



## LED - Lamp

## ELD-1300-525

15.11.2007

rev. 05

Radiation	Type	Technology	Case
Infrared	MQW	InGaAs/InP	5 mm plastic lens

	<p><b>Description</b></p> <p>High-power, high-speed infrared LED in standard 5 mm package, housing without standoff leads</p> <p>Note: Special packages with standoff available on request</p>
	<p><b>Applications</b></p> <p>Optical communications, safety equipment, automation</p>

### Maximum Ratings

$T_{amb} = 25^{\circ}\text{C}$ , unless otherwise specified

Parameter	Test conditions	Symbol	Value	Unit
Forward current (DC)		$I_F$	100	mA
Peak forward current	$(t_p \leq 50 \mu\text{s}, t_p/T = 1/2)$	$I_{FM}$	200	mA
Power dissipation		$P_D$	150	mW
Operating temperature range		$T_{amb}$	-20 to +80	$^{\circ}\text{C}$
Storage temperature range		$T_{stg}$	-55 to +100	$^{\circ}\text{C}$
Soldering temperature	$t \leq 5 \text{ s}, 3 \text{ mm from case}$	$T_{sd}$	260	$^{\circ}\text{C}$

### Optical and Electrical Characteristics

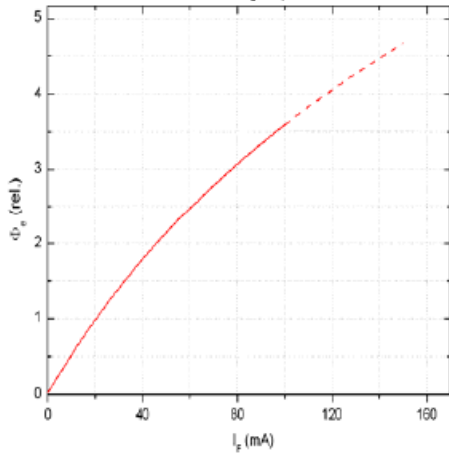
$T_{amb} = 25^{\circ}\text{C}$ , unless otherwise specified

Parameter	Test conditions	Symbol	Min	Typ	Max	Unit
Forward voltage	$I_F = 20 \text{ mA}$	$V_F$		0.85	1.0	V
Forward voltage*	$I_F = 100 \text{ mA}$	$V_F$		0.95		V
Reverse voltage	$I_R = 100 \mu\text{A}$	$V_R$	5			V
Radiant power	$I_F = 20 \text{ mA}$	$\Phi_e$	1.6	2.2		mW
Radiant power*	$I_F = 100 \text{ mA}$	$\Phi_e$		8.5		mW
Radiant intensity	$I_F = 20 \text{ mA}$	$I_e$		10		mW/sr
Radiant intensity*	$I_F = 100 \text{ mA}$	$I_e$		38		mW/sr
Peak wavelength	$I_F = 20 \text{ mA}$	$\lambda_p$	1250	1300	1350	nm
Spectral bandwidth at 50%	$I_F = 20 \text{ mA}$	$\Delta\lambda_{0.5}$		70		nm
Viewing angle	$I_F = 20 \text{ mA}$	$\varphi$		25		deg.
Switching time	$I_F = 20 \text{ mA}$	$t_r, t_f$		10		ns

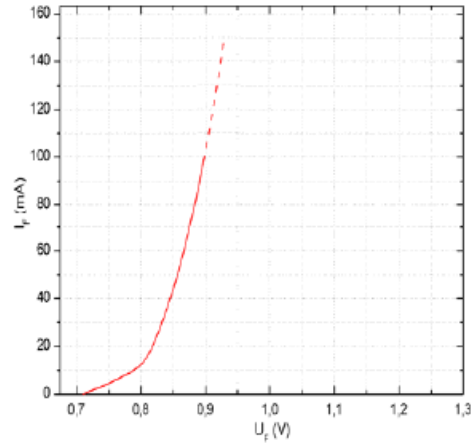
\*measured after 30s current flow



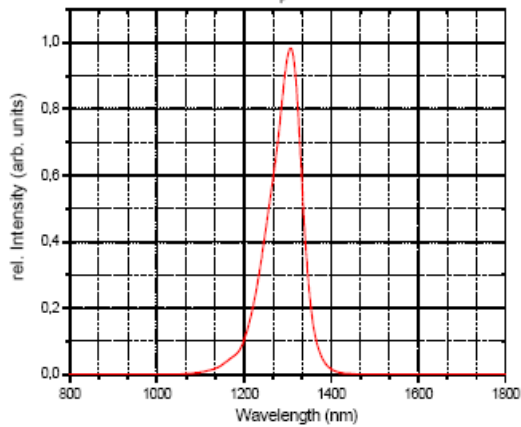
Radiant power vs. forward current (typical)  
normalized to  $\Phi_e$  @  $I_f = 20$  mA



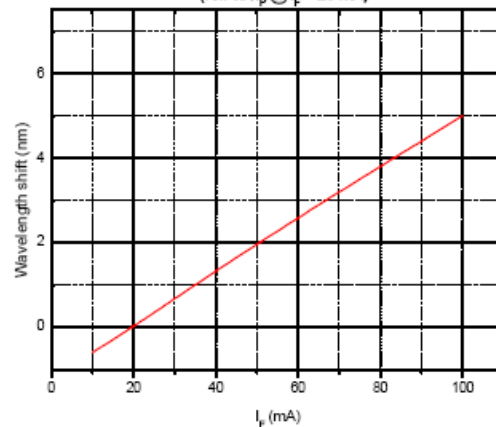
Forward current vs. forward voltage (typical)



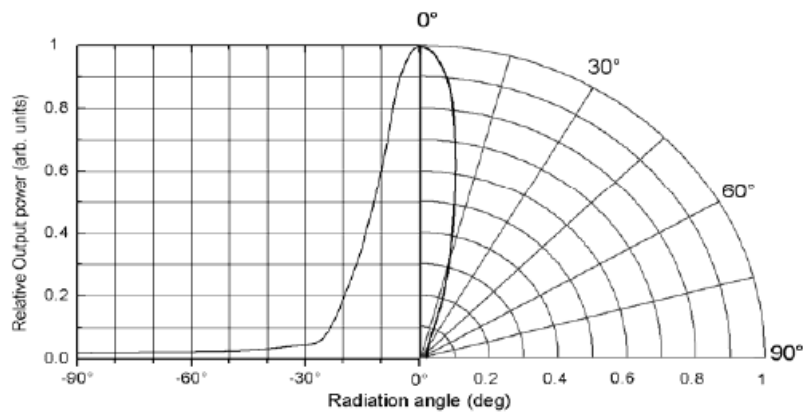
Spectral power distribution (typical)  
at  $I_f = 20$  mA



Typical wavelength shift vs. forward current  
(rel. to  $\lambda_p$  @  $I_f = 20$  mA)



Typical radiant pattern





## Remarks concerning optical radiation safety\*

Up to maximum forward current, at continuous operation, this LED may be classified as LED product *Class 1*, according to standard IEC 60825-1:A2. *Class 1* products are safe to eyes and skin under reasonably predictable conditions. This implicates a direct observation of the light beam by means of optical instruments.

\*Note: Safety classification of an optical component mainly depends on the intended application and the way the component is being used. Furthermore, all statements made to classification are based on calculations and are only valid for this LED "as it is", and at continuous operation. Using pulsed current or altering the light beam with additional optics may lead to different safety classifications. Therefore these remarks should be taken as recommendation and guideline only.

