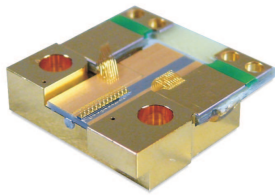


LU1064F200

1064nm Double Emitter Laser Diode on Flat_mount Up to 20W c.w. or 25W Pulsed Power



Description:

The LU1064F200 series offers high optical output power of up to 20W in c.w. operation from a double emitter. Long lifetime is ensured due to the Lumics proprietary laser diode facet passivation technology. This performance makes them a valuable tool for the highly efficient medical laser treatment. Further important applications are micro material processing with exceptional power densities and illumination applications.

Features & Functions:

- Double emitter 400µm pitch
- 2 x 190µm emitter
- Wavelength 1064nm
- Burn-in tested
- Up to 20W c.w. operation
- Holes for mounting
- Copper base
- Electrically isolated
- Option: FAC lens

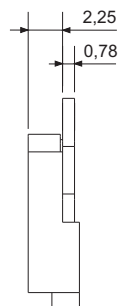
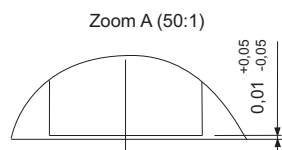
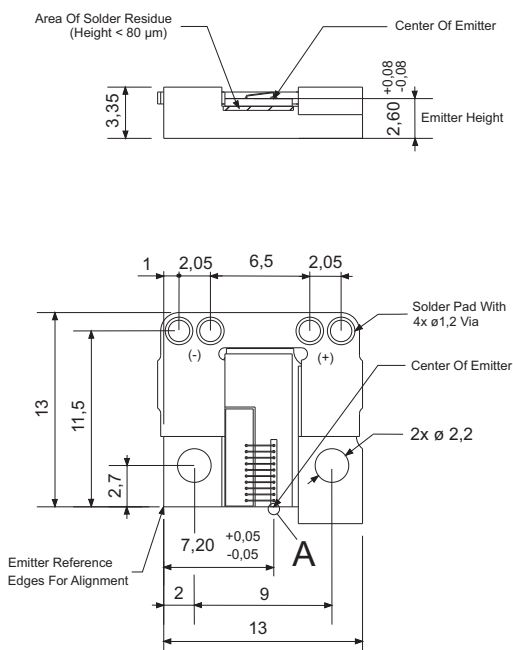
Benefits:

- Small footprint
- High reliability
- Field proven reliability

Applications:

- Pumping (SSL)
- Plastic welding
- Marking
- Illumination
- Medical treatment

Drawing (dimensions in mm)

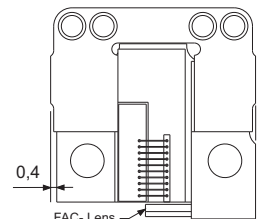


Connections

Contact Pad	Function
(+)	LD Anode (+)
(-)	LD Cathode (-)

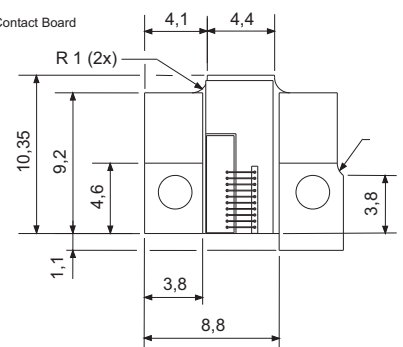
Option

Additional FAC-Lens



Option

Without Contact Board



We manufacture diode lasers.

Typical Electrical and Optical Characteristics

Parameter	Symbol	LU1064F200	Unit
Emitter Width	W	2 x 190	µm
Pitch of the two emitters		400	µm
c.w. Operating Power	P _{op (c.w.)}	20	W
c.w. Operating Current	I _{op (c.w.)}	25	A
Pulsed (1) Operating Power	P _{op (< 30µsec pulse / < 30% d.c.)}	25	W
Pulsed (1) Operating Current	I _{op (< 30µsec pulse / < 30% d.c.)}	33	A
Threshold Current	I _{th}	1700	mA
Forward Voltage	V _{op}	1.6	V
Slope Efficiency	λ _{diff}	0.9	W / A
Peak Wavelength	λ _{peak}	1064+/-10	nm
Spectral Width (fwhm)	λ _{FWHM}	4	nm
Beam Divergence (horizontal) ₍₂₎	FWHM, 90% energy inclusion at I _{op}	8	deg
Beam Divergence (vertical) ₍₂₎	FWHM, Gaussian beam at I _{op}	25	deg
AR Reflectivity ₍₃₎	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}	0.5	nm / A
Operating Temp.	T _{op}	20-30	°C

Option: FAC lens

Fast axis (vertical) divergence	NA	< 3	mrاد
Vertical width of the beam		< 0.8	mm

Important Notes:

- (1) Typical pulse condition: pulse <100µsec / 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 $G(FWHM) = FWHM / (2 \cdot \sqrt[SG]{0.346573})$
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) Optionally other coatings are offered on request

Absolute Maximum Ratings

Parameter	Symbol	LU1064F170	Unit
LD c.w. Forward Current	I _{op, (c.w.) max}	25	A
LD pulsed (<30µsec) Forward Current	I _{op, (pulsed) max}	35	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 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

