

DSS™ 580 with In-FlightOrtho™ SPECIFICATIONS

Complete End-To-End Solution For High-Efficiency Aerial Mapping

The DSS system with In-FlightOrtho is designed to make mapping fast and efficient. Capable of producing highly accurate orthophotos, stereo photos and mosaics while still in the air, the DSS is a flexible platform that can be customized to meet a variety of needs. With multiple camera options, the system is ideal for data collection tasks ranging from corridor and GIS mapping to disaster response and tactical mapping.



CAMERA

Image Size/Pixel Size	80 MP: 7752 x 10320, Pixel Size: 0.0052 mm
Filter Array	Color (VIS)
Lens System	Schneider-Kreuznach fast sync (Standard): 55 mm, F/2.8, FOV(deg): crosstrack 52, alongtrack 40, diagonal 62 80, 110 & 240 mm Schneider-Kreuznach fast sync lens options available upon request
Exposure Control	All-electronic function control: auto/manual shutter speed mode
Shutter	Field-replaceable lens leaf shutter (primary); built-in focal plane shutter (backup)
Shutter Speed	Lens leaf shutter (primary): up to 1/1600 second*; Focal plane shutter (backup): up to 1/4000 second Angular and linear motion compensation (FMC) achieved via fast shutter speeds
ISO	Up to 800
Sensor Head	Mirror-free system; meets RTCA/DO-160G shock/vibration specification
Calibration	Terrestrial and airborne calibration with full report

* 240 mm leaf max shutter speed is 1/1000s

COMPUTER SYSTEM

Tested and meets RTCA/DO160G specifications for shock/vibration

Data Logger	Server grade Solid State Devices, 7900 image capacity per drive (2 supplied, 480 GByte each)
Navigation, Direct Georeferencing and Flight Management	Embedded Applanix POSTrack V6, integrated GPS/Inertial Direct Georeferencing and Flight Management System
	XTRACK mission planning software
	Ruggedized 7" pilot smart display and 8.9" operator tablet with touch screen
	Operator or pilot-only operation mode
	Real-time image, camera, and POS status display
In-FlightOrtho™	Rapid capture, processing, and delivery of airborne geospatial imagery. High performance mobile workstation laptop provided for real-time orthophoto production*

*For more information on In-FlightOrtho accuracy please go visit: <http://www.applanix.com/solutions/airborne/dss.html>

PERFORMANCE

Direct Georeferencing, RMS

DSS 580	510 SPS	510 XP*	510 Post-Processed
Position (m)	1.5 - 3	0.1 - 0.5	0.05 - 0.3
Velocity (m/s)	0.05	0.01	0.005
Roll & Pitch (deg)	0.008	0.008	0.005
True Heading (deg)	0.07	0.04	0.008

*OmniStar XP service, typical airborne results, subject to regional coverage and mission profile. Subscription sold separately

PERFORMANCE

Minimum Ground Sample Distance (GSD), Portrait Mode*

55 mm lens: Speed < 60 kts, Height < 220 m AGL, 30% endlap, 1/f > 1600
Effective GSD (developed images) 0.029 m (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
	Stereo	H: max of 1.2 X GSD** (max) or POS AV position accuracy V: max of 3 X GSD** (max) or POS AV position accuracy

*Post-processed POS 510 AV, QA/QC procedure followed, self-extracted or high-accuracy DEM (LIDAR), datum errors removed.

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

Note: Product accuracy for 55 mm lens

PHYSICAL DATA: SINGLE AND DUALCAM

DSS comes in Single and DualCam configurations. The dual camera version has the ability to capture large swaths in a single pass. With all the features and benefits of the DSS 580, the dual camera version adds a second VIS sensor to nearly double the swath width. The DualCam system comes with a 3-axis SSM270 gyro-stabilized mount.

SINGLE CAM

DUALCAM

	SINGLE CAM	DUALCAM
Size	Full System (L x W x H): 42 X 43 X 41 cm	SSM270 mount foot print (L x W): 52 X 47 cm Height of full system (Digital sensors & Computer) 63 H cm
Weight	Full System (Digital sensor, Az Mount & Computer) ~ 31 kg AzMount ~ 15 kg	Full System (Digital sensors, SSM270 mount & Computer) ~ 55 kg SSM270 mount ~ 25 kg
Computer System Power	28 VDC 154 W (max) (includes camera, Az Mount, pilot & operator tablets)	28 VDC 412W (max) (includes cameras, SSM270, pilot & operator tablets)
Camera Temp Range	-10 deg C to +40 deg C	
Computer Temp Range	-20 deg C to +55 deg C	
Humidity	5 to 90% RH non-condensing	
Altitude	20,000 ft	

PROCESSING SOFTWARE

Produces plotter ready images and Exterior Orientation data

POSPac MMS	GNSS Aided INS Processing Tools: Differential GNSS processing, Inertial/GNSS post-processing
	Photogrammetry Tools: Direct Georeferencing software: produces direct exterior orientation for each photo, IMU/camera boresight calibration, Quality Control
DSS Tools	ImageView 580 (x64 bit): Image development software: lens fall-off correction, image color processing tools, format conversion: TIFF, JPEG, quantization conversion: 8 bit or 16 bit RapidOrtho (x64 bit): Rapid generation of directly georeferenced orthophotos
InPHO DTMBBox and OrthoBox (Optional)	Automatic DTM extraction and orthomosaic generation

USER SUPPLIED EQUIPMENT

PC for Post-Processing	PC with x64 bit Windows OS Minimum of 300 GB disk space 4 GB of RAM with USB 2.0 or higher
Softcopy OrthoPhoto Software	Compatible with most softcopy photogrammetry packages

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