TRIMBLE UX5
AERIAL IMAGING SOLUTION

A NEW STANDARD IN MAPPING AND SURVEYING
The all-new Trimble® UX5 Aerial Imaging Solution is setting the standard for fast and safe aerial data collection by offering a complete system with powerful technologies such as reversed thrust & automatic fail-safe procedures, a robust design and radically simplified workflow. Featuring the Trimble Access™ Aerial Imaging application the Trimble UX5 makes a once time-consuming and complex process incredibly easy – no matter what the conditions.

HIGH QUALITY IMAGE ACQUISITION
Designed to follow the latest developments in the ‘prosumer’ camera market, the Trimble UX5 ensures optimal image quality along with maximum photogrammetric accuracy. The UX5 camera has – unlike a traditional compact camera – a large imaging sensor that captures very sharp, color-rich images, even in dark or cloudy conditions. The 16.1 MP camera and its custom optics give the UX5 the ability to capture data down to 2.4 cm (0.94 in) resolution.

LANDINGS, LESS SPACE – MORE ACCURATE
The Trimble UX5 overcomes the limitations of traditional UAS landings with the addition of an advanced control method. Based on reversed thrust, this innovative improved altitude measurement results in accurate and predictable landings for landing confidence every time. For professionals working in small areas, the landing angle and trajectory is compact and allows landings in confined spaces.

UNRIVALED DURABLE AIRFRAME
Based on a production method patented by Trimble, the Trimble UX5 combines an impact resistant foam structure and internal and external composite elements that give the UX5 its extreme durability and strength. Additionally, the design focus has been on delivering an easy to maintain airframe that can be renewed at users’ discretion by a plug-and-play fitting of the protected internal electronics.

INTUITIVE WORKFLOWS WITH TRIMBLE ACCESS
The Trimble Access Aerial Imaging application loaded onto the Trimble Tablet Rugged PC operates the Trimble UX5 and is a single software tool for planning your aerial missions, performing pre-flight checks and monitoring your flights – all with intuitive workflows that ensure reliable results. In the field, the operator is guided through the pre- and post-flight sequences with step-by-step digital checklists. For additional time and resource savings, many of the Trimble UX5 checks are automatically verified by the software and do not require any interaction from the operator. Plus, the fast and intuitive workflow allows the Trimble UX5 to be ready to fly in only 5 minutes ensuring minimal downtime.

AUTOMATIC PROCEDURES FOR MAXIMUM SAFETY
The Trimble UX5 offers a much safer method to collect data compared to traditional surveying methods. Flights are conducted in a fully automated manner, from launch to landing, and require no piloting skills. The operator merely facilitates the aircraft’s operation and built-in safety procedures ensure safe and successful launches each time. This means that data collection is performed without risking injury to individuals as a result of hazardous terrain, environmental contaminants, or equipment and machinery.

MAXIMUM PERFORMANCE
The remarkable design of the Trimble UX5 ensures employability nearly everywhere and in practically all weather conditions. Whether you choose to fly in rainy conditions along windy seashores, in hot deserts, or in a snowy, mountain terrain, the Trimble UX5 is a dependable solution to gather high quality data without compromising coverage.

VALUABLE PHOTOGRAMMETRY DELIVERABLES
Optimized to process data from the Trimble UX5 Aerial Imaging Rover, the Trimble Business Center Photogrammetry Module creates impressive deliverables with flights performed with the Trimble UX5. Produce point clouds, Triangulated Irregular Network (TIN) models and contour maps of the area flown. These can then be used to calculate volumes, excavation planning, drainage planning and many other functions. Trimble Business Center also produces a scaled orthophoto of the area that can be used to plan a project, define features of interest, identify property boundaries, or show construction progress by comparing orthophotos from different times.

The Trimble UX5 Aerial Imaging Solution, a new standard in mapping and surveying for professionals that require the highest accuracy – no matter what the conditions.
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PERFORMANCE SPECIFICATIONS
• Maximized image footprint without compromising resolution, obtained with a custom wide-angle lens and APS-C-type sensor.
• Maximized coverage per flight and per hour due to large image footprint, sharp turning capability and high cruise speed.
• Reversed thrust technology for a short and steep landing circuit.
• Powerful propulsion system for steep climbs and high altitude flights.
• High airframe service life due to wing robustness and maintainability.
• Short setup time with automated procedures in Trimble Access field software.
• Self-check and failsafe procedures for safe operation.
• One-button export to Trimble Business Center to create deliverables.
• Optimized data accuracy when processed with Trimble Business Center.

HARDWARE
Type ........................................................................ Fixed wing
Weight ............................................................... 2.5 kg (5.51 lb)
Wingspan ............................................................ 1 m (3.28 ft)
Wing area ............................................................ 34 dm²
Dimensions ........................................................ 100 cm x 65 cm x 10.5 cm (39.37 in x 25.59 in x 4.13 in)
Material .............................................................. EPP foam; Carbon frame structure; Composite elements
Propulsion ............................................................ Electric pusher propeller; brushless 700 W motor
Battery ............................................................... 14.8 V, 6000 mAh
Camera ............................................................... 16.1 MP mirrorless APS-C with custom 15 mm lens
Controller .......................................................... Trimble Tablet Rugged PC

SOFTWARE
Trimble Access Aerial Imaging application
• Project management
• Mission planning with option for multiple flights
• Automated pre-flight checks
• Automatic take off, flight and landing
• Autonomous camera triggering
• Automated fail-safe routines
• User controlled fail-safe commands
• Automated data consistency checks
• Export to Trimble Business Center and a generic format for image processing

OPERATION
Endurance1,2 ........................................................ 50 minutes
Range 3,2 .......................................................... 60 km (37.28 mi)
Cruise speed ...................................................... 80 kmh (50 mph)
Maximum ceiling3 ............................................. 5000 m (16,404 ft)
Pre-flight system setup time ................................ 5 minutes
Take off
Type ............................................................... Catapult launch
Angle .............................................................. 30 degrees
Landing
Type .............................................................. Belly landing
Angle .............................................................. 14 degrees
Landing space (L x W) ......................................... 20 m x 6 m (66 ft x 20 ft)
Recommended .............................................. 50 m x 30 m (164 ft x 98 ft)
Weather limit ................................................... 65 kmh (40.39 mph) and light rain
Communication & control frequency .................. 2.4 GHz (FHSS)
Communication & control range ......................... Up to 5 km (3.10 mi)

ACQUISITION PERFORMANCE
Resolution (GSD) ................................................ 2.4 cm to 24 cm (0.94 in to 9.44 in)
Height above take-off location (AGL) ................. 75 m to 750 m (246 ft to 2,460 ft)

AREA COVERAGE TABLE

<table>
<thead>
<tr>
<th>Height above take-off (AGL)</th>
<th>Coverage/flight [km²] (1)</th>
<th>Coverage/day [km²] (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 m</td>
<td>0.2 km²</td>
<td>1.7 km²</td>
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<td>50 m</td>
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<td>75 m</td>
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<tr>
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<td>600 m</td>
<td>5.5 km²</td>
<td>47.2 km²</td>
</tr>
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</table>

1 ISO standard atmosphere conditions.
2 Recommended; UX5 not tested above 2,500 m (8,202 ft)
3 1 sigma for wind <30 kph (19 mph).

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