



# Summary of Specifications

## ModuRay® Series of Linear Incremental Position Encoders

| model                                       | LT800                                | LT700   | LT500     | LT400         | comment                                   |
|---|--------------------------------------|---------|-----------|---------------|---|
| <b>Performance Data and Typical Values</b>  |                                      |         |           |               |   |
| Interpolation Error                         | <1nm                                 |         | <3nm      | <10nm         | measured over the 2µm optical pitch       |
| Jump Error                                  | <1nm                                 |         | <5nm      | <5nm          | measured over any 1mm segment             |
| Repeatability, 3σ                           | 100pm                                |         | 150pm     | 5nm           | measured 10,000 times, over 1 second      |
| Warm Up Drift                               | <40nm                                |         | <100nm    |               | 20 min. after power up, from a cold start |
| <b>Specifications</b>                       |                                      |         |           |               |   |
| Scale Accuracy at 20°C (after linear comp.) | 0.3µm/300mm                          |         | 1µm/400mm | 2+(5L/1000)µm | L is the useable length of the scale      |
| Resolution                                  | 3.8pm                                | 3.8pm   | 3.8pm     | 3.8pm         | Digital resolution                        |
| Maximum Speed                               | 500mm/s                              | 500mm/s | 500mm/s   | 500mm/s       |   |
| Maximum Acceleration                        | 30m/s <sup>2</sup>                   |         |           |               |   |
| Scale Length                                | 120-520mm                            |         | 120-480mm |               |   |
| Tc of Scale                                 | 0.47ppm                              | +3.3ppm | +8.5ppm   |               | per degree C                              |
| Index position accuracy                     | 0.1µm                                |         |           | NA            | 3σ  |
| Light Source                                | VCSEL 850nm (Class 1M laser product) |         |           |               | Max. output 5.7mW CW                      |

All specifications are believed to be accurate at the time of publication but are subject to change without notice.

All models are RoHS compliant.

IEC Class 1M laser product. All models comply with US FDA performance standards for laser products except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007.

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For more information, contact [info@nanowave.com](mailto:info@nanowave.com)

