

## UltraCamFalconPrime - 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 13 µm  
JPEG; TIFF with options for 8 and 16 bits, standard tiff format  
Full resolution panchromatic, separate color channels at color resolution  
Full resolution R, G, B, Near-IR channels, planar or pixel-interleaved

### Camera Digital Sensor Subsystem

Panchromatic image size 17,310 \* 11,310 pixels  
Panchromatic physical pixel size 6.0 µm  
Input data quantity per image 624 Mega Bytes  
Physical format of the focal plane 103.86 mm \* 67.86 mm  
Color (multi-spectral capability) 4 channels – R, G, B & NIR  
Color image size 5,770 \* 3,770 pixels  
Color physical pixel size 6.0 µm  
PAN-sharpen ratio 1:3  
Sensor configuration "f70"  
Panchromatic lens focal distance Linos Vexcel Apo-Sironar digital HR 70 mm  
Total field of view, cross track (along track) 73° (52°)  
Lens aperture f=1/5.6  
Flying height for PAN Pixel size on the ground of 10 cm (GSD) 1,167 m  
Color lens system focal distance 23 mm  
Color lens aperture f=1/4.0  
Sensor configuration "f100"  
Panchromatic lens focal distance Linos Vexcel Apo-Sironar digital HR 100 mm  
Total field of view, cross track (along track) 55° (37°)  
Lens aperture f=1/5.6  
Flying height for PAN Pixel size on the ground of 10 cm (GSD) 1,675 m  
Color lens system focal distance 33 mm  
Color lens aperture f=1/4.0  
Shutter system  
Shutter speed options  
Forward-motion compensation (FMC) 1/500 to 1/32  
Maximum FMC-capability TDI controlled  
Frame rate per second (minimum inter-image interval) 50 pixels  
CCD signal to noise ratio 1 frame per 1.35 seconds  
Radiometric resolution in each channel 72 dB  
Analog-to-digital conversion at >>12 bit  
Workflow dynamic 14 bits  
Physical dimensions of the camera; including computer and storage module (CFDF) 43 cm x 43 cm x 76 cm  
Weight of the camera; including computer and storage module (CFDF) ~ 75 kg  
Power consumption at full performance; including computer and storage module (CFDF) 350 W

### Camera Computer And Data Storage Subsystem (CFDF)

Concept Modular stack, stacked onto sensor head or released with cabling to sensor head  
In-flight storage system Solid state disc pack, with RAID system for data protection  
In-flight storage capacity Unlimited with use of multiple data units DF; per DF unit ~3.3 TB, ~ 5,200 images  
Weight of DF unit < 3 kg  
Method of exchanging DF units in-flight In less than 2 minutes  
Physical dimensions of CFDF module Width 43 cm x Depth 43 cm x Height 35 cm  
Weight of CFDF < 30 kg  
Power consumption at full performance 150 W

### Camera Operational Specification

Operating / storage temperature 0 °C to 45 °C / -20 °C to 65 °C  
Humidity 5% ... 95% no condensation  
Flight altitude non-pressurized (full accuracy, full temperature range) ≤ 5,000 m AGL  
Flight altitude non-pressurized (reduced temperature range; 0 °C to 25 °C) ≤ 7,000 m AGL  
Flight altitude pressurized aircraft no limitation unless cabin pressure stays above 5000 m pressure  
Data recording time @ 10 cm GSD, 60% forward overlap, 140 kts 8 hours per DF unit  
Max. forward overlap @ 10 cm GSD (@ 5 cm GSD) with 140 kts 91% (83%)  
Max. flight speed @ 10 cm GSD (@ 5 cm GSD) with 80% forward overlap 326 kts (163 kts)  
Data transfer from aircraft to office Shipping of DF, or transfer by high capacity storage medium  
Post-processing of collected raw images UltraMap, UM/AT extension, PC network or Laptop  
Photogrammetric Production TIFF-output compatible with Customer's photogrammetric production software  
Extended Ortho Workflow Full ortho workflow by UltraMap  
Mounting of the camera Using adapter ring for most current film camera mounts (UltraMount GSM 3000, PAV-80, T-AS)  
Integrated GPS/INS/FMS system UltraNav (Applanix POSTrack OEM) full embedded into camera head  
Flight planning support (external FMS) Compatible with all major commercial systems (TrackAir, CCNS-4, ...)  
Exterior orientation support (external GPS/INS system) Compatible with all major DGPS/IMU systems (Applanix POS-AV, IGI Aero-Control, ...)  
Image geometric accuracy Better ±2 µm

