



Up to 24W c.w. / 36W Pulsed Power



Typical Electrical and Optical Characteristics

Parameter	Symbol	LU09xxF240	Unit
Emitter Width	W	2x190	μm
Pitch of the two emitters		400	μm
c.w. Operating Power	P _{op (c.w.)}	24	W
c.w. Operating Current	I _{op (c.w.)}	28	A
Pulsed (1) Operating Power	P _{op (pulse)}	36	W
Pulsed (1) Operating Current	I _{op (pulse)}	42	A
Threshold Current	I _{th}	2.6	A
Forward Voltage	V _{op}	<1.55	V
Slope Efficiency	λ _{diff}	>0.9	W / A
Peak Wavelength			
LU0915Fxxx	λ _{peak}	915+/-10 (2)	nm
LU0940Fxxx,	λ _{peak}	940+/-10 (2)	nm
LU0975Fxxx,	λ _{peak}	975+/-10 (2)	nm
Spectral Width (FWHM)	λ _{FWHM}	<6	nm
Beam Divergence (horizontal) ₍₂₎	FWHM, 90% energy inclusion at I _{op}	<8	deg
Beam Divergence (vertical) ₍₂₎	FWHM, Gaussian beam at I _{op}	<30	deg
AR Reflectivity	r _f	2	%
HR Reflectivity	r _r	95	%
Spectral Shift with Temp.	λ _{T Shift}	0.3	nm / K
Spectral Shift with Current	λ _{P Shift}	0.4	nm / A
Operating Temp.	T _{op}	20-30	°C
Option: FAC lense			
Fast axis (vertical) divergence	NA	< 3	mrad
Vertical width of the beam		< 0.8	mm

Important Notes:

- (1) Typical pulse condition: pulse <100 μsec / d.c. 5%
- (2) The Intensity I(α,G,SG) of the far field in vertical and horizontal plane versus deflection angle (α) can be approximated with a Zemax Super-Gaussian Diode model by two parameters (first) Gaussian(G) width describing the beam width by the Full Width Half Maximum (FWHM) of the beam intensity in measurement plane and (second) Super Gauss (SG) describing the deviation from a Gaussian shape of the beam whereas:
 $I(\alpha,G,SG) = \exp(-2((\alpha/G)^2)^{SG})$ with $G(FWHM) = FWHM / (2 \cdot \sqrt[SG]{0.346573^{(1/SG)}})$
 Lateral far field: Typical parameter values are SG = 3-4 and G(7°) ~ 6. Due to the non - gaussian shape the FWHM of the beam includes app. 90% of the energy. The beam width increase by current with app. 0.4° / A.
 Vertical far field: Typical parameter values are SG = 1 and G(25°) ~ 21. The beam width does not change by current.
- (3) Other coatings are offered on request.

Absolute Maximum Ratings

Parameter	Symbol		Unit
LD c.w. Forward Current	I _{op, (c.w.) max}	30	A
LD pulsed (<30μsec) Forward Current 2x190μm	I _{op, (pulsed) max}	45	A
LD pulsed (<30μsec) Forward Current 3x95μm	I _{op, (pulsed) max}	40	A
LD Reverse Voltage	V _{R, max}	2	V
Maximum Processing Temperatures:			
Solder pads for LD contacts / max 5sec.	T _{Op max, solder pad}	250	°C
Soldering of Cu base block / max 5sec.	T _{Op max, Cu base}	150	°C
Rel. Humidity, Storage Temperature and Operating Heat Sink Temperature ₍₁₎			

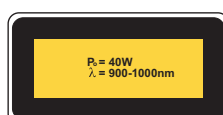
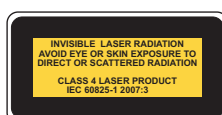
Note:

Absolute Maximum Ratings may be applied to the laser module for short period of time only. Exposure to maximum ratings for extended period of time or exposure above one or more max ratings may cause damage or affect the reliability of the device.

Operating Temperature and Rel. Humidity must be chosen such that the dewpoint of humid air around the laser diode is below the operating heat sink temperature to avoid condensing of water on the laser diode facet.

This product may contains 1.5% BeO as solid fully metallized ceramic (CAS Number 1304-56-9), 0.05% of solid metallized InAlGaAsP crystal, as well as 0.05% Pb (CAS Nummer 7439-92-1)

User Safety



We manufacture diode lasers.