MCA Series
1.5ns Microchip Laser

MCA series microchip lasers are RealLight's self-developed, passively Q-switched diode-pumped solid-state lasers, featuring stable single pulse energy, excellent beam quality and high reliability. The integrated design of diode-pumped module and laser crystal brings convenience to installation and integration due to the compact size. MCA series provides various wavelengths include 1064nm, 532nm, 355nm and 266nm, and supports internal and external triggering. The internal hermetic module of the laser head is available to customers for tailor-made development.

Applications

LIDAR

Biomedicine

Laser ranging

Optical metrology

Atmospheric monitoring

3D scanning and imaging

Pump source for optical parametric oscillators

Laser ionization mass spectroscopy (LIMS)

Laser-induced breakdown spectroscopy (LIBS)

Laser-induced fluorescence (LIF)

Laser-induced plasma spectroscopy (LIPS)

Laser-based ultrasound detection

Key Features

- Pulse width down to 1.2ns
- Single pulse energy up to 120μJ
- Repetition rate up to 20kHz
- Spatial mode TEM_{00}
- Sealed package, high reliability

Technical Specifications

Optical Parameters																
Wavelength (nm)		1064				532				355				266			
Repetition rate (kHz)		1	5	10	20	1	5	10	20	1*	5*	10*	20*	1*	5*	10*	20*
Average power (mW)		120	300	400	400	60	150	150	200	30	50	50	60	10	40	30	40
Pulse energy (μJ)		120	60	40	20	60	30	15	10	30	10	5	3	10	8	3	2
Pulse width (ps)		2000		1500		1500	1200			1500	1200			1500	1200		
Power stabilty (8h)		±3%															
Beam profile		TEM_{00}															
Beam full divergence (typ., mrad)	Horizontal @1/e²	8				6				5				5			
	Vertical @1/e²	8				6				5				5			
Polarization ratio		>100:1															
System Parameters																	
Supply power voltage		100-240 VAC, 50/60 Hz															
Control interface		RS232, USB															
Power consumption (W)		≤35															
Power dimensions (W×H×L,mm)		180×90×180															
Laser dimensions (W×H×L,mm)		45×33×120															
Operation temperature (℃)		15~35															
Storage temperature (℃)		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. 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.

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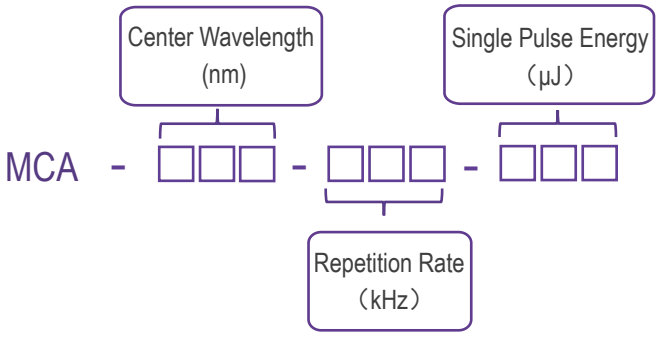
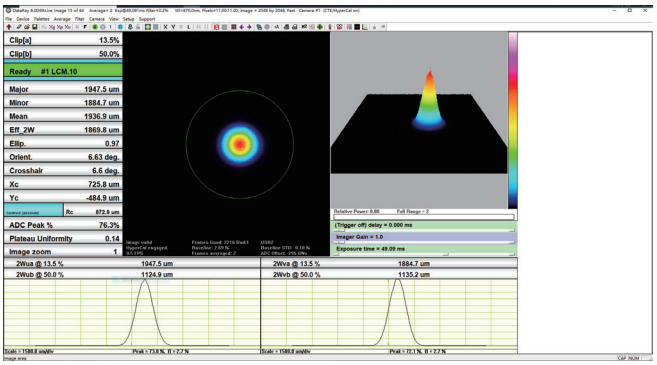
Order Information

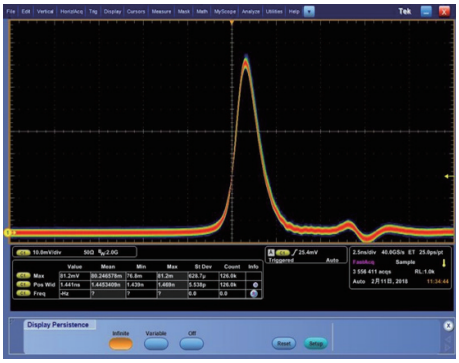
Wavelength (nm)	Part Number	Repetition rate (kHz)	Pulse energy (μJ)
1064	MCA-1064-1-120	1	120
	MCA-1064-5-60	5	60
	MCA-1064-10-40	10	40
	MCA-1064-20-20	20	20
532	MCA-532-1-60	1	60
	MCA-532-5-30	5	30
	MCA-532-10-15	10	15
	MCA-532-20-10	20	10
355	MCA-355-1-30	1	30
	MCA-355-5-10	5	10
	MCA-355-10-5	10	5
	MCA-355-20-3	20	3
266	MCA-266-1-10	1	10
	MCA-266-5-8	5	8
	MCA-266-10-3	10	3
	MCA-266-20-2	20	2

Part Numbering Schema



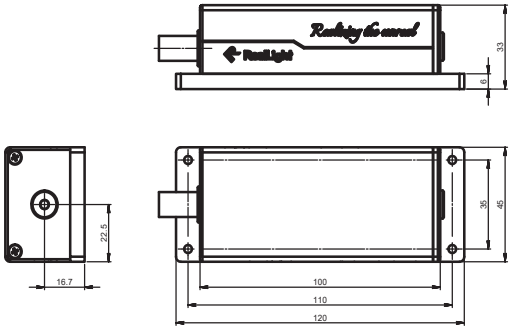


Beam Profile (532nm)

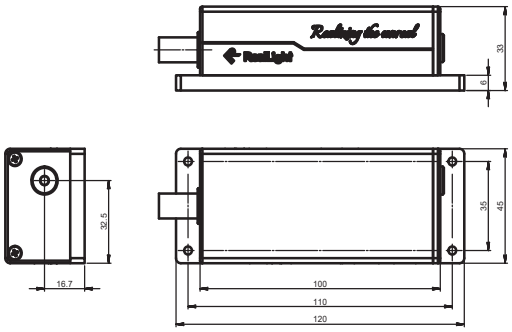


Typical Pluse

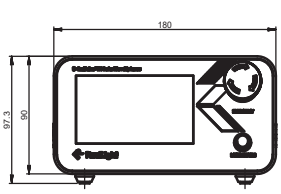
Mechanical Drawings (in mm)

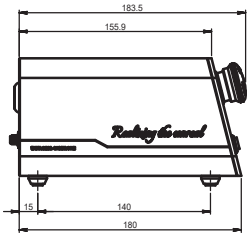


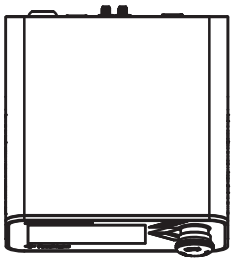
Laser Head (middle laser outlet)



Laser Head (side laser outlet)







Power Supply