

Lapis[®] Multi-Laser Engine

High-power, Multi-mode Fiber Delivery

The Lapis[®] High-Power Multi-laser Engine delivers >1 Watt of output power at the distal end of an optical fiber from each of its individual lasers. The light output port has a built-in adapter for facile connection to microscopes and other bioanalytical instruments through a SMA-terminated optical fiber. These capabilities are assembled in a compact bench-top unit.

Lapis[®] Multi-laser Engines feature an advanced control system based on an onboard computer with an embedded command library. This allows control using simple and intuitive text string commands sent to the light engine via USB/RS-232 or TCP serial protocols. These commands give access not only to the basic control functions of light source selection, on/off switching and output intensity adjustment, but also to an extensive panel of operating status reports and advanced control features.

Long-term stability is sustained by active power control circuitry. The light output is monitored and controlled using an internal feedback loop to maintain constant output over time.



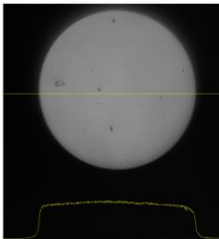
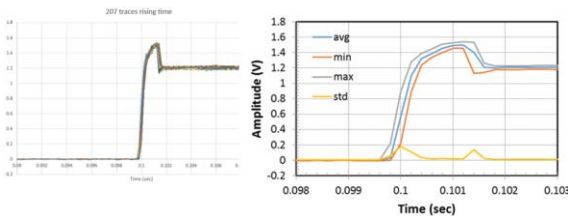
FEATURES

- Up to 11 wavelengths
- From 375 to 1064 nm
- Adjustable output power
- Multi-mode fiber output
- Speckle reduction
- Fast rise/fall time

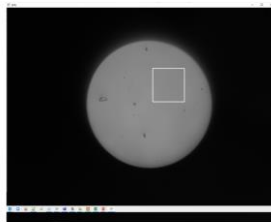
APPLICATIONS

- High throughput imaging microscopy
- Confocal microscopy
- Biomedical instrument
- High throughput DNA sequencing
- Spatial genomics
- Structured light illumination

Consistent Rising time



Beam profile of PIC's product
 457nm 1W out of 200µm NA 0.22 fiber
 20ms camera exposure time



Speckle contrast inside the square ~2.2%

Product Specifications

Table 1. Optical

PARAMETER	Conditions	Min.	Specifications Typ.	Max.	Units
CW Mode Output Power from Fiber*	405nm laser		0.3		W
	445nm laser		1		W
	470nm laser		1		W
	520nm laser		0.5		W
	555nm laser		1		W
	640nm laser		0.4		W
	730nm laser		0.7		W
Peak Laser Wavelength	405nm laser	397	405	407	nm
	445nm laser	438	445	450	nm
	470nm laser	463	470	470	nm
	520nm laser	514	520	523	nm
	555nm laser	552	555	557	nm
	640nm laser	632	640	644	nm
	730nm laser	725	730	735	nm
Warm up time			5		min
Power Stability, after 10 min Warm up	8Hrs in CW mode (25±1°C)	-1%		+1%	
Rise/Fall Time				5	ms
Pulse width		20		CW	ms
Power Adjustment**		20%		100%	
Fiber Connector	SMA905				

* Other wavelengths and output power are available upon request:

375nm 0.3W; 405nm 0.3W; 445nm 1W; 470nm/488nm 1W; 520nm/532nm/544nm 1W; 555nm/561nm 1W; 577nm/588nm 1W; 640nm 1W; 690nm 1W; 730nm/750nm 1W; 808nm 1W.

** 20% to 100% output power meeting specification, power adjustment range is 5% to 100%. Power stability test is conducted at full power.

Table 2. Electrical

PARAMETER	Conditions	Min.	Specifications Typ.	Max.	Units
Total Power Dissipation			305		W
Supply Current			12.7		A
Supply Voltage		21.6	24	26.4	V

Firmware and Command Functions

Laser engine firmware provides the below functions via interface RS232.

1. Report laser status (on or off) of each channel
2. Set output power for each channel
3. Report output power for reference from each channel
4. Turn on or turn off an individual laser of each channel
5. Turn on/off all lasers with one command

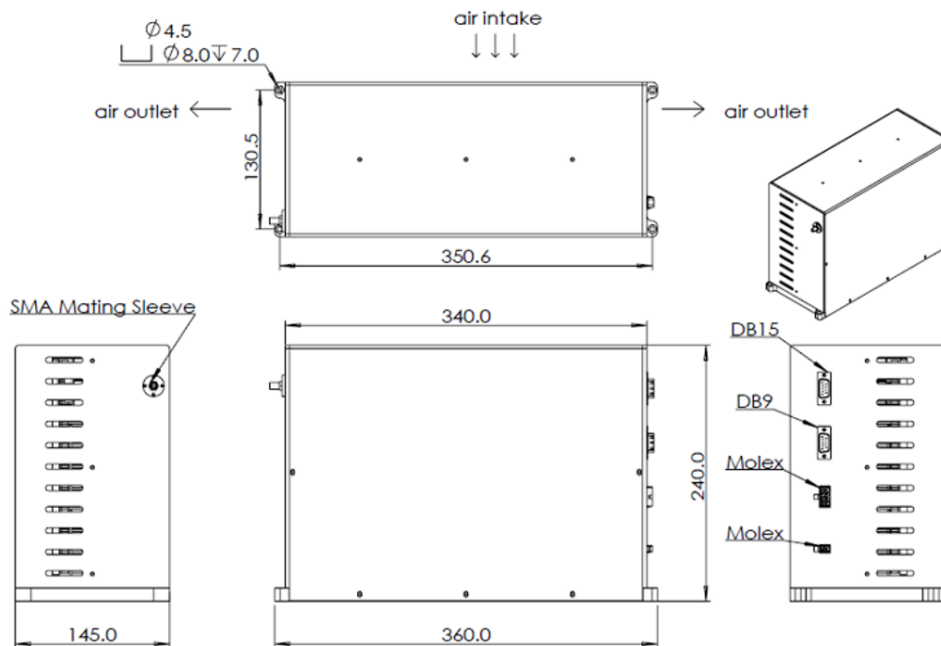
Mechanical Dimensions

Table 3. Mechanical

Parameters	Conditions	Min.	Specifications Typ.	Max.	Units
Laser Head Dimension*	L x W x H		360 x 145 x 240		mm

*Standard 7-laser dimension as reference.

Mechanical Diagram



This OEM laser does not comply with 21 CFR 1040.10 and 1040.11 without appropriate integration. Please contact Pavilion Integration Corp. for additional support or questions.

