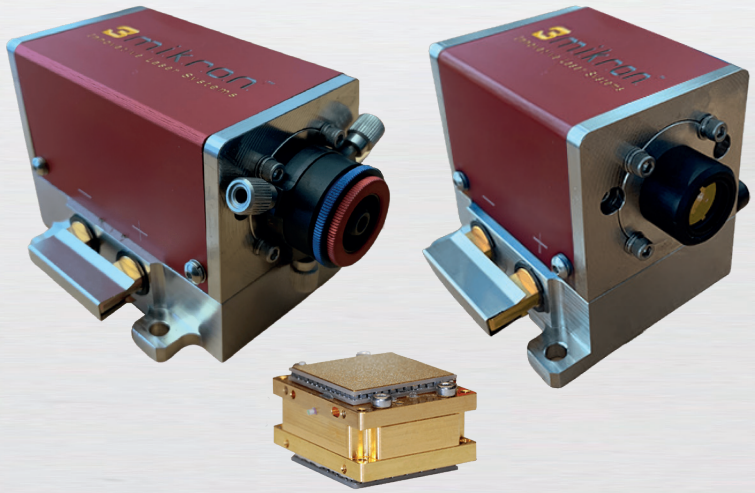
High Power
3 µm DPSSL Modules

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

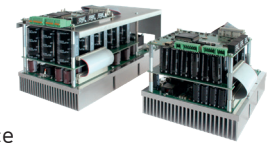
	DPM-2 (Er:YAG) free / fiber [1]	DPM-25 (Er:YAG) free / fiber [1]	DPM-50 (Er:YAG) free / fiber [1]
Optical Parameters			
· Wavelength	2940 nm	2940 nm	2940 nm
· Average Output Power (max)	2 / 1.2 W	25 / 16 W	50 / 33 W
· Pulse Energy (max)	20 [2] / 13 [2] mJ	300 [2] / 200 [2] mJ	600 [2] / 400 [2] mJ
· Pulse Repetition Rate	up to 1 kHz	up to 1 kHz	up to 1 kHz
· Pulse Duration	(40 - 1000 [3]) µs	(40 - 1000 [3]) µs	(40 to 1000 [3]) 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 GeO_2 [1]	~ 250 µm (NA ‹ 0.2)	~ 250 µm (NA ‹ 0.2)	~ 450 µm (NA ‹ 0.2)
Cooling Requirements			
· Coolant	Air-cooled or cooled with distilled Water with Algaecide and Corrosion Inhibitor	Distilled Water with Algaecide and Corrosion Inhibitor	Distilled Water with Algaecide and Corrosion Inhibitor
· Coolant Temperature	(20 - 35) °C	(20 - 25) °C	(20 - 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 (max)	350 A Pulsed	300 A Pulsed	300 A Pulsed
· Average Power Consumption	< 120 W incl. 2 TECs	< 450 W	< 900 W
Mechanical Dimensions			
· Dimension (L x W x H)	(29 x 38 x 22) mm^3 [4]	(59 x 78 x 59) mm^3 [4]	(90 x 78 x 59) mm^3 [4]
· Weight	80 g	1 kg	1 kg
· Emission Height	-	38.1 mm	38.1 mm

[1] Fiber as specified by Pantec
[2] For pulse durations > 600 µs
[3] 600 µs standard, 1000 µs on request
[4] Dimensions for bare modules

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.™ laser modules in various applications. The drivers deliver output currents up to 300 A and pulse widths variable from 50 µs up to 1000 µs operation [3]. Up to 1000 W average output power is available with the supplied heatsink. Several safety features are integrated to protect both laser module and laser 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)	(195 x 140 x 110) mm³	(195 x 140 x 130) mm³
· Additional Features	Safety circuit and communication interface	Safety circuit and communication interface



[3] 600 µs standard, 1000 µs on request (different mechanical dimensions)

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 different kinds 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: info@pantec-biosolutions.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, ...)

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