

# ULTRACAM X



## Technical Specifications

### Image Product Specification

Image format  
Image data formats  
Image storage format in level 2  
Color at level 3

Analogous to an aerial film image at a format of 23 cm x 15 cm, scanned at 15  $\mu$ m  
JPEG; TIFF with options for 8, 12 and 16 bits, scan-line, stripped or tiled  
Full resolution panchromatic, separate color channels at color resolution  
Full resolution R, G, B, Near-IR channels, planar or pixel-interleaved

### Digital Camera Technical Data (Sensor Unit S-X)

Panchromatic image size	14,430 * 9,420 pixels
Panchromatic physical pixel size	7.2 $\mu$ m
Input data quantity per image	435 Mega Bytes
Physical format of the focal plane	104 mm * 68.4 mm
Panchromatic lens focal distance	100 mm
Lens aperture	f = 1/5.6
Angle-of-view from vertical, cross track (along track)	55° (37°)
Color (multi-spectral capability)	4 channels -- RGB & NIR
Color image size	4810 * 3140 pixels
Color physical pixel size	7.2 $\mu$ m
Color lens system focal distance	33 mm
Color lens aperture	f = 1/4.0
Color field of view from vertical, cross track (along track)	55° (37°)
Shutter speed options	1/500 to 1/32
Forward-motion compensation (FMC)	TDI controlled
Maximum FMC-capability	50 pixels
Pixel size on the ground (GSD) at flying height of 500 m (at 300m)	3.6 cm (2.2 cm)
Frame rate per second (minimum inter-image interval)	1 frame per 1.35 seconds
Analog-to-digital conversion at	14 bits
Radiometric resolution in each color channel	>12 bit
Physical dimensions of the camera unit	45cm x 45cm x 60 cm
Weight	~ 55 kg
Power consumption at full performance	150 W

### In Flight Data Storage D-X and Data Processing C-X

In-flight storage capacity	Unlimited with use of multiple data units D-X; per D-X unit ~1.7 TB
In-flight capacity to collect uncompressed frames	Unlimited with multiple D-X units; per D-X unit ~ 4700 images
Method of exchanging D-X units in-flight	In less than 3 minutes
Configuration of Storage D-X and Computing C-X	C-X with 14 Pentium-M CPUs; each D-X with 28 disks
Redundancy	Storing mirror images of the data
Data transfer into office environment	Removable D-X data units; docking station (optionally mobile)
Physical dimensions	Width 50cm x Depth 36cm x Height 65 cm
Weight of C-X + 2 D-X	< 92 kg
Weight of C-X	~ 65 kg
Weight of single D-X	~ 15 kg
Power consumption at full performance	700 W

### Operational Specification

Data collection period at 70% & 20 % overlap, at 20 cm GSD (film scale 1:10,000)	8.5 hours per single D-X unit
Post-processing of collected raw images	OPC Software, Mobile Server, Office PC Network, Laptop, C-X
Data transfer from aircraft to office	Shipping of D-X, or transfer to high capacity storage medium via Mobile Server
Mounting of the camera	Using adapter ring for all current film camera mounts (PAV-30, Z/I T-AS, GSM3000)
Flight planning support	Compatible with commercial systems (CCNS-4, Trackair, Vega, ...)
Exterior orientation support	Compatible with DGPS/IMU systems (IGI's Aero-Control, Applanix' POS-AV)
Photogrammetric Production	TIFF-output compatible with Customer's photogrammetric production software
Image geometric accuracy	Approximately $\pm 2 \mu$ m

### For more Information, contact:



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