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

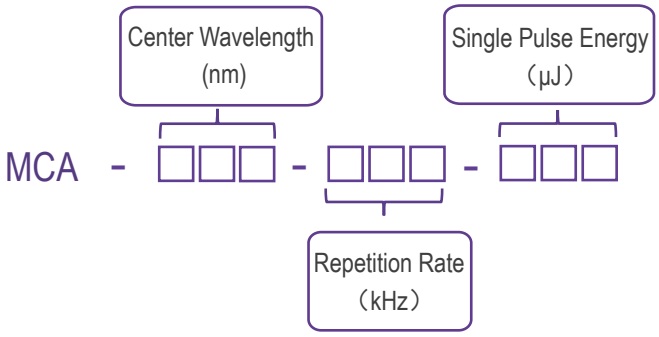
Optical Parameters																
Wavelength (nm)		1064				532				355				266			
Repetition rate (kHz)		1	5	10	20	1	5	10	20	1*	5*	10*	20*	1*	5*	10*	20*
Average power (mW)		120	300	400	400	60	150	150	200	30	50	50	60	10	40	30	40
Pulse energy (μJ)		120	60	40	20	60	30	15	10	30	10	5	3	10	8	3	2
Pulse width (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)		168×88×140															
Laser dimensions (W×H×L,mm)		45×33×120															
Operation temperature (℃)		15~35															
Storage temperature (℃)		0~60															

*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!

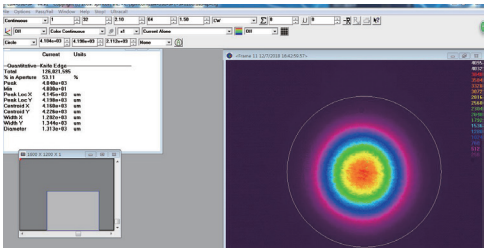
Order Information

Wavelength (nm)	Part Number	Repetition rate (kHz)	Pulse energy (μJ)
1064	MCA-1064-1-120	1	120
	MCA-1064-5-060	5	60
	MCA-1064-10-040	10	40
	MCA-1064-20-020	20	20
532	MCA-532-1-060	1	60
	MCA-532-5-030	5	30
	MCA-532-10-015	10	15
	MCA-532-20-010	20	10
355	MCA-355-1-030	1	30
	MCA-355-5-010	5	10
	MCA-355-10-005	10	5
	MCA-355-20-003	20	3
266	MCA-266-1-010	1	10
	MCA-266-5-008	5	8
	MCA-266-10-003	10	3
	MCA-266-20-002	20	2

Part Numbering Schema

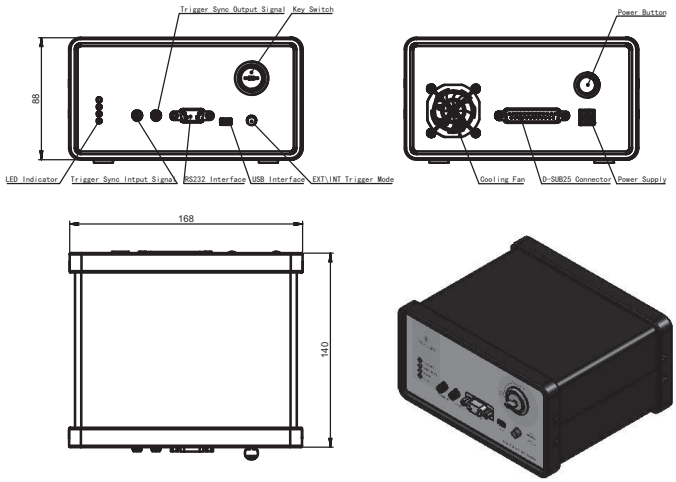


Typical Pluse

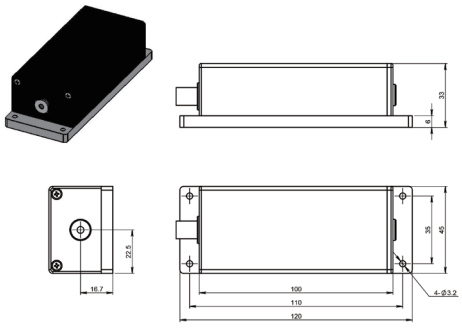


Beam Profile

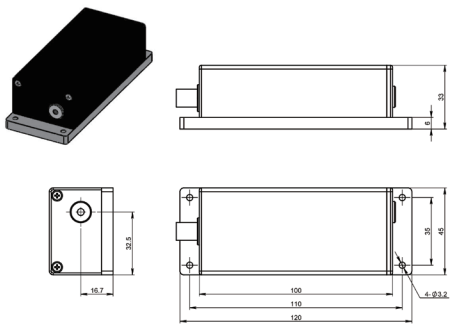
Mechanical Drawings (in mm)



Power Supply



Laser Head (middle laser outlet)



Laser Head (side laser outlet)