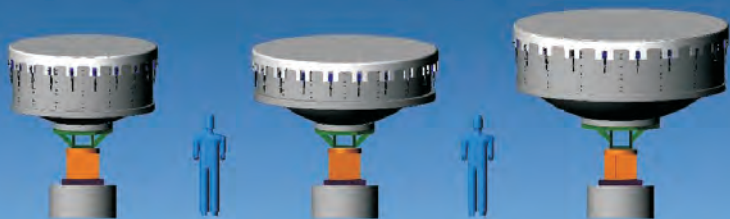


RAPTOR VAD-BL

Boundary Layer Radar Wind Profilers



DeTect's RAPTOR VAD-BL represents a revolutionary, unique design in Radar Wind Profiler technology offering a high performance, all digital system in a compact, portable, scalable design for fixed and mobile use.

System: RAPTOR VAD-BL Radar Wind Profiler

Application: Real-time operational support for weather forecasting, aviation operations, and other applications demanding high quality meteorological data products.

Transmit Frequency: 915 MHz nominal, can be customized

Antenna: 3 m (10') diameter high performance parabolic dish, with shroud and radome

Antenna Pointing: 4 beams DBS (Doppler Beam Swinging) or 8 or 16 beam VAD (Velocity Azimuth Display), 15° zenith nominal beam

Peak Power: 1000 W

Height Resolution: User selectable from 75 to 500m

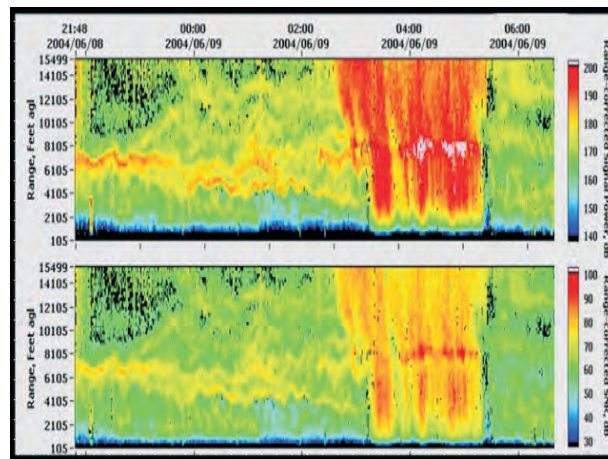
Range: (estimated) 2,000 - 5,000 m in clear air
5km or higher with precipitation

AC Power: < 1500 Watts
(120 or 240 VAC, 50 or 60 HZ)

Accuracy: < 1 m/s speed; <10° for wind speeds > 5m/s; <15° for wind speed ≤ 5m/s

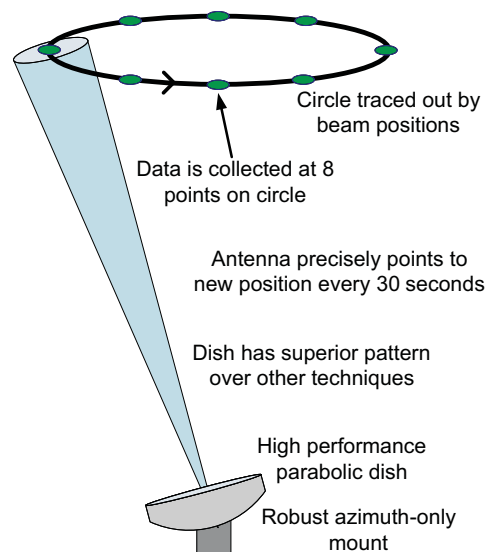
Network: TCP/IP supports multi-user remote system display and control via fiber optic, wireless or cellular networks

PC OS: Windows 7 Enterprise or Red Hat Linux

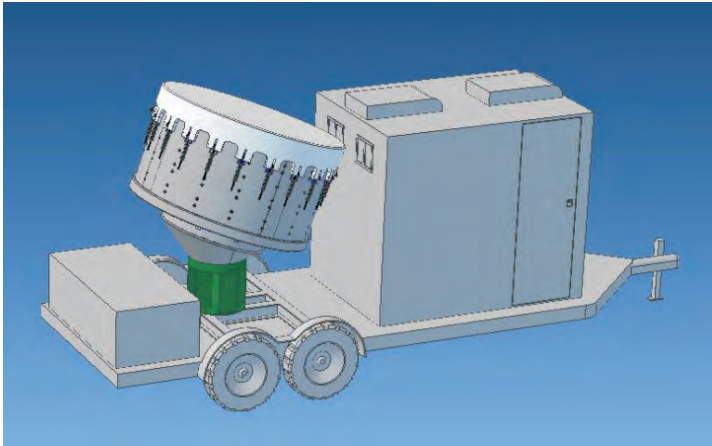


TOP: Display of range corrected radar returned power (upper) and Signal to Noise Ratio (lower). Image shows turbulent layers and clouds. The melting-layer is evident during the rain storm as an area of enhanced reflectivity or "bright band". **

BOTTOM: The new RAPTOR VAD-BL is equipped with unique azimuth-only positioner and a high-performance parabolic dish antenna. This combination is unique in the industry and produces a superior beam pattern and superior atmosphere sampling strategy for superior data quality.



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RAPTOR VAD-BL conceptual mobile system.

The DeTect RAPTOR line of Radar Wind Profilers provide unattended, real-time operational support for weather forecasting, aviation operations, and other applications demanding high quality meteorological data products. RAPTOR systems utilize the latest in radar technologies to insure high reliability and low operating cost. Along with a fully digital receiver system and advanced signal processing, the result is superior data products at high temporal resolution suitable for true operational applications. The addition of a Radio Acoustic Sounding System (RASS) provides vertical profiles of virtual temperature.

RAPTOR systems are modular and built to high standards incorporating commercial off-the-shelf (COTS) components to reduce costs of ownership and enable ongoing technology insertion and upgrade opportunities.

The RAPTOR VAD-BL is nominally a 915 MHz radar* for boundary-layer wind profiling. The system is composed of a fixed-mount parabolic dish antenna with a long-life ruggedized multi-azimuth positioner, server-class PC for radar control and signal processing, proprietary software package including:

- Radar control software, BIRCH, with consensus processing wind calculation software; low-level data (time series and spectra), moments and winds products displays and data archive.
- Advanced signal detection processing and data

display software, ASPEN, with time/height continuity analysis, multi-peak discrimination, QC algorithms displays and data archive.

Other major components of the radar include:

- Intermediate Frequency Converter (IFC) Subsystem (acts as analog front-end for digital receiver)
- Transmit/Receive Switch
- High power Final Amplifier (1200 W)
- Profiler Health Monitor (PHM)
- Electronics Power Supply (EPS)
- Surge/lightning protection on antenna RF and control cables
- All required cables

All RAPTOR radar systems include a full warranty that includes:

- Internet and telephone technical support
- Data QA/QC checking
- RAPTOR software upgrades (base and any options)

All systems can be custom configured to comply with country or project specific operating requirements.

Customizable options include but are not limited to: total system power, operating frequency, computer operating system, and AC operating voltage.

