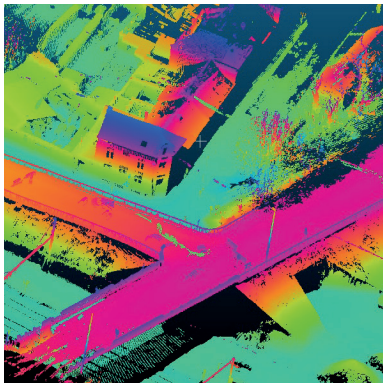
TECHNICAL DATASHEET - UAV S20

°USER-FRIENDLY

STORMBEE is a user-friendly Unmanned Aerial Vehicle (UAV) custom designed for laserscanning with a FARO Focus laser scanner. User-friendliness was one of the primary requirements during its development ensuring that both flying the UAV and post- processing the data is as simple as possible. STORMBEE can be flown fully automatic from take-off to landing using the dedicated iPad app. It has advanced safety features ensuring it always comes home even when one of its motors has failed. In addition , STORMBEE is also transport user-friendly. It's arms and legs are foldable ensuring it fits in your car booth. Post-processing the laser scan data into a cm-accurate geo-referenced point cloud using our in-house developed BEEFLEX software package is straightforward and takes very little time.

°FAST AND ACCURATE

STORMBEE requires only minutes to get ready for its (next) flight. The high accuracy of both the FARO Focus laser scanner and the Applanix GNSS-Inertial module ensure high accuracy qualitative data. Either your object of interest is tall, large or inaccesible, STORMBEE is your best solution. Our proven solution is ideal for many applications including infrastructure inspection (roads, bridges, railways, waterways, powerlines, antennas, ...) forestry applications, precision agriculture, archeology and volume measurements.



°STATIC AND AIRBORNE

STORMBEE extents your company's current terrestrial laser scanning capabilities. The FARO Focus 3D scanner is attached to STORMBEE using a custom adapter, wich provides in-flight power to the scanner, and can be (dis-)mounted in less than just 2 minutes. This allows you to rapidly switch between static terrestrial and airborne scanning using the same laser scanner. The point clouds from both can be combined into one single point cloud, ensuring you can inspect your object of interest from all directions. No more blind spots and significant cost savings!

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STORMBEE
UNBEATABLE ACCURACY IN MOBILE 3D LASERSCANNING

SPECIFICATIONS

° LASERSCANNER

Type	Faro Focus 3D X-and S-series	Wavelength	1550 nm
Scanner max range	Up to 350m	Data Storage	32 GB SD-card
Max measurement range	967,000 pts/second	Mass	4,2 kg
3D positional accuracy	3.5 mm @25m distance	Scanning mode	Helical
Safety	Class 1 , eye-safe	Vertical Field-of-View (installed)	300°

°STORMBEE

Dimensions (Ready to Fly)	145 x 150 x 60 cm	Remote controller	DJI lightbridge 2 with Ipad
Dimensions (Folded for transport)	70 x 60 x 40 cm	Full automated flight capabilies	TakeOff,GPS waypoints, landing
MTOM (Max Take-Off Mass)	25kg	Max transmission range	> 3,5 km
Empty mass	15kg	Flight endurance	15 minutes
Wind resistance	30 km/h		
Max flight speed	50 km/h		
Advanced safety features	Return-to-Home, motor failure protection,...		
Additional features	Built-in power supply for Faro scanner, First-person-View onboard camera		
Structure	Full carbon fiber frame with foldable motor arms and landing legs		
Flight app on Ipad	User-friendly (GPS-waypoint) flight planning, monitoring and First-person-View videofeed onboard camera		

°TRIMBLE APX-20 UAV GNSS-IMU MODULE

High performance Direct Georeferencing (no Ground Control Points needed)
Survey-grade multi frequency GNSS receiver (GPS L1/L2, GLONASS, BeiDou, Galileo,...) and dual MEMS IMU (200Hz data rate)
Fully integrated into STORMBEE© avionics
GNSS post-processing can be based on either own local or Applanix Smart base stations network worldwide

°BEEFLEX

Export formats : LAS, E57
GNNS post-processing and Geo-referenced pointcloud reconstruction software package (in combination with PosPac UAV)
Shows flight trajectory on Google Maps background to allow user to easily select what parts of flight should be used in post-processing
Further post-processing possible with 3rd party mobile mapping software, such as TerraSolid to improve accuracy (up to 3x)
Very user friendly, requires less than 1 hour of training

°SYSTEM

Absolute horizontal accuracy @30m	5 cm	Operating temperature limit	-5°C to 45°
Absolute vertical accuracy @30m	5 cm	Typical mission altitude	Between 20 and 40 m
Relative accuracy (point cloud)	1-2cm	Typical mission speed	3-6m/second
RMS Point-to-point noise	<5 mm	Flight range	> 1,2 km at mission speed
Typical point cloud density (@20m)	≈1,000pts/m2 ,		

°SHIPPING CASES

Type	Durable custom lightweight shipping cases with trolley handle and wheels
Flight case (stormbee)	85x75x50 cm , 35kg incl content
Battery case (4 batteries)	50x40x20 cm , 12kg incl content
Battery charger case	40x40x20 cm , 9kg incl content