

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)

This publication is issued to provide outline information only and is supplied without liability for errors or omissions. No part of it may be reproduced or used unless authorized in writing. We reserve the right to modify or revise all or part of this document without notice.