

iPhone Equipped with Lidar: Apple Brings Laser Scanning to the Masses



The new iPhone 12 Pro is equipped with a Lidar sensor, marking an encouraging step towards the democratization of photogrammetry and 3D scanning.

Smartphones equipped with a laser scanner have been in the pipeline for some time now. The iPad Pro 2020 was Apple's first tablet to include a Lidar scanner, and now the iPhone 12 Pro is equipped with a Lidar sensor too. This

makes it possible to scan the environment, measure distances and recognize objects – putting Lidar mapping at people's fingertips.

The iPhone 12 Pro has a triple-lens camera system: 12MP ultra-wide-angle, wide-angle and telephoto camera, while the iPad Pro 2020 has a 10MP ultra-wide-angle lens and a 12MP wide-angle lens. Both camera systems have an advanced Lidar sensor linked to the various lenses.

On the iPhone 12 Pro (Max), the laser scanner is visible as a black dot beneath the camera. Apple itself says: "The Pro series has a completely new Lidar scanner which can measure the light distance and can use information about pixel depth. This technology provides faster and more realistic AR experiences and a six times faster autofocus in low light, making photos and videos sharper and reducing the exposure time." So it is not only useful for AR (as on the iPad Pro) but also for sharper photos and better image quality.

The laser scanner measures the distance to objects a maximum of 5 metres away in a matter of nanoseconds and works both indoors and outdoors.

Lidar moves into the mainstream

Smartphones with Lidar are more than just nice gadgets. This is an encouraging step towards the 'democratization' of photogrammetry and 3D scanning. So how can the potential benefits of smartphones with Lidar technology be realized? App developers could have an important role to play in this context. 3D scanning technology opens a whole world of new possibilities – not only for businesses, but also in people's everyday lives. [Matterport](#) is one company that is already responding to this: "Apple has taken a big step in making powerful 3D sensing hardware mainstream via its ever popular smartphone. At Matterport, we couldn't be more excited about this development and its applications," says the spatial data company which, in its own words, is focused on digitizing and indexing the built world.

Smartphone for professional mapping

So does the laser scanner-equipped iPhone also offer added value for professional surveyors? Thomas Kersten, professor of photogrammetry and laser scanning at HafenCity University Hamburg, wrote a column last year entitled '[The Smartphone as a Professional Mapping Tool](#)'. He states: "If smartphones are to gain relevance as professional mapping tools, then other features will also be of importance. Such features include high-accuracy measurement capabilities, tools for the simple handling of data acquisition and processing, some degree of automation and interactivity in data processing and rapid data transfer via WLAN or Bluetooth to other evaluation systems."

Whatever the case, the new iPhone is certainly entertaining. Geomares team member Pyter-Anne has already had fun using it [to capture a scan](#) (with the Polycam - LiDAR 3D Scanner app) of the office where *GIM International* and *Hydro International* are put together!



An iPhone Lidar scan of the office where GIM International and Hydro International are put together.