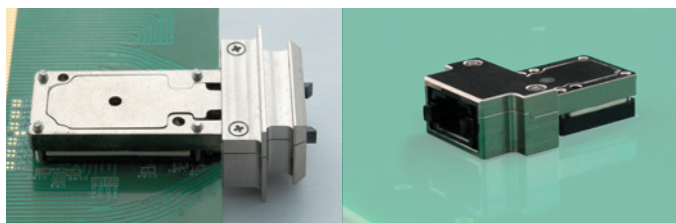
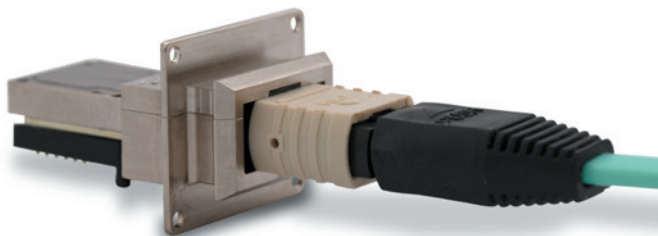


LightVISION 10G VM Series

Industrial Optical Transceivers with MPO Interface



The LightVISION VM is available in bulkhead (board-edge) and "midboard" versions.

The LightVISION 10G VM Series family of optical embedded transceivers are affordable, reliable, high-performance embedded optical transceivers with bandwidth up to 120 Gbps.

These modules are well suited for high-bandwidth commercial aerospace systems with the added benefit of reducing aircraft wiring and system weight and bringing fault, EMI/EMC and lightning tolerance.

The LightVISION® 10G VM Series is a screw-on, robust, industrial, and RoHS optical module with MPO interface. This approach combines a standard MPO cable connection with a robust, board mounted optical engine providing small size (footprint), face-plate or line-card mounting, and convenient optical cabling.

In addition, the MPO connector is covered with an outside cover boot addressing the issue of dust contamination.

The LightVISION 10G VM Series operates like a QSFP+ but offers reduced dimensions and power consumption, operation over industrial temperature range, and option for board-mount or edge-mount. This optical module offers size and performance advantages over the QSFP+ in addition to Reflex Photonics products proven reliability and ruggedness.

Industrial multichannel optical transceivers designed for commercial aerospace applications.

Key advantages

- **Flexible:** height adjustable with LGA interposer
- **Rugged:** RoHS electrical interface
- **Performance:** up to 10.3125 Gbps/channel
- **Standards:** MPO/MTP® cable connection
- **Robust:** Screw-on board-mounted optical module with reduced footprint
- **Low power consumption:** 100 mW per channel

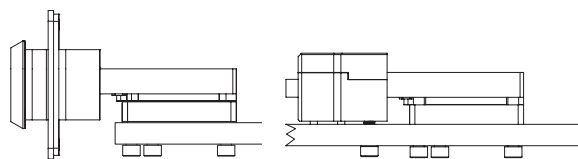
Configurations

- 4TRX (20G or 40G, full duplex)
- 12TX or 12RX (120G, half duplex)
- 12TRX (120G, full duplex), in development

Applications

- In-flight entertainment and connectivity (IFEC)
- Smart car, high-resolution cameras
- LIDAR connection to embedded computer
- Smart city, surveillance cameras
- Industry 4.0 and machine vision

Real size illustration

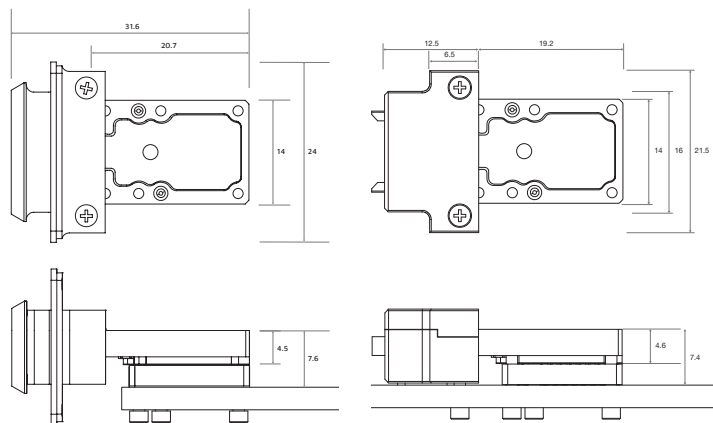


Real size for LightVISION VM bulkhead (left) and LightVISION VM mid-board versions (right).

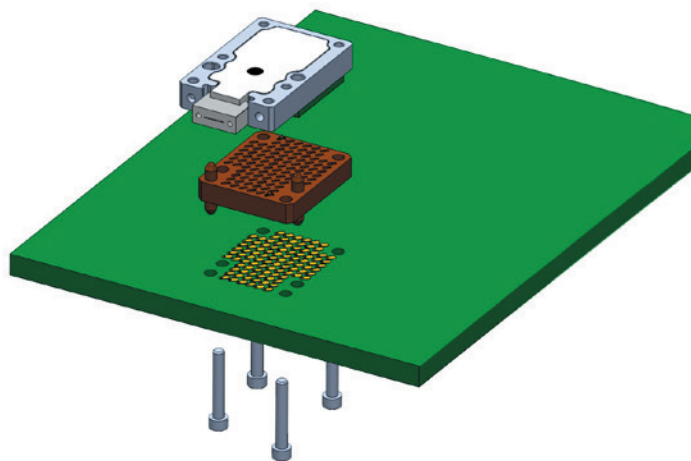
LightVISION 10G VM Series features

The LightVISION® 10G VM Series module is offered with bandwidth from 20G (2 TX or 2 RX channel) to 120G (12 TX or 12 RX channel). All modules operate at up to 10.3125 Gbps per channel with a BER as low as 10⁻¹² and a -9 dBm sensitivity.

- Array of multimode 850 nm wavelength VCSEL lasers
- Over 100 m reach on OM3 ribbon fiber
- Standard MPO parallel fiber connector
- Equalizer, pre-emphasis, adjustable output
- Monitoring: LOS, RSSI, temperature, etc.
- Integrated microcontroller
- Commercial grade temperature range (0 °C to 85 °C)



Drawing of LightVISION VM bulkhead (board-edge) mount (left) and mid-board (right). (measurements given in mm)



LightVISION VM LGA interposer and board attachment.

LightVISION 10G VM Series ordering information

Part Number	Product Description	Channels or Lanes	Bandwidth (Gbps/ch.)	Mounting	Optical Interface	Sensitivity (dBm)	Operating Temp. (°C)
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Bulkhead version

VMX04P6185321AA	LightVISION 10G VM 4TRX transmit /receive	4+4	10.3125	RoHS LGA	MTP/MPO	-9	-40 to 85
VMX04P6185121AA	LightVISION 10G VM 4TRX transmit/receive	4+4	10.3125	RoHS LGA	MTP/MPO	-9	0 to 70
VMT12P6185330AA	LightVISION 10G VM 12TX transmitter	12	10.3125	RoHS LGA	MTP/MPO	n.a.	-40 to 85
VMT12P6185130AA	LightVISION 10G VM 12TX transmitter	12	10.3125	RoHS LGA	MTP/MPO	n.a.	0 to 70
VMR12P6185301AA	LightVISION 10G VM 12RX receiver	12	10.3125	RoHS LGA	MTP/MPO	-9	-40 to 85
VMR12P6185101AA	LightVISION 10G VM 12RX receiver	12	10.3125	RoHS LGA	MTP/MPO	-9	0 to 70

Mid-board version

VMX04B6185321AA	LightVISION 10G VM 4TRX transmit/receive	4+4	10.3125	RoHS LGA	MTP/MPO	-9	-40 to 85
VMX04B6185121AA	LightVISION 10G VM 4TRX transmit/receive	4+4	10.3125	RoHS LGA	MTP/MPO	-9	0 to 70
VMT12B6185330AA	LightVISION 10G VM 12TX transmitter	12	10.3125	RoHS LGA	MTP/MPO	n.a.	-40 to 85
VMT12B6185130AA	LightVISION 10G VM 12TX transmitter	12	10.3125	RoHS LGA	MTP/MPO	n.a.	0 to 70
VMR12B6185301AA	LightVISION 10G VM 12RX receiver	12	10.3125	RoHS LGA	MTP/MPO	-9	-40 to 85
VMR12B6185101AA	LightVISION 10G VM 12RX receiver	12	10.3125	RoHS LGA	MTP/MPO	-9	0 to 70

Accessories

Part Number	Product Description
500-00090	LightSNAP MPO cable

more > smithsinterconnect.com | [in](#) [twitter](#) [youtube](#)