

**EXS8310-F411**  
**High Power SLED**  
**830 nm**  
**DIL Package**

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## 1. SCOPE

### 1.1 PURPOSE

The purpose of this document is to specify the electro-optical performance and dimensions of superluminescent light emitting diode (SLED) DIL.

### 1.2 RESPONSIBILITY

EXALOS is responsible for establishing, implementing and maintaining this procedure. The Quality representative shall ensure that a timely Engineering Change Notice (ECN) is issued in accordance with EXALOS procedure for any changes.

## 2. REFERENCE DOCUMENT

- EXS-WI-0001 Visual Inspection Criteria SLED Chip on Submount Procedure
- MIL STD 883 C method.
- Bellcore GR-468-CORE.

## 3. ELECTRO-OPTICAL PERFORMANCE ( $T_{SLED} = 25^{\circ}C$ )

Parameter	Symbol	Cond.	Min	Typ	Max	Unit
Operating Current	$I_F$				140	mA
Power in SMF	$P_o$	$I_{F,max}$	3	5		mW
Center Wavelength	$\lambda_c$	$I_{F,max}$	800	820	840	nm
Bandwidth FWHM		$I_{F,max}$	22	25		nm
Spectral ripple [RB=0.1nm]		$I_{F,max}$		0.1	0.2	dB
PD Monitor Current <sup>†</sup>	$I_m$	$I_{F,max}$		3		mA
PD Monitor Bias Voltage	$V_b$		0		-2	V

<sup>†</sup> Measurement conditions:

- $I_F = I_F \text{ Max}$
- Monitor PD bias voltage: 0 Volts
- Input resistance of the Monitor PD current measurement circuit <0.1 Ohm

#### 4. ABSOLUTE MAXIMUM RATINGS

Stresses beyond the absolute maximum ratings may cause permanent damage to the device. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

Parameter	Symbol	Cond.	Min	Max	Unit
Reverse voltage	$V_R$			-2	V
Forward voltage	$V_F$	$I_{F,max}$		2.5	V
Storage temperature	$T_{stg}$		-40	85	°C
Operating temperature	$T_{op}$	$I_{F,max}$	-20	60	°C
Storage humidity	<30°C		5	95	% r.h.
	>30°C			85	% r.h.
Thermoelectric cooler voltage	$V_{tec}$			2.5	V
Thermoelectric cooler current	$I_{tec}$			1.8	A
Thermistor Resistance	$R_{th}$	25°C	10		KΩ
Thermistor constant	B		3892		K
Lead soldering temperature				260	°C
Lead soldering duration				10	s
ESD		human b.m		500	V

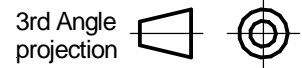
#### 5. SCREENING

The produced 830nm SLED Module is required to meet all operating conditions specified in Table 3, Electro-Optical Performance Specifications after being subjected to the following screening tests.

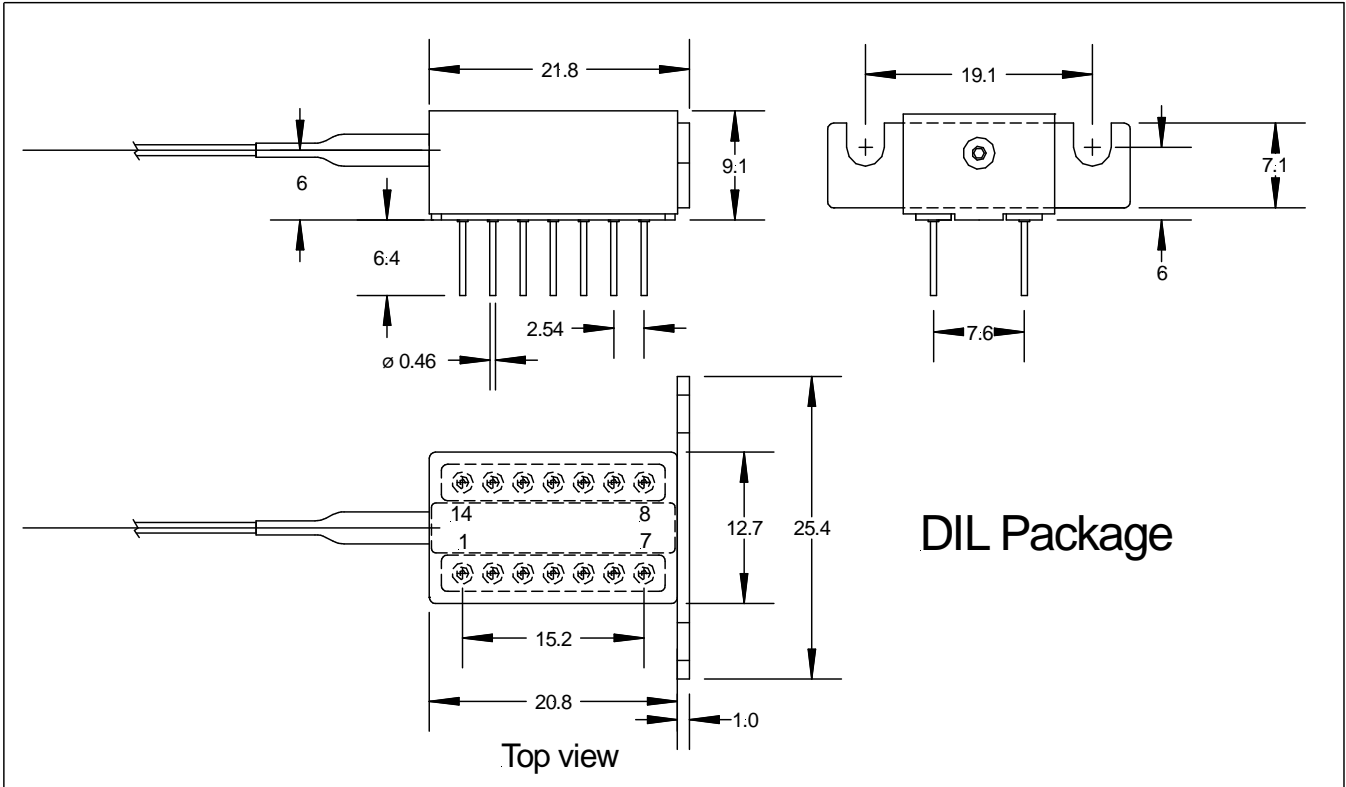
Test Item	Test Conditions	Reference
Seal	Fine: Condition A1 Gross: Condition C	MIL-STD-883, Method 1014 Temperature max 85°C
Temperature Cycling	-40°C to +85°C, ramp rate $\geq 5^\circ\text{C}/\text{min}$ 10 cycles	MIL-STD-883, Method 1010

## 6. PACKAGE DIMENSIONS

Dimensions [mm]



Tolerances : .X ± 0.25 mm  
.XX ± 0.05 mm



DIL Package

DIL Package (Floating)			
Pin	Function	Pin	Function
1	TEC (+)	8	MONITOR DIODE ANODE
2	NC	9	SLED CATHODE (-) (Note 1)
3	NC	10	CASE GROUND
4	NC	11	THERMISTOR
5	SLED ANODE (+)	12	THERMISTOR
6	NC	13	NC
7	MONITOR DIODE CATHODE (Note 1)	14	TEC (-)

- Note 1: Pin # 7 and Pin # 9 are short-circuited.

**Attention:** Prior to connecting the SLED module to the driver using constant power mode, make sure that your SLED driver supports the so-called "Common laser cathode/photodiode cathode" arrangement and the connections are set accordingly. If this is not the case do not connect the SLED, otherwise it may result in permanent damage to the SLED.

## 7. FIBRE AND CONNECTOR

Part	Description
SM Fibre	SM 5/125 (Corning PureMode HI-780-6)
Loose tube secondary coating	900 $\mu$ m
Fiber pigtail length [min]	1 m
Optical connector	FC/APC Narrow Key (2.0mm)

### 8. IMPORTANT NOTES

1. Avoid electrostatic discharges, which may destroy the SLED.
2. Never use the bare die without heat sinking.
3. Adequate eye protection against laser radiation should be used while handling and operating the module.
4. EXALOS declines any responsibility if the device is used in applications where human life may be endangered.
5. Back reflections may influence the output power and spectral characteristics of the SLED. The use of optical isolators and/or angled connectors is recommended. Back reflections of less than -30dB are recommended.

### 9. ORDERING INFORMATION

Please use the following code system to order products from EXALOS:

