 48CORE
Code No.	Fig - 1	
Initial	2006. 02. 21	
Revised		

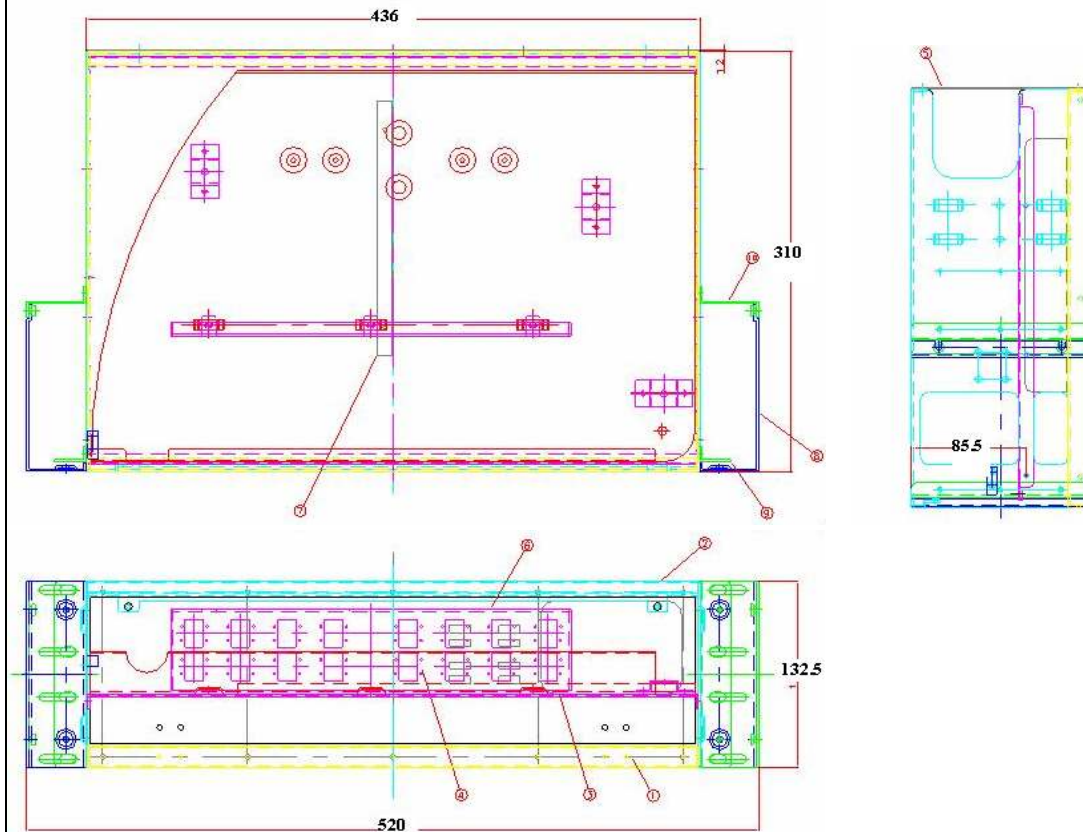
Unit : mm
Tolerance : 1/100



No.	Item	Material	Qty	Remark
1	Assembly overview	SPCC or Aluminum	1	

Spec No.	NWC-OFD-B-1	Assembly Overview (OFD-B-1)
Code No.	Fig - 2	
Initial	2006. 02. 21	
Revised		

Unit : mm
Tolerance : 1/100

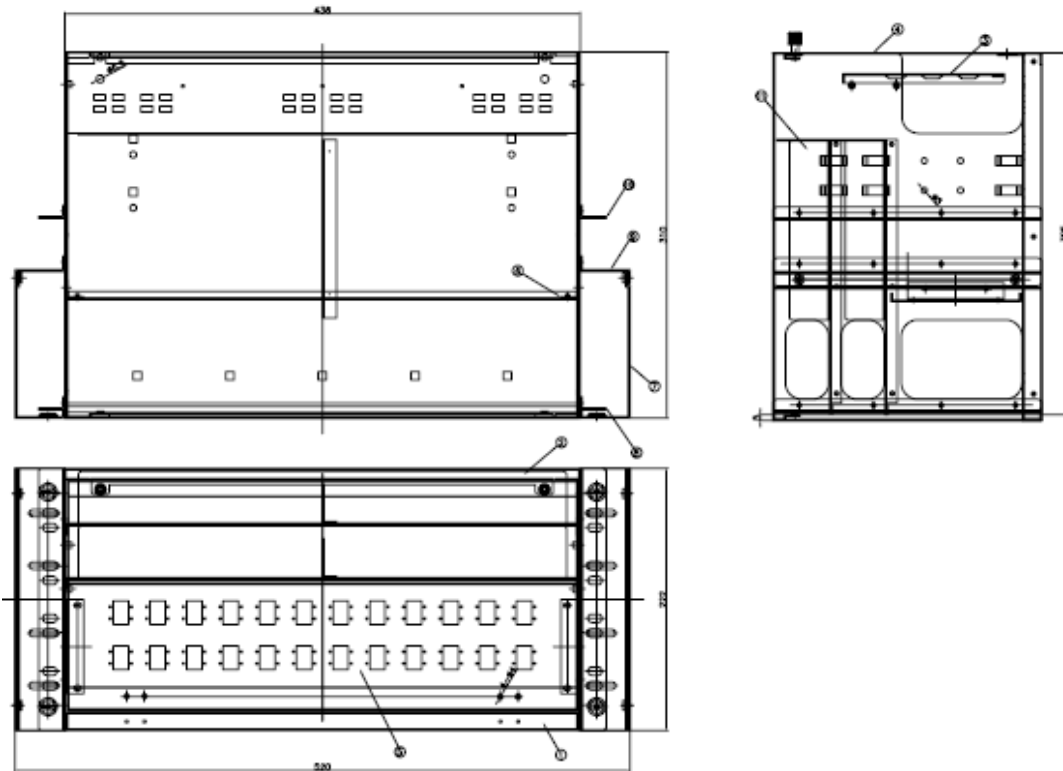


11	DOOR	1	ACRYLIC	t3.0	X
10	REAR BRACKET	2	CR	t1.8	X
9	BU BRACKET	2	CR	t1.8	X
8	COVER BRACKET	2	CR	t1.8	X
7	PARTITION	1	CR	t1.2	X
6	CORE PANEL-32C	1	CR	t1.2	X
5	REAR PANEL	1	CR	t1.8	X
4	ROTATE PANEL	1	CR	t1.2	X
3	MIDDLE PANEL	1	CR	t1.2	X
2	BODY	1	CR	t1.2	X
1	BASE	1	CR	t1.2	X
NO.	DESCRIPTION	Q'TY	MATERIAL	WEIGHT OR SIZE	REMARK

No.	Item	Material	Qty	Remark
1	Assembly overview	SPCC or Aluminum	1	

Spec No.	NWC-OFD-B-2	Assembly Overview (OFD-B-2)
Code No.	Fig - 3	
Initial	2006. 02. 21	
Revised		

Unit : mm
Tolerance : 1/100

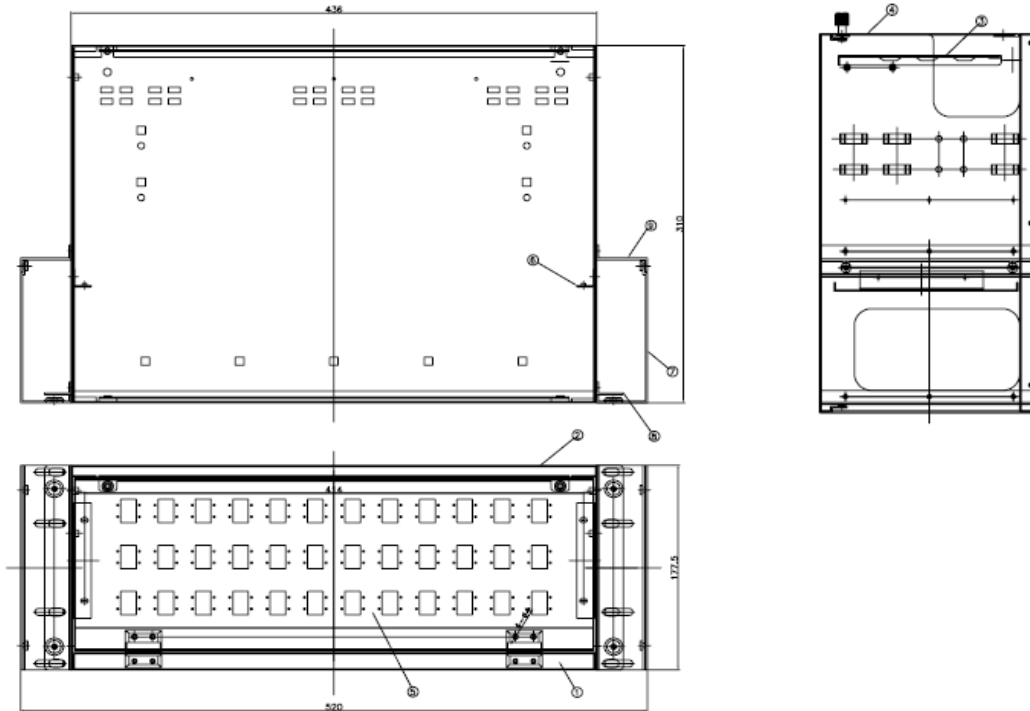


12	DOOR	1	ACRYLIC	t3.0	X
11	MIDDLE PANEL	2	CR	t1.2	SUB ASSY
10	SU BRACKET-1	2	CR	t1.6	X
9	REAR BRACKET	2	CR	t1.6	X
8	SU BRACKET	2	CR	t1.6	X
7	COVER BRACKET	2	CR	t1.6	X
6	INNER BRACKET	2	CR	t1.2	X
5	CORE PANEL	1	CR	t1.6	X
4	REARDOOR	1	CR	t1.2	X
3	INNER PANEL	1	CR	t1.2	X
2	BODY	1	CR	t1.2	X
1	BASE	1	CR	t1.2	X
NO.	DESCRIPTION	Q'TY	METERIAL	WEIGHT OR SIZE	REMARK

No.	Item	Material	Qty	Remark
1	Assembly overview	SPCC or Aluminum	1	

Spec No.	NWC-OFD-C-1	Assembly Overview (OFD-C-1)
Code No.	Fig - 4	
Initial	2006. 02. 21	
Revised		

Unit : mm
Tolerance : 1/100

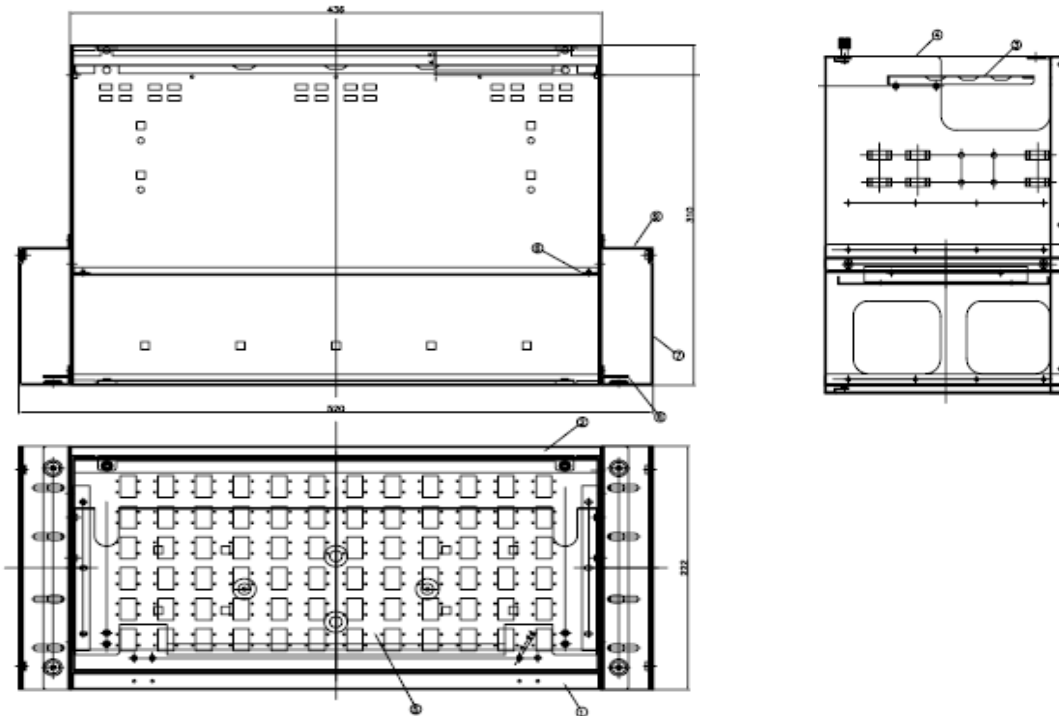


10	DOOR	1	ACRYLIC	±3.0	X
9	REAR BRACKET	2	CR	±1.6	X
8	4U BRACKET	2	CR	±1.6	X
7	COVER BRACKET	2	CR	±1.6	X
6	INNER BRACKET	2	CR	±1.2	X
5	CORE PANEL	1	CR	±1.2	X
4	REAR DOOR	1	CR	±1.2	X
3	INNER PANEL	1	CR	±1.2	X
2	BODY	1	CR	±1.2	X
1	BASE	1	CR	±1.2	X
NO.	DESCRIPTION	Q'TY	MATERIAL	WEIGHT OR SIZE	REMARK

No.	Item	Material	Qty	Remark
1	Assembly overview	SPCC or Aluminum	1	

Spec No.	NWC-OFD-C-2	Assembly Overview (OFD-C-2)
Code No.	Fig - 5	
Initial	2006. 02. 21	
Revised		

Unit : mm
Tolerance : 1/100



10	DOOR	1	ACRYLIC	13.0	X
9	REAR BRACKET	2	CR	t1.8	X
8	SU BRACKET	2	CR	t1.8	X
7	COVER BRACKET	2	CR	t1.8	X
6	INNER BRACKET	2	CR	t1.2	X
5	CORE PANEL	1	CR	t1.8	X
4	REAR PANEL	1	CR	t1.2	X
3	INNER PANEL	1	CR	t1.2	X
2	BODY	1	CR	t1.2	X
1	BASE	1	CR	t1.2	X
NO.	DESCRIPTION	Q'TY	MATERIAL	WEIGHT OR SIZE	REMARK

No.	Item	Material	Qty	Remark
1	Assembly overview	SPCC or Aluminum	1	