



Electro Optical Components, Inc.

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MCC Series 750ps Microchip Laser



Key Features

- ◆ Pulse width down to 550ps
- ◆ Single pulse energy up to 120μJ
- ◆ Repetition rate up to 10kHz
- ◆ Spatial mode TEM₀₀
- ◆ Polarization-stable

Applications

- Seed laser
- Micromachining
- Pump source for optical parametric oscillators
- Laser-induced breakdown spectroscopy (LIBS)
- Laser-based ultrasound detection
- Laser ionization mass spectroscopy (LIMS)
- Laser ranging
- Laser-induced fluorescence (LIF)
- Laser ultrasonic imaging

Technical Specifications

| Optical Parameters | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------------|------------------------------|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Wavelength (nm) | 1064 | | | | 532 | | | | 355 | | | | 266 | | | | 213 | | | | |
| Repetition rate (kHz) | 1 | 1 | 5 | 10 | 1 | 1 | 5 | 10 | 0.2* | 1* | 1* | 5* | 10* | 1* | 1* | 5* | 10* | 1* | 1* | 5* | 10* |
| Average power (mW) | 120 | 80 | 350 | 300 | 60 | 40 | 175 | 150 | 6 | 20 | 15 | 50 | 60 | 12 | 8 | 35 | 30 | 4 | 3 | 10 | 10 |
| Pulse energy (μJ) | 120 | 80 | 70 | 30 | 60 | 40 | 35 | 15 | 30 | 20 | 15 | 10 | 6 | 12 | 8 | 7 | 3 | 4 | 3 | 2 | 1 |
| Pulse width (ps) | 650 | | 750 | | 600 | | 700 | | 550 | | 650 | | 550 | | 600 | | 550 | | 600 | | |
| Power stability (8h) | ±3% | | | | | | | | | | | | | | | | | | | | |
| Beam profile | TEM ₀₀ | | | | | | | | | | | | | | | | | | | | |
| Full angle divergence Typ. (mrad) | Horizontal @1/e ² | | ≤8 | | ≤10 | | ≤6 | | ≤5 | | ≤4 | | ≤4 | | ≤4 | | ≤4 | | ≤4 | | |
| | Vertical @1/e ² | | ≤8 | | ≤10 | | ≤6 | | ≤5 | | ≤4 | | ≤4 | | ≤4 | | ≤4 | | ≤4 | | |
| Polarization | >100:1 | | | | | | | | | | | | | | | | | | | | |
| System Parameters | | | | | | | | | | | | | | | | | | | | | |
| Supply power voltage | 100-240 VAC, 50/60 Hz | | | | | | | | | | | | | | | | | | | | |
| Modulation input | TTL 0-5V, SMA input | | | | | | | | | | | | | | | | | | | | |
| Control interface | RS232, USB | | | | | | | | | | | | | | | | | | | | |
| Power consumption (W) | ≤25 | ≤25 | ≤20 | ≤30 | ≤25 | ≤25 | ≤30 | ≤35 | ≤25 | ≤25 | ≤25 | ≤25 | ≤30 | ≤25 | ≤25 | ≤30 | ≤30 | ≤25 | ≤25 | ≤30 | ≤30 |
| Power dimensions (W×H×L,mm) | 168×88×140/168×88×220* | | | | | | | | | | | | | | | | | | | | |
| Laser head dimensions (W×H×L,mm) | 45×30×120 | | | | | | | | | | | | | | | | | | | | |
| Operation temperature (°C) | 15-35 | | | | | | | | | | | | | | | | | | | | |
| Storage temperature (°C) | 0-60 | | | | | | | | | | | | | | | | | | | | |

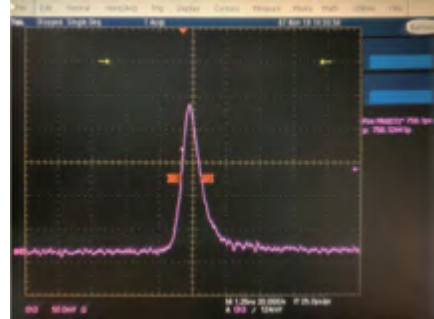
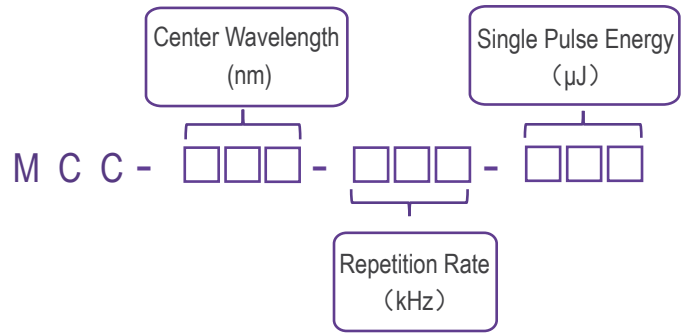
*1. Laser head features side laser outlet, please see mechanical drawings for more details.

2. Built-in beam expander and collimator are available upon request, and divergence can be less than 2mrad.

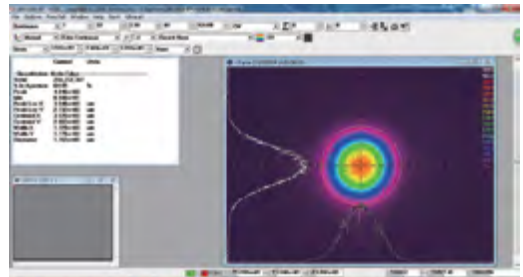
Order Information

| Wavelength (nm) | Part Number | Repetition rate (kHz) | Pulse energy (μJ) |
|-----------------|-----------------|-----------------------|--------------------------------|
| 1064 | MCC-1064-1-120 | 1 | 120 |
| | MCC-1064-1-080 | 1 | 80 |
| | MCC-1064-5-070 | 5 | 70 |
| | MCC-1064-10-030 | 10 | 30 |
| 532 | MCC-532-1-060 | 1 | 60 |
| | MCC-532-1-040 | 1 | 40 |
| | MCC-532-5-035 | 5 | 35 |
| | MCC-532-10-015 | 10 | 15 |
| 355 | MCC-355-0.2-030 | 0.2 | 30 |
| | MCC-355-1-020 | 1 | 20 |
| | MCC-355-1-015 | 1 | 15 |
| | MCC-355-5-010 | 5 | 10 |
| 266 | MCC-266-1-012 | 1 | 12 |
| | MCC-266-1-008 | 1 | 8 |
| | MCC-266-5-007 | 5 | 7 |
| | MCC-266-10-003 | 10 | 3 |
| 213 | MCC-213-1-004 | 1 | 4 |
| | MCC-213-1-003 | 1 | 3 |
| | MCC-213-5-002 | 5 | 2 |
| | MCC-213-10-001 | 10 | 1 |

Part Numbering Schema

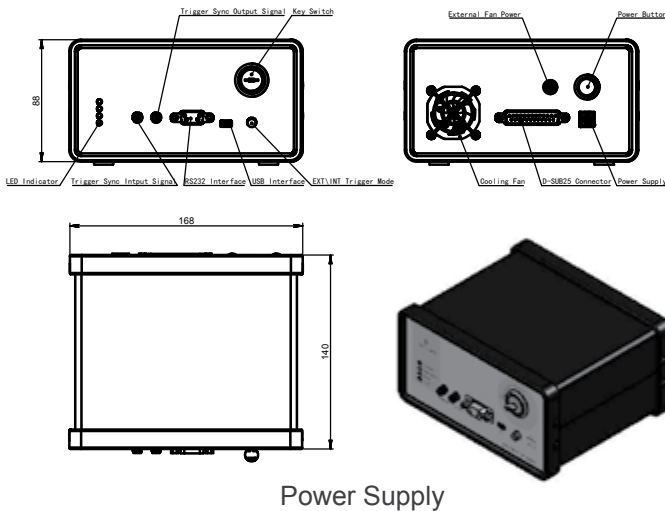


Typical Pulse

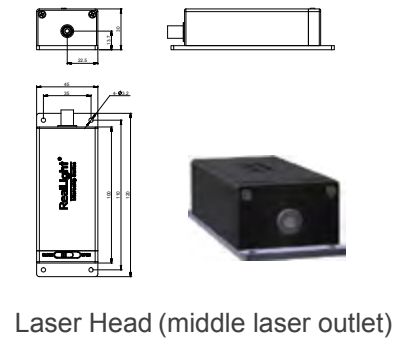
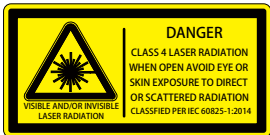


Beam Profile

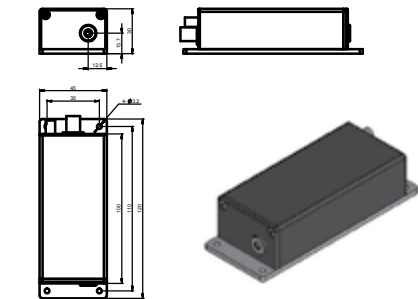
Mechanical Drawings (in mm)



Power Supply



Laser Head (middle laser outlet)



Laser Head (side laser outlet)