

# ULTRACAMX

Large Format Digital Aerial Camera

Microsoft's new UltraCamX provides the same obvious advantages over film cameras as the UltraCamD, but features superior specifications and extended capabilities. The data flow is simpler, the technology is more robust, and image formatting is the world's most precise.



## Overview

Taking advantage of improved CCD technology, the UltraCamX employs 7.2 micrometer pixels and thus achieves an even larger image format at 216 gross pixels (14,430 across track x 9,420 along track) with outstanding radiometric performance.

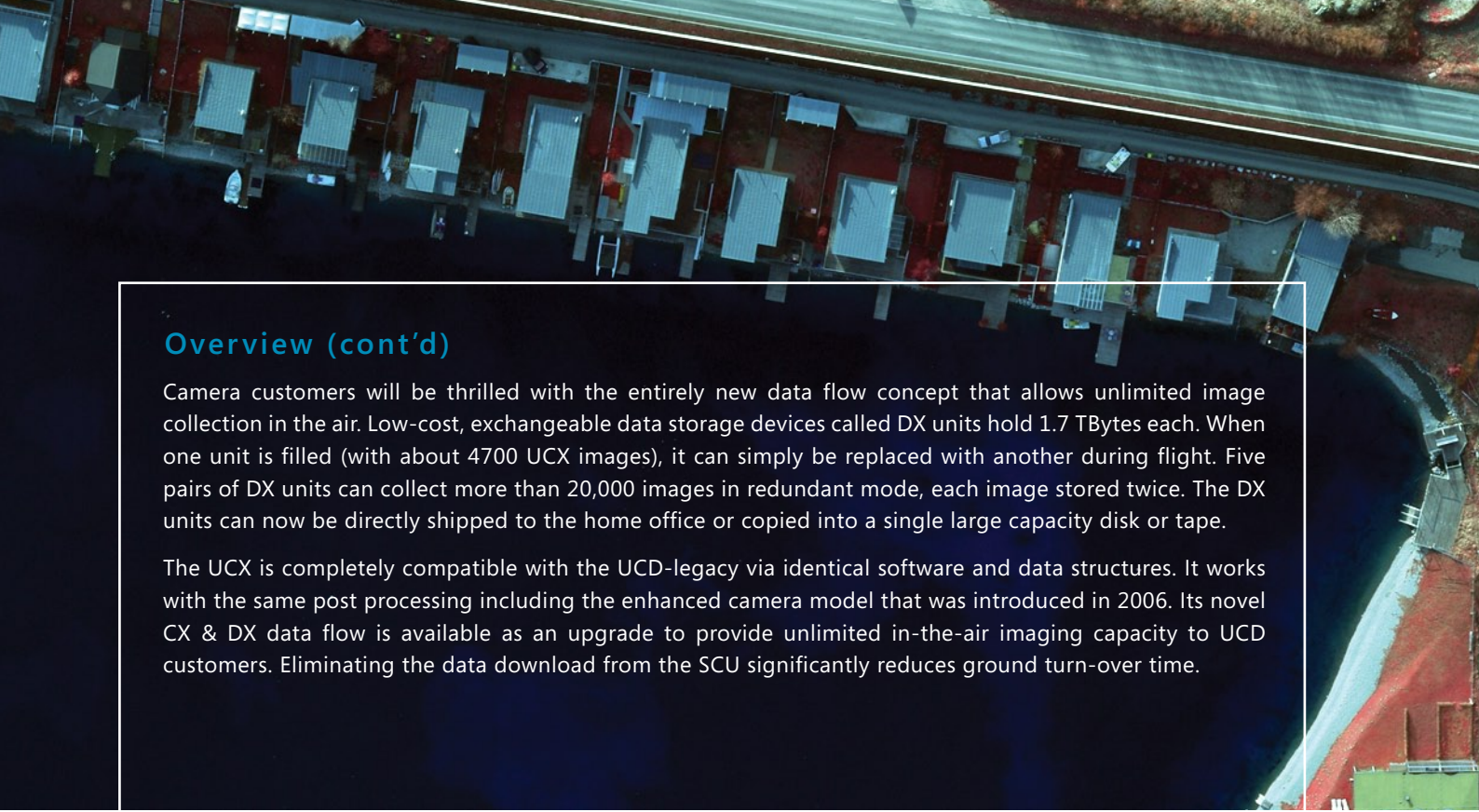
An all new optical system developed for the UCX by LINOS improves light fall-off over previous solutions, maintaining image sharpness and high radiometric range well into corners of each image.

As large scale mapping applications are rapidly growing more important, the ability to deliver imagery at fast intervals has become critical. The UCX collects pixels at a sustained rate of 3 GBits per second. The results of this improved technology include: urban mapping with minimization of occlusions, Digital Elevation Models (DEMs) with no spikes or holes, ortho-photo production from only the most central image portions, and support of automated image analysis.

The sensor unit (SX) fits into all current gyro-stabilized camera mounts. Customers can still maintain their old flight environment and mounts, as they continue to move to digital technology.

## features

- Largest image format available (216 gross megapixel, 14,430 pixels across track; 9,420 pixels along track) means fewer flight lines and the best stereo base of all digital aerial cameras
- New lens system delivers superior sharpness, a 1:3 pan-to-color ratio for stunning color and color-infrared (CIR) image quality
- Forward motion compensation (up to 50 pixels) delivers high level of detail with no blur
- "Best in class" data generation at - 3 Gigabit per second
- Removable data storage units allow for unlimited storage capacity for longer missions and minimal ground time
- Maximum use of legacy environments, now supports ALL standard gyro-stabilized mounts (PAV, T-AS, GSM)



## Overview (cont'd)

Camera customers will be thrilled with the entirely new data flow concept that allows unlimited image collection in the air. Low-cost, exchangeable data storage devices called DX units hold 1.7 TBytes each. When one unit is filled (with about 4700 UCX images), it can simply be replaced with another during flight. Five pairs of DX units can collect more than 20,000 images in redundant mode, each image stored twice. The DX units can now be directly shipped to the home office or copied into a single large capacity disk or tape.

The UCX is completely compatible with the UCD-legacy via identical software and data structures. It works with the same post processing including the enhanced camera model that was introduced in 2006. Its novel CX & DX data flow is available as an upgrade to provide unlimited in-the-air imaging capacity to UCD customers. Eliminating the data download from the SCU significantly reduces ground turn-over time.

## configurations

### Sensor Unit (SX)

- **Distributed parallel sensing achieved with a set of 8 optical cones to assemble a large format digital image in natural color with false color infrared**
- **13 CCDs arrays (9 pan, 4 color)**
- **Each CCD array feeds signals into its own compact and proprietary electronics setup and data path**
- **The "Master Cone" provides single image coordinate system and control of geometric accuracy**

### Computing Unit (CX)

- **14 CPUs for computation of interim data products for in-the-air image quality assessment**
- **Processes raw images on-board in real time, to compute quick views**

### Data Units (DX)

- **Each exchangeable data unit can store 4,700 images**
- **As many data units as can be brought on board, given the space and weight constraints for the particular aircraft**

### Rich Data Flow Options

- **Modularity achieves flexibility and versatility**
- **Post-processing can be done on the ground with a laptop, or faster with a group of PCs**

## More Information

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