VEXCEL
IMAGING

ULTRACAM OSPREY 4.1

New perspectives on 3D Aerial Mapping

ULTRACAM OSPREY 4.1

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.

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 1.1 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.

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.”

Specifications & details

Technical changes, printing errors, mistakes and amendments reserved.

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	14,176 x 10,592 pixels
Color physical pixel size	3.76 µm

Imaging sensor	CMOS
Shutter (longlife central leaf)	Prontor magnetic-0 HS; field exchangable
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)

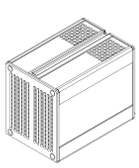
[1] Full Width at Half Maximum.

DATA STORAGE SYSTEM

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

Redundancy:
Yes, optional

Storage capacity:
16 TB



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

Weight of data unit:
1 kg

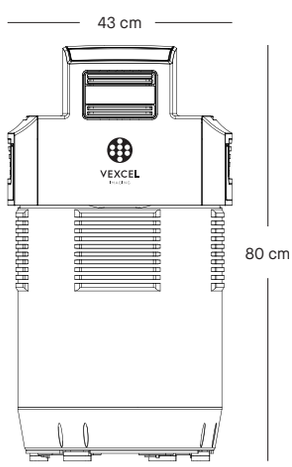
Number of raw images:
4,100 (6,200 without
optional redundancy)

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

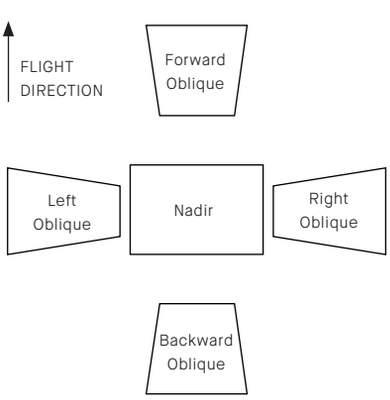
Weight:
<58 kg

Cylinder diameter:
395 mm

Operator display:
Vexcel IPT v3 with 1024 x
768 resolution and 2.1 kg



LENS SYSTEM



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 along track	51.5° 36.5°

Oblique

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 along track	45° (+9.2° / -15.1°) 45° (+9.2° / -9.2°)

Sample flying
heights:
2128m @ 10cm GSD
1596m @ 7.5cm GSD

OPERATIONAL SPECIFICATION

Flight altitude:
≤ 7,000 m
above sea level

Humidity:
5 % to 95 %
no condensation

Temperature:
-20 °C to +45 °C
(operation, sensor)
0 °C to +45 °C
(operation, computer)
-20 °C to +65 °C (storage)

Mounting:
UltraMount (GSM
4000 & GSM 3000)
and most current third
party mounts[2]

GNSS/INS/FMS
system support:
UltraNav (Applanix
POSTrack OEM) and
most current third
party systems[2]

Installation (Camera,
UltraNav & UltraMount):
<98 kg weight,
480 W (avg.) and
560 W (peak) power
consumption

Data processing:
UltraMap
processing suite
including data export
in standard formats

[2] Please contact our sales team for detailed information.

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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.

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