



High-Speed Two-Axis Gimbal

CMM Optic Beam Delivery Solutions

CMM Optic's high-speed gimbal uses high-torque, direct-drive brushless DC motors to deliver ultrafast point-to-point movement with milli-radian accuracy. The high-speed gimbal is ideal for applications requiring rapid response, including rocket or artillery countermeasures.

A 90-degree azimuth, 45-degree elevation combined move can be performed in less than 20 milliseconds, including settle. The gold-coated aluminum mirror is supported on either side by a yoke that comprises the elevation drive assembly. Its unique design conceals all elevation motor and encoder

cables. The base of the mechanism contains the azimuth drive system and consists of a hollow shaft to permit a laser beam to pass through the center and strike the mirror from below. High-precision rotary position sensors provide a complete feedback control system.

A trickle charge is provided to a high voltage capacitor bank, which is discharged to provide punch when a high-speed move is commanded. The hardware consists of a 16-bit 150 MHz Digital Signal Processor and 16-bit dual Digital-to-Analog Converters with a settle time of less than 2 microseconds. Serial flash allows for in-the-field code updates.



High-Speed Two-Axis Gimbal

SPECIFICATIONS

Weight	10.2 lbs
Envelope	6.25" W x 7.75" L x 6.50"
Input Beam	(1/e ²) 15 mm
Clear Aperture	0.60" x 1.60" Ellipse
Travel (optical °)	Azimuth: ±160 Elevation: ±45
Resolution (optical °)	Azimuth: 0.01 Elevation: 0.05
Accuracy (optical °)	±0.20
Repeatability (asec)	Azimuth: ±10 Elevation: ±100
Max Speed	90° in 20 ms (Including Settling)
Reflective Coating	Vapor-deposited gold or other—per request
Power Supply	28V DC (Optional AC Power Source)

6.2020-R1

CMM Optic
2909 Waterview Drive
Rochester Hills, MI 48309

Sales Contact: tvette@cmmp optic.com
(248) 293-2900
www.cmmp optic.com