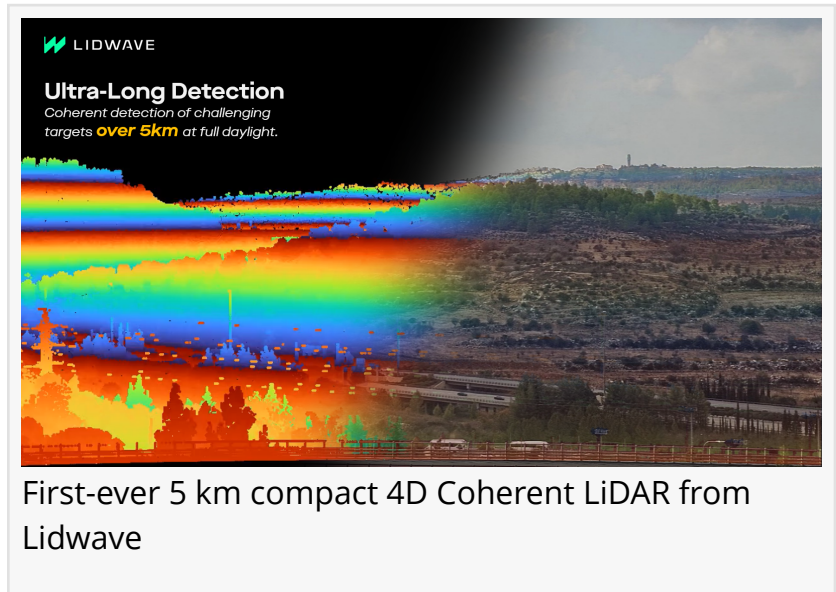


# Expanding the Horizon: Lidwave Demonstrates Over 5km Detection Range with Revolutionary 4D Coherent LiDAR

*Lidwave, a global leader in coherent sensors, presents the first ever 5km-range, high-resolution compact 4D LiDAR*

JERUSALEM, ISRAEL, November 13, 2024 /EINPresswire.com/ -- [Lidwave](https://www.lidwave.com/) reveals the first and only ultra-long-range coherent sensor demonstrating object detection at distances exceeding 5 kilometers, opening new fields for LiDARs, such as drone detection, advanced security, monitoring, and precise mapping. "This achievement underscores Lidwave's position as a global leader in Doppler-LiDAR development and opens new possibilities in Ultra-Long-Range sensing," said Yehuda Vidal, Lidwave's CEO.



“

With more than 5km detection range from a compact and adaptable device, Lidwave's 4D coherent LiDAR opens new frontiers”

*Yehuda Vidal, Lidwave's CEO*

The secret behind this achievement lies in the unique capabilities of Lidwave's coherent sensing. Unlike traditional Time of Flight (ToF) systems, which depend on the speed of light for depth measurements, Lidwave's proprietary Finite Coherent Ranging ([FCR™](#)) technology utilizes the coherence properties of light and features inherent sensitivity 10 million times greater than the sensitivity of ToF technology. This enhanced-sensitivity allows for detection at greater distances with power outputs in the milliwatts range—remarkably lower than the

high-power lasers required by similar ToF systems. Current ultra-long-range LiDARs typically use enormous lenses and cooled detectors, resulting in bulky and costly configurations. Lidwave, by contrast, has achieved this range with a compact, portable system, without relying on cooled detectors, due to the native high sensitivity of its FCR™ technology. The result is a compact and lightweight design, weighing less than 1.5 kg – a striking contrast to current ultra-long-range

systems that can weigh over 50 kg.

Moreover, Lidwave's system meets Class 1 laser safety standards, making it eye-safe and suitable for deployment across varied environments without safety concerns. The sensor's low power consumption, compact form factor, quiet operation, and discreet presence make it a seamless and environmentally friendly solution.

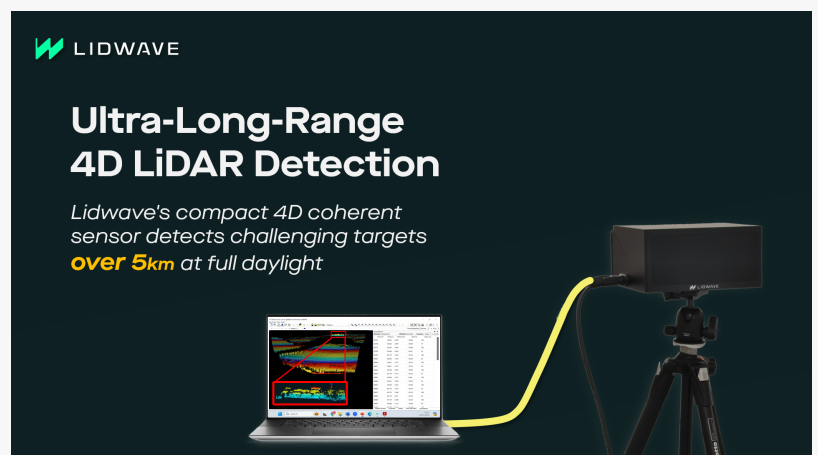
Providing an outstanding real-time point rate (hundreds of kilo-points-per-second for the ultra-long-range scenario) Lidwave's coherent LiDAR captures scenes with unprecedented detail. Its high sensitivity allows it to detect challenging objects, even those with low reflectivity, with a high probability of detection.

In the accompanying images, the sensor's capabilities are demonstrated, capturing complex structures and elements with precision—power lines, tunnels, bridges, trees, paths, and buildings that are several kilometers away. The image displays detection at more than 6 km with an angular resolution of 0.04 by 0.04 degrees across the field of view, with specific regions of interest achieving an enhanced resolution of 0.005 by 0.005 degrees, illustrating the sensor's adaptability to varying imaging needs. "Lidwave's sensor further excels in versatility with its software-defined architecture, enabling adjustments to parameters such as field of view, horizontal/vertical/depth resolution, detection range, and frame rate on the fly," explains Dr. Yossi Kabessa, Lidwave's CTO.

"The applications of Lidwave's [4D coherent LiDAR](#) extend far beyond typical use cases", said Nitsan Avivi, Lidwave's Head of Business Development. "For example, low-flying drones, which escape radar detection and pose challenges for traditional LiDARs that operate only at short range, can now be reliably detected at considerable distances". Beyond drone detection, the sensor is primed for diverse applications such as airport safety, maritime traffic management, logistics and port security, obstacle detection for high-speed railways, high-resolution 3D mapping, and more.



High-resolution (0.005X0.005 deg) zoom-in view to an object located 5.6 km away



Lidwave's portable, compact 4D Coherent LiDAR sensor module

The FCR-based sensor offers a solution to previously unsolved challenges in long-range, high-resolution sensing. Lidwave's technology addresses the need for reliable and dependable sensor for complex scenarios—tasks that have posed significant difficulties to other systems. "By redefining detection ranges, with more than 5km detection range from a compact and adaptable device, Lidwave's 4D coherent LiDAR opens new frontiers for industries that demand accuracy, efficiency, and real-time insight across a variety of detection ranges and varied environments," summarized Vidal.

Nitsan Avivi

Lidwave Ltd

contact@lidwave.com

Visit us on social media:

[X](#)

[LinkedIn](#)

[YouTube](#)

---

This press release can be viewed online at: <https://www.einpresswire.com/article/760267342>

EIN Presswire's priority is source transparency. We do not allow opaque clients, and our editors try to be careful about weeding out false and misleading content. As a user, if you see something we have missed, please do bring it to our attention. Your help is welcome. EIN Presswire, Everyone's Internet News Presswire™, tries to define some of the boundaries that are reasonable in today's world. Please see our Editorial Guidelines for more information.

© 1995-2024 Newsmatics Inc. All Right Reserved.