



# TALP1000B

## Dual-Axis Analog MEMS Pointing Mirror

Texas Instruments has more than a decade of design and manufacturing experience with custom, single-element analog mirrors using MEMS technology. Now available to the mass market, TI Analog Mirrors are designed to support a wide range of light beam steering applications in optical networking, free space optics, imaging and display, object detection, and laser-based measurements.

The TALP1000B is a low power, dual-axis MEMS pointing mirror with a competitively large, highly reflective surface designed to precisely steer lasers with wavelengths from visible red to infrared.

The TALP1000B's gold-coated, highly reflective surface and 13-bit position feedback sensors offer precision infrared laser steering and alignment along two axes. Competitively, the more than 9 mm<sup>2</sup> of active optical surface is one of the largest MEMS mirrors on the market, allowing the mirror to produce large laser spot sizes. Overall, the large aperture in a small package provides system designers with flexibility for optical specs and physical placement in tight cavities.

Produced from a single crystal silicon, the TALP1000B mirror and its hinges have no grain boundaries, thus virtually eliminating surface defects and avoiding work hardening to the hinges.

### Key Specifications

Mechanical Rotation Angle (deg)	+/- 5
Resonant Frequency (nominal)	130 Hz
Max Drive (V)	3
Max Power (mW)	700
Wavelength Range	650 nm – 10 μm
Optical Surface	3.2 mm x 3.6 mm ellipse
Static Flatness (Radius of Curvature) (m)	5
Integrated Position Sensor	Yes

The TALP1000B can be precisely positioned within +/-5 degrees of mechanical rotation along each axis, making it an ideal solution for optical switch systems. For example, a banded optical signal can be separated into its individual wavelengths using a grating surface, and the mirror can be tilted to match the resulting angle of each desired wavelength.

### Key Benefits

- High optical efficiency in visible red to infrared range
- Precise positioning along two axes of mechanical motion
- Large aperture in a small, windowless package
- Low voltage drive requirements
- High resolution position sensor for feed back control

For more information about the TALP1000B, visit [www.ti.com/analogmirrors](http://www.ti.com/analogmirrors)

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