

# Passively Cooled Diode Laser Bar Both Axes Collimated 25 ... 30 W cw

## SPL MBxx



### Preliminary Data

#### Features

- Collimated radiation source for cw operation in a sealed housing
- Very low fast and slow axes divergence angle
- No water required, passive cooling through copper mount
- High reliable strained layer InGa(Al)As/GaAs material
- Standard wavelength selection is  $\pm 3$  nm, others on request
- Low smile, low mechanical tolerances

#### Applications

- End pumping of rods and fibers
- Soldering, direct material processing
- Marking, surface processing
- Medical applications

#### Safety Advices

Depending on the mode of operation, these devices emit highly concentrated non visible infrared light which can be hazardous to the human eye. Products which incorporate these devices have to follow the safety precautions given in IEC 60825-1 "Safety of laser products".

Type	Wavelength <sup>1)</sup>	Power	Ordering Code
SPL MB81-E	808 nm	25 W	on request
SPL MB94-E	940 nm	30 W	on request

<sup>1)</sup> Other wavelengths in the range of 780 nm ... 980 nm are available on request.

**Maximum Ratings** ( $T_A = 20\text{ °C}$  mount temperature)

Parameter	Symbol	Values		Unit
		min.	max.	
Operating temperature <sup>1)</sup>	$T_{op}$	+ 10	+ 40	°C
Storage temperature <sup>1)</sup>	$T_{stg}$	− 20	+ 70	°C

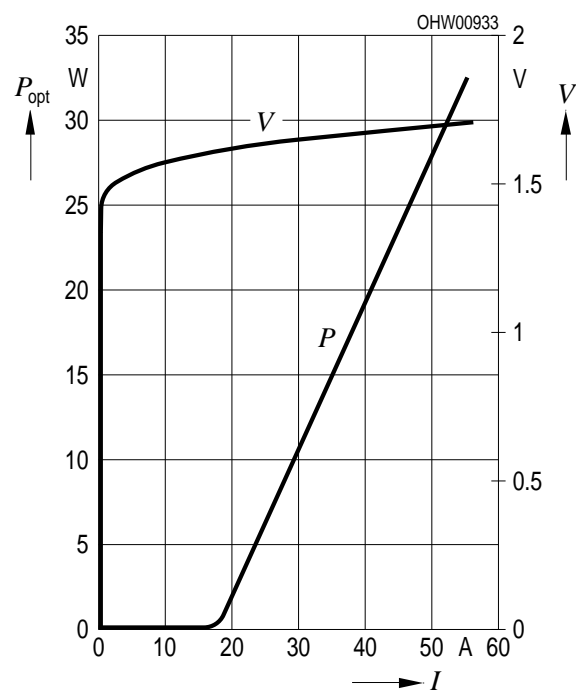
<sup>1)</sup> Condensation must be avoided.

**Characteristics** ( $T_A = 20\text{ °C}$  mount temperature)

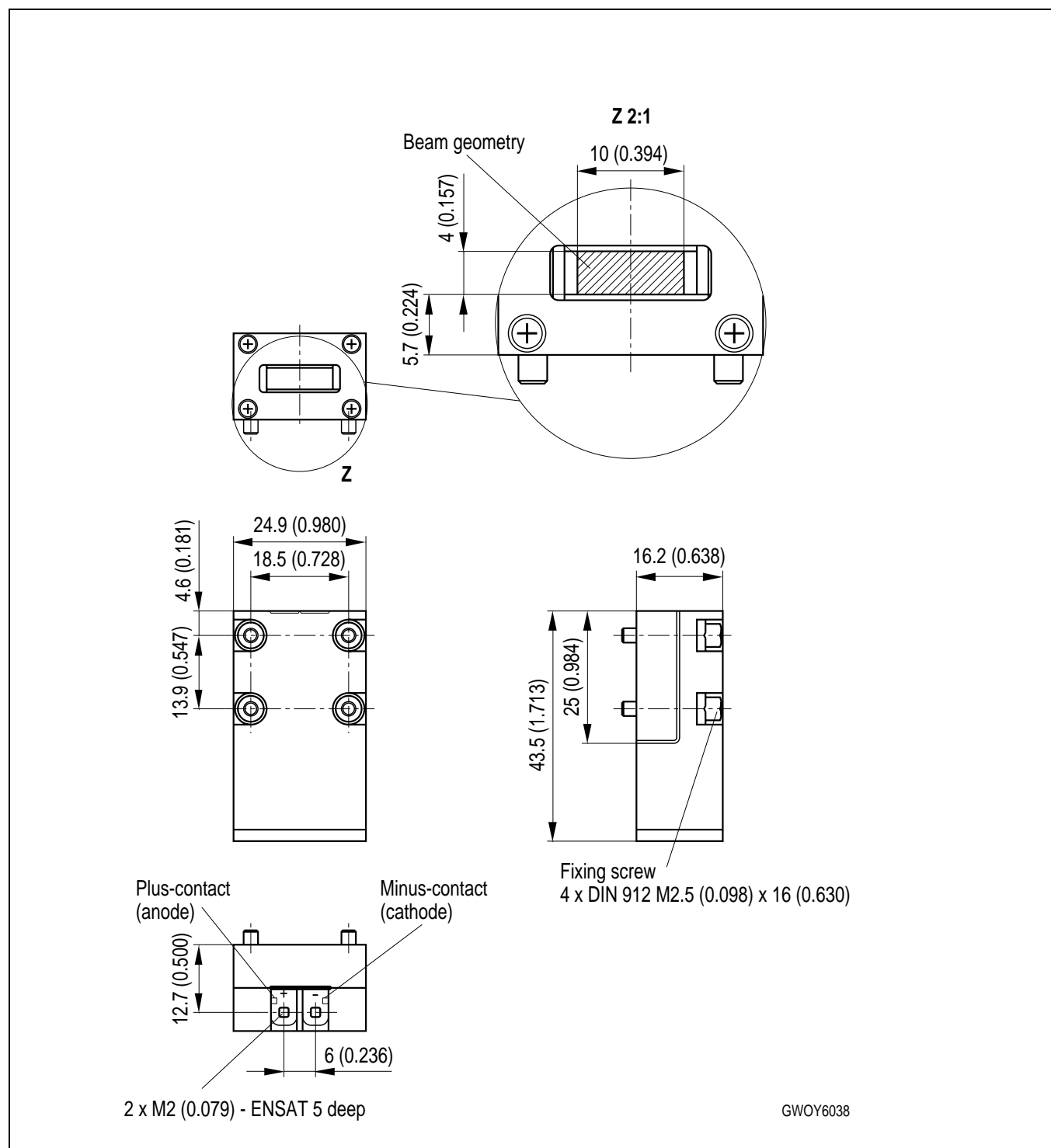
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Output power cw <sup>1)</sup>	$P_{op}$	−	22	25	W
Wavelengths <sup>1)</sup>	$\lambda$	− −	808 940	− −	nm nm
Spectral width (FWHM) <sup>1)</sup>	$\Delta\lambda$	−	4	−	nm
Threshold current	$I_{th}$	−	16 10	20 12	A
Differential efficiency <sup>1)</sup>	$\eta_d$	−	0.6	0.70	W/A
Operating current <sup>1)</sup>	$I_{op}$	−	45	50	A
Operating voltage <sup>1)</sup>	$V_{op}$	−	1.8	2.0	V
Overall efficiency <sup>1)</sup>	$\eta_c$	25	28	33	%
Emitting aperture	$H$ $W$	− −	4.0 11.6	− −	mm mm
Beam divergence <sup>1)2)</sup>	$\theta_{\perp} \times \theta_{\parallel}$	−	10 × 20	15 × 25	mrad
Temperature coefficient of wavelength	$\Delta\lambda / \Delta T$	−	0.27	−	nm/K
Temperature coefficient of operating current	$\Delta I_{op} / I_{op} \Delta T$	−	0.5	−	%/K
Mechanical dimensions	$w \times d \times h$	25 × 43.5 × 16.2			mm

<sup>1)</sup> Standard operating conditions refer to 25 W cw collimated optical output power at 20 °C.

<sup>2)</sup> Far field divergence refers to half angle at  $1/e^2$  relative intensity.

**Optical Characteristics** $(T_A = 20\text{ }^{\circ}\text{C mount temperature})$ **Optical Output Power  $P_{\text{opt}}$  vs.  
Forward Current  $I_F$** **cw-device**

## Package Outlines



Dimensions are specified as follows: mm (inch).

For safety, unpacking, handling, mounting and operating issues, please carefully read our “**Notes For Operation II**”.