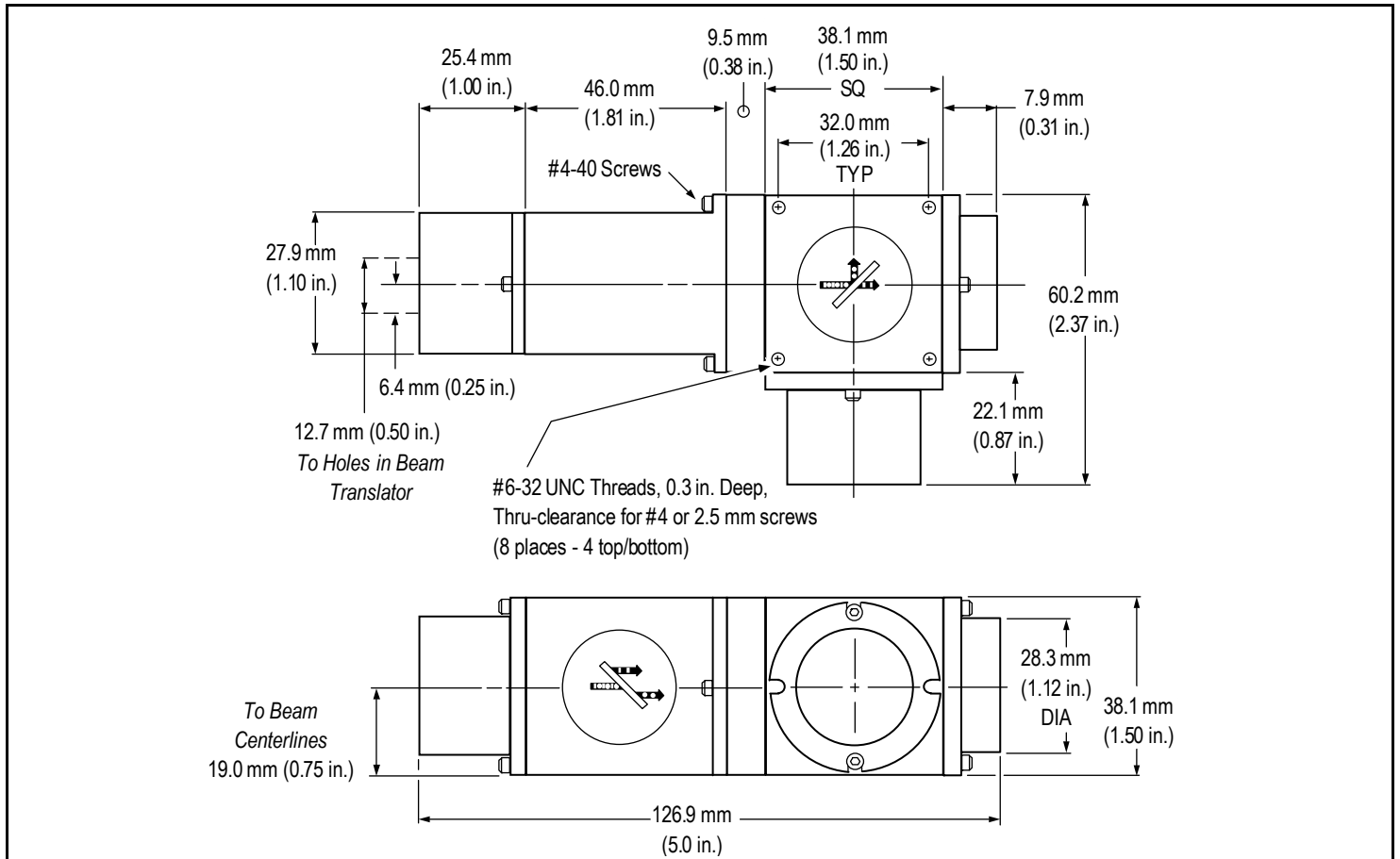
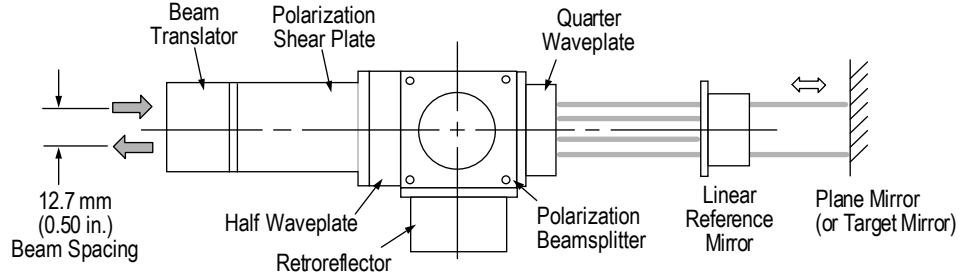


# ZMI Differential Plane Mirror Interferometer (DPMI)

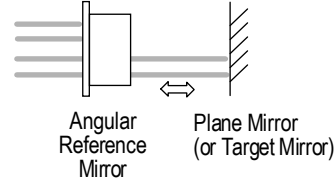
| P/N  | DESCRIPTION  | OPTICAL  |   |
|--|--|--|---|
| 6191-0188-02   | Differential plane mirror interferometer   | Linear displacement resolution (nominal)   | 0.31 nm (ZMI 2000)<br>0.15 nm (ZMI 4000)                                    |
| <b>PHYSICAL CHARACTERISTICS</b>                                  |  | Angular displacement resolution (nominal)  | 0.014 arc sec (ZMI 2000)<br>0.007 arc sec (ZMI 4000)                        |
| Dimensions   | See Figure   | Out-of-parallelism of transmitted beam to input beam   | ≤11 arc min   |
| Weight   | 528 grams (18.6 oz)  | Maximum error due to tolerances in polarizing optical elements                                     | ± 2 nm (0.08 μin)   |
| Materials  | Housing- magnetic stainless steel<br>Optics- BK7, crystalline quartz, Zerodur<br>Adhesives- vacuum grade, low volatility | Thermal drift coefficient (typical) (change of indicated distance per degree C temperature change) | < 0.01 micrometer/degree C<br>( < 0.4 microinch/degree C)                   |
| <b>COMPONENTS</b>  |  | Signal Efficiency  | >52% with plane mirror having 99% reflectance at 633 nm at normal incidence |
| Included   | Polarization Beamsplitter, Retroreflector, Quartz Waveplate, Half Waveplate, Beam Translator, Polarization Shear Plate   |  |   |
| Not Included   | Reference Plane Mirror, Target Plane Mirror, Fiber Optic Pickup  |  |   |
| Note: this interferometer does not perform optical differencing. |  |  |   |



## Measuring Linear Displacement



## Measuring Angular Displacement



## DPMI MIRRORS

| P/N          | DESCRIPTION                     |
|--------------|---------------------------------|
| 6191-0437-01 | Linear reference mirror         |
| 6191-0437-02 | Angular reference mirror        |
| 6191-0437-03 | Target mirror                   |
| 6191-0437-04 | Reverse linear reference mirror |
| 6191-0437-05 | Reverse target mirror           |

### PHYSICAL CHARACTERISTICS

|            |   |
|------------|---|
| Dimensions | See Figure  |
| Weight     | ≈42 grams (1.5 oz)  |
| Materials  | Housing- magnetic stainless steel<br>Optics- Zerodur<br>Adhesives- vacuum grade, low volatility |

### OPTICAL

|                             |      |
|-----------------------------|------|
| Signal Efficiency (typical) | >99% |
|-----------------------------|------|

