

# RIEGL miniVUX-1 UAV

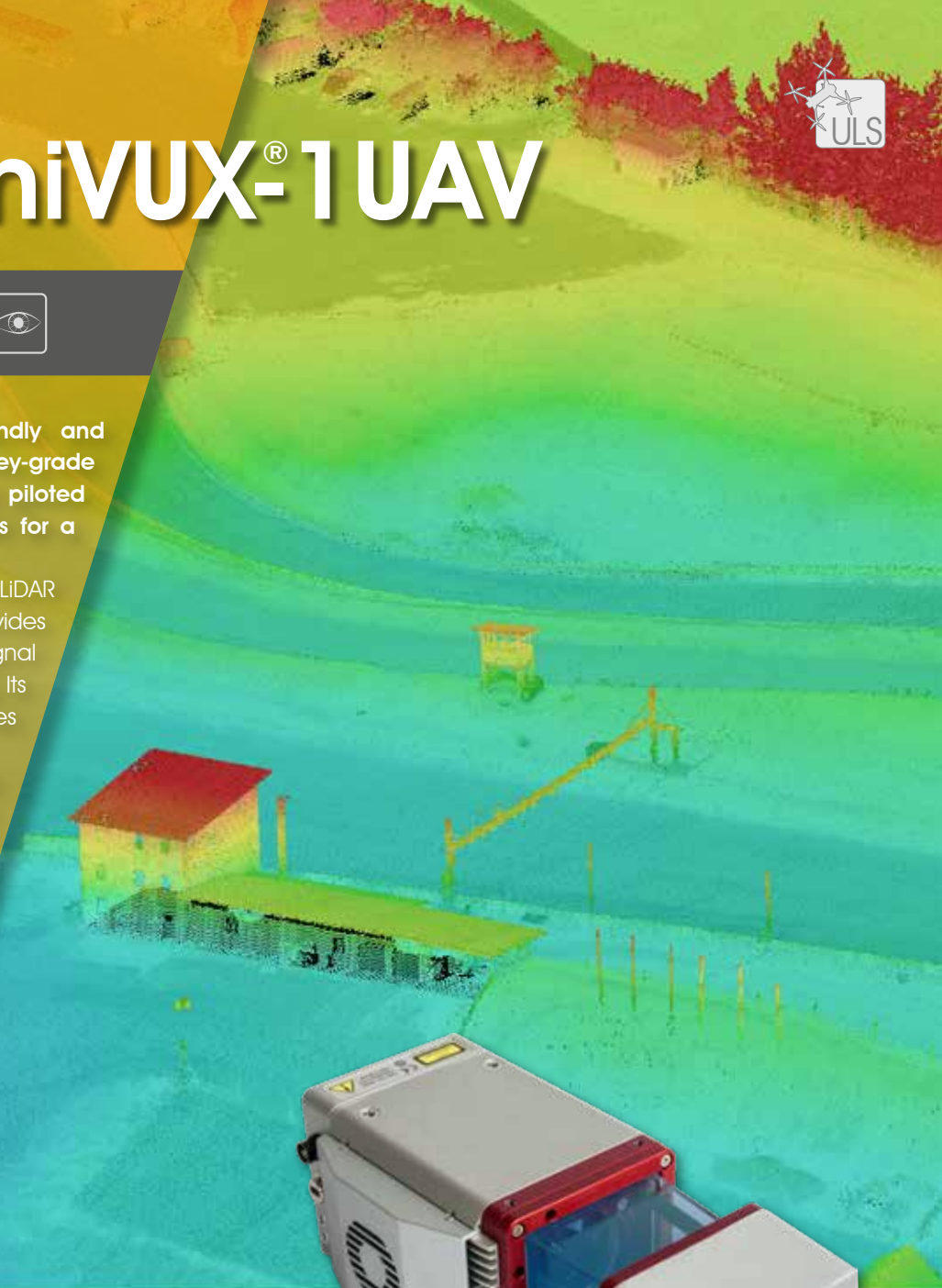


The *RIEGL* miniVUX-1 UAV is a user-friendly and cost-efficient device to acquire survey-grade measurement data by use of remotely piloted multi-rotor, rotary-wing, or fixed-wing UAVs for a variety of applications.

Based on *RIEGL*'s sophisticated Waveform-LiDAR technology, the *RIEGL* miniVUX-1 UAV provides high-speed data acquisition using echo signal digitization and online waveform processing. Its excellent multiple target capability achieves superior measurement results.

The 360° field of view allows complete acquisition of the environment, and a well designed housing supports mounting even with restricted weight and space requirements.

*RIEGL* offers user-friendly, installation- and application-oriented solutions for the integration of the miniVUX-1 UAV, from the stand-alone sensor to fully-integrated *RIEGL* airborne laser scanning systems.



## Miniaturized LiDAR Sensor for Unmanned Laser Scanning

### Typical applications include






- Agriculture & Forestry
- Glacier and Snowfield Mapping
- Archeology and Cultural Heritage Documentation
- Construction-Site Monitoring
- Landslide Monitoring



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## RIEGL miniVUX-1 UAV Stand-alone

-  max. operating flight altitude AGL
-  pulse repetition rate PRR (peak)
-  eye safe operation at Laser Class 1
-  online waveform processing
-  multiple target capability

<b>Eye Safety Class</b>	Laser Class 1
<b>Max. Range @ Target Reflectance 60%</b>	250 m
<b>Max. Range @ Target Reflectance 20%</b>	150 m
<b>Minimum Range</b>	3 m
<b>Accuracy / Precision</b>	15 mm / 10 mm
<b>Max. Effective Measurement Rate</b>	up to 100,000 meas./sec
<b>Field of View (FOV)</b>	up to 360°
<b>Typ. Operating Flight Altitude AGL</b>	80 m / 260 ft

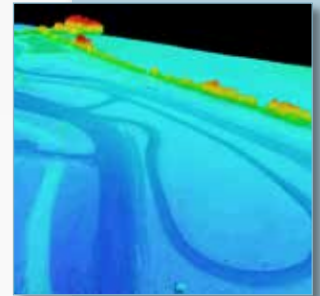
Class 1 Laser Product according to IEC 60825-1:2014

### Highlights

- extremely lightweight (1.55 kg / 3.4 lbs stand-alone LiDAR sensor without cooling fan)
- compact (243 x 111 x 85 mm), robust aluminum housing
- 360° field of view
- exceptionally suited to measure in snowy and icy terrains
- RIEGL's unique echo signal digitization and online waveform processing
- multiple target capability – up to 5 target echoes per laser shot
- narrow measurement beam with low divergence for high spatial resolution
- mechanical and electrical interface for IMU mounting



compact & lightweight miniVUX®-1 UAV



RIEGL miniVUX®-1 UAV scan data



DJI Matrice M600 equipped with RIEGL miniVUX-SYS using RIEGL Integration Kit 600

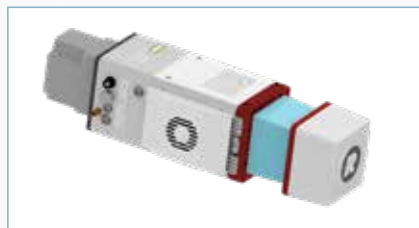
## RIEGL miniVUX-SYS System Integration Options

### RIEGL miniVUX-1 UAV with APX-15 UAV<sup>1)</sup>



- IMU/GNSS unit integrated with LiDAR engine
- total weight approx. 2 kg
- interfaces for up to 2 cameras
- suited for integration into fixed-wing UAVs

### RIEGL miniVUX-1 UAV with APX-20 UAV<sup>1)</sup>



- higher-grade IMU/GNSS unit partly integrated with LiDAR engine
- total weight approx. 2.5 kg
- interfaces for up to 2 cameras
- suited for integration into all types of UAVs

### RIEGL Integration Kit 600



- add-on to the miniVUX-SYS coming with shock-absorbing mounting-kit, power supply module and cabling
- total weight approx. 0.7 kg (without sensor and camera)
- suited for integration into multi-rotor UAVs

<sup>1)</sup> See technical details in the corresponding Applanix datasheet.



### Find your perfect system!

Please contact [sales@riegl.com](mailto:sales@riegl.com) / [info@ricopter.com](mailto:info@ricopter.com) to get more detailed information on the available solutions and to find the system perfectly suited for your application and needs.

The RIEGL miniVUX-1 UAV / RIEGL miniVUX-SYS is designed & manufactured by RIEGL Laser Measurement Systems GmbH. It is distributed, supported and serviced by RiCOPTER UAV GmbH, also a RIEGL company.

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