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, profilers, 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 flexibility and versatility for your industrial applications.

### Technical Specifications

<table>
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<th>Parameter</th>
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<td>Wavelength</td>
<td>from 405 nm up to 1550 nm</td>
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<td>Power</td>
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<tr>
<td>Operation mode</td>
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</tr>
<tr>
<td>Power stability</td>
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</tr>
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<td>down to 1 mrad</td>
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</table>

- Integrated electronics
- thermo-optic wavelength stabilization on request
- High beam quality for any application
- Focused spot size down to 1 µm depending on the distance
- Very low line bowing submillimeter
- from 405 nm up to 1550 nm
- up to 300 mW
- CW / TTL switched / Modulated
- < 0.5% with temperature variation
- Fixed / Collimated or focusable at 20 mm distance
- down to 1 mrad

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**Imaging**

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

- Pattern projection
- Illumination
- TV
- Computer radiography
- STP

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**Lasers for Industrial Applications**

**Compact. Precise. Versatile**

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**OEM Laser Solutions for Industrial Applications**

We are global

https://www.monocrom.com/en/contact
Technical Specifications

**Laser Pumping**

Diode lasers are one of the most popular sources for optical pumping nowadays, because of their intrinsically good efficiency and wavelength versatility. They 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).

- **Operation mode:** CW / Modulated up to 20 kHz
- **Power:** > 100 W / laser bar (CW)
- **Rod diameter:** 3 mm - 10 mm
- **Suitable for:** Ti:sapphire, DYE, OPD, OPA, OPCP, OPCPA

Possible host materials: YAG / YLF / YVO4

Dyes: Nd / Er / Tm / Ho / Yb

**Sensing for Food Industry**

Laser sensing enables efficient quality control of optimized industrial processes. It is used in the food industry in order to spread in sorting and classification tasks of fruits, vegetables, and nuts on the basis of structural or color defects.

- **Sensing in free fall**
- **Quality control**
- **Classification**

**Material Processing**

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

- **Wavelength:** from 405 nm up to 1550 nm
- **Power:** up to 300 mW
- **Operation mode:** CW / Modulated up to 20 kHz
- **Power stability:** < 0.5% with temperature variation

**Optics:**

- **Fixed / Collimated or focusable at 20 mm distance**
- **Boresight:** down to 0.2 mrad

**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 (plus for Cu and metals)

**Plastic welding**

- **BPP:** 30 - 200 (sometimes 1000)
- **Power:** 10 - 200 W
- **Wavelength:** NIR (blue for Cu and metals)

**Soldering/Brazing**

- **BPP:** 10 - 40 (brazing) 30 - 500 (brazing)
- **Power:** 100 - 10 W (brazing) 300 W - 8 kW (brazing)
- **Wavelength:** NIR

**Cutting**

- **BPP:** 30 - 500
- **Power:** 1 - 10 kW
- **Wavelength:** NIR (blue for Cu and metals)

**Hardening/Softening**

- **BPP:** 50 - 1200
- **Power:** 2 - 25 kW
- **Wavelength:** NIR

**Laser Cleaning**

- **Repetition rate:** 10 - 20 kHz
- **Power:** 100 - 1500 W
- **Wavelength:** 1064 nm
- **Pulse width:** < 100 ns

**Technical Specifications**

**Wavelength:**

- Ti:sapphire: SHG / N2 / YAG (CW/Q-switched)
- DYE: SHG / N2 / YAG (CW/Q-switched)
- OPD: SHG / THG / N2 / YAG (CW/Q-switched)
- OPA: SHG / THG / N2 / YAG (CW/Q-switched)
- OPCPA: SHG / THG / N2 / YAG (CW/Q-switched)

**Power:**

- 808 nm (Nd:YAG)
- 960/1450 nm (Er:YAG)
- 785 nm (Tm:YAG)

**Power:**

- < 250 W for laser bar (CW)
- < 500 W for laser bar (Q-switched)

**Dopants:**

- Nd / Er / Tm / Ho / Yb

**Possible host materials:**

- YAG / YLF / YVO4

**Operation mode:**

- CW / Modulated up to 20 kHz

**Power:**

- up to 300 mW

**Power stability:**

- < 0.5% with temperature variation

**Optics:**

- Fixed / Collimated or focusable at 20 mm distance

**Beam diameter:**

- down to 0.2 mrad

**Technical Specifications**

**Wavelength:** 808 nm (Nd:YAG)

**Power:** < 250 W / laser bar (CW)

**Repetition rate:** 10 - 20 kHz

**Power:** 100 - 1500 W

**Wavelength:** 1064 nm

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**Possible host materials:**

- YAG / YLF / YVO4

**Dopants:**

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- up to 300 mW

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