



MUNICIPIO DE ZAPOTLAN EL GRANDE, JALISCO

PROVEEDURIA MUNICIPAL

LICITACIÓN PÚBLICA LOCAL 011/2018

"ADQUISICIÓN E INSTALACIÓN DE CABLEADO ESTRUCTURADO Y FIBRA ÓPTICA, PARA EL EDIFICIO QUE OCUPA LA PRESIDENCIA MUNICIPAL DE ZAPOTLÁN EL GRANDE, JALISCO"


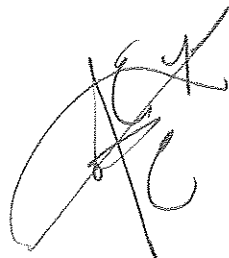



Propuesta Técnica Anexo 1

	Características Técnicas		
1	Suministro de Cable UTP cat.6 azul, Debera cumplir y exceder los estandares ANSI/TIA-568-C.2-1 para la categoria 6, ISO11801 2a edicion Clase E, IEC 61156-5 para 100 metros, debera ser cobre solido calibre 23 AWG, forro exterior de PVC, desempeño en redes de 1000 base-T, Carrete de 305m, verificacion UL.	24,00	BOBINA
2	Suministro de Jack categoría 6 keystone color azul, debera cumplir con ANSI/TIA-568-C.2 de categoria 6 y con ISO 11801 2a edicion clase E, verificacion UL, CE y ETL, codigo de colores para terminacion den T568A, T568B	114,00	PIEZA
3	Suministro de Panel de parcheo categoría 6, 24 puertos debera cumplir con ANSI/TIA-568-C.2 de categoria 6 y con ISO 11801 2a edicion clase E, configuracion de colores para terminacion den T568A, T568B en parte posterior del panel, areas de identificacion en color blanco en parte delantera	3,00	PIEZA
4	Suministro de Panel de parcheo categoría 6, 48 puertos. debera cumplir con ANSI/TIA-568-C.2 de categoria 6 y con ISO 11801 2a edicion clase E, configuracion de colores para terminacion den T568A, T568B en parte posterior del panel, areas de identificacion en color blanco en parte delantera	3,00	PIEZA
5	Suministro de Patch cord cat. 6 con bota inyectada color azul, 1 m debera cumplir con ANSI/TIA-568-C.2 de categoria 6 y con ISO 11801 2a edicion clase E, elaborado con cable UTP multifilar Categoria 6, los conectores deberan cumplir con los requerimientos de FCC-68 e IEC 60603j-7, fabricados con bota inyectada.	114,00	PIEZA
6	Suministro de Patch cord cat. 6 con bota inyectada color rojo, 3 m debera cumplir con ANSI/TIA-568-C.2 de categoria 6 y con ISO 11801 2a edicion clase E, elaborado con cable UTP multifilar Categoria 6, los conectores deberan cumplir con los requerimientos de FCC-68 e IEC 60603j-7, fabricados con bota inyectada.	114,00	PIEZA
7	Placa de pared angulada p/jack cat 6 1 p color blanco, con mica para etiquetas, Para montaje en caja universal, cumple con UL-94V-0 retardante a la flama, verificacion UL, CE, ETL.	114,00	PIEZA
8	Sujetacable de tela tipo velcro o similar color negro rollo 25 metros x 3/4" (2 cm)	5,00	PIEZA
9	Mano de obra, instalacion de nodos de red	114,00	PIEZA
10	Pruebas de Cableado con equipo certificador CALIBRADO VIGENTE.	114,00	PIEZA
11	Memoria Tecnica para certificación de 114 nodos de red ante fabricante (Planos AsBuilt y Reporte Fotografico)	1,00	LOTE

12	Organizador de cable horizontal 19" 2 UR doble lado	11,00	PIEZA
13	Organizador de cable vertical Nueva Linea 45UR doble	1,00	PIEZA
14	Etiquetas para cableado en ambas puntas, en faceplate, en patch panel	1,00	LOTE
15	Canaleta plastica tipo T-45 o similar, incluye fijacion a pared mediante pija a cada 1.50, coples, curvas, tees, reducciones, pasos en muro de tablaroca o mamposteria gruesa, asi como todos los accesorios de linea requeridos para su correcta instalacion.	140,00	ML
16	Canaleta plastica LD-10 o similar, incluye fijacion a pared mediante pija a cada 1.50, coples, curvas, tees, reducciones, pasos en muro de tablaroca o mamposteria gruesa, asi como todos los accesorios de linea requeridos para su correcta instalacion.	285,00	ML
17	Registro plastico para canaleta LD10/T45 o similar	130,00	PIEZA
18	Tuberia PdG 2" Suministro e instalacion de tuberia metalica pared delgada de 2", incluye la instalacion de coples, conectores, contras, monitores, cajas de registros, curvas, etiquetas y soportes, debera cumplir con los estandares de cableado ANSI/TIA 569-c	6,00	ML
19	Registro Tipo Himel o Alco dimensiones aproximadas 30x30x15, incluye perforaciones con KNOCKOUT, fijacion a techo o pared, sellos	1,00	PIEZA
20	Fibra Optica para uso interior/externo tubo apretado 50/125, LSZH, OM3 6 hilos, dielectrica, con cubierta de aramida	750,00	ML
21	Distribuidor de Fibra Optica para 2 placas, 1 UR, para montaje en rack de 19", fabricado en acero rolado en frio	5,00	PIEZA
22	Distribuidor de Fibra Optica para 6 placas, 2 UR para montaje en rack de 19", fabricado en acero rolado en frio	1,00	PIEZA
23	Placa ciega para distribuidores tanto de rack como pared	6,00	PIEZA
24	Placa con 6 coples LC duplex multimodo, cumplen hasta con OM4, cumplen con TIA/EIA-568-C.3	10,00	PIEZA
25	Pigtail SC MM 50/125 OM4 simplex 1 metro UPC, Cumple con la TIA-568, con codigo de color, forro de 2mm.	60,00	PIEZA
26	Jumper LC-LC MM 50/125 OM4 duplex 2 mm, 1 metro, UPC cumple con los requerimientos de desempeño de TIA-568-B, terminado en fabrica, y 100% probado contra perdida de insercion, se debera proporcionar al cliente el resultado de la prueba.	10,00	PIEZA
27	Mangas o tubos de empalme de 60 mm, paquete con 12 pzas	5,00	PAQUETE
28	Fusiones de Fibra Optica	60,00	PIEZA
29	Pruebas de Fibra Optica	60,00	PIEZA
30	Memoria Tecnica para certificacion ante fabricante (Planos AsBuilt y Reporte Fotografico)	1,00	EVENTO
31	Kit de Consumibles para fibra optica	1,00	EVENTO
32	Etiquetas para cables de fibra optica, charolas de fibra, Registros, etc	1,00	LOTE
33	Suministro e Instalacion de tuberia conduit metalica pared gruesa galvanizada PGG 2", incluye codos, coples, contras monitores, etiquetas y soportes a cada 1.50 mts	245,00	ML
34	Suministro e Instalacion de registro de paso, tipo himel, alco o similar dimensiones aproximadas 60x40x25	7,00	PIEZA
35	Perforaciones en Losa, incluye el cierre impermeabilizado	12,00	PIEZA
36	Suministro e instalacion de 1000BASE-SX SFP transceiver module, MMF, 850nm, DOM modelo GLC-SX-MMD=	6,00	PIEZA
37	Sistema de Tierra Fisica adecuada para cuartos de telecomunicaciones, incluye el electrodo, H2OHM, registro, tapete, aerosol, conectores, canalizacion, cableado, conectores, excavacion, obra civil y tuberias hasta para 20m, barra tgb, barra de rack y jumpers de tierra	1,00	PIEZA

38	Router 16Gb memoria RAM 2 ranuras DDR3 SODIMM(8GB en cada una), 12 puertos Ethernet 10/100/1000 Mbit/s con auto-MDI/X, 4 puertos SPF 1.25G Ethernet, puerto microUSB, almacenamiento 1Gb, puerto serial asincrono D89-RS232C, Sistema Operativo Mikrotik Router OS v6, licencia nivel 6 y software de sistema de monitoreo DUDE para el router.	1,00	PIEZA
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Nota: El presente formato podrá ser reproducido por cada participante en el modo que estime conveniente, debiendo respetar su contenido, y el orden indicado.



Strategic
LEVITON Partner
PROGRAM

Certificación de Socio "Diamante" para el Programa CCS de Leviton

Integradora de servicios a la construcción S.A. de C.V.

Ha cumplido con los requerimientos establecidos para el Socio del Programa de Sistemas de Cableado Certificado CCS de Leviton, incluyendo todo entrenamiento necesario. Por lo tanto, se lo certifica como Socio Diamante del Programa CCS de Leviton y es autorizado a diseñar e instalar Sistemas de Cableado Certificado de Leviton y respaldar el Aseguramiento de Aplicaciones y Garantía de Desempeño del Programa.

Integradora de servicios a la construcción S.A. de C.V.

se ha comprometido a cumplir y respetar todas las recomendaciones de Leviton y las normas de TIA/EIA presentadas en el entrenamiento para la certificación de instalador. Además, se compromete a instalar solo equipo aprobado por Leviton y cableado de la categoría apropiada.

Los sistemas de canal aprobados y diseñados para TIA/EIA-568B e inscritos con Leviton a través de un Socio Diamante del Programa CCS están cubiertos por el Aseguramiento de Aplicaciones y Garantía de Desempeño de dicho programa.

**SISTEMA DE CABLEADO CERTIFICADO
ASEGURAMIENTO DE APLICACION Y
GARANTIA DE DESEMPEÑO**

Los productos aprobados para los Sistemas de Cableado Certificados de Leviton, instalados correctamente en el cuarto de telecomunicaciones y área de trabajo con el cable de categoría apropiado y en estricto cumplimiento de las normas TIA/EIA-568B, operarán y cumplirán con las especificaciones de EIA/TIA-568B para APLICACIONES ACTUALES o FUTURAS, que transmitan señales sobre un sistema de cableado horizontal construido correctamente para enlace de red, el cual cumple con las especificaciones de canal como se describen en el ANEXO E de TIA/EIA-568B. Además, estos mismos productos de Leviton no presentarán defectos de material o mano de obra mientras estén instalados en el sistema de cableado certificado.

Los términos y condiciones específicas del Aseguramiento de Aplicaciones y la Garantía de Desempeño, son detallados en su totalidad en el Acuerdo y Políticas para el Socio del Programa CCS de Leviton.

MX220635

Número de Certificación

Junio 2017

Fecha de Certificación

Daniel Rando

Director de Programas Técnicos

Junio 2017 a Junio 2019

Fecha Vigencia

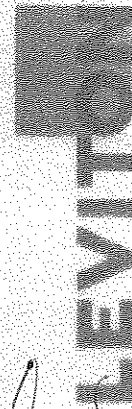
[Handwritten signatures and marks at the bottom of the page]

Este diploma reconoce que

Diego Parada Fuentes

Integradora de servicios a la construcción S.A. de C.V.

Ha completado satisfactoriamente la
Certificación en Instalación y Pruebas de
Cableado Estructurado de
Telecomunicaciones de Leviton



A handwritten signature in black ink, appearing to read "David Rumbakis".

David Rumbakis, RCDD
Gerente del Programa de Certificación

Junio 2017 a Junio 2019

Fecha

*Este Certificado califica al receptor a recibir 7 horas de créditos de CEC de RCDD BICSI

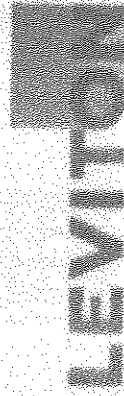


Este diploma reconoce que

Alfonso Valentín Parada Fuentes

Integradora de servicios a la construcción S.A. de C.V.

Há completado satisfactoriamente la
Certificación en Instalación y Pruebas de
Cableado Estructurado de
Telecomunicaciones de Leviton



David Rumpoaks, RCDD
Gerente del Programa de Certificación

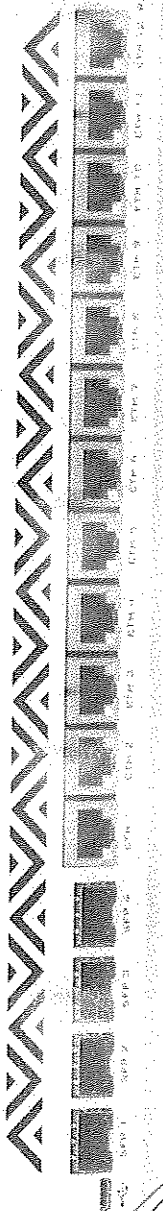
Junio 2017 a Junio 2019
Fecha

*Este Certificado califica al receptor a recibir 7 horas de créditos de CEC de RCDD BICSI

Cloud Core Router

CCR1036-12G-4S-EM

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CLOUD CORE
ROUTER CCR1036



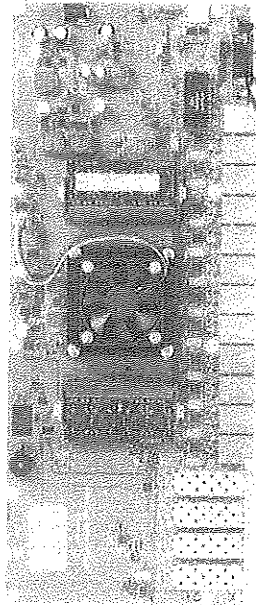
MikroTik

CCR1036-12G-4S-EM is an industrial grade router with cutting edge 36 core CPU! Unprecedented power and unbeatable performance - this is our new flagship device, the Cloud Core Router (CCR1036). If you need many millions of packets per second - Cloud Core Router with 36 cores is your best choice.

This new kit comes preinstalled with 16GB of RAM to provide you the absolute best performance possible in a MikroTik device.

The device comes in a 1U rackmount case, has four SFP ports, twelve Gigabit ethernet ports, a serial console cable and a USB port.

The CCR1036-12G-4S-EM has two DDR3 SODIMM slots, by default it is shipped with 16GB of RAM, and has no memory limit in RouterOS.



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New generation CPU

- 36 core CPU
- 1.2GHz clock per core
- 12 Mbytes total on-chip cache
- State of the art TILE GX architecture

Highest performance

- 8 mpps standard forwarding
- 24 mpps fastpath forwarding (wire speed for all ports)
- Up to 16Gbps throughput

Full set of features

- 1U rackmount case
- 12x Gigabit ports
- 4x SFP ports
- Color touch-screen LCD
- Ports directly connected to CPU
- 16GB of RAM

CPU

16-core Tile-Gx36 CPU (36-cores, 1.2GHz per core)

Two SODIMM DDR3 slots, 2x 8GB DDR3 10600 modules installed (16GB total)

Twelve 10/100/1000 Mbps Gigabit Ethernet with Auto-MDIX

Four 1.25G Ethernet SFP cage (Mini-GSIC, SFP module not included)

Internal USB port, host and device mode

1GB Onboard NAND

One DB9 RS232C asynchronous serial port

Power switch, speed controlled fan, sleep, voltage, current and temperature monitoring

IEC C14 standard connector (10/220V (PSU included), up to 60W power consumption)

355x145mmx55mm

Max ambient temperature: 50° @ 1.2GHz, 70° @ 1.0Hz CPU core frequency

MikroTik RouterOS v6 (64bit), Level 6 license

Router in a 1U case with LCD, PSU, power cable, usb cable

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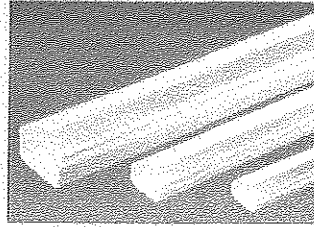
Pan-Way® LD Surface Raceway System

PANDUIT®

SPECIFICATION SHEET

specifications

LD non-metallic series low voltage, one-piece hinged design, single channel surface raceway shall include adhesive backing and shall be made of impact resistant material with a smooth finish that shall not scratch, peel or corrode. The raceway shall include an assortment of bend radius and standard fittings that complement the offering to help route, protect and conceal low voltage data, voice and video cabling. LD raceway shall be available in three sizes and four standard colors that shall be optimized with the Panduit® Pan-Net® communication system.



technical information

Material:	Rigid PVC
Flammability:	UL94V-0; FT4
Capacity:	Single Channel
Voltage Rating:	50V or less
Operating and Storage Temperature:	0 to 50° C

key features and benefits

1" bend radius control fittings:	Cables in the raceway will satisfy the minimum 1" bend radius requirement, preventing the potential degradation of cable performance; meets TIA/EIA standards
One-piece hinged design:	Cables can be laid into the raceway, speeding installation and preventing damage to cables
Adhesive backing:	Full length adhesive strip allows easy tool free installation and works well for temporary mounting
Available in different sizes & lengths:	Accommodates varying cable types and capacities. Available sizes - LD3, LD5, LD10 ; Available lengths - 6', 8', 10' (2m length available in Europe only)
Non-metallic construction:	Lightweight, reducing installer fatigue and labor required to install the raceway; solid color throughout will not chip, peel, rust or corrode; easy to cut with standard saws and saw blades, eliminating the need for special cutting devices
Distinct colors:	Available in four standard colors- IW, EI, IG, WH. AW available in Europe only. Raceway is field paintable to match walls and surrounding décor
Full selection of fittings and surface mount boxes:	Wide variety of fittings and surface mount boxes available for various LD raceway applications

applications

Pan-Way® LD Surface Raceways are designed to provide easy and economical solutions for routing any low voltage cable along smooth and clean perimeter walls,

baseboards or ceilings. This raceway is a perfect solution for schools, hospitals, offices, homes or anywhere a small, secure, low profile raceway is needed.

www.panduit.com

LD Raceway

Raceway:	LD3IW**-A LD5IW**-A LD10IW**-A
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LD Raceway Fittings

Coupler:	CF*IW-E
Inside corner:	ICFC*IW-X
Outside corner:	OCFC*IW-X
Right angle:	RAFC*IW-X
End cap:	ECF*IW-X
Tee:	TFC*IW-X
Four-way cross:	CRFC5IW-X
Drop ceiling/entrance end:	DCF*IW-X
Right angle/entrance end:	RAEFXIW-X
LD5 to LD3 reducer:	RF5X3IW-E
LD10 to LD5 reducer:	RF10X5IW-X
LD10 to LD3 reducer:	RF10X3IW-X
LD5 fire box adapter:	FBA5IW-X
LD10 fire box adapter:	FBA10IW-X

LD Raceway Installation

Installation tool:	LDW*-V
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LD Raceway Surface Mount Outlet/Junction Boxes

Low Voltage:	
Single gang, one-piece :	JB1IW-A
Single gang, one-piece, deep:	JB1DIW-A
Single gang, two-piece :	JBX3510IW-A
Single gang, two-piece, fast snap:	JB1FSIW-A
In-wall box adapter:	JBA-X

Power rated:	
Single gang, two-piece:	JBP1IW
Single gang, two-piece, deep:	JBP1DIW
Single gang, two-piece, extension:	JBP1EIW
Single gang, two-piece, intermediate:	JBP1IIW
Single gang, two-piece, snap on:	JBP1FSIW
Single gang, two-piece, round:	RJBX3510IW
Double gang, two-piece:	JBP2IW
Double gang, two-piece, deep:	JBP2DIW
Double gang, two-piece, divided:	JBP2SIW
Double gang, two-piece, snap on:	JBP2FSIW

* Insert raceway size of 3, 5, or 10

** Insert raceway length of 6', 8', or 10'

All parts listed in International White (IW) color. To order other colors substitute Electrical Ivory (EI), International Gray (IG), and White (WH).

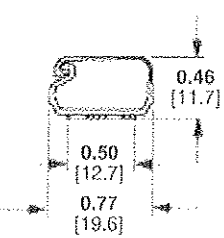
[Handwritten signatures and initials are present at the bottom of the page, including a large signature that appears to be 'John' and another that appears to be 'Alp' or similar.]

Pan-Way® LD Surface Raceway System

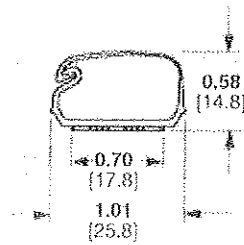
Wire Fill

Raceway Type and Configuration	Fill Area (in ²)	Electrical Cables			Data Grade Cables								Audio/Video		Fiber Optic Cable			
		14 AWG	12 AWG	10 AWG	Cat 5e - Plenum				Cat. 6		Cat. 6A		Cat. 6A (SD)		RG6		2 Strand	
		THHN/T90	THHN/T90	THHN/T90	DIA. = 0.193		DIA. = 0.24		DIA. = 0.30		DIA. = 0.24		DIA. = 0.275		DIA. = 0.175			
		FILL	FILL	FILL	FILL		FILL		FILL		FILL		FILL		FILL			
		MAX	MAX	MAX	SPEC	MAX	SPEC	MAX	SPEC	MAX	SPEC	MAX	SPEC	MAX	SPEC	MAX		
		(UL Temp Rise Test)			40%	60%	40%	60%	40%	60%	40%	60%	40%	60%	40%	60%		
LD3	0.21	**	**	**	2	4	1	2	1	1	1	2	1	2	3	5		
LD5	0.38	**	**	**	5	7	3	5	2	3	3	5	2	3	6	9		
LD10	1.00	**	**	**	13	20	8	13	5	8	8	13	6	10	16	24		

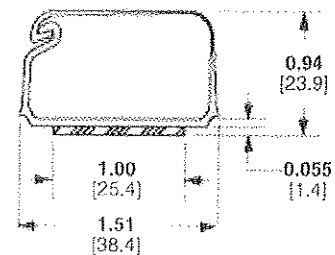
LD Raceway



LD3

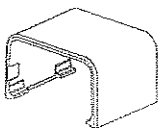


LD5

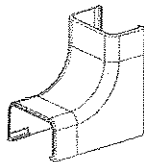


LD10

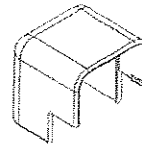
Fittings



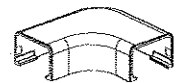
CF



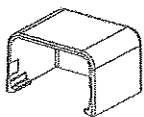
IOFC



OCFC



RAFC



ECF



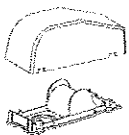
TFC



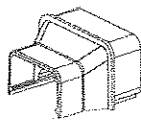
CRFC5



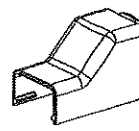
DCF



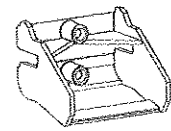
RAEFX



RF



FBA



LDW

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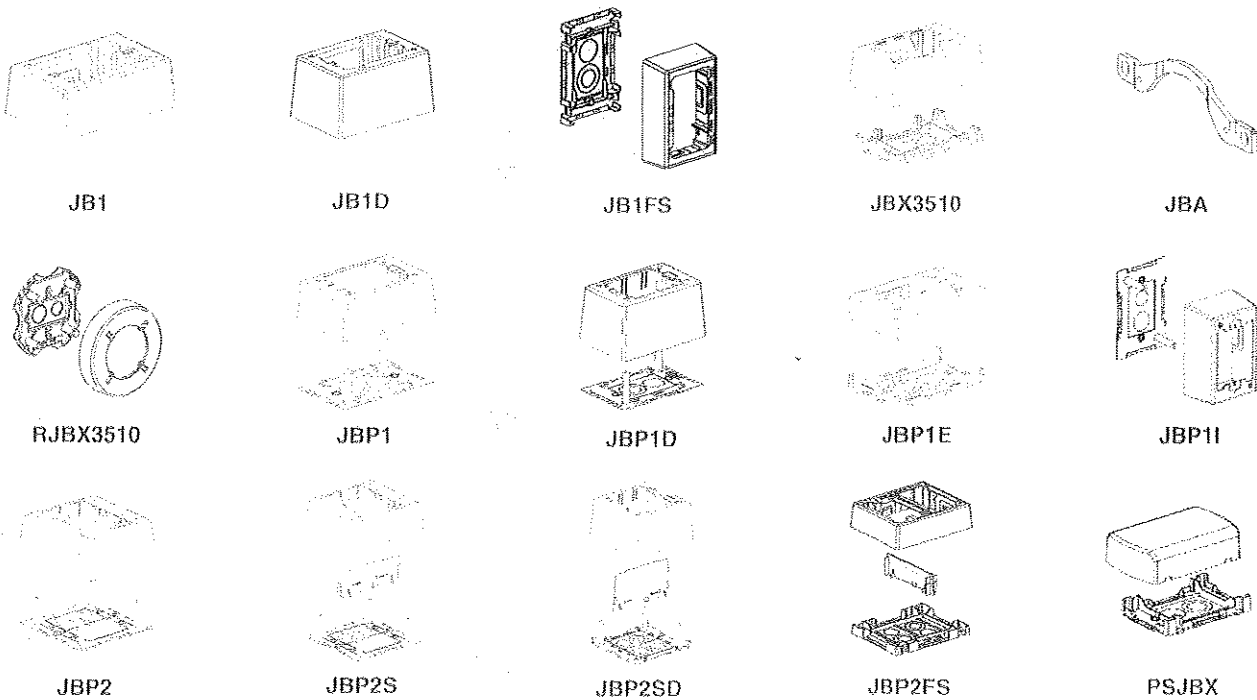
Pan-Way® LD Surface Raceway System

Compatible LD Raceway Surface Mount Outlet/Junction Boxes

Low Voltage or Fiber Optic ONLY	
JB1** -A	Single gang one-piece outlet box with adhesive backing.
JB1D** -A	Single gang one-piece deep outlet box with adhesive backing.
JB1FS** -A	Fast-Snap™ Single Gang Two-Piece Snap Together Outlet Box with adhesive backing.
JBX3510** -A	Single gang two-piece snap together outlet box with adhesive backing.
JBA-X	In-wall box adapters adapt single gang surface mount outlet boxes to in-wall conduit boxes.
Power, Low Voltage or Fiber Optic	
RJBX3510**	Single gang two-piece screw together round outlet box.
JBP1**	Single gang two-piece screw together outlet box.
JBP1D**	Single gang two-piece screw together deep outlet box.
JBP1E**	Single gang two-piece screw together extension outlet box.
JBP1I**	Single gang two-piece screw together intermediate outlet box.
JBP2**	Double gang two-piece screw together deep outlet box.
JBP2S**	Double gang two-piece screw together divided outlet box.
JBP2D**	Double gang two-piece screw together deep outlet box.
JBP2FS**	Fast-Snap™ Double Gang Power Rated Two-Piece Snap Together Outlet Box.
PSJBX**	Single gang two-piece snap together power source box.

** = Available colors: International White (IW), Electrical Ivory (EI), International Gray (IG), White (WH) or Arctic White (AW).

Surface Mount Outlet/Junction Boxes



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WORLDWIDE SUBSIDIARIES AND SALES OFFICES

PANDUIT CANADA
Markham, Ontario
cs-cdn@panduit.com
Phone: 800.777.3300

PANDUIT EUROPE LTD.
London, UK
cs-emea@panduit.com
Phone: 44.20.8601.7200

PANDUIT SINGAPORE PTE. LTD.
Republic of Singapore
cs-ap@panduit.com
Phone: 65.6305.7575

PANDUIT JAPAN
Tokyo, Japan
cs-japan@panduit.com
Phone: 81.3.6863.6000

PANDUIT LATIN AMERICA
Guadalajara, Mexico
cs-la@panduit.com
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SRSP21--WW-ENG
Replaces WW-SRSP10
6/2015

PANDUIT

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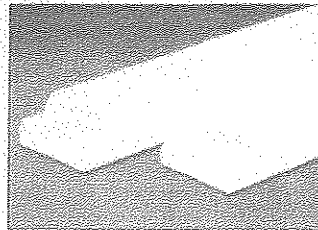
Pan-Way® T-45 Surface Raceway System

PANDUIT®

SPECIFICATION SHEET

specifications

T-45 non-metallic multi-channel, two-piece, hinged cover design surface raceway shall be used to route, protect, and conceal data, voice, video, fiber optic and power cabling. The raceway shall be listed as suitable for use in applications up to 600 volts between conductors by Underwriters Laboratories, Inc. per standard 5A, and by Canadian Standards Association, Inc. per 22.2 no. 62.1-03, when screw secured and installed per instructions. A full complement of fittings with a 1" minimum bend radius compliant with TIA/EIA-568-B, must be available as well as device brackets and junction boxes to install a variety of communication and electrical devices. Divider walls must be available to form separate channels in the multi-channel raceway. An offset box shall be available, with versions for "snap-on" as well as "screw mount" faceplates, for mounting the power receptacle or the data receptacles outside of the raceway channel. T-45 raceway will be manufactured from impact resistant material with flammability rating of V-0. T-45 raceway must be tamper resistant yet also allow access for moves, adds and changes. T-45 raceway finish shall be pure color and will resist scratches and dents and will not peel or corrode.



technical information

Material:	Rigid PVC
Flammability:	UL94V-0
Voltage rating:	UL-5A 600VAC; CSA C22.2 No. 62.1-03 600V
Approvals:	UL Listed 95425 (raceway); UL Listed E116129 (fittings)
NEC:	Article 388
Color:	IW (Off White), EI (Electrical Ivory), WH (White) available in 8 foot lengths only without adhesive
CSI spec form:	LP-CSISPEC-T45-1

key features and benefits

Unique size	Provides capacity for up to 22 Category 5e cables in a 2.38" footprint which allows greater flexibility to match the raceway to the application
1" bend radius control fittings	Meets TIA/EIA standard and many warranty requirements
Designer profile	Maintains the same aesthetically pleasing profile of Panduit® T-70, Twin-70 and TG-70 Raceway which allows all four systems to work together or independently
Multi-directional hinge	Easy access from either side of the raceway provides more convenience for moves, adds and changes; latch is tamper resistant which provides maximum security for communication cabling and maximum safety for power cabling
Multi-channel capable	Capable of routing both power and communication cabling in a single raceway
Multi-termination options	Ability to create many different configurations using proprietary or standard faceplate solutions provides more flexibility to meet end-user connectivity preferences

applications

Pan-Way® T-45 Non-Metallic Surface Raceway is a multi-channel channel raceway which provides solutions for routing low voltage, fiber optic and/or power cabling along perimeter walls. T-45 Surface Raceway terminates using the T-45 Hinged Data

and Power Brackets, T-45 Offset Box and Pan-Way® Surface Mount Outlet Boxes and superior Pan-Way® Snap-On Faceplates. Fittings for T-45 are available to transition to Pan-Way® LD Series Raceways.

www.panduit.com

Pan-Way® T-45 Raceway

Bases with adhesive

8 feet:	T45BIW8-A
10 feet:	T45BIW10-A

Bases without adhesive

8 feet:	T45BIW8
10 feet:	T45BIW10

Covers

8 feet:	T45CIW8
10 feet:	T45CIW10

Divider walls

8 feet:	T45DW8
10 feet:	T45DW10

T-45 Raceway Fittings

Cover coupler

fitting:	T45CCIW-X
----------	-----------

Outside corner

fitting:	T45OCIW
----------	---------

Inside corner

fitting:	T45ICIW
----------	---------

Right angle

fitting:	T45RAIW
----------	---------

End cap fitting:

	T45ECIW
--	---------

Entrance end

fitting:	T45EEIW
----------	---------

Bend radius

control fitting:	T45TRI
------------------	--------

Reducer fitting:

	T45RLDIW
--	----------

Tee fitting:

	T45TIW
--	--------

Insert for tee

fitting:	T45TD
----------	-------

T-45 Raceway Accessories

Hinged data

bracket:	T45HDBIW
----------	----------

Wire retainer:

	T45WR-X
--	---------

Workstation

Outlet Center™	
----------------	--

Offset box:	T45WCIW
-------------	---------

Workstation

Outlet Center™	
----------------	--

Offset box:	T45WCJW
-------------	---------

Electrical bracket

and box for duplex outlets:	T45HEBIW
-----------------------------	----------

Electrical bracket

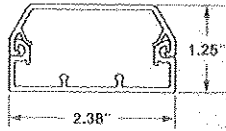
and box for rectangular outlets:	T45HEGBIW
----------------------------------	-----------

For standard colors other than IW (Off White), replace IW in part number with EI (Electric Ivory). WH (White) is available in 8 foot lengths without adhesive only.

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Pan-Way® T-45 Surface Raceway System

Wire Fill



T-45
Internal Area = 2.12 Sq. In.

Raceway Type & Configuration	Fill Area (in ²)	Electrical Cables			Data Grade Cables						Coax Cables		Fiber Optic Cable					
		14 AWG	12 AWG	10 AWG	24 AWG	24 AWG	24 AWG	24 AWG	24 AWG	RG6	RG59/u	2 Strand						
		THHN/THWN/T90	THHN/THWN/T90	THHN/THWN/T90	Cat. 5e - Plenum DIA = 0.193	Cat. 5e - Riser DIA = 0.225	Cat. 6 and Cat. 6A (SD) DIA = 0.240	Cat. 6A DIA = 0.300	RG6 DIA = 0.275	RG59/u DIA = 0.242	2 Strand DIA = 0.175							
		Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill							
		MAX	MAX	MAX	SPEC	MAX	SPEC	MAX	SPEC	MAX	SPEC	MAX	SPEC	MAX	SPEC	MAX		
		(UL Temp Rise Test)			(40%) (60%)		(40%) (60%)		(40%) (60%)		(40%) (60%)		(40%) (60%)		(40%) (60%)			
T-45: No Devices	2.13	36	27	25	20	43	21	32	18	28	12	18	14	21	18	27	35	53
T-45: No Devices with wire retainer	1.72	36	27	25	23	35	17	25	15	22	9	14	11	17	14	22	28	42
T-45: Power and data with wire retainer and divider wall (2 channels)	0.44	12	11	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	1.20	—	—	—	16	24	12	18	10	15	6	10	8	12	10	15	19	29
T-45: Power and data with wire retainer and two divider walls (3 channels)	0.44	12	11	8	6	9	4	6	3	5	2	3	2	4	3	5	7	10
	0.68	—	—	—	9	13	6	10	6	9	3	5	4	6	5	8	11	16
	0.44	—	—	—	6	9	4	6	3	5	2	3	2	4	3	5	7	10
T-45: Power and data using the Workstation Outlet Center™ Offset Box	1.06	—	—	—	14	21	10	15	9	14	5	8	7	10	9	13	17	26
T-45: Data only using data bracket	2.00	—	—	—	27	41	20	30	17	26	11	16	13	20	17	26	33	49
T-45 Power and Data using Hinged Data Bracket with Divider Insert	0.52	12	8	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	1.20	—	—	—	16	24	12	18	10	15	6	10	8	12	10	15	19	29
T-45: Power and Data Using Electrical Bracket and Box	0.22	9	4	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	0.59	—	—	—	6	10	5	7	4	6	2	4	3	5	4	6	8	12

T-45 Raceway



T45B



T45C

Fittings and Accessories



T45CC**X



T450C



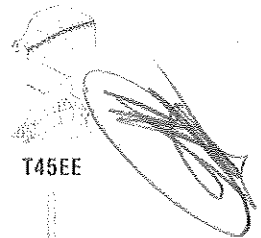
T451C



T45RA



T45EC



T45EE



T45TRI



T45RLD



T45TD



T45T



T45HDB



T45DW



T45WR-X



T45WC



T45WC2



T45HEB



T45HEGB

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SRSP24--WW-ENG

1/2014

Cisco SFP Modules for Gigabit Ethernet Applications

Cost-effective Small Form-factor Pluggable (SFP) transceivers for Gigabit Ethernet applications

Product Overview

The industry-standard Cisco® Small Form-Factor Pluggable (SFP) Gigabit Interface Converter (Figure 1) links your switches and routers to the network. The hot-swappable input/output device plugs into a Gigabit Ethernet port or slot. Optical and copper models can be used on a wide variety of Cisco products and intermixed in combinations of 1000BASE-T, 1000BASE-SX, 1000BASE-LX/LH, 1000BASE-EX, 1000BASE-ZX, or 1000BASE-BX10-D/U on a port-by-port basis.

Figure 1. Cisco Optical Gigabit Ethernet SFP

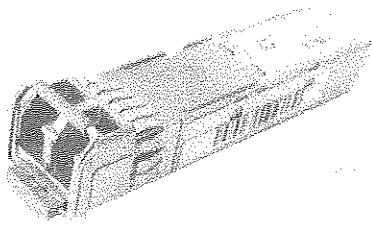


Figure 2. Cisco 1000BASE-T Copper SFP

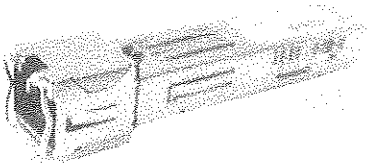
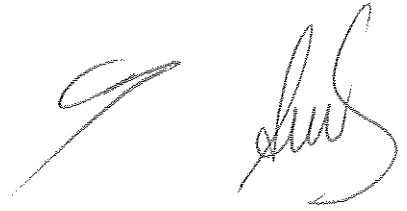



Figure 3. Cisco 2-Channel 1000BASE-BX Optical SFP



Features and Benefits

- Hot swappable to maximize uptime and simplify serviceability
- Flexibility of media and interface choice on a port-by-port basis, so you can "pay as you populate"
- Robust design for enhanced reliability
- Supports digital optical monitoring (DOM) capability

Product Family

1000BASE-T SFP for Copper Networks

The 1000BASE-T SFP operates on standard Category 5 unshielded twisted-pair copper cabling of link lengths up to 100 m (328 ft). Cisco 1000BASE-T SFP modules support 10/100/1000 auto negotiation and Auto MDI/MDIX.

1000BASE-SX SFP for Multimode Fiber Only

The 1000BASE-SX SFP, compatible with the IEEE 802.3z 1000BASE-SX standard, operates on legacy 50 μ m multimode fiber links up to 550 m and on 62.5 μ m Fiber Distributed Data Interface (FDDI)-grade multimode fibers up to 220 m. It can support up to 1km over laser-optimized 50 μ m multimode fiber cable.

1000BASE-LX/LH SFP for Both Multimode and Single-Mode Fibers

The 1000BASE-LX/LH SFP, compatible with the IEEE 802.3z 1000BASE-LX standard, operates on standard single-mode fiber-optic link spans of up to 10 km and up to 550 m on any multimode fibers. When used over legacy multimode fiber type, the transmitter should be coupled through a mode conditioning patch cable. For details on this implementation, refer to http://www.cisco.com/en/US/prod/collateral/modules/ps5455/product_bulletin_c25-530836.html.

1000BASE-EX SFP for Long-Reach Single-Mode Fibers

The 1000BASE-EX SFP operates on standard single-mode fiber-optic link spans of up to 40 km in length. A 5-dB inline optical attenuator should be inserted between the fiber-optic cable and the receiving port on the SFP at each end of the link for back-to-back connectivity.

1000BASE-ZX SFP for Long-Reach Single-Mode Fibers

The 1000BASE-ZX SFP operates on standard single-mode fiber-optic link spans of up to approximately 70 km in length. The SFP provides an optical link budget of 21 dB, but the precise link span length depends on multiple factors such as fiber quality, number of splices, and connectors.

When shorter distances of single-mode fiber (SMF) are used, it might be necessary to insert an inline optical attenuator in the link to avoid overloading the receiver. A 10-dB inline optical attenuator should be inserted between the fiber-optic cable plant and the receiving port on the SFP at each end of the link whenever the fiber-optic cable span loss is less than 8 dB.

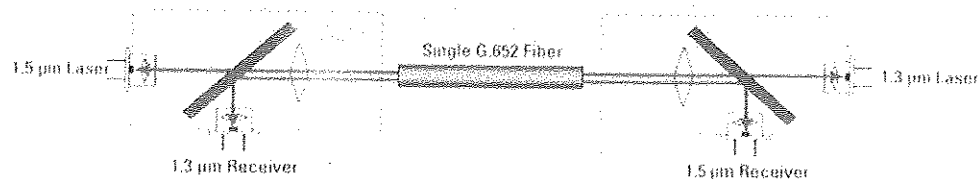
1000BASE-BX10-D and 1000BASE-BX10-U SFP for Single-Fiber Bidirectional Applications

The 1000BASE-BX-D and 1000BASE-BX-U SFPs, compatible with the IEEE 802.3ah 1000BASE-BX10-D and 1000BASE-BX10-U standards, operate on a single strand of standard SMF.

A 1000BASE-BX10-D device is always connected to a 1000BASE-BX10-U device with a single strand of standard SMF with an operating transmission range up to 10 km.

The communication over a single strand of fiber is achieved by separating the transmission wavelength of the two devices as depicted in Figure 2: 1000BASE-BX10-D transmits a 1490-nm channel and receives a 1310-nm signal, whereas 1000BASE-BX10-U transmits at a 1310-nm wavelength and receives a 1490-nm signal. As shown, the presence of a wavelength-division multiplexing (WDM) splitter integrated into the SFP to split the 1310-nm and 1490-nm light paths.

Figure 4. Bidirectional Transmission of a Single Strand of SMF



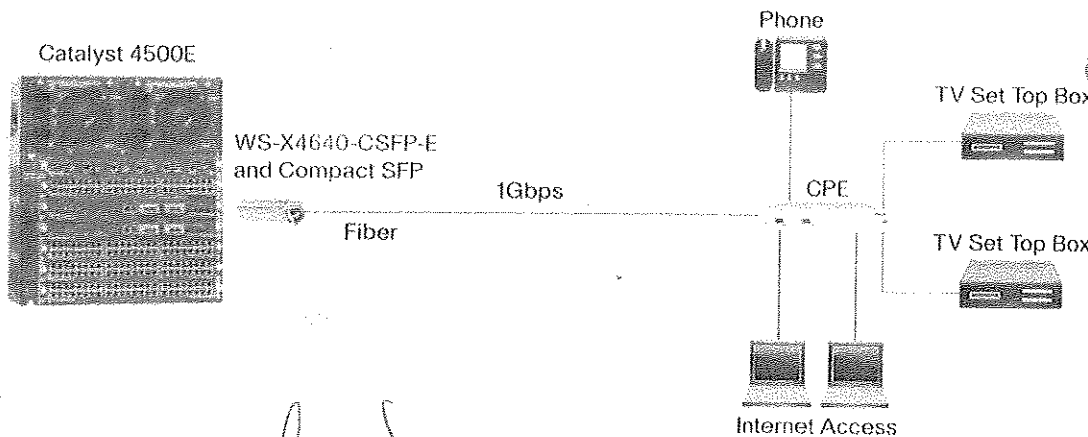
The GLC-BX-D and GLC-BX-U SFPs also support digital-optical monitoring (DOM) functions according to the industry-standard SFF-8472 multisource agreement (MSA). This feature gives the end user the ability to monitor real-time parameters of the SFP, such as optical output power, optical input power, temperature, laser bias current, and transceiver supply voltage.

2-Channel 1000BASE-BX10-D for Single-Fiber Bidirectional Applications

The 2-channel 1000BASE-BX-D SFP module, also known as Compact SFP, integrates two IEEE 802.3ah 1000BASE-BX10-D interfaces in one SFP module. The GLC-2BX-D is always connected to two 1000BASE-BX10-U interfaces over two single strands of standard SMF with an operating transmission range up to 10km.

GLC-2BX-D is designed to connect to any standard-based Customer Premises Equipment (CPE) in FTTH links (Figure 3).

Figure 5. Compact SFP Deployment with Cisco Catalyst 4500



- ASA5500 Series Appliances
- ASR 901 and 903 Series Routers
- ASR 1000, 9000, and 9000v Series Routers
- Catalyst Express 500 and Express 520
- Catalyst 2350 and 2360 Series
- Catalyst 2900, 2940, 2950, 2960, 2960-Plus, 2960-C, 2960-S, 2960-SF, 2960-X Series
- Catalyst 2970 and 2975 Series
- Catalyst 3000 and 3100 Blade Switches
- Catalyst 3500XL Series
- Catalyst 3550, 3560, 3560-C, 3560-E, 3560-X Series
- Catalyst 3750-E Series, 3750 Metro, 3750-X Series
- Catalyst 3850 Series
- Catalyst 4500 and 4500-X Series
- Catalyst 4900 Series
- Catalyst 6000 Series
- Catalyst 6800 Series
- Cisco 1941 Series Router
- Cisco 2600, 2800, 2900 Series Router
- Cisco 3200, 3600, 3700 Series Router
- Cisco 4400 Series Router
- Cisco 5700 Series Wireless LAN Controller
- Cisco 6400 Universal Access Router
- Cisco uBR7200 Series
- Cisco 7200, 7300, 7500, and 7600 Series Routers
- Cisco 10000 and uBR 10000 Series Routers
- Cisco 10700 Series Internet Router
- Cisco 12000 Series Router
- Cisco 2000 Connected Grid Router Series
- Cisco 2500 Connected Grid Switch Series
- Cisco IE2000 and IE2000U Series
- Cisco IE3010 Series
- Cisco MDS 9000
- Cisco ME 2400
- Cisco ME 2600X
- Cisco ME 3400
- Cisco ME 3600X and ME 3800X
- Cisco ME 4600 and ME 4900 Series
- Cisco ME 6500 Series
- Cisco MWR 2941 Mobile Wireless Router
- CRS Router Series
- CSS 11500 Series
- Cisco RF Gateway Series
- NAM 2200 Series Appliances
- Nexus 2000, 3000, 4000, 5000, 7000, 9000, 9300, 9500 (modular) Series

Additional platforms may continually be added; please check the [compatibility matrix](#) for the latest information and for the Cisco compatible operating system for each platform.

Product Specifications

Cabling and Connectors

Connectors include the following:

- Dual LC/PC connector (1000BASE-SX, 1000BASE-LX/LH, 1000BASE-EX and 1000BASE-ZX)
- Single LC/PC connector (1000BASE-BX-D and 1000BASE-BX-U)
- RJ-45 connector (1000BASE-T)

Note: Only connections with patch cords with PC or UPC connectors are supported. Patch cords with APC connectors are not supported. All cables and cable assemblies used must be compliant with the standards specified in the standards section.

1000BASE-BX40-D and 1000BASE-BX40-U for Single-Fiber Bidirectional Applications

The Cisco GLC-BX40-D-I, GLC-BX40-DA-I, and GLC-BX40-U-I SFPs operate on a single strand of standard SMF.

A GLC-BX40-D-I or GLC-BX40-DA-I device connects to a GLC-BX40-U-I device with a single strand of standard SMF with an operating transmission range up to 40 km.

The communication over a single strand of fiber is achieved by separating the transmission wavelength of the two devices. The GLC-BX40-D-I, GLC-BX40-DA-I, and GLC-BX40-U-I SFPs also support digital optical monitoring (DOM) functions according to the industry-standard SFF-8472 multisource agreement (MSA). This feature gives the end user the ability to monitor real-time parameters of the SFP, such as optical output power, optical input power, temperature, laser bias current, and transceiver supply voltage.

1000BASE-BX80-D and 1000BASE-BX80-U for Single-Fiber Bidirectional Applications

The Cisco GLC-BX80-D-I and GLC-BX80-U-I SFPs operate on a single strand of standard SMF.

A GLC-BX80-D-I device is always connected to a GLC-BX80-U-I device with a single strand of standard SMF with an operating transmission range up to 80 km.

The communication over a single strand of fiber is achieved by separating the transmission wavelength of the two devices. The GLC-BX80-D-I and GLC-BX80-U-I SFPs also support digital optical monitoring (DOM) functions according to the industry-standard SFF-8472 multisource agreement (MSA). This feature gives the end user the ability to monitor real-time parameters of the SFP, such as optical output power, optical input power, temperature, laser bias current, and transceiver supply voltage.

100/1000BASE-LX SFP for Long-Reach Single-Mode Fibers

The dual-rate 100M/1G 10Km SFP is interoperable with the IEEE 100BASE-LX and 1000BASE-LX/LH standards.

The GLC-GE-DR-LX SFP also supports digital optical monitoring (DOM) functions according to the industry-standard SFF-8472 multisource agreement (MSA). This feature gives the end user the ability to monitor real-time parameters of the SFP, such as optical output power, optical input power, temperature, laser bias current, and transceiver supply voltage.

SFP Operation at 100M

The GLC-GE-DR-LX SFP can interoperate with other 100M SFPs/interfaces as long as those are based on 100BASE-LX10 standard. A 5dB attenuator is needed on the path of dual-rate SFP Tx and 100BASE-LX10 interface Rx. No attenuator is needed on the other fiber strand.

SFP Operation at 1G

The GLC-GE-DR-LX SFP can interoperate with other 1G SFPs/interfaces as long as those are based on 1000BASE-LX/LH standard. No attenuator is needed in any fiber strand.

Platform Support

The Cisco 1-Gbps SFPs are supported across a variety of Cisco networking equipment. For more details, refer to the document SFP Compatibility Matrix at

http://www.cisco.com/en/US/docs/interfaces_modules/transceiver_modules/compatibility/matrix/OL_6981.pdf.

Table 1 provides cabling specifications for the SFPs that you install in the Gigabit Ethernet port. Note that all SFP ports have LC-type connectors, and the minimum cable distance for all SFPs listed (multimode and single-mode fiber) is 6.5 feet (2 m).

Table 1. SFP Port Cabling Specifications.

Product	Wavelength (nm)	Fiber Type	Core Size (µm)	Modal Bandwidth (MHz·Km) ^{***}	Operating Distance (m)
1000BASE-SX	850	MMF	62.5	160 (FDDI-grade)	220 (722 ft)
			62.5	200 (OM1)	275 (902 ft)
			50	400 (400/400)	500 (1,640 ft)
			50	500 (OM2)	550 (1,804 ft)
			50	2000 (OM3)	1000 (3281 ft)
1000BASE-LX/LH	1310	MMF	62.5	500	550 (1,804 ft)
			50	400	550 (1,804 ft)
			50	500	550 (1,804 ft)
		SMF	-	-	10,000 (32,821 ft)
1000BASE-EX	1310	SMF	-	-	40,000 (131,234 ft)
1000BASE-ZX	1550	SMF	-	-	Approximately 70 km depending on link loss
1000BASE-BX-U	1310	SMF	-	-	10,000 (32,821 ft)
1000BASE-BX-D	1490	SMF	-	-	10,000 (32,821 ft)
GLC-BX40-D-I	1550	SMF	-	-	40,000 (131,234 ft)
GLC-BX40-DA-I	1490	SMF	-	-	40,000 (131,234 ft)
GLC-BX40-U-I	1310	SMF	-	-	40,000 (131,234 ft)
GLC-BX80-D-I	1570	SMF	-	-	80,000 (262,467 ft)
GLC-BX80-U-I	1490	SMF	-	-	80,000 (262,467 ft)
GLC-GE-DR-LX	1310	SMF	-	-	10,000 (32,821 ft)

A mode-conditioning patch cord, as specified by the IEEE standard, is required regardless of the span length. Note how the mode conditioning patch cord for 62.5-µm fibers has a different specification from the mode-conditioning patch cord for 50-µm fibers.

^{**} ITU-T G.652 SMF as specified by the IEEE 802.3z standard.

^{***} Specified at transmission wavelength.

Optical Specifications

Table 2 specifies the optical parameters for the SFPs. Both receiver power and channel insertion loss specifications must be met for guaranteed operation.

Table 2. Main Optical Parameters

Product	Transmit Power Range (dBm)	Receive Power Range (dBm)	Maximum Channel Insertion Loss in dB (by fiber type) [*]	Transmit and Receive Wavelength Range (nm)
1000BASE-SX	-3 to -9.5	0 to -17	2.4 (FDDI-grade) 2.6 (OM1) 3.4 (400/400) 3.6 (OM2) 5 (OM3)	770 to 860
1000BASE-LX/LH	-3 to -9.5	-3 to -20	2.4 (any MMF) 6 (G.652 SMF)	1270 to 1355
1000BASE-EX	+3 to -1	+1 to -22	18 (G.652 SMF)	1290 to 1335
1000BASE-ZX	+5 to 0	-3 to -23	21 (any SMF)	1500 to 1580

Product	Transmit Power Range (dBm)	Receive Power Range (dBm)	Maximum Channel Insertion Loss In dB (by fiber type)*	Transmit and Receive Wavelength Range (nm)
1000BASE-BX10-D	-3 to -9	-3 to -19.5	5.5 (G.652 SMF)	1480 to 1500 (Transmit) 1260 to 1360 (Receive)
1000BASE-BX10-U	-3 to -9	-3 to -19.5	6 (G.652 SMF)	1260 to 1360 (Transmit) 1480 to 1500 (Receive)
GLC-BX40-D-I	-5 to +3	-25 to +3	19 (G.652 SMF)	1540 to 1560 (Transmit) 1260 to 1360 (Receive)
GLC-BX40-DA-I	-5 to +3	-25 to +3	19 (G.652 SMF)	1480 to 1500 (Transmit) 1260 to 1360 (Receive)
GLC-BX40-U-I	-5 to +3	-25 to +3	19 (G.652 SMF)	1260 to 1360 (Transmit) 1480 to 1600 (Receive)
GLC-BX80-D-I	-2 to +3	-27 to +3	23 (G.652 SMF)	1560 to 1580 (Transmit) 1470 to 1510 (Receive)
GLC-BX80-U-I	-2 to +3	-27 to +3	23 (G.652 SMF)	1480 to 1500 (Transmit) 1550 to 1620 (Receive)
GLC-GE-DR-LX	-9.5 to -3	-25 to -3	6 (G.652 SMF)	1260 to 1360

* Maximum channel insertion loss is defined for maximum distance guaranteed as specified in Table 1 and by fiber type. When links are deployed over shorter distances, additional channel insertion loss may be allowed.

Dimensions

Dimensions (H x W x D): 8.5 x 13.4 x 56.5 mm. Cisco SFPs typically weigh 75 grams or less.

Environmental Conditions and Power Requirements

Operating temperature range:

- Commercial temperature range (COM): 0 to 70°C (32 to 158°F)
- Extended temperature range (EXT): -5°C to 85°C (23 to 185°F)
- Industrial temperature range (IND): -40 to 85°C (-40 to 185°F)
- Storage temperature range: -40 to 85°C (-40 to 185°F)

Cisco SFP modules typically consume up to 1W per SFP port, with the exception of the Compact SFP (GLC-2BX-D) consuming up to 1.5W.

Table 3 lists temperature range and DOM support information for the SFPs.

Table 3. Temperature Range and DOM Support

Product Number	Temperature Range	DOM
GLC-ZX-SM	COM	Yes
GLC-BX-U	COM	Yes
GLC-BX-D	COM	Yes
GLC-2BX-D	COM	Yes
GLC-T	COM	n/a
SFP-GE-T	EXT	n/a
SFP-GE-Z	EXT	Yes
GLC-SX-MMD	EXT	Yes
GLC-LH-SMD	EXT	Yes
GLC-EX-SMD	EXT	Yes
GLC-ZX-SMD	EXT	Yes

Product Number	Temperature Range	DOM
GLC-SX-MM-RGD	IND	Yes
GLC-LX-SM-RGD	IND	Yes
GLC-ZX-SM-RGD	IND	Yes
GLC-BX40-D-I	IND	Yes
GLC-BX40-DA-I	IND	Yes
GLC-BX40-U-I	IND	Yes
GLC-BX80-D-I	IND	Yes
GLC-BX80-U-I	IND	Yes
GLC-GE-DR-LX	EXT	Yes

Ordering Information

To place an order, refer to Table 4 and visit the [Cisco Ordering Home Page](#)

Table 4. Ordering Information

Product Description	Product Number
1000BASE-T standard	GLC-T
1000BASE-ZX extended distance	GLC-ZX-SM
1000BASE-BX10-D downstream bidirectional single fiber; with DOM	GLC-BX-D
2-channel 1000BASE-BX10-D downstream bidirectional single fiber; with DOM	GLC-2BX-D
1000BASE-BX10-U upstream bidirectional single fiber; with DOM	GLC-BX-U
1000BASE-T NEBS 3 ESD	SFP-GE-T
1000BASE-SX short wavelength; with DOM	GLC-SX-MMD
1000BASE-LX/LH long-wavelength; with DOM	GLC-LH-SMD
1000BASE-EX long-wavelength; with DOM	GLC-EX-SMD
1000BASE-ZX extended distance; with DOM	SFP-GE-Z GLC-ZX-SMD
1000BASE-SX short wavelength; rugged	GLC-SX-MM-RGD
1000BASE-LX/LH long wavelength; rugged	GLC-LX-SM-RGD
1000BASE-ZX extended distance; rugged	GLC-ZX-SM-RGD
1000BASE-BX40-D for 40km Single-Fiber Bidirectional Applications; with DOM	GLC-BX40-D-I
1000BASE-BX40-D (Alternative) for 40km Single-Fiber Bidirectional Applications; with DOM	GLC-BX40-DA-I
1000BASE-BX40-U for 40km Single-Fiber Bidirectional Applications; with DOM	GLC-BX40-U-I
1000BASE-BX80-D for 80km Single-Fiber Bidirectional Applications; with DOM	GLC-BX80-D-I
1000BASE-BX80-U for 80km Single-Fiber Bidirectional Applications; with DOM	GLC-BX80-U-I
100/1000BASE-LX long-wavelength; with DOM	GLC-GE-DR-LX

Warranty

- Standard warranty: 1 year
- Extended warranty (option): Available under a Cisco SMARTnet[®] Service support contract for the Cisco switch or router chassis

Regulatory and Standards Compliance

Safety:

- Laser Class I 21CFR1040 LN#50 7/2001
- Laser Class I IEC 60825-1

Standards:

- IEEE 802.3z
- IEEE 802.3ah
- GR-20-CORE: Generic Requirements for Optical Fiber and Optical Fiber Cable
- GR-326-CORE: Generic Requirements for Single-Mode Optical Connectors and Jumper Assemblies
- GR-1435-CORE: Generic Requirements for Multifiber Optical Connectors

Next Steps

Learn more about the Cisco SFP Ethernet Converter Modules by contacting your sales representative or visiting <http://www.cisco.com/c/en/us/products/interfaces-modules/transceiver-modules/index.html>.

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Placas adaptadoras de fibra Opt-X® SDX - Moldeado de precisión

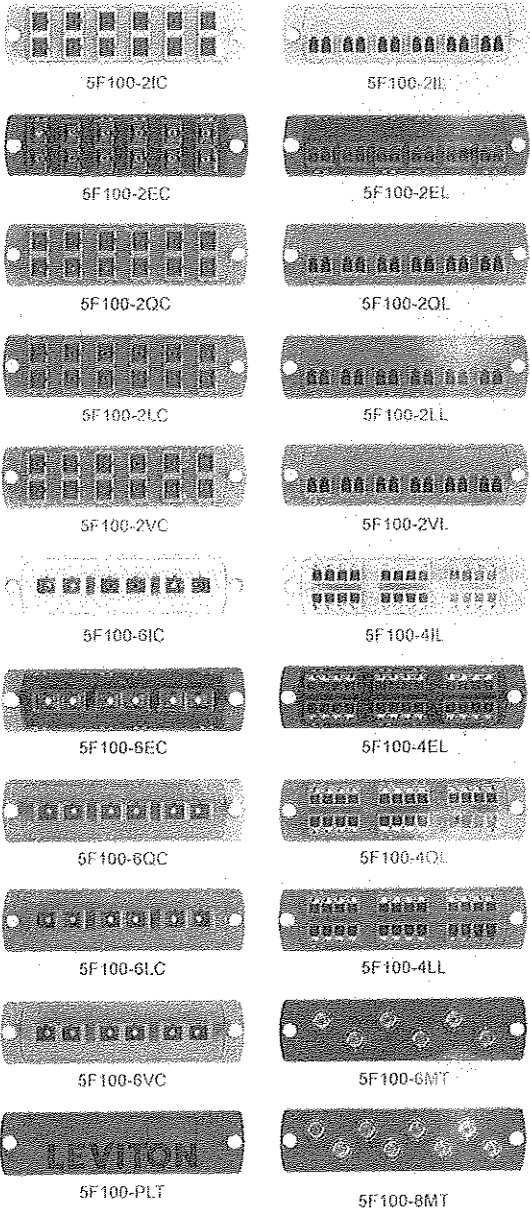
APLICACIÓN

Las placas adaptadoras de fibra SDX de Leviton se utilizan en conjunto con paneles o cajas SDX (de montaje en rack o pared) para brindar un medio de conexión de red troncal a red troncal o de red troncal a cableado de fibra horizontal. Las placas adaptadoras de fibra SDX se ofrecen en las versiones LC, SC y ST.

ESPECIFICACIÓN

La placa adaptadora SDX es modular y presenta un uso funcional en paneles o cajas SDX (de montaje en rack o pared). La placa adaptadora se ofrece en las versiones LC, SC y ST y en 6, 12 o 24 configuraciones de fibra. La placa adaptadora cumple con los estándares ANSI/TIA-568-C.3 (de rendimiento) y el respectivo ANSI/TIA-604-X (de compatibilidad). Las placas adaptadoras usan fundas cerámicas de circonio y se ofrecen en los colores de tipo de fibra estándar, de conformidad con los estándares ANSI/TIA-568-C.3. El adaptador y la placa se integran para eliminar el ruido metálico y el ajuste suelto. Las placas adaptadoras se fabrican en USA.

5F100-xxx (moldeado de precisión)



CARACTERÍSTICAS

- Las placas LC y SC integradas (dos piezas) eliminan el traqueteo y el ajuste suelto
- Las placas adaptadoras usan fundas cerámicas de circonio para un rendimiento óptimo en velocidades de transmisión de 1 Gbps y superior
- Las placas LC y SC se ofrecen en colores de tipo de fibra estándar
- Las placas adaptadoras se ofrecen en estilos LC, SC, ST y en blanco
- Las clavijas a presión de soporte permiten la instalación rápida y sin herramientas
- Compatible con todos los paneles y las cajas SDX (de montaje en rack y pared)

CONSIDERACIONES DE DISEÑO

- El montaje de las placas adaptadoras en el panel o la caja facilita futuras ampliaciones
- Las placas o adaptadores de fibra de colores identifican el tipo de fibra usado
- Numeración secuencial visible para identificar los puertos (para Tx y Rx)
- La caja montada en rack de 4 U admite hasta 15 placas adaptadoras para lograr una mayor densidad por U.
- La funda cerámica de circonio se utiliza generalmente en aplicaciones de modo simple o múltiple optimizadas con láser (OM3, OM4, OM4+, OS2)

CUMPLIMIENTO DE LOS ESTÁNDARES

- Cumple los requisitos de rendimiento de los estándares ANSI/TIA-568-C.3
- Cumple los requisitos de compatibilidad del conector de los estándares ANSI/TIA-604-2B (ST), -3B (SC) y -10B (LC)

ESPECIFICACIONES FÍSICAS

Materiales: Placa adaptadora: fabricada de polímero de ingeniería, varios colores pantone

PAÍS DE ORIGEN
USA

INFORMACIÓN DE GARANTÍA

Para obtener una copia de las garantías de producto de Leviton, visite www.leviton.com/warranty.

ESPECIFICACIONES DEL PRODUCTO
5F100-xxx (moldeado de precisión)

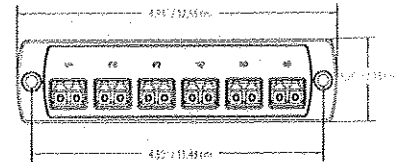
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ARCHIVOS ELECTRÓNICOS

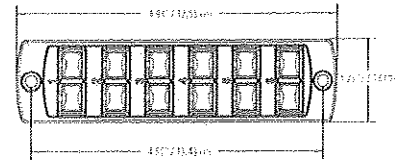
Para obtener los archivos CAD, las especificaciones típicas o las ilustraciones lineales dimensionales (.DXF, .DWG, o Visio), visite www.leviton.com.

NÚMEROS DE PARTES

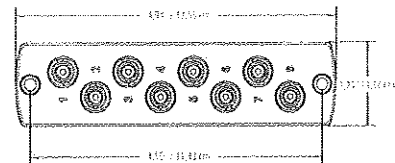
Descripción	N.º de parte
Placa (beige), 62,5 µm MM (OM1), LC dúplex, 12 fibras, funda cerámica de circonio	5F100-2IL
Placa (negro), 50 µm MM (OM2), LC dúplex, 12 fibras, funda cerámica de circonio	5F100-2EL
Placa (aguamarina), 50 µm LOMM (OM3 y OM4), LC dúplex, 12 fibras, funda cerámica de circonio	5F100-2QL
Placa (violeta), 50 µm LOMM (OM4+), LC dúplex, 12 fibras, funda cerámica de circonio	5F100-2PL
Placa (azul), SM (OS1 y OS2), LC dúplex, 12 fibras, funda cerámica de circonio	5F100-2LL
Placa (verde), SM/APC (OS2), LC dúplex, 12 fibras, funda cerámica de circonio	5F100-2VL
Placa (beige), 62,5 µm MM (OM1), LC cuádruple, 24 fibras, funda cerámica de circonio	5F100-4IL
Placa (negro), 50 µm MM (OM2), LC cuádruple, 24 fibras, funda cerámica de circonio	5F100-4EL
Placa (aguamarina), 50 µm LOMM (OM3 y OM4), LC cuádruple, 24 fibras, funda cerámica de circonio	5F100-4QL
Placa (violeta), 50 µm LOMM (OM4+), LC cuádruple, 24 fibras, funda cerámica de circonio	5F100-4PL
Placa (azul), SM (OS1 y OS2), LC cuádruple, 24 fibras, funda cerámica de circonio	5F100-4LL
Placas (beige), 62,5 µm MM (OM1), SC dúplex, 6 fibras, funda cerámica de circonio	5F100-6IC
Placas (negro), 50 µm MM (OM2), SC dúplex, 6 fibras, funda cerámica de circonio	5F100-6EC
Placas (aguamarina), 50 µm MM (OM3 y OM4), SC dúplex, 6 fibras, funda cerámica de circonio	5F100-6QC
Placas (azul), SM (OS1 y OS2), SC dúplex, 6 fibras, funda cerámica de circonio	5F100-6LC
Placas (verde), SM/APC (OS2), SC dúplex, 6 fibras, funda cerámica de circonio	5F100-6VC
Placa (beige), 62,5 µm MM (OM1), SC dúplex, 12 fibras, funda cerámica de circonio	5F100-2IC
Placa (negro), 50 µm MM (OM2), SC dúplex, 12 fibras, funda cerámica de circonio	5F100-2EC
Placa (aguamarina), 50 µm LOMM (OM3 y OM4), SC dúplex, 12 fibras, funda cerámica de circonio	5F100-2QC
Placa (azul), SM (OS1 y OS2), SC dúplex, 12 fibras, funda cerámica de circonio	5F100-2LC
Placa (verde), SM/APC (OS2), SC dúplex, 12 fibras, funda cerámica de circonio	5F100-2VC
Placa (negro), ST MM/SM, 6 fibras, funda cerámica de circonio	5F100-6MT
Placa (negro), ST MM/SM, 8 fibras, funda cerámica de circonio	5F100-8MT
Placa (negro), vacía	5F100-PLT



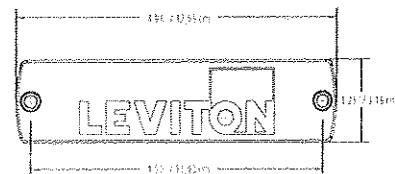
Estilo LC



Estilo SC



Estilo ST



Estilo vacío

5F100-xxx (moldeado de precisión)

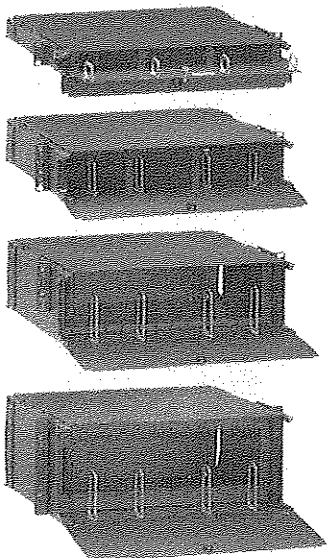
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Cajas de montaje en rack Opt-X® 1000i SDX
1 U, 2 U, 3 U, y 4 U

5RxUM-xxx

APLICACIÓN

La caja de montaje en rack Opt-X 1000i SDX permite interconectar el cable de la red troncal y los equipos activos y, a la vez, utilizar un espacio en rack mínimo con una configuración en marco o gabinete. Las características y el diseño de la caja permiten la terminación de campo de conectores, empalme o soluciones plug-n-play, predeterminadas. La caja se utiliza principalmente en aplicaciones de fibra, como centros de datos, salas de equipos y salas de telecomunicaciones, entre otras.



CARACTERÍSTICAS

- La bandeja deslizante (en 1 y 2 unidades) se extrae completamente de la caja para facilitar las terminaciones en campo y el empalme
- La bandeja deslizante se desliza hacia adelante y atrás (con freno), lo que permite acceder a la división de la parte frontal y trasera después de la instalación
- Profundidad de 38 centímetros para una terminación o empalme de fibra de alta densidad
- Los anillos de fibra apilables y ajustables simplifican la organización de los cables
- Los soportes frontales giran para mejorar el enrutamiento de los cables de interconexión
- Las cubiertas delantera y posterior extraíbles facilitan el acceso al interior de la caja
- El ojal de goma extraíble permite la instalación de troncos de fibra predeterminada, protege el cable y minimiza la acumulación de polvo
- Construido de acero calibre 16, con revestimiento de color negro
- Las bandejas deslizantes para reacondicionamiento de 1 y 2 unidades, que se venden por separado, permiten aplicaciones de mayor densidad con cassettes HDX MTP® o placas adaptadoras HDX (la bandeja deslizante no es compatible con bandejas de empalme)

CONSIDERACIONES DE DISEÑO

- Acepta placas adaptadoras o módulos/cassettes SDX
- Juego de montaje de alivio contra tirones opcional (para la instalación en el lateral de la caja o el poste del rack)
- Opciones de cajas montadas en rack de 48,26 o 58,42 cm (el soporte de montaje de 1 U de 58,42 cm se vende por separado)
- Sobresale 11,43 cm de las lengüetas del rack para alinearse con el sistema de manejo de cables Versi-Duct® de Leviton
- Puede almacenar hasta 3 metros de fibra en tubo ajustado de 900 µm por adaptador
- La placa adaptadora en 3 U y 4 U se orienta horizontal o verticalmente para lograr una densidad óptima
- Opción de bloqueo de las puertas disponible en la parte delantera, posterior o ambas
- Las cajas se venden vacías (descargadas) y se pueden preconfigurar en función de las especificaciones del cliente (véase la página 3)
- La caja incluye un juego de accesorios que consta de ataduras de cable, tornillos de montaje con pestañas, etiqueta de ID de puerto y abrazaderas en espiral (para protección de cables en unidades con bandeja deslizante)

ESPECIFICACIÓN

La caja de fibra está disponible en versiones de 1 U, 2 U, 3 U y 4 U para adaptarse a terminaciones o empalmes de fibra. También hay disponible una bandeja deslizante extraíble en las cajas de 1 U y 2 U. La división del adaptador admite placas adaptadoras SC, LC, ST, MTP®, además de módulos/cassettes MTP plug-n-play. Las cajas de 4 U admiten hasta 15 placas adaptadoras para 360 conexiones de fibra. Se admite el manejo de cables de fibra para enrutamiento, almacenamiento y protección en cordones de interconexión, fibra de tubo ajustado y cables troncales. Los anillos de manejo de cable de fibra posterior son apilables y se pueden configurar en disposiciones de un cuarto de anillo, medio anillo o anillo completo. Las cajas están construidas de acero de calibre 16 con un acabado con revestimiento de color negro y se pueden montar en rack marcos de gabinetes de 48 o 58 cm. Se dispone de una puerta con seguro opcional. Producto originario de USA.

CUMPLIMIENTO DE LOS ESTÁNDARES

Cumple o supera todos los requisitos de ANSI/TIA-568-C.3

ESPECIFICACIONES FÍSICAS

Capacidad y dimensiones: Véase la página dos.

Materiales: Construido de acero calibre 16, con revestimiento de color negro. Las partes plásticas están confeccionadas utilizando únicamente materiales de policarbonato y ABS que se extingue automáticamente clasificado como UL 94V-2. El material del ojal está confeccionado de Santopreno®, un elastómero de goma termoplástica.

Página 1 de 3

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ESPECIFICACIONES DEL PRODUCTO
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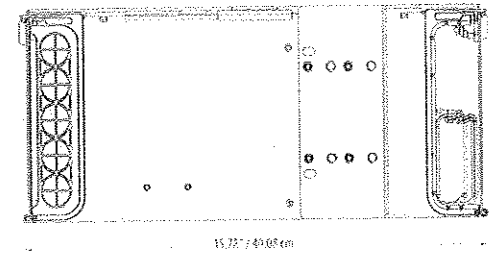
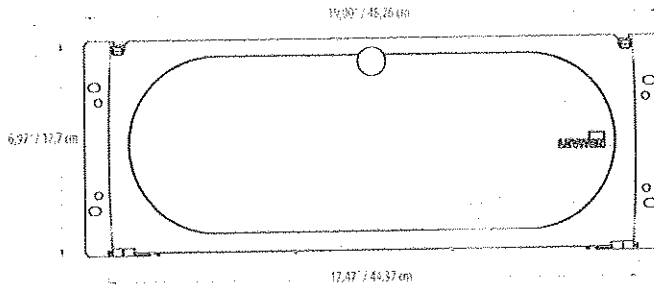
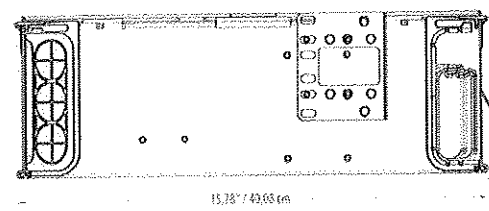
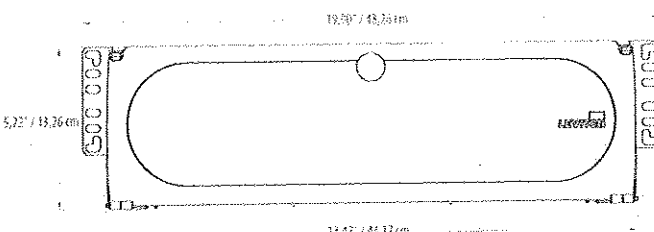
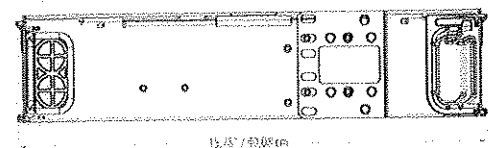
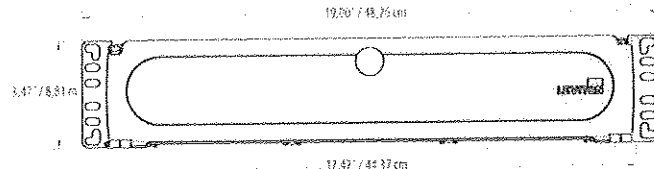
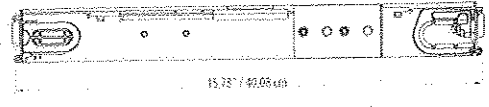
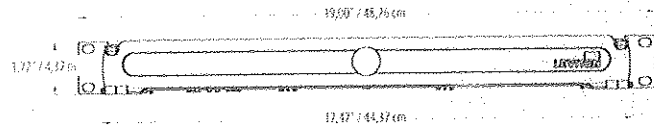
INFORMACIÓN DE GARANTÍA

Para obtener información sobre la garantía, visite leviton.com/warranty o llame al 800.722.2072.

ARCHIVOS ELECTRÓNICOS

Para obtener los archivos CAD, las especificaciones típicas o los dibujos técnicos (.DXF, .DWG, Visio) visite www.leviton.com.

5RxUM-xxx



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DENSIDAD

Unidad de bastidor	Fibras	SDX Placa adaptadoras o cassettes MTP [®]	Bandejas de empalmes
1 U	72	Hasta 3	Hasta 3
2 U	144	Hasta 6	Hasta 6
3 U	216	Hasta 9 (orientación del módulo/placa adaptadora horizontal)	Hasta 12
3 U (no estándar)	288	Hasta 12 (orientación del módulo/placa adaptadora vertical)	Hasta 12
4 U	288	Hasta 12 (orientación del módulo/placa adaptadora vertical)	Hasta 12
4 U (no estándar)	360	Hasta 15 (orientación del módulo/placa adaptadora horizontal)	Hasta 12

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Página 2 de 3

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DENSIDAD CON BANDEJA DESLIZABLE DE REACONDICIONAMIENTO		
Unidad de rack	Fibras	Placa adaptadoras o cassettes MTP (HDX)
1 U	96	Hasta 8
2 U	192	Hasta 16

Opciones de las cajas de montaje en rack Opt-X 1000i SDX									
ESTILO DE CAJA	PLACAS ADAPTADORAS O CASSETTES MTP SELECCIÓN	NÚMERO DE PLACAS ADAPTADORAS	FIBRA TIPO	SELECCIÓN DE TIPO DE ADAPTADOR Y CABLES FLEXIBLES	ESTILO DE LA BANDEJA DE EMPALMES	N.º DE BANDEJAS DE EMPALMES	OPCIONES DE SEGURIDAD	JUEGO DE ABRAZADERAS DE CABLES	POSICIÓN DE LAS LENGÜETAS DEL RACK
1 U 2 U 1 U o 2 U con bandeja 2 U o 4 U con placas adaptadoras horizontales 2 U o 4 U con placas verticales/placas adaptadoras horizontales	6 fibras (SC, ST) 6 fibras (SC, ST) 12 fibras (solo LC) 16 fibras (solo LC) 24 fibras (solo LC) MTP-12 fibras (LC, SC, ST) MTP-24 fibras (solo LC)	1-15	OM3 OM4 OM3+ OM4+ OS2	LC + cable flexible SC SC/APC SC + cable flexible SC/APC + cable flexible ST ST + cable flexible	- Contracción térmica, soportes de plástico hasta 12 fibras (bandeja moldeada) - Contracción térmica, soportes de plástico hasta 12 fibras (bandeja moldeada) - Fusión directa, soportes de plástico hasta 12 fibras (bandeja de metal) - Contracción térmica, soportes de plástico hasta 24 fibras (bandeja moldeada) - Ninguna	1 o 2 Ninguna	- Puerta del frente con seguro - Puerta posterior con seguro - Ambas puertas - Ninguna	SI No	43 o 48 cm

Para obtener ayuda para personalizar sus Cajas, visite leviton.com/configurator o llame al servicio de asistencia técnica al 800.824.3005.

5RxUM-xxx

CAJAS DE MONTAJE EN BASTIDOR 1000i SDX OPT-X®	
DESCRIPCIÓN	N.º DE PIEZA
caja de 1 U, vacía	5R1UM-F03
caja de 1 U, vacía, con bandeja deslizable	5R1UM-S03
caja de 2 U, vacía	5R2UM-F06
caja de 2 U, vacía, con bandeja deslizable	5R2UM-S06
caja de 3 U, vacía	5R3UM-F09
caja de 3 U, vacía	5R3UM-F12
caja de 4 U, vacía	5R4UM-F12
caja de 4 U, vacía	5R4UM-F15

La caja incluye un juego de accesorios que consta de ataduras de cable, tornillos de montaje con pestañas, etiqueta de ID de puerto y abrazaderas en espiral (para protección de cables en unidades con bandeja deslizable)

ACCESORIOS	
DESCRIPCIÓN	N.º DE PIEZA
Bandeja deslizable para reacondicionamiento, 2 U (para usar con placas/cassettes HDX)	5R2UR-TRY
Bandeja deslizable para reacondicionamiento, 1 U (para usar con placas/cassettes HDX)	5R1UR-TRY
Juego de abrazaderas universal (para el montaje de la caja)	5RCMP-KIT
Juego de abrazaderas universal (para instalación en el poste del rack)	5RCMR-KIT
Juego de anillos de manejo de cables de fibra de 0,64 cm (bolsa de cuatro anillos de 0,64 cm)	5R100-14R*
Soporte de montaje de gabinete y rack de caja de 58 cm con 1 U	5R1RU-023
Cierre y llave	5L000-KAL

*No se puede utilizar con la bandeja deslizable para reacondicionamiento

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Atlas-X1™ Cat 6 U/UTP Cable, LSZH-3

PART NUMBERS

Description	Part No.
Atlas-X1 Cat 6 U/UTP Cable, Low-Smoke Zero Halogen, blue, 305-meter reel in box	900-UTP63-MLB
Atlas-X1 Cat 6 U/UTP Cable, Low-Smoke Zero Halogen, grey, 305-meter reel in box	901-UTP63-MSB

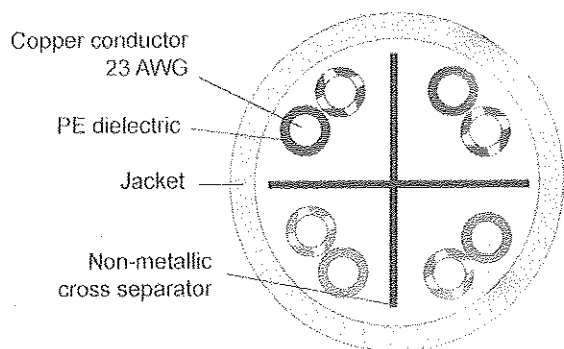
APPLICATION

IEEE 802.3: 1000BASE-T, 100BASE-T, 10BASE-T

STANDARDS COMPLIANCE

- ANSI/TIA-568-C.2 Cat 6
- ISO/IEC 11801 Class E
- ISO/IEC 15018: 2004
- IEC 61156-1
- IEC 61156-5
- EN50173
- RoHS Compliant
- IEEE 802.3at (Type 1) Power over Ethernet (PoE) applications up to 15.4 watts (formerly 802.11af)
- IEEE 802.3at (Type 2) Power over Ethernet (PoE+) applications up to 30 watts
- IEEE Draft 802.3bt/D1.2 (Type 3) Power over Ethernet (PoE+) applications up to 60 watts
- IEEE Draft 802.3bt/D1.2 (Type 4) Power over Ethernet (PoE+) applications up to 100 watts (bundle size limit: 135 cables)

UTP63-MxB



FIRE RATING

- IEC 60332-3-25
- IEC 60754-1
- IEC 60754-2
- IEC 61034-2

COUNTRY OF ORIGIN

Taiwan

Construction		
Conductor	Bare copper wire	23 AWG
Insulation	Polyethylene	Ø 0.99 mm
Twisting	4 twisted pairs, 2 single conductors paired Twisted pair color code: 1: Blue+White/Blue 2: Orange+White/Orange 3: Green+White/Green 4: Brown+White/Brown	
Cable lay-up	4 pairs with different pitches	
Outer jacket	IEC 60332-3-25	
Outer diameter	Ø 6.0 mm (.236")	

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UTP63-MxB

TECHNICAL SPECIFICATIONS	
Mechanical Properties	
Bending Radius	≥ 4 x OD without load
Temperature range	during operation: -20° C ~ 60° C during installation: 0° C ~ 50° C
Electrical Properties (-20° C ± 5° C)	
DC resistance	Max. 8.9 Ω/100 m at 20° C
Resistance unbalance	Max. 2% at 20° C
Insulation resistance (500V)	Min. 5000 MΩ/Km at 20° C
Mutual capacitance	Nom. 5.1 nF/100 m at 1kHz
Capacitance unbalance (pair to ground)	Max. 160 pF/100 m at 1kHz
Characteristic impedance (1 - 100MHz)	(100 ± 15) Ω
Nominal velocity of propagation	67%
Test voltage (DC, 1 min.)	1 kV/1 min.
Delay Skew	45 ns/100 m Max.

Transmission characteristics acc. to ANSI/TIA-568-C.2 Cat 6 (20° C)							
Freq. (MHz)	Attenuation (dB) max.	NEXT (dB) min.	PS-NEXT (dB) min.	ELFEXT (dB) min.	PS-ELFEXT (dB) min.	Return Loss (dB) min.	Propagation Delay (ns/100m) max.
1	2.0	74.3	72.3	67.8	64.8	20.0	570.0
4	3.8	65.3	63.3	55.8	52.8	23.0	552.0
10	6.0	59.3	57.3	47.8	44.8	25.0	545.4
16	7.6	56.3	54.3	43.7	40.7	25.0	543.0
20	8.5	54.8	52.8	41.8	38.8	25.0	542.0
31.25	10.7	51.9	49.9	37.9	34.9	23.6	540.4
62.5	15.4	47.4	45.4	31.9	28.9	21.5	538.6
100	19.8	44.3	42.3	27.8	24.8	20.1	537.6
200	29.0	39.8	37.8	21.8	18.8	18.0	536.6
250	32.8	38.3	36.3	19.8	16.8	17.3	536.3



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Premises Distribution Riser-Rated Optical Cables

APPLICATION

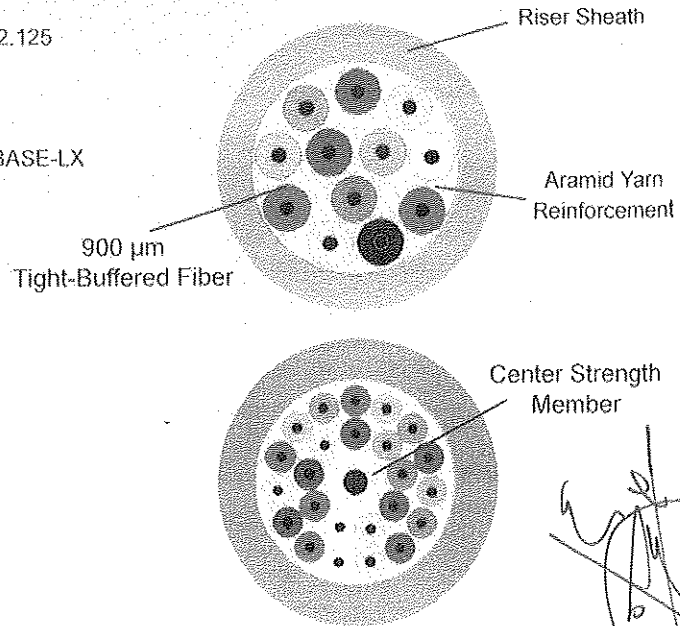
- As backbone in LANs
- For premises wiring
- Indoor and outdoor in ducts
- 10BASE-FL
- 100BASE-SX/100BASE-FX
- ATM 155/ATM 622
- Fiber Channel 1.062/2.125
- 10GBASE-SR/SW
- 10GBASE-LX4
- 40/100 GbE
- 1000BASE-SX/1000BASE-LX

STANDARDS COMPLIANCE

- IEC 60794-2, IEC 60794-2-20
- ITU G.652.A/B/C/D for SM (low water peak)
- ITU G.657.A/B for SM (enhanced bend insensitive)
- EN 50173
- ISO/IEC 11801
- ANSI/ICEA S-83-596
- ANSI TIA-568-C.3
- Telcordia GR-409
- RoHS

FIRE RATING

UL 1666, OFNR



50DRR-yy1, 5LDRR-yy1, 55DRR-yy1, SMDRR-yy1

Construction	
Fiber	6-24 tight-buffered fibers, 900 μm
Central Strength member	≥ 24 Fiber
Jacket	Riser
Color	OM2: Orange; OM3: Aqua; OS2: Yellow

Physical Properties		
Installation tensile strength	6 fibers	667 N/150 lbs
	12 fibers	667 N/150 lbs
	24 fibers	667 N/150 lbs
Long-term tensile strength	6 fibers	200 N/45.0 lbs
	12 fibers	200 N/45.0 lbs
	24 fibers	200 N/45.0 lbs
Compressive strength (crush)	6 fibers	100 N/cm
	12 fibers	100 N/cm
	24 fibers	220 N/cm
Impact	2 at 5.88 N-m	
Temperature	Operation:	-40 °C to 75 °C
	Installation:	-20 °C to 75 °C
	Storage:	-40 °C to 85 °C

Mechanical Properties			
Fiber count	Nominal diameter	Nominal cable weight	Minimum bending radius Long term/short term
6	5.7 mm	29 kg/km	5.7/8.5 cm
12	6.2 mm	37 kg/km	6.2/9.4 cm
24	8.5 mm	70 kg/km	8.5/12.8 cm

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50DRR-yy1, 5LDRR-yy1, 55DRR-yy1, SMDRR-yy1

TRANSMISSION CHARACTERISTICS			
50/125 µm	OM2 Multimode	OM3 Multimode	OM4 Multimode
Attenuation (of cable with fibers)			
Maximum value of cable at 850 nm	≤ 3.5 dB/km	≤ 3.0 dB/km	≤ 3.0 dB/km
Maximum value of cable at 1300 nm	≤ 1.5 dB/km	≤ 1.0 dB/km	≤ 1.0 dB/km
Inhomogeneity of OTDR trace for any two 1000-meter fiber lengths	Max. 0.2 dB/km	Max. 0.1 dB/km	Max. 0.1 dB/km
Bandwidth			
OFL value at 850 nm	500 MHz • km	1500 MHz • km	4700 MHz • km
Effective Modal BW value at 850 nm	500 MHz • km	2000 MHz • km	3500 MHz • km
OFL value at 1300 nm	500 MHz • km	500 MHz • km	500 MHz • km
Group index of refraction at 850 nm	1.482	1.482	1.482
Group index of refraction at 1300 nm	1.477	1.477	1.477
8.3/125 µm	OS2 Single-mode		
Attenuation (of cable with fibers)			
1310 nm - 1625 nm	≤ 0.39 dB/km		
1550 nm	≤ 0.25 dB/km		
Inhomogeneity of OTDR trace for any two 1000-meter fiber lengths	Max. 0.1 dB/km		
Bandwidth			
Group index of refraction at 1310 nm	1.467		
Group index of refraction at 1550 nm	1.468		
Group index of refraction at 1625 nm	1.468		

PART NUMBERS

Description	Part No.
OM2 Premise Distribution Riser Cable	50DRR-yy1
OM3 Premise Distribution Riser Cable	5LDRR-yy1
OM4 Premise Distribution Riser Cable	55DRR-yy1
OS2 Premise Distribution Riser Cable	SMDRR-yy1

yy = fiber count (06) 6 fibers, (12) 12 fibers, (24) 24 fibers.
 Note: All packaging is 1,000 meter drum reel. Other lengths available upon request. 62.5/125 µm (OM1 and OM4) multimode cable is available upon request. Other fiber counts available upon request. Available in plenum upon request.

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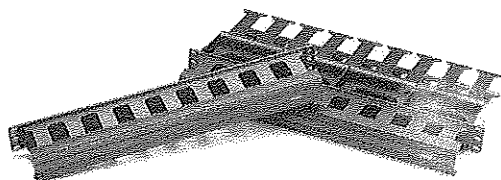


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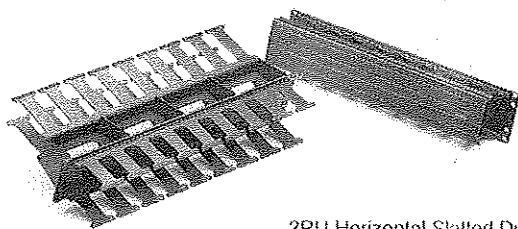
Versi-Duct® Horizontal Cable Management System

APPLICATION

The Versi-Duct Horizontal Cable Management System uses slotted ducts to route cable. The ducts come with concealing covers and an assortment of cable management accessories. They mount onto a standard 19-inch equipment rack.



1RU Horizontal Slotted Duct



2RU Horizontal Slotted Duct

SPECIFICATION

Cable management system shall mount horizontally to a standard 19-inch equipment rack. The system shall be designed with slotted duct configuration for copper and fiber cabling systems. It shall be cULus listed and compliant with ANSI/TIA-568-C standards. The material shall be PVC rated for 94V-0. It shall have a duct cover, and bend-radius compliant router to transition between horizontal and vertical slotted ducts.

DESIGN CONSIDERATIONS

- Use on front and back of cable rack to route and manage cables
- Use with either fiber or copper cabling system

STANDARDS COMPLIANCE

- ANSI/TIA-568-C
- cULus Listed

PHYSICAL SPECIFICATIONS

Dimensions: See page two
Materials: PVC rated for UL 94V-0

ACCESSORIES

Accessories sold separately:

- **Cable Retainer** — Adjusts to slide along the duct finger and includes break-away detail to accommodate all duct sizes
- **Designer Covers** — Grey snap-on covers provide a high-end look while concealing cables transitioning from horizontal to vertical ducts
- **Duct Cover Hinge** — The Duct Cover Hinge is designed to easily open and close duct cover for increased protection and easy access

COUNTRY OF ORIGIN

Taiwan: 491RU-HFx, 492RU-HFx
USA: 49265-xxx

WARRANTY INFORMATION

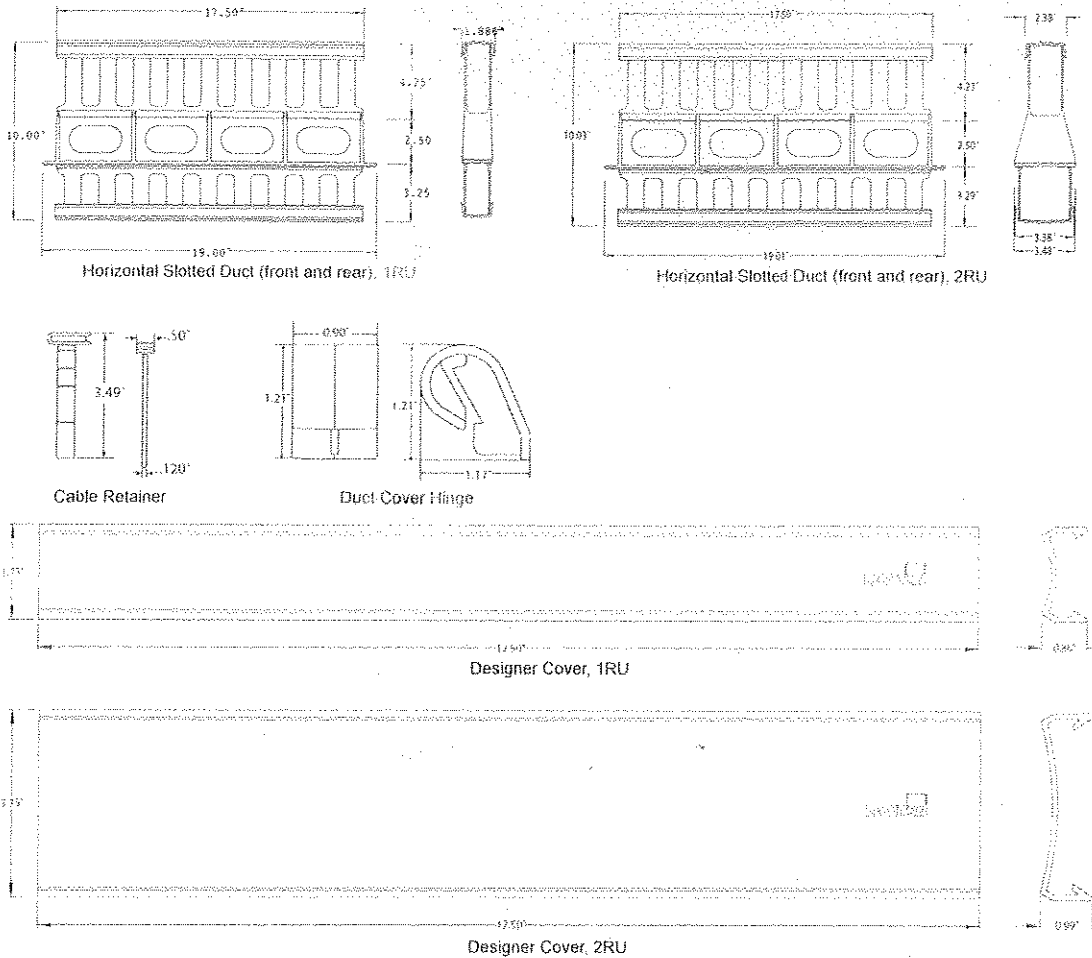
For a copy of Leviton product warranties, visit www.leviton.com/warranty.

ELECTRONIC FILES

For CAD files, typical specs, or technical drawings (.DXF, .DWG), visit www.leviton.com.

491RU-HFx, 492RU-HFx, 49265-xxx

491RU-HFx, 492RU-HFx, 49265-xxx



PART NUMBERS

Description	Part No.
Horizontal Slotted Duct (front and rear) 1.5" x 3" front and 1.5" x 4" rear, 1RU, w/ covers	491RU-HFR
Horizontal Slotted Duct (front only) 1.5" x 3", w/ cover	491RU-HFO
Horizontal Slotted Duct (front and rear) 3" x 3" front and 2" x 4" rear, 2RU, w/ covers	492RU-HFR
Horizontal Slotted Duct (front only) 3" x 3", w/ cover	492RU-HFO
Cable Retainer	49265-WR1
Duct Hinge	49265-HNG
Designer Cover, grey, 1RU (includes two 1RU covers)	49265-DC1
Designer Cover, grey, 2RU*	49265-DC2

*Part number includes 2RU cover for front and 1.5RU cover for rear.



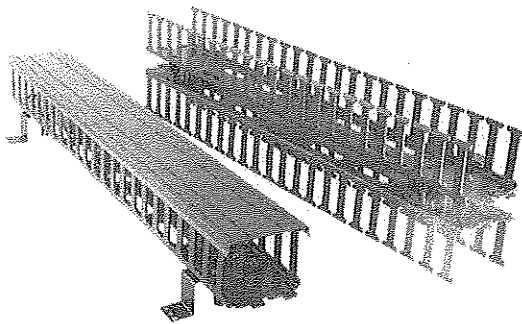
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Sistema de manejo de cables vertical Versi-Duct®

APLICACIÓN

El sistema de manejo de cables Versi-Duct utiliza conductos ranurados para el tendido de cables. El sistema se monta sobre un rack estándar. Dos conductos verticales de 1 m o un conducto de 2 m (compuesto de dos conductos de 1 m) componen la longitud completa de rack estándar de 2 m. Los conductos ranurados horizontales y verticales vienen con cubiertas para ocultar cables y una variedad de accesorios.



ESPECIFICACIÓN

El sistema de manejo de cable vertical se incorpora en una configuración de conducto ranurado para sistemas de cables de cobre y fibra. El sistema de manejo está homologado por cULus. PCI clasificado como 94V-0, ABS clasificado como UL94HB y cumple con las normas ANSI/TIA 568-C. Se monta en un rack industrial estándar de 48 cm. El sistema de manejo ofrece una variedad de accesorios, que incluye un enrutador de cable compatible con el radio de curvatura para pasar el cable de un conducto ranurado horizontal a uno vertical.

INFORMACIÓN DE GARANTÍA

Para obtener una copia de las garantías de producto de Leviton, visite www.leviton.com/warranty.

ARCHIVOS ELECTRÓNICOS

Para obtener los archivos CAD, las especificaciones típicas o los dibujos técnicos (.DXF, .DWG), visite www.leviton.com.

CARACTERÍSTICAS

- Solución flexible para la organización y el manejo de cables de cobre/fibra
- Configuraciones frontales y frontales/posteriores
- Cubiertas para ocultar los cables
- Montaje sobre rack estándar con entrada de cable por la parte superior, inferior y lateral
- Alineación de agujas con separación de rack

CONSIDERACIONES DE DISEÑO

- Uso del lateral del rack para enrutar, proteger y manejar el cable de fibra o cobre
- El enrutador de cable compatible con el radio de curvatura cumple con las normas ANSI/TIA, lo que garantiza un radio de curvatura mínimo de 3 cm

CUMPLIMIENTO DE LOS ESTÁNDARES

- ANSI/TIA-568-C
- Homologado por cULus

ESPECIFICACIONES FÍSICAS

Dimensiones: Véase la página 2
Materiales (canal): ABS clasificado como UL94HB
Materiales (cubierta): PVC clasificado como UL 94V-0

ACCESORIOS

Los accesorios se venden por separado:

- **Sujetador de cables:** se monta en las agujas del conducto, se ajusta a lo largo de la aguja del canal e incluye detalles desprendibles para adaptarse a cualquier tamaño de conducto
- **Juego de soportes de montaje:** se usa para adjuntar un conducto vertical a un rack adyacente (cada juego presenta 8 tornillos)
- **Enrutador de cable compatible con el radio de la curvatura:** enruta el cable de fibra o cobre desde el interior del conducto horizontal al conducto vertical, manteniendo un radio de curvatura mínimo de 3 cm
- **Organizador de holgura de lazo:** almacena la holgura de cable y mantiene un radio de curvatura mínimo de 3 cm. Está diseñado para montarse en las agujas del conducto y se ajusta a una gran variedad de tamaños de holgura de lazo
- **Cubierta de conductos con bisagra:** diseñada para facilitar la apertura y el cierre de la cubierta para mejorar la protección y facilitar el acceso

PAÍS DE ORIGEN

Taiwán: 4940L-VF_x, 4980L-VF_x, 49265-BKT
USA: 49265-xxx, 59265-5DC

Página 1 de 2

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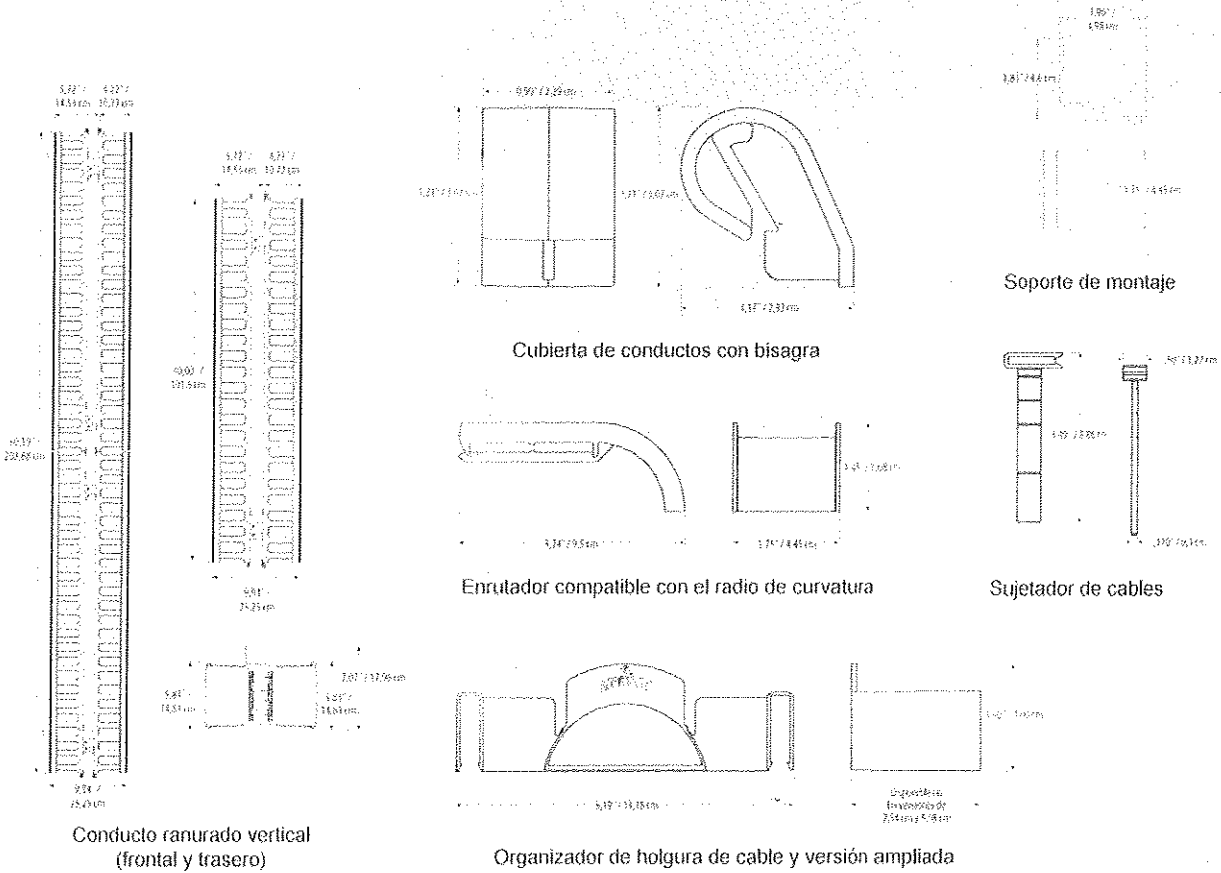
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E infokorea@leviton.com



4940L-VF_x, 4980L-VF_x, 49265-xxx, 59265-5DC

NÚMEROS DE PARTE

Descripción	N.º de parte
Conducto ranurado vertical Versi-Duct® - 10 cm x 12 cm trasero y 10 cm x 12 cm frontal (frontal y trasero), 101 cm de alto	4940L-VFR
Conducto ranurado vertical Versi-Duct - 10 cm x 12 cm (solo frontal), 101 cm de alto	4940L-VFO
Conducto ranurado vertical Versi-Duct - 10 cm x 12 cm trasero y 10 cm x 12 cm frontal (frontal y trasero), 202 cm de alto	4980L-VFR
Conducto ranurado vertical Versi-Duct - 10 cm x 12 cm (solo frontal), 202 cm de alto	4980L-VFO
Sujetador de cables Versi-Duct	49265-WR1
Organizador de holgura de lazos Versi-Duct	49265-SL1
Organizador de holgura de lazo Versi-Duct (extendido)	49265-SL2
Soporte de montaje Versi-Duct	49265-BKT
Cubierta de conductos con bisagra Versi-Duct	49265-HNG
Cubierta de diseño vertical de 202 cm, canal de 12 cm, gris (juego de 2)	59265-5DC



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Single-Gang and Dual-Gang QuickPort® Wallplates with ID Windows

APPLICATION

Leviton single-gang and dual-gang wallplates accept QuickPort snap-in modules to support multimedia station applications with 1, 2, 3, 4, 6, 8, and 12 ports. Use where port designation windows in a single-gang or dual-gang economical flush-mount housing is desired. Available in five colors: white, light almond, grey, ivory, and black.

FEATURES

- Includes ID designation windows for each wallplate
- Color-matched wallplate screws
- Fits within minimum rectangular NEMA openings and accommodates low-voltage box eliminators for a flush mount
- Compatible with all individual QuickPort modules
- Individual port configurability allows specification flexibility
- Narrow module width allows high port density in a small area

DESIGN CONSIDERATIONS

- Single-gang fits standard NEMA single-gang back boxes; dual-gang fits both single- and dual-gang standard NEMA back boxes
- Put blanks (41084-B*B) in unused ports for future expansion
- Specify port identification method (colored modules, designation labels, and custom silk-screening available to identify ports, use different colored connectors for each application or Leviton pre-printed Port Designation Labels (41080-LEB)
- The higher port versions (4, 6, 8, and 12 ports) may be used for MUTOA (multi-user telecommunications outlet assembly) applications

STANDARDS COMPLIANCE

- cULus Listed (UL 1863 & CAN/CSA-C22.2 No. 182.4)
- ANSI/TIA-568-C.0

PHYSICAL SPECIFICATIONS

Dimensions: See page two
 Materials: High-impact, fire-retardant plastic rated UL 94V-0
 Capacity: Single-gang: Available in 1, 2, 3, 4, or 6 ports
 Dual-gang: Available in 1, 2, 3, 4, 6, 8, or 12 ports

SPECIFICATION

The wallplate housing shall be a one-piece, single- or dual-gang flush-mount style that fits standard NEMA openings and accommodates low-voltage box eliminators for a flush mount. It shall provide 1, 2, 3, 4, 6, 8, or 12 ports. It must be able to accept all Leviton QuickPort modules. The wallplate shall feature clear port ID windows. It must be made of high-impact, fire-retardant plastic rated UL 94V-0, and be cULus Listed and compliant with ANSI/TIA-568-C.0 specifications. Colors, port counts, and configurations to be specified per schedule on plan. Wallplate screws shall match wallplate color.

Page 1 of 2

COUNTRY OF ORIGIN

USA

WARRANTY INFORMATION

For a copy of Leviton product warranties, visit www.leviton.com/warranty.

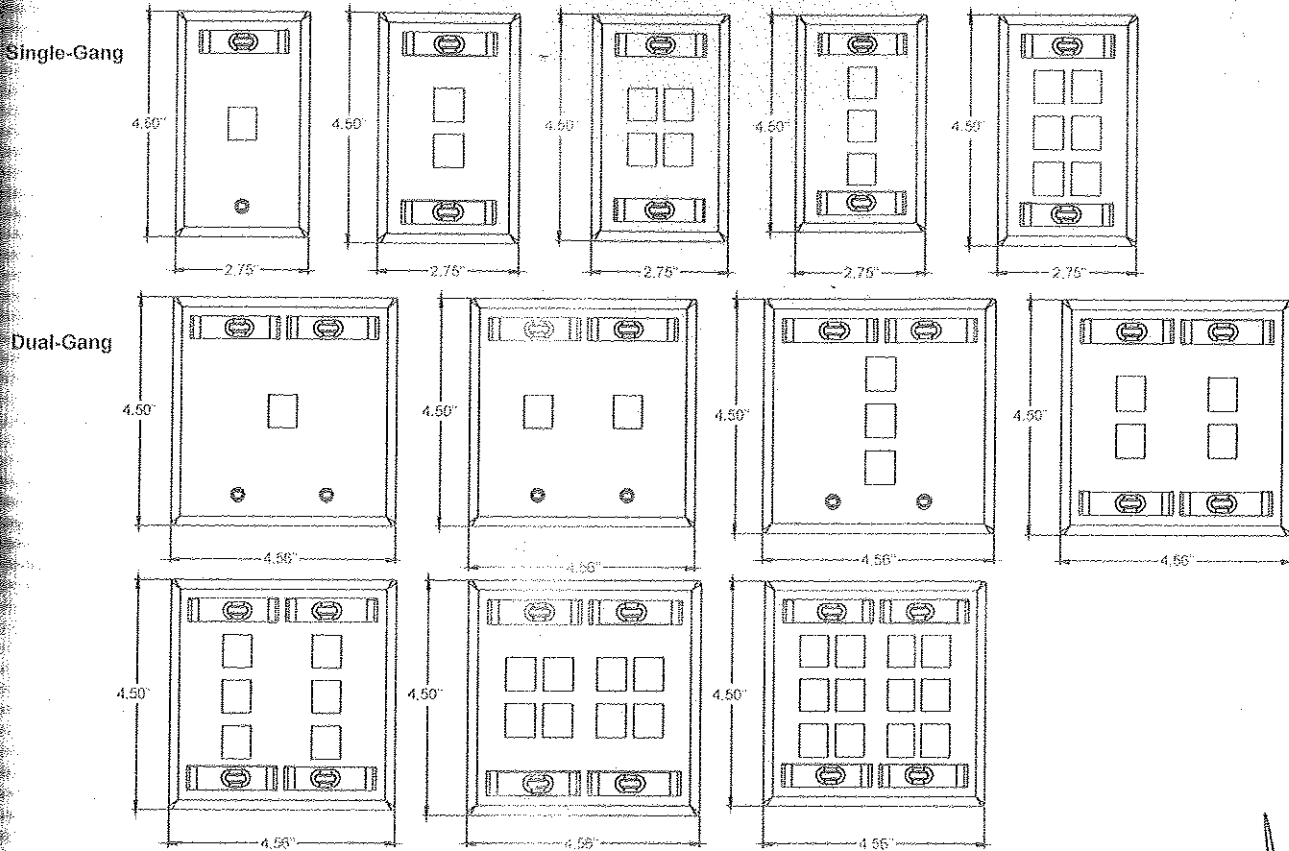
ELECTRONIC FILES

For CAD files, typical specs, or technical drawings (.DXF, .DWG), visit www.leviton.com.

42080-xxS, 42080-xxP, 42080-12x

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42080-xxS, 42080-xxP, 42080-12x



SINGLE-GANG QUICKPORT® WALLPLATES WITH ID WINDOWS

Description	White	Lt. Almond	Ivory	Grey	Black
6-Port Wallplate	42080-6WS	42080-6TS	42080-6IS	42080-6GS	42080-6ES
4-Port Wallplate	42080-4WS	42080-4TS	42080-4IS	42080-4GS	42080-4ES
3-Port Wallplate	42080-3WS	42080-3TS	42080-3IS	42080-3GS	42080-3ES
2-Port Wallplate	42080-2WS	42080-2TS	42080-2IS	42080-2GS	42080-2ES
1-Port Wallplate*	42080-1WS	42080-1TS	42080-1IS	42080-1GS	42080-1ES

DUAL-GANG QUICKPORT WALLPLATES WITH ID WINDOWS

Description	White	Lt. Almond	Ivory	Grey	Black
12-Port Wallplate	42080-12W	42080-12T	42080-12I	42080-12G	42080-12E
8-Port Wallplate	42080-8WP	42080-8TP	42080-8IP	42080-8GP	42080-8EP
6-Port Wallplate	42080-6WP	42080-6TP	42080-6IP	42080-6GP	42080-6EP
4-Port Wallplate	42080-4WP	42080-4TP	42080-4IP	42080-4GP	42080-4EP
3-Port Wallplate	42080-3WP	42080-3TP	42080-3IP	42080-3GP	42080-3EP
2-Port Wallplate†	42080-2WP	42080-2TP	42080-2IP	42080-2GP	42080-2EP
1-Port Wallplate†	42080-1WP	42080-1TP	42080-1IP	42080-1GP	42080-1EP

Wallplates are sold empty.

* = Single-gang 1-port wallplates only have one ID window on top.

† = Dual-gang 1- and 2-port wallplates only have two ID windows on top.

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Fast-Cure® Anaerobic Adhesive-Style Connectors

APPLICATION

Fast-Cure anaerobic adhesive-style connectors are designed for quick and easy termination in the field. Fast-Cure connectors are available in single-mode and multimode versions in LC, SC, and ST® styles. Fast-Cure connectors are designed for indoor and outdoor applications where reliability, durability, and ease of installation are an important consideration. Typical installations are in premise LAN environments, or anywhere adhesive-style connectors are specified.



Pictured (left to right): ST Connector, SC Connector, and LC Connector.

SPECIFICATION

The Fast-Cure anaerobic adhesive-style fiber optic connector shall meet or exceed the requirements described in ANSI/TIA-568-C.3 and 604 standards. All plastic components shall be molded of 94 V-0 rated plastic. The connector shall be field-polished, field-installable, and does not require a curing oven or proprietary tool to facilitate the termination of the fiber. The connector shall be available in LC, SC, or ST single-mode or multimode configurations terminated on 900 µm buffered fiber or 3-mm jacketed fiber. Typical connector insertion loss shall be 0.2dB. Typical connector return loss shall be greater than 25dB (multimode) and 55dB (single-mode).

FEATURES

- Typical termination in less than three minutes
- Low insertion loss connection
- Higher fiber retention than mechanical connectors
- No curing oven or proprietary tool required
- Compatible with MOS, QuickPort®, SDX, and LightSpace® adapter plates
- Accessory for duplex clip sold separately

DESIGN CONSIDERATIONS

- Single-mode and multimode versions
- Precision pre-radiused zirconia ferrules
- Supports 900 µm buffered fiber or 3-mm jacketed fiber
- High cable retention crimp for jacketed fiber
- Recommended for indoor and outdoor usage
- Body of ST connectors are metal

PERFORMANCE SPECIFICATIONS	
Parameter	Value
Insertion Loss (Single-mode or Multimode)	Typical: 0.2dB Max: <0.3dB
Return Loss (Single-mode)	Typical: >55dB
Return Loss (Multimode)	Typical: >25dB
Operating Temperature	-40 °C to +85 °C

STANDARDS COMPLIANCE

- Meets ANSI/TIA-568-C.3 performance requirements
- Meets ANSI/TIA-604-2 (ST), -3 (SC), -10A (LC) Connector Interchangeability Standards
- Meets GR-326, General Requirement for Single-mode Connectors

COUNTRY OF ORIGIN

Taiwan

WARRANTY INFORMATION

For a copy of Leviton product warranties, visit www.leviton.com/warranty.

49990-xxx, 49800-xxx

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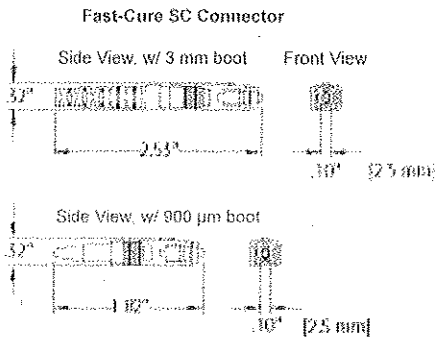
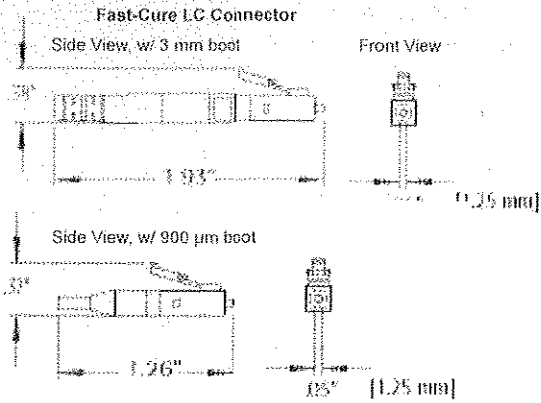
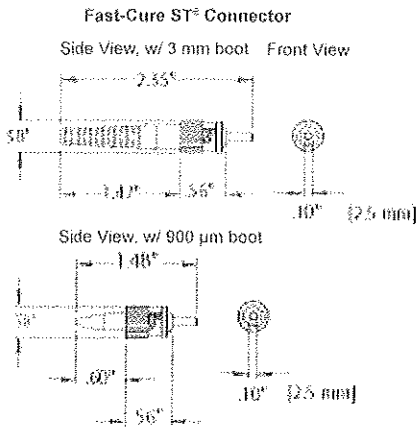
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ELECTRONIC FILES

For CAD files, typical specs, or technical drawings (.DXF, .DWG), visit www.leviton.com.



49990-XXX, 49800-XXX

LEVITON FAST-CURE CONNECTORS	
Description	Part No.
Fast-Cure LC Multimode, beige w/ 3 mm boot	49990-ML2
Fast-Cure LC LOMM, aqua w/ 3 mm boot	49990-LL2
Fast-Cure LC Multimode, beige w/ 900 µm boot	49990-MDL
Fast-Cure LC LOMM, aqua w/ 900 µm boot	49990-LDL
Fast-Cure LC Single-mode, blue w/ 3 mm boot	49990-SL2
Fast-Cure LC Single-mode, blue w/ 900 µm boot	49990-SDL
Fast-Cure SC Multimode, beige	49990-MSC
Fast-Cure SC LOMM, aqua	49990-LSC
Fast-Cure SC Single-mode, blue	49990-SSC
Fast-Cure ST [®] Multimode	49990-MST
Fast-Cure ST Single-mode	49990-SST

LEVITON TOOLKITS & ACCESSORIES	
Description	Part No.
Light Tool Kit	49800-MTK
Fast-Cure Tool Kit	49800-FTK
Consumable Kit	49800-CON
LC Duplex Clip, beige, MM (bag of 25)	49886-DLM
LC Duplex Clip, blue, SM (bag of 25)	49886-DLS
SC Duplex Clip, black (bag of 25)	49886-DSC

NOTE: Both single-mode and multimode SC and ST connectors come with a 3-mm and 900 µm boot. Please visit www.leviton.com for a detailed look at what is included in each kit.

ST is a registered trademark of AT&T Inc.

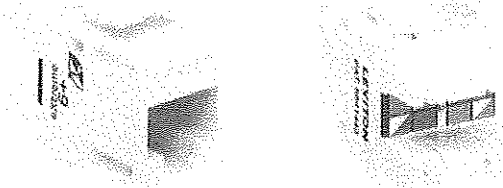


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Conector UTP eXtreme® Cat 6

APLICACIÓN

El conector eXtreme 6 de Leviton está diseñado para ser utilizado con todos los productos compatibles QuickPort® de Leviton. Los conectores incluyen la patente de "Tecnología de Fuerza de Retención" (RFT) de Leviton, que estimula el rendimiento constante a lo largo de la vida útil del sistema. Incluye torres de separación únicas, lo que permite unas terminaciones más fáciles y rápidas. El conector está configurado con un ajuste de 180°, de forma que el campo de conexión está en la parte trasera, lo que permite una terminación posterior.



ESPECIFICACIÓN

Los conectores cumplen o exceden los requisitos de rendimiento de canal y a nivel de componente descritos en las normas ANSI/TIA-568-C.2 Categoría 6. El conector debe ser complemento de estilo individual. Los conectores también cumplen con todos los códigos eléctricos nacionales de USA; cumplen con ANSI/TIA-1096-A; Certificados por UL; y verificados independientemente. Además de cumplir con Categoría 6, el conector tiene la capacidad para soportar aplicaciones grandes de megabits y aplicaciones compartidas de estuche. Todos los plásticos utilizados en la construcción de los cuerpos del conector son retardantes al fuego con un grado de la inflamabilidad UL 94V-0. La terminación de todos los conectores es de tipo 110 de aislante de desplazamiento (IDC). Los conectores proporcionan una cornisa directamente adyacente a la terminación de estilo 110 contra la cual los cables pueden ser terminados y cortados en una acción por el instalador. El cableado del conector es universal y se adaptará a los códigos de color de instalación de sistemas de cableado T568A y T568B. El campo de terminación está en la parte trasera para facilitar el acceso. El conector deberá encajar en una variedad de placas de pared de telecomunicaciones, toma de corriente y paneles de conexión de campo configurables y bloques de conexión.

CARACTERÍSTICAS

- Conductores sólidos de terminación calibre 26-22.
- Capacidad para múltiples re-terminaciones.
- Conectores hermético de IDC para prevenir la corrosión.
- Etiqueta de cableado de doble capa T568B/T568A simplifica la perforación.
- La Tecnología Patentada de Fuerza de Retención protege los dientes de daños para enchufes de 4 y 6 pines.
- El diseño de torre de separación de pares facilita la separación de conductores y minimiza la des-torsión.
- Configuración de 180° que permite una terminación posterior.
- Disponible en 13 colores compatibles ANSI/TIA-606-B para la codificación del color u organización.

CONSIDERACIONES DE DISEÑO

- Para utilizarse en cualquier caja QuickPort para soportar la conectividad eXtreme 6 UTP para montaje en superficie, empotrado, salidas de muebles modulares y paneles configurables de campo.
- Puede ser utilizado en combinación con otros módulos QuickPort de presión para aplicaciones de voz / datos y video a través de UTP, cable coaxial y fibra.

CUMPLIMIENTO DE LAS NORMAS

ANSI/TIA-568-C.2
ISO/IEC 11801
ANSI/TIA-1096-A (antes FCC Parte 68)
Listado cULus

ESPECIFICACIONES FÍSICAS

Dimensiones: ver página 2
Materiales: El cuerpo del conector es de alto impacto, plástico retardante al fuego clasificado UL 94V-0. Los contactos de alambre son de aleación de alta calidad a base de cobre, con baño de oro de 50 micro pulgadas sobre 100 micro pulgadas de níquel e resistencia de contacto más baja y de una vida máxima.

PAÍS DE ORIGEN

USA

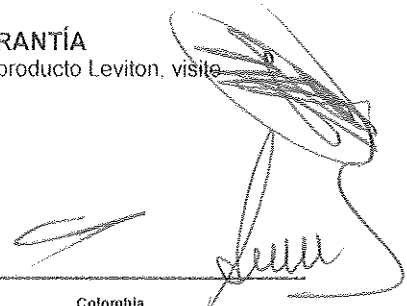
INFORMACIÓN SOBRE LA GARANTÍA

Para una copia de las garantías del producto Leviton, visite www.leviton.com/warranty.

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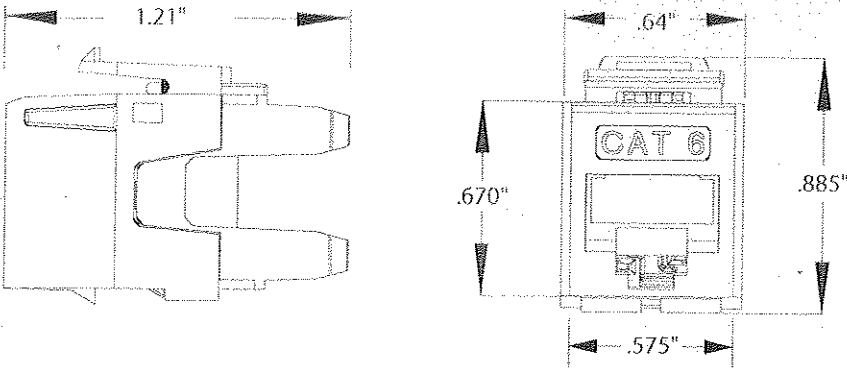
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61110-xx6



ELECTRONIC FILES

Para archivos CAD, especificaciones típicas o dibujos técnicos (.DXF, .DWG), visite www.leviton.com.



61110-xx6

PARÁMETROS TIA-568-C.2 CAT 6

Requisitos para conexión del hardware

	@ 100MHz	@ 250MHz
Pérdida de inserción (IL)	0.20	0.32
Diafonía de extremo cercano (NEXT)	54.0	46.0
Diafonía de extremo lejano (FEXT)	43.1	35.1
Pérdida de retorno (RL)	24.0	16.0
Pérdida de conversión transversal (TCL)	28.0	20.0
Pérdida de transferencia de conversión transversal (TCTL)	28.0	20.0

* Todos los requisitos son mínimos permitidos salvo IL que son requisitos mínimos permisibles. La conexión del hardware deberá cumplir con los requisitos de todos los parámetros de 1 a 250 Mhz. Los valores de la tabla anterior son sólo de frecuencias específicas y son sólo para referencia.

NÚMEROS DE PARTE

Descripción	Parte Núm.	QuickPack® 25/Bolsa
Conector eXtreme® Cat 6, blanco	61110-RW6	61110-BW6
Conector eXtreme Cat 6, marfil	61110-RI6	61110-BI6
Conector eXtreme Cat 6, almendra claro	61110-RT6	61110-BT6
Conector eXtreme Cat 6, gris	61110-RG6	61110-BG6
Conector eXtreme Cat 6, negro	61110-RE6	61110-BE6
Conector eXtreme Cat 6, anaranjado	61110-RO6	61110-BO6
Conector eXtreme Cat 6, azul	61110-RL6	61110-BL6
Conector eXtreme Cat 6, rojo carmesí	61110-RC6	61110-BC6
Conector eXtreme Cat 6, amarillo	61110-RY6	61110-BY6
Conector eXtreme Cat 6, verde	61110-RV6	61110-BV6
Conector eXtreme Cat 6, morado	61110-RP6	61110-BP6
Conector eXtreme Cat 6, café	61110-RB6	61110-BB6
Conector eXtreme Cat 6, rojo oscuro	61110-RR6	61110-BR6

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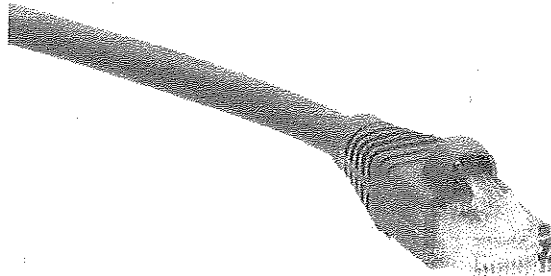
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Patch Cords Estándar eXtreme® 6 Cat 6 UTP

APLICACIÓN

Los patch cords eXtreme® 6 de Leviton están diseñados para ser utilizados en aplicaciones típicas con canales Categoría 6. Los sistemas eXtreme 6 de Leviton están diseñados para su uso en aplicaciones de un alto nivel de megabits como en Gigabit Ethernet.



ESPECIFICACIÓN

Los patch cords cumplen o exceden los requerimientos de desempeño para Categoría 6 como se describe en ANSI/TIA-568-C.2. Los patch cords son de un conductor trenzado con un enchufe de 8 posiciones en cada extremo. Están disponibles en largos de 3', 5', 7', 10', 15' y 20'. El enchufe es transparente y los conectores cumplen con el estándar TIA-1096-A con un baño de oro de 50 micro pulgadas.

CARACTERÍSTICAS

- Conductor trenzado para una mayor duración
- Cableado T568B para funcionar en aplicaciones T568A o T568B
- Los cordones y las botas son del mismo color

CONSIDERACIONES DE DISEÑO

- El rendimiento del cable TIA limita la longitud total del área de trabajo y los cordones de equipo a 32 pies (10 metros) según ANSI/TIA-568-C.2 u 88.6 pies (27 metros) en una aplicación MUTOA
- Una variedad de colores para la codificación por color y la organización
- Disponible en seis longitudes estándar

CUMPLIMIENTO DE LAS NORMAS

- ANSI/TIA-568-C.2
- ISO/IEC 11801-B
- ANSI/TIA-1096-A
- Listado cULus
- UL 444 CM rated
- IEEE 802.3at (Tipo 1 y 2)
- Draft IEEE 802.3b1/D1.2 (Tipo 3)
- Cisco UPoE (60W)
- Draft IEEE 802.3b1/D1.2 (Tipo 4) - 100 cables máximo en un group juntado
- Power over HDBaseT (PoH) - 100 cables máximo en un group juntado

ESPECIFICACIONES DE DESEMPEÑO

Dimensiones ver página 2.

Materiales: El cuerpo del enchufe es de alto impacto, de plástico retardante al fuego clasificado UL 94V-0.

Colores: Blanco, gris, negro, azul, rojo, amarillo, verde (Con botas del mismo color).

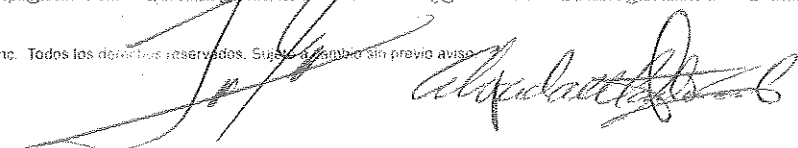
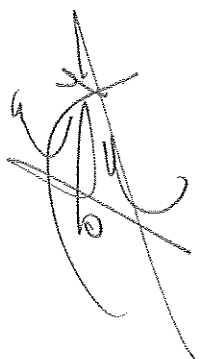
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China

INFORMACIÓN SOBRE LA GARANTÍA

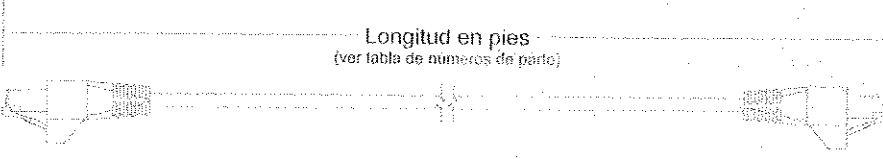
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62460-xxx



ARCHIVOS ELECTRÓNICOS

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62460-xxx

NÚMEROS DE PARTE

Descripción	Parte Núm.
Patch Cord estándar Cat 6, 3 pies de largo (0.9 m)	62460-03*
Patch Cord estándar Cat 6, 5 pies de largo (1.5 m)	62460-05*
Patch Cord estándar Cat 6, 7 pies de largo (2.1 m)	62460-07*
Patch Cord estándar Cat 6, 10 pies de largo (3.0 m)	62460-10*
Patch Cord estándar Cat 6, 15 pies de largo (4.6 m)	62460-15*
Patch Cord estándar Cat 6, 20 pies de largo (6.1 m)	62460-20*

*Colores: (W) Blanco, (Y) Amarillo, (L) Azul, (E) Negro, (R) Rojo, (G) Verde, (S) Gris



Para obtener asistencia al personalizar sus cables de conexión, visite www.leviton.com/configurator o llame a Soporte Técnico al 800.824.3005.



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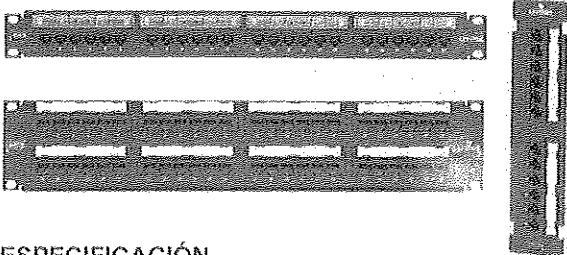
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Patch Páneles Planos eXtreme® Cat 6 estilo 110

APLICACIÓN

Los patch páneles eXtreme 6 de Leviton están diseñados para usarse en racks y gabinetes estándar de 19". Los patch páneles incluyen la "Tecnología de Fuerza de Retención" patentada, que promueve el rendimiento constante a lo largo de la vida útil del sistema. El diseño de montaje sencillo permite una instalación rápida debido a las terminaciones estándar 110 en la parte trasera del panel, que sigue la secuencia de colores habitual de instalación (azul, naranja, verde y café) de izquierda a derecha. El sistema eXtreme 6 de Leviton está diseñado para usarse en aplicaciones de un alto nivel de megabits, como Gigabit Ethernet.



ESPECIFICACIÓN

Patch Panels deben exceder los requerimientos de componente y de canal establecidos en la norma ANSI/TIA-568-C.2 Categoría 6, cumpliendo también con los requisitos de clase E según ISO/IEC 11801. Los páneles incluyen ambas configuraciones de cableado T568A y T568B, módulos de perforación 110 IDC blancos, separadores de montaje para barra de manejo de cable, ventana frontal de etiquetado con código de colores. Los páneles cuentan con tarjeta universal de cableado T568A y T568B para terminaciones. Están hechos de acero calibre 14 con acabado de pintura en negro y serigrafía blanca. Los elementos de plástico son retardantes al fuego bajo clasificación de flamabilidad UL 94V-0. Los páneles se ofrecen en configuraciones de 12, 24, 48 y 96 puertos así como también en configuración 89D de 12 puertos. Los patch páneles se configuran con seis módulos de puerto. La terminación 110 en la parte posterior del panel se debe ajustar a la secuencia de color normal de instalación (azul, naranja, verde, café) de izquierda a derecha.

PAÍS DE ORIGEN
USA

CARACTERÍSTICAS

- La Tecnología Fuerza de Retención Patentada protege los contactos de daños para conectores de 4 y 6 pines (RJ-11 Y RJ-12)
- De fácil instalación y aumenta longevidad del sistema
- Tarjetas de cableado universales T568A y T568B para terminaciones IDC estilo 110
- Etiquetado frontal con código de colores para una fácil identificación de puertos (cumple con ANSI/TIA-606-B)
- Conductores sólidos de terminación calibre 26-22
- Etiquetado centralizado (disponible en 48 puertos) promueve una mayor visibilidad de las etiquetas cuando los patch cords se enrutan por el organizador de cable horizontal por encima y por debajo del panel
- Capacidad para múltiples re-terminaciones
- Panel disponible con portatiqueta tipo lupa (patentada) para mejor visibilidad

CONSIDERACIONES DE DISEÑO

- Montaje en rack de 19"
- Se ofrece en configuraciones de 12, 24, 48 y 96 puertos y bloque U89 de 12 puertos para aplicaciones de montaje en pared
- Los módulos conectores se encuentran en grupos de seis
- Incluye barras posteriores para manejo de cable
- Utilice arandelas de estrella para conectar a tierra en instalaciones de montaje en rack

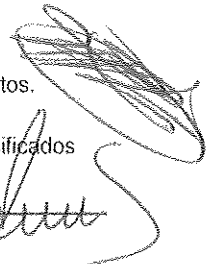
CUMPLIMIENTO DE LAS NORMAS

- ANSI/TIA-1096-A (antes FCC Parte 68)
- ANSI/TIA-568-C.2
- Listado cULu
- ISO/IEC 11801
- IEEE 802.3at (Tipo 1) Power over Ethernet (PoE) aplicaciones hasta 15.4 watts
- IEEE 802.3at (Tipo 2) Power over Ethernet (PoE+) aplicaciones hasta 30 watts
- IEEE 802.3bt/D1.7 (Tipo 3) Power over Ethernet (PoE+) aplicaciones hasta 60 watts.
- IEEE 802.3bt/D1.7 (Tipo 4) Power over Ethernet (PoE+) aplicaciones hasta 100 watts
- Cisco Universal Power Over Ethernet (UPOE) aplicaciones hasta 60 watts
- Power over HDBaseT™ (POH) aplicaciones hasta 100 watts

ESPECIFICACIONES FÍSICAS

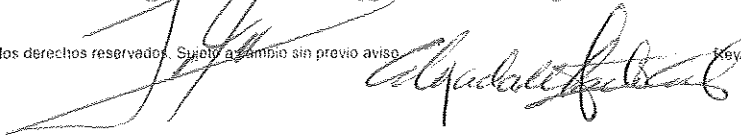
Dimensiones: ver página 2
 Capacidad: 12, 24, 48 o 96 puertos.
 Patch Panel universal U-89 de 12 puertos.
 Materiales: Acero calibre 14, pintado en negro; los componentes plásticos y PBC son clasificados UL94V-0.

69586-xxx



Página 1 de 2

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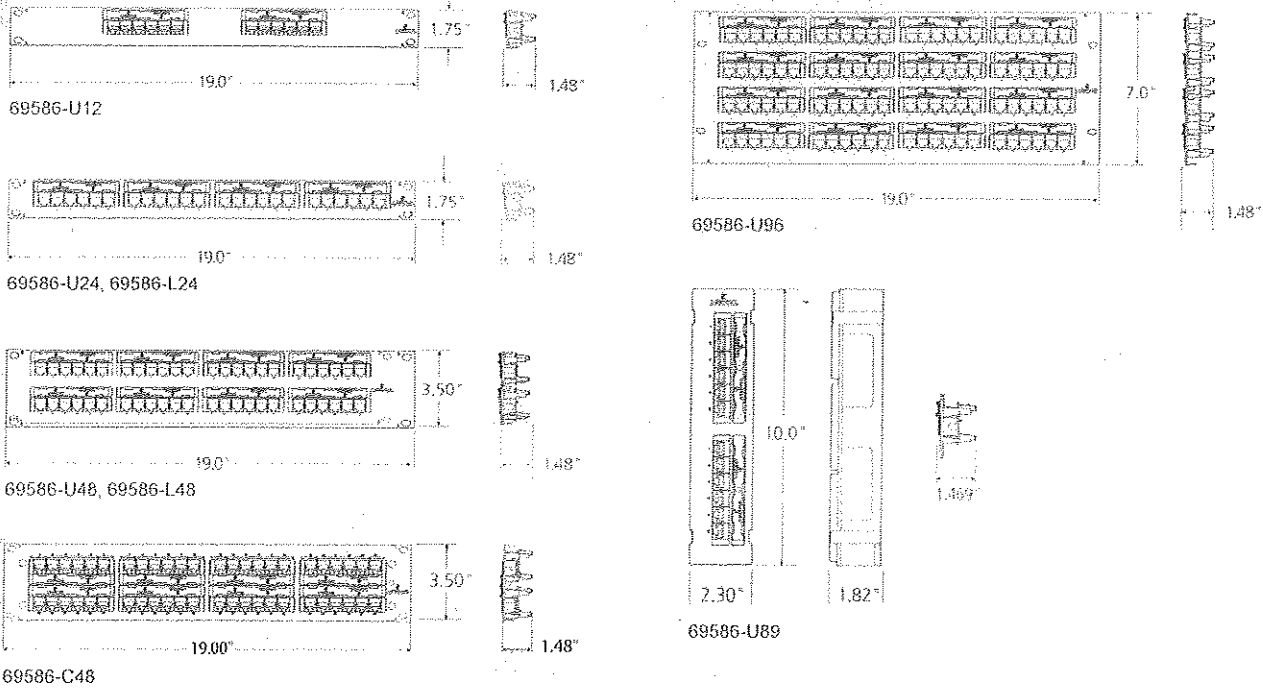


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69586-XXX

NÚMEROS DE PARTE	
Descripción	Parte Núm.
Patch Panel eXtreme [®] 6, estilo 110, 12 puertos, 1UR	69586-U12
Patch Panel eXtreme 6, estilo 110, 24 puertos, 1UR	69586-U24
Patch Panel eXtreme 6, estilo 110, con portaetiqueta tipo luna, 24 puertos, 1UR	69586-L24
Patch Panel eXtreme 6, estilo 110, 48 puertos, 2UR	69586-U48
Patch Panel eXtreme 6, estilo 110, 48 puertos, 2UR, etiquetado centralizado	69586-C48
Patch Panel eXtreme 6, estilo 110, con portaetiqueta tipo luna, 48 puertos, 2UR	69586-L48
Patch Panel eXtreme 6, estilo 110, 96 puertos, 4UR	69586-U96
Patch Panel eXtreme 6, estilo 110, 12 puertos	69586-U89

PARÁMETROS ANSI/TIA-568-C.2 CAT 6	Requisitos para conexión del hardware*	
	@ 100MHz	@ 250MHz
Pérdida de inserción (IL)	0.20	0.32
Diafonía de extremo cercano (NEXT)	54.0	46.0
Diafonía de extremo lejano (FEXT)	43.1	35.1
Pérdida de retorno (RL)	24.0	16.0
Pérdida de conversión transversal (TCL)	28.0	20.0
Pérdida de transferencia de conversión transversal (TCTL)	28.0	20.0

* Todos los requisitos son mínimos permitidos salvo IL, que son requisitos máximos permisibles. La conexión del hardware deberá cumplir con los requisitos de todos los parámetros de 1 a 250 Mhz. Los valores de la tabla anterior son sólo de frecuencias específicas y son sólo para referencia.



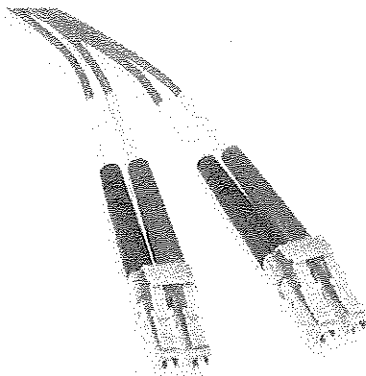
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Economy Series Fiber Optic Patch Cords

APPLICATION

Leviton Fiber Optic Patch Cords are designed to interconnect or cross connect fiber networks within structured cabling systems. Leviton can produce any standard or custom fiber patch cord to meet your needs, and can offer quick-turn services for fast delivery.

Leviton offers two series of patch cords: Premium Series and Economy Series. Premium Series Patch Cords offer higher performance, optional custom labels, and optional 100% interferometer testing. Economy Series Patch Cords are a price-competitive solution that meets or exceeds all industry standards.



Economy Series
LC-LC Duplex, OM3 LOMM

SPECIFICATION

Multimode patch cords shall meet an optical return loss equal to or better than -25 dB per mated pair, and single-mode equal to or better than -50 dB for UPC polish, or -55 dB for APC polish. Insertion loss shall not exceed 0.4 dB per mated pair for multimode and 0.35 dB for single-mode. The patch cords shall be compliant with ANSI/TIA-568-C.3.

FEATURES

- Available in duplex configurations
- Industry-standard connector options
- All cables 100% optically tested
- Many fiber options: OM1, OM2, OM3, OM4, and OS2
- All cables are pre-labeled and individually bagged

DESIGN CONSIDERATIONS

- Offered in SC, ST, LC, or hybrid options
- All connectors have precision pre-radiused zirconia ferrules
- ST connectors have metal bodies
- Duplex clips included
- Single-mode SC available in UPC or APC

STANDARDS COMPLIANCE

Designed to meet the requirements of ANSI/TIA-568-C.3

COUNTRY OF ORIGIN

China

WARRANTY INFORMATION

For Leviton product warranties, visit leviton.com/warranty.

COLOR CODES	
Cable Jackets	
Single-mode	Yellow
Multimode (62.5/125 µm)	Orange
Multimode (50/125 µm)	Orange
Laser optimized multimode (50/125 µm)	Aqua
Connectors and adapters	
Single-mode	Blue
Single-mode, APC (angle polishing)	Green
Multimode (62.5/125 µm)	Beige
Multimode (50/125 µm)	Beige
Laser optimized multimode (50/125 µm)	Aqua (connectors are beige)
Boots (Polarity defined by the following color scheme)	
Single-Mode	Yellow and White
Multimode	Black and Red

PERFORMANCE SPECIFICATIONS		
	Multimode	Single-mode
Insertion Loss	0.4 dB Max	0.35 dB Max
Return Loss	>-25 dB	>-50 dB (UPC), >-55 dB (APC)
Durability	500 Matings	500 Matings
Repeatability	<0.2 dB	<0.2 dB
Operating Environment	-40° C to 75° C	-40° C to 75° C
Cable Retention	>20lbs / 89 N	>20lbs / 89 N
Rohs	Yes	Yes

Page 1 of 3

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PRODUCT SPECIFICATIONS
Economy Series Fiber Optic Patch Cords



PERFORMANCE SPECIFICATIONS (CONT.)											
Cable Performance											
Fiber Type	Maximum Attenuation (db/km)				Bandwidth (MHz*km)		Transmission Distance (meters)				
	850nm	1300nm	1310nm	1550nm	850nm	1300nm	100Mb	1GbE	10GbE	40GbE	10GbE
Single-mode (OS2)	N/A	N/A	0.4	0.3	N/A	N/A	>5,000 @ 1310nm		>10,000 @ 1310nm	NA	NA
62.5/125 µm MM (OM1)	3.5	1.0	N/A	N/A	200	500	300/2000 @ 850/1300nm	300/600 @ 850/1300nm	36/300 @ 850/1300nm	NA	NA
50/125 µm MM (OM2)	3.0	1.0	N/A	N/A	950	500		750/600 @ 850/1300nm	150/300 @ 850/1300nm	NA	NA
50/125 µm LO (10G-300nm) MM (OM3)	3.0	1.0	N/A	N/A	2,000 ¹	500 ²		1,000/600 @ 850/1300nm	300/300 @ 850/1300nm	100 @ 850nm	100 @ 850nm
50/125 µm LO (10G-550nm) MM (OM4)	3.0	1.0	N/A	N/A	4,900 ¹	500 ²		1,210/600 @ 850/1300nm	600/300 @ 850/1300nm	150 @ 850nm	150 @ 850nm

¹ The effective modal bandwidth is determined based on an overfill launch (OFL per ANSI/TIA-455-204, except on laser-optimized fiber types).

² 10GbE transmission @ 1,300 nm only applies to 10GBASE-LX4 (CWDM).

62.5/125 µm MULTIMODE (OM1) OFNR DUPLEX

DESCRIPTION	LENGTH (METERS)	DUPLEX
SC-SC	1	62DSC-M01
SC-SC	2	62DSC-M02
SC-SC	3	62DSC-M03
SC-SC	5	62DSC-M05
SC-SC	10	62DSC-M10
ST-ST	1	62DST-M01
ST-ST	2	62DST-M02
ST-ST	3	62DST-M03
ST-ST	5	62DST-M05
ST-ST	10	62DST-M10
LC-LC	1	62DLC-M01
LC-LC	2	62DLC-M02
LC-LC	3	62DLC-M03
LC-LC	5	62DLC-M05
LC-LC	10	62DLC-M10
SC-ST	1	62DCT-M01
SC-ST	2	62DCT-M02
SC-ST	3	62DCT-M03
SC-ST	5	62DCT-M05
SC-ST	10	62DCT-M10
SC-LC	1	62DCL-M01
SC-LC	2	62DCL-M02
SC-LC	3	62DCL-M03
SC-LC	5	62DCL-M05
SC-LC	10	62DCL-M10

50/125 µm MULTIMODE (OM2) OFNR DUPLEX

DESCRIPTION	LENGTH (METERS)	DUPLEX
SC-SC	1	50DSC-M01
SC-SC	2	50DSC-M02
SC-SC	3	50DSC-M03
SC-SC	5	50DSC-M05
SC-SC	10	50DSC-M10
ST-ST	1	50DST-M01
ST-ST	2	50DST-M02
ST-ST	3	50DST-M03
ST-ST	5	50DST-M05
ST-ST	10	50DST-M10
LC-LC	1	50DLC-M01
LC-LC	2	50DLC-M02
LC-LC	3	50DLC-M03
LC-LC	5	50DLC-M05
LC-LC	10	50DLC-M10
SC-LC	1	50DCL-M01
SC-LC	2	50DCL-M02
SC-LC	3	50DCL-M03
SC-LC	5	50DCL-M05
SC-LC	10	50DCL-M10

Economy Series Fiber Optic Patch Cords

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50/125 µm LOMM (OM3) OFNR DUPLEX		
DESCRIPTION	LENGTH (METERS)	DUPLEX
SC-SC	1	5LDSC-M01
SC-SC	2	5LDSC-M02
SC-SC	3	5LDSC-M03
SC-SC	5	5LDSC-M05
SC-SC	10	5LDSC-M10
LC-LC	1	5LDLC-M01
LC-LC	2	5LDLC-M02
LC-LC	3	5LDLC-M03
LC-LC	5	5LDLC-M05
LC-LC	10	5LDLC-M10
SC-LC	1	5LDCL-M01
SC-LC	2	5LDCL-M02
SC-LC	3	5LDCL-M03
SC-LC	5	5LDCL-M05
SC-LC	10	5LDCL-M10

9/125 µm SINGLE-MODE (OS2) OFNR DUPLEX		
DESCRIPTION	LENGTH (METERS)	DUPLEX
SC-SC	1	UPDSC-S01
SC-SC	2	UPDSC-S02
SC-SC	3	UPDSC-S03
SC-SC	5	UPDSC-S05
SC-SC	10	UPDSC-S10
LC-LC	1	UPDLC-S01
LC-LC	2	UPDLC-S02
LC-LC	3	UPDLC-S03
LC-LC	5	UPDLC-S05
LC-LC	10	UPDLC-S10
SC-LC	1	UPDCL-S01
SC-LC	2	UPDCL-S02
SC-LC	3	UPDCL-S03
SC-LC	10	UPDCL-S10
ST-ST	1	UPDST-S01
ST-ST	2	UPDST-S02
ST-ST	3	UPDST-S03
ST-ST	10	UPDST-S10
SC-ST	1	UPDCT-S01
SC-ST	2	UPDCT-S02
SC-ST	3	UPDCT-S03
SC-ST	10	UPDCT-S10

50/125 µm LOMM (OM4) OFNR DUPLEX		
DESCRIPTION	LENGTH (METERS)	DUPLEX
LC-LC	1	54DLC-M01
LC-LC	2	54DLC-M02
LC-LC	3	54DLC-M03
LC-LC	5	54DLC-M05
LC-LC	10	54DLC-M10
SC-LC	1	54DCL-M01
SC-LC	2	54DCL-M02
SC-LC	3	54DCL-M03
SC-LC	5	54DCL-M05
SC-LC	10	54DCL-M10

APC SINGLE-MODE (OS2) SIMPLEX		
DESCRIPTION	LENGTH (METERS)	SIMPLEX
SC-SC	1	APSSC-S01
SC-SC	2	APSSC-S02
SC-SC	3	APSSC-S03
SC-SC	5	APSSC-S05
SC-SC	10	APSSC-S10



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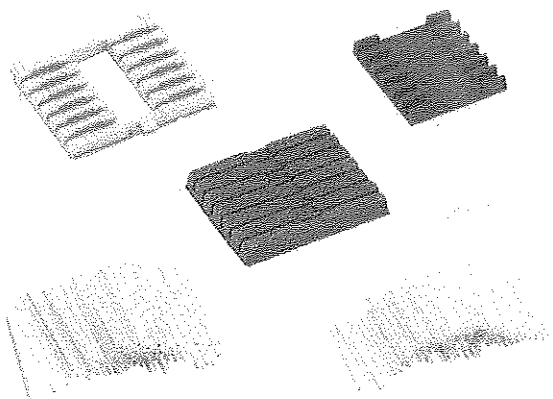
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Fiber Splice Holders & Sleeves

APPLICATION

Leviton Splice Sleeves, available in standard, slim, mini, and micro styles, are designed with a stainless-steel strength member, polyolefin copolymer inner tube, and polyolefin outer tube for reliable fiber alignment during shipping, handling, and installation. Use them with Leviton Splice Holders to provide maximum protection from shock and vibration. Holders accommodate the entire range of Leviton fusion splice sleeves, plus devices from other manufacturers for complete design flexibility.



SPECIFICATION

Fiber Splice Sleeves shall meet the requirements for Bellcore GR-1380 specifications. Outer tubing shall meet MIL-I-23053/5 Class 2 requirements. The sleeves shall feature a stainless-steel strength member, polyolefin copolymer inner tube and polyolefin outer tube with precise cut lengths and smooth ends. Sleeves shall be available in standard, slim, mini, and micro styles. Fiber Splice Holders shall accommodate the entire line of Leviton Fusion Splice Sleeves as well as devices from other manufacturers. Holders shall be available in foam or solid plastic with 6- and 12-fiber design options and adhesive backs.

FEATURES — Splice Holders

- 6- and 12-fiber designs
- Mini, Micro, and Mechanical options available
- Adhesive back for ease of assembly
- Foam and solid plastic designs
- Sold separately for use in packaging of passive optical devices

FEATURES — Splice Sleeves

- Precise lengths free of all burrs and sharp edges
- Heat-bonded assembly
- Choice of lengths and diameters
- Sleeves feature clear outer tube for viewing fiber color
- Slim sleeves feature reduced diameter to fit more finished product in splice trays
- Mini sleeves fit smaller width splice trays while still accommodating both 250 μm and 900 μm fibers, and require less shrink time
- Micro sleeves for splitter and coupler packages fit 250 μm fibers

STANDARDS COMPLIANCE

Outer tube of the splice sleeves meets MIL-I-23053/5 Class 2. Standard style sleeves meet Bellcore GR-1380 specifications.

PHYSICAL SPECIFICATIONS

Dimensions:	See page two
Outer Tube	Polyolefin
Working Temperature	-55° C to 135° C (-65° F to 275° F)
Ultimate Strength	220 kg/cm2
Elongation	650%
Specific Gravity	0.95
Water Absorption	0.05%
Minimum Shrink Temp	95° C (203° F)
Fungus Resistance	Inert
Solvent Resistance	Good
Acid Resistance	Excellent
Inner Tube	Polyolefin Copolymer (Ethylene-Vinyl Acetate)
Ultimate Strength	200 kg/cm2
Elongation	700%
Melting Point	80° C (176° F)
Specific Gravity	0.93
Strength Member	302 Stainless Steel with rounded and polished ends
Shrink Time*	Standard: 90 seconds Mini/Micro: 30-50 seconds

*Shrink times vary with heater style and ambient temperature.

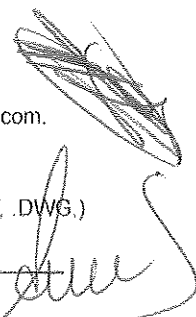
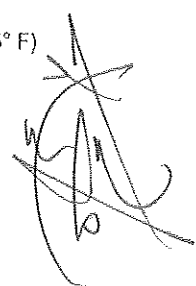
WARRANTY INFORMATION

For a copy of Leviton product warranties, visit www.leviton.com.

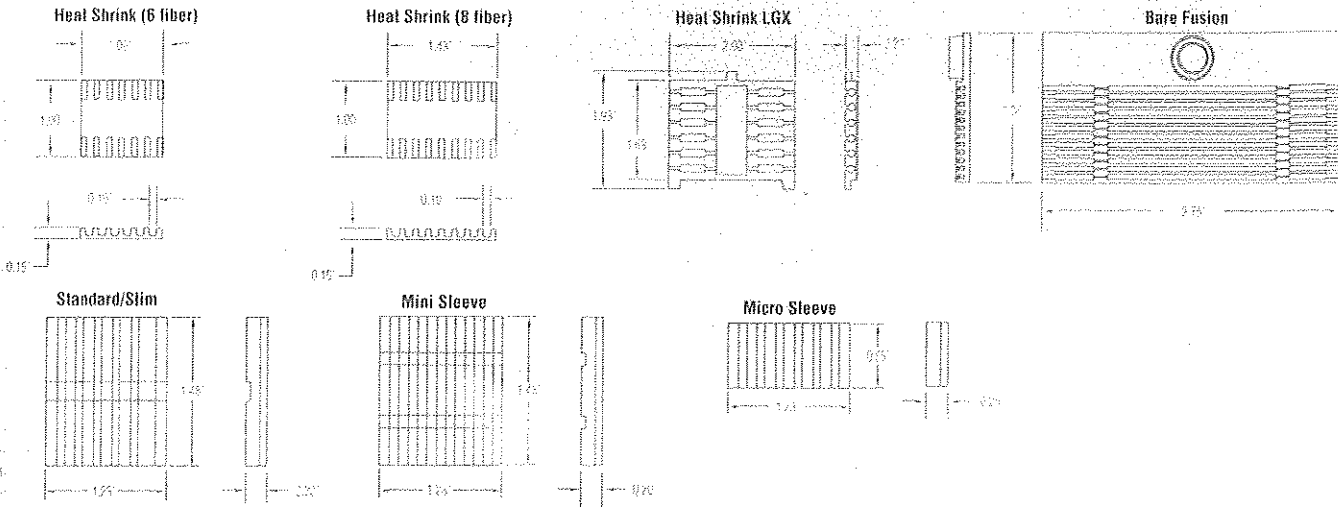
ELECTRONIC FILES

For CAD files, typical specs, or dimensional line art (.DXF, .DWG,) visit www.leviton.com.

FSHxx-xxx, FSSx-xxx



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FSHXX-XXX, FSSX-XXX

MAXIMUM SLEEVES PER SLICE HOLDER

Sleeves	Holders					
	Heat Shrink 8 Fiber (black plastic)	Heat Shrink 6 Fiber (black plastic)	Heat Shrink 6 Fiber (black foam)	Mini Sleeve (black foam)	Micro Sleeve (black foam)	Heat Shrink (LGX footprint)
Standard	8	6	6	N/A	N/A	6
Slim	8	6	6	N/A	N/A	N/A
Mini	N/A	N/A	N/A	6	6	N/A
Micro	N/A	N/A	N/A	6	6	N/A

SPLICE HOLDERS

Description	Part No.
Splice Holder, heat shrink (black plastic), 6-fiber capacity	FSHHS-P06
Splice Holder, heat shrink (black plastic), 8-fiber capacity	FSHHS-P08
Splice Holder, heat shrink (black foam), 6-fiber capacity	FSHSL-F06
Splice Holder, mini sleeves (black foam), 6-fiber capacity	FSHMI-F06
Splice Holder, micro sleeves (black foam), 6-fiber capacity	FSHMR-F06
Splice Holder, bare fusion, 12-fiber capacity	FSHBF-P12
Splice Holder, heat shrink (LGX footprint), 6-fiber capacity	FSHAT-F06
Splice Holder, ribbon, 6 position, 72-fiber capacity	FSHRB-F06

FUSION SPLICE SLEEVES

Description	Standard (50/pack)	(Slim 100/pack)	Mini (100/pack)	Micro (100/pack)	Ribbon (25/pack)
Fusion Splice Sleeve, 60 mm	FSSSD-060	FSSSL-060	---	---	---
Fusion Splice Sleeve, 40 mm	FSSSD-040	FSSSL-040	FSSMI-040	FSSMR-040	---
Fusion Splice Sleeve, 25 mm	---	FSSSL-025	FSSMI-025	FSSMR-025	---
Fusion Splice Sleeve, 40 mm	---	---	---	---	FSSRB-P40

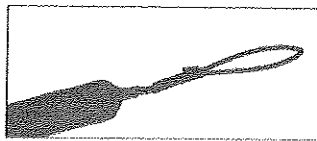


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Plug-n-Play Pre-terminated Fiber Trunk Cables

APPLICATION

Factory-terminated and tested fiber trunk cables connect central patching locations to zones or pods. Available terminated with both modular (MTP®) and discrete connectors, these trunks are custom built in any length to meet specific applications. An optional Pulling Eye, installed on the first end, protects fiber connectors on 12- through 144-fiber trunk cables. The Pulling Eye completely covers the breakout length, transferring any pulling force from the assembly to the pulling-eye sleeve. A high-tensile load option that attaches to Kevlar® is also available for applications of greater than 125 feet.



Pulling Eye

SPECIFICATION

All pre-terminated components—including trunks, cassettes, harnesses, brackets, patch panels, and enclosures—shall be provided and warranted by a single manufacturer. Components with a modular (12-fiber) connection shall utilize MTP connectors. All discrete connectors (LC, SC, ST, MU) shall use ceramic ferrules and sleeves. Insertion loss for connectors shall be a maximum of 0.5 dB per mated pair for both MTP connectors as well as discrete connectors. Trunks shall be available in plenum, LSZH, and interlock armor versions. Each will be available in MTP-to-MTP, MTP-to-discrete, and discrete-to-discrete configurations in 12, 24, 36, 48, 72, 96, and 144 fiber counts in sub-units of 12 fibers each. Each will also be available in custom lengths of one-foot increments. Total trunk length shall be specified from connector to connector. A pulling eye is optional on the pulling end of all trunks to safeguard fibers during installation. Trunks shall be pre-terminated and pre-tested with test documentation available upon request.

FEATURES

- Plug-n-play fiber eliminates the need for complicated and craft-sensitive field terminations and splices
- Every fiber component is factory terminated and pre-tested using automated procedures to ensure product quality
- All discrete connectors (LC, SC, ST, MU) are heat cured and use ceramic ferrules and sleeves for consistent performance
- Available in 12, 24, 36, 48, 72, 96, 144, or custom fiber counts
- Cable is available in indoor/outdoor-rated plenum or LSZH riser, all dielectric or interlock armor versions, depending on the application
- Fiber types include OS2 single-mode, OM2, OM3, OM4, and OM4+
- Standard breakout lengths can be staggered to ease installation
- Pulling eyes are provided as an option along with robust connector protection on both ends to safeguard fiber connectors during installation
- Trunk cables have a sturdy breakout point, yet are flexible enough to allow for smooth curving of breakout cordage without kinking or creating sharp bends

DESIGN CONSIDERATIONS

- For use with Leviton MTP cassettes, panels, and brackets
- Standard breakout length is 38 inches; other lengths available upon request
- Total trunk length is from connector to connector
- Trunks over 125 feet long are shipped on spools, or upon request for shorter lengths
- Standard polarity is A to B for LC and SC connector types; for MTP, standard polarity is Method B; and for other polarity options see page three
- Pulling eye is typically on first-end termination, if selected. First-end breakout length must be staggered if selecting pulling eye
- Sub-units of 12 fibers are staggered 1.5 inches, if selected. First sub-unit (or 1-12 fibers) is shortest length, then second sub-unit (or 13-24 fiber), and so forth

STANDARDS COMPLIANCE

UL riser- or plenum-rated cables meet the following standards:

- ANSI/TIA-568-C.3
- IEEE 802.3, adheres to ANSI/TIA-942 data center design guidelines

UL LSZH cables meet the following standards:

- IEC 60332-1-2
- IEC 60332-1-3
- IEC 60332-3-24 CAT.C
- IEC 60332-3-25 CAT.D
- IEC 61034-2
- IEC 61300-3-35
- IEC 61755

MTP® is a registered trademark of US Conec, Ltd.

Plug-n-Play Pre-terminated Fiber Trunk Cables

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COMPONENT SPECIFICATIONS
Plug-n-Play Pre-terminated Fiber Trunk Cables



COUNTRY OF ORIGIN
 USA

WARRANTY INFORMATION
 For a copy of Leviton product warranties, visit
www.leviton.com/warranty.

Performance Specifications									
Fiber Performance									
Fiber Type	Maximum Attenuation (db/km)				Bandwidth (MHz*km)		Transmission Distance (meters)		
	850nm	1300nm	1310nm	1550nm	850nm	1300nm	100Mb	1GbE	10GbE
Single-mode (OS2)	N/A	N/A	0.4	0.3	N/A	N/A	>5,000 @ 1310nm		>10,000 @ 1310nm
50/125 µm MM (OM2)	3.0	1.0	N/A	N/A	950	500	300/2000 @ 850/1300nm	750/600 @ 850/1300nm	150/300 @ 850/1300nm
50/125 µm LO (10G-300m) MM (OM3)	3.0	1.0	N/A	N/A	2,000 ¹	500 ²		1,000/600 @ 850/1300nm	300/300 @ 850/1300nm
50/125 µm LO (10G-550m) MM (OM4)	3.0	1.0	N/A	N/A	4,700 ¹	500 ²		1,040/600 @ 850/1300nm	550/300 @ 850/1300nm
50/125 µm LO (10G-600m) MM (OM4+)	3.0	1.0	N/A	N/A	4900 ¹	500 ²		1,210/600 @ 850/1300nm	600/300 @ 850/1300nm

¹ The effective modal bandwidth is determined based on an overfill launch (OFL) per ANSI/TIA-455-204, except on laser-optimized fiber types.

² 10GbE transmission @ 1.300 nm only applies to 10GBASE-LX4 (CWDM).

Plug-n-Play Pre-terminated Fiber Trunk Cables

MDP Non-Armored Trunk Cable Physical Specifications

Fiber Count	Nominal Outside Diameter In (mm)	Weight lbs/1000 ft (kg/km)	Max Installation Tension lbs (N)	Minimum Bend Radius in (cm)		Temperature Range	
				Installation	Long Term	Operating	Storage
12	0.160 (4.1)	10 (15)	100 (445)	2.4 (6.1)	1.6 (4.1)	0° C to +75° C	-40° C to +85° C
24	0.180 (4.6)	14 (21)	200 (890)	2.7 (6.9)	1.8 (4.6)		
48	0.231 (5.9)	22 (33)	200 (890)	3.5 (8.8)	2.3 (5.9)		
72	0.275 (7.0)	33 (48)	200 (890)	4.1 (10.5)	2.8 (7.0)		
96	0.316 (8.0)	45 (66)	300 (1335)	4.7 (12.0)	3.2 (8.0)		
144	0.360 (9.1)	56 (83)	300 (1335)	5.4 (13.7)	3.6 (9.1)		

MDP Armored Trunk Cable Physical Specifications

Fiber Count	Nominal Outside Diameter In (mm)	Weight lbs/1000 ft (kg/km)	Max Installation Tension lbs (N)	Minimum Bend Radius in (cm)		Temperature Range	
				Installation	Long Term	Operating	Storage
12	0.495 (12.6)	75 (112)	50 (222)	7.4 (18.9)	5.0 (12.6)	0° C to +75° C	-40° C to +85° C
24	0.495 (12.6)	80 (119)	100 (445)	7.4 (18.9)	5.0 (12.6)		
48	0.584 (14.8)	104 (154)	300 (1334)	8.8 (22.3)	5.8 (14.8)		
72	0.594 (15.1)	114 (170)	300 (1334)	8.9 (22.6)	5.9 (15.1)		
96	0.653 (16.7)	136 (202)	600 (2670)	9.9 (25.1)	6.6 (16.7)		
144	0.708 (18.0)	157 (233)	600 (2670)	10.6 (27.0)	7.1 (18.0)		

* Check local IEC requirements for grounding armored cables.

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Color Codes	
Cable Jackets	
OS2 Single-mode	Yellow
OM2 Multimode (50/125 µm)	Orange
OM3/OM4 Laser-optimized multimode (50/125 µm)	Aqua
OM4+ Laser-optimized multimode (50/125 µm)	Violet
Connectors	
OS2 Single-mode	Blue
OS2 Single-mode, APC (angle polishing)	Green
OM2 Multimode (50/125 µm)	Beige
OM3 Laser-optimized multimode (50/125 µm)	Aqua
OM4 Laser-optimized multimode (50/125 µm), uniboot	Aqua
OM4+ Laser-optimized multimode (50/125 µm)	Aqua

Fiber Insertion Loss Performance (dB)						
Connector Mated Pairs	Multimode			Single-mode		
	TYP IL	MAX IL	MIN RL	TYP IL	MAX IL	MIN RL
LC, MU	0.15	0.25	-	0.15	0.25	-45
SC, ST	0.20	0.25	-25	0.20	0.25	-60 for APC)
MTP	0.35	0.50	-	0.35	0.75	-

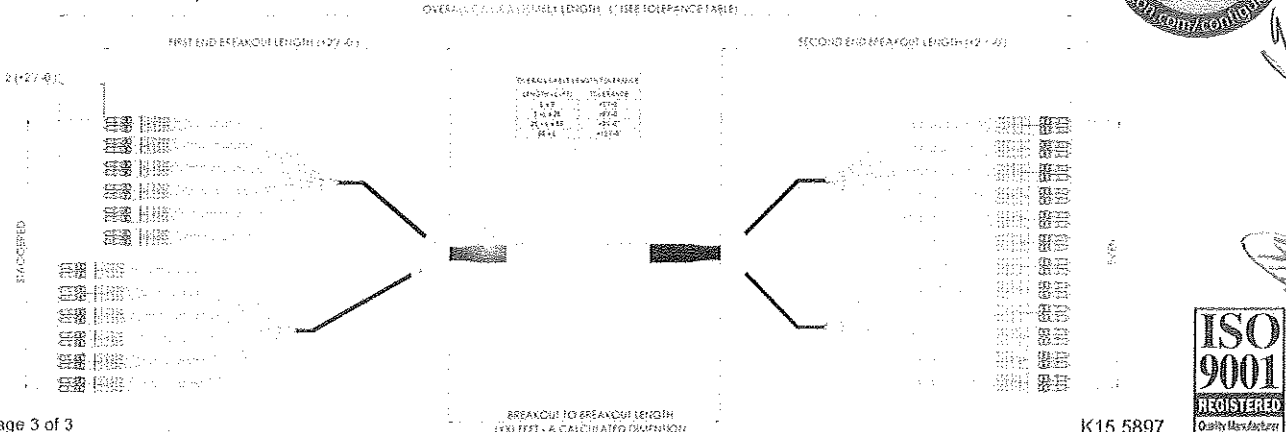
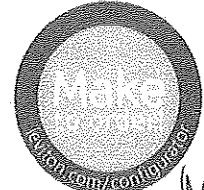
For premium MTP® (low loss) see Opt-X® Unity Trunks.

PRE-TERMINATED TRUNK CABLE OPTIONS

FIBER TYPE	CABLE TYPE	FIBER COUNT	TERMINATION (FIRST END)	TERMINATION (SECOND END)	CABLE LENGTH (FEET)	BREAKOUT LENGTH (INCHES)	BREAKOUT LEE TYPE (FIRST & SECOND END TERMINATION)	PULLING EYE	POLARITY	LABELING
OM2	Plenum/Outdoor - riser	24	ST (duplex) or LC/APC	LC/APC or LC/APC	10-3200 (1km)	12-99 (95% typical)	00 (LC) or 01 (SC) or 02 (ST) or 03 (MTP)	00 (LC) or 01 (SC) or 02 (ST) or 03 (MTP)	A-A	Standard
OM3	Plenum/Outdoor - riser	24	ST (duplex) or LC/APC	LC/APC or LC/APC	10-3200 (1km)	12-99 (95% typical)	00 (LC) or 01 (SC) or 02 (ST) or 03 (MTP)	00 (LC) or 01 (SC) or 02 (ST) or 03 (MTP)	A-A	Standard
OM4	Plenum/Outdoor - riser	24	ST (duplex) or LC/APC	LC/APC or LC/APC	10-3200 (1km)	12-99 (95% typical)	00 (LC) or 01 (SC) or 02 (ST) or 03 (MTP)	00 (LC) or 01 (SC) or 02 (ST) or 03 (MTP)	A-A	Standard
OM4+	Plenum/Outdoor - riser	24	ST (duplex) or LC/APC	LC/APC or LC/APC	10-3200 (1km)	12-99 (95% typical)	00 (LC) or 01 (SC) or 02 (ST) or 03 (MTP)	00 (LC) or 01 (SC) or 02 (ST) or 03 (MTP)	A-A	Standard
OS2	Plenum/Outdoor - riser	24	ST (duplex) or LC/APC	LC/APC or LC/APC	10-3200 (1km)	12-99 (95% typical)	00 (LC) or 01 (SC) or 02 (ST) or 03 (MTP)	00 (LC) or 01 (SC) or 02 (ST) or 03 (MTP)	A-A	Standard

For assistance in ordering your custom cable, please email our sales team at sales@leviton.com or call 1-800-824-3000.

Make-to-Order
 Pre-Terminated
 Trunk Cable Options:



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