

**MSL-FN series**



**SINGLE LONGITUDINAL MODE LASER**

All solid state single longitudinal mode laser is made features of ultra compact, long lifetime, low cost and easy operating, which is used in DNA sequencing, flow cytometry, cell sorting, optical instrument, spectrum analysis, interference, measurement, holography, physics experiment, etc.



**SPECIFICATIONS**

|                                                       |                                               |                                                 |                   |
|-------------------------------------------------------|-----------------------------------------------|-------------------------------------------------|-------------------|
| Wavelength (nm)                                       | 360±1                                         | 457±1                                           | 473±1             |
| Output power (mW)                                     | 1-50                                          | 1-350                                           | 1-100             |
| Power stability (rms, over 4 hours)                   | <1%, <2%, <3%                                 | <2%, <3%, <5%                                   | <2%, <3%, <5%     |
| Transverse mode                                       | TEM <sub>00</sub>                             | Near TEM <sub>00</sub>                          | TEM <sub>00</sub> |
| Longitudinal mode                                     | Single                                        |                                                 |                   |
| Operating mode                                        | CW                                            |                                                 |                   |
| Spectral line width (nm)                              | <0.00001                                      |                                                 |                   |
| Coherent length (m)                                   | >50                                           |                                                 |                   |
| Noise of amplitude (rms, 1Hz~20MHz)                   | <0.5%, <1%                                    | <0.5%, <1%                                      |                   |
| M <sup>2</sup> factor                                 | <1.5                                          | <1.2                                            |                   |
| Beam diameter at the aperture (1/e <sup>2</sup> , mm) | <1.2                                          | <2.0                                            |                   |
| Beam divergence, full angle (mrad)                    | <1.0                                          | <1.2                                            |                   |
| Polarization Ratio                                    | >50:1 Horizontal±5 degree (Vertical Optional) | >100:1, Horizontal±5 degree (Vertical Optional) |                   |
| Warm-up time (minutes)                                | <10                                           |                                                 |                   |
| Pointing stability after warm-up (mrad)               | <0.05                                         |                                                 |                   |
| Beam height from base plate (mm)                      | 27.4                                          |                                                 |                   |
| Laser head consumption(W)                             | 15 (typical) , <25 (40°C)                     |                                                 |                   |
| Max. Laser Head Base plate Temp (°C)                  | 50                                            |                                                 |                   |
| Operating Temperature (°C)                            | 10-40                                         |                                                 |                   |
| Power supply (90-264VAC)                              | PSU-H-FDA                                     |                                                 |                   |
| Expected lifetime (hours)                             | 10000                                         |                                                 |                   |
| Warranty                                              | 1 year                                        |                                                 |                   |

**Note: The laser head needs to be used on a heat sink with good heat dissipation.**

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**SPECIFICATIONS**

|                                                       |                                                 |               |               |                                  |          |
|-------------------------------------------------------|-------------------------------------------------|---------------|---------------|----------------------------------|----------|
| Wavelength (nm)                                       | 522±1                                           | 523.5±1       | 526.5±1       | 532±1                            |          |
| Output power (mW)                                     | 1-100                                           | 1-100         | 1-100         | 100-200                          | 200-400  |
| Power stability (rms, over 4 hours)                   | <1%, <2%, <3%                                   | <1%, <2%, <3% | <1%, <2%, <3% | <1%, <2%, <3%<br>(0.5% Optional) | <2%, <3% |
| Transverse mode                                       | TEM <sub>00</sub>                               |               |               |                                  |          |
| Longitudinal mode                                     | Single                                          |               |               |                                  |          |
| Operating mode                                        | CW                                              |               |               |                                  |          |
| Spectral line width (nm)                              | <0.00001                                        |               |               |                                  |          |
| Coherent length (m)                                   | >50                                             |               |               |                                  |          |
| Noise of amplitude (rms, 1Hz~20MHz)                   | <1%                                             |               | <1%           | <0.5% (0.25% Optional)           |          |
| M <sup>2</sup> factor                                 | <1.5                                            | <1.2          |               | <1.2 (<1.1 Optional)             |          |
| Beam diameter at the aperture (1/e <sup>2</sup> , mm) | ~2.0                                            | <1.5          |               |                                  |          |
| Beam divergence, full angle (mrad)                    | <1.5                                            | <1.2          |               |                                  |          |
| Polarization Ratio                                    | >100:1, Horizontal±5 degree (Vertical Optional) |               |               |                                  |          |
| Warm-up time (minutes)                                | <10                                             |               |               |                                  |          |
| Pointing stability after warm-up (mrad)               | <0.05                                           |               |               |                                  |          |
| Beam height from base plate (mm)                      | 27.4                                            |               |               |                                  |          |
| Laser head consumption(W)                             | 15 (typical), <25 (40°C)                        |               |               |                                  |          |
| Max. Laser Head Base plate Temp (°C)                  | 50                                              |               |               |                                  |          |
| Operating Temperature (°C)                            | 10-40                                           |               |               |                                  |          |
| Power supply (90-264VAC)                              | PSU-H-FDA                                       |               |               |                                  |          |
| Expected lifetime (hours)                             | 10000                                           |               |               |                                  |          |
| Warranty                                              | 1 year                                          |               |               |                                  |          |

**Note: The laser head needs to be used on a heat sink with good heat dissipation.**



**SPECIFICATIONS**

|                                                       |                                                 |                        |                    |                    |
|-------------------------------------------------------|-------------------------------------------------|------------------------|--------------------|--------------------|
| Wavelength (nm)                                       | 543±1                                           | 552±1                  | 556±1              | 561±1              |
| Output power (mW)                                     | 1-100                                           | 1-100                  | 1-100              | 1-150              |
| Power stability (rms, over 4 hours)                   | <1%, <2%, <3%                                   | <2%, <3%, <5%          | <1%, <2%, <3%, <5% | <1%, <2%, <3%, <5% |
| Transverse mode                                       | TEM <sub>00</sub>                               | Near TEM <sub>00</sub> | TEM <sub>00</sub>  |                    |
| Longitudinal mode                                     | Single                                          |                        |                    |                    |
| Operating mode                                        | CW                                              |                        |                    |                    |
| Spectral line width (nm)                              | <0.00001                                        |                        |                    |                    |
| Coherent length (m)                                   | >50                                             |                        |                    |                    |
| Noise of amplitude (rms, 1Hz~20MHz)                   | <1%                                             |                        | <0.5%, <1%         |                    |
| M <sup>2</sup> factor                                 | <1.2                                            | <1.2 (<1.1 Optional)   |                    | <1.2               |
| Beam diameter at the aperture (1/e <sup>2</sup> , mm) | <1.5                                            |                        | <2.0               |                    |
| Beam divergence, full angle (mrad)                    | <1.2                                            |                        | <1.2               |                    |
| Polarization Ratio                                    | >100:1, Horizontal±5 degree (Vertical Optional) |                        |                    |                    |
| Warm-up time (minutes)                                | <10                                             |                        |                    |                    |
| Pointing stability after warm-up (mrad)               | <0.05                                           |                        |                    |                    |
| Beam height from base plate (mm)                      | 27.4                                            |                        |                    |                    |
| Laser head consumption(W)                             | 15 (typical) , <25 (40°C)                       |                        |                    |                    |
| Max. Laser Head Base plate Temp (°C)                  | 50                                              |                        |                    |                    |
| Operating Temperature (°C)                            | 10-40                                           |                        |                    |                    |
| Power supply (90-264VAC)                              | PSU-H-FDA                                       |                        |                    |                    |
| Expected lifetime (hours)                             | 10000                                           |                        |                    |                    |
| Warranty                                              | 1 year                                          |                        |                    |                    |

**Note: The laser head needs to be used on a heat sink with good heat dissipation.**



**SPECIFICATIONS**

|                                                       |                                                 |          |               |               |                      |
|-------------------------------------------------------|-------------------------------------------------|----------|---------------|---------------|----------------------|
| Wavelength (nm)                                       | 588±2                                           | 589±1    |               | 607±1         | 639±1                |
| Output power (mW)                                     | 1-200                                           | 1-100    | 100-200       | 1-100         | 1-300                |
| Power stability (rms, over 4 hours)                   | <3%, <5%, <10%                                  | <2%, <3% | <2%, <3%, <5% | <1%, <2%, <3% | <1%, <2%, <3%        |
| Transverse mode                                       | TEM <sub>00</sub>                               |          |               |               |                      |
| Longitudinal mode                                     | Single                                          |          |               |               |                      |
| Operating mode                                        | CW                                              |          |               |               |                      |
| Spectral line width (nm)                              | <0.00001                                        |          |               |               |                      |
| Coherent length (m)                                   | >50                                             |          |               |               |                      |
| Noise of amplitude (rms, 1Hz~20MHz)                   | <0.5%, <1%                                      |          |               | <1%           | <0.5%, <1%           |
| M <sup>2</sup> factor                                 | <1.2                                            |          |               |               | <1.2 (<1.1 Optional) |
| Beam diameter at the aperture (1/e <sup>2</sup> , mm) | <2.5                                            |          |               | <1.5          |                      |
| Beam divergence, full angle (mrad)                    | <1.2                                            |          |               |               | <1.5                 |
| Polarization Ratio                                    | >100:1, Horizontal±5 degree (Vertical Optional) |          |               |               |                      |
| Warm-up time (minutes)                                | <10                                             |          |               |               |                      |
| Pointing stability after warm-up (mrad)               | <0.05                                           |          |               |               | 6 μ mrad/°C          |
| Beam height from base plate (mm)                      | 27.4                                            |          |               |               |                      |
| Laser head consumption(W)                             | 15 (typical) , <25 (40°C)                       |          |               |               |                      |
| Max. Laser Head Base plate Temp (°C)                  | 50                                              |          |               |               |                      |
| Operating Temperature (°C)                            | 10-40                                           |          |               |               |                      |
| Power supply (90-264VAC)                              | PSU-H-FDA                                       |          |               |               |                      |
| Expected lifetime (hours)                             | 10000                                           |          |               |               |                      |
| Warranty                                              | 1 year                                          |          |               |               |                      |

**Note: The laser head needs to be used on a heat sink with good heat dissipation.**



SPECIFICATIONS

|                                                       |                                                 |          |                      |
|-------------------------------------------------------|-------------------------------------------------|----------|----------------------|
| Wavelength (nm)                                       | 656.5±1                                         | 660±1    | 671±1                |
| Output power (mW)                                     | 1-50                                            | 1-20     | 300-500              |
| Power stability (rms, over 4 hours)                   | <1%, <3%, <5%                                   | <3%, <5% | <2%, <3%             |
| Transverse mode                                       | TEM <sub>00</sub>                               |          |                      |
| Longitudinal mode                                     | Single                                          |          |                      |
| Operating mode                                        | CW                                              |          |                      |
| Spectral line width (nm)                              | <0.00001                                        |          |                      |
| Coherent length (m)                                   | >50                                             |          |                      |
| Noise of amplitude (rms, 1Hz~20MHz)                   | <0.5%, <1%                                      |          |                      |
| M <sup>2</sup> factor                                 | <1.2                                            |          | <1.2                 |
| Beam diameter at the aperture (1/e <sup>2</sup> , mm) | <2.0                                            |          | <2.0 (<1.5 Optional) |
| Beam divergence, full angle (mrad)                    | <1.2                                            |          |                      |
| Polarization Ratio                                    | >100:1, Horizontal±5 degree (Vertical Optional) |          |                      |
| Warm-up time (minutes)                                | <10                                             |          |                      |
| Pointing stability after warm-up (mrad)               | <0.05                                           |          |                      |
| Beam height from base plate (mm)                      | 27.4                                            |          |                      |
| Laser head consumption(W)                             | 15 (typical) , <25 (40°C)                       |          |                      |
| Max. Laser Head Base plate Temp (°C)                  | 50                                              |          |                      |
| Operating Temperature (°C)                            | 10-40                                           |          |                      |
| Power supply (90-264VAC)                              | PSU-H-FDA                                       |          |                      |
| Expected lifetime (hours)                             | 10000                                           |          |                      |
| Warranty                                              | 1 year                                          |          |                      |

Note: The laser head needs to be used on a heat sink with good heat dissipation.



|                                                       |                                                 |          |                |
|-------------------------------------------------------|-------------------------------------------------|----------|----------------|
| Wavelength (nm)                                       | 698±1                                           | 721±1    |                |
| Output power (mW)                                     | 1-200                                           | 1-50     | 50-100         |
| Power stability (rms, over 4 hours)                   | <1%, <2%, <3%                                   | <3%, <5% | <3%, <5%, <10% |
| Transverse mode                                       | TEM <sub>00</sub>                               |          |                |
| Longitudinal mode                                     | Single                                          |          |                |
| Operating mode                                        | CW                                              |          |                |
| Spectral line width (nm)                              | <0.00001                                        |          |                |
| Coherent length (m)                                   | >10                                             | >50      |                |
| Noise of amplitude (rms, 1Hz~20MHz)                   | <0.5%, <1%                                      |          |                |
| M <sup>2</sup> factor                                 | <1.2(<1.1 optional)                             | <1.2     |                |
| Beam diameter at the aperture (1/e <sup>2</sup> , mm) | <1.5                                            |          |                |
| Beam divergence, full angle (mrad)                    | <1.5                                            | <1.2     |                |
| Polarization Ratio                                    | >100:1, Horizontal±5 degree (Vertical Optional) |          |                |
| Warm-up time (minutes)                                | <10                                             |          |                |
| Pointing stability after warm-up (mrad)               | <0.05                                           |          |                |
| Beam height from base plate (mm)                      | 27.4                                            |          |                |
| Laser head consumption(W)                             | 15 (typical) , <25 (40°C)                       |          |                |
| Max. Laser Head Base plate Temp (°C)                  | 50                                              |          |                |
| Operating Temperature (°C)                            | 10-40                                           |          |                |
| Power supply (90-264VAC)                              | PSU-H-FDA                                       |          |                |
| Expected lifetime (hours)                             | 10000                                           |          |                |
| Warranty                                              | 1 year                                          |          |                |

**Note: The laser head needs to be used on a heat sink with good heat dissipation.**



| LASER HEAD                                       | LASER HEAD (MSL-FN-360)                          | POWER SUPPLY                                         |
|--------------------------------------------------|--------------------------------------------------|------------------------------------------------------|
| <p>197(L)×70(W)×50(H) mm<sup>3</sup>, 1.5 kg</p> | <p>197(L)×70(W)×50(H) mm<sup>3</sup>, 1.5 kg</p> | <p>275(L) ×145(W) ×104(H) mm<sup>3</sup>, 2.3 kg</p> |