vectorbirds
A I R B O R N E   S Y S T E M S

B E Y O N D   T H E   P O S S I B L E
unmanned aerial systems for professionals

![vectorbirds AIRBORNE SYSTEMS logo]

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W H O   W E   A R E
a team of inspired professionals

Vectorbirds airborne systems has started in 2019, to fill a gap in the field of professional UAVs for authorities and organizations with security tasks.

It is our passion, to design and manufacture reliable, innovative and sustainable UAV systems.

Every single System is meticulously handcrafted in Germany.

Our tactical multicopters and helicopters are deployed by military, special forces and security, rescue forces and fire departments, as well as in agriculture, research and industry.

Vectorbirds airborne systems ist 2019 angetreten, eine Lücke im Bereich der professionellen UAVs für Behörden und Organisationen mit Sicherheitsaufgaben zu schließen. .

Die Entwicklung und Fertigung von zuverlässigen, innovativen und nachhaltigen UAV-Systemen ist unsere Passion.

Jedes einzelne System wird von uns in sorgfältigster Handarbeit in Deutschland gefertigt.

Unsere taktischen Multikopter und Helikopter kommen bei Militär- und Spezialeinheiten, Sicherheits- und Rettungskräften, Feuerwehren, sowie in der Landwirtschaft, Forschung und Industrie zum Einsatz.

Kite75

engineered to perform –
crafted by hand in Germany

- SAFETY AND MONITORING
- EMERGENCY SERVICES
- ENERGY INDUSTRY
- SURVEYING AND CARTOGRAPHY
- SCIENCE AND RESEARCH
- AGRICULTURE AND FORESTRY
- CONSTRUCTION AND FACILITY MANAGEMENT
- FILM AND PHOTOGRAPHY
- ANIMAL AND ENVIRONMENTAL PROTECTION

❯ Up to 40 minutes flight time
❯ Up to 12Kg TOW
❯ Payload quick change system
❯ Retractable landing gear
❯ Up to 3 simultaneous live images
❯ Battery rail system
❯ Compact dimensions

Kite75

Handle with OLED preflight display

Computer controlled LED collision warning and position lights

320° obstacle avoidance

Foldable arms

Lithium-Ion batteries

90° rotatable pilot camera

Foldable propellers

Companion computer

LIDAR altimeter

Gimbal quick release mount

5+ gimbal options

Retractable landing gear

AUTOPILOT

❯ GPS mode, fly like on rails even under windy conditions

❯ Autonomous start and landing

❯ Autonomous return to launch

❯ Autonomous mission by waypoints

❯ Camera trigger on predefined GPS positions

❯ Point of Interest (circling around a defined GPS coordinate point)

❯ Care-Free Mode (UAV always moves in relation to the pilot)

❯ Follow-Mode (UAV follows the GPS coordinates of a moving person or vehicle

❯ LIDAR with 320° obstacle avoidance

❯ Additional features according to requirements and use cases

COMPANION COMPUTER

❯ Camera control, real-time image evaluation and display

❯ Pilot cam control, real-time image analysis and display

❯ Autopilot data HUD

❯ Multi-core CPU, AI application ready

CAMERA CONTROL

❯ 90° rotatable pilot HD camera

❯ Mode switching: Still, Movie and Image Stabilization

❯ Zoom (10x - 30x optical)

❯ Further camera settings possible according to requirements and use case

FLIGHT PLATFORM

❯ Downward folding quick-click arms for easy transport and fast readiness for use

❯ Retractable landing gear for undisturbed 360° round vision

❯ Practical handhold with integrated flight data sensors

❯ Battery rail system, automatically connected at click

❯ Gimbal quick exchange system with hotplug function

❯ Camera quick exchange system

❯ Electronic decoupling of both batteries

CONTROLLER

❯ Various controllers available for different application scenarios

Kite75

Height 570mm

Stand space 430x430 mm

Dimensions	Rotoraxis diameter:	950 mm Ø
	Package size:	430 mm x 430 mm x 580 mm
	Ready to fly:	650 mm x 650 mm x 580 mm
Propellers	52cm Ø	
Motors	Brushless Motors	
Batteries	2x Lithium-Ion Batteries, redundant system	
Weight	3400 g	
Max. Take-off weight	12000 g	
Speed	70 km/h max	
Climbing performance	4 m/s max.	
Flight altitude ASL	4000m max.	
Windresistance	15m/s max.	
Operating temperature range	-20°C to +50°C	
Protection class	IP54	
Flight time	42 Min. with Litium-Ion-Batteries	
Sensors	2x Magnetometer, 2x GNSS, 2x Barometer, heated IMU, 320° LIDAR, altitude-LIDAR	
Frequencies	2,4 GHz or 868 Mhz control link 2,4 Ghz or 5,8 GHz digital video transmission other frequencies on request!	
Operating range	10 km max.	
Data transmission/protocols	AES 256 encryption, MavLink, optional STANAG 4586	
Video standards	MPEG-2, MISB ST 0601 / KLV Metadata	

Grabbit G6

portable versatility

- SAFETY AND MONITORING
- EMERGENCY SERVICES
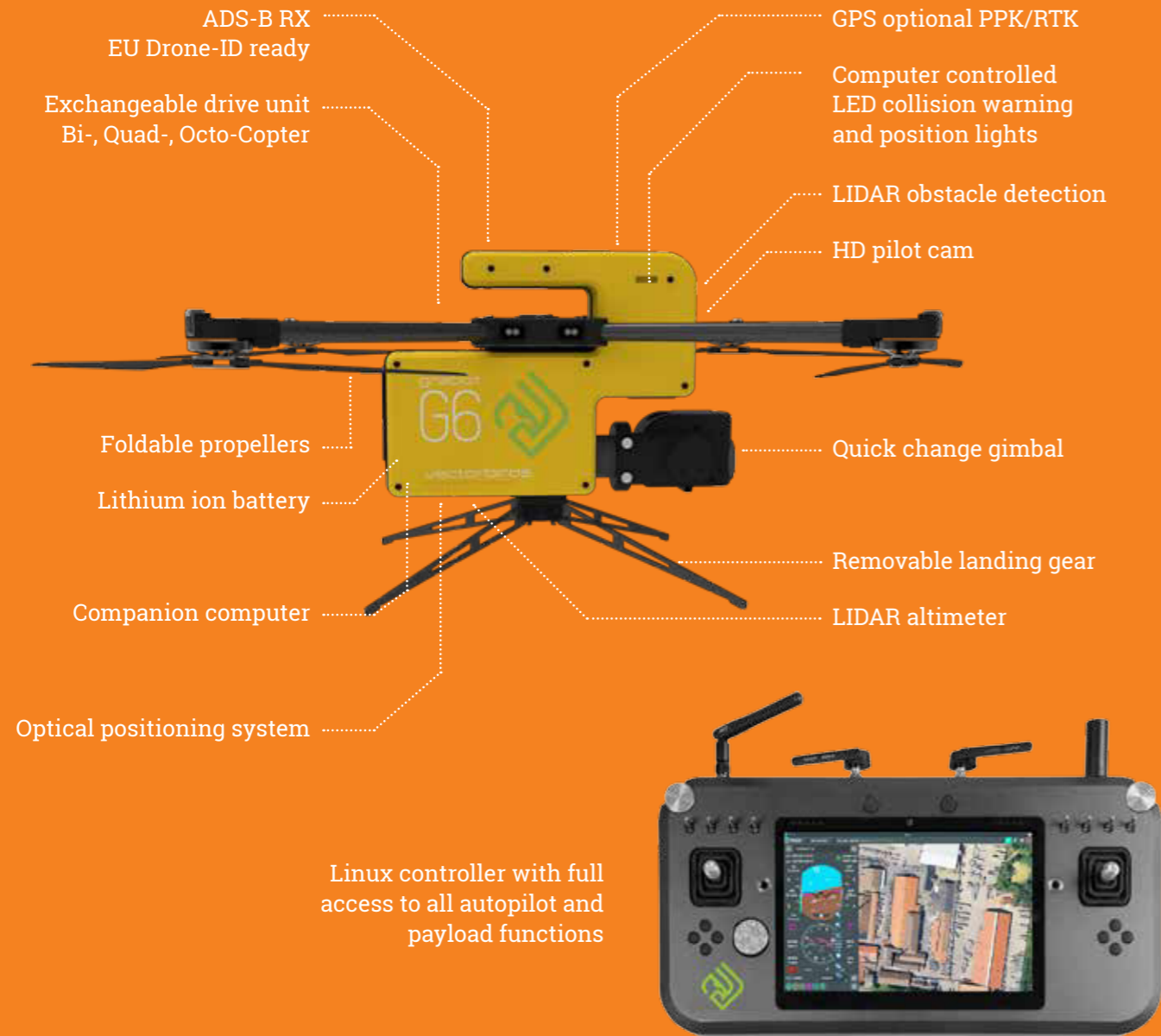- ENERGY INDUSTRY
- SCIENCE AND RESEARCH
- AGRICULTURE AND FORESTRY
- CONSTRUCTION AND FACILITY MANAGEMENT
- ANIMAL AND ENVIRONMENTAL PROTECTION

❯ Rapid operational readiness
❯ Up to 60 minutes flight time
❯ Payload quick change system
❯ Exchangable drive unit
❯ Exchangable landing gear
❯ Up to 3 simultaneous live images
❯ Battery rail system
❯ Compact size

GRABBIT G6

- ADS-B RX
  EU Drone-ID ready
- GPS optional PPK/RTK
- Exchangeable drive unit
  Bi-, Quad-, Octo-Copter
- Computer controlled
  LED collision warning
  and position lights
- LIDAR obstacle detection
- HD pilot cam
- Foldable propellers
- Lithium ion battery
- Quick change gimbal
- Companion computer
- Removable landing gear
- LIDAR altimeter
- Optical positioning system

Linux controller with full
access to all autopilot and
payload functions

F E A T U R E S

AUTOPILOT

- ❯ GPS mode, fly like on rails even under windy conditions
- ❯ Autonomous start and landing
- ❯ Autonomous return to launch
- ❯ Autonomous missions by waypoints
- ❯ Camera trigger on predefined GPS positions
- ❯ Point of Interest (circling around a defined GPS coordinate point)
- ❯ Care-Free Mode (UAV always moves in relation to the pilot)
- ❯ Follow-Mode (UAV follows the GPS coordinates of a moving person or vehicle
- ❯ Additional features according to requirements and use cases
- ❯ Front LIDAR for obstacle detection

COMPANION COMPUTER

- ❯ Camera control, real-time image evaluation and display
- ❯ Pilot cam control, real-time image analysis and display
- ❯ Autopilot data HUD
- ❯ Multi-core CPU, AI application ready

CAMERA CONTROL

- ❯ Mode switching: Still, Movie and Image Stabilization
- ❯ Zoom (10x - 30x optical)
- ❯ Object tracking
- ❯ Further camera settings possible according to requirements and use case

FLIGHT PLATFORM

- ❯ Foldable quick-click arms for easy transport and fast readiness for use
- ❯ Exchangeable drive unit
- ❯ Exchangeable landing gear
- ❯ Practical handhold with integrated flight data sensors
- ❯ Battery rail system, quick exchange
- ❯ Camera quick exchange system with hotplug function

CONTROLLER

- ❯ Milled Hall-Gimbals
- ❯ 7" ultra bright HD Display
- ❯ Linux Operating System
- ❯ 20km range
- ❯ AES encryption

GRABBIT G6

Dimensions	Rotoraxis diameter:	670 mm Ø	
	Package size:	700 mm x 200 mm x 220 mm	
	Ready to fly:	540 mm x 540 mm x 270 mm	
Propeller	42cm Ø		
Motors	Brushless Motors		
Batteries	1x Lithium-Ion Battery		
Weight	2700 g		
Max. Take-off weight	3300 g		
Speed	45 km/h max.		
Climbing performance	3,5 m/s max.		
Flight altitude ASL	2500m max.		
Wind resistance	10m/s max.		
Operating temperature range	-20°C to +50°C		
Protection class	IP54		
Flight time	60 Min. with Bi-Copter-Drive unit		
Sensors	2x Magnetometer, 2x GNSS, 2x Barometer, heated IMU, distance-LIDAR, altitude-LIDAR		
Frequencies	2,4 GHz or 868 Mhz Control Link 2,4 Ghz or 5,8 GHz digital video transmission other frequencies on request!		
Operating range	10 km max.		
Data transmission/protocols	AES 256 encryption, MavLink, optional STANAG 4586		
Video Standards	MPEG-2, MISB ST 0601 / KLV Metadata		

Sparrow20

ultra compact high tech

- Day and night Object tracking
- Person and vehicle detection
- Fire and smoke detection
- Detection of persons in water
- 50 minutes flight time
- Battery Quick change system
- Compact transport size

Currently under development

- MILITARY RECONNAISSANCE
- MARINE RECONNAISSANCE
- INDOORS AND CONFINED SPACES
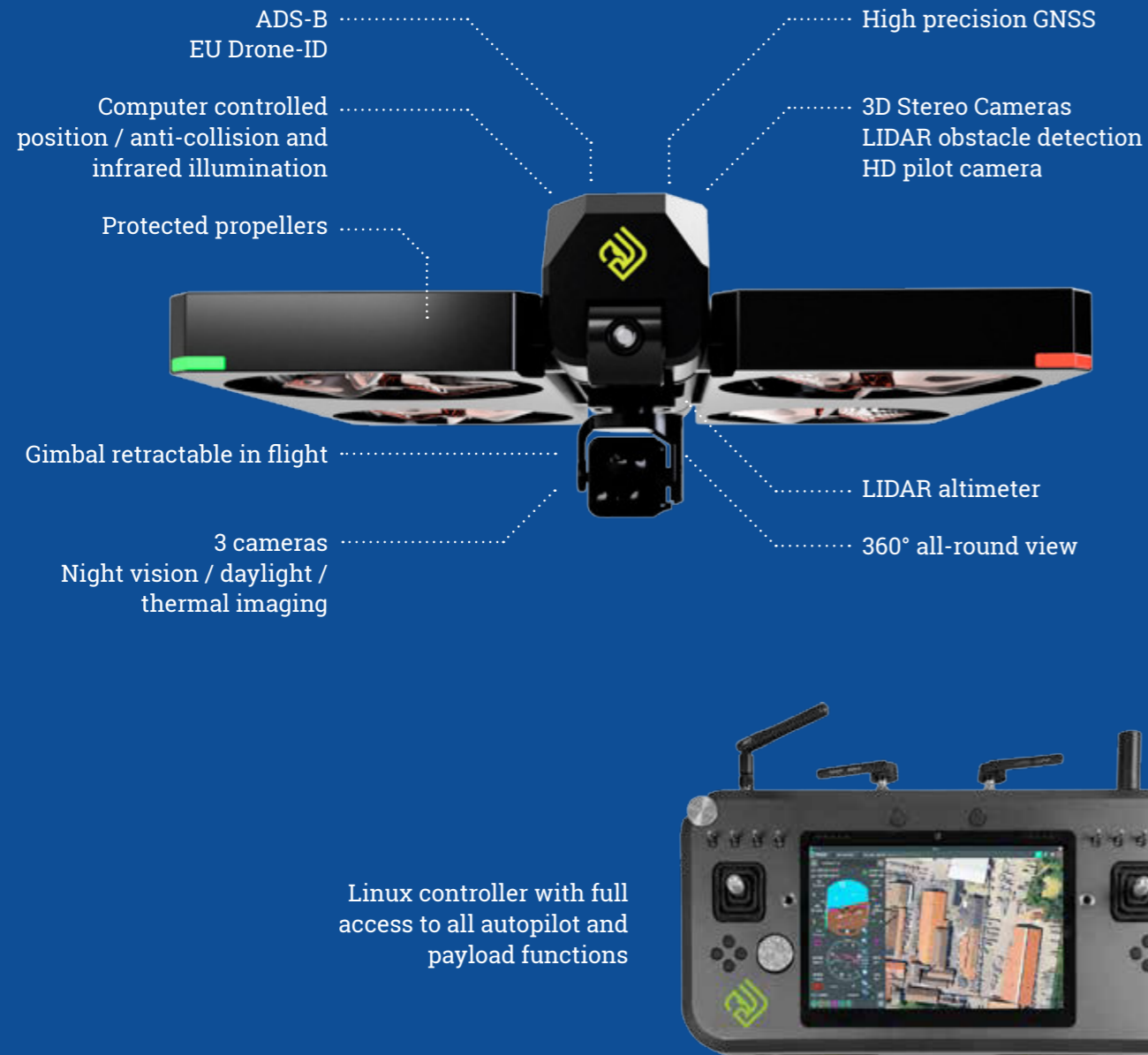- SITUATION AWARENESS
- BLIND SPOT CLARIFICATION
- DISMOUNTED SOLDIER APPLICATIONS
- PERSONAL RECONNAISSANCE SYSTEM
- SECRET MISSIONS
- AI APPLICATIONS PLATFORM

SPARROW20

ADS-B
EU Drone-ID

High precision GNSS

Computer controlled
position / anti-collision and
infrared illumination

3D Stereo Cameras
LIDAR obstacle detection
HD pilot camera

Protected propellers

Gimbal retractable in flight

LIDAR altimeter

3 cameras
Night vision / daylight /
thermal imaging

360° all-round view

Linux controller with full
access to all autopilot and
payload functions

F E A T U R E S

AUTOPILOT

❯ GPS mode, fly like on rails even under windy conditions

❯ Autonomous start and landing

❯ Autonomous return to launch

❯ Autonomous missions by waypoints

❯ Camera trigger on predefined GPS positions

❯ Point of Interest (circling around a defined GPS coordinate point)

❯ Care-Free Mode (UAV always moves in relation to the pilot)

❯ Follow-Mode (UAV follows the GPS coordinates of a moving person or vehicle)

❯ Additional features according to requirements and use cases

❯ Front LIDAR rangefinder for obstacle detect and avoid

CAMERA / PAYLOAD

❯ Static and moving object tracking

❯ Zoom (20x optical)

❯ KLV Metadata

❯ Geo Referencing Point to coordinate, Ground crossing location

❯ Autonomus SAR functions

❯ Direct Payload communication

COMPANION COMPUTER

❯ Payload control, real-time image evaluation and display

❯ Pilot cam control, real-time image analysis and display

❯ Precision landings on optical markers

❯ ROS (Robot Operation System) API

❯ HUD with raltime autopilot data
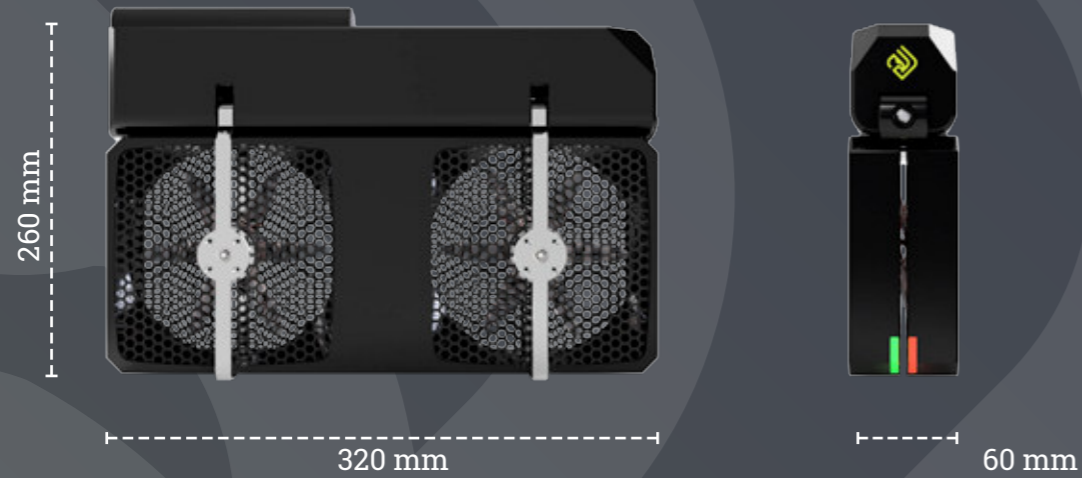
❯ Multi-core CPU, AI application ready

FLIGHT PLATFORM

❯ Folding quick-click drive unit for easy transport and fast readiness for use

❯ Automatic gimbal release

❯ Battery rail system

CONTROLLER

❯ Milled hall-gimbals

❯ 7″ ultra bright HD display

❯ Linux operating system

❯ 20km range

❯ AES encryption

SPARROW20

260 mm

320 mm

60 mm

Dimensions	Rotoraxis diameter:	290 mm Ø
	Package size:	320 mm x 210 mm x 60 mm
	Ready to fly:	320 mm x 320 mm x 60 mm
Propeller	177mm Ø	
Motors	Brushless motors	
Batteries	Lithium Ion	
Weight	900 g	
Max. Take-off weight	900 g	
Speed	50 km/h max.	
Climbing performance	5 m/s max.	
Flight altitude ASL	2500m max.	
Wind resistance	8m/s max.	
Operating temperature range	-20°C to 50°C	
Protection class	IP54	
Flight time	50 Min.	
Sensors	redundant sensors, 2x magnetometer, 2x GPS, 2x barometer, heated IMU, 3D stereo cameras, Altitude-LIDAR	
Frequencies	2,4 GHz or 868 Mhz control link 2,4 Ghz or 5,8 GHz digital video transmission other frequencies on request!	
Operating range	10 km max.	
Data transmission/protocols	AES 256 encryption, MavLink, optional STANAG 4586	
Video Standards	MPEG-2, MISB ST 0601 / KLV Metadata	

TELEVATOR

mobile tether UAS port

- ❯ Redundant positioning system with centimeter-accuracy
- ❯ Autonomous following of the lead vehicle
- ❯ Take-off and landing from moving vehicle optional
- ❯ Suitable for armoured vehicles, pick-ups, trucks and trailers
- ❯ Wired UAS power supply
- ❯ Wide range of climatic conditions
- ❯ Fully remote controllable
- ❯ Automatic levelling Platform

TECHNICAL DATA PLATFORM

Energy supply	230V, 50Hz	4,8A
	24V	90A
	12V	180A
230V	DIN EN 50699 VDE 0702:2021 / VDE 0100	
Platform dimensions (H x W x L)	480mm x 1000mm x 800mm	
Weight	55kg	
Cable length	100m	
Power	1200W	
Data transmission / control	TCP/IP 1000BASE-T, 200Mbit	

TECHNICAL DATA UAS

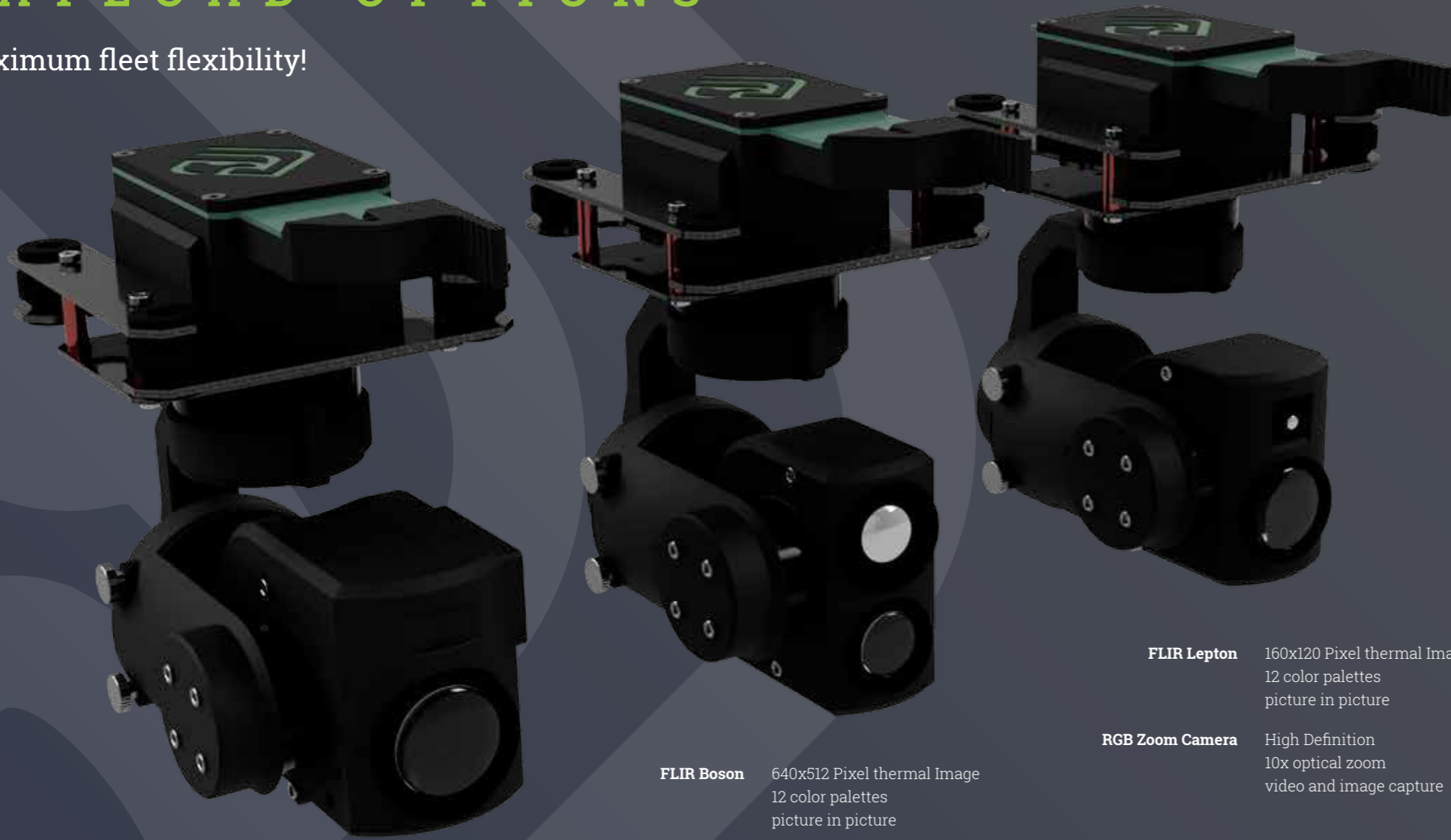|	
Dimensions	Rotor axis diameter 900 mm Ø
	600 mm x 600 mm x 450 mm
Propellers	52cm Ø
Motors	Brushless Motors
Weight	4500 g
Max. Take-off weight	9000 g
Speed	70 km/h max.
Climbing performance	4 m/s max.
Flight altitude ASL	2500m max.
Wind resistance	15m/s max.
Data transmission / protocols	via radio or tether cable, STANAG 4586, MavLink
Video Features and Standards	Object tracking, image stabilisation MPEG-2, MISB ST 0601

TECHNICAL DATA OVERALL SYSTEM

Working temperature	-20°C to +55°C
Protection class	IP54
Humidity	20% - 90% RH non condensing

PAYLOAD OPTIONS

maximum fleet flexibility!

MicaSense Multispectral Cameras

Trichogramma dropping device

Workswell Thermal Cameras

Sony Alpha 6000 / Alpha 7

YellowScan Laser Scanner

LED Headlights

FLIR Lepton   160x120 Pixel thermal Image
12 color palettes
picture in picture

RGB Zoom Camera   High Definition
10x optical zoom
video and image capture

FLIR Boson   640x512 Pixel thermal Image
12 color palettes
picture in picture

RGB Camera   High Definition
video and image capture

Sony 30x Zoom   High Definition
30x optical zoom
electronic image stabilization
video and image capture

All camera bodies can also
be mounted on **Grabbit**G6

TETHER GROUNDSTATIONS

∞ infinite flight time

powered by:
VALO FLY

TECHNICAL DATA

Supply voltage	230V, 50Hz, 4,8A	
Dimensions (H x W x D)	272mm x 591mm x 576mm	
Weight	32kg	
Cable length	60m	100m
Power	1400W	1200W
Data transmission (optional)	1000BASE-T, up to 200Mbit	
Remote control (optional)	UART 5V TTL	
230V Mains connection	Neutrik® powerCON TRUE1	
Network connection (optional)	Neutrik® etherCON CAT6A	
Remote control (optional)	D-Sub 9 pole, female	

-15,2° C

43,8° C

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