



Model OIM101 features a removable submount which holds an industry standard 1" x 0.25" or 6mm glass mirror substrate with a customer specified reflective coating.

A built in high precision optical sensor monitors mirror angle. The compact optical head is attached to a servo controller using a supplied 6 foot cable. The user inputs analog mirror command to the controller to steer the mirror.

FEATURES:

- Flexure suspension allows stiction free motion of the mirror with an infinite fatigue lifetime
- Built in optical sensor allows the user to monitor both axes of mirror motion
- Moving magnet design allows coils to be heat sunk to the mirror base structure
- New coil design eliminates coil overheating problems, no need to monitor coil temperature
- Uses industry standard 1" x 0.25" (or 1" x 6mm) glass mirrors
- Mirror coating to customer requirements
- Mirror mounted into sub-mount using low out-gassing RTV
- Additional sub-mount available for user installation of mirror
- Wave-front quality 1/10th wave p-v (depends on mirror substrate)
- Useable aperture 0.94"

Mirror Specifications

| Specification | Typical | Units |
|--|----------------------------|--------------|
| Dynamic Performance | | |
| Mirror Angular Range (mechanical) | +/- 1.5 | degrees |
| Angular resolution | <2 | urads |
| 3dB Bandwidth (user adjustable, factory set for 550Hz) | > 850 | Hz |
| Linearity | 1% | % Full Scale |
| Step Response (1 mrad step) | <5 | ms |
| Mirror Substrate | | |
| Material | Fused Silica | |
| Mirror substrate size | 1" x .25" or 25.4mm x 6 mm | |
| Coating | Protected Aluminum | |
| Reflectivity | >85% from 400 – 700nm | |
| Wavefront quality | $\lambda/10$ @ 633nm | waves |
| Clear Aperture | 0.94 | inches |
| Electrical | | |
| Peak power | 30 | Watts |
| Mechanical | | |
| Mirror head size | 2.3 X 2.3 X 2.2 | inches |
| Weight, no foot | 8.8 | oz |
| Weight with foot | 12.2 | oz |
| Controller size | 2.0 X 4.0 X 6.1 | inches |
| Weight | 21 | oz |
| Head to Controller Cable Weight | 8.0 | oz |

Pricing

| | | |
|--|--------|--------|
| Complete mirror system (mirror head, controller, cables, and power supply) Includes: Fast Steering Mirror Head Protected aluminum or gold mirror substrate* Analog Servo Controller 6 foot cable FSM to Controller Table top power supply | OIM101 | \$3900 |
|--|--------|--------|

* Contact Optics In Motion to obtain a price for other mirror coatings (protected silver, multilayer ...).

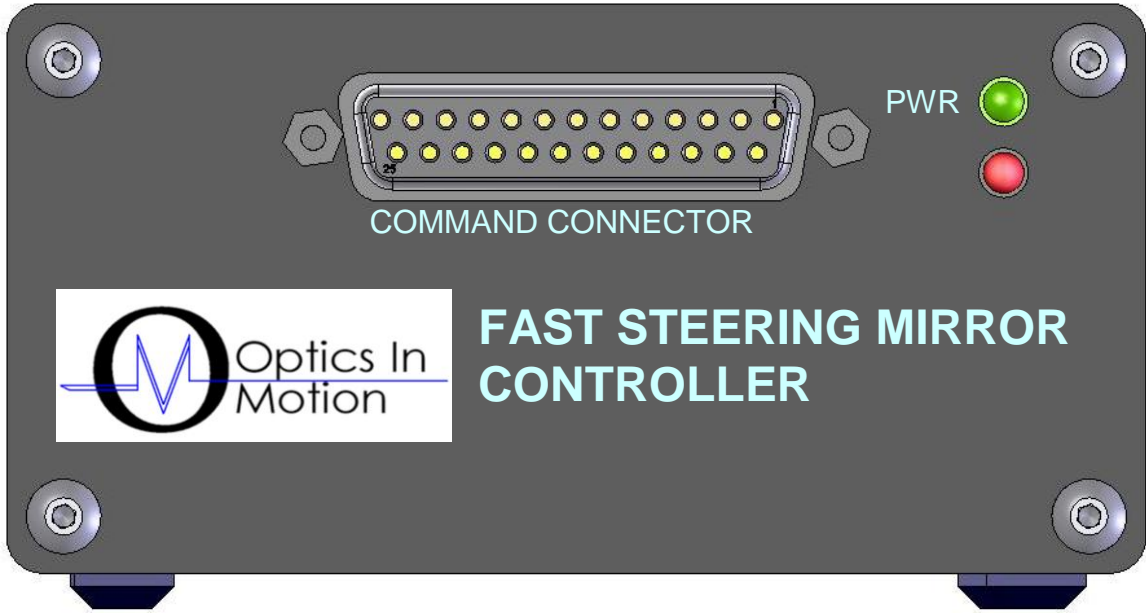


Figure 1: Controller Front View

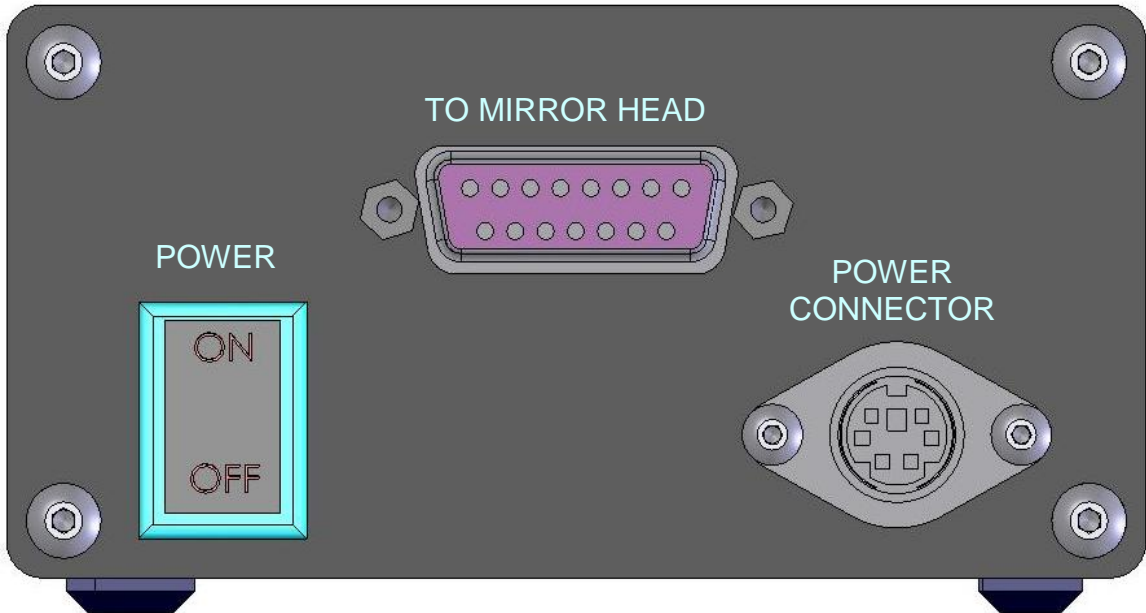
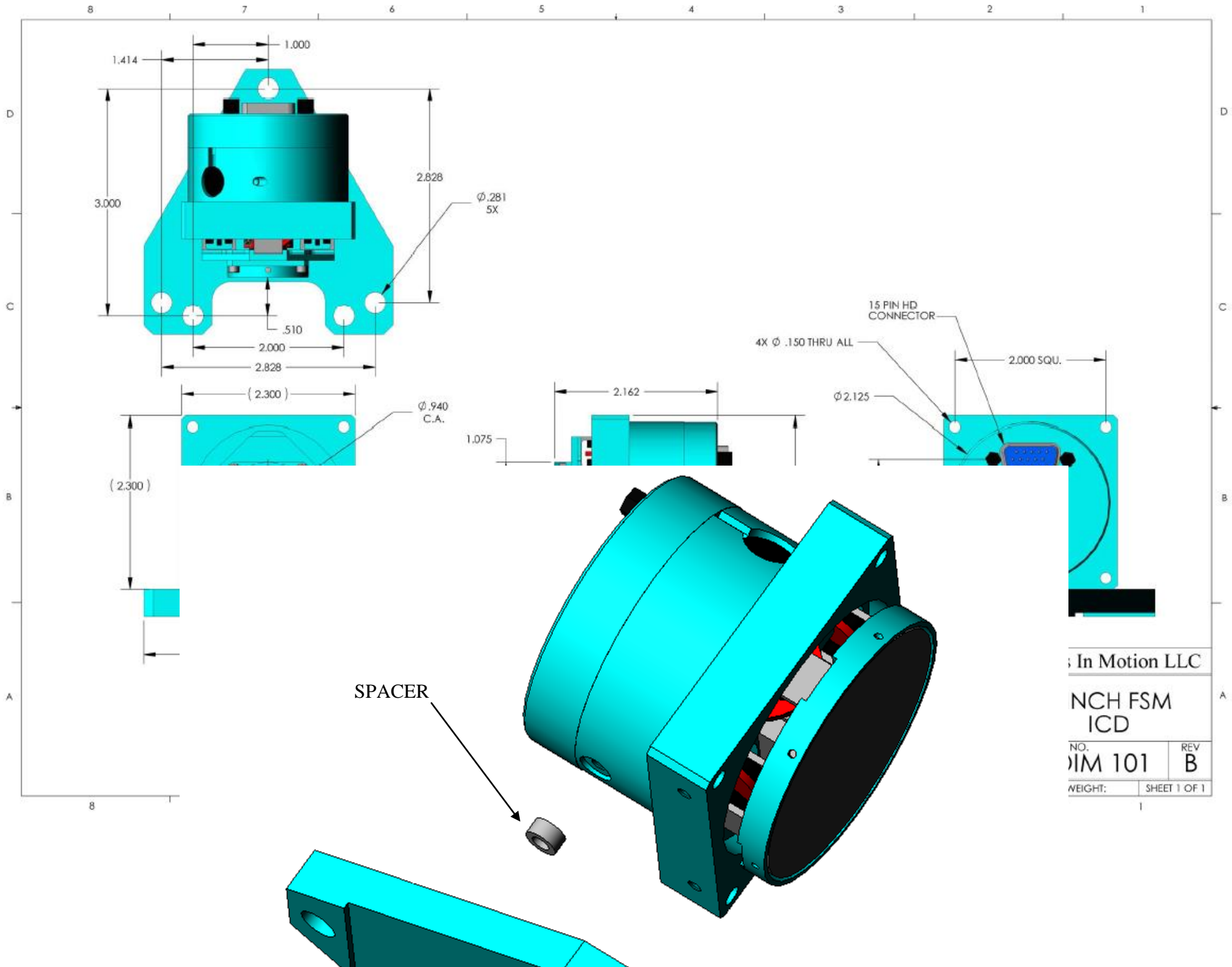


Figure 2: Controller Rear View



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| | |
|----------------|--------------|
| NO. DIM 101 | REV B |
| WEIGHT: | SHEET 1 OF 1 |

**OIM100 SERIES MIRROR, FOOT
INSTALLATION/REMOVAL**

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Command Connector Wiring Table

25-Socket Sub-miniature D Connector

| Pin Number | Signal Name | I/O Type | Description |
|------------|----------------|----------|--|
| 1 | X ERROR | Output | X summing junction error voltage output, difference between commanded and actual position. (referenced to ground) |
| 2 | INT/EXT SWITCH | Input | Normally low TTL input. High level switches the position feedback input from local to external. (used with input pins 10,11 and 17, 5) |
| 3 | X- COMMAND | Input | X mirror position command. Low side of differential command input. Range +/-10 Volts. |
| 4 | X+ COMMAND | Input | X mirror position command. High side of differential command input. Range +/-10 Volts. |
| 5 | X- EXTERNAL | Input | X external mirror position. Low side of differential position input (from external quad or similar position sensor) |
| 6 | GND | Output | Ground Reference |
| 7 | -15 VOLTS | Output | -15 VDC for external loads of less than 100ma. |
| 8 | RESERVED | | |
| 9 | N/C | | |
| 10 | Y+ EXTERNAL | Input | Y external mirror position. High side of differential position input (from external quad or similar position sensor) |
| 11 | Y- EXTERNAL | Input | Y external mirror position. Low side of differential position input (from external quad or similar position sensor) |
| 12 | Y- COMMAND | Input | Y mirror position command. Low side of differential command input. Range +/-10 Volts. |
| 13 | Y+ COMMAND | Input | Y mirror position command. High side of differential command input. Range +/-10 Volts. |
| 14 | X POSITION | Output | X mirror angular position readout from local position sensor. (referenced to ground) |
| 15 | +5 VOLTS | Output | 5 VDC for external loads of less than 100ma. |
| 16 | GND | Output | Ground Reference |
| 17 | X+ EXTERNAL | Input | X external mirror position Low side of differential position input (from external quad or similar position sensor) |
| 18 | RESERVED | | |
| 19 | +15 VOLTS | Output | +15 VDC for external loads of less than 100ma. |
| 20 | GND | Output | Ground Reference |
| 21 | RESERVED | | |
| 22 | GND | Output | Ground Reference |
| 23 | Y POSITION | Output | Y mirror angular position readout from local position sensor. (referenced to ground) |
| 24 | Y ERROR | Output | Y summing junction error voltage output, difference between commanded and actual position. (referenced to ground) |
| 25 | RESERVED | | |