



PHOTO-SONICS MOBILE COMPACT OPTICAL TRACKING SYSTEM



- Computer Based Precision Tracking System
- Highly Mobile
- Full Computer Integration of all Sensors and Controls
- Manned or Unmanned Operation
- Multiple Sensors
 - Film Cameras
 - Digital Cameras
 - Video Cameras
 - Video Acquisition and Tracking
 - Radar
 - IR
 - Laser Range Finder
 - GPS
- Complete Control Software
 - Standby Mode
 - Tracking Mode
 - System Preparation Mode
 - Star Calibration
 - Simulation Mode
 - Fault Status Mode
 - Maintenance Mode

- 4 Primary Payloads + 2 Auxiliary
- Remote Control Console with Fiber-Optic Communication:
 - Touch Screen Monitor
 - Local Sensor Control
 - Video Switcher
 - Video Recorder (2)
 - UPS
- Protective Shelter



Photo-Sonics International Ltd

5 Thame Park Business Centre,
Wenman Road, THAME, Oxfordshire, UK.

Tel: ++44 (0)1844 260600

Fax: ++44(0)1844 260126

E-Mail: sales@photo-sonics.co.uk

www.photo-sonics.co.uk

GENERAL SPECIFICATIONS:

Size: 92"L x 82"W x 85.62"H plus 18" trailer tongue
Weight: MCOTS - 6240 lbs. (no payload)
Tongue weight - 1260 lbs.
Payload: 600 lbs. total
Power Requirements: 208 VAC, 60 Hz, 3 phase
380VAC, 50 Hz, 3-phase (optional)
Total peak power 7.5 KVA providing 1500 ft. lbs.
Azimuth torque and 750 ft. lbs. elevation torque
Road Clearance: 12 inches
Roadability: Highway 55 mph
Unimproved roads 35 mph



DYNAMIC PERFORMANCE:

The following apply to a payload of 600 lbs:

Travel: Azimuth 600 degrees total
Elevation 100 degrees (-10 to +95)
Torque: Azimuth 1 x 1500 ft. lbs. permanent magnet motor
Elevation 2 x 375 ft. lbs. permanent magnet motors
Acceleration Azimuth Greater than 2.5 radians per second per second
Elevation Greater than 3.5 radians per second per second
Velocity: Azimuth Configurations available from sidereal to 1.75 radians/sec
Elevation Configurations available from sidereal to 1.75 radians/sec
Dynamic Range: 1000:1
Bandwidth Azimuth 12 Hz
Elevation 15 Hz
Non-Orthogonality: Less than 15 arc seconds
Bearing Wobble: Less than 5 arc seconds
Drive System Direct drive DC motors and servo amplifier



Control Electronics

- Dual Gate Video Tracker
- Global Positioning System (or IRIG-B) for timing
- Global Positioning System for position
- Photo-Sonics Film Data Recording System
- Video Data Recording System
- Optical Encoders, 20 bit
- On-Board Computer systems (3): 15 slot VME in trailer, 5 slot VME in trunion and 19-inch rack-mounted PC in the Remote Control Console
- Dual Bay Remote Control Console

Software Components

- Extensive pre-flight preparation, calibration and built-in tests
- Real time TSP input and output
- Nominal Trajectories
- Target Simulation
- Celestial Calibration designed specifically for an off-axis tracking system with sensors mounted on either side of the rotational axis for better than 5 arc-second accuracies
- Remote control capabilities from the Remote Control Console
- Extensive Fault Detection
- Comprehensive Man-Machine Interface



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