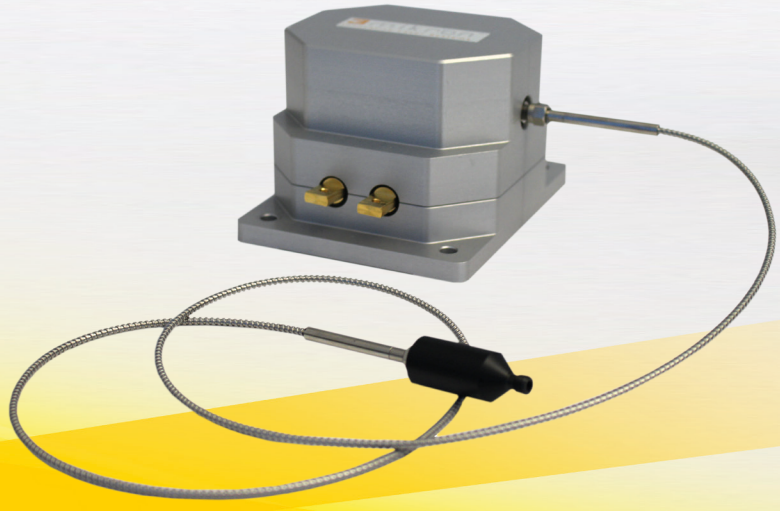
High Power
3 µm DPSSL Modules

3 m.i.k.r.o.n.™
Innovative Laser Systems

- 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 1 kHz	up to 1 kHz	up to 1 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	~ 230 µm (NA < 0.2)	~ 230 µm (NA < 0.2)	~ 420 µm (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	≥ 1 lpm	> 5 lpm	≥ 6 lpm
Coolant Pressure	(1 - 3) bar	(2 - 5) bar	(3 - 5) bar
Required Cooling Power	~ 150 W @ 25 °C Environment Temperature	≥ 540 W @ 25 °C Environment Temperature	≥ 780 W @ 25 °C Environment Temperature
Electrical Parameters			
Diode Forward Voltage	2 V	~ 20 V	~ 30 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

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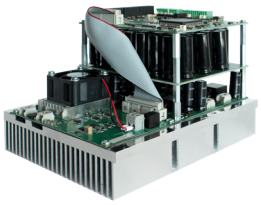
Laser Diode Drivers

The LDD series are economic QCW laser diode driver modules designed to provide high current pulses to drive 3m.i.k.r.o.n.™ modules in various applications. It delivers output currents up to 300 A and pulse widths variable from 50 up to 1000* µs 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 µs	< 20 µs
. 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.™ evalution 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.™ Applications

Medical	Industrial
. Aesthetics / Dermatology	. Material Processing (Drilling, Cutting, Melting, Welding, Evaporation)
. Dentistry	. Analytics
. ENT	. Security
. Lithotripsy	. Defense
. Minimally-Invasive Surgery	
. Orthopedics	
. etc.	

More Services

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

Pantec Biosolutions AG · Medical Laser
Industriering 21 · 9491 Ruggell · Liechtenstin
Tel: +423 377 13 33 · Fax: +423 377 13 34
3um@pantec.com · www.pantec-medicallaser.com

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