

SKIRON^{3D}®



SKIRON^{3D}® DOPPLER LIDAR SYSTEM

The SKIRON^{3D}® lidar is the optimal solution for measuring winds and detecting wind hazards. Wind shear, gusts, turbulence, and microbursts are dangerous wind phenomena, which impact airport efficiency and flight safety.

SKIRON^{3D}® provides the tools necessary to monitor the hazardous winds threatening airports.

The SKIRON^{3D}® is a coherent pulsed Doppler lidar system, which employs a MOPA (Master-Oscillator-Power-Amplifier) configuration. It combines an all-fiber technique that enables excellent beam quality with high pulse energy for long-range measurements.

SKIRON^{3D}® Doppler lidar is optimally suited for integration with weather radar for observing 3D wind shear along the ILS glide slope and for takeoffs.

SKIRON^{3D}® PRODUCT LINE ADVANTAGES

- Optimized for integrating with Rainbow®, the most advanced meteorological software available today
- Unattended remote operation 24 hours a day, 365 days a year
- Long-life, state-of-the-art technology

- Full remote surveillance and control capability based on Ravis® maintenance tool
- Comprehensive BITE (Built-In Test Equipment) system
- Full network capability in heterogeneous networks
- Maximum use of COTS components (e.g. PC-based signal processing, fiber components)

SKIRON^{3D}® SPECIFIC ADVANTAGES

- High-end lidar in compact shelter design
- Cost-effective and modular design
- High number of LRUs (Line-Replaceable Units) and sub-LRUs for low-cost spare parts
- Proprietary designed scanner with no slip rings
- Air-knife no-contact optical window cleaning
- Integrated camera for lidar northing using the sun, moon, or a fixed target
- Feedback-controlled laser power for long-term stability
- Minimal lifecycle costs due to highly reliable fiber technology
- Laser pulse operated in eye-safe wavelength





TECHNICAL DATA

SYSTEM	SKIRON ^{3D} ®
Operating Wavelength	near 1550 nm
Pulse Duration [FWHM]	typ. 600 ns
Laser Beam Quality [M ²]	< 1.2
Figure of Merit (FOM)	120 mJ/Hz
System Efficiency	- 7.5 dB (including heterodyne efficiency)
Average Power	up to 20 W
Pulse Repetition Frequency (PRF)	typ. 4 kHz
Angular Span in Azimuth	0° - 360° continuous
Angular Span in Elevation	0° - 360° continuous
Operational Range	> 10 km (depending on atmospheric conditions) At typical parameter values and 30 s PPI-duration
Technical Range (unambiguous range)	> 30 km
Overlap Factor	2 to 8
Range Resolution	typ. 100 m (variable)
Blind Measurement Range	< 300 m (depending on pulse settings)

Angular Resolution	0.2° up to 3.0°
Accumulation Time	0.02 s - 2.00 s
Radial Wind Speed Accuracy	< 1 m/s
Radial Wind Speed Range	± 70 m/s
Intermediate Frequency	110 MHz
Rotation Speed of Scanning	2°/s to 40°/s during operation
Scanner Pointing Accuracy	± 0.05°
Safety Requirement	Class 1M (NOHD >30 m) IEC/EN 60825-1 compliant Scanner IP65; Shelter IP63
Enclosure/Shelter	10 ft container with fire prevention and air conditioning
Environmental Temperature	- 40° C to + 55° C
Power	3 x 230 VAC, 50 Hz 3000 W (excluding air conditioning)
Weight	< 3500 kg
Dimensions	2.7 m (L) x 3 m (W) x 3 m (H)

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