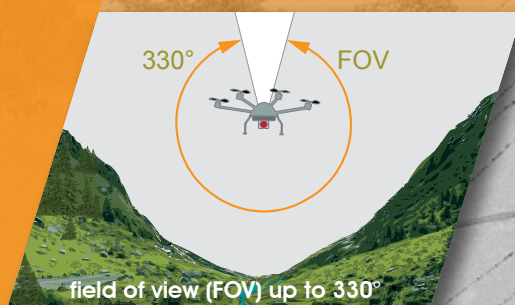


# NEW RIEGL VUX<sup>®</sup>-1



RIEGL has developed a new class of LiDAR sensor to meet the challenges of emerging surveying solutions by UAS, UAV, RPAS, gyrocopters, and ultra-light aircraft, both in measurement performance and in system integration.



VUX<sup>®</sup>-1 mounted on  
RIEGL RICOPTER<sup>®</sup>

Data acquisition with a RIEGL VUX-1: PRR 550 kHz  
flight altitude AGL 250 ft; speed 30 kn



## Introducing the World's first survey-grade UAS laser scanner

### Typical applications include

- Power Line, Railway Track, and Pipeline Inspection
- Terrain and Canyon Mapping
- Surveying of Urban Environments
- Capturing the Topography in Open-Cast Mining Areas
- Archaeology and Cultural Heritage Documentation
- Construction-Site Monitoring
- Corridor Mapping
- Precision Agriculture
- Flood Zone Mapping



[www.riegl.com](http://www.riegl.com)



## RIEGL VUX®-1 Preliminary Technical Data



max. operating flight altitude AGL



pulse repetition rate PRR (peak)



eye safe operation at Laser Class 1



online waveform processing

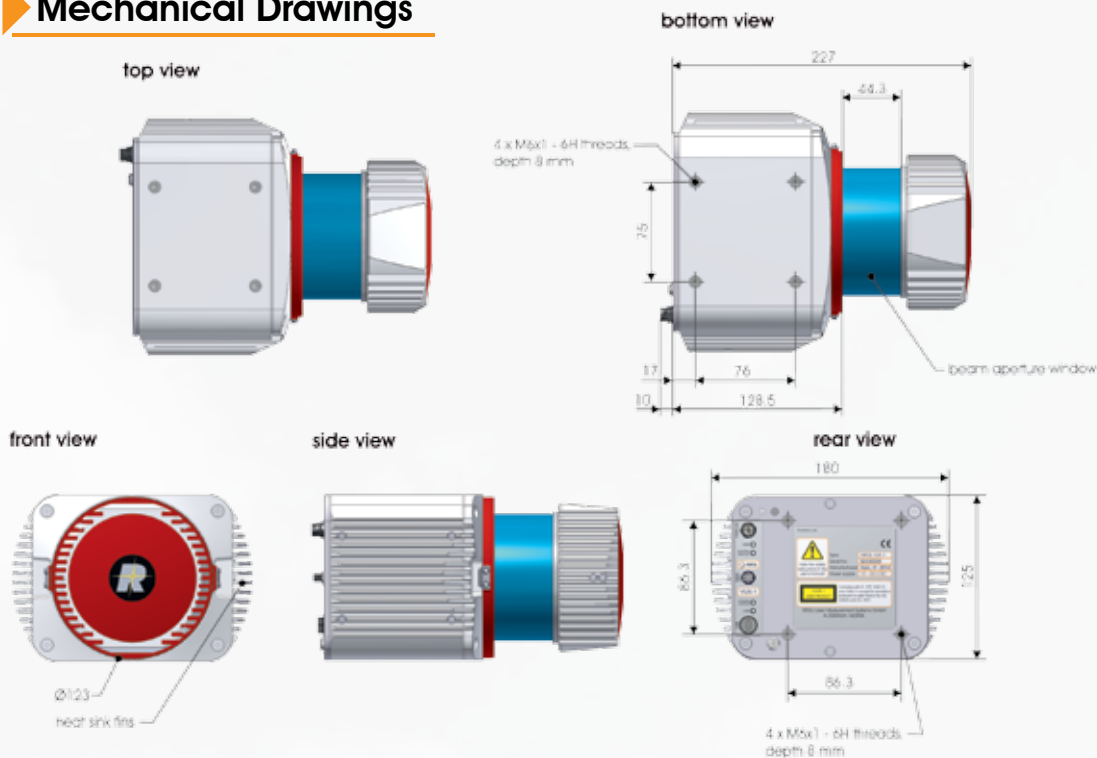


multiple target capability

<b>Eye Safety Class</b>	Laser Class 1
<b>Max. Range @ Target Reflectivity 60%</b>	920 m
<b>Max. Range @ Target Reflectivity 20%</b>	550 m
<b>Minimum Range</b>	3 m
<b>Accuracy/Precision</b>	10 mm / 5 mm
<b>Max. Effective Measurement Rate</b>	up to 500,000 meas./sec
<b>Field of View (FOV)</b>	up to 330°
<b>Max. Operating Flight Altitude AGL</b>	350 m / 1,150 ft

Class 1 Laser Product according to IEC60825-1:2007

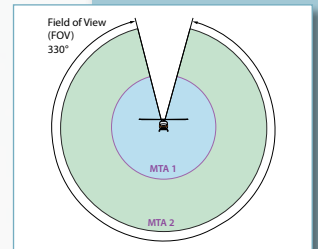
## Mechanical Drawings



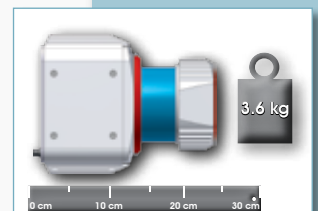
RIEGL VUX®-1 with cooling fan device



RIEGL VUX®-1 with external IMU-Sensor (optional)



Multiple-Time-Around data acquisition and processing



compact and lightweight

## Highlights

- compact, rugged and very lightweight design
- easily mountable to professional UAS/UAV/RPAS
- high-accuracy ranging based on echo digitization and online waveform processing
- high laser pulse repetition rate up to 550 kHz for fast data acquisition
- fast scan speed up to 200 scans/sec.
- field of view up to 330° enabling data acquisition in narrow, complex environments
- multiple target capability – unlimited number of target echoes
- perfectly parallel scan lines
- regular point pattern
- electrical interfaces for GPS data string and Sync Pulse (1PPS)
- mechanical interface for IMU mounting
- scan data storage on internal 240 GByte SSD Memory
- integrated LAN-TCP/IP interface