

NEW RIEGL RiLOC®-F / RiLOC®-F^{inside}

RIEGL's high-precision IMU/GNSS solution for VUX-series laser scanners

Besides the already proven RiLOC-E²⁵, RIEGL now also offers a new high-precision, fully integrated subsystem for localization and orientation (Localization/Orientation/Component), the RiLOC-F or RiLOC-F^{inside} IMU/GNSS solution for VUX-series laser scanners. The RiLOC-F can be either directly attached to the rear panel of the VUX-100²⁵ or VUX-120²³ or – as RiLOC-F^{inside} – be fully integrated in the VUX-100²⁵, VUX-120²³, VUX-160²³ and VUX-180²⁴. It includes a high-precision Micro Electro Mechanical System (MEMS) Inertial Measurement Unit (IMU), a GNSS unit, and appropriate software.

The combination of a VUX-series laser scanner and RiLOC-F/RiLOC-F^{inside} into a compact complete LiDAR system is the ideal solution for small-scale LiDAR surveying with unmanned platforms such as multirotor, fixed-wing, or VTOL drones. In such applications, using a nearby local base station ensures the shortest base length and thus maximum accuracy in the georeferencing of the RIEGL VUX-series laserscanner's high-precision LiDAR data.

Key Features

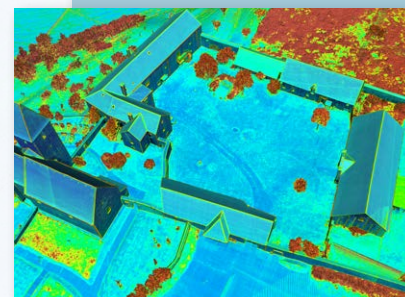
- tight coupling of IMU / GNSS / LiDAR data
- seamlessly integrated into the RIEGL post-processing workflow
- lightweight, small form factor

Specifications

	RiLOC-F / RiLOC-F ^{inside}
IMU system	MEMS based
IMU sampling rates	up to more than 700 Hz
IMU acceleration range	±8 g
IMU angular rate range	± 300°/sec
Roll/Pitch	0.005°
Heading	0.020°
Performance specifications ¹⁾	0.02 - 0.03 m (position, post-processed)
GNSS system	multi-constellations (GPS, GLONASS, Galileo and BeiDou) up to triple-frequency
Dimensions	approx. 85 x 85 x 44 mm / approx. 117 x 110 x 22 mm ²⁾
Weight	approx. 0.35 kg / approx. 0.22 kg ²⁾

1) Typical accuracy under ideal conditions, RMS values, no GNSS outages, short baseline < 10 km. Positioning performance depends on satellite visibility, atmospheric conditions, and other environmental effects. Navigation performance depends on platform dynamics. Overlapping flight strips with at least 25% overlap and cross strips; significant elevation changes and/or objects with planar features need to be available.

2) Applies only for RIEGL VUX-100²⁵ / VUX-120²³ with RiLOC-F^{inside}



RiLOC-F directly attached to
e.g. RIEGL VUX-120²³



RiLOC-F^{inside} fully integrated in
e.g. RIEGL VUX-120²³



RiLOC-F^{inside} fully integrated in
e.g. RIEGL VUX-160²³