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 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 inducted 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

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
Pansharpen 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

Imaging sensor	CMOS
Shutter (longlife central leaf)	Prontor magnetic-0 HS; field exchangeable
Motion compensation (multi-directional)	Adaptive Motion Compensation (AMC)
Frame rate (min. inter-image interval)	1 frame per 0.7 seconds
Dynamic range	> 83 dB at base ISO
Analog-to-digital-conversion at	14 bits
Spectral bands (FWHM[1])	R (580–690 nm)
	G (480–600 nm)
	B (420–510 nm)
	IR (690–800 nm)
	PAN (430–690 nm)

[1] Full Width at Half Maximum.

DATA STORAGE SYSTEM & CAMERA SPECIFICATIONS

Type:
Solid state disk pack
(in-flight exchangeable)

Redundancy:
Yes, optional

Storage capacity:
16 TB (4x 4 TB NVMe SSD)
32 TB (4x 8 TB NVMe SSD)

Size of one raw image:
3,300 MB
(2,400 MB without optional redundancy)

Weight of data unit:
1 kg

Number of raw images[2]
(without optional redundancy):
16 TB: up to 4,890 (7,330)
32 TB: up to 9,780 (14,660)

Power consumption:
330 W (average)
350 W (peak)

Weight:
≤58 kg

Cylinder Diameter:
395 mm

Operator display:
Vexcel IPT v3 with 1,024 x 768 resolution and 2.1 kg

43 cm

80 cm

[2] Due to configuration and change in SSD technology, usable storage size may vary and can not be guaranteed.

LENS SYSTEM

FLIGHT DIRECTION

Forward Oblique

Left Oblique | Nadir | Right Oblique

Backward Oblique

Nadir		
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
Total field of view, across track		51.8°
along track		36.6°

Oblique		
Color (RGB Bayer pattern) lens system focal length		123 mm
Color (RGB Bayer pattern) lens aperture		f=1/4.0
Total field of view, across track		45° (+9.2° / -15.1°)
along track		45° (+9.2° / -9.2°)

Sample flying heights:
1588 m @ 7.5 cm GSD
2117 m @ 10 cm GSD

OPERATIONAL SPECIFICATIONS

FLIGHT ALTITUDE
≤ 7,000 m
above sea level

HUMIDITY
5 % to 95 %,
non-condensing

TEMPERATURE
0 °C to 45 °C
-20 °C to +45 °C[3]
(operation)
-20 °C to +65 °C
(storage)

MOUNTING
UltraMount and most
current third party
mounts[4]

GNSS/INS/FMS
UltraNav and most
current third party
systems[4]

INSTALLATION
(Camera, UltraNav
& UltraMount):
≤95 kg,
480 W (average)
560 W (peak)

DATA PROCESSING
UltraMap
processing suite
including data export
in standard formats

[3] Camera cylinder exposed to outside airflow only.
[4] Please contact our sales team for detailed information.

**BENEFIT FROM
OUR TECHNOLOGY**

When you partner with Vexcel Imaging,
you get more than a camera.

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.