

PHOENIX LiDAR SYSTEMS

AEROMEDIA
ESPECIALISTAS EN DRONES
DISTRIBUIDORES EN ESPAÑA Y PORTUGAL



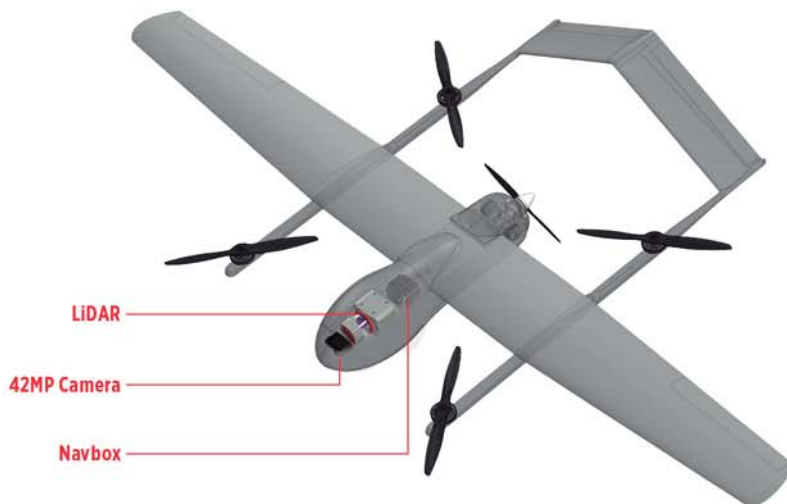
TERRAHAWK CW-30

The TerraHawk CW-30 is a hybrid VTOL / fixed-wing UAV with an integrated Phoenix Ranger-LR-T LiDAR mapping payload. Hybrid VTOL / fixed-wing technology offers an innovative and logistically simple solution to the problem of vertical takeoff and landing: it combines the vertical takeoff and landing (VTOL) capabilities of a multirotor aircraft and the efficiency, speed, and range of a normal fixed-wing aircraft. Combined with the Phoenix Ranger-LR-T payload, the TerraHawk CW-30 provides both ortho-imagery as well as high density LiDAR point clouds.



FEATURES

- » Reduced operational footprint - no runway requirement, no approach obstacle issues, no launch/recovery infrastructure required
- » Portability - by eliminating launch & recovery equipment, there are significantly fewer items to transport and ship
- » Advanced automatic fail safe modes, with emergency multirotor landing
- » 120 minute flight endurance
- » Up to 52 km² mapped per flight with absolute accuracy down to 2cm
- » Payload is directly controlled through the JOUAV Ground Control Station for real time quality check



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UAV SPECIFICATIONS

WINGSPAN / LENGTH	4 m / 2.2 m
DEPLOYMENT TIME	10 min
WEIGHT (w/LiDAR)	33 kg
ENDURANCE	Up to 2 hours
TAKEOFF / LANDING	VTOL
COMMUNICATION RANGE	Up to 30 km (250 m AGL)
CRUISE SPEED	28 m/s 55 kn 100 km/h
MAX. SPEED	36 m/s 70 kn 130 km/h
MAX. TAKEOFF ALTITUDE	4000 m
V. POSITIONING ACCURACY	2 cm
H. POSITIONING ACCURACY	1 cm+ 1 ppm
PROPULSION SYSTEM	Gas Engine / Electric Motors

MAX. SURFACE AREA COVERED LIDAR + PHOTO (60% PHOTO OVERLAP)

16 km² mapped with 3 cm GSD @ 250m AGL / LiDAR Density: 30 pts/m² (assuming 60° LiDAR FOV used)

21 km² mapped with 4 cm GSD @ 300m AGL / LiDAR Density: 27 pts/m² (assuming 60° LiDAR FOV used)

MAXIMUM SURFACE AREA COVERED LIDAR ONLY (NO PHOTO)

40 km² mapped @ 250m AGL / LiDAR Density: 22 pts/m² (assuming 60° LiDAR FOV and 20% side overlap)

52 km² mapped @ 300m AGL / LiDAR Density: 19 pts/m² (assuming 60° LiDAR FOV and 20% side overlap)

LIDAR SENSOR



MAX. RANGE	
@TARGET REFLECTIVITY 20%	820 m
MAX EFFECTIVE MEASUREMENT RATE	750,000 meas./s
PP ATTITUDE HEADING RMS ERROR	0.019°
POINT CLOUD ACCURACY	2.5 cm RMS
RANGE ACCURACY	15 mm one Sigma @ 150m
MAX FOV OF LIDAR IN CW-30	100°

Source: RIEGL Laser Measurement Systems. All specifications are subject to change without notice

SINGLE SWATH POINT DENSITY RANGER-LR-T

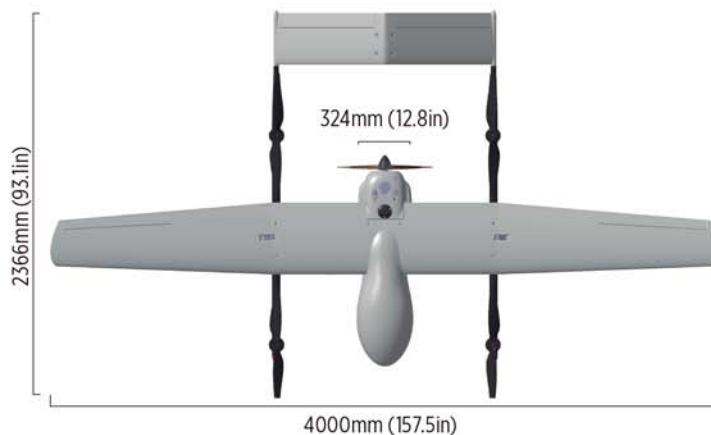
AGL (m)	200 kHz	400 kHz	600 kHz	820 kHz	Swath Width
100	12 pts/m ²	23 pts/m ²	34 pts/m ²	44 pts/m ²	238 m
120	10 pts/m ²	19 pts/m ²	29 pts/m ²	37 pts/m ²	287 m
150	8 pts/m ²	15 pts/m ²	23 pts/m ²	29 pts/m ²	358 m
200	6 pts/m ²	11 pts/m ²	17 pts/m ²	22 pts/m ²	478 m
250	5 pts/m ²	9 pts/m ²	14 pts/m ²	18 pts/m ²	598 m
275	4 pts/m ²	8 pts/m ²	13 pts/m ²	---	836 m
300	4 pts/m ²	8 pts/m ²	11 pts/m ²	---	716 m
350	3 pts/m ²	7 pts/m ²	---	---	404 m
400	3 pts/m ²	6 pts/m ²	---	---	956 m
425	3 pts/m ²	---	---	---	1016 m
500	2 pts/m ²	---	---	---	1159 m

- The following conditions are assumed for the Operating Flight Altitude AGL
- ambiguity resolved by multiple-time-around (MTA) processing & flight planning
 - target size ≥ laser footprint
 - average ambient brightness
 - swath width given at a 100° FOV

CAMERA

RESOLUTION	42.4 MPIX
FEATURES	Mirrorless full-frame with 35 mm lens
HFOV / VFOV	55° / 38°

TerraHawk CW-30 Dimensions | Top View



TerraHawk CW-30 Dimensions | Side View



TerraHawk CW-30 Case Dimensions

