

# DSS™ WideAngle SPECIFICATIONS

## A COMPLETE SOLUTION FOR HIGH-EFFICIENCY AERIAL MAPPING AND ORTHOPHOTO PROJECTS, ALL AT ONE LOW COST.

### CAMERA

Image Size:	60 MP: 6732 x 8924 pixels
Pixel Size:	0.006 mm
Filter Array:	Color (VIS)
Precision Lens Options:	Standard: 35mm, f/4, FOV(deg): crosstrack 75, alongtrack 60, diagonal 87 Optional: 50mm, f/4, FOV(deg): crosstrack 57, alongtrack 44, diagonal 68
Exposure Control:	Aperture or shutter priority, user-selectable
Light Metering:	Center weighted average
Shutter:	Electronically-controlled leaf shutter
Shutter Speed:	1/125 to 1/1000 (slower speeds not recommended)
ISO:	Up to 800
Max Exposure Rate:	<3 seconds, sustained, including display of QA/QC thumbnail and status, logging of image and POS data
Sensor Head:	Proprietary CCD mount, ruggedized exoskeleton, designed to hold geometric accuracy over RTCA/DO-160D shock/vibe spec to within 1 pixel*
Calibration:	Terrestrial and airborne calibration with full report

\*When mounted on supplied shock isolators

### COMPUTER SYSTEM

<b>Data Logger</b>	Embedded OS
	Removable pressurized and temperature controlled ruggedized disk drive, 7000 image capacity per drive (2 supplied, 500 GByte each)
<b>Navigation, Direct Georeferencing and Flight Management</b>	Embedded Applanix POSTrack, integrated GPS/Inertial Direct Georeferencing and Flight Management System
	XTRACK mission planning software
	Remote pilot display with touch screen
	Operator or pilot only operation mode
	Panasonic Toughbook for optional operator interface (operator client can be run on any Windows computer)
	Real-time image, camera, and POS status display
	Tested and meets RTCA/DO-106D specs for shock and vibe

### PERFORMANCE

#### Direct Georeferencing, RMS

DSS	C/A GPS	DGPS*	Post-Processed
Position (m)	4.0-6.0	0.3-2	0.05-0.3
Velocity (m/s)	0.100	0.050	0.005
Roll & Pitch (deg)	0.015	0.010	0.008
True Heading (deg)	0.08-0.016	0.050	0.015

\*When using optional Satellite Based Augmentation Service (SBAS)



## PERFORMANCE

### Minimum Ground Sample Distance (GSD), Portrait Mode\*

35mm lens: speed < 50 kts, Height < 250m AGL, 30% endlap, 1/f 1000  
 50mm lens: speed < 50 kts, Height < 175m AGL, 30% endlap, 1/f 1000  
 Effective GSD (developed images) 0.033m (1.3 X theoretical GSD)

### Product Accuracy, RMS, High Precision Post-processing\*

Orthophoto:	max of 1.2 X GSD** (max) or POS AV position accuracy
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\*Post-processed POS AV, QA/QC procedure followed, self-extracted or high-accuracy DEM (LIDAR), datum errors removed.

\*\*Effective GSD = (1.2 - 1.3) X Theoretical GSD

## PHYSICAL DATA

<b>Size:</b>	Digital sensor head Digital sensor mount tray Computer system	180 x 180 x 360 mm 250 x 310 x 36 mm 340 x 370 x 340 mm
<b>Weight:</b>	Digital sensor w/o Az Mount Digital sensor mount tray Computer system	~ 7 kg (35 mm lens) ~ 2 kg 24 kg
<b>Power:</b>	Computer system	28 VDC 280 W (max) (includes camera, Az Mount)
<b>Temp. Range:</b>	Camera with 35mm/50mm lens Computer system	0 deg C to +40 deg C -20 deg C to +55 deg C
<b>Humidity:</b>	5 to 90% RH non-condensing	
<b>Altitude:</b>	Up to 10,000 ft, with supplied operator laptop (higher altitude option available) Up to 20,000 ft, without supplied laptop	

## PROCESSING SOFTWARE

Produces plotter ready images and Exterior Orientation data

<b>POSPac MMS</b>	<b>GNSS Aided INS Processing Tools:</b> Differential GNSS processing, Inertial/GNSS post-processing
	<b>Photogrammetry Tools:</b> Direct Georeferencing software; produces direct exterior orientation for each photo, IMU/camera boresight calibration, Quality Control
	<b>RapidOrtho (Optional):</b> rapid generation of directly georeferenced orthophotos
<b>DSS Tools</b>	<b>MissionView:</b> Data management software, downloads images from removable drives
	<b>ImageView:</b> Image development software, lens fall-off correction < 3%, image sharpening tools, format conversion: TIFF, JPEG, quantization conversion: 8 bit or 12 bit
<b>InPHO DTMBBox and OrthoBox (Optional)</b>	Automatic DTM extraction and orthomosaic generation

## USER SUPPLIED EQUIPMENT

<b>PC for Post-processing</b>	PC with Windows OS Minimum of 300 GB disk space (512 MB of RAM) Tower rack with external SATA or USB port
<b>Softcopy OrthoPhoto Software</b>	Compatible with most softcopy photogrammetry packages

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