

**LOCKHEED MARTIN**   
*We never forget who we're working for®*

**WindTracer® Doppler Lidar**  
Increase Flight Safety  
Boost Airport Efficiency



# WindTracer® Doppler Lidar – *Wind Hazard Detection*

## WTX WindTracer® Specifications\*

|                            |   |
|----------------------------|---|
| Measurement                |   |
| Measurement Range          | 400 m to 15 km (typical)  |
| Radial Wind Velocity Range | ±38 m/s   |
| Range Resolution           | Nominal 80 m  |
| Velocity Accuracy          | Less than 1.0 m/s   |
| Scanner                    |   |
| Azimuth Range              | 0 to 360 degrees  |
| Elevation Range            | -5 to 185 degrees   |
| Resolution                 | ±0.01 degrees   |
| Pointing Accuracy          | ±0.1 degrees  |
| Optical Clear Aperture     | 12 cm   |
| Transceiver                |   |
| Laser Wavelength           | 1617 nm   |
| Pulse Energy               | 2.0 mJ ± 0.25 mJ  |
| Pulse Duration             | 300 nsec ± 150 nsec   |
| Pulse Repetition Frequency | 750 Hz  |
| Beam Diameter              | 9.6 cm (e <sup>-1</sup> intensity width)  |
| Shelter                    |   |
| Environment                | All weather   |
| Weight                     | 2600 kg   |
| Dimensions                 | 197x244x329(H) cm<br>(clearance with lightning rods)  |
| Power Specification        | 200-240 VAC single phase, 50 or 60 Hz<br>(specified at time of purchase), 50A<br>service required |

\*Specifications subject to change

Lockheed Martin's WindTracer Doppler lidar (light detection and ranging system) detects dangerous wind shear in the airport terminal vicinity. It is the world's most sophisticated system of its type. Designed to assist safe airport flight operations, the system also complements existing sensors by monitoring current meteorological conditions.

WindTracer is used for tracking hazardous winds. The system provides advanced warning of wind shear, allowing air traffic control personnel to give precise, timely direction to pilots during takeoff and landing. Defined as sudden changes in wind speed and direction over a relatively short distance, wind shear is hazardous during these critical phases of flight due to its effect on aircraft control. With wind hazard detection capability, WindTracer is vital during dangerous weather conditions and is deployed to help prevent wind shear-related accidents at major airports.

WindTracer sends out pulses of eye-safe infrared laser light that reflect off naturally-occurring particulates in the wind. The movement of these aerosols alters the frequency of the light that is reflected back to the sensor. By processing the return signal, the system is able to detect radial wind speed and direction.

WindTracer successfully operates at numerous airports worldwide, and continues to be the lidar sensor of choice for airport weather sensing upgrade programs.

## *Features & Benefits*

- **Continuous Scanning of Approach and Departure Corridors**
- **Real-Time Detection of Dry Air Hazards Missed by Radar**
- **Advanced Warning for Economical and Efficient Runway Management**
- **Wind Monitoring and Profiling**
- **Improved Flight Safety**

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