Optical Transceivers

Australian Representatives
ROJONE, PTY LTD.
Tel: 02 9829 1555
E: sales@rojone.com.au
www.rojone.com.au

Navigator

The ABC's of Ordering From Radiall

A. Family

Radiall Active Optics and D-Lightsys© are transparent & protocol independent optical transmitters, receivers & transceivers designed for harsh environments, demanding applications and markets. These products operate in a large temperature range [-40 to +90°C] and are available with a variety of options. There are several package options offered including, surface mount, pluggable and multi-source agreements as well as specific custom packages which cover bit rates up to 10 Gbps.

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.

Medical
Signal processing capacities enable very high performances in imaging and diagnostics systems.

Oil & Gas
Oil & gas prospection and extraction require high temperature optical interconnect solutions that are able to handle field operations.

Series

S-Light
Single-port optical transceivers for harsh environment applications are available in transmitter, receiver or transceiver. S-Light transceivers are among the world's smallest transceivers for severe environment applications. They are the perfect match for end-point equipment and sensors, where low power consumption and small board real-estate are key.

D-Light
Multiple channel optical transceivers for harsh environment applications are available in transmitter, receiver or transceiver. Available in 2, 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 & SERDES to enable state of the art data & signal processing applications. Several package options are offered from surface mount to pluggable. The D-Light family is available in 40 Gbps, 120 Gbps and above.
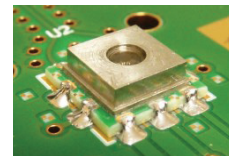
F-Light
Designed for short distance communication, the F-Light family enables board-to-board communication at a very high speed without the need to use fiber. They are compatible with automatic solder reflow processes and with large misalignment tolerances and vibrations. The F-Light optical transceivers are the perfect solution for high performance processing boards, mezzanines and in between cabinets.

Type
S-Light & D-Light families are available as Transmitter (T), Receiver (R) or Transceiver (M). Transceivers must have an equal number of transmitting and receiving channels.

B. Options and Customization

Channel Count
S-Light is a single channel device: either unidirectional (single Tx or Rx) or bidirectional (Tx and Rx). D-Light families are available in 2, 4 or 12 channels as a single transmitter or receiver. A quad channel (4 Tx & 4 Rx) is also available.

Bit Rate (Gbps)
S-Light & D-Light families are available in two bit rate ranges: 0.1 to 4.5 Gbps (251) and 5 to 12 Gbps (1000). Modules are protocol independent and compatible with LVDS & CML -3.3v standards. DC to 10 Mbps devices are only available in the SFF (2x5) package.
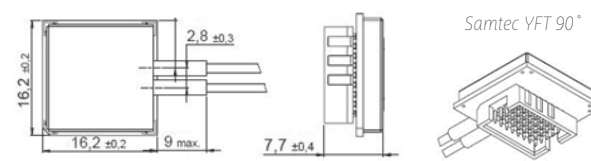
Packaging
S-Light & D-Light families are available in surface mount or pluggable packages. Surface mount packages are ideal for low profile applications and very harsh environment applications. Pluggable packages simplify module integration and handling. The SFF (2x7) option is only available with electronics revision 2.0 (Bit Rate option 252).

S-Light - Pluggable packages
40-Pin Narrow Plug - **IGn** option

Samtec YFT 0°
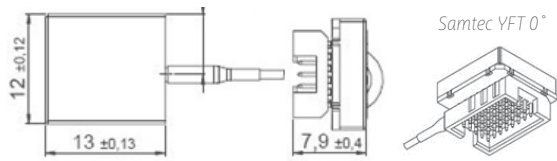
40-Pin Plug - IGV option

Samtec YFT 90°

D-Light - Pluggable packages
100-Pin Plug - **IGM** option

Surface Mount
48-Pin LCC package **IL** option
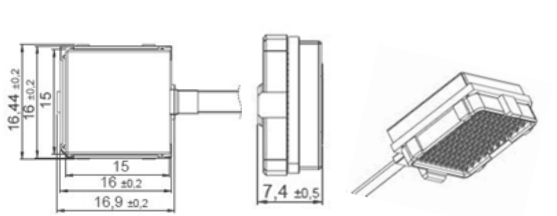
Qualifications
All active solution proposed packages have been extensively qualified through MIL-STD-810 e/g, MIL-STD-883e and ARINC 804 standards.

S-Light and D-Light families are compatible with vibration up to 50G$_{rms}$ and shocks above 1500 g.

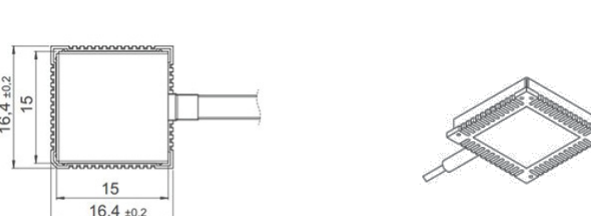The operating temperature range is -40 to +95°C with humidity up to 90%.

Through Holes
Through Holes - **IS** option (2x5 only for 251 and 2x7 only for 252 ver.)
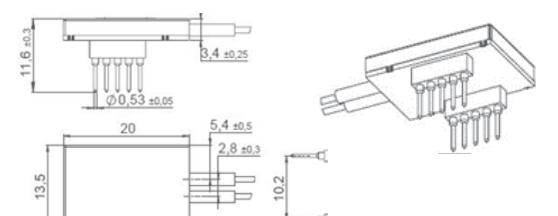
Optical Termini/Connectors
A large variety of termini/connectors are available, ranging from telecom standards (LC, ST, etc.) to military specifications (29504-4/5, expanded beam) or avionics (ARINC 801, ABS1379). MT ferrule based connectors are used for the D-Light family (MTP/MPO, VITA 66.7, etc.). Single Fiber Optic termini can only be used on individual fiber modules (S-Light or 2 channel D-Light).

Fiber Type
Various fiber options are available. S-Light uses single ruggedized fiber patch cords (Nexans, Gore, etc.). D-Light uses bare ribbon fibers that are compatible with high temperatures. Nexans (62.5/125/900 µm) or Gore (G.50 & H.62.5/125/1200 µm) are recommended fiber cables for harsh environments. For additional fiber choices, please contact your local Radiall representative.

Fiber Length · Packaging · Fiber Type · Termini · Fiber Length
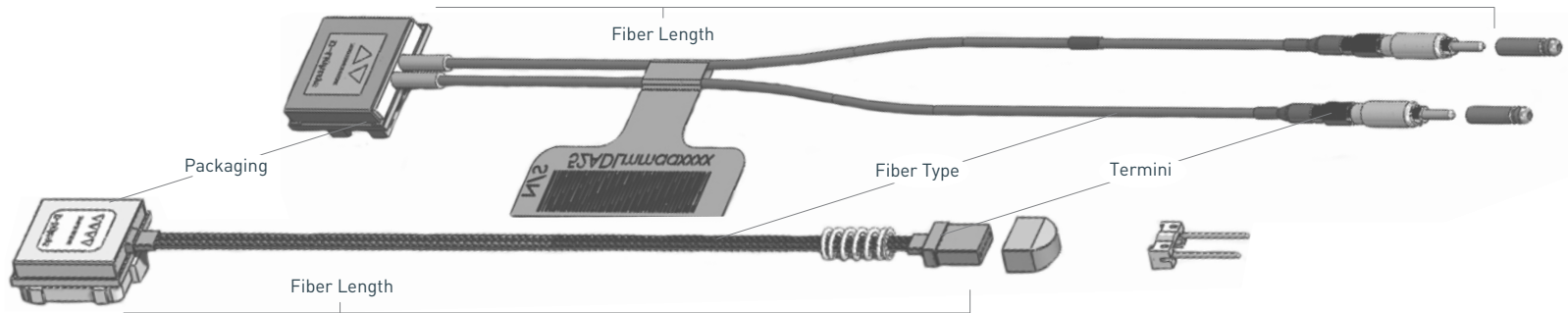
Module pigtail lengths are customizable from 10 to 50 cm with a typical tolerance of 15 mm. Tight tolerances are also available with a precision of 5 mm. Pigtails are strongly fixed to the module devices for high level of integration and robustness.

C. Part Numbers

Part Numbers
The pigtail length is expressed in centimeters. There are no decimal values for normal precision (-L25 for 25 cm pigtail) and a resolution of 1 mm is available in a tight tolerance option (-L10T5 for 10.5 cm pigtail in tight tolerances).

A. Family		B. Options and Customization																			C. Part Numbers
		Channel Count		Bit Rate (Gbps)			Packaging							Optical Termini/Connectors							Fiber Type[3]	
Series	Type	Tx	Rx	<0.01	0.1-4.5	5-12 [1]	LCC	SFF (2x5)	SFF (2x7)	40-Pin Plug	40-Pin Plug Narrow	100-Pin Plug	ARINC 801	ABS1379	29504 / 4 & 5[2]	LC	MT-Ferrule	VITA 66.7	MTP / MPO	C-MTitan	50 / 125 µm	62.5 / 125 µm	Part Number
S-Light	Transmitter	1		■	■	■	■	■	■	■			■	■	■	■				■	■	■	SLT-www-Ix-Pyz-Lvv
	Receiver		1	■	■	■	■	■	■	■			■	■	■	■				■	■	■	SLR-www-Ix-Pyz-Lvv
	Transceiver	1	1	■	■	■	■	■	■	■			■	■	■	■				■	■	■	SLM-www-Ix-Pyz-Lvv
Part Number Options				001	251	1000	L	S	S	GY	GN	GM	X	E	2	L	N	M	O	C	G	N or H	SLM-251-IGn-PXN-L25
D-Light	Transmitter	2[1]		■	■	■	■			■		■	■	■	■	■	■	■	■		■	■	DLT-02-www-Ix-Pyz-Lvv
		4			■	■	■			■		■			■	■	■	■	■		■	■	DLT-04-www-Ix-Pyz-Lvv
		12			■	■	■			■		■			■	■	■	■	■		■	■	DLT-12-www-Ix-Pyz-Lvv
	Receiver		2[1]	■	■	■	■			■		■	■	■	■	■	■	■	■		■	■	DLR-02-www-Ix-Pyz-Lvv
			4		■	■	■			■		■			■	■	■	■	■		■	■	DLR-04-www-Ix-Pyz-Lvv
			12		■	■	■			■		■			■	■	■	■	■		■	■	DLR-12-www-Ix-Pyz-Lvv
	Transceiver	2	2	■	■	■	■			■		■	■	■	■	■	■	■	■		■	■	DLM-02-www-Ix-Pyz-Lvv
		4	4	■	■	■	■			■		■			■	■	■	■	■		■	■	DLM-04-www-Ix-Pyz-Lvv
Part Number Options				001	251	1000	L	S	S	GY	GN	GM	X	E	2	L	N	M	O	C	1	2	DLT-12-251-IGM-PN1-L10T5

Notes:
[1] Bit Rate: DC to 10 Mbps devices are only available in the SFF (2x5) package.
[2] Either standard telecom termini/connector can be made available upon request.
[3] Contact sales for fiber availability.
For any additional information or specific requests, please contact your local Radiall representative.

Australian Representatives
ROJONE, PTY LTD.
Tel: 02 9829 1555
E: sales@rojone.com.au
www.rojone.com.au