ULTRACAM
EAGLE

Ultra-LARGE. Ultra-RELIABLE. Ultra-EFFICIENT.

The Microsoft UltraCam Eagle represents a revolution in digital photogrammetric camera systems and sets new industry standards for digital aerial photography, enabling customers to soar to new heights with their mapping projects. UltraCam Eagle builds on the award-winning UltraCam legacy and reputation; Microsoft has further developed nearly every component of the camera, while still delivering a reliable and economical solution that captures breathtaking images.

UltraCam Eagle introduces a modular housing concept, setting a new standard in component integration, which reduces sensor head size and balances weight. The updated sensor head includes an exchangeable lens system with two different focal lengths—a groundbreaking enhancement in digital photogrammetry—and is specifically designed for high-resolution digital aerial photography. UltraCam Eagle also presents filters with curved characteristics and silent-board camera electronics, further ushering in revolutionary aerial photogrammetric technology. Embedded in the integrated component package is UltraNav, a flight management and georeferencing system that includes state-of-the-art GNSS-Inertial technology, pilot displays, and flight-planning software.

The result is an ultra-reliable, ultra-efficient, ultra-large-footprint camera that screams through image acquisitions, captures the smallest details, and enables direct and swift flights that are not limited by technology.

○ Features

The most innovative and advanced UltraCam system to date, offering revolutionary product features that include:

- *PAN image footprint of more than 20,000 pixels across the flight strip.*

- *Imaging-specific electronics and automated workflow that deliver 3.7 gigabits per second of image collection, resulting in a frame rate of less than 1.80 seconds and forward overlapping of 80 percent at 284 kts.*

- *An integrated package that contains all components in the sensor head, including an embedded OEM UltraNav GPS/INS/FMS system, and modular solid-state storage, providing flexibility for onboard orientation of equipment.*

- *A solid-state image storage system to store more than 3,800 images—and storage units that can be exchanged in flight, resulting in minimal ground time.*

- *Exchangeable lens system configurations with two different focal lengths for greater flexibility, from lower-altitude engineering applications to high-altitude orthophotography projects.*

- *Pixel size of 5.2 μm, as well as enhanced PAN 16,000 gray values per pixel, offered by the latest CCD technology and silent-board camera electronics.*

- *A user-focused interface with touchscreen technology to ease configuration and operation and allow in-flight control of each image.*

- *A compact unit weighing less than 75 kg (165 lbs) and reduced power consumption of 350 watts @ 24-28 VDC for increased flight efficiency.*

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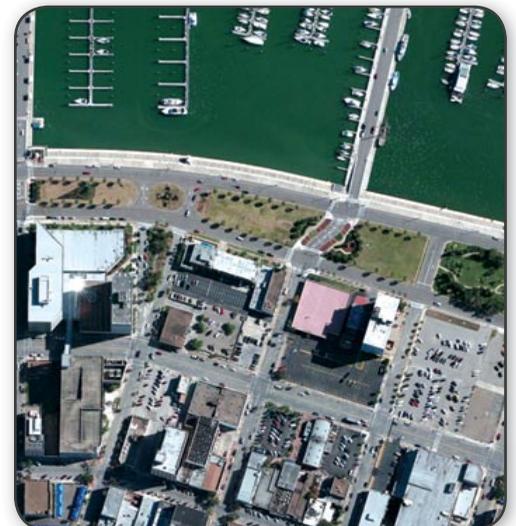
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UltraCam Eagle offers the ultimate in reliability and efficiency for digital aerial photography. With a PAN image footprint of more than 20,000 pixels across the flight strip, and an image capture rate of 3.7 gigabits per second, it soars beyond the traditional large-format cameras. The solid-state storage system stores 3,800 superior-quality images and can be exchanged in flight to meet any storage need.

Despite its expansive digital footprint, the UltraCam Eagle is a lightweight, integrated system that features a smaller physical footprint—taking up less aircraft space and providing the utmost in fuel economy. It also consumes less power than other cameras for even more cost savings. With UltraCam Eagle, customers can take to the skies, capture more data in less time, and complete mapping projects in fewer flight lines and with greater efficiency than ever before.

○ Specifications

Image Product Specification
- Image format analogous to an aerial film image at a format of 23 cm x 15 cm, scanned at 12 μm
- Image data formats: JPEG; TIFF with options for 8 and 16 bits, standard TIFF format
- Image storage format in level 2: full resolution panchromatic, separate color channels at color resolution

Camera Digital Sensor Subsystem
- Panchromatic image size: 20,010 x 13,080 pixels
- Panchromatic physical pixel size: 5.2 μm
- Input data quantity per image: 842 megabytes, 260 megapixels
- Lens system 1: 80 mm PAN and 27 mm RGBNIR
- Lens system 2: 210 mm PAN and 70 mm RGBNIR, exchangeable by a trained end user, no recalibration required after lens exchange
- Maximum frame rate <1.8 seconds per frame
- CCD signal to noise ratio: 72 dB
- CCD image dynamic: 14 bit; workflow dynamic: 16 bit
- Physical dimensions with 80 mm (210 mm) PAN lenses, including computer and storage module: 43 cm x 43 cm x 76 cm (86 cm)
- Weight with 80 mm (210 mm) PAN lenses, including computer and storage module: approximately 75 kg (80 kg)
- Power consumption at full performance, including computer and storage module: 350 watts

Camera Computer and Data Storage Subsystem (CEDE)
- Solid-state disc pack, with optional storing of mirror images of the data on the data unit
- Unlimited with use of multiple data units with approximately 3.3 terabytes (3,800 images) per unit

Camera Operational Specification
- Data recording time @ 10 cm GSD, 60 percent forward overlap, 140 kts @ 8 hours per data unit
- Maximum forward overlap @ 10 cm GSD (@ 5 cm GSD) with 140 kts @ 90 percent (80 percent)
- Maximum flight speed @ 10 cm GSD (@ 5 cm GSD) with 80 percent forward overlap @ 268 kts (134 kts)

○ Info

For more information about UltraCam Eagle, visit **www.iflyultracam.com**.

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