

# Mirror Steering

## GOAL

Positioning steering mirrors to control and track laser beams used for communication and research.

Maintaining accuracy in the sub-microradian range while positioning the mirror, so that a reflected laser beam will find its target hundreds of kilometers away.

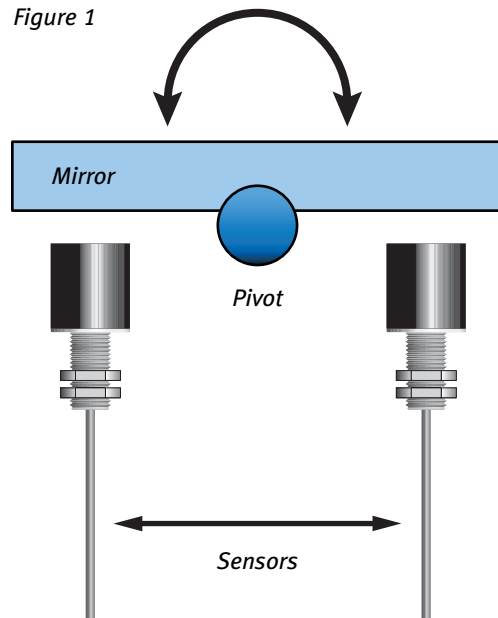
## SOLUTIONS

### KD-5100+     DIT-5200L

Four inductive sensors — one pair per axis — are mounted behind the mirror to detect its position throughout its range of motion (see Figure 1). Each sensor acts as one leg of a balanced bridge circuit; when the mirror pivots, the bridge becomes unbalanced. The sensors provide a bipolar output voltage proportional to the angular displacement of the mirror.

Result: Mirror position is measured with extremely fine resolution.

Figure 1



Every application is unique.  
Contact Kaman for application engineering assistance.

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## THE KAMAN ADVANTAGE

Good reasons to use the Kaman KD-5100+ / DIT-5200L measuring system:

**Non-contact.** Using eddy current technology, the sensor can measure position without ever touching the target. The result is an extremely reliable system with no moving parts.

**High resolution.** The mirror's position is measured with accuracy in the sub-microradian range, limited only by the sensor's fixturing.

**Flexibility.** Multiple sensor configurations are available to accommodate a variety of measuring ranges and other performance considerations, such as mirror size and displacement.

**Compact packaging.** The KD-5100+ is small (2.12 x 2.00 x 0.75 in.) and lightweight (2.5 oz.).

**Versatility.** The KD-5100+ system can be used to position steering mirrors in applications ranging from communication satellites to night vision systems to laser optics.