



QUICK SPECS

Water Depth Penetration 2.0 Secchi Depths @ 50 kHz PP Attitude Heading RMS Error 0.01° IMU options Weight 13 kg / 28.7 lbs approx. Dimensions 432 x 337 x 202 mm (L x W x H) Scan Rate 200,000 shots/second, up to 15 returns

NAVIGATION SYSTEM

CONSTELLATION SUPPORT	GPS + GLONASS + BEIDOU + GALILEO
SUPPORT ALIGNMENT	Static, Kinematic, Dual-Antenna
OPERATION MODES	Real-time, Post-processing optional
ACCURACY POSITION	1 cm + 1 ppm RMS horizontal
PP ATTITUDE HEADING RMS ERROR	0.01° IMU options

HydroRANGER

The **HydroRANGER** is an evolution of mapping technology. This airborne topo-bathymetric (ATB) system provides dual purpose topographic and bathymetric measurements for full scene mapping of shoreline systems. Utilizing a visible green spectrum laser with an elliptical scan pattern and measurements rates up to 200 kHz, the **HydroRANGER** provides a combination of high spatial resolution and spatial accuracy. Reaching potentially beyond 2 Secchi depths, this is the ideal solution for mapping landwater interface environments, rivers, and reservoirs.

FEATURES

- » Green light laser (532 nm) with online waveform processing for topographic, water surface and subsurface target mapping
- » Elliptical scan pattern provides a +/- 20 degree horizontal FOV for low angle of incident measurements
- » High quality 24 MP camera enables RGB colorization and orthophotography
- » Configurable beam divergence and receiver FOV for low AGL missions

LIDAR SENSOR

LASER PROPERTIES	532 nm
NOHD ⁽¹⁾	15 m
ENOHD ⁽¹⁾	75 m
RANGE MIN	20 m
SCAN PATTERN	nearly elliptical
OFF NADIR SCAN ANGLE	± 20° = 40° perpendicular to flight direction ± 14° = 28° in flight direction
HORIZONTAL FIELD OF VIEW	40°
ACCURACY	20 mm
PRECISION	15 mm
SENSOR CLASSIFICATION	IP64, dust and splash-proof
WEIGHT	12 kg
POWER CONSUMPTION	110 W typical (220 W max)

(1) 6 mrad beam divergence, 50 kHz, from a moving platform

PLATFORM

OVERALL DIMENSIONS (with AIR NavBox)	(with Heli Vibration Isolator) 476 x 440 x 380 mm
	(without Heli Vibration Isolator) 432 x 337 x 202 mm
OPERATING VOLTAGE	18 - 28 V DC
POWER CONSUMPTION	122 W (typical) 232 W (max)
OPERATING TEMPERATURE	-10°C up to +40°C
WEIGHT	(with Heli Vibration Isolator) 21 kg / 46.3 lbs approx.
	(without Heli Vibration Isolator) 13 kg / 28.7 lbs approx.

HydroRANGER MEASUREMENT PERFORMANCE

APPLICATIONS

- ✓ Shoreline Digitization
- ✓ Erosion Control
- River System Mapping
- ✓ Hydrographic Surveying
- ✓ Engineering
- ✓ Hazard Mitigation

MEASUREMENT RATE200 kHz150 kHz50 kHzMax. Water Depth Penetration
(Secchi Depth) @ 75 m1.71.82.0Point Density @ Nadir from
75 m AGL, 15 knots320 points/m²160 points/m²80 points/m²

HydroRANGER DIMENSIONS (mm)





SCAN PATTERN



POINT DENSITY ESTIMATES



CAPABILITY



A photogrammetrically rectified mosaic image with overlaid elevation contour lines.



A topographic and bathymetric combined digital
elevation model with overlaid elevation contour lines showing the details of the river bed.

EXPLORE A PHOENIX LIDAR SYSTEM FOR YOUR TEAM, CONTACT US!

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