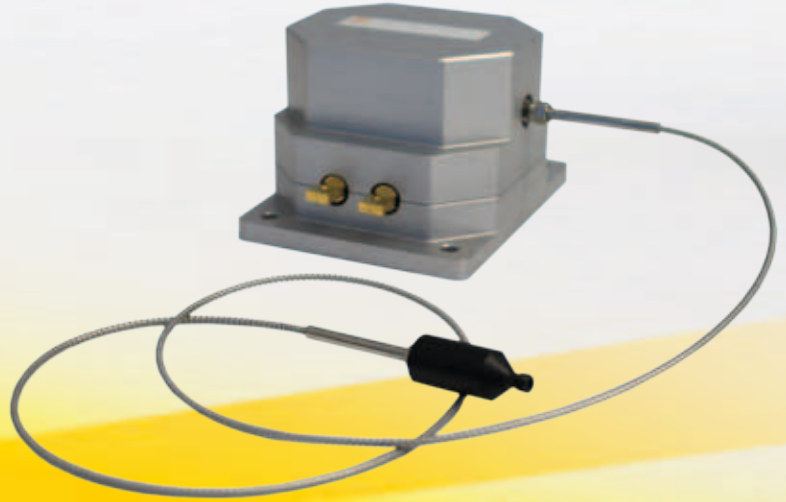


High Power 3 μm DPSSL Modules

- . Compact monolithic laser systems
- . Highly efficient diode pumping
- . Fiber-coupled versions available
- . No high-voltage required
- . Reduced waste heat
- . Maintenance free
- . Process variability



Specifications

| | DPM-2 (Er:YAG) free / fiber | DPM-25 (Er:YAG) free / fiber | DPM-50 (Er:YAG) free / fiber |
|-----------------------------------|--|--|--|
| Optical Parameters | | | |
| . Wavelength | 2940 nm | 2940 nm | 2940 nm |
| . Average Output Power (max) | 2 / 1.2 W | 25 / 16 W | 50 / 33 W |
| . Pulse Energy (max) | 20* / 13* mJ | 300* / 200* mJ | 600* / 400* mJ |
| . Pulse Repetition Rate | up to 2 kHz | up to 2 kHz | up to 2 kHz |
| . Pulse Duration | 40 to 1000** μs | 40 to 1000** μs | 40 to 1000** μs |
| . Average Current (max) | 30 A | 25 A | 25 A |
| . Mode of Operation | Pulsed | Pulsed | Pulsed |
| . Efficiency (optical-optical) | > 10 % | > 10 % | > 10 % |
| . Beam Shape (focus) | top hat like | top hat like | top hat like |
| . Free Beam Quality | $M^2 < 5$ | $M^2 < 25$ | $M^2 < 50$ |
| . Free Beam Diameter | 0.6 mm | 1.6 mm | 1.6 mm |
| . Free Divergence (half angle) | < 25 mrad | < 25 mrad | < 50 mrad |
| . Fiber Diameter GeO2 | $\sim 230 \mu\text{m}$ (NA < 0.2) | $\sim 230 \mu\text{m}$ (NA < 0.2) | $\sim 420 \mu\text{m}$ (NA < 0.2) |
| Cooling Requirements | | | |
| . Coolant | Distilled water with Algaecide and Corrosion Inhibitor | Distilled water with Algaecide and Corrosion Inhibitor | Distilled water with Algaecide and Corrosion Inhibitor |
| . Coolant Temperature | 20 to 35 °C | 20 to 25 °C | 20 to 25 °C |
| . Coolant Flow Rate | $\geq 1 \text{ lpm}$ | > 5 lpm | $\geq 6 \text{ lpm}$ |
| . Coolant Pressure | (1 - 3) bar | (2 - 5) bar | (3 - 5) bar |
| . Required Cooling Power | $\sim 150 \text{ W}$ @ 25 °C Environment Temperature | $\geq 540 \text{ W}$ @ 25 °C Environment Temperature | $\geq 780 \text{ W}$ @ 25 °C Environment Temperature |
| Electrical Parameters | | | |
| . Diode Forward Voltage | 2 V | $\sim 20 \text{ V}$ | $\sim 30 \text{ V}$ |
| . Diode Forward Current | 350 A Pulsed | 300 A Pulsed | 300 A Pulsed |
| . Average Power Consumption (max) | < 120 W incl. 2 TECs | < 450 W | < 650 W |
| Mechanical Dimensions | | | |
| . W x D x H | 30 x 32 x 25 mm | 120 x 96 x 75 mm | 120 x 120 x 75 mm |
| . Weight | 60 g | 1.5 kg | 1.7 kg |
| . Emission Height | - | 47.5 mm | 47.5 mm |

* with pulse durations > 600 μs

** 600 μs standard, 1000 μs on request

Laser Diode Drivers

The LDD series are economic QCW laser diode driver modules designed to provide high current pulses to drive 3m.i.k.r.o.n.TM modules in various applications. It delivers output currents up to 300 A and pulse widths variable from 50 up to 1000⁺ μ s operation. Up to 1000 W average output power is available with the supplied heatsink and forced air flow. Several safety features are integrated to protect both laser diode and driver.

| | DPM-2 (Er:YAG) / DPM-25 (Er:YAG) | DPM-50 (Er:YAG) |
|-------------------------------------|--|--|
| Laser Diode Driver | LDD-20300 | LDD-30300 |
| • Output Current | up to 300 A | up to 300 A |
| • Rise Time (10 - 90%) | < 20 μ s | < 20 μ s |
| • Mechanical Dimensions (W x D x H) | 200 x 150 x 85 mm | 200 x 150 x 85 mm |
| • Additional Features | Safety circuit and communication interface | Safety circuit and communication interface |



Test and Evaluate



The 3m.i.k.r.o.n.TM evaluation kits are ready-to-use and straightforward laboratory systems for first feasibility studies in research environment. The evaluation kits are available with three different kind of laser sources (see front page), shortens the development time, enables flexibility and a fast demonstration of feasibility. The test systems are delivered with your requested laser source, a laser control system and a cooling system for laboratory use only.

Please contact us for more information on rental or purchase conditions: 3um@pantec.com

3m.i.k.r.o.n.TM Applications

| Medical | Industrial |
|--|--|
| <ul style="list-style-type: none"> • Aesthetics / Dermatology • Dentistry • ENT • Lithotripsy • Minimally-Invasive Surgery • Orthopedics • etc. | <ul style="list-style-type: none"> • Material Processing (Drilling, Cutting, Melting, Welding, Evaporation) • Analytics • Security • Defense |

More Services



Customized laser sources
Optical and mechanical design
Contract development and manufacturing
Medical device consulting (IP research, Medical CE, ...)

