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SPECIFICATIONS

1305 nm ELED Die

DL-US3104H-00-100

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DenseLight reserves the right to make product design or specifications changes without notice.

A. PRODUCT DESCRIPTION

The DenseLight DL-US3104H-00-100 is a 1550nm uncooled ELED. It is available in die form. The metallization is compatible with 25µm wire bonding with 80Au/20Sn compatible solderability.

For responsive prototyping enquiries please email: info@denselight.com

B. FEATURES

- Free-space power >1 mW
- Wide bandwidth > 40 nm

C. PACKAGING

- ELED die with coated facets
- Delivered as die in gelpak

D. APPLICATIONS

- Spectrometry
- Fiber optic test and measurement
- Fiber optic sensor

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E. ABSOLUTE MAXIMUM RATINGS

Exposure to maximum rating and operation exceeding the absolute maximum rating can cause degradation in device performance leading to permanent damage to the device.

Parameter	Symbol	Condition	Min	Max	Unit
ELED reverse voltage	V_R	CW	-	2	V
ELED forward current	I_F	CW	-	150	mA
ELED forward voltage	V_F	CW	-	2	V
ELED operating temperature	T_{ELED}	CW, No condensation	0	70	°C
Storage temperature	T_{stg}	No condensation	-40	85	°C
Electro static discharge (ESD)	V_{ESD}	Human body model	-	500	V
Chip Solder reflow temperature	C_{TEMP}	(Max 60s)	-	350	°C

Note:

¹ELED operating temperature and relative humidity should be chosen such that the dew point of humid air around the ELED is below the operating heat sink temperature to avoid condensing of water on the ELED facet.

² Hermetic packaging during operation and humidity control below dew point is required to ensure reliability and to prevent degradation.

³ T_{ELED} is monitored by thermistor attached on TEC cooled heat sink.

F. SPECIFICATIONS

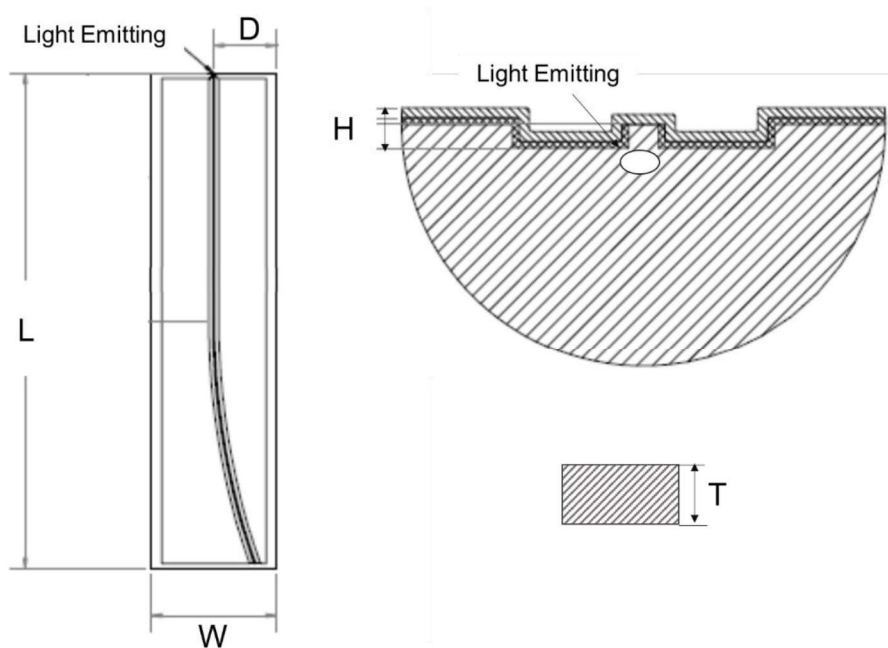
The ELED's parameters in this specification are tested at coated bar level on TEC cooled heat sink and the ELED operating temperature is monitored by thermistor attached on TEC cooled heat sink.

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Operating current	I_{OP}	CW, 25°C	-	-	100	mA
ELED forward voltage	V_F	CW, 25°C	-	1.5	2	V
Output power	P	CW, 25°C	1	-	-	mW
Central wavelength	λ_c	CW, 25°C	1280	1305	1330	nm
Bandwidth	B_{FWHM}	CW, 25°C	40	-	-	nm
Ripple	R	CW, 25°C	-	-	0.6	dB

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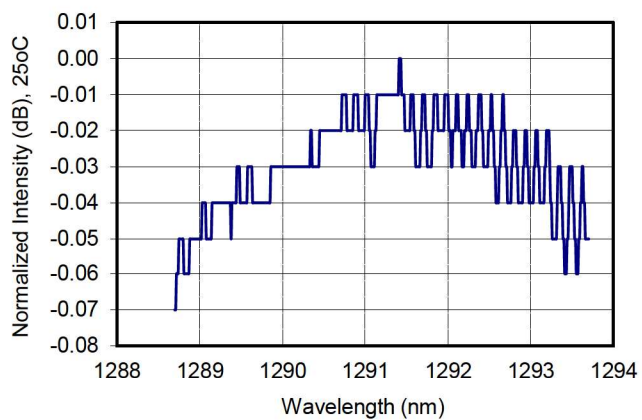
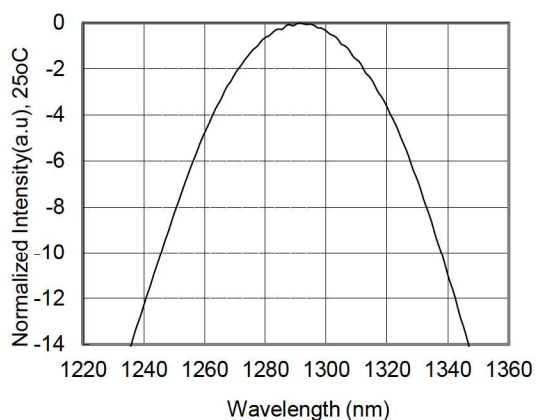
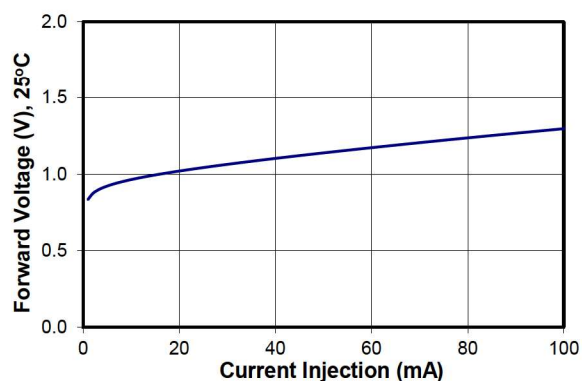
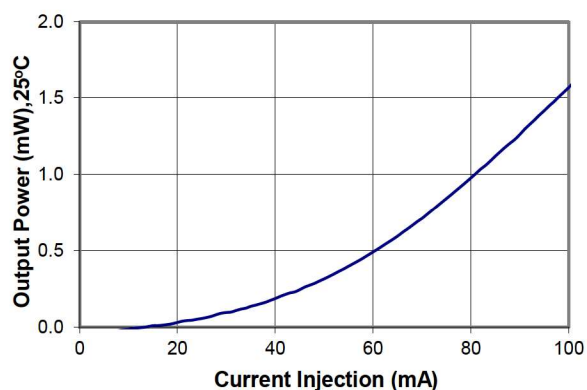
G. CHIP MECHANICAL DRAWING



Parameters	Value (μm)
Chip Length (L)	1000
Chip Width (W)	250
Distance from Edge (D)	125
Chip Thickness (T)	100
Emission Distance from Surface (H)	2.77

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H. TYPICAL PERFORMANCE CHARACTERISTICS



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I. BURN-IN AND TEST

The ELED chips have not undergone burn-in screening. The user is expected to perform burn-in screening after assembly of the ELED chip onto a submount, or into a TO-can package, BTF, or DIL. The recommended burn-in screening conditions are as follows:

Temperature : 85°C

Operating mode : ACC

Drive current : 125 mA

Duration : 24 hours

DenseLight will perform the necessary wafer/cell buyoff using chips mounted on DenseLight standard submounts, based on statistical sampling plan for AQL of 0.4%, Special Inspection Levels S-2 as per ANSI/ASQ Z1.4. Only those associated chips that have passed the criteria described in the “Wafer Acceptance Test” will their corresponding cells, and/or bars, be accepted for use.

Since the product is in chip form, its eventual electro-optical performance will depend not only on chip performance but also on its assembly process. If the chip is assembled in a proper way, the performance described in specification table can be expected.

K. VISUAL INSPECTION

Refer to document “QA-WIN-0001 Chip on Sub-mount (CoS) Visual Inspection Criteria”, which will represent the visual mechanical criteria upon which acceptance of product has been made. The acceptance criteria represented in this specification does not impede the functions of the ELED CoS in its electro-optical characteristics.

L. OTHER NOTIFICATIONS

1. Quality Assurance

After any processing of the ELED Die into a package product (TO-Can/BTF/DIL), the performance, yield and reliability of the product, in which the CoS is applied, are subject to change due to the customer’s handling, assembly, testing and processing. All assembly and handling related matters that are out of the control of DenseLight are at the customer’s responsibility. DenseLight does not have any responsibility for field failures attributed to a customer process.

2. Specification

The information provided by DenseLight Semiconductors, including but not limited to technical specification, customer recommendations, application notes related to the CoS, are believed to be reliable and accurate, and is subject to change as and when required.

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M. Disclaimer for Customer Specific Applications.

Denselight product is not intended for use other than stated on the application note or as defined in the product specification. The performance of the product should always be tested in the actual application conditions. As our products are used in conditions beyond our control, we cannot assume any liability for damage caused through their use. Users of DenseLight products are solely responsible to thoroughly test and qualify their system and / or application for their intended application and have determined such at their sole discretion. DenseLight cannot assume any liability for the use of our products in conjunctions with other. Customer assumes the sole risk and liability of the product performance other than specified by the product specific data sheet or application notes without DenseLight's specific written consent.

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