ULTRACAM EAGLE MARK 3

One system for endless possibilities
An ultra-large footprint coupled with a unique user-exchangeable lens system makes the UltraCam Eagle one of the most versatile aerial systems on the market.

The UltraCam Eagle Mark 3 boasts an ultra-large footprint of 450 Megapixels. It is the only digital photogrammetric aerial sensor that features a user-exchangeable lens system, providing you with a “workhorse” sensor to serve all your aerial acquisition missions.

Thanks to the latest sensor technology, the UltraCam Eagle achieves an excellent minimum capture interval of one frame per 1.5 seconds. The exchangeable lens system offers the option of four lens kits at focal lengths of 80mm, 100mm, 120mm and 210mm — a groundbreaking enhancement in digital photogrammetry. A key modification to the new UltraCam Eagle M3 is a newly developed CCD sensor based on new 4.0µ technology, featuring outstanding signal/noise ratio and non-mechanical FMC by TDI. UltraCam operators are sure to appreciate the easy to configure and operate new user-focused interface panel with touchscreen technology for in-flight quality control of each image. The result is an ultra-efficient, ultra-flexible, ultra-reliable camera for streamlined image acquisition for all your mission needs.

“Without the UltraCam Eagle on board our aircraft, our operations would not be nearly as efficient. The state-of-the-art technology from Vexcel enables our teams to work more efficiently and economically than our competitors.”

PROF. DI DR. HARALD MEIXNER
ULTRACAM EAGLE CUSTOMER
With the UltraCam Eagle, customers can capture more data in less time to complete mapping projects in fewer flight lines and with greater efficiency than previously possible.

**FLEXIBILITY**

**USER-EXCHANGEABLE**
Exchange the lens kits on-site by trained personnel within 3-4 hours.

**NO RECALIBRATION**
Photogrammetric grade accuracy is maintained even after multiple lens exchanges.

**4 FOCAL LENGTHS**
Take full advantage of the entire camera footprint of 26,460 pixels across the flight strip at different altitudes.
Specifications & details

**ULTRACAM EAGLE MARK 3 - PAN FOCAL LENGTH (MM)**

- **f 210 mm**
  - For regions with flight altitude restrictions when collection of high resolution images of highest quality is required.

- **f 120 mm**
  - For photogrammetric applications, optimizing usable footprint under lean restrictions at the image edges.

- **f 100 mm**
  - For photogrammetric applications, balancing flight altitude and footprint under lean restrictions at the image edges.

- **f 80 mm**
  - For photogrammetric applications requiring minimal flight altitude.

Illustration of respective flight altitudes above ground level at a ground sampling distance of 10 cm.

- **Max. 440 kts flight speed for 10 cm GSD at 80% forwardlap**
- **1 frame per 1.5 seconds**
- **26,460 pixels across flight strip**
- **17,004 pixels along flight strip**
- **Max. 94 % forwardlap for 10 cm GSD at 140 kts**
**SENSOR SYSTEM**

- **PAN image size**: 26,460 x 17,004 pixels
- **PAN physical pixel size**: 4.0 µm
- **Color capability (multi-spectral)**: 4 channels – R, G, B & NIR
- **Color image size**: 8,820 x 5,668 pixels
- **Color physical pixel size**: 4.0 µm
- **Pansharpen ratio**: 1 : 3

- **Imaging sensor**: CCD
- **Shutter**: (long-life central leaf) 1/1000 to 1/64
- **Forward-motion compensation (FMC)**: TDI controlled
- **Maximum FMC capacity**: 50 pixels
- **Frame rate (minimum inter-image interval)**: 1 frame per 1.5 seconds
- **Dynamic range**: > 72 db
- **Analog-to-digital-conversion at**: 14 bits

---

**DATA STORAGE SYSTEM**

- **Data unit storage capacity**: 10 TB (~4,600 images)
- **Input data quantity per image**: 1780 MB
- **Weight of data unit**: 2.2 kg

- **Power consumption**: max. 350 W
- **Configuration**: Integrated housing concept
- **Cylinder Diameter**: 325 mm

---

**LENS SYSTEM**

- **PAN lens system focal length**
  - f100: 80 mm
  - f120: 100 mm
  - f210: 120 mm
  - f210: 210 mm
- **PAN lens aperture**
  - f100: f=1/5.6
  - f120: f=1/5.6
  - f210: f=1/7.8
- **Color (R, G, B & NIR) lens system focal length**
  - f100: 27 mm
  - f120: 33 mm
  - f210: 40 mm
  - f210: 70 mm
- **Color (R, G, B & NIR) lens aperture**
  - f100: f=1/4.8
  - f120: f=1/4.8
  - f210: f=1/5.6
- **PAN total field of view, across track (along track)**
  - f100: 67,0° (46,1°)
  - f120: 55,8° (37,6°)
  - f210: 47,6° (31,6°)
  - f210: 28,3° (18,4°)
- **Flying height for PAN pixel size @ 10 cm GSD**
  - f100: 2,000 m
  - f120: 2,500 m
  - f210: 3,000 m
  - f210: 5,250 m
- **Footprint for lean restriction of 1 m lean @ 5 m height (across x along)**
  - f100: 8,000 x 8,000
  - f120: 10,000 x 10,000
  - f210: 12,000 x 12,000
  - f210: 21,000 x 17,004

---

**OPERATIONAL SPECIFICATION**

- **Flight altitude**: ≤ 7000 m above sea level
- **Humidity**: 5 % to 95 %, no condensation
- **Temperature**: 0 °C to +45 °C (operation, computer stack)
  - -20 °C to +45 °C (operation, sensor stack)
  - -20 °C to +65 °C (storage)
- **Mounting**: UltraMount (GSM, 4000 & GSM 3000), and most current third party mounts
- **GNSS/INS/FMS system support**: UltraNav (Applanix POSTrack OEM) and most current third party systems
- **Data processing**: UltraMap processing suite including data export in standard formats

¹ For separated housing concept options please contact our sales team.

² 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.