

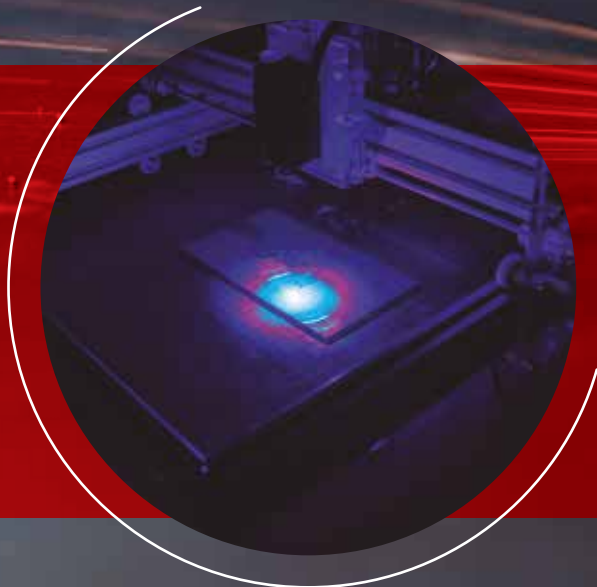


Lasers for Industrial Applications

- life-science & medical
- **industrial**
- defense & aerospace

Material Processing

Laser material processing uses high power lasers to generate intense light beams in material fabrication. This can include welding, drilling, cutting, engraving or cleaning different materials as plastics, wood and metals.



Marking/Engraving

Metal welding

Plastic welding

Soldering/Brazing

Cladding

Cutting

Hardening/Softening

Laser cleaning

Marking/Engraving	BPP: 0.3 - 5 Power: 10 - 100 W Wavelength: NIR
Metal welding	BPP: 1 - 40 Power: 1 - 10 kW (thick sheets need more power) Wavelength: NIR (blue for Cu [red-metals])
Plastic welding	BPP: 30 - 300 (sometimes ~ 10) Power: 10 - 200 W Technology shifts from 1 μm to 2 μm wavelength
Soldering/Brazing	BPP: 10 - 80 (soldering) 30 - 500 (brazing) Power: 10 - 100 W (soldering) 300 W - 8 kW (brazing) Wavelength: NIR
Cladding	BPP: 30 - 300 Power: 1 - 10 kW Wavelength: NIR (blue for Cu [red-metals])
Cutting	BPP: 2 - 10 Power: 10 W - 10 kW (high power for metals) Wavelength: NIR
Hardening/Softening	BPP: 50 - 1000 Power: 2 - 20 kW Wavelength: NIR
Laser Cleaning	Rep.rate.: 10 - 20 kHz Power: 100 - 1600 W Wavelength: 1064 nm Pulse width: < 100 ns



Laser Pumping

Diode lasers are one of the most popular sources for optical pumping nowadays, because of their unsurpassed wall-plug efficiency and wavelength versatility. We offer a wide variety of pumping solutions involving single emitters, emitter arrays (laser bars and mini-bars) and laser bar arrays (vertical and horizontal stacks).

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



Technical Specifications		
Wavelength*	808/825/880/888 nm (Nd:YAG / Nd:YLF) 960/1450 nm (Er:YAG) 915/940/969/976 nm (Yb:YAG) 785 nm (Tm:YAG)	Possible host materials: YAG / YLF / YVO ₄
Power	up to 250 W / laser bar (CW) up to 500 W / laser bar (QCW)	Dopings: Nd / Er / Tm / Ho / Yb
Rod diameter	3 mm - 10 mm	
Suitable for	Ti:Sa -> SHG - Nd:YAG (CW/Q-switched) DYE -> SHG - Nd:YAG (CW/Q-switched) OPO -> SHG/THG - Nd:YAG (CW/Q-switched) OPA -> SHG/THG - Nd:YAG (CW/Q-switched) OPCPA -> SHG/THG - Nd:YAG (CW/Q-switched)	

*VBG option available

Sensing for Food Industry

Laser sensing enables efficient quality control of optimized industrial processes. Its use in the food industry is widely spread in sorting and classifying fruits, vegetables and nuts on the basis of structural or color defects.

Sorting in free fall

Quality control

Classification



Technical Specifications	
Wavelength	from 405 nm up to 1550 nm
Power	up to 300 mW
Operation mode	20 kHz - CW
Power stability	< 0.5% with ambient temperature variation
Optics	fixed / collimated or focusable with working distance starting from 20 mm
Boresight	down to 0.2 mrad

- Very low line bowing in submillimeter range for our pattern generators
- Thermo-electrical wavelength stabilization

Imaging

Diode lasers are used in many demanding high-speed imaging applications such as: scanning, radiography imaging, offset-printing and particle image velocimetry. Monocrom is an expert in laser-based illumination sources serving for over 25 years a diversity of industries and sectors.

Pattern projection

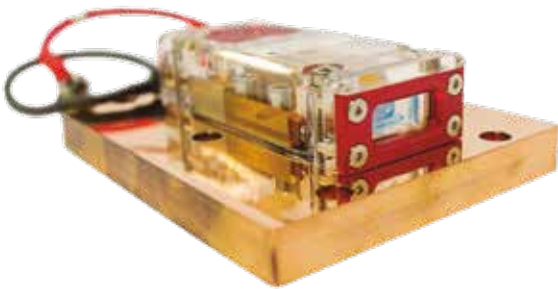
Illumination

PIV

Computer radiography

3D scanners

CTP



Technical Specifications	
Wavelength	from 405 nm up to 1550 nm
Power	up to 300 mW
Operation mode	CW / TTL switched / analog modulated
Power stability	< 0.5% with temperature variation
Optics	fixed / collimated or focusable with working distance starting from 20 mm
Boresight	down to 1 mrad

- Integrated electronics
- Thermo-electrical wavelength stabilization
- High beam performance for any pattern requested
- Focused spot size down to 10 μm depending on the distance
- Very low line bowing submillimeter range for our pattern generators

OEM Laser Solutions for Industrial Applications

Compact. Precise. Versatile

Lasers are proved to be more efficient, precise and versatile in many industrial processes compared to other traditional methods and techniques. Material processing, printing and laser assisted sensing are only a few examples.

Our products can be found in offset printers, pointers and target designators, proylers, markers, 3D scanners, holographic projectors, diode-pumped solid state lasers, plastic cutting and welding equipment or laser-assisted roll-forming equipment.

Our lasers solutions offer a high degree of felxibility and versatility for your industrial applications.



Main headquarters

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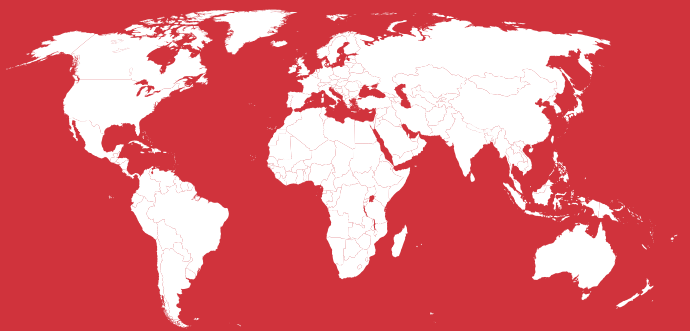
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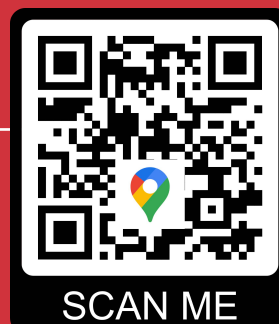
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We are global



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