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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 measurement rates up to 200 kHz, the **HydroRANGER** provides a combination of high spatial resolution and spatial accuracy. Capable of reaching up to 2 Secchi depths, this is the ideal solution for mapping land-water 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



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 334 x 202 mm (L x W x H)

SCAN RATE

200,000 shots/second, up to 15 returns

LiDAR SENSOR

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

LASER PROPERTIES	532 nm, Green
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)

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

PLATFORM

OVERALL DIMENSIONS	(with Heli Vibration Isolator) 476 x 440 x 380 mm (without Heli Vibration Isolator) 432 x 334 x 202 mm
OPERATING VOLTAGE	18 - 28 VDC
POWER CONSUMPTION	122 W (typical) 232 W (max)
OPERATING TEMPERATURE	0° 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.

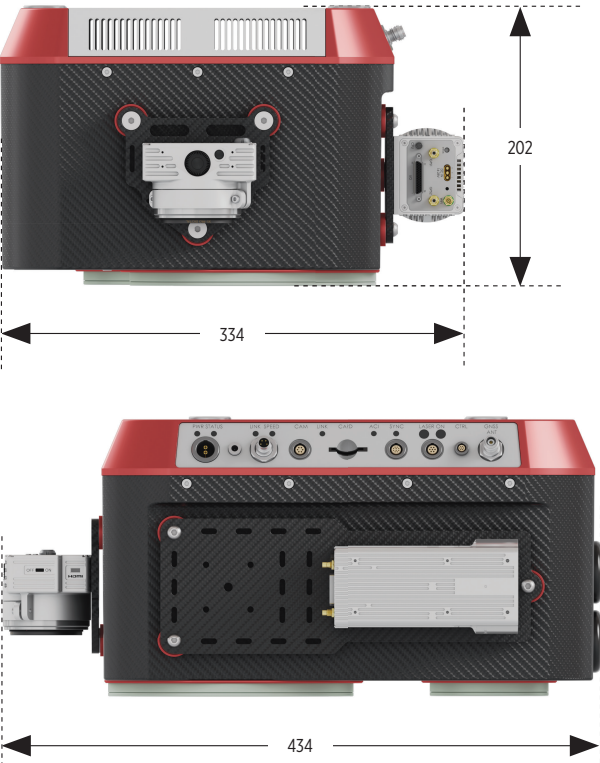
HydroRANGER MEASUREMENT PERFORMANCE

MEASUREMENT RATE	200 kHz	150 kHz	50 kHz
Max. Water Depth Penetration (Secchi Depth) @ 75 m AGL	1.7	1.8	2.0
Point Density @ Nadir from 75 m AGL, 15 knots	320 points/m ²	160 points/m ²	80 points/m ²

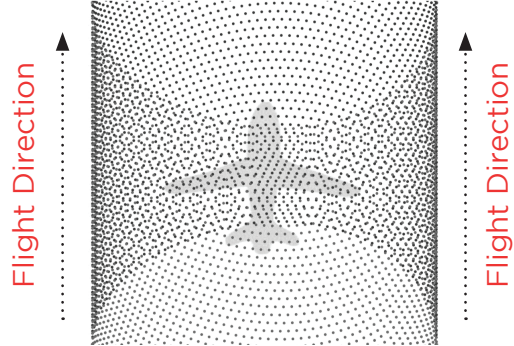
APPLICATIONS

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

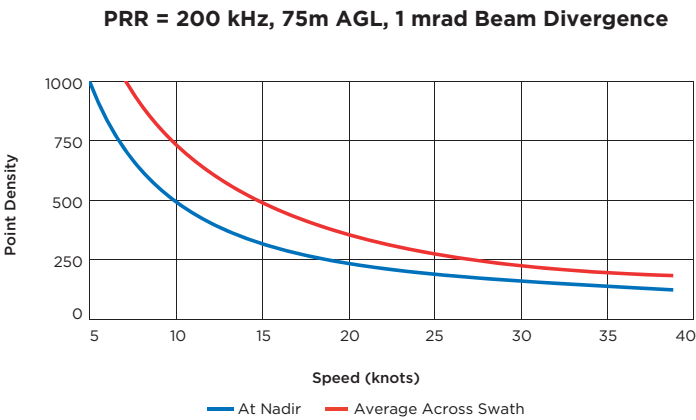
HydroRANGER DIMENSIONS (MM)



SCAN PATTERN



POINT DENSITY ESTIMATES



ACCESSORIES



Optional 905nm LiDAR Sensor



Drone Integration Option



Manned Helicopter Integration Option



EXPLORE A PHOENIX LiDAR SYSTEM FOR YOUR TEAM, CONTACT US!
PhoenixLiDAR.com • sales@phoenixlidar.com • USA +1.323.577.3366