

Forward Scatter Sensor FD70

The leading forward scatter technology for visibility determination, present weather identification, and precipitation accumulation



Key benefits

Multipurpose application

The FD70 is a factory-calibrated, plug-and-play sensor. It can function as a stand-alone unit, as an integral part of Vaisala systems, or with most third-party systems.

Economical operation and maintenance

The sensor's rugged, modular design uses no movable or consumable parts and makes for quick repairs. Remote performance monitoring reduces trips into the field, while advanced self-diagnostics further decrease maintenance.

Reference-grade performance in all conditions

The FD70 detects and identifies precipitation types that have historically been challenging for conventional technologies. Vaisala's pioneering sensor design enables the FD70 to provide constant, reference-grade performance unlike any other forward scatter technology — even for incidents of freezing rain, ice pellets, intense precipitation, or mixed precipitation.

Responsiveness to changing weather

The high sensitivity of the FD70 sensor means it's able to detect precipitation onset right from the first droplets, and it reacts quickly to meteorological visibility changes from 1m to 100km (3ft to 62mi).

The Vaisala Forward Scatter Sensor FD70 is a powerful technology that can outperform and potentially replace the functionality of many separate sensors, such as a present weather sensor, rain gauge, disdrometer, and freezing rain sensor. The FD70 helps you make the best decisions for safer runway operations, even in the most challenging weather conditions.

Building on years of expertise in optical measurements, the FD70 offers the key features customers rely on from Vaisala, including uncompromised measurement performance over a wide range of parameters, reliability in operation, and ease of maintenance. In addition, the FD70 excels with fast response times and 100% identification even for the smallest precipitation events.

The FD70 is fully configurable to meet our customers' runway condition, Runway Visual Range (RVR) assessment, and visibility determination needs. It complies with ICAO, FAA, and WMO requirements, and has been developed around the WMO SYNOP, METAR, and NWS reporting demands for precipitation and obscuration types.

Advanced sensing technology provides accurate visibility measurement with proven calibration traceability and a range of up to 100km (62mi). It also allows the FD70 to detect every particle separately, which enables droplet size distribution and reflectivity reporting previously not available from conventional forward scatter sensors. This is also the first sensor on the market that can reliably report a full range of present weather types, including freezing precipitation.

FD70 at a glance

Applications

- Monitoring present weather for runway condition reporting and synoptic weather observations.
- Measuring real-time runway conditions around RVR assessment, visibility, and general safety determination.
- Logging precipitation intensity and accumulation for nowcasting and long-term modeling.
- Identification of freezing conditions for triggering runway maintenance and safety protocols.

Key features

Single-particle analysis for improved accuracy and reliable identification of challenging precipitation types in all conditions, even for low-intensity precipitation.

Exceptional data capture that reports precipitation type, droplet size, intensity, accumulation, and visibility range up to 100km (62mi) Meteorological Optical Range (MOR).

Reporting of more than 150 weather codes in accordance with the WMO SYNOP, METAR, and NWS code tables.

100% detection that registers all events, including extremely light precipitation.

Advanced detection and analysis technology that captures particle size and distributions for enhanced precipitation type identification.

Look-down geometry and hood heating that protect against external contaminants.

Window contaminant compensation for consistent data quality in all conditions.

Professional software security enabling encrypted communication and preventing unauthorized access.



Why Vaisala?

Experience with perspective

Having launched our first sensor in 1990, Vaisala is a trusted expert in forward scatter systems. Our unique understanding of weather measurement has made us a leader in weather observation solutions. The technologies we offer are the result of our own R&D, and our solutions and services are used in meteorology worldwide. Our extensive expertise and global presence — with more than 20,000 devices in over 120 countries and all seven oceans — makes us your global weather monitoring and reporting expert.

Support to count on

Look to Vaisala to provide 24/7 service and easy availability of spare parts to keep you up and running. We also offer dependable support, project capabilities, and training so you can get the most from your system. With decades of experience providing the best technologies and the finest support, Vaisala's philosophy of partnership is unmatched in the industry.

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vaisala.com/FD70



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