

X-band Weather Radar WRS400

Accurate, real-time weather and storm data for port and harbor operations



Key benefits

Complete localized coverage

WRS400 radar provides a detailed picture of local weather events within 100 kilometers, with improved nowcasting (predictions for the next two hours) and no gaps in coverage or blind spots.

Detailed precipitation data

Modern, dual-polarization, solid-state WRS400 radar delivers excellent accuracy and sensitivity for more precise, higher-resolution weather information. It reliably differentiates between snow, hail, sleet, graupel, and rain.

Improved decision-making

Filling in the data that other monitoring systems miss ensures your operations and safety decisions are based on a more complete picture of onshore and near-offshore conditions.

Outstanding performance and reliability

WRS400 radar is built to work 24/7 in structural icing, dust, wind, power outages, and other demanding port and coastal conditions. It delivers highly accurate, comprehensive measurement data for extremely effective local storm tracking that leads to better operational and safety decisions.

Lower investment and lifecycle costs

Rugged design, easy deployment, and minimal maintenance requirements make the WRS400 a cost-effective solution that ports can depend on over a long service life.

Today's maritime operations frequently demand reliable, actionable weather data across a wide area. Vaisala X-band Weather Radar WRS400 provides enhanced onshore and near-offshore weather observations that allow you to make informed operational decisions, maintain safety, and confidently manage route planning and port closures.

WRS400 X-band radar can be used to complement a port or coastal area's existing weather monitoring system in order to cover larger areas or give more precise data to support critical decisions. It closes the knowledge gap between the forecast and current seaport and coastal area weather conditions through high-resolution weather sensing with short lead times.

The result is that ports and VTS providers can anticipate where and how the weather will change in the near future, improving operational continuity, keeping cargo moving, and protecting the port's commodities and workers.

X-band Weather Radar WRS400 at a glance

Applications

- Port-wide weather monitoring and alerting for dangerous operating conditions
- Optimized nowcasting across a range of phenomena including rain, snow, hail, thunderstorms, and more
- Reducing frequency and length of storm-related shutdowns to maximize operational efficiency
- Improved operational efficiency and safety for ports and shipping through accurate measurement of current and upcoming weather conditions
- Guidance to help arriving and departing sea traffic operate safely and efficiently
- Filling in data gaps and improving coverage of C-band and S-band radar networks

Key features

Compact design combined with solid-state transmitters reduces overall complexity and improves the maintainability and reliability of the system.

Independent solid-state transmitters provide redundancy and reliability while requiring minimal maintenance.

Dual-polarization radar captures more accurate precipitation and location data, which includes differentiating between rain, sleet, snow, hail, and mixed precipitation.

Remote operation and diagnostics reduce the need for site visits and improve decision-making with high-quality data and 24/7 availability.

Automatic, continuous calibration measures each transmitted output pulse and adjusts levels accordingly, which increases data reliability while minimizing downtime.

Attenuation correction algorithm corrects for signal variances associated with heavy rainfall and strong storm cells.



Why Vaisala?

Weather and environmental insights are the greatest catalysts for successful maritime operations. From sensors to systems and digital services, Vaisala technology empowers maritime leaders to confidently meet new challenges and harness new opportunities.

Vaisala is driven by passion, relentless curiosity, and the desire to create a better world, as reflected by our guiding principles for maritime:

1. Master the weather, master the sea

The weather affects maritime operations—whether onshore or offshore—more than any other factor. It also reveals the vast potential of the sea. We enable maritime leaders to harness that potential while navigating pressing challenges driven by climate change.

2. Oceans of insight

The maritime industry is a complex ecosystem, with valuable information to be found everywhere. Our integrated, end-to-end solutions turn that information into practical insights for new competitive advantages.

3. Currents of innovation

Maritime is evolving, and the currents of innovation are taking us to a more sustainable and weather-aware industry. Vaisala markets leading-edge solutions backed by our unmatched legacy of scientific leadership.

4. Champions for sustainability

We help provide a proactive, informed approach to navigating sustainability initiatives and saying ahead of regulatory pressures. Along the way, we protect and strengthen the ecosystems of which we are all part.

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