

NEXUS 800

Fast Setup. Smart Acquisition. Quick Products.



Technical Specification Sheet

Product Name		NEXUS 800 Multisensor Unmanned Aerial System (UAS)
Sensor Payload	LIDAR Photogrammetry Thermal	Directly Georeferenced Point Cloud Data Geotagging of Imagery Real time Geotagging of Thermal Images
UAS Total System Uncertainty (Accuracy)	High & Moderate Reflective Surfaces Low or Poorly Reflective Surfaces	$X, Y = \pm 3 \text{ cm}$, $Z = \pm 5 \text{ cm}$ @ 40 m altitude (Examples of surfaces with High Reflectivity: Concrete, Granite, Sand) $X, Y = \pm 5 \text{ cm}$, $Z = \pm 9 \text{ cm}$ @ 40 m altitude (Examples of surfaces with Low Reflectivity: Asphalt, Wood, Dark Soils)
<i>Using 4 channels ($\pm 3^\circ$) Using more channels will increase uncertainty.</i>		
Accuracy Compliance	USGS LIDAR Base Specification Version 1.2, November 2014	Meets Quality Level: QL1 (data filtered to 90° swath width)
LIDAR		Velodyne Puck LITE™
RGB		Canon EOS M3 - 24 mm prime lens
Thermal		FLIR Vue Pro - 9 mm lens
GNSS Inertial Navigation System	Ellipse2-D Roll / Pitch Heading Velocity Position	SBG Dual GNSS Inertial Navigation System 0.1° 0.2° 0.03 m/s Single point L1/L2: 1.2m SBAS: 0.6m DGPS: 0.4m GLONASS (Optional) RTK: 2 cm - 3 cm via NTRIP or Radio PPK: (not available at this time. Estimated 2018) Autonomous, RTK via NTRIP or Radio
Data Link		1 watt at 5.0 GHz
Antenna		L1/L2/GPS/GLONASS Helix Style
Differential Correction Methods	Internet or Radio Based	Networked Transport of RTCM via Internet Protocol (NTRIP) Radio Modem User Configurable 400 MHz/900 MHz
Infinite Jib Unmanned Aerial Vehicle (UAV)	UAV Configuration Collapsible Max Climb Rate Maximum UAV Speed (manual mode) Maximum UAV Speed (autonomy mode) Weight Flight Range Windows 7 Professional	Coaxial Y6 Collapsible Boom Arms to reduce shipping size 5 meters/sec 20 meters/sec 8 meters/sec 18 lbs (8.16 kg) / 23.5 lbs (10.66 kg) with batteries Line of Sight (Subject to United States FAA Regulations) Onboard Intel Core i7, 16GB RAM, 512GB Solid State Hard Drive
Onboard Computer		
UAV Safety Features	Flight Voltage Levels Return to Home	Redundant Powering, Monitoring Systems Automatic return to takeoff point can be initiated via RC Controller or iPad. In unlikely event of link loss, craft will enter Fail-Safe mode and return to home.
UAS Temperature Range	Multiple First Person Views Minimum Maximum	Forward, Below, and RGB Camera view. 20° F or -6° C 95° F or 35° C
UAV Dimensions	Overall Height Overall Length	19.5 cm 122 cm
Flight Time		10 - 15 minutes (12 min typical)
Power Source		Hot Swappable Batteries 6s LiPo, 22.2V, 11,000 mAh (244.20 Watt hour)
HYPACK Software	HYPACK HYSWEEP	Acquire, Process, Output. Directly Georeferenced LIDAR Data. Bore Sight Calibration Module. Process, edit, and derive LIDAR point clouds. Create XYZ or LAS/LAZ files.
NEXUS 800: Summary of Benefits		Short set up to flight time. Multisensor Payload RF Mitigating features. Low RF noise profile
Additional Notes		HYPACK drivers can support additional hardware: The NEXUS Onboard Gimbal supports other RGB Cameras. ¹
Notes		¹ Other supported Cameras include: GoPro Hero 4/5 Canon DSLR: EOS 5DS / EOS 5DS R / EOS REBEL T6s / EOS 760D / EOS 8000D / EOS REBEL T6i / EOS 750D / EOS Kiss X8i / EOS M3 EOS-1D C / EOS M / EOS 6D / EOS M2 / EOS 7D Mark II EOS-1D X / 1D Mark III / 1Ds Mark III / 1D Mark IV EOS 40D / 50D / 5D Mark II / 5D Mark III / 7D / 60D / 60Da / 70D EOS Kiss X2 (Rebel XSi/450D) EOS Kiss F (Rebel XSi/1000D) EOS Kiss X3 (Rebel T1i/500D) EOS Kiss X4 (Rebel T2i/550D) EOS Kiss X5 (Rebel T3i/600D) EOS Kiss X6i (Rebel T4i/650D) EOS Kiss X50 (Rebel T3/1100D) EOS Kiss 7i (Rebel T5i /700D) / EOS Kiss 7 (Rebel SL1/100D) EOS Kiss X70(Rebel T5/1200D/Hi)
Export Restrictions		FLIR VUE PRO Thermal Camera may be subject to US Export Control Laws and regulations.
Regulatory Approvals		

For more information:
(860) 635 - 1500
unmanned@hypack.com
www.hypack.com

