

RiCOPTER-M



The extra high performance M-Type of the RiCOPTER is a multi-purpose octocopter for professional UAV missions in highly sensitive areas and situations of limited access.

Key Facts:

- robust und reliable multi-sensor carrying UAV-platform
- 40 kg MTOM (Maximum Take-Off Mass)
- exceptional payload capability
- equipped with special aviation safety features and ADS-B/Mode-S transponder
- **RiCopterControl (RiCC):** redundant flight control system developed and produced by RIEGL
- remote control Graupner MC32 (2.4 GHz; telemetry supported)
- 433, 868 or 915 MHz command and control link; 5.8 GHz live video downstream
- UN 38.3 certified batteries
- highly versatile and customizable



RiCOPTER-M

Remotely Piloted Multi-Purpose Aircraft System
with exceptional payload capacity

Perfectly prepared for the integration of multi-sensor systems in interchangeable configurations, e.g. laser scanners combined with photogrammetric cameras, thermal-infrared cameras, hyperspectral cameras, magnetometers, radiation sensors, gas leak detectors

RICOPTER-M Key Features

- multi-sensor carrying platform with enhanced operational possibilities
- exceptional payload capacity of up to 15 kg
- aviation safety features such as strobe light, landing light, sound signals, and ADS-B/Mode-S transponder for safe use in emergency scenarios, e.g. in parallel to manned helicopters or in areas where air traffic management has to monitor and coordinate low flying UAS traffic
- fully redundant control system RiCC offering several multiple control interfaces and trigger options
- straight-forward integration and control of complex multi-sensor systems for acquiring comprehensive information in one single mission
- full mechanical and electrical integration of sensor system components with aircraft fuselage
- carbon fibre main frame, foldable propeller carrier arms, and shock-absorbing undercarriage for stable flight, landings and comfortable transportation
- optionally available: RICOPTER-M Ground Control Unit and Charging Control Unit

Typical RICOPTER-M configuration: one or two RIEGL UAV LiDAR sensors for topographic and bathymetric surveying combined with high resolution cameras, thermal camera or hyper-spectral camera, or other sensors, for e.g. gas detection or radiation detection

RICOPTER-M Aircraft Technical Data

Specifications and Performance:

| | |
|--|--|
| Main Dimensions ready to fly arms folded for transportation & storage | 1,920 mm x 1,820 mm x 470 mm 624 mm x 986 mm x 470 mm |
| MTOM (Maximum Take-Off Mass) | 40 kg ¹⁾ |
| Max. Sensor Load | 15 kg |
| Empty Weight | 13.5 kg |
| Max. Operating Altitude AMSL ²⁾ | up to 3000 m (10,000 ft) ^{3) 4)} (under ISA ⁵⁾ conditions) |
| Max. Flight Endurance | up to 20 min @ 10 kg sensor load up to 15 min @ 15 kg sensor load |
| Cruise Speed | typ. 20 - 30 km/h |
| Take-off / Landing | VTOL (Vertical Take-off and Landing) |
| Transmission Range | Remote Control > 1km ⁶⁾ Command and Control Link > 3 km ^{6) 7)} |
| RICOPTER Transportation Case dimensions empty weight | 1,220 mm x 810 mm x 540 mm approx. 20 kg |

1) high reliability up to 37.5 kg MTOM

2) AMSL – Above Mean Sea Level

3) depending on rotor blade configuration

4) For flight altitude above ground level, operational limits for civil unmanned aircraft according to national regulations have to be observed.

5) ISA – International Standard Atmosphere

6) line-of-sight, 50 m above ground level

7) depending on frequency and local regulations

Limitations:

| | |
|----------------------------------|-----------------------|
| Max. Ground Speed | 50 km/h ¹⁾ |
| Max. Tolerable Wind Speed | 30 km/h |
| Max. Climb Rate | 5 m/sec ¹⁾ |
| Max. Descent Rate | 2 m/sec ¹⁾ |

1) electronically limited

Hot / Cold Weather Operation:

| | |
|-----------------------------------|-------------------------------------|
| Min. Operating Temperature | -5°C OAT (Outside Air Temperature) |
| Max. Operating Temperature | +40°C OAT (Outside Air Temperature) |



RICOPTER-M equipped with ADS-B/Mode-S transponder



RICOPTER-M in action



Transportation Case:
foldable arms facilitate
easy transportation and storage



Ground Control Unit



Charging Control Unit

The RICOPTER-M is a high performance unmanned multi-rotor aircraft, 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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