Passively Cooled Diode Laser Bar

SPL MNxx No Optics
SPL MYxx Fast-Axis Collimation

SP-pack. (left), DL-pack. (right)

Preliminary Data

Features

- Uncollimated (MN-series) or fast-axis collimated radiation (MY-series)
- 1 cm-laser bar mounted on passive heat sink, no water required
- Highly reliable strained layer InGa(Al)As/GaAs material
- Standard wavelength selection is ± 3 nm, others on request
- Low smile (< 1 µm) and low mechanical tolerances

Applications

- Pumping of solid state lasers (Nd: YAG, Yb: YAG, …)
- Direct industrial applications (soldering, surface treatment, marking, …)
- Heating, illumination
- Medical and printing 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 Designation System

SPL M[Y][xx] - [G]

Y) Collimation

			Beam Divergence / $1/e^2$
N	–	No optics	30° × 5°
Y	–	Fast axis collimation	< 0.5° (15 mrad) × 5°

x) Wavelength

81	–	808 nm
83	–	830 nm
94	–	940 nm
98	–	975 nm

G) Package/Power

		Package	Features
D	–	DL-type/30 W cw	compact size 12 × 22 × 8 mm
G	–	SP-type/40 W cw	reduced thermal resistance 25 × 25 × 12 mm

Recommended Types	Wavelength[1)]	Max. Output Power	Ordering Code
SPL MN81-D	808 nm	30 W, cw	Q62702-P3555
SPL MN81-G	808 nm	40 W, cw	Q62702-P5312

Both packages are available on request with any other unmounted bar from data sheet SPL Byxx.

1) Other wavelengths in the range of 780 nm … 980 nm are available on request.

Maximum Ratings (T_A = 20 °C mount temperature)

Parameter	Symbol	Values		Unit
		min.	max.	
Operating temperature[1)]	T_{op}	– 10	+ 60	°C
Storage temperature[1)]	T_{stg}	– 40	+ 85	°C

1) Condensation must be avoided.

Characteristics (T_A = 20 °C mount temperature)

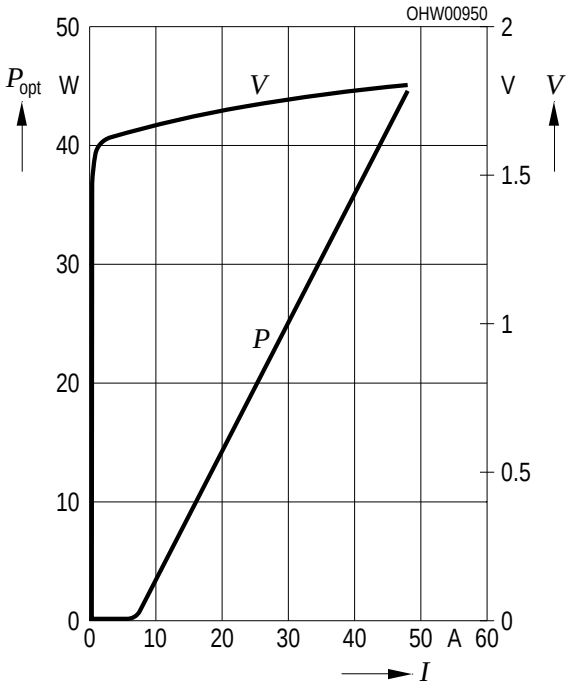
Parameter		Symbol	Values			Unit
			min.	typ.	max.	
Output power[1]	DL-pack. SP-pack.	P_{op}	– –	25 35	30 40	W
Wavelength		λ	– – –	808 940 975	– – –	nm
Spectral width (FWHM)		$\Delta\lambda$	–	3	–	nm
Threshold current[1]	DL-pack. SP-pack.	I_{th}	8 15	10 17	12 20	A
Differential efficiency uncollimated[1]		η_d	0.8	0.9	1	W/A
Fast-axis collimation efficiency into beam divergence	MY-series	η_{col}	–	93	–	%
Operating current	DL-pack. SP-pack.	I_{op}	– –	38 45	40 50	A
Operating voltage		V_{op}	–	1.8	–	V
Conversion efficiency[1]		η_c	35	43	–	%
Beam divergence 1/e² [2]	MN-series MY-series	$\theta_\perp \times \theta_\parallel$	30° × 5° 0.5° × 5°			deg.
Thermal resistance	DL-pack. SP-pack.	R_{th}	1 0.8			K/W
Temperature coefficient of wavelength		$\Delta\lambda / \Delta T$	0.27			nm/K
Mount dimensions	DL-pack. SP-pack.	$w \times d \times h$	12 × 22 × 8 25 × 25 × 12			mm

[1] Depending on wavelength.

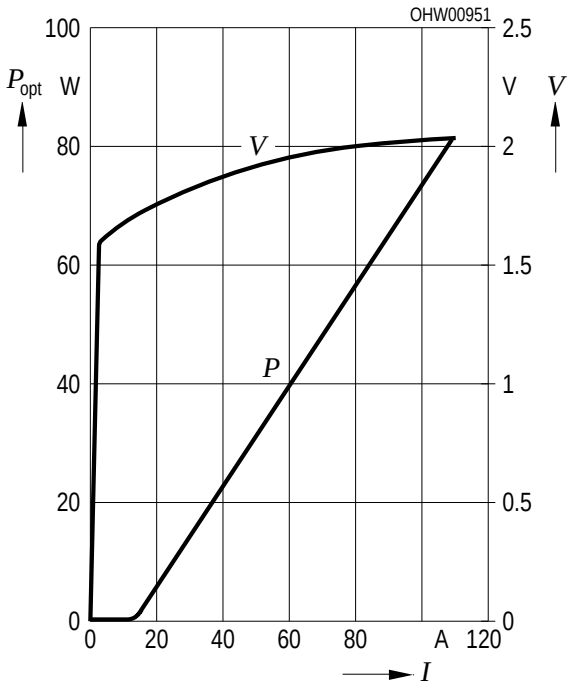
[2] Far field divergence refers to half angle at 1/e² relative intensity.

Optical Characteristics (T_A = 20 °C mount temperature)

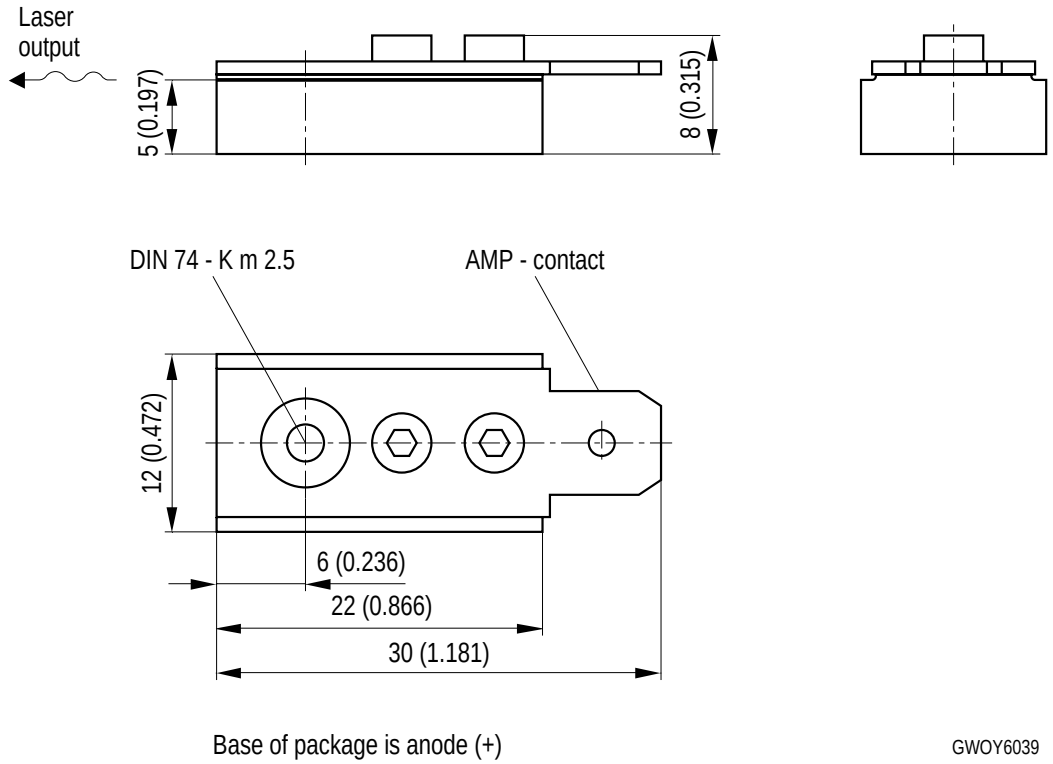
Optical Output Power P_{opt} vs. Forward Current I_F
cw-device, Mount: SP



Optical Output Power P_{opt} vs. Forward Current I_F
qcw-device, Mount: DL

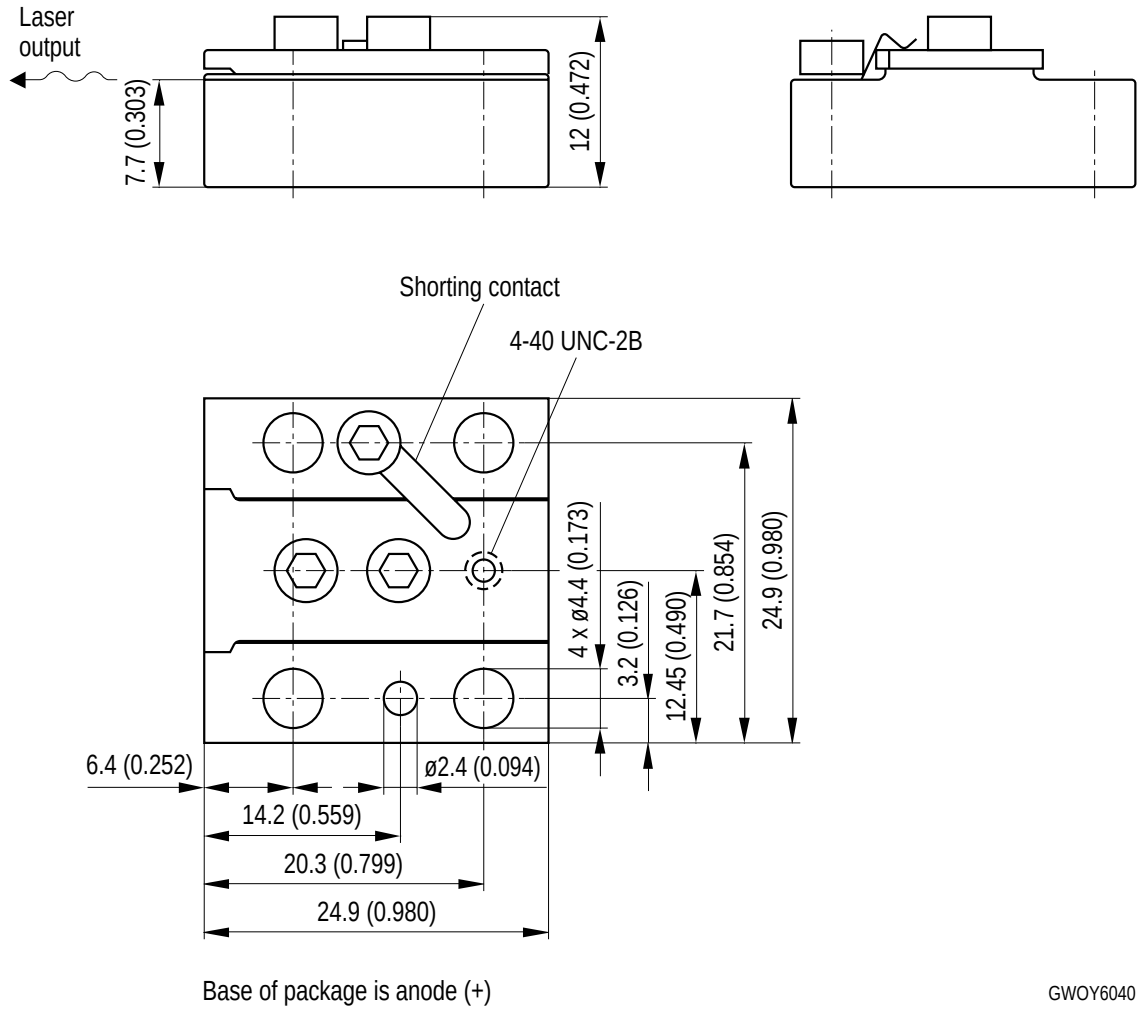


Package Outlines (DL-type package)



Dimensions are specified as follows: mm (inch).

Package Outlines (SP-type package)



Dimensions are specified as follows: mm (inch).

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