

# High Power 2 $\mu$ m 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-25 (Tm:YAG) free / fiber <sup>(1)</sup>	DPM-50 (Tm:YAG) free / fiber <sup>(1)</sup>	DPM-100 (Tm:YAG) free / fiber <sup>(1)</sup>
<b>Optical Parameters</b>			
. Wavelength	2020 nm	2020 nm	2020 nm
. Average Output Power (max)	25 / 20 W	50 / 40 W	100 / 80 W
. Pulse Energy (max)	[0.2 - 1.6 <sup>(2)</sup> ] / [0.16 - 1,28 <sup>(2)</sup> ] J	[0.5 - 4 <sup>(2)</sup> ] / [0.4 - 3.2 <sup>(2)</sup> ] J	[1 - 8 <sup>(2)</sup> ] / [0.8 - 6.4 <sup>(2)</sup> ] J
. Pulse Repetition Rate (max)	500 Hz	500 Hz	500 Hz
. Pulse Duration	(100 - 500) [20 000 <sup>(2)</sup> ] $\mu$ s	(100 - 500) [20 000 <sup>(2)</sup> ] $\mu$ s	(100 - 500) [20 000 <sup>(2)</sup> ] $\mu$ s
. Average Current (max)	7.5 A	7.5 A	7.5 A
. Mode of Operation	Pulsed	Pulsed	Pulsed
. Efficiency (optical-optical)	> 15 %	> 20 %	> 20 %
. Beam Shape (focus)	top hat like	top hat like	top hat like
. Free Beam Quality	$M^2 < 20$	$M^2 < 30$	$M^2 < 40$
. Free Beam Diameter	1.6 mm	1.6 mm	1.6 mm
. Free Divergence (half angle)	< 20 mrad	< 30 mrad	< 40 mrad
. Fiber Diameter	$\sim 250 \mu$ m (NA < 0.2)	$\sim 250 \mu$ m (NA < 0.2)	$\sim 450 \mu$ m (NA < 0.2)
<b>Cooling Requirements</b>			
. Coolant	Distilled water with Algaecide and Corrosion Inhibitor	Distilled water with Algaecide and Corrosion Inhibitor	Distilled water with Algaecide and Corrosion Inhibitor
. Coolant Temperature	25 °C	25 °C	25 °C
. Coolant Flow Rate	> 4 lpm	$\geq 5$ lpm	$\geq 6$ lpm
. Coolant Pressure	(2 - 5) bar	(3 - 5) bar	(3 - 5) bar
. Required Cooling Power	$\geq 350$ W @ 25 °C Environment Temperature	$\geq 500$ W @ 25 °C Environment Temperature	$\geq 750$ W @ 25 °C Environment Temperature
<b>Electrical Parameters</b>			
. Diode Forward Voltage	< 40 V	< 75 V	< 130 V
. Diode Forward Current	150 A	150 A	150 A
. Average Power Consumption	< 500 W	< 750 W	< 1000 W
<b>Mechanical Dimensions</b>			
. Dimension (L x W x H)	(70 x 60 x 60) mm <sup>3</sup>	(70 x 60 x 60) mm <sup>3</sup>	(95 x 50 x 60) mm <sup>3</sup>
. Weight	1 kg	1 kg	1 kg
. Emission Height	38.1 mm	38.1 mm	38.1 mm

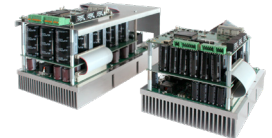
<sup>(1)</sup> Fiber as specified by Pantec

<sup>(2)</sup> With Pantec Ultrapulse Mode (on request only)

## Laser Diode Drivers

The LDD series are economic QCW laser diode driver modules designed to provide high current pulses to drive 2m.i.k.r.o.n.<sup>TM</sup> modules in various applications. It delivers output currents up to 150 A and pulse widths variable from 50 up to 500 µs operation. (Up to 1000 W average output power is available with the supplied heatsink and forced airflow). Several safety features are integrated to protect both laser diode and driver.

	DPM-25 (Tm:YAG)	DPM-50/100 (Tm:YAG)
Laser Diode Driver <sup>[3]</sup>	LDD-36200	LDD-140200
• Output Current	up to 200 A	up to 200 A
• Rise Time (10 - 90)%	< 20 µs	< 20 µs
• Mechanical Dimensions (W x D x H)	(200 x 150 x 85) mm <sup>3</sup>	(300 x 200 x 120) mm <sup>3</sup>
• Additional Features	Safety circuit and communication interface	Safety circuit and communication interface



<sup>[3]</sup> 600 µs standard, 1000 µs on request

## Test and Evaluate



The 2m.i.k.r.o.n.<sup>TM</sup> evaluation kits are ready-to-use and straightforward laboratory systems for first feasibility studies in research environment. The evaluation kits are available with two 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:  
[info@pantec-biosolutions.com](mailto:info@pantec-biosolutions.com)

## 2m.i.k.r.o.n.<sup>TM</sup> 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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