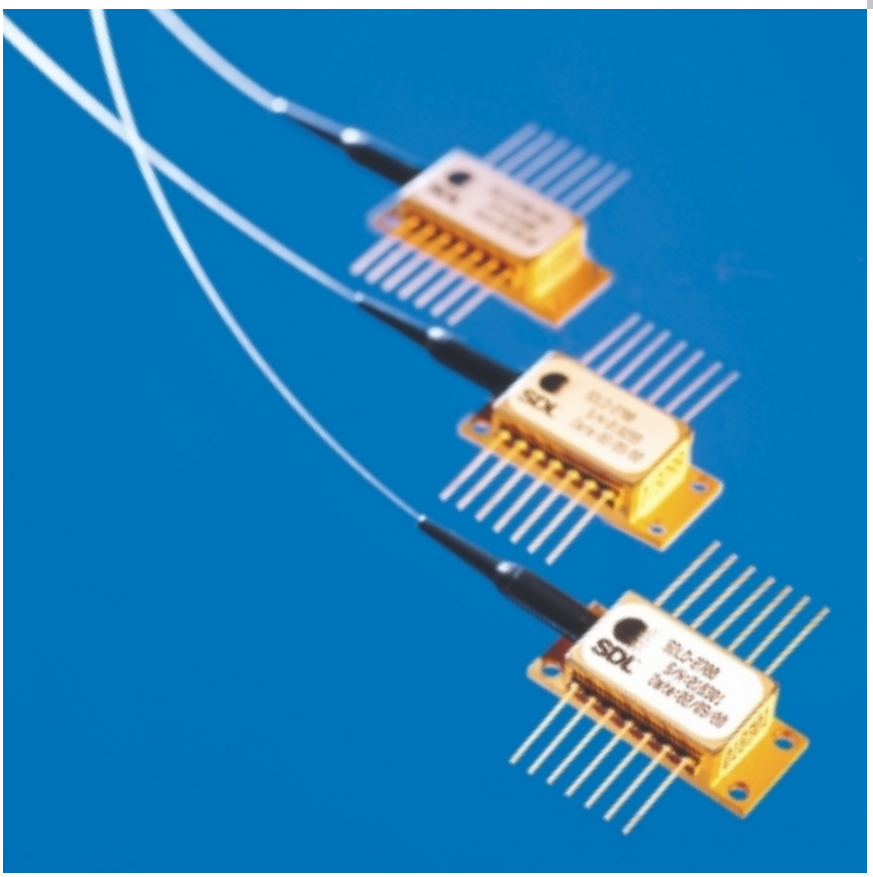
SDLO
2600 SERIES

PUMP SOURCES



FEATURES

- ***New low profile planar package***
- ***Fiber Bragg grating stabilized***
- ***High kink-free powers to 180 mW***
- ***Wavelength selection available***
- ***Integrated TEC and thermistor***
- ***Telcordia™ GR-468-CORE***

APPLICATIONS

- ***DWDM EDFAs for small package designs***
- ***High bit rate, high channel count EDFAs***
- ***CATV distribution***

Up to 180 mW fiber Bragg grating stabilized 980 nm pump modules

The SDLO-2600 Series 980 nm pump module utilizes a planar construction with chip on subcarrier. The new package is hermetically sealed and meets the stringent requirements of the Telecommunications Industry as well as the intent of Telcordia™ GR-468-CORE for hermetic 980 nm pump modules.

The design with chip on subcarrier has improved thermal performance allowing higher power performance from SDL's proven 6530 chip with over 100 million field deployed hours of operation. The SDLO-2600 Series pump module uses fiber Bragg grating stabilization to "lock" the emission wavelength and provides a noise-free narrow band spectrum even under changes in temperature, drive current and optical feedback. Wavelength selection is available for applications requiring the highest performance in spectrum control with the highest powers available.

SDL®

PUMP SOURCES

Absolute Maximum Ratings

Parameter	Condition	Min	Max	Units
Laser Diode				
Forward Current	unlimited time		500	mA
Current Transient	1µs max		1	A
Reverse Voltage			2.5	V
Reverse Current			2	mA
Monitor Photodiode				
Reverse Voltage			20	V
Forward Current			10	mA
Thermistor				
Voltage			5	V
Current			2	mA
Thermoelectric Cooler				
Voltage			4	V
Current			2.5	A
Package				
Storage Temperature	2000 hrs	-40	+75	°C
Operating Temperature		-20	+75	°C
Fiber Pigtail				
Fiber Temperature		-40	+85	°C
Tensile Stress			5	N
Bend Radius		16		mm

Operating Powers

Product Number	Operating Power P_{op} (mW)	Maximum Operating Current I_{op} (mA)	Maximum Kink-Free Power P_{max} (mW)	Maximum Kink-Free Current I_{max} (mA)
SDLO-2600-110	100	240	110	260
SDLO-2600-120	110	260	120	270
SDLO-2600-130	120	270	130	290
SDLO-2600-140	125	280	140	310
SDLO-2600-150	135	300	150	330
SDLO-2600-160	145	320	160	350
SDLO-2600-170	155	340	170	370
SDLO-2600-180	160	360	180	400

Electro-Optical Performance

Parameter	Symbol	Test Condition	Min.	Max.	Units
Spectrum					
Peak Wavelength	λc	$T_{ambient}$ = 22±3°C (see note 1)	974	985	nm
Power in Band	P_{band}	974 nm < λc < 985 nm	90	-	%
Spectral Width	ΔλRMS	-	-	2.0	nm
Spectral Shift w/temperature	Δλ/Δ°T		0	0.02	nm/°C
Spectrum Stability	Δλ/Δt	25°C, I_{max}, t = 60 seconds		0.1	nm
Optical Power Stability	$\Delta P_{opt}/\Delta t$	25°C, I_{max}, t = 60 seconds	-	0.5	%
Laser Diode					
Threshold Current	I_{th}	-	-	25	mA
Forward Voltage	V_f	Imax	-	2.5	volts
Front Coupling Stability vs. Case Temperature	$\Delta\eta_T$	T_{case} = 0 to 75°C	-10	10	%
Monitor Photodiode					
Current	I_{mpd}	$I_f = I_{op}$	0.1	3.0	mA
Thermoelectric Cooler Operation					
TEC Cooling Capacity	ΔT_{TEC}	$P_{TEC} \leq 3.75W$, $I_f = I_{op\_EOL}$, T_{LD} = 25°C	50	-	°C
TEC Current	I_{TEC}	ΔT=50°C, $I_f = I_{op\_EOL}$, T_{LD} = 25°C	-	1.5	amps
TEC Voltage	V_{TEC}	ΔT=50°C, $I_f = I_{op\_EOL}$, T_{LD} = 25°C	-	2.5	volts
Total Module Power Consumption	P_{mod_tot}	ΔT=50°C, $I_f = I_{op\_EOL}$, T_{LD} = 25°C	-	4.5	W
Thermistor Resistance	R_{th}	T = 25°C	9.5	10.5	KΩ
Thermistor Constant	B		3600	4200	K

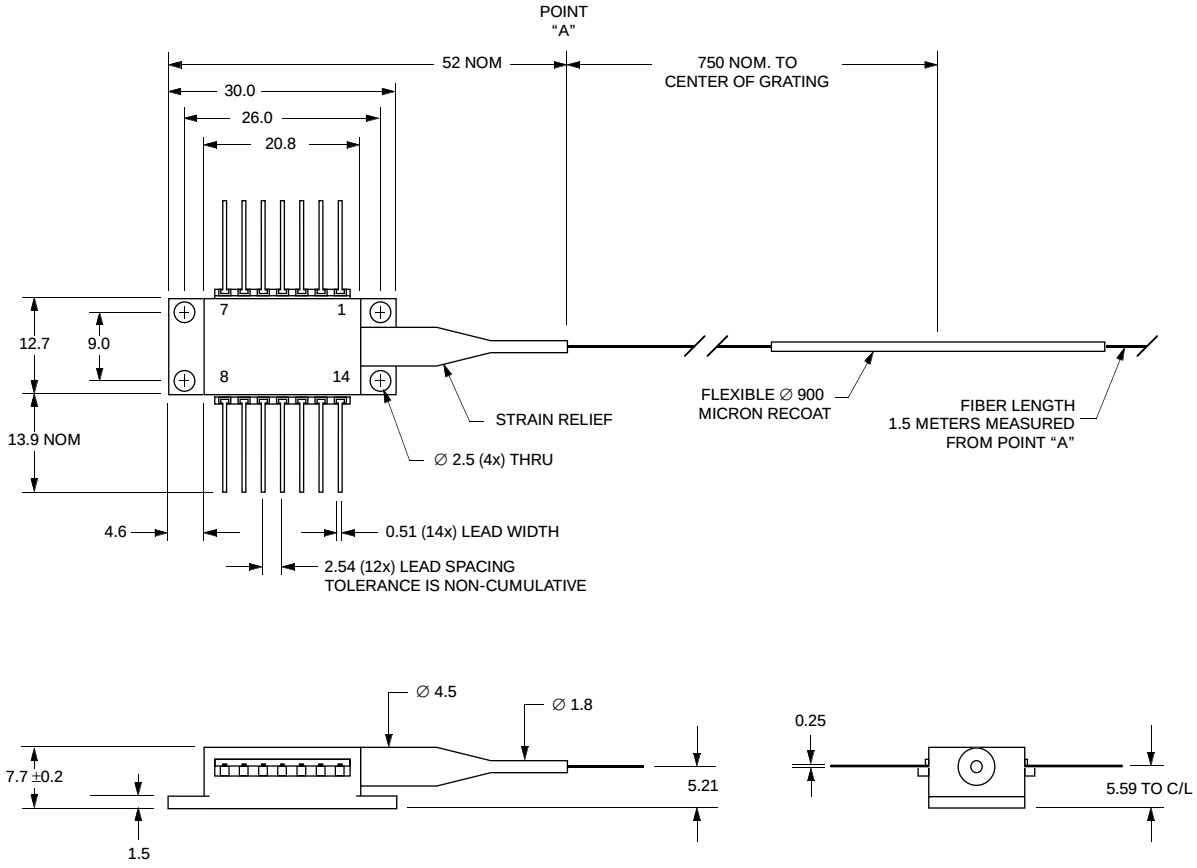
Parameter	Specification	Units
Fiber Pigtail Specifications		
Type	SM	-
Mode-field Diameter	6.5 ±1	µm
Cladding Diameter	125 ±2	µm
Jacket Diameter	250	µm

Notes

1. Wavelength selection available
2. All specifications are at BOL for an operating temperature range for T_{case} = 0 to 75 °C and back reflection < -50 dB.

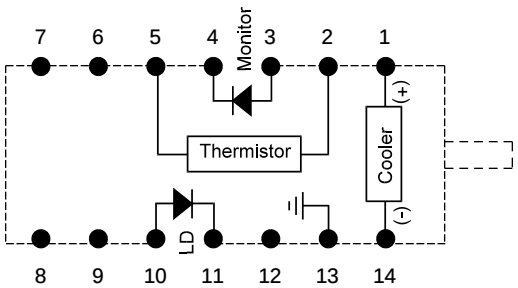
Outline Drawing

Dimensions in millimeters except where indicated



Lead Connection

Electrical Schematic
(Package Viewed From Top)



Lead Connections

1 Cooler (+)
2 Thermistor
3 Monitor PD Anode
4 Monitor PD Cathode
5 Thermistor
6 N/C
7 N/C
8 N/C
9 N/C
10 Laser Anode
11 Laser Cathode
12 N/C
13 Case Ground
14 Cooler (–)

User Safety

Safety and Operating Considerations

The laser light emitted from this laser diode is invisible and may be harmful to the human eye. Avoid looking directly into the fiber when the device is in operation.

CAUTION: THE USE OF OPTICAL INSTRUMENTS WITH THIS PRODUCT WILL INCREASE EYE HAZARD.

Operating the laser diode outside of its maximum ratings may cause device failure or a safety hazard. Power supplies used with the component must be employed such that the maximum peak optical power cannot be exceeded.

CW laser diodes may be damaged by excessive drive current or switching transients. When using power supplies, the laser diode should be connected with the main power on and the output voltage at zero. The current should be increased slowly while monitoring the laser diode output power and the drive current.

Careful attention to heatsinking and proper mounting of this device is required to insure specified performance over its operating life. To maximize thermal transfer to the heatsink, the heatsink mounting surface must be flat to within .001" and the mounting screws must be torqued down to 1.5 in.-lb.

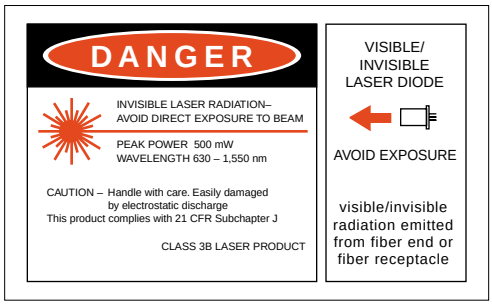
ESD PROTECTION — Electro-static discharge is the primary cause of unexpected laser diode failure. Take extreme precaution to prevent ESD. Use wrist straps, grounded work surfaces, and rigorous anti-static techniques when handling laser diodes.

21 CFR 1040.10 Compliance

Because of the small size of these devices, each of the labels shown is attached to the individual shipping container. They are illustrated here to comply with 21 CFR 1040.10 as applicable under the radiations control for health and safety act of 1968.

SERIAL NUMBER IDENTIFICATION LABEL

OUTPUT POWER AND LASER EMISSION INDICATOR LABEL



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