

New Leica ScanStation and Leica Cyclone 5.5

Leica Geosystems (Switzerland) has introduced Leica ScanStation, a 3D laser scanner with four total station features: full Field-Of View (FOV); survey-grade dual-axis tilt compensation for traversing and re-sectioning; survey-grade accuracy for each measurement; and useful measuring range.

Leica ScanStation retains the **FOV** of its predecessor, the Leica HDS3000 scanner, with a maximum 360 degrees horizontal FOV and maximum 270 degrees vertical FOV. With this FOV, ScanStation can scan overhead while simultaneously using scan targets spread optimally at ground level for accurate registration/control. This type of logistical freedom is similar to that of a total station and provides valuable versatility and project savings for accurately capturing overhead structures such as ceilings, bridges, overpasses, domes, facades, pipe racks, columns and towers.

Integrating the same one-second resolution, dual-axis (**tilt**) **compensator** as in Leica Geosystems total stations, Leica ScanStation can be used with traditional traverse and resection workflows for additional field and office savings.

Unlike scanners that require “averaging” of many scan points to achieve **survey-grade accuracy**, Leica ScanStation “and its sister Leica HDS3000 scanner” achieves survey-grade accuracy for each scan point without averaging. This lets users take advantage of the ability to “click on” individual scan points and use them directly for survey-grade coordinate and distance measurements with confidence in their accuracy.

With a maximum range of 300m (90% surface reflectivity), a narrow beam and ultra-fine scanning capability, Leica ScanStation addresses the vast majority of as-built and topographic survey projects for which users would consider the use of reflectorless instruments.

Leica Geosystems will continue to offer Leica ScanStation’s predecessor scanner, the Leica HDS3000 time-of-flight scanner (without dual-axis compensation), and the ultra-high speed Leica HDS4500 phase-based scanner as standard products.

Leica Cyclone v5.5 is the companion software for operating Leica ScanStation in re-section, back-sight and traverse workflows. Leica Cyclone is Leica Geosystems’s suite of software modules that enables users to efficiently register, geo-reference, and process rich, as-built point cloud data into project deliverables.

New features in Cyclone-SCAN and -REGISTER modules pace the survey-grade, dual-axis level compensation capability of the new Leica ScanStation laser scanner. With these new features, Leica ScanStation users can take advantage of (1) resectioning - or “free stationing” - methods for direct, field geo-referencing of scan data and (2) traversing, including calculation of traverse closures. Standard survey-style reports, including error calculations, are generated for both resectioning and traversing.

Leica Cyclone 5.5 also continues to support registration and geo-referencing based on scan targets, modeled objects, and “cloud-to-cloud” methods. Together with resectioning, back-sighting, and traversing, this set of workflow options provides users with valuable added flexibility and cross-checking aids.

Point loading performance for large data sets, such as those generated by the Leica HDS4500 phased-based scanner, has been improved by up to 4X. This improvement applies to all Leica Cyclone and to all Leica CloudWorx modules.