MCA-R Series
2ns Microchip Laser

MCA series microchip lasers are RealLight's self-developed, passively Q-switched diode-pumped solid-state lasers. The integrated design of diode-pumped module and laser crystal brings convenience to installation and integration due to the compact size. This series of lasers offers miniaturized drive boards specially for meteorological radar application, featuring small size, low power consumption, and can be used in high altitude, large temperature difference and other harsh environment. Custom dual wavelength laser solutions are available for MCA series, such as 1064nm&532nm, 1064nm&355nm or others.

Key Features

- Pulse width down to 2ns
- Single pulse energy up to 180μJ
- Repetition rate up to 2.5kHz
- Spatial mode TEM_{00}
- Sealed package, high reliability

Applications

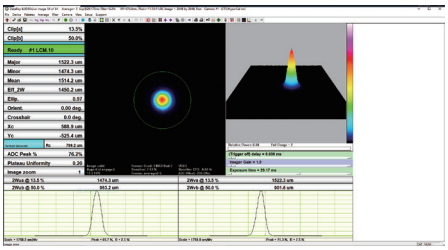
LIDAR

Laser ranging

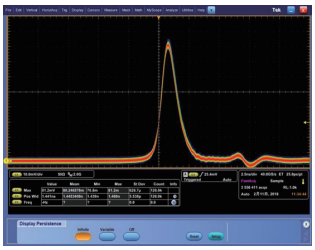
Atmospheric monitoring

Technical Specifications

Optical Parameters					
Wavelength（nm）		1064		532	
Repetition rate (kHz)		2.5*			
Average power (mW)		275	450	138	225
Pulse energy (μJ)		110	180	55	90
Pulse width (ps)		2000	2500	2000	2500
Power stabilty (8h)		±3%			
Beam profile		TEM_{00}			
Beam full divergence (typ., mrad)	Horizontal @1/e²	≤3		≤2.5	
	Vertical @1/e²	≤3		≤2.5	
Polarization ratio		>100:1			
System Parameters					
Supply power voltage		12~24V DC，100W			
Control interface		RS232, USB			
Power consumption (W)		≤20	≤25	≤25	≤25
Power dimensions (W×H×L,mm)		86×30.5×101			
Laser head dimensions (W×H×L,mm)		45×33×120			
Operation temperature (℃)		15~35			
Storage temperature (℃)		0~60			



Beam Profile (532nm)



Typical Pluse

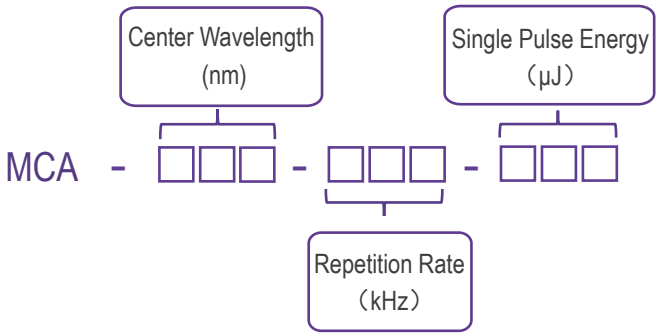
1. *Side laser outlet configuration.
Lasers with repetition rate < 20kHz are positive-edge-triggered, and lasers with repetition rate > 20kHz are gate-triggered. All systems rely on 5V TTL levels and have SMA interfaces for external triggering input. See mechanical specifications for more details!
2. External beam expanders are available upon request, to meet smaller divergence requirements.
3. All the data in the above table are the typical values obtained from the tests at room temperature of 25℃, and the final data is subject to the final test report.

RealLight 西林睿光

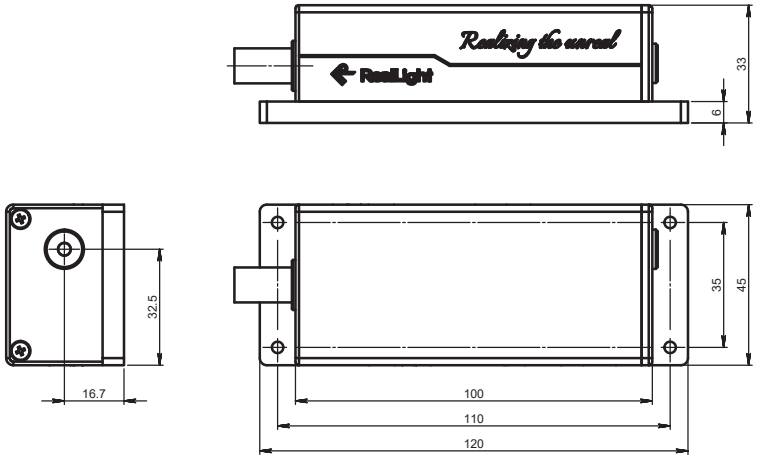
Order Information

Wavelength (nm)	Part Number	Repetition rate (kHz)	Pulse energy (μJ)
1064	MCA-1064-2.5-110	2.5	110
	MCA-1064-2.5-180	2.5	180
532	MCA-532-2.5-55	2.5	55
	MCA-532-2.5-90	2.5	90

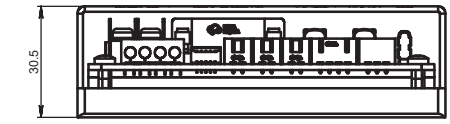
Part Numbering Schema

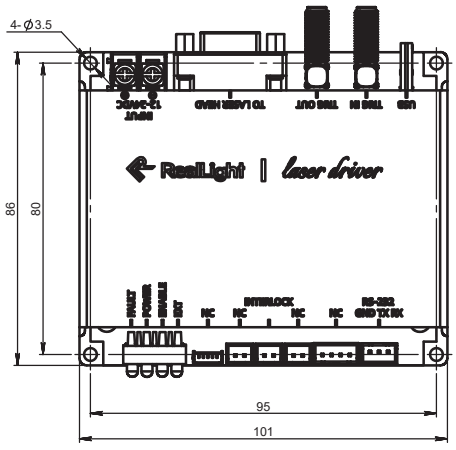


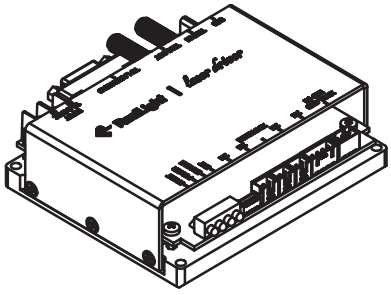
Mechanical Drawings (in mm)



Laser Head (side laser outlet)







Laser Drive Board