m2k-BA-1940-1000-SE High Power GaSb based MIR Laser



High-Brightness Diode-Lasers

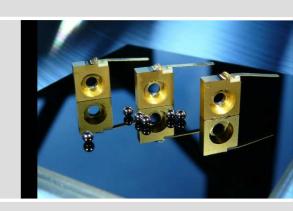
General Description

The m2k-BA-1940-1000-SE is a mid-infrared diode laser which is used in medical applications, illumination, materials processing or pumping of mid-infrared solid-state and disc lasers. The broad-area, gain-guided lasers are based on the (AlGaln)(AsSb) material system, epitaxially grown on GaSb substrates. The single emitters are mounted onto cmounts and feature output powers up to 1000 mW. The fast axis beam divergence is as low as 44°FWHM due to an innovative waveguide design.

Output power: 1000 mW Wavelength: 1940 nm Divergence: 44°(FWHM) **Emitter width:** 150 µm Packaging: **C-Mount**

Advantages

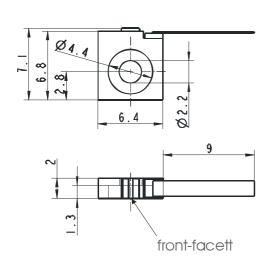
- high brightness
- nominal output of 1000 mW
- emitter stripe width of 150 µm
- divergence in the fast direction of 44° (FWHM)
- highly reliable
- compact package
- passive cooling
- customized packaging possible



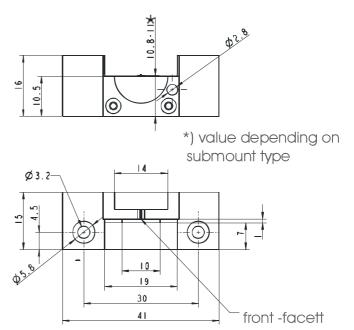
Related products

- Single emitter with 90µm stripe width (BA-1940-0700-SE)
- Fiber coupled single emitter module for 200µm core fiber with NA=0.22 (BA-1940-E0500-MMF200)
- Laser bar with 20% or 30% fill factor (BA-1940-20-10-BAR, BA-1940-30-10-BAR)
- Fiber coupled bar modules (BA-1940-B06-MMF600, BA-1940-B12-MMF600, BA-1940-B18-MMF600)

C-Mount



DHP Mount



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m2k-BA-1940-1000-SE Specification Data



CW - nominal output-power mW 1000 Center wavelength ¹ nm 1940 Center wavelength variation (@ 20 °C) ² nm ±10 Spectral bandwidth (FWHM) nm <5 Divergence parallel (FWHM) ° < 11 Divergence perpendicular (FWHM) ° < 47 Design data ** 150 Stripe width µm 1000 Emitter height µm 1000 Emitter height µm 1000 Electrical data ** ** Typical operation current A 3.5 Maximum operation current A 3.5 Typical threshold current A 0.35 Typical slope efficiency W/A > 0.29 Operation voltage V < 1.5 Thermal data ** ** Operating temperature C 20 Storage temperature ³ C 20 Operating conditions ** *** Norder Specifications **	Product		BA-1940-1000-SE
Center wavelength 1	Optical data		
Center wavelength variation (® 20 °C) ² nm ±10 Spectral bandwidth (FWHM) nm <5	CW - nominal output-power	mW	1000
Spectral bandwidth (FWHM) ° < 11	Center wavelength ¹	nm	1940
Spectral bandwidth (FWHM) ° < 11	Center wavelength variation (@ 20 °C) 2	nm	±10
Divergence perpendicular (FWHM) ° < 447 Design data Stripe width	Spectral bandwidth (FWHM)	nm	<5
Design data Stripe width μm 150 Cavty length μm 1000 Emitter height μm 100 110 Electrical data Typical operation current A 3.5 Maximum operation current A 4.0 Typical threshold current A 0.35 Typical slope efficiency W/A > 0.29 Operation voltage V < 1.5	Divergence parallel (FWHM)	0	< 11
Stripe width μm 150 Cavty length μm 1000 Emitter height μm 100 110 Electrical data Typical operation current A 3.5 Maximum operation current A 4.0 Typical treshold current A 0.35 Typical slope efficiency W/A > 0.29 Operation voltage V < 1.5 Thermal data Operating temperature © 20 The colopies of	Divergence perpendicular (FWHM)	•	< 47
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Emitter height μm 100 110 Electrical data Typical operation current A 3.5 Maximum operation current A 4.0 Typical threshold current A 0.35 Typical slope efficiency W/A > 0.29 Operation voltage V < 1.5	Stripe width	μm	150
Electrical data Typical operation current A 3.5 Maximum operation current A 4.0 Typical threshold current A 0.35 Typical slope efficiency W/A > 0.29 Operation voltage V < 1.5	Cavity length	μm	1000
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Maximum operation current A 4.0 Typical threshold current A 0.35 Typical slope efficiency W/A > 0.29 Operation voltage V < 1.5	Electrical data		
Typical threshold current A 0.35 Typical slope efficiency W/A > 0.29 Operation voltage V < 1.5 Thermal data Operating temperature C 15 30 Recommended heat sink temperature C 20 Storage temperature 3 C -20 +60 Operating conditions non-condensing atmosphere Other specifications Heat sink type C-mount Cathode (-) wire flag Anode (+) base plate RoHS 2002/95EC compliant yes Related products BA-1940-E0500-MMF200 CW - nominal output-power mW 500 Fiber core diameter μm 50.29	Typical operation current	Α	3.5
Typical slope efficiency	Maximum operation current	Α	4.0
Operation voltage V < 1.5 Thermal data Operating temperature ℃ 15 30 Recommended heat sink temperature ℃ 20 Storage temperature ³ ℃ -20 +60 Operating conditions non-condensing atmosphere Other specifications - c-mount Heat sink type c-mount Cathode (-) wire flag Anode (+) base plate RoHS 2002/95EC compliant yes Related products BA-1940-E0500-MMF200 W - nominal output-power mW 500 Fiber core diameter μm 200			
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BA-1940-E0500-MMF200 CW - nominal output-power mW 500 Fiber core diameter μm 200	RoHS 2002/95EC compliant		yes
BA-1940-E0500-MMF200 CW - nominal output-power mW 500 Fiber core diameter μm 200	Related products		
CW - nominal output-power mW 500 Fiber core diameter µm 200	<u> </u>		
Fiber core diameter µm 200		mW	500
	Fiber core diameter		
		Part .	

Safety

This is a laser class IV product according to IEC - Standard International Commission (Publication 825, 1993). The laser light emitted from this laser diode is invisible and/or visible and is harmful to the human eye. The safety regulations for eye and personell protection included in the IEC Standard must be observed to avoid any harm to operating personell. Avoid direct exposure and looking into the laser diode, into the collimated beam or into the fiber when it is linked to the module.

Storage and shipping

¹ Other wavelength on request

Store and ship the diode laser with shortened electrical contacts, in a clean and dry atmosphere and in a tempertaure range of 0℃ to 60℃.

² Smaller spectral bandwidth on request

Operation and handling

Diode lasers are extremely sensitive to over-voltage. Take extreme precaution to avoid electrostatic charges. Precautions against spiking during switching on and off the power supply must be assured. Correct polarity of power supply must be assured. During handling personell has to wear wrist straps. Grounded work surfaces and additional antistatic techniques are mandatory during handling.

Device failure and safety hazard are caused by operation in excess of maximum ratings. Exceeding output power and temperature specification will result in accelerated device ageing.

Do not mount via any paste-like media!



³ in a non condensing atmosphere