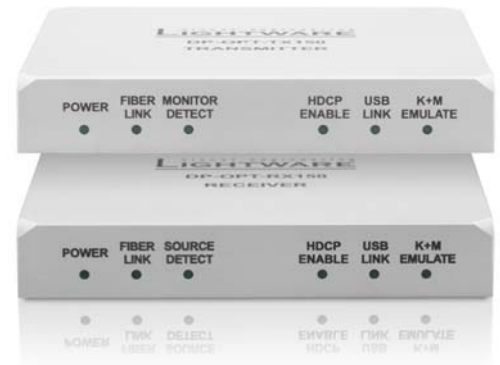


KVM DisplayPort fiber optical extenders

Highlight features

- DisplayPort 1.1a + Keyboard + Mouse fiber extender
- Plug and Play – no drivers required
- Up to 2560 x 1600 pixel resolution
- HDCP 1.1 compliant extension over one multimode fiber
- Compatible with Apple Cinema Display, 27" and 30" LCD displays
- USB HID* extension of maximum two devices over the same multimode fiber

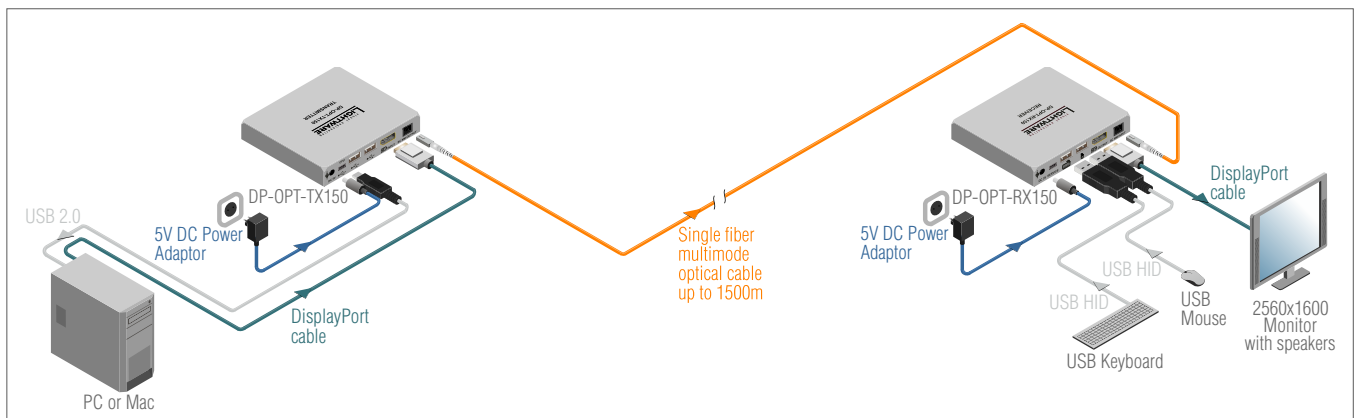


Lightware DP-OPT-TX150 and DP-OPT-RX150 devices extend Dual-mode DisplayPort 1.1a high resolution video and embedded audio with optional HDCP encryption plus USB HID* over one multimode fiber up to 1500 m.

DisplayPort is one of the newest video interface standards. Using DisplayPort, high resolution video and excellent quality audio can be transmitted. The interface's 10.8 Gbps bandwidth is capable of transmitting 2560 x 1600 pixel resolution video with full support of content protection (HDCP).

*USB HID: Human Interface Device such as keyboard, mouse or presenter.

Standalone diagram with high resolution DP monitor



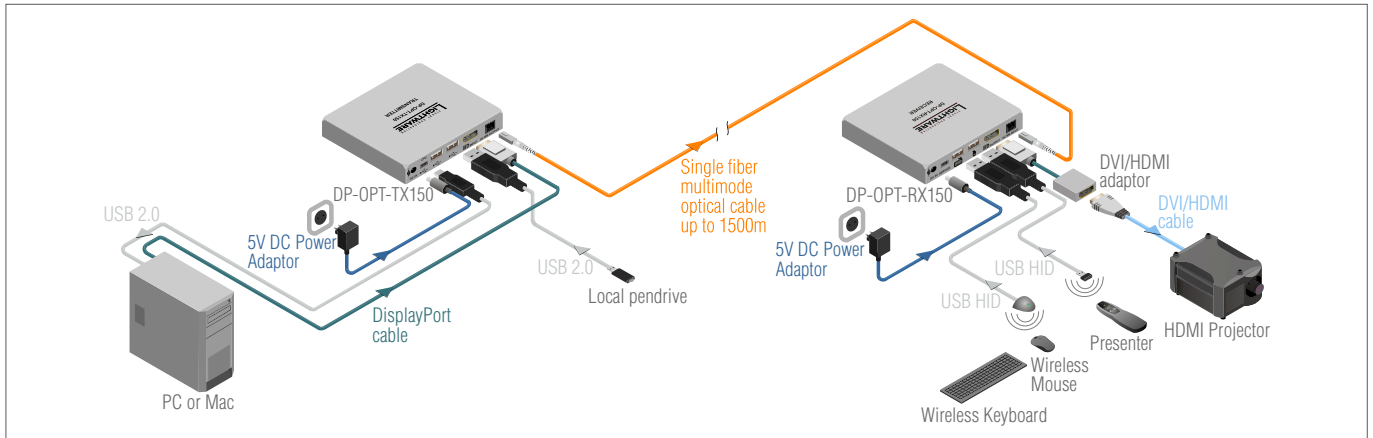
Intelligent HID Emulation is provided for two devices with full transparency. The special HID devices - including keyboard and mouse - are emulated by the extender and transparently transferred to the computer with the result that no drivers are required for the proper functionality, it's as easy as Plug & Play.

DP-OPT-TX150 has 2 extra local USB ports with a built-in HUB and can be connected to the PC/Mac with a single USB cable.

Dual-mode DisplayPort: when connecting a DVI or HDMI display through an adaptor cable, Dual-mode DisplayPort graphic cards reconfigure their outputs to DVI or HDMI accordingly. Lightware DisplayPort extenders support Dual-mode port extension and adaptor cables.

Single Fiber Technology makes these units fully DisplayPort 1.1a and HDCP 1.1 compliant without the need of a second fiber cable or copper connections. To simplify cabling, the bi-directional communication - necessary for DisplayPort Link Training, HDCP handshaking and USB transfer - is performed on the same fiber core that transmits the video signal. Both receiver and transmitter are remote configurable from either side through the mini USB connector.

Standalone diagram with HDMI projector



Transmitter and receiver front and rear view



DP-OPT-TX150 front view



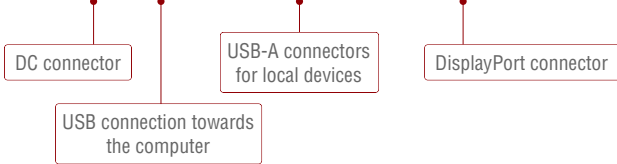
DP-OPT-RX150 front view



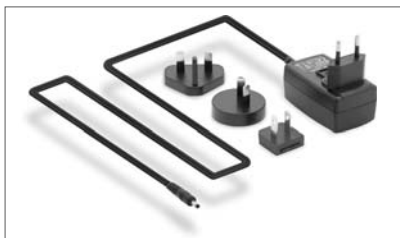
DP-OPT-TX150 rear view



DP-OPT-RX150 rear view



Supplied accessories



Universal DC adaptor

Wall power adaptor with interchangeable plug for international use.
Universal input: 100-240 V AC, 50-60 Hz
Output: 5 V DC, 2 A



DP to DP cable

Male DisplayPort to male DisplayPort cable.



Mini DP to DP cable

Male mini DisplayPort to male DisplayPort adapter cable.



DP to mini DP cable

Male DisplayPort to female mini DisplayPort adapter cable.



USB to USB cable

USB cable with male 5-pin mini USB-B to USB-A connector.

Applications

- Long distance lossless DisplayPort signal and USB HID transmission
- Apple Cinema Display compatible AV extension
- Ground loop isolation

Features

- DisplayPort 1.1a + Keyboard + Mouse fiber extender
- Dual-mode DP: supports DVI and HDMI adaptors
- Up to 2560 x 1600 pixel resolution
- HDCP 1.1 compliant extension over one multimode fiber
- Compatible with Apple Cinema Display and 30" LCD displays
- 4K resolution can be achieved at lower framerate (4096 x 2160 @ 30 Hz)
- USB HID (Human Interface Device) only
- External USB HUBs are supported
- Single Fiber Technology
- Zero frame latency, no delay
- No compression
- SC optical fiber connector
- Solid Aluminum body
- Several status LEDs: power, fiber link, source detect, monitor detect, HDCP enable, USB link, K+M emulate
- USB control
- Kensington lock support

Specifications

Data rate:	1.62 / 2.7 Gbps/lane, maximum: 10.8 Gbps total
Max Resolution:	2560 x 1600 pixels @ 60 Hz
Color depth:	24, 30, 36, 48 bits deep color
HDCP pass through:	yes
Fiber:	50/125 SC Multimode (preferred) 62.5/125 SC Multimode
Laser wavelengths:	high speed lanes: 778; 800; 825; 850 nm low speed lanes: 911; 980 nm
Laser class specifications:	Class 3R
Transmitter output OMA*:	-6.25 dBm (worst case)
Receiver OMA* sensitivity:	-14.25 dBm (worst case)
Transmission distance:	1500 m (using OM3e or OM4 type fiber)
Power supply:	external power adaptor (100 to 240 V AC, 50-60 Hz)(5 V DC, 2 A)
Power consumption (RX):	3,25 W (typ.) 3,5 W (max) without USB 3,75 W (typ.) with USB 8,25 W (max 500mA/USB-A conn) with USB
Power consumption (TX):	2,75 W (typ.) 3 W (max) without USB 3,1 W (typ.) with USB 8,2 W (max 500mA/USB-A conn) with USB
Enclosure:	solid Aluminum
Dimensions:	110 W x 95 D x 18 H mm
Weight:	300 gramms
Compliance:	CE
Warranty:	3 years

OMA*: Optical Modulation Amplitude

Connectors

DisplayPort:	standard DisplayPort gold plated connector
Fiber:	SC receptacle
USB HID (RX):	2 x USB-A female connector
USB (TX):	2 x USB-A female connector
USB control:	mini USB-B female connector
Power:	DC connector (3.75 mm)

Optional accessories



Rack shelf

1U high rack shelf provides mounting holes for fastening two half-rack or four quarter-rack sized units. Pocket sized devices can also be fastened on the shelf.

Under desk mounting kit double

The UD-kit double makes it easy to mount a single device or multiple devices on any flat surface (e.g. furniture).

Lightware developed several accessories to support mounting products in various environments. This compatibility table shows a summary on product compliance with the mounting accessories.

	Product name	Accessory			
		Rack shelf	UD-kit double	UD-kit	Mounting bracket
Distribution amplifiers	DA4HDSDI	✓(4)	x	x	x
	DA4-3GSDI	✓(4)	x	x	x
	DA2DVI-HDCP-Pro	✓(4)	x	x	x
	DA2DVI-DL	✓(4)	✓(2)	✓(1)	x
Twisted pair extenders for DVI signal	DVI-TP-TX200	✓(4)	✓(2)	✓(1)	x
	DVI-TP-TX200DL	✓(4)	✓(2)	✓(1)	x
	DVI-TP-TX300	✓(4)	✓(2)	✓(1)	x
	DVI-TP-RX100	✓(4)	✓(2)	✓(1)	x
	DVI-TP-RX100DL	✓(4)	✓(2)	✓(1)	x
Twisted pair extenders for HDMI signal	DVI-HDCP-TP-TX50	✓(4)	✓(2)	✓(1)	x
	DVI-HDCP-TP-TX100R	✓(4)	✓(2)	✓(1)	x
	DVI-HDCP-TP-RX50	✓(4)	✓(2)	✓(1)	x
	DVI-HDCP-TP-RX100R	✓(4)	✓(2)	✓(1)	x
	HDMI-TP-TX50	✓(4)	✓(2)	✓(1)	x
	HDMI-TP-TX100R	✓(4)	✓(2)	✓(1)	x
	HDMI-TP-TX200R	✓(4)	✓(2)	✓(1)	x
	HDMI-TP-RX50	✓(4)	✓(2)	✓(1)	x
	HDMI-TP-RX100R	✓(4)	✓(2)	✓(1)	x
	HDMI-TP-RX100RA	✓(4)	✓(2)	✓(1)	x
HDMI-TP-RX200R	✓(4)	✓(2)	✓(1)	x	
Twisted pair extenders for universal signal	UMX-TP-TX100R	✓(2)	✓(1)	x	x
TPS extenders for HDMI signal	HDMI-TPS-TX90	✓(4)	✓(2)	✓(1)	x
	HDMI-TPS-RX90	✓(4)	✓(2)	✓(1)	x
Optical extenders for DVI signal	DVI-OPT-TX110	x	x	x	x
	DVI-OPT-TX220-Pro	✓(2)	x	x	✓(1)
	DVI-OPT-TX220-ST-Pro	✓(2)	x	x	✓(1)
	DVI-OPT-RX110	x	x	x	x
	DVI-OPT-RX220-Pro	✓(2)	x	x	✓(1)
	DVI-OPT-RX220-ST-Pro	✓(2)	x	x	✓(1)
	DVIDL-OPT-TX200	✓(4)	x	x	x
	DVIDL-OPT-RX100	✓(4)	x	x	x
Optical extenders for HDMI signal	HDMI-OPT-TX100	✓(4)	✓(2)	✓(1)	x
	HDMI-OPT-TX100R	✓(4)	✓(2)	✓(1)	x
	HDMI-OPT-TX200R	✓(4)	✓(2)	✓(1)	x
	HDMI-OPT-RX100	✓(4)	✓(2)	✓(1)	x
	HDMI-OPT-RX100R	✓(4)	✓(2)	✓(1)	x
	HDMI-OPT-RX200R	✓(4)	✓(2)	✓(1)	x
	HDMI-3D-OPT-RX150RA	✓(4)	✓(2)	✓(1)	x
Optical extenders for DP signal	DP-OPT-TX100	✓(4)	✓(2)	✓(1)	x
	DP-OPT-RX100	✓(4)	✓(2)	✓(1)	x
	DP-OPT-TX150	✓(4)	✓(2)	x	x
	DP-OPT-RX150	✓(4)	✓(2)	x	x

The number after the ✓ signal shows the number of products that can be mounted in the accessory simultaneously.

Please note Lightware's standalone matrices, modular digital matrix frames and remote control panels are supplied with their own rack mounting ears. Interfaces and wall plate extenders are not compatible with any accessory listed above.