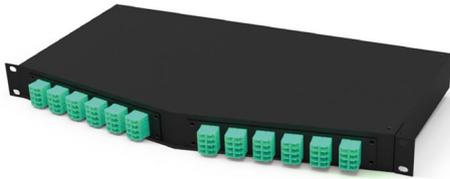


# STRUCTURE CABLING

## MPO

### ULTRA DENSITY



#### Most densely populated patch panels

- 1U Angled or 1U Flat
- Up to 144 fiber in 1U, LC to MPO
- Factory configured for rapid deployment
- Single-mode or multimode (OM3/OM4)



#### MPO HARNESES

- Pre-terminated MPO-LC or MPO-SC
- 12 or 24 pin MPO connectors
- Connect directly to equipments



#### MPO TRUNK CABLES

- Pre-terminated 40G/100G backbone
- 12 or 24 pin MPO connectors
- MPO cassette to cassette connections

### HIGH DENSITY



#### Modular patch panels fully loaded with MPO cassettes

- 1U or 3U (max 4 MPO cassettes per 1U)
- Up to 96 fiber in 1U, LC to MPO
- Work with MPO Cassettes
- Factory configured or build your own



#### MPO CASSETTES

- Up to 4 cassettes in 1U
- 12, 24, or 36 fiber per cassette
- Easy installation/replacement

### HIGH DENSITY



#### Modular patch panels fully loaded with adapter plates

- 1U (max 4 adapter plates per 1U)
- Up to 108 fiber in 1U, LC to MPO
- Work with Adapter Plates
- Factory configured or build your own



#### ADAPTER PLATES

- Up to 4 plates in 1U
- 12, 24, or 36 fiber per plate
- Pigtail/Splice tray sets available

### Accessories



#### MPO Adapter

- Type A (opposed) or type B (aligned), Full Flange
- Free-hanging or panel-mount design
- High Performance, Premium Quality
- High-strength casing materials



# STRUCTURE CABLING TRANSCEIVER

## 40G QSFP+



- High-performance Backplane
- Computer Cluster Cross-connect
- Switch, Router and HBAs
- 10G/40G Ethernet (XAUI)

## 40G CFP



- 40GBASE-LR4 Ethernet
- 40GBASE-ER4 Ethernet
- 40GBASE-FR

## XFP



- SONET OC-192 / SDH STM-64
- ITU-T G.709
- 10GBASE-SR/LR/ER/EW/ZR
- 10GBASE-SR/LR/ER/EW/ZR+ FEC

## TUNABLE XFP



- Wide, local, and storage area networks
- SONET OC-192 and SDH STM-64
- Ethernet and Fibre Channel switches
- XFP MSA Revision 4.5

## DWDM XFP



- 9.95G SONET/SDH
- 10.3G Ethernet
- 10.5G Fiber Channel
- 10.7G SONET/SDH+FEC

## CWDM XFP



- 9.95G SONET/SDH
- 10.3G Ethernet
- 10.5G Fiber Channel
- 10.7G SONET/SDH+FEC

## BiDi XFP



- 10GBASE-BX at 10.3125 Gb/s
- 10GBASE-BX at 9.953 Gb/s

## TUNABLE SFP+



- 10 Gbps Ethernet with/without FEC
- 8.5 Gbps Fibre Channel
- 10 Gbps Fibre Channel with/without FEC
- SONET OC-192/STM-64 with/without FEC

## SFP+



- 10GBASE-SR, LR, ER, at 10.31Gbps
- 10GBASE-LW at 9.95Gbps
- 1000 Base-LX Ethernet
- 8XFCA at 8.5Gbps

## SDH SFP+



- SONET OC-192 / SDH STM-64
- ITU-T G.709
- 10GBASE-SR/LR/ER/EW/ZR
- 10GBASE-SR/LR/ER/EW/ZR+ FEC

## DWDM SFP+



- 10Gb/s SONET/SDH ITU-T G.959.1 P1L1-2D2
- 10Gb/s SONET/SDH ITU-T G.709
- 10 Gb/s OC-192 / STM-64 LR2
- 10GBASE-ZR/ZW

## CWDM SFP+



- 10G BASE Ethernet, Fiber Channel
- High-speed Storage Area Networks, SAN Fiber Channel
- Computer Cluster Cross-connect

# STRUCTURE CABLING TRANSCEIVER

## BiDi SFP+



- 10GBASE-BX at 10.3125 Gb/s
- 10GBASE-BX at 9.953 Gb/s
- 1000 Base-LX Ethernet
- 8XFC at 8.5Gbps

## VIDEO SFP



- SMPTE 297-2006 compatible optical-to-electrical
- Broadcast cameras
- High-density video routers

## SFP ETHERNET



- The IEEE 802.3z standard includes
- 1000BASE-SX for transmission over
- multi-mode fiber

## 4G SFP



- Fibre Channel, or FC,
- is a gigabit-speed network technology
- primarily used for storage networking.

## LTE SFP



- For the OBSAI application,
- the rates are 6.144Gb/s, 3.072 Gb/s,
- 1.536 Gb/s and 0.768 Gb/s.

## DWDM SFP



- The transceivers are small form factor pluggable
- modules for bi-directional serial
- optical data communications such

## CWDM SFP



- Gigabit Ethernet Switches and Routers
- FE/GE/SDH/10G
- Fibre Channel Switch Infrastructure
- XDSL Applications

## COPPER SFP



- LAN 10/100/1000Base-T
- Gigabit Ethernet over Cat 5 Cable
- Switch to Switch Interface
- Router/Server Interface

## BiDi SFP SDH



- SDH/SONET Link
- Gigabit Ethernet Interconnect
- Fibre Channel Links

## BiDi SFP ETHERNET



- WDM Fast Ethernet Links
- IEEE 802.3ah 1000BASE-BX Applications
- Fibre Channel Links

## 4G BiDi SFP



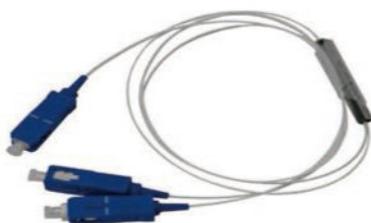
- Fibre Bi-Directional SFP Optical Transceiver
- Up to 4.25 Gb/s
- Compliant with Fibre Channel FC-PI 400/200/100

## ACTIVE OPTICAL CABLES



- LAN 10/100/1000Base-T
- Gigabit Ethernet over Cat 5 Cable
- Switch to Switch Interface
- Router/Server Interface

# STRUCTURE CABLING SPLITTER

**VS-011**

**Micro Type**
**VS-012**

**Cassette**
**VS-013**

**Rack Type**
**VS-014**

**Module Type 1**
**Technical Specification**
**1×N Series**

Parameters	1×4	1×8	1×16	1×24	1×32	1×64	1×64
Operation wavelength (nm)	1260 - 1650						1310 ± 40 1490 ± 10 1550 ± 40
Insertion loss (dB)	≤ 7.4	≤ 10.7	≤ 13.9	≤ 15.8	≤ 17.2	≤ 21.5	≤ 20.1
PDL	≤ 0.3	≤ 0.3	≤ 0.3	≤ 0.3	≤ 0.3	≤ 0.5	≤ 0.3
Uniformity of I.L	≤ 0.8	≤ 1.0	≤ 1.4	≤ 1.4	≤ 1.6	≤ 2.0	≤ 1.6
Return loss (dB)	≥ 55						
Directivity (dB)	≥ 55						
Working / Storage Temperature (°C)	-40 ~ + 85						

**2×N Series**

Parameters	2×4	2×8	2×16	2×32	2×64	2×64
Operation wavelength (nm)	1260 - 1650					1310 ± 40 1490 ± 10 1550 ± 40
Insertion loss (dB)	≤ 7.6	≤ 11.0	≤ 14.8	≤ 17.9	≤ 21.5	≤ 20.1
PDL	≤ 0.3	≤ 0.3	≤ 0.3	≤ 0.3	≤ 0.5	≤ 0.3
Uniformity of I.L	≤ 1.0	≤ 1.2	≤ 1.5	≤ 1.8	≤ 2.0	≤ 1.8
Return loss (dB)	≥ 55					
Directivity (dB)	≥ 55					
Working / Storage Temperature (°C)	-40 ~ + 85					

# STRUCTURE CABLING

## FIBER OUTDOOR CABINET

Customized designs available upon your request.

Fiber Optic Cross-Connect Cabinet (Glass-fiber Cabinet)



VB31-2-A1

Fiber Optic Cross-Connect Cabinet (Metal Cabinet)



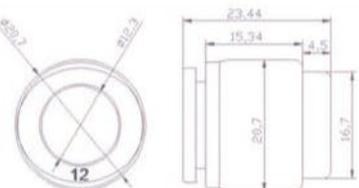
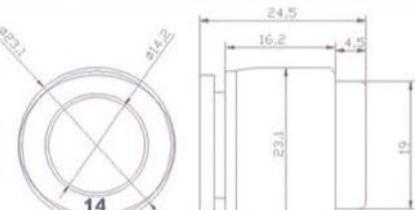
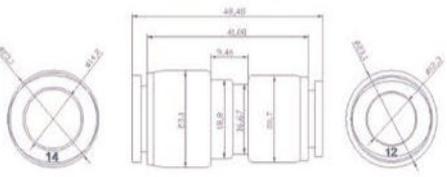
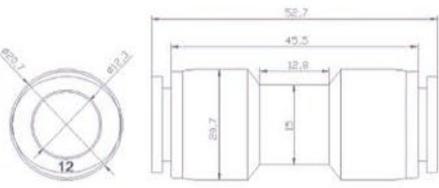
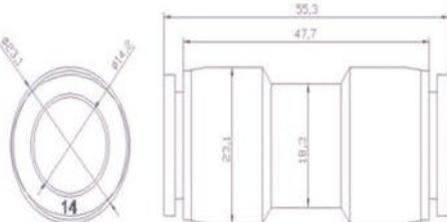
VB31-2-B1

VB31-2-C1

Multi-functional Outdoor Cabinet (Suitable for Extreme Weather)



# STRUCTURE CABLING MICRODUCT CONNECTOR

<p>Item: <b>TRUB12</b></p> <p>End Stop Microduct connectors 12 mm</p>		
<p>Item: <b>TRUB14</b></p> <p>End Stop Microduct connectors 14 mm</p>		
<p>Item: <b>TRPG14-12</b></p> <p>Reducer Microduct connectors 14/12 mm</p>		
<p>Item: <b>TRU12</b></p> <p>Straight Microduct connectors 12/12 mm</p>		
<p>Item: <b>TRU14</b></p> <p>Straight Microduct connectors 14/14 mm</p>		

### Specification

Product usage:	suitable for gas and waterway connection
Product characteristics:	1.adopts PC injection molding. 2. transparent with excellent permeability. 3. quick joint and easy to install.
Installation method:	1.Rotate and insert the corresponding specification line and check that the line is in place.
Remarks:	:The test temperature is 0-25 °C; : This product is not available for corrosive media such as strong acid and strong base.

Main material	Sealing ring material	Push-button	Fluid media	Bursting pressure of tank shell	Normal operating pressure	Temperature
PC	NBR	POM	Water/Air	≧ 3.5MPa	0.1-1.5MPa	≧ 40 °C

# STRUCTURE CABLING MICRODUCT CONNECTOR

Microduct external diameters:	Metri(mm)	3,4,5,7,8,9,10,12,14,15,16,18,20,25,32
	Inch	1/8,3/16,1/4,5/16,3/8,1/2

Connectors      Straight, Direct Buried(DB), Reducing, Endstop



## Product specifications:

<p>These connectors were developed to connect microducts with each other. Our system enables an easy, fast connection and disconnection of the microduct.</p> <p>The connectors' robust construction resistance to high pressure forces, allowing them to be used in direct buried (DB) applications. The transparent body enables easy visual inspection of the cable within the connector.</p>	No.	Name	Material	Colour
	1	Body	PC	Transparent
	2	Sealing	NBR	Black
	3	Back Ring	POM	Black
	4	Lock Claws	SUS	Silver
	5	Collar	POM	Blue ,etc
	6	Release sleeve	POM	Orange, etc
	7	Locking Clip	POM	Blue ,etc
Tube to connectors:	Polyethylene HDPE	Working temperature:	-45°C/+50°C	
Fluid:	Air with blowing system	Transport and storage temperature:	-10°C/+50°C	
Working Pressure:	20 bar	Installation temperature:	-10°C/+50°C	
MAX. Pressure:	28 bar	Recommended blowing temperature:	-15°C/+35°C	
Year esteemed of life:	25 years	Outdoor exposure limit @Cetral Europe:	12 months	
Tube assembly:	No tooling required	Protection class:	IP68	
Water ingress test:	(0.5 bar during 168	High pressure resistance(safety)	>50bar	
3,4,5, 1/8,3/16,1/4	IK05(0.7J)	12,14,15,16,18, 1/2	IK07(2J)	
7,8,9,10, 5/16,3/8,	IK06-IK07(1.5J)	20,25,32	>IK08(>2J)	

# STRUCTURE CABLING TOOL

Fiber Optic Cleaner Pen



Fiber Optic Cleaner Pen



Fiber Optic Cleaner Cassette type



Fiber optic stripper



Fiber jacket peeling tool



Optical cleaver



Visual fault locator Pen type



Media converter, Dual fiber



Optical Fiber Cold Joint Toolkit



Optical Power Meter



Visual fault locato



Optical Fiber Cold Joint Toolbox





**NINGBO HI-SUN COMMUNICATION EQUIPMENT CO.,LTD**

ADD: 1398 north zhangxin Road xiao lin town cixi Ningbo China

Tel: 86-574-87267243 / 88183928

Fax: 86-574-87268243

E-mail: [veki@nbhisun.net](mailto:veki@nbhisun.net)

[Http://www.nbhisun.net](http://www.nbhisun.net)