

VelocityKVM

Thinklogical's VelocityKVM systems offer best-in-class fiber optic performance with advanced video, audio and peripheral capabilities. VelocityKVM extenders offer 6.25Gbps bandwidth, to achieve *uncompressed, high resolution video with no latency, lost frames or artifacts*. Systems are simple plug and play designs, utilizing either multi-mode or single mode fiber. For routing applications, VelocityKVM systems are compatible with Thinklogical's MX and VX Series Routers, scalable from 5 to 640 ports.

Powered by

MRTS Technology

VelocityKVM systems are powered by **Thinklogical's patented Multi-Rate Transmission System (MRTS) technology**, which enables multiple data signals (video, audio and peripheral) to be transmitted up to 80km, over a single data stream. MRTS completely reconstructs the data clocks at the destination, to offer perfect synchronization with each transmitted stream.

VelocityKVM systems are highly customizable, to ideally suit any application.

VelocityKVM systems offer support for:

Video Signals

- Single-Link DVI
- Dual-Link DVI
- RGB

Audio Signals

- Bidirectional unbalanced analog stereo audio
- Bidirectional digital audio channel (AES3, TRS or S/PDIF, TOSLINK or RCA)

Peripheral Signals

- DDC
- Serial (RS-232 or RS-422)
- Stereo Emitter
- PS/2
- USB HID
- USB 2.0 (480Mbps)
- 10/100 Network
- FireWire 800

Optional Configurations

Redundant Fiber Path

To further ensure system reliability, Thinklogical offers a Redundant Fiber Path. This intelligent fiber redundancy system uses twice the fiber from the transmitter, to provide two identical data streams. In the event of a loss of signal on one fiber stream, the system automatically fails over to the second stream, to maintain signal. For systems that cannot tolerate downtime, fiber redundancy provides continuous operation.

Multipath

To incorporate VelocityKVM into a 4G system, Thinklogical splits the 6.25G signal over two 4G data streams. Multipath systems require an additional fiber per video stream.

Separate Video from Audio and Peripheral Data

MRTS technology transmits video, audio and peripheral data over a single fiber, delivering data to a single destination. For applications where the video signal must be sent to a different location than the audio and peripheral signals, Thinklogical offers a Separate Data Path option. Video can be sent to a video wall, while the peripheral data from the same source is sent to a desktop. At the desktop, the user can control the video at the wall.

When a system requires only the separation of audio from video and peripheral data, Thinklogical offers a Separate Audio Path. The audio signal transmits independently of video and peripheral data, allowing the audio to be projected over a sound system, while the video is displayed at a desk or at the video wall.

Color Correction Receivers

Thinklogical has integrated SpectraCal's color calibration technology into VelocityKVM Receivers. After accurate color specification is determined, the resulting lookup tables are downloaded into Thinklogical's receiver. The receiver then controls the display's settings to adjust the image to match the original content. This system eliminates the need for a set of color correction devices for each individual display, as well as the need to access those devices on a display by display basis. For more information on how Color Correction Receivers provide exceptional benefits for an easy integration and save install time and costs, please reference Thinklogical's Color Correction Receiver Data Sheet.

VelocityKVM extenders are available in several form factors, from rack mount units, to compact chassis for use at the desktop. All chassis types are completely compatible, so users can mix-and-match to reduce the overall footprint of the design.

Fixed Chassis

Thinklogical's fixed, 1RU extenders offer advanced support for numerous video, audio and peripheral extension applications. Each unit is rack mountable and supports a single receiver or transmitter. As receivers are often co-located with users, Thinklogical utilizes exceptionally quiet fans, which only operate when the temperature of the unit begins to increase, to reduce noise and maximize workflow.

Modular Chassis

Thinklogical offers a variety of modular chassis for VelocityKVM systems. Thinklogical's modular systems allow users to create a flexible, custom, space-saving and easily scalable product. Choose from the resilient, rack mount chassis (housing up to two extenders per single rack unit) or from the more compact, space-saving design for use at the desktop. All modular chassis extenders offer a dry contact annunciator, providing an alarm warning for power failures or increased temperatures. For enhanced resiliency, each extender module is hot-swappable, complete with hot-swappable optical modules. As a system design evolves, easily convert a unit from multi-mode to single mode or swap the module to easily reconfigure a system to meet new requirements. Modular chassis includes fans to keep the system cool, and emit virtually no detectable sound to interfere with the local user.

Modular Chassis

Desktop Chassis

Space Saving at the Desktop

The compact design of the ½RU Desktop Chassis is ideal for use on or mounted below the desktop. The modular design is **configurable with a single Desktop transmitter or receiver module**.

Modular Extenders
enhance system



*flexibility,
customization,
scalability, and
space-savings.*

T-Series 4200 Chassis

Space Saving at the Rack & Desktop

The rack mountable T-4200 chassis is ideal for high density applications, where space may be limited. The 1RU, modular design is **configurable with up to two T-Series transmitter or receiver modules**, in any combination - as a dual transmitter, dual receiver or transceiver.

See also, Compact T-4200 Chassis in Specifications.

Redundant Power Supplies

The T-4200 and T-Q4200 Chassis are ideal for 24/7 environments, where minimal downtime is critical. The system is designed with redundant, current-sharing and hot-swappable power supplies. In the unlikely event that one power module fails, the second automatically fails over to power the unit with no delay or data loss. The failed module may be swapped out, without ever powering down the unit or interrupting operations. (Not available on Compact T-4200 Chassis)

T-Series Q-4200 Chassis

T- and Q-Series in a Single Chassis

The rack mountable T-Q4200 chassis offers increased flexibility, for systems utilizing both T-Series and Q-Series extender modules. The 1RU, modular design is **configurable with a single T-Series transmitter or receiver module and up to two Q-Series modules**, in any combination.





Fixed Chassis



Desktop Chassis



T-Series Q-4200 Chassis



T-Series Compact Chassis



T-Series 4200 Chassis



Hot-Swappable Extender Modules



Specifications	Fixed	Desktop	Compact T-4200	T-4200	T-Q4200
Environmental	Operating Temperature: 0°C-50°C; Humidity: 5-95% RH, non-condensing				
Compliance	Approvals for United States of America, Canada, and European Union				
Warranty	One year · Extended warranties available for purchase				
Mounting Brackets	19" Rack Mounting Hardware Included Surface Mounting Hardware, order (2) ENC-001598-R	Surface Mounting Hardware Included 19" Rack Mounting Hardware, order (2) ENC-001541-R	19" Rack Mounting Hardware Included Surface Mounting Hardware, order (2) ENC-001598-R	19" Rack Mounting Hardware Included Surface Mounting Hardware, order (2) ENC-001598-R	19" Rack Mounting Hardware Included Surface Mounting Hardware, order (2) ENC-001598-R
Power Consumption	25-35 Watts, See extender	1 Watt (16 Watts Loaded)	1 Watt (31 Watts Loaded)	1 Watt (31 Watts Loaded)	5 Watt (40 Watts Loaded)
Supply Voltage	Universal AC Power Supply, 100-240VAC, 47-63Hz (1)			Universal AC Power Supply, 100-240VAC, 47-63Hz (2)	
Weight	8.50lbs (3.86kg)	3.00lbs (1.36kg) 4.00lbs (1.81kg) Loaded	7.00lbs (3.18kg) 9.00lbs (4.08kg) Loaded	8.00lbs (3.63kg) 10.00lbs (4.54kg) Loaded	8.00lbs (3.63kg) 10.00lbs (4.54kg) Loaded
Dimensions					
Rack Size (w/ mounting hardware)	EIA 19" (483.36mm)	11.98" (304.29mm)	EIA 19" (483.36mm)	EIA 19" (483.36mm)	EIA 19" (483.36mm)
Width (w/o mounting hardware)	17.49" (444.25mm)	10.74" (272.80mm)	17.49" (444.25mm)	17.49" (444.25mm)	17.49" (444.25mm)
Height	1RU · 1.72" (43.69mm)	1RU · 1.72" (43.69mm)	1RU · 1.72" (43.69mm)	1RU · 1.72" (43.69mm)	1RU · 1.72" (43.69mm)
Depth	14.94" (379.53mm)	11.52" (292.61mm)	8.91" (226.31mm)	15.56" (395.22mm)	15.56" (395.22mm)
Tolerance	± 0.039" (1.00mm)	± 0.039" (1.00mm)	± 0.039" (1.00mm)	± 0.039" (1.00mm)	± 0.039" (1.00mm)
Connectors					
Software Updates	See Extender Data Sheet	See Extender Module	See Extender Module	See Extender Module	See Extender Module
Cables Included					
	AC Power Cable (1)	AC Power Cable (1)	AC Power Cable (1)	AC Power Cable (2)	AC Power Cable (2)

For use with Desktop Modules, T-Series Modules and Q-Series Modules.

Modules will not operate without a chassis.

Ordering Information

Part Number		VED-000001	VCS-004200	VTS-004200	VTS-Q04200
Description	Fixed Extenders do not require an additional chassis, see Ordering Information on corresponding extender data sheet.	Desktop Modular Chassis Configure with a single Desktop Module	T-Series Compact 4200 Modular Chassis Configure with up to two T-Series Compact 4 Modules	T-Series 4200 Modular Chassis Configure with up to two T-Series Modules Redundant power supplies	T-Series Q-4200 Modular Chassis Configure with a single T-Series Module and up to two Q-Series Modules Redundant power supplies

VelocityKVM · Product Features

PRODUCT FEATURES		STANDARD FEATURES										CONFIGURABLE FEATURES											
Product Name		Video Heads			Video Signals			Additional Features			Control		Peripheral Signals				Fiber Connectors						
All models available as Transmitter or Receiver	1	2	3	4	Single Link DVI	Dual Link DVI	RGB	TX Local Output RX Aux Output	3D Emitter	Fiber Count	DDC	RS-232	RS-422	Unbalanced Analog Stereo	USB HID	PS/2	USB 2.0	10/100 Network	FireWire 800	Professional Audio	LC	SC	ST
	Fixed Extenders (19" Rackmount, 1RU)																						
	VEL-04	✓				✓			✓	✓	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	VEL-05	✓				✓		✓		✓	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	VEL-08	✓					✓		✓	✓	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
VEL-24		✓			✓			✓	✓	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
VEL-28		✓			✓	✓		✓ (TX Only)	✓	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
VEL-34				✓	✓				✓	5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
VEL-35			✓		✓				✓	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
VEL-38		✓				✓		✓ (TX Only)	✓	5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Desktop Modular Extenders (½RU each: 1 Module per Desktop Chassis)																							
VDM-04	✓				✓			✓	✓	2	✓	✓	✓	✓	✓	✓	✓	✓				✓	
VDM-05	✓				✓		✓	✓	✓	2	✓	✓	✓	✓	✓	✓	✓	✓				✓	
VDM-08	✓					✓		✓	✓	3	✓	✓	✓	✓	✓	✓	✓	✓				✓	
VDM-24		✓			✓				✓	3	✓	✓	✓	✓	✓	✓	✓	✓				✓	
T-Series Modular Extenders (½RU each: 2 Modules per T-Series 4200 Chassis, 1 Module per T-Series Q4200 Chassis)																							
VTM-04	✓				✓			✓	✓	2	✓	✓	✓	✓	✓	✓	✓	✓				✓	
VTM-05	✓				✓		✓	✓	✓	2	✓	✓	✓	✓	✓	✓	✓	✓				✓	
VTM-08	✓					✓		✓	✓	3	✓	✓	✓	✓	✓	✓	✓	✓				✓	
VTM-24		✓			✓				✓	3	✓	✓	✓	✓	✓	✓	✓	✓				✓	
T-Series Compact Modular Extenders (½RU each: 2 Modules per T-Series Compact 4200 Chassis, Receiver Only)																							
VCM-04	✓				✓					2	✓	✓	✓	✓	✓	✓	✓	✓				✓	

Additional Configurable Features		Additional Fibers Required	
Available on all models		Additional Fibers Required	
Multi-Mode (Extension up to 1000m) or Single Mode (Extension up to 80km)		0	
Redundant Optic Path(s)		x2	
Separate Data Path		+1	
Separate Audio Paths		+2	
Color Correction (Receiver Only)		0	
Multipath		+1/video stream	

MRTS Technology

VelocityKVM extension systems utilize *Thinklogical's patented Multi-Rate Transmission System (MRTS) Technology*. MRTS enables multiple data streams of uncompressed video, audio and peripheral signals to be combined and transmitted over distances of up to 80km over a single fiber optic cable at 6.25Gbps bandwidth. This architecture enables a solution that delivers video content and data with no latency, artifacts or lost frames, and with a minimum number of system components and fiber connections.

VelocityKVM 24 · Dual Head Single-Link DVI Displays



Fixed Extender · Front



Fixed Extender · Backpanel



Modular Transmitter



Modular Receiver

The System

VelocityKVM systems have a simple transmit and receive design. The VelocityKVM Transmitter connects to the source to receive video, audio and peripheral data. The data is multiplexed with Thinklogical's patented MRTS Technology, and transmitted over 6.25Gbps SFP+ technology for up to 80 kilometers. Fiber provides a secure connection from the transmitter to the receiver, where MRTS Technology demultiplexes the data stream to deliver uncompressed, high resolution video, audio and peripheral data to the destination.

A VelocityKVM 24 system requires three fibers for the standard configuration. The forward channels are dedicated to transmitting video, audio and peripheral data from the

source to the destination. The return channel is dedicated to transmitting DDC/EDID and peripheral data from the destination to the source. All Thinklogical VelocityKVM systems are configurable with multi-mode or single mode fiber.

The VelocityKVM 24 extension systems are designed to support **two single-link DVI displays, USB HID, full duplex stereo audio and serial (RS-232), PS/2 and stereo emitter.**

Systems are custom configurable to also support **serial RS-422, USB 2.0 (480 Mbps), FireWire 800, 10/100 Network, Professional Audio**, and LC, SC or ST connector types.

Extenders may be further configured with redundant data paths, separate audio and/or peripheral data paths and color correction technology.

FORM FACTOR

VelocityKVM 24 systems are available in two, completely compatible form factors. The fixed extenders are factory configured, as a single RU chassis. The modular extenders are compact and hot-swappable, enabling users to field configure any modular chassis. Additionally, the optical modules within the modular extenders are hot-swappable. Modular systems promote system flexibility, scalability and a reduced maintenance effort. For additional information, please see Fixed and Modular Chassis specifications.

PRODUCT FEATURES

Standard



Configurable



Source

Dual Head
Single-Link DVI



VelocityKVM 24 Transmitter

MRTS Technology provides full bandwidth connectivity over a fiber connection of up to 80km

Video, audio and peripheral data
Peripheral data, audio and EDID

Destination



VelocityKVM 24 Receiver

VelocityKVM 24 · Dual Head Single-Link DVI Displays

Specifications	Desktop & T-Series Extender Modules (VDM & VTM)		Fixed Extenders (VEL)
Video Resolution	DVI-D, all single-link DVI resolutions (maximum 165MHz pixel clock)		
Optical Cable	Three (3) multi-mode or single mode fiber optic cables, for fewer fibers contact Thinklogical (fiber not supplied, available for purchase)		
Optical Distance	Multi-Mode up to 1000m Single Mode up to 80km	65m: OM1 (62.5/125); 350m: OM2 (50/125); 750m: OM3 (50/125 SX+); 1000m: OM4 (50/125eSX+) All Distances: OS2 (9/125)	
Optical Wavelength	Multi-Mode: 850nm; Single Mode: 1310nm (CWDM and DWDM wavelengths available, contact Thinklogical for further information)		
Data Rate	Forward channels: 6.25Gbps; Return Channel: 2Gbps		
Environmental	Operating Temperature: 0°C-50°C; Humidity: 5-95% RH, non-condensing		
Compliance	Approvals for United States of America, Canada, and European Union		
Warranty	One year - Extended warranties available for purchase		
Mounting Brackets	See Modular Chassis Specifications		19" Rack Mounting Brackets Included
Power Consumption	15 Watts		25 Watts
Supply Voltage	Universal AC Power Supply, 100-240VAC, 47-63Hz		Universal AC Power Supply, 100-240VAC, 47-63Hz
Weight	1.00lb (0.45kg)		8.50lbs (3.86kg)
Dimensions			
Rack Size	See Modular Chassis Specifications		EIA 19"
Height x Width x Depth	1.65" (41.91mm) x 7.41" (188.11mm) x 9.06" (230.15mm)		1RU: 1.72" (43.69mm) x 17.49" (444.25mm) x 14.94" (379.53mm)
Tolerance	± 0.039" (1.00mm)		± 0.039" (1.00mm)
Connectors			
Video	DVI-D (4)		DVI-D (4)
Audio MIC/LINE	3.5mm Jack (2)		3.5mm Jack (2)
RS-232 Serial Port	TX: DB9 Female (1); RX: DB9 Male (1)		TX: DB9 Female (1); RX: DB9 Male (1)
RS-422 Serial Port (Configurable)	DB9 Female (1)		DB9 Female (1)
Stereo Emitter	50Ω BNC (1)		50Ω BNC (1)
PS/2 Keyboard/Mouse	Mini DIN 6 Female (2)		Mini DIN 6 Female (2) + additional (2, TX only) for Local Keyboard/Mouse
USB Local Keyboard/Mouse			TX: USB A (2)
USB HID	TX: USB B (1); RX: USB A (4)		TX: USB B (1); RX: USB A (4)
USB 2.0 (Configurable)	TX: USB B (1); RX: USB A (4)		TX: USB B (1); RX: USB A (4)
FireWire 800 (Configurable)			9-Pin Male IEEE 1394b (1)
Professional Audio (Configurable)			AES3 (TRS), S/PDIF (RCA) or S/PDIF (TOSLINK) (1)
10/100 Network (Configurable)			RJ45 (1)
Software Updates	USB B (2)		TX: USB B (3); RX: USB B (2)
Alarm	Closed contact alarm, three position terminal block		
Fiber Connectors	LC (1)		LC, SC or ST (1) [FireWire 800 (2)]
Cables Included			
Transmitter	(1) AC Power Cable for Fixed Extenders (for Extender Modules see Modular Chassis Specifications) (2) DVI-D Single-Link Male to Male, 2 Meters (CBL000009-002MR) (1) KMASS Cable Kit (KIT-000005-R) (2) 6 Pin Mini DIN Male to Male, 1.8 Meters (CBL000006-006FR) (1) BNC Male to BNC Male, 50Ω, 1.8 Meters (CBL000018-006FR) (2) 3.5mm Male to 3.5mm Male Plug, 1.8 Meters (CBL000016-006FR) <i>USB 2.0:</i> (1) USB A-B, 1.8 Meters (CBL000015-006FR) <i>10/100 Network:</i> (1) CAT 5, 2 Meters (CBL000001-002MR) <i>FireWire 800:</i> (1) 9-Pin to 9-Pin 1394b, 1.8 Meters (CBL000101-006FR) & (1) 6-Pin to 9-Pin 1394b, 1.8 Meters (CBL000100-006FR) <i>Professional Audio:</i> (1) Optical TOSLINK, 1.8 Meters (CBL-000043-R), (1) Coaxial RCA, 1.8 Meters (CBL-000044-R)		
Receiver	(1) AC Power Cable (For Fixed Extenders, for Extender Modules see Modular Chassis Specifications) <i>FireWire 800:</i> (1) 9-Pin to 9-Pin 1394b, 1.8 Meters (CBL000101-006FR) & (1) 6-Pin to 9-Pin 1394b, 1.8 Meters (CBL000100-006FR)		
Contact Thinklogical for additional specifications for redundant, separate data, separate audio and multipath extenders.			

VelocityKVM 24 · Dual Head Single-Link DVI Displays

Ordering Information

V **E** **L** — **2** **4** —

H USB HID
W USB HID & USB 2.0
K USB HID, USB 2.0 & Network 10/100
E USB HID, USB 2.0 & FireWire 800
P USB HID, USB 2.0 & Professional Audio
A USB HID & Professional Audio

O No Redundant Optic Paths
R Redundant Optic Paths

O No Separate Data Paths
D Separate Data Paths

M Multi-Mode
S Single Mode
X Multipath · 4G Optics

LC LC Fiber Connectors
SC SC Fiber Connectors
ST ST Fiber Connectors

TX Transmitter
RX Receiver
RC Receiver with Color Correction
TA Transmitter with Separate Audio Paths
RA Receiver with Separate Audio Paths

Common Fixed Extender Configurations

VEL-H00M24-LCTX Velocity 24 Transmitter, Dual Head Single-Link DVI, HID, KMASS, Multi-Mode, LC
VEL-H00M24-LCRX Velocity 24 Receiver, Dual Head Single-Link DVI, HID, KMASS, Multi-Mode, LC
VEL-HR0M24-LCTX Velocity 24 Transmitter, Dual Head Single-Link DVI, HID, KMASS, Redundant Optics, Multi-Mode, LC
VEL-HR0M24-LCRX Velocity 24 Receiver, Dual Head Single-Link DVI, HID, KMASS, Redundant Optics, Multi-Mode, LC
VEL-W00M24-LCTX Velocity 24 Transmitter, Dual Head Single-Link DVI, HID, USB 2.0, KMASS, Multi-Mode, LC
VEL-W00M24-LCRX Velocity 24 Receiver, Dual Head Single-Link DVI, HID, USB 2.0, KMASS, Multi-Mode, LC
VEL-WR0M24-LCTX Velocity 24 Transmitter, Dual Head Single-Link DVI, HID, USB 2.0, KMASS, Redundant, Multi-Mode, LC
VEL-WR0M24-LCRX Velocity 24 Receiver, Dual Head Single-Link DVI, HID, USB 2.0, KMASS, Redundant, Multi-Mode, LC

For additional customization, Thinklogical utilizes a single **Optics Package (VOP)** per extender, available in Multi-Mode or Single Mode, allowing extension of up to 1000m, 10km, 40km or 80km.

For example, when ordering a Velocity 24 with LC fiber connectors, select from the following VOP's:

VOP-M05 for Multi-Mode Extension up to 1000m

VOP-S12 for Single Mode Extension up to 10km

VOP-S87 for Single Mode Extension up to 40km

Please consult Thinklogical for VOP Ordering Information.

Modular Extenders

V **M** — **2** **4** — **L** **C**

D Desktop Module
T T-Series Module

H USB HID
U USB HID & USB 2.0

O No Redundant Optic Paths
R Redundant Optic Paths

O No Separate Data Paths
D Separate Data Paths

O Standard · 6.25G Optic
X Multipath · 4G Optics

LC LC Fiber Connectors

TX Transmitter Module
RX Receiver Module
RC Receiver Module with Color Correction
TA TX Module with Separate Audio Paths
RA RX Module with Separate Audio Paths

Common Modular Extender Configurations

VTM-H00024-LCTX Velocity T-Series 24 Transmitter Module, Dual Head Single-Link DVI, HID, KMASS, Multi-Mode, LC
VTM-H00024-LCRX Velocity T-Series 24 Receiver Module, Dual Head Single-Link DVI, HID, KMASS, Multi-Mode, LC
VTM-U00024-LCTX Velocity T-Series 24 Transmitter Module, Dual Head Single-Link DVI, HID, USB 2.0, KMASS, MMode, LC
VTM-U00024-LCRX Velocity T-Series 24 Receiver Module, Dual Head Single-Link DVI, HID, USB 2.0, KMASS, MMode, LC

Each Extender Module requires a Modular Chassis; for further information, see Modular Chassis Specifications.

VED-000001 Velocity Desktop Chassis · Configurable with a single Desktop Module
VTs-004200 Velocity T-Series 4200 Chassis · Configurable with up to two T-Series Modules
VCS-004200 Velocity Compact T-Series 4200 Chassis · Configurable with up to two Compact T-Series Modules
VTs-Q04200 Velocity T-Series Q-4200 Chassis · Configurable with a single T-Series Module & two Q-Series Modules

For additional customization, Thinklogical utilizes a single **Optics Package (VOP)** per extender, available in Multi-Mode or Single Mode, allowing extension of up to 1000m, 10km, 40km or 80km.

For example, when ordering a Velocity 24 Module, select from the following VOP's:

VOP-M30 for Multi-Mode Extension up to 1000m

VOP-S06 for Single Mode Extension up to 10km

VOP-S89 for Single Mode Extension up to 40km

Please consult Thinklogical for VOP Ordering Information.