

Medical Laser  
Innovative Laser Systems



## INDUSTRIAL APPLICATIONS



## 3m.i.k.r.o.n.™

### High-power, diode-pumped laser technology

3m.i.k.r.o.n.™ is the technology platform for compact, efficient, fast and reliable lasers for a wide range of potential applications in the field of medical engineering and industry. It enables a new generation of innovative mid-IR lasers based on diode-

pumped solid-state technology, operating at wavelengths of 2 to 3  $\mu\text{m}$  using different types of laser crystals (e.g. Er:YAG, Er:YSGG, Er:YLF, Tm:YAG).

#### Beam Quality

3m.i.k.r.o.n.™ offers high beam quality and accordingly high focusability.

#### Speed

3m.i.k.r.o.n.™ enables repetition rates up to 2 kHz.

#### Efficiency and TCO

Because of higher efficiency electricity consumption and cooling demands are reduced drastically compared to flash lamp pumped lasers. Higher efficiency and lack of consumables reduce the TCO drastically in comparison to CO<sub>2</sub> lasers.

#### Life time and availability

Compared to flash lamps laser diodes are of longer life time. Compared to CO<sub>2</sub> lasers no consumables like laser gas are needed. Both effects involve longer maintenance intervals and thus higher availability.

#### Compactness

3m.i.k.r.o.n.™ modules are very compact due to their smaller pump sources and cooling systems, leading to laser devices, which are more convenient to use.

#### Flexibility

The wider range of adjustable laser parameters (pulse energy, pulse duration, repetition rate) offers a high level of flexibility for different applications.

#### Reliability

3m.i.k.r.o.n.™ modules are maintenance free and allow for robust construction of laser devices.

#### Process efficiency

The very good absorption of many organic materials at 3  $\mu\text{m}$  wavelength allows for a very efficient cutting process. The 3  $\mu\text{m}$  technology combines the benefits of CO<sub>2</sub> and solid state lasers.