jenaoptronik

µRVS

Ready for the next rendezvous:
The **small and lightweight LiDAR µRVS**.

Jena-Optronik's Rendezvous and Docking Sensor RVS© and RVS© 3000 are the most frequently used LIDAR sensors for docking to the International Space Station ISS. Numerous flight models have been delivered to customers in the United States, Japan and Europe. All flight models being used in orbit delivered a flawless, fully reliable performance.

Based on the RVS and RVS 3000 success story Jena-Optronik has developed the new generation of Rendezvous and Docking Sensors, the µRVS.

A compact LiDAR for space: From approaching ISS to removing space debris - our µRVS serves a wide range from LEO to GEO as well as lunar orbit and rover applications.

- For rendezvous and docking to cooperative targets, e.g. ISS
- For rendezvous and docking to non-cooperative targets and space robotics applications, like 3D point cloud imaging

The µRVS is the most compact in the Jena-Optronik LiDAR portfolio. It combines multiple newly developed and optimized system components into one LiDAR, thereby minimizing its size, weight and power consumption. This reduced the number of components in general and therefore achieves a quarter of the size and power of the RVS 3000 and a reduction of over 50% of the RVS 3000's weight.

µRVS Performance

Due to the µRVS´s compact size it opens up a wider range of possible applications. The capabilities of the µRVS include docking and rendezvous with cooperative and non-cooperative targets, which enables support of maintenance and mission extension of various kinds of spacecraft, e.g. space debris removal activities.

The µRVS combines precision, efficiency, and resilience in a compact LiDAR offering a lightweight solution for the imaging needs of future missions.

Scan Parameter	
Field of View	40° x 40° ... 1° x 1°
Line of Sight 3σ noise	< 0.2°
Laser	
Wavelength	905 nm (eye-safe under certain condition: CW < 1 mW)
Operating Range Cooperative Targets	
Range min.	< 1m
Range max.	> 1000m
Operating Range Non-cooperative Targets	
Range min.	< 1m
Range max.	> 70m (depending on sun position)
Power Consumption	
Nominal	< 25 W
Maximum	< 30 W
Mechanical Interface	
Mass	< 5 kg
Dimensions	180 mm x 170 mm x 140 mm
Electrical Interface	
Power nominal	28 V (unregulated 24-36 V)
Data Interface	SpaceWire (others on request)
Output Data	
	point cloud
	retro tracking and relative 6DOF to target object optional development

EN 9100 certified AIRCERT Certification of Management Systems

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