ULTRACAM OSPREY 4.1

New perspectives on 3D Aerial Mapping
Taking collection efficiency to new heights.

The UltraCam Osprey 4.1 collects photogrammetry-grade nadir imagery plus oblique images simultaneously, enabling unprecedented flight collection efficiency at industry-leading image and data quality.

“AICKE DAMRAU
ULTRACAM OSPREY CUSTOMER

“We selected the UltraCam Osprey knowing that it was developed based on sound photogrammetric principles. The integration of the sensor and the uniquely continuous UltraMap software workflow are a winning advantage over other solutions on the market.”

The UltraCam Osprey 4.1 introduces the 4th generation UltraCam aerial imaging sensors. A highly versatile system, the UltraCam Osprey simultaneously collects photogrammetry grade nadir images (PAN, RGB and NIR) and oblique images (RGB) in four directions. As a result of a combination of industry-leading customized lens systems, next generation image sensors with custom electronics, and a best-in-class image processing pipeline, the UltraCam Osprey 4.1 delivers imagery of unprecedented quality in terms of detail resolution, clarity and dynamic range. The system pushes urban flight productivity to new levels, collecting 1.2 Gigapixels every 0.7 seconds. Customers can fly faster, cover more area and see more detail. The new and innovative Adaptive Motion Compensation (AMC) method compensates for multidirectional motion induced image blur and additionally also compensates for ground sampling distance variations in oblique images, produces imagery of unprecedented vividness and sharpness.
From orthophotos to point clouds and 3D models, the UltraCam Osprey 4.1 high-performance system sets new standards in urban mapping and 3D city modeling.
Specifications & details

SENSOR SYSTEM

- Imaging sensor: CMOS
- Shutter: Prontor magnetic-0 HS, field exchangeable
- Motion compensation: Adaptive Motion Compensation (AMC)
- Frame rate: 1 frame per 0.7 seconds
- Dynamic range: > 83 dB at base ISO
- Analog-to-digital-conversion at 14 bits
- Spectral bands (FWHM):
  - R (580 - 690 nm)
  - G (480 - 600 nm)
  - B (420 - 510 nm)
  - IR (690 - 800 nm)
  - PAN (430 - 690 nm)

LENS SYSTEM

- Nadir
  - PAN image size: 20,544 x 14,016 pixels
  - PAN physical pixel size: 3.76 µm
  - Color capability (multi-spectral): 4 channels – RGB Bayer pattern & NIR
  - Color image size: 12,840 x 8,760 pixels
  - Color physical pixel size: 3.76 µm
  - Pan sharpen ratio: 1:1.6
- Oblique
  - Color capability: 3 channels – RGB Bayer pattern
  - Color image size: 14,144 x 10,560 pixels
  - Color physical pixel size: 3.76 µm

DATA STORAGE SYSTEM

- Type: Solid state disk pack
- Redundancy: Yes, optional
- Storage capacity: 16 TB
- Size of one raw image: 3,300 MB
- Number of raw images: 4,100 (6,200 without optional redundancy)
- Weight of data unit: 1 kg

OPERATIONAL SPECIFICATION

- Flight altitude: ≤ 7,000 m above sea level
- Humidity: 5 % to 95 % non condensation
- Temperature: -20 °C to +45 °C operation, sensor
  - -20 °C to +45 °C (operation, computer)
  - -20 °C to +65 °C (storage)
- Mounting: UltraMount (GSM 3000 & GSM 30000) and most current third party mounts
- GNSS/INS/FMS system support: UltraNav (Applanix, POSTrack OEM) and most current third party systems
- Installation (Camera, UltraNav & UltraMount): ≤98 kg weight, 480 W peak, 560 W (peak) power consumption
- Flight direction:
  - Forward Oblique
  - Left Oblique
  - Right Oblique
  - Backward Oblique
- Sample flying heights:
  - Nadir: 2128m @ 10cm GSD
  - Oblique: 1596m @ 7.5cm GSD

- Power consumption: 330 W (average)
  - 350 W (peak)
- Weight: ≤98 kg
- Cylinder diameter: 956 mm
- Operator display: Vexcel IPT v3 with 1024 x 768 resolution and 2.1 kg

- LENS SYSTEM

  - PAN lens system focal length: 80 mm
  - PAN lens aperture: f=1/4.8
  - Color (RGB Bayer pattern & NIR) lens system focal length: 50 mm
  - Color (RGB Bayer pattern & NIR) lens aperture: f=1/4.0
  - Color (RGB Bayer pattern) lens system focal length: 120 mm
  - Color (RGB Bayer pattern) lens aperture: f=1/4.0
  - Total field of view, across track:
    - Nadir: 45° (+9.2° / -15.1°)
    - Oblique: 45° (+9.2° / -9.2°)

- Installation: UltraNav (Applanix, POSTrack OEM) and most current third party systems

- Flight altitude: ≤ 7,000 m above sea level
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  - -20 °C to +45 °C (operation, computer)
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Additional Notes:
- *Full Width at Half Maximum.
- Please contact our sales team for detailed information.
BENEFIT FROM OUR TECHNOLOGY

When you partner with Vexcel Imaging, you get more than an UltraCam. You get cutting-edge technology combined with a progressive service concept for constant product upgrades, world-class support and one-stop solutions. Today and tomorrow.