PO.405

ZX 300e Performance Verification at simple sites and in complex terrain

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ZX Lidars

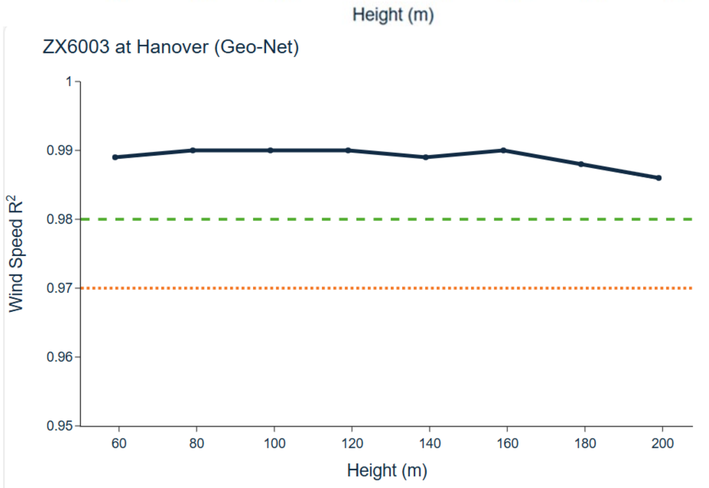
ZX 300e is a newly-developed wind lidar profiler, with improved performance compared to ZX 300, which has itself been used for many years in many resource assessment campaigns across the world. Across a wide range of campaigns, ZX 300e lidars demonstrated:

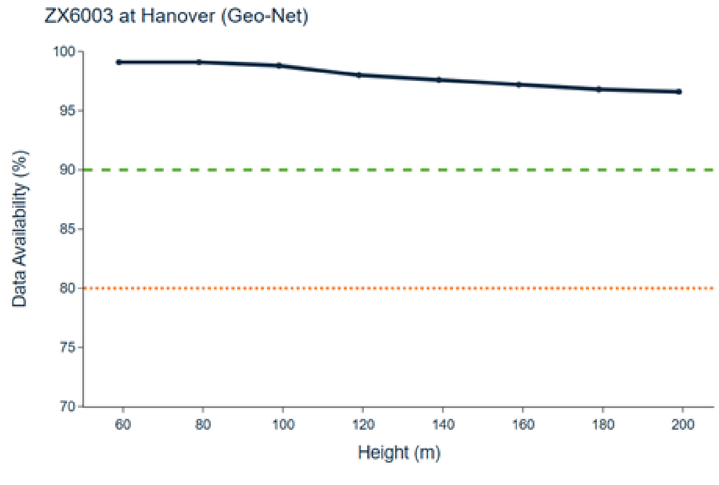
Accuracy and certainty – Wind speed gradients within ±1% of unity up to 200 m with coefficients of determination (R^2) above 0.985.

High data availability – Routinely above 80% at higher heights, surpassing industry acceptance criteria and reinforcing reliability under real-world operating conditions.

Proven resilience in complex terrain – CFD-corrected results at highly complex sites confirmed the ZX 300e's suitability in the most challenging environments, with data recovery methods further strengthening availability at high elevations.

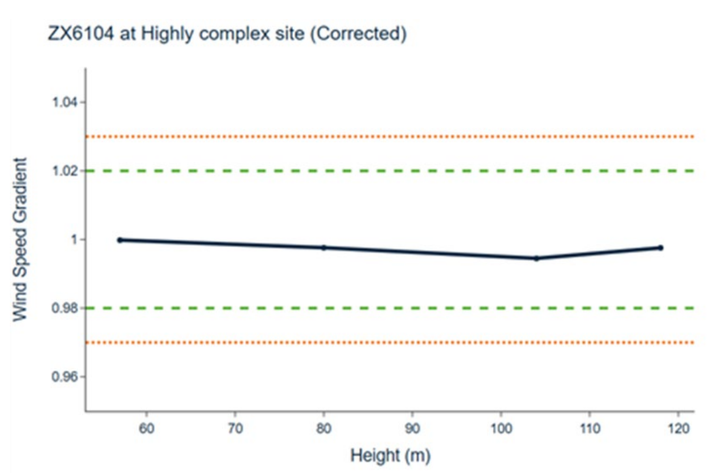
- The ZX 300e was verified at two sites with 200m meteorological masts.
- GEO-NET's and Pavana's 200m meteorological masts in Hanover, and Janneby respectively are specialized, IEC-compliant structures used for the calibration/verification of lidars.
- Both are located on flat terrain with free flow.
- A ZX 300e unit was also deployed to a highly complex site in the UK.
- Height and wind direction dependent Computational Flow Dynamic correction factors for the wind speeds were obtained from Deutsche-WindGuard GmbH, Germany.
- The ZX Quality Score data recovery method was applied to the data to boost availability.

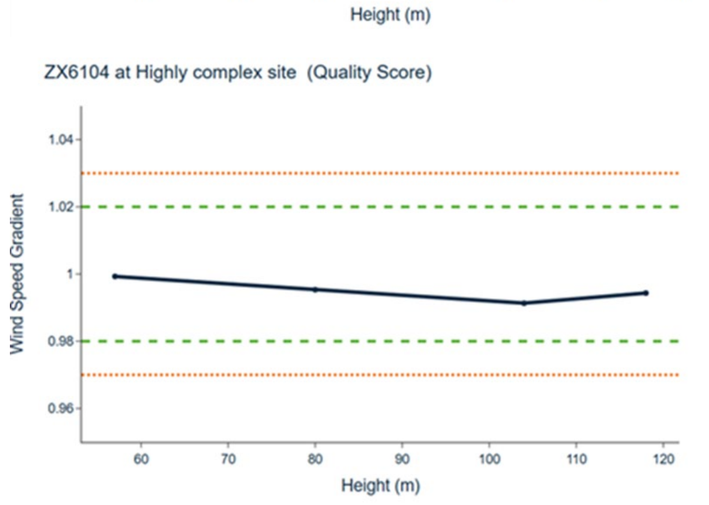


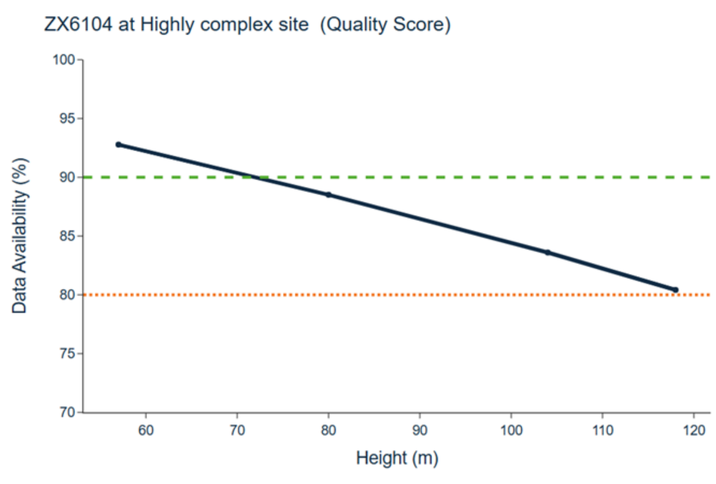


- At both 200m mast sites, the gradients and coefficients of determination meet Wind Industry Best Practice Acceptance criteria.
- Data availability at both sites was above 80% at all heights.
- ZX 300e units were also deployed at sites such as the UK Remote Sensing Test Site in the UK and Janneby (DNV) with similar results.
- At a highly complex site in the UK, the ZX 300e met Wind Industry Best practice after the application of CFD correction factors.
- Application of the ZX Quality Score boosted availability to above 80% at all heights with no significant change to the gradients and coefficients of determination.
- With these verifications, the ZX 300e has demonstrated high accuracy and data availability up to 200m at a wide range of sites [1].

[1] *ZX 300e Introduction and Performance Credentials, 24 Sept. 2025*







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