

# Fiber Coupled Laser Modules



## Application

- Fiber Laser Pumping
- Direct Material Processing
- FPD Sealing/Annealing
- Soft Soldering
- Plastic Welding
- Material Heating



## 105um SMA Fiber Coupled Module

OPTICAL PERFORMANCE								
Output Power	W	30 / 27	40 / 37	60 / 55	110 / 105	50	976	92
Wavelength	nm	915 / 976						
Spectral Width (FWHM)	nm	7						
NA 90% Power Enclosure		0.14	0.18	0.14	0.14	0.14	1	0
Fiber Core / Clad Diameter	um	105 / 125						
Fiber NA / Index Type		0.22 / Step Index						
ELECTRICAL PERFORMANCE								
Electrical-to-Optical Eff	%	45						
Threshold Current	A	40						
Operating Current	A	0.4						
Operating Voltage	V	6.5	6.5	11	20.4	11	20.4	12
THERMAL PERFORMANCE								
Operational Temp Range	C	15 - 35						
Thermal Resistance	C/W	0.6	0.6	0.6	0.3	0.6	0.3	0.3
Waste Heat	W	40	45	70	155	70	155	155
Temperature Coefficient	nm/C	0.35						
Current Coefficient	nm/A	1.2						
MECHANICAL								
Mass	g	60	60	85	450	85	450	450
Fiber Length	m	User Defined						
Active Fiber Bend Radius	mm	25						
Fiber Jacketing		Bare / Stainless Steel						
Fiber Termination		SMA 905						

## High Power Fiber Coupled Module

Optical Performance								
Output Power	W	200	300	400	200	300	400	550
Wavelength	nm	9xx						
Wavelength Tolerance	nm	±5						
Power Stability	%	2						
Fiber Core	um	200			400			
Excitation NA		0.15 - 0.22						
Fiber Length	m	3m and 5m Standard						
<sup>1</sup> Fiber Termination		Fiber Pigtail						
Pilot Laser	nm	650						
Pilot Laser Power	mW	5						
Electrical Performance								
Operational Current	A	15	12	12	15	17		
Threshold Current	A	2						
Operational Voltage	V	34.2	68.4	79.8	34.2	45.6	57	79.8
Rise / Fall Time	us	10 / 10						
Overall Efficiency	%	>40						
Thermal Performance								
<sup>2</sup> Operational Temp Range	°C	15 - 30						
Storage Temp	°C	0 - 50						
Max Dissipated Heat	W	513	821	958	513	775	969	1357
Min Flow Rate	l/min	1.5		2	1.5		2	3
Max Inlet Pressure	PSI	60						
Water Temp Range	°C	20 - 25						
Water Filter	um	100						
Mechanical								
Dimensions (L x W x H)	mm	TBD						
Weight	kg	TBD						

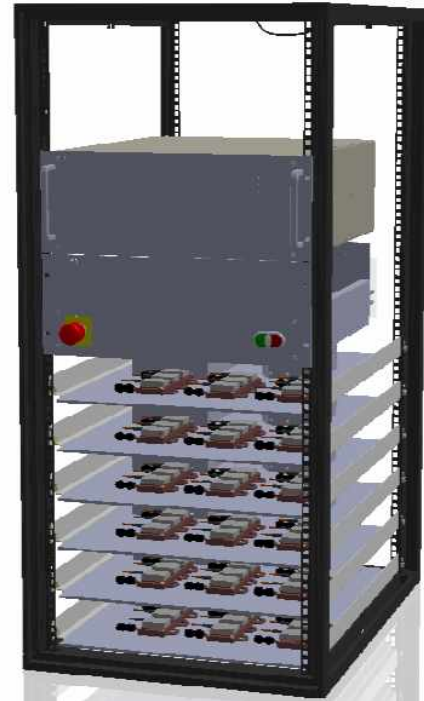
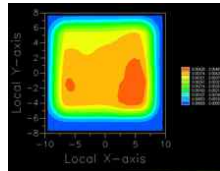
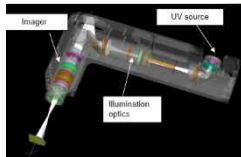
<sup>1</sup> Additional terminations available  
<sup>2</sup> Non-condensing environment

# High Power Laser Diode System



## Application

- Designator/Targeting Systems
- FPD Bonding/Annealing
- Li-Ion Battery Welding
- Plastic Welding
- Soft Soldering/Thin Metal Welding
- Vision Systems
- Material Heating



## Electronics

- RS232, USB, Ethernet Control
- Operation Modes – CW, Gated, Timer, Trigger
- Redundant interlocks for machine tool integration
- Advanced warning protocol prior to system errors
- Clean Water for cooling – No Di-ionized water needed

## Lasers/Fiber Delivery/Optics

- Single Emitter Reliability
- Industry leading power/chip and optical design
- Scalable Power from **100W – Multi-kW** using durable fiber combining technology
- Highly efficient
- Wavelengths from 640nm- 2100nm
- 650nm Pilot Beam
- Customer Specified fiber length
- Optical partnership with over 50 years of combined optical design experience
- Capabilities for design, prototype, and production



**TechMAC Co., Ltd.**  
Advanced Precision System