Leica Aibot

Intelligent aerial reality capture

Aibot

Complete aerial surveying solution

Leica Aibot, the complete UAV solution for surveying, mapping and construction enables fast and flexible data collection. The system captures, processes and analyzes millions of data points. Visualization of the data provides actionable and accurate information that depicts the reality and improves decision making.

Seamlessly integrated workflow

The Aibot workflow is based on Leica Geosystem's trusted product portfolio and seamlessly integrates with Leica Infinity software suite to process and analyze data. This UAV technology supplements existing survey equipment such as total stations, GNSS and laser scanning to provide a complete view of your project site.

Highest flying performance

The flying platform is specifically designed for professional industrial applications. The modular design makes this system easy to set up and ready to use in just minutes. Intelligent data asset management and Leica GNSS technology provide highest accuracy data. The plaform can be completed with various sensor payloads.

- when it has to be **right**

Leica Geosystems

Leica Aibot product specifications

LEICA AIBOT SOLUTION

Typical flight time[1]	24 min
Productivity: **Max area coverage**[2]	64 ha / 160 acres
Productivity: **Typical area coverage**[3]	10 ha / 25 acres
Mapping accuracy: **Max area coverage**[2]	4 cm (2D), 8 cm (1D)
Mapping accuracy: **Typical area coverage**[3]	2.5 cm (2D), 5 cm (1D)
Supported data processing software	Leica Infinity & 3rd party Software

AX20 UAV

WEIGHT & DIMENSIONS

Aircraft dimensions (propellers, frame arms & GPS mount unfolded)	1668 x 1518 x 759 mm
Aircraft dimensions (frame arms & GPS mount folded)	540 x 582 x 623 mm
Weight (incl. batteries)	11.2 kg
Max takeoff weight	15.5 kg
Max payload	4.3 kg

ENVIRONMENT

Operating temperature	-10° to 40°C (14° to 104°F)

FLIGHT PERFORMANCE

Hovering accuracy (P-Mode, with GPS)	Vertical: ±0.5 m, Horizontal: ±1.5 m
Max pitch angle	25°
Max speed	18 m/s (no wind)
Max wind resistance	8 m/s
Max flight altitude MAMSL	2500 m (4500 m with high alt. propellers)
Flight time (with six TB47S batteries)[1] No payload Typical Max payload	33 min 24 min 18 min

POWER MANAGEMENT

Standard battery	6x LiPo, 22.2 VDC, 4500 mAh, 99.9 Wh

TRIGGER PERFORMANCE

Data synchronization[4]	10 msec

GNSS TECHNOLOGY

GNSS technology	Leica SmartCheck, Leica RTKplus
RTK accuracy: **Single baseline**[5]	Hz 8 mm +1 ppm / V 15 mm +1 ppm
RTK accuracy: **Network RTK**[5]	Hz 8 mm +0.5 ppm / V 15 mm +0.5 ppm
Post processing kinematic accuracy[5]	Hz 3 mm +0.5 ppm / V 5 mm +0.5 ppm
RTK data protocols	Leica, Leica 4G, CMR, CMR+, RTCM 2.2, 2.3, 3.0, 3.1, 3.2 MSM
Network RTK protocols	VRS, FKP, iMAX, MAC (RTCM SC 104)

COMMUNICATION

Communication ports	MicroSD, USB Host, microUSB OTG, SD (to GNSS)
Storage	up to 32GB on micro SD slot
GSM / UMTS / LTE Modem[6]	Fully integrated, internal and external antenna
Radio[6]	Fully integrated, receive, external antenna, 403 to 470 MHz

GIMBAL AMB100

Technology	Brushless gimbal with quick release
Operating temperature	-15° to 50°C (5° to 120°F)
Weight	1050 gr
Max payload	1700 gr
Gimbal dimension	236 x 179 x 288 mm
Input power	12 - 52 V
Connections	WiFi, USB 2.0, CAN, UART, S-bus, Spektrum, PPM
Angular vibration range	±0.02°

SUPPORTED PAYLOAD

RGB camera & lens	Sony α6300 28 mm Sony lens 16-50 mm zoom lens Sony α7RII 28 mm Sony lens 55 mm Sony/Zeiss lens

AR20 REMOTE CONTROL

Operating frequency	5.725 to 5.825 GHz, 2.400 to 2.483 GHz, 920.6 to 928 MHz (Japan)
Max transmission distance[7]	5 km / 3.1 mi (FCC); 3.5 km / 2.1 mi (CE)
Dual users capability	Master-and-Slave control
Operating temperature	-10° to 40°C (14° to 104°F)
Built-in battery	6000 mAh, 2S LiPo

AC20 TABLET

Display	Multi-touch display with IPS technology
Resolution	2048 x 1536
Brightness High Ultra	1000 cd/m² 2000 cd/m²
Operating system	Android
Supported apps	Leica Aibot skyCAPP, Leica QGround Control
Memory High Ultra	ROM 64 GB + RAM 4 GB ROM 128 GB + RAM 4 GB
Connectors	HDMI, microSD card slots, microUSB, USB-C
Connectivity	WiFi: 2.4G, 5.2G, 5.8G, 802.11abgn (HT20); 4G dongle support
Built-in battery	980 mAh, 3.7 V
External battery	4920 mAh, 7.6 V
Operation temperature	-20° to 40°C (-4° to 104°F)
Dimension L x W x H	209 x 148 x 35 mm (incl. external battery)
Weight	600 g (425 g tablet + 170 g battery + 5 g RC mount)

STANDARDS

CE (2014/53/EU, 2014/30/EU, 2014/35/EU, 2011/65/EU, 2012/19/EU, Reach)

FCC

Batteries: UN 38.3 (for transport see UN 3480 / UN 3481)

[1] Flight time depends on operation mode, weather conditions, altitude and payload
[2] Maximum area coverage depends on environment conditions, payload with Sony 7RII, 28 mm lens, GSD 2 cm, flight height 120 m, 60% side overlap, dual frequency GNSS RTK or PP and 5 GCPs
[3] Typical area coverage depends on environment conditions, payload with Sony 7RII, 28 mm lens, GSD 1 cm, flight height 60 m, 80% side overlap, dual frequency GNSS RTK or PP and 5 GCPs
[4] Depending on camera model, GNSS 20 Hz
[5] Measurement accuracy, reliability and time for initialization are dependent upon various factors including number of satellites, observation time, atmospheric conditions, multipath etc. figures quoted assume normal
[6] For real-time correction services
[7] Unobstructed, free of interference

Leica Geosystems AG
Heinrich-Wild-Strasse
9435 Heerbrugg, Switzerland
+41 71 727 31 31

- when it has to be **right**

Leica
Geosystems