



ULTRACAM MERLIN 4.1 2010

# Your gateway to professional aerial data collection

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The UltraCam Merlin 4.1 2010 is your solution for local projects that require a rapid response at exceptional value. The system enables efficient image capture at a footprint of 20,544 x 14,016 pixels so customers can offer comprehensive mapping services while fully leveraging their investment. Vexcel's sophisticated image

processing chain maximizes the performance of the Bayer-pattern sensors and produces best-in-class data quality and accuracy. Embedded in Vexcel's integrated camera and software ecosystem with its unparalleled upgrade path, the Merlin 2010 is your scalable solution for sustainable success.



# PRELIMINARY SPECIFICATIONS & DETAILS

## ULTRACAM MERLIN 4.1

2010

True nadir RGB sensor, portrait oriented  
2 x 150 megapixels

True nadir NIR sensor, landscape oriented  
1 x 150 megapixels

SENSOR SYSTEM

Imaging sensor   physical pixel size	CMOS   3.76 μm
Shutter (longlife central leaf)	Prontor magnetic-0 HS2; field exchangeable
Color capability (multi-spectral)	4 channels – RGB Bayer pattern & NIR
Color (RGB Bayer pattern) image size	20,544 x 14,016 pixels
Color (NIR) image size	12,840 x 8,760 pixels
Ratio RGB to NIR	1 : 1.6
Spectral bands (FWHM <sup>1</sup> )	R (580–690 nm) G (480–600 nm) B (420–510 nm) NIR (690–880 nm)

1 frame per 0.7 seconds

Adaptive Motion Compensation

>83 dB at base ISO

14 bits at 4 bands

True Pixel Processing

CAMERA SPECIFICATIONS

Height: 76 cm

Cylinder diameter: 32.5 cm

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

Width: 42 cm

Weight: <52 kg

Operator display: Vexcel IPT – Interface Panel Touch (2 kg)

LENS SYSTEM

Color (RGB Bayer pattern) lens system focal length	80 mm
Color (RGB Bayer pattern) lens aperture	f=1/4.3
Color (NIR) lens system focal length	50 mm
Color (NIR) lens aperture	f=1/4.2
Total field of view, across track along track	51.5° 36.5°
Footprint for lean restriction of 1 m lean @ 5 m height (across x along)	8,510 x 8,510 pixels

Sample flying heights:  
2,128 m @ 10 cm GSD  
1,064 m @ 5 cm GSD

DATA STORAGE

Type	NVMe solid state disk pack (SSD)
Storage capacity	8 TB (4x 2 TB) 16 TB (4x 4 TB) 32 TB (4x 8 TB)
Size of one raw image (without optional redundancy)	1,030 MB (772 MB)
Features	In-flight exchangeable Optional redundancy
Number of raw images <sup>2</sup> (without optional redundancy)	8 TB: up to 7,350 (9,850) 16 TB: up to 14,200 (18,950) 32 TB: up to 29,650 (39,500)
Weight of data unit	1 kg

### 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<sup>3</sup> (operation)  
-20 °C to +65 °C (storage)

MOUNTING  
UltraMount and most current third party mounts<sup>4</sup>

GNSS/INS/FMS  
UltraNav and most current third party systems<sup>4</sup>

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

DATA PROCESSING  
UltraMap processing suite including data export in standard formats



<sup>1</sup> Full Width at Half Maximum.

<sup>2</sup> Due to configuration and change in SSD technology, usable storage size may vary and can not be guaranteed.

<sup>3</sup> Camera cylinder exposed to outside airflow only.

<sup>4</sup> Please contact our sales team for detailed information.

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