

MNx Ultra-Compact Microchip Series

Key features

- ▶ Ultra-compact package
- ▶ 1535nm, 1064nm and 532nm
- ▶ Ultra-short pulses down to 650ps
- ▶ Multi-kW peak power
- ▶ Excellent beam quality – TEM00, $M^2 < 1.1$
- ▶ Efficient, air-cooled



The MNx series are our most compact microchip lasers and cover the mid-IR to visible part of the spectrum. They integrate the pump diode, the micro-cavity and even the second harmonic generation crystal in a package less than 7cm long.

The 1064nm engine produces sub-nanosecond pulses with several kW peak power, achieving over 50% second harmonic generation efficiency at 532nm. The 1535nm micro-laser displays similar performances with a few nanoseconds pulse duration.

Applications

- ▶ Super-continuum generation
- ▶ Marking
- ▶ Raman spectrometry
- ▶ Ranging

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Technical specifications:

| | MNE-06E-100 | MNP-08E-100 | MNG-03E-100 |
|---|--------------------|--------------------|--------------------|
| Wavelength | 1535nm | 1064nm | 532nm |
| Repetition Rate | >2kHz | >5kHz | >5kHz |
| Constant Pulse width range (FWHM) ⁽¹⁾ | <3.5ns | <1ns | <0.75ns |
| Output power⁽²⁾ | >12mW | >40mW | >15mW |
| Output energy | >6μJ | >8μJ | >3μJ |
| Peak Power | >1.5kW | >8kW | >4kW |
| Short term (1min) power stability ⁽³⁾ | <±1% | <±1% | <±1% |
| Long term (6 hrs) power stability⁽³⁾ | <±5% | <±3% | <±3% |
| Beam profile | Gaussian TEM00 | Gaussian TEM00 | Gaussian TEM00 |
| Full angle divergence | | | |
| Horizontal@1/e² | 23±3.4 mrad | 12±2 mrad | 10±2 mrad |
| Vertical@1/e² | 23±3.6 mrad | 14±2 mrad | 9±2 mrad |
| M²⁽⁴⁾ | <1.3 | <1.3 | <1.3 |
| Beam ellipticity⁽⁵⁾ | <1.2 | <1.3 | <1.3 |
| Polarization | Linear PER>20dB | Linear PER>20dB | Linear PER>20dB |
| Package dimensions | 100x22x32mm | 68x41x29mm | 68x41x29mm |
| Package weight | 250g | 250g | 250g |
| Options (table p3) | - | M | - |

Notes

- (1)** Measured with 1Ghz photodiode and 1GHz/10GS/s oscilloscope.
- (2)** Measurement performed with an OPHIR thermal power sensor (OPHIR 3A-FS-SH).
- (3)** For temperature variation < ± 3°C and < 3°C/hour, stability is measured with calorimeter - detector band [DC, 2Hz]
- (4)** Mean average value $M = \sqrt{XY}$, X and Y being respectively the major and minor axis of the ellipse
- (5)** Beam ellipticity is calculated as the ratio of the main axis far field divergence

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Complementary information & options:

Environment Parameters

| | |
|--|--------|
| Operating Temperature Range | 0-50°C |
| Maximum Laser Head Baseplate Temperature | <50°C |
| Maximum Power Consumption | <40W |
| Laser Head Thermal Dissipation | <10W |
| Storage Temperature | 0-50°C |
| Shock of 11ms according to IEC 68-2-27, non operating | 25g |
| Vibration 5Hz to 500Hz sinusoidal according to IEC 68-2-6 | 2g |

Certification

| | |
|---|--|
| Laser classification according to IEC 60825-1:2007 | 3R for MNE-06E 3B MNP-08E and MNG-03E |
| CDRH | Yes, if used with a -DR1 controller |
| ROHs | Yes |

Options

| | |
|-------------------------------|----------------------------------|
| Multimode fibering (M) | Contact factory for availability |
|-------------------------------|----------------------------------|

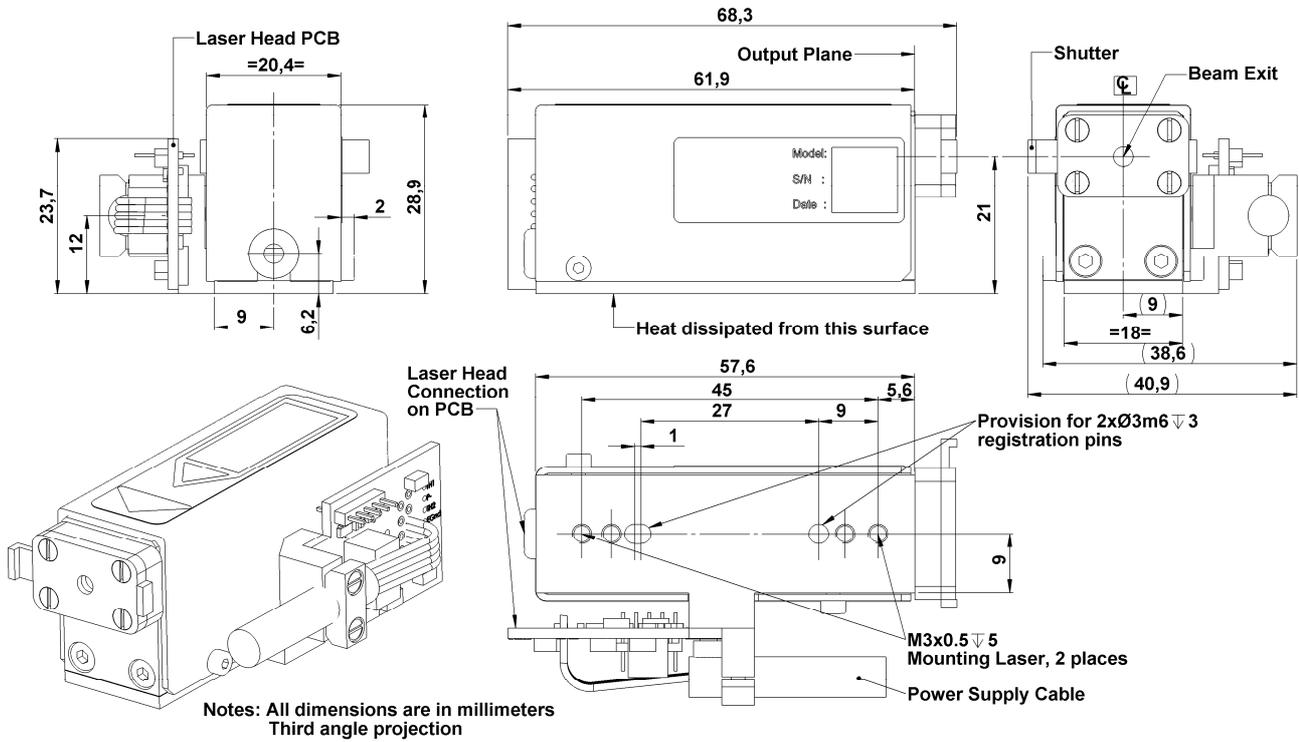
Available Controller Types

| Model | Type | Input Power | CDRH |
|--------------|-------------|--------------------|-------------|
| MLC-03A-DR1 | Desktop | 100-240 V AC | Yes |
| MLC-03A-MR1 | Module | 12 V DC | No |
| MLC-03A-BR1 | Board | 12 V DC | No |

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CDRH Laser Head Mechanical Drawings : MNP-08E-100, MNG-03E-100



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CDRH Laser Head Mechanical Drawings : MNE-06E-100

NOTES: All dimensions are in millimeters
Third Angle Projection

