

# MCA-R Series

## 1.5ns 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 1.5ns
- ◆ Single pulse energy up to 200μJ
- ◆ Repetition rate up to 2.5kHz
- ◆ Spatial mode TEM<sub>00</sub>
- ◆ Sealed package, high reliability

### Technical Specifications

### Applications

LIDAR  
Laser ranging  
Atmospheric monitoring

Optical Parameters							
Wavelength (nm)		1064			532		
Repetition rate (kHz)		1*	2.5	2.5*	1*	2.5	2.5*
Average power (mW)		200	300	500	100	150	250
Pulse energy (μJ)		200	110	180	100	55	90
Pulse width (ps)		2000			1500		
Power stability (8h)		±3%					
Beam profile		TEM <sub>00</sub>					
Beam full divergence (typ., mrad)	Horizontal @1/e <sup>2</sup>	≤3			≤2.5		
	Vertical @1/e <sup>2</sup>	≤3			≤2.5		
Polarization ratio		>100:1					
System Parameters							
Supply power voltage		100-240 VAC, 50/60 Hz					
Control interface		RS232, USB					
Power consumption (W)		≤20	≤20	≤25	≤20	≤25	≤25
Power dimensions (W×H×L,mm)		90×32.6×120					
Laser head dimensions (W×H×L,mm)		45×30×120					
Operation temperature (°C)		15~35					
Storage temperature (°C)		0~60					

1. \*Side laser outlet configuration (middle laser outlet configuration unless otherwise stated)

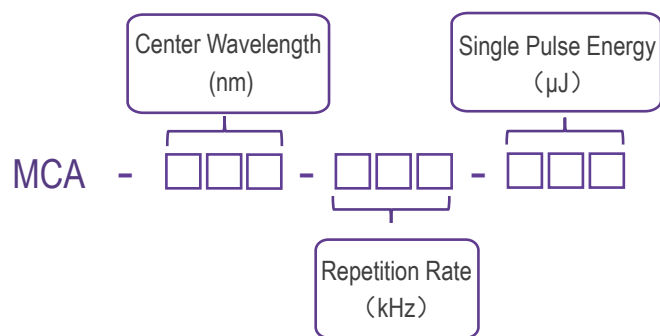
Lasers with repetition rate < 20kHz are positive-edge-triggered, and lasers with repetition rate > 20kHz are gate-triggered. All systems rely on 5V TTL levels and have SMA interfaces for external triggering input. See mechanical specifications for more details!

2. External beam expanders are available upon request, to meet smaller divergence requirements.

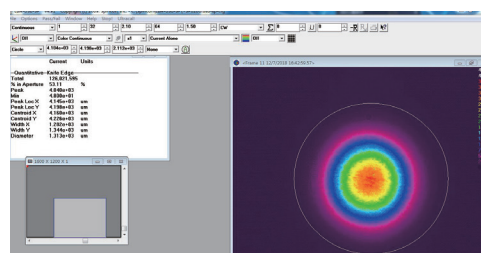
## Order Information

Wavelength (nm)	Part Number	Repetition rate (kHz)	Pulse energy (μJ)
1064	MCA-1064-1-200	1	200
	MCA-1064-2.5-110	2.5	110
	MCA-1064-2.5-180	2.5	180
532	MCA-532-1-100	1	100
	MCA-532-2.5-55	2.5	55
	MCA-532-2.5-90	2.5	90

## Part Numbering Schema

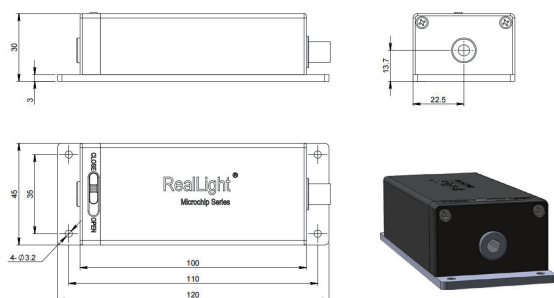


Typical Pluse

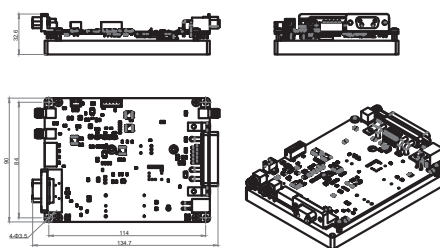


Drive Board

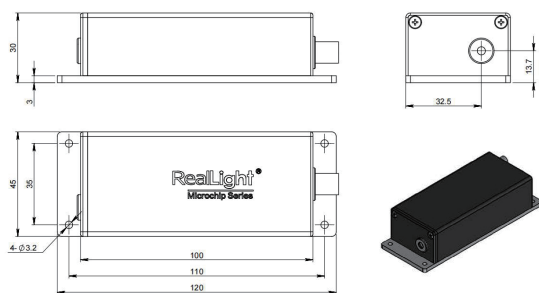
## Mechanical Drawings (in mm)



Laser Head (middle laser outlet)



Laser Head (side laser outlet)



Laser Head (side laser outlet)

