

# Tracker<sup>2</sup>



## Comprehensive High-Speed Ballistic Tracker System



**Award winning flight follower system**

**Multiple tracking modes**

**Remote control motorised adjustment**

**Multiple high-speed camera options**

The Specialised Imaging Tracker<sup>2</sup> is the next generation of projectile tracking platforms for high-speed video and measurement.

Full motorised remote control of three axis rotation and multiple inputs for real-time velocity adjustment contribute to the evolution of this award-winning system.

Built on a sturdy mount, the fully weatherproofed mirror and camera housings allow a large range of high-speed video cameras and long focal length lens options.

Custom software controls the Tracker system and provides calculators for Tracker placement, camera fields-of-view and velocities.

### FEATURES

- Full remote control operation
- Multiple operating modes allow capture of decelerating, accelerating, user defined velocity profiled projectiles
- Scan ratio range from 0.1 to 100
- Scanning accuracy of  $\pm 0.2^\circ$
- Gigabit ethernet communications
- Built in camera power, communications and trigger
- No calibration required

### OPERATING MODES

Fixed Velocity	Single trigger using known velocity
Velocity	The scan is corrected using the measured velocity from at least 2 of the 8 available detector inputs.
Position	The scan position is corrected from the detector inputs. Known velocity is assumed.
Drag / Acceleration	The scan is corrected using the measured velocity and drag / acceleration from at least 3 of the 8 available detector inputs.
Pre-defined profile	Programmable Velocity Vs Time curve. Triggered using single trigger. Used for non-linear projectile trajectories.
Advanced User Functions	Specialised Imaging is prepared to customise modes of operation to user requirements.
Skewed Geometry	Allows non perpendicular operation

### OPERATING PARAMETERS

Scan Ratio (SR)	0.1 to 100 (defined as the ratio of projectile velocity/stand-off distance)
Scanning range (Max.)	-60° to +60°
Scanning Distance	>=2x standoff distance (distance from the line of flight to Tracker2)
Scanning Accuracy	±0.2°
Positional Accuracy	±0.018°
Calibration	Not required
Projectile Velocity	SR x Standoff distance
Projectile Drag	0 to 100 m/s/m
Acceleration Angle	1° - 5° depending on scan rate (defined as the angle required to accelerate the mirror from rest to full scanning speed)

### ENVIRONMENTAL

Storage temperature	-10°C to +74°C
Operating temperature	-5°C to +50°C
Warmup Period	Not Required
Humidity	10 - 90% RH non-condensing
Operational vibration	10G, 10-40Hz Max, any direction
EMC	Meets all EC harmonized standards

### INPUT / OUTPUT SIGNALS

Detector In	BNC
Number of inputs	8
Trigger In	Rising or Falling Edge pulse Make/break
Camera Trigger	TTL positive pulse
Communication Interface	Data and command transfer via 1Gbps ethernet cable length 100m (standard). Other lengths available 1000FX fibre optic ethernet link (up to 2Km) - optional
Software	Custom software compatible with Microsoft Windows Operating Systems for control and data archiving in various file formats

### MECHANICAL

Dimensions mm (w/d/h)	1340 x 670 x 590 (without tripod)
Mount	Tripod Included

### MIRROR

Type	Optical flat elliptical Silicon Carbide Mirror
Size (HxW) mm	135 x 85 x 2

### CONTROL UNIT

System Clock	10MHz quartz crystal controlled
Trigger Jitter	<1us

**UK** (Head Office / Factory)  
6 Harvington Park,  
Pitstone Green Business Park  
Pitstone. LU7 9GX England  
**Tel +44 (0) 1442 827728**

**USA**  
Specialised Imaging Inc.  
40935 County Center Dr. Suite D  
Temecula, CA 92591, USA  
**Tel +1 951-296-6406**

**GERMANY**  
Hauptstr. 10,  
82275 Emmering  
Germany  
**Tel +49 8141 666 89 50**

