DESTINATION MARS

ESA ExoMars Project

Monocrom has developed a miniaturized and extremely robust diode-pumped solid state laser (DPSSL) with second harmonic generation (SHG) for the ESA ExoMars (2020) mission on Mars. The device will be part of the Raman LIBS equipment included in the Mars exploration rover.

OEM Laser Solutions for Aerospace & Defense

Robust. Resistant. Accurate

Laser devices in the aerospace and defense industries are subject to strict regulations and requirements. Monocrom lasers show inherent advantages due to the implementation of unrivalled advanced technologies kept for exclusive use of the company. They have also proven to be compliant with the military standard MIL-STD-810.

We have a solid expertise in lasers for aerospace and defense applications. Our commitment to innovation, quality and excellence allow us bring to furtition any product development: from a simple pointing laser device to a complex diode-pumped solid state laser for outerspace exploration.

We offer a high degree of flexibility and versatility for your developments.

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crafting ideas into light

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Lasers for Defense & Aerospace Applications

- life science & medical
- industrial
- defense & aerospace

Security and Target Aquisition

Lasers greatly improve the accuracy and efficiency of defense systems.
The uses of lasers include applications such as temporarily blinding and desorientating (laser dazzlers), laser guidance, laser sight, target designation and ranging, defensive cuntermeasures.
Lasers can also be used in underwater communications for secure and timely transmission of information.

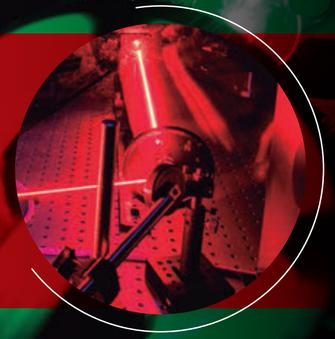
- Dazzling
- Guidance
- Target designation
- Ranging
- Defensive countermeasures
- Underwater communications

Technical Specifications	
Wavelength:	640 - 2100 nm
Power per bar:	up to 500 W at QCW
Bar to bar pitch:	down to 1 mm
Optics:	FAC / SAC
Bar per stack	1-10 (pitch dependent)
Smile:	< 0,3 µm
Duty cycle:	> 1%

Pumping Sources

Diode lasers offer usurpassed wall-plug efficiency and wavelength versatility when it comes to optical pumping solutions. Our pump heads are based on emitter arrays (laser bars and mini-bars) and laser bar arrays (vertical and horizontal stacks). We offer also single emiters to explore exotic wavelengths in solid state lasers (Pr:YLF)

- Ti:Sa
- DYE
- OPO
- OPA
- OPCPA

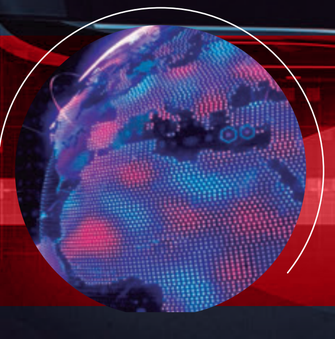


Technical Specifications	
Wavelength:	808 nm (Nd:YAG)
	960/1450 nm (Er:YAG)
	785 nm (Tm:YAG)
Power:	< 250 W / laser bar (CW)
	< 500 W / laser bar (QCW)
Rod diameter:	customized
Slab dimensions:	customized

Possible host materials:
YAG / YLF / YVO4
Dopings:
Nd / Er / Tm / Ho / Yb

Light Detecting and Ranging (LiDAR)

LiDAR is used for different kinds of measurements in an array of sectors and industries. The automotive and aerospace industry are the main users of this versatil laser technology. LiDAR is also successfully used for improving weather forecasts in meteorology, for quality control of fields in agriculture and also for supporting renewable-energy technologies.



LiDAR type	Wavelegth	Laser Source
underwater LiDAR	532 / 527 nm	Solid state laser (Nd:YAG-SHG / Nd:YLF-SHG)
		Solid state laser (Nd:YLF-SHG)
air- or ground-based LiDAR	1064 / 1053 nm	Solid state laser (Nd:YAG- FUN / Nd: YLF-FUN)
		Solid state laser (Nd:YLF-FUN)
(air- or ground-based LiDAR / eye-safe)	15xx nm	Solid state laser (Er:Glass)
		Diode laser