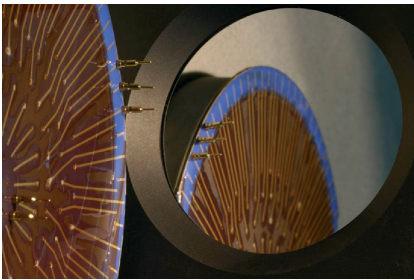


Astronomy and laser applications



Principle and advantages

The bimorph deformable mirror (DM) design is a symmetric assembly of two piezoelectric plates with two glass plate. The outside glass surface is polished and coated. Metallic electrodes are located between the two piezoelectric plates.

BIM mirrors have been pioneered by CILAS since the early 90s'. This is in many cases a good performance to cost solution for adaptive optic systems. Low temperature dependence, large aperture, low mass, scalability, and custom design of electrodes are among the advantages.

Applications

CILAS BIM deformable mirrors are mainly used for adaptive optic systems for two applications:

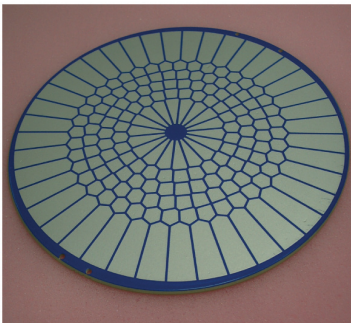
- atmospheric turbulence correction on astronomical telescopes. Examples: CFHT (3.6m telescope), VLTi (ESO), SUBARU / NAOJ (8m telescope)
- beam correction on large/high power laser facilities. Examples: LOA (France); DLR (Germany) .

The typical optical quality is 20nm rms wavefront error (BIM driven to flat).

The proposed optical coatings of the mirror depend on the application:

- wide band protected silver coatings for telescope applications,
- dedicated metallic and / or dielectric coatings for laser beams.

Electronic drivers with 32 and 64 channels are available with RS 232 numerical interface (USB or Ethernet on request).



Electrode design
for a BIM 188

Some Standard Products

| | BIM31 | BIM36 | BIM60-60 | BIM60-100 | BIM188 |
|-------------------------|-------|-------|----------|-----------|--------|
| Number of Electrodes | 31 | 36 | 60 | 60 | 188 |
| Global Curvature radius | 35 m | 20 m | 16 m | 30 m | 14 m |
| Optical Aperture | 50 mm | 62 mm | 60 mm | 100 mm | 90 mm |

Quotation upon your specifications – Contact: optics@cilas.com