

MERLIN 9090 True3D™ BDR

Bird Detection Radar

True3D bird detection radar system for environmental survey, monitoring and research.

Engineered & manufactured in the USA for dependable 24-7 operation with high reliability & low maintenance with hardware and operating software developed specifically for bird detection and tracking.

The Right Radar for the Job™



Proven bird radar technology tested, validated & used operationally by commercial airports, the US Fish & Wildlife Service, Air Force, Navy & NASA

- Developed by the world leader in avian radar technologies
- Incorporates technologies proven at over 600 installations worldwide since 2003
- Full parts & labor warranty & performance guarantee
- Designed & manufactured in the USA; meets Buy American Act (2018 & 2021 amendment)
- Supported by global network of offices and technicians.

The Right Radar for the Job™



Model: MERLIN 9090 True3D BDR for bird & bat survey & monitoring

Technology Features

- Classification intelligence (target-of-Interest & false positive minimization)
- Fast update rates (1-5 Hz) for improved target tracking
- Small bird/drone detection up to 6km (3 nm)
- All weather situational awareness
- Low wattage power for low interference risk
- US FCC, US DOD & foreign frequency licensed/registered.

Application: Real-time bird & bat survey and monitoring; highly portable for tower, vehicle and stabilized offshore use

Configuration: Fixed & mobile designs, self-contained with all system hardware, software & integration included

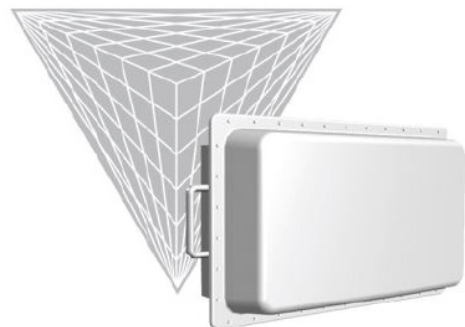
Sensors:

- Solid-state S-band Pulsed Doppler 3D radar, 90 degree panel (4 panels provide full 360 degree surveillance) with high update rates (4x per second)
- Sealed radome enclosure for all environmental conditions, no moving parts for high reliability and durability
- Optional EOIR integration (visible & night camera) for real-time target classification & identification with advanced AI.

Operating Range: 15km (8 nm) 360-degree True3D

Power: Single phase 110/240VAC, with UPS back-up, power conditioning (foreign power configurations available)

Network: TCP/IP supports multi-user web remote real-time system display, control & data access via fiber optic, wireless or mobile broadband.



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Specifications

Unlike traditional 3D & quasi-3D radars that scan only one sector at a time and leads to under-sampling, fewer tracks & low accuracy altitude estimates, DeTect's dynamic multibeam True3D radar scans & updates target data across the entire 3D volume continually, providing precise (x-y-z) data and no target or track error.

TECHNICAL SPECIFICATIONS

Architecture: Simultaneous multiple beams

Processing Type: Pulsed Doppler

Frequency Band: S (3.0–3.3 GHz)

Range Resolution: 10 or 20 m (adjustable)

Selectable Frequency Bands: 6 calibrated

Instrumented Range: 15km (9.3 nm)

Azimuth FOV: 90° (4 panels, 360°)

Elevation FOV: 12.5°

Software Defined Update Rate: 1–5 Hz

Minimum Detectable Velocity: 0.4–1.6 km (0.25 – 1mph)

Weight: 40.8 kg / 90 lbs

Dimensions: 91.4 cm x 53.3 cm x 22.9 cm (36" x 21" x 9")

Power Draw: 200W

Operating Temperature: –40°C to +65°C (–40°F to +149°F)

Component Temperature: –40°C to +85°C (–40°F to +185°F)

Heating/Cooling: Passive

Notes:

- Achieving maximum detection ranges requires sufficient mounting height and line of sight
- Specifications subject to change as design is completed.



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DETECT TRUE3D™ RADAR ADVANTAGES

- Full 3D Radar
- S-Band, Pulsed Doppler
- 3D digital multibeam dynamic (scans full 3D volume in single scan)
- High update rates (4x per second)
- Available in fixed, mobile & stabilized offshore configurations.

