

## MAR1500 | 1D MEMS LASER SCANNING MIRROR (1.5MM)

MAR1500 is a 1D, single-axis MEMS scanning mirror targeted for various laser steering applications.

The MAR1500 is based on Maradin's cutting edge MEMS technology. It has a powerful electro-magnetic actuator, along with on chip capacitive sensors, to enable a feedback controlled operation in various scanning patterns, such as: oscillations, ramp, point-to-point etc. The MAR1500 is designed to work with MAR2000 controller, to provide a high accuracy full scanning solution.

### FEATURES

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- A single axis mirror
- Various of scanning patterns
- Powerful electro-magnetic actuator
- A full, real time FOV control (size and location)
- High scanning accuracy

### APPLICATIONS

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SYSTEM CHARACTERISTICS

|         | Parameter                              | Min  | Typical Value         | Max  | Unit | Remarks   |
|---------|--|------|-----------------------|------|------|---|
| General | Optical angle                          |      | 30                    |      | Deg. |   |
|         | Pixel position error                   |      | 0.4                   |      | mRad | Scan regime dependent   |
|         | Scan Frequency Range                   | 1    |                       | 2300 | Hz   | Scan regime dependent   |
|         | Resonance frequency                    | 2000 | 2150                  | 2300 | Hz   |   |
|         | Mirror size                            |      | 1.37x1.59             |      | mm   | Along the rotational axis   |
|         | MEMS Scanning Module dimensions        |      | 10x5.5x4.6            |      | mm   | Length X Width X Height   |
|         | MEMS Scanning module power consumption |      | 70                    |      | mW   | RMS; Scan regime dependent  |
|         | Package                                |      | Plastic, Non-Hermetic |      |      | Optional: Ceramic, Hermetic   |
| Optical | Mirror flatness                        |      | 150                   | 300  | nm   |   |
|         | Mirror reflectance                     | 90   |                       | 93   | %    | Aluminum coating; Coating could be adjusted to achieve higher reflectance |
|         | Overall reflectance                    | 84   | 85                    | 86   | %    | Mirror and Optical window   |
|         | Wave length range for reflection       | 440  |                       | 9000 | nm   | Optical window coating dependent  |
|         | laser max spot size                    |      |                       | 1.15 | mm   | @1/e <sup>2</sup>   |
|         | Laser max Power                        |      |                       | 2    | W    |   |

## OPTO-MECHANICAL INTERFACE

### Scanning module

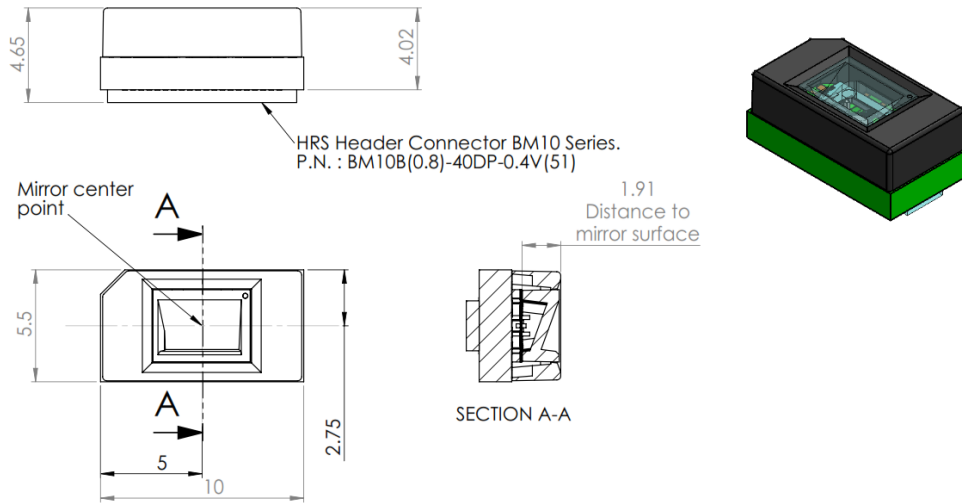


Figure 1: Scanning Head Module General View

### Scanning module electrical connection

The scanning module should be connected to the control board by a specified flat printed cable having a receptacle 40pin connector BM10NB (0.8)-40DS-0.4V (51).

## IMPORTANT NOTE

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