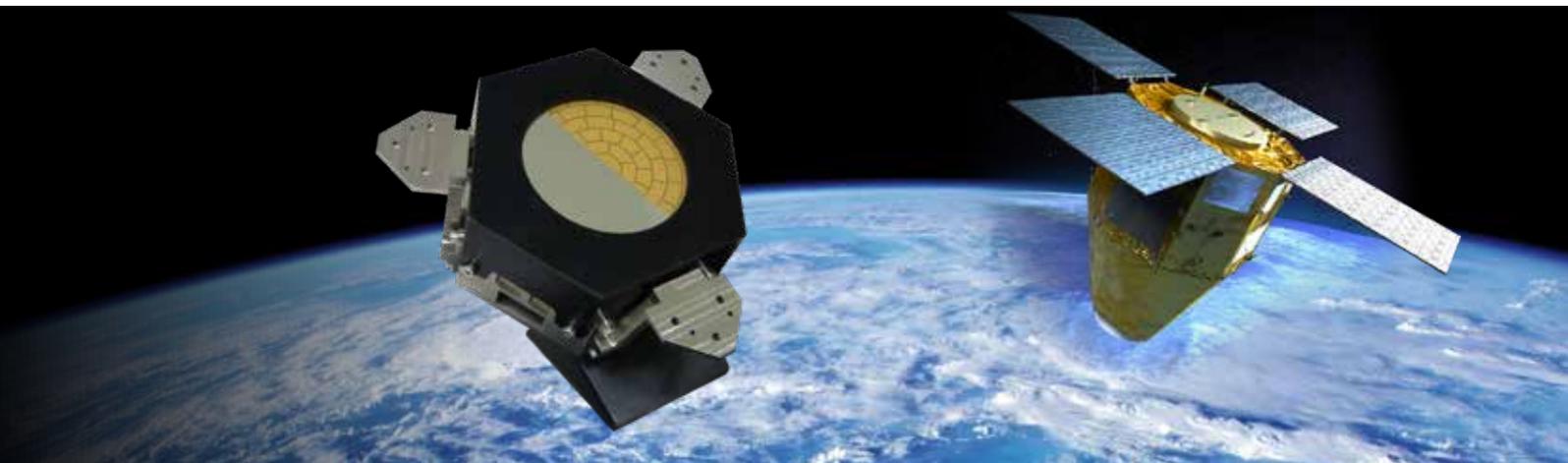


Monomorph Deformable Mirrors for Space

Because the race for very large Earth observation instruments requires now in-flight correction of the telescope deformations, a deformable mirror become a key disruptive technology for making these programs realistic and relevant.

Thanks to its ability to adapt immediately its shape, CILAS monomorph mirror can compensate the optical defects of the telescope even along the orbital cycle.

It allows harnessing the full-performances of the instrument while reducing the global cost and schedule of the programs: it relaxes the level of requirements to design the telescope, it simplifies the integration and testing of the instrument, and finally it allows volume and mass saving at the satellite level which substantially reduces the cost of the launch.



■ TECHNOLOGY READINESS LEVEL

- TRL 6 obtained in 2017 in the frame of "OTOS" technology program from CNES (TANGO demonstrator)

■ ARCHITECTURE

- Optical aperture diameter: up to 90 mm for TANGO deformable mirror
- 63 actuators, pattern easily modified keeping the qualified status

■ PERFORMANCES

- Wavefront error ~ 10 nm RMS after correction
- Large stroke: ~ 6 μm RMS @150V
- High efficiency of the correction: > 90% up to 7th order
- Response time << 1s

■ ENVIRONMENTAL CHARACTERISTICS

- Vibration: 8 g.rms (In Plane) – 10 g.rms (Out Of Plane)
- Specified range: -15 deg.C, +50 deg.C
- Concept compatible with cold environment for science mission

■ MECHANICAL CHARACTERISTICS

- Diameter: 240 mm – Width: 100 mm
- Mass: 1.7 kg
- First frequency: 700 Hz

■ THERMAL CHARACTERISTICS

- No heat dissipation

■ ELECTRICAL CHARACTERISTICS

- Power supply ±150 V
- Electrical consumption < 1 μW

For more information, please contact:
+33 4 42 36 97 00 or optics@cilas.com

SIÈGE SOCIAL
8, AVENUE BUFFON - CS 16319
45 063 ORLEANS CEDEX 2 - FRANCE
www.cilas.com

SITE D'AUBAGNE
600 AVENUE DE LA ROCHE FOURCADE
PÔLE ALPHA SUD-SAINT MITRE
13 400 AUBAGNE - FRANCE