

# OPTICAL TRANSCEIVERS

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*Navigator*



SIMPLIFICATION IS OUR INNOVATION



# OPTICAL TRANSCEIVERS NAVIGATOR

## FAMILY

D-Lightsys® opto-electronic modules are transparent and protocol independent optical transmitters, receivers and transceivers designed for harsh environments, demanding applications and markets. These products operate in a large temperature range and are available with a variety of options. There are several package options offered, including surface mount, pluggable as well as specific custom packages which cover data rates up to 12 Gbps.

## INDUSTRIES



### AEROSPACE

Avionics is a demanding environment where weight and power consumption are critical, especially in cockpit displays or avionic bays.



### DEFENSE

Radars and on-board electronic warfare systems use processing capacities that need optical interconnect solutions.



### SPACE

Our high quality, reliable solutions offer top performance in mission critical applications. The complete range of space qualified passive products includes a wide range of coaxial connectors, cable assemblies, microwave components and switches.

Qualifications - All active solution packages have been extensively qualified through MIL-STD-810 e/g, MIL-STD-883e and ARINC804.

## SERIES



### S-Light

Single channel modules for harsh environment applications are available in transmitter, receiver or transceiver. They are available with an optical pigtail version or with an optical disconnect version. S-Light is among the world's smallest transceivers for severe environment applications. It is the perfect fit for endpoint equipment and sensors, where low power consumption and small board real-estate are key.

### D-Light

Multiple channel modules for harsh environment applications are available in transmitter, receiver or transceiver. Available in 4 or 12 channel counts, the D-Light family offers the highest channel integration density. This family has been designed for direct integration with high-speed FPGAs and SERDES to enable state of the art data and signal processing applications. Several package options are offered, from surface mount to pluggable. D-Light is available up to 144 Gbps.

## OPTIONS AND CUSTOMIZATION

### CHANNELS

- S-Light is a single channel device: either simplex or full-duplex (1 Tx or 1 Rx or 1 Tx and Rx)
- D-Light families are available in 4 channels full duplex or 12 channels simplex:
  - 4-ch Transceiver (4 Tx and 4 Rx)
  - 12-ch Transmitter or Receiver (12Tx or 12 Rx)

### DATA RATE

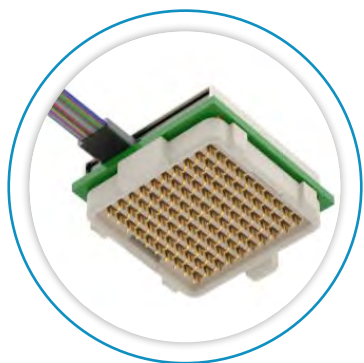
S-Light and D-light families are available in 3 data rate ranges:

- up to 10 Mbps
- up to 5 Gbps
- up to 12 Gbps

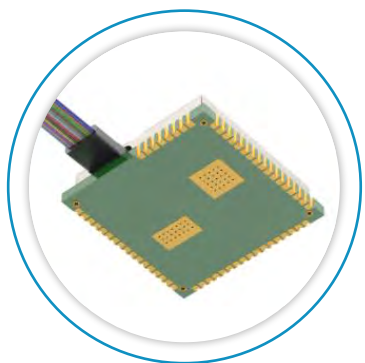
The modules are protocol agnostic and suitable for Fiber Channel, ARINC818, 1000BASE-SR, 10GBASE-SR, etc.

## PACKAGING

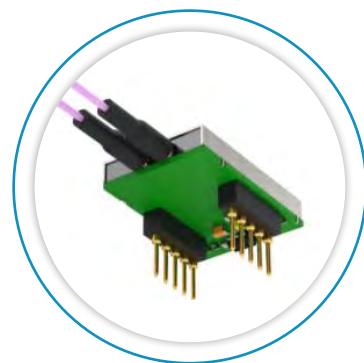
S-Light and D-Light families are available in surface mount or pluggable packages. Surface mount packages are ideal for low profile applications. Pluggable packages simplify module integration and handling.



Pluggable GM



Surface Mount - LCC



Through Hole - S  
SFF Connector



Essential - E

## OPTICAL TERMINI

A large variety of termini/connectors are available:

- Telecom standards (LC, ST, etc.)
- MIL-PRF-29504
- LuxCis® ARINC801, ABS1379
- Expanded beam solutions

MT ferrule based connectors (MPO, Q-MTitan™, C-MTitan™) are used for the D-Light family. Single fiber optic termini are used on individual fibers.

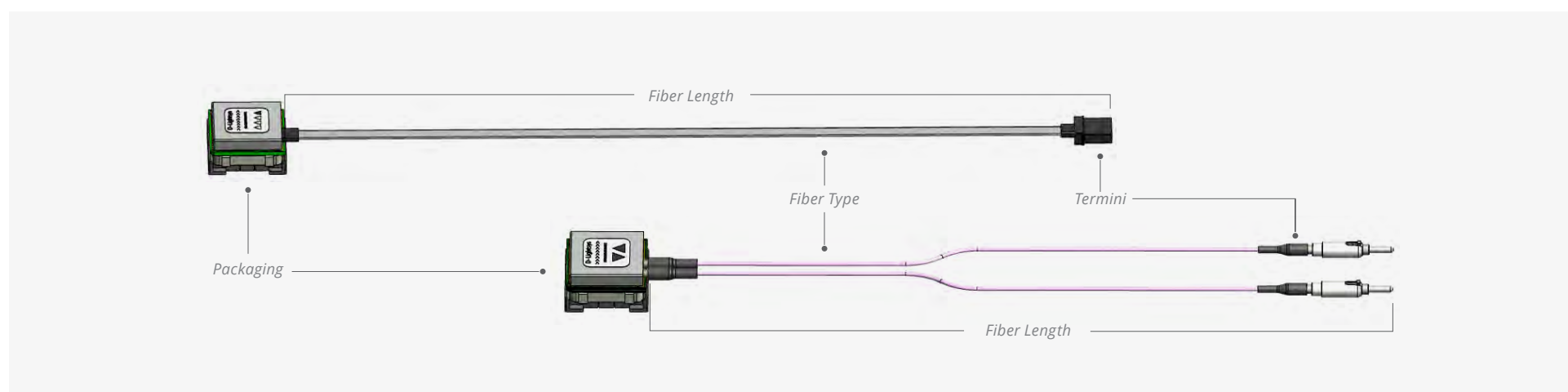
## FIBER TYPE

Various ruggedized cable options are available:

- S-Light uses single ruggedized optical cable based on multimode 50/125µm or 62,5/125µm fiber.
- D-Light uses 12-channel ribbon fibers compatible with high temperatures.
- Essential is the module that features the LuxCis disconnect solution. Please refer to our cable assembly offer for more information on our LuxCis® disconnect solution.

## OPTICAL CABLE LENGTH<sup>[1]</sup>


The cable length is customized according to customer requirements. The standard length is between 40 and 500 mm. Tolerance is 0/+5 mm. Cable strengthening options and harness integration are available.



## PRODUCT ORDERING

		CHANNELS		PERFORMANCES				PACKAGING				OPTICAL CONTACTS/CONNECTORS <sup>[2]</sup>						FIBER TYPE			
		Tx	Rx	Data Rate	Optical Power Min	Sensitivity Max	Link Budget Min	GM	LCC	S	Essential	LuxCis®/ ARINC801	ABS1379	LC	29504/485	MPO/MT	Q-MTitan	C-MTitan	50/125	62.5/125	
S-Light	S	M	001	S	1	1	up to 10 Mbps	-5 dBm	-17 dBm	12 dB											
	S	M	255	GM	1	1	up to 4.25 Gbps	-2 dBm	-15 dBm	13 dB											
	S	M	425	E1XM	1	1	up to 5 Gbps	-4 dBm	-15 dBm	11 dB											
	S	M	425	E2XM	1	1	up to 5 Gbps	-4 dBm	-15 dBm	11 dB											
	S	M	1001	GM	1	1	up to 10 Gbps	-2 dBm	-10 dBm	8 dB											
	S	R	255	GM		1	up to 4.25 Gbps	-	-15 dBm	-											
	S	R	1001	GM		1	up to 10 Gbps	-	-	-											
D-Light	S	T	255	GM	1		up to 4.25 Gbps	-2 dBm	-	-											
	S	T	1001	GM	1		up to 10 Gbps	-2 dBm	-	-											
	D	M4	255	GM	4	4	up to 4.25 Gbps	-2 dBm	-15 dBm	13 dB											
	D	M4	1000	GM	4	4	up to 12 Gbps	-2 dBm	-12 dBm	10 dB											
	D	R12	255	GM	12		up to 4.25 Gbps	-	-14 dBm	-											
	D	R12	1000	GM	12		up to 10 Gbps	-	-10 dBm	-											
	D	R12	1000	LL	12		up to 12 Gbps	-	-10 dBm	-											
D-Light	D	T12	255	GM		12	up to 4.25 Gbps	-2 dBm	-	-											
	D	T12	1000	GM		12	up to 10 Gbps	-2 dBm	-	-											
	D	T12	1000	LL		12	up to 12 Gbps	-2 dBm	-	-											
	D	T12	1000	LL		12	up to 12 Gbps	-2 dBm	-	-											

Notes  
 1. D-light and S-light pigtailed modules only. Please refer to our cable assembly offer for essential disconnect modules  
 2. Feel free to contact us for other contact configurations

An aerial night view of a city, likely Tokyo, with a network of white location pins connected by thin white lines. The city lights are visible in the background, and the sky is a deep blue. The pins are scattered across the city, with some larger than others. A semi-transparent blue box with a faint map pattern is overlaid on the left side of the image, containing two paragraphs of text.

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*This Navigator serves as a supplemental guide to information available in our catalogs and on our website ([www.radiall.com](http://www.radiall.com)). We recognize that time is a very limited and valuable asset. We are confident that Radiall Navigator will help users understand our products, terminologies and references better.*

## SIMPLIFICATION is our INNOVATION

*We advance the design and engineering process for innovators, ground-breakers and pioneers of technology. We reduce weight, improve durability and streamline installation to provide leading-edge connectors that drive product performance.*

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