World's first 21-200 m wind Lidar IEC Classification achieved by ZX 300 'e'
ZX Lidars confirms market launch of new ground-based wind Lidar ‘e’volution

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Wind Lidar has evolved with ZX Lidars’ global release of ZX 300e and the world’s first 21-200 m IEC Classification at the independent test sites of wind engineering consultants with the best possible final accuracy class and standard uncertainty of 0% at all heights.

Figure 1: The new ZX 300e ground-based Continuous Wave wind Lidar from ZX Lidars

The announcement confirms that ZX 300e has exceeded the full conditions to satisfy the IEC 61400-50-2 standard, demonstrating no environmental variables to be significant and validating again that ZX Lidars are an acceptable technology for inclusion in the wide variety of wind campaigns and applications including resource assessment, site calibration and power curve measurements. An industry first; the IEC Classification has been achieved on data measured up to 200 metres from ground level including data down to just 21 m – the widest, most comprehensive Classification range of any Lidar covering 3 Lidars and 5 campaigns in total and at test sites operated by DNV, GeoNet and Pavana.

ZX 300e is the culmination of 15 years of evolution of the 300-series Lidar from ZX and is founded on the industry’s most validated Lidar with its own existing IEC Classification, tens of thousands of deployments, and 1,000’s of Performance Verifications at test sites around the world.

New features of ZX 300e include enhanced wind data with a new generation of Continuous Wave wind Lidar algorithms for superior accuracy, wind direction sensing, data availability and Cup-Equivalent Turbulence Intensity. With a reduced power consumption of just 44W even at -25°C, off-grid power supply fuel is better preserved and autonomy extended. A new powerful and secure web-based User Interface supports local and remote, multi-user access and system status checks.

In addition to the extensive IEC Classification that retains ZX 300e position as the industry benchmark for wind Lidar, a fleet of ZX 300e units have been verified using ‘Midar’ technology – a novel mast + Lidar approach where a vertical-profiling Lidar mounted to a 91 m mast extending traceable reference measurements far above the mast itself, and up to 300 m. The results were compelling: correlation slopes consistently within ±1%, R^2 greater than 0.985, and repeatability across the fleet within the narrowest ranges yet reported for a ground-based Lidar. 99.8% - 94.2% availability was achieved consistently from 20 to 300m. At 250 m, data availability exceeded 96%, and at 300 m it remained above 94%, with correlation slopes within ±1.1% and R^2 values again remaining greater than 0.985. This represents the first independent demonstration of a ground-based Lidar delivering consistent, low-uncertainty data at heights up to 300 m.

"It's certainly a special moment for ZX in achieving the world's first and best possible 21-200 metre IEC Classification for a wind Lidar along with Performance Verification up to a staggering 300 m. Moreover, I am incredibly proud of the continual product evolution that we have strived for over the past few decades. ZX 300e is the result of a passionate team who recognise that product performance and customer experience are paramount" commented Ian Locker, Managing Director at ZX Lidars. "As those of you who know ZX, we always try and take our existing owners and friends along the journey with us too, so I am delighted that ZX can support recent proud owners of ZX 300 with some exciting options too." explained Locker.

In a very 'ZX' way, existing owners of ZX 300 from 1st January 2025 up to present day are invited to discuss with ZX directly options for embracing ZX 300e immediately; you can ask ZX to 'Turn-Me-On' as you already have the ZX 300e specification, it's just not yet enabled!

"With ZX 300e, we raise the benchmark again" concluded Locker.

ZX 300e's IEC Classification in addition to a full Introduction & Performance Credentials document are available by request to sayhello@zxlidars.com

About ZX Lidars (formerly ZephIR Lidar)

ZX Lidars provides industry-leading wind lidar products ZX 300e, ZX 300M and ZX TM for wind energy and meteorological applications. These Lidars deliver accurate wind measurements in both onshore and offshore applications at measurement heights / ranges across the full swept area of the blades of modern wind turbines, and beyond. With more than 30 million hours of operation in the field and over 15,000 deployments (and counting), ZX Lidars has pioneered the use of Lidar in the wind industry. The company is proud of the many world firsts it has achieved with customers including: upwind measurements from a turbine nacelle, turbine wake studies, offshore deployments of both fixed and floating wind lidar, an industry-accepted validation process, re-financing and re-powering of a wind farm, successful demonstration of measurement accuracy in a wind tunnel and total wind project financing from a lidar without need for a met mast.

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