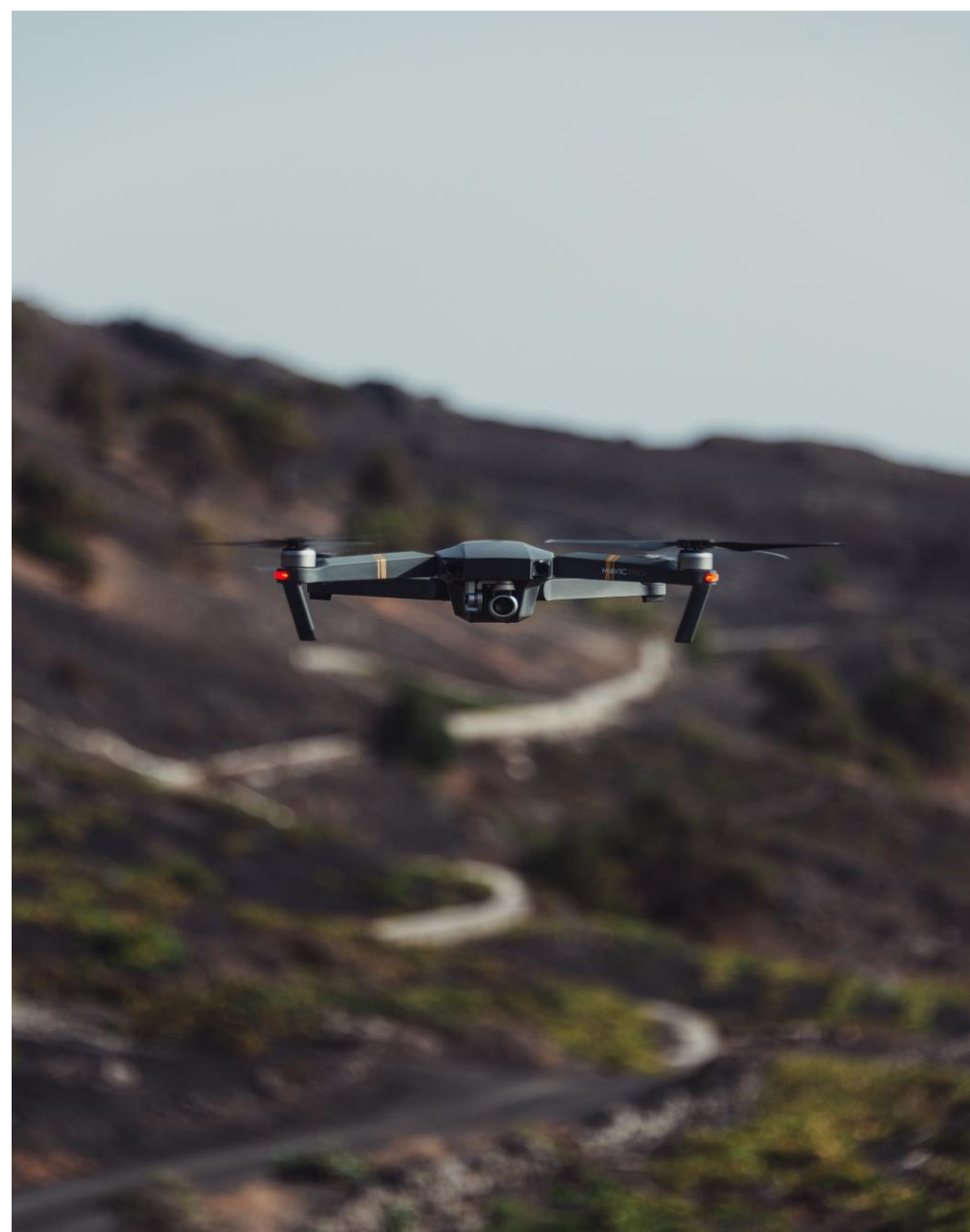


Manufacturing capacity of Polish startups specializing in unmanned vehicles

DECEMBER 2025



Poland in the world of drones: dual-use technologies are changing the rules of the game...

This report, prepared by the Polski Fundusz Rozwoju S.A. (hereinafter: PFR), focuses on the topic of unmanned solutions (also known as 'drones'; hereinafter, this term will be used interchangeably with the technical names of specific types of solutions) manufactured in Poland and defense systems against them. Our analysis is based on surveys and interviews with entities selected by PFR as experts, largely drawing from experience gained during programs organized by PFR to support growth of the dual-use sector (such as the IDA Bootcamp). This report describes aerial, surface (including underwater) and ground platforms.

Its purpose is to present interesting and innovative concepts of dual-use drones developed in Poland. **The following several limitations apply to our analysis:**

1. It does not purport to identify all relevant drone manufacturers or specify their manufacturing capacities, as this sort of analysis would be extremely difficult due to the sector's high degree of fragmentation (coupled with frequent bankruptcies and the emergence of new startups);
2. Our analysis focuses on entities whose solutions are manufactured in Poland and are based predominantly on Polish components, while omitting solutions that are based on already existing commercial platforms or their minor modifications;
3. Our report also excludes companies that operate strictly in the defense sector (such as WB Electronics and Polska Grupa Zbrojeniowa) – rather, it sheds light on civilian (dual-use) enterprises that have the potential to significantly contribute to the resilience of the Polish state in the event of a major crisis;
4. Entities that have refused to give us permission to publish information on their products or whose materials contain insufficient relevant information about the solutions they manufacture are also excluded;
5. The information presented herein is based on the entities' own disclosures – PFR has neither tested their solutions nor independently vetted the data obtained.



... however, systemic support is required to ensure the sector's growth

Our report does not seek to formulate recommendations for the future of the civilian dual-use sector. However, the information we have obtained indicates that setting clear guidelines for the direction of change is not an easy challenge. Due to Poland's status as a frontline state, we compare the solutions available in the country with those being actively used in warfare (some drone manufacturers employ individuals with combat experience gained in Ukraine).

On the other hand, in peacetime, the speed of decision-making, the acceptable risk and the available funding must be commensurate with the existing situation, including the need to ensure appropriate procedures for the operation of the state (for instance, as far as drones autonomously controlled by AI area concerned, there is a considerable risk of attacks on targets other than those intended, especially in the early stages of development of such solutions; and while this risk may be tolerable in wartime, it would be unreasonable to assume public tolerance in Poland for situations where, e.g., a drone accidentally leaves the training ground and attacks a civilian off-road vehicle painted dark green).

In the second half of 2025, information emerged about changes already made and intended by the Polish Ministry of National Defense regarding the acquisition, testing and use of drones by the Polish military. A key change is the adoption of an exemption from the application of the Public Procurement Law to contracts related to unmanned weapon systems and means of combating such systems, which have been tested by the Armed Forces of the Republic of Poland and received a favorable recommendation as a result of such tests and the consent of the Minister of National Defense (MON).*

* The changes in question result from the Act of 25 July 2025 on Special Rules for the Preparation and Implementation of Strategic Investments for National Defense Needs or Key Investments in National Defense or Public Security and the Establishment of Protective Zones for Restricted Areas (Journal of Laws, item 1080) and Decision No. 123/MON of the Minister of National Defense of 12 September 2025 on the Organization and Procedures for Testing Unmanned Aerial Vehicles, Unmanned Weapon Systems and Means of Combating Unmanned Aerial Vehicles and Unmanned Weapon Systems in the Polish Armed Forces (Official Journal of the Ministry of National Defense, item 147) issued on the basis of the said Act.

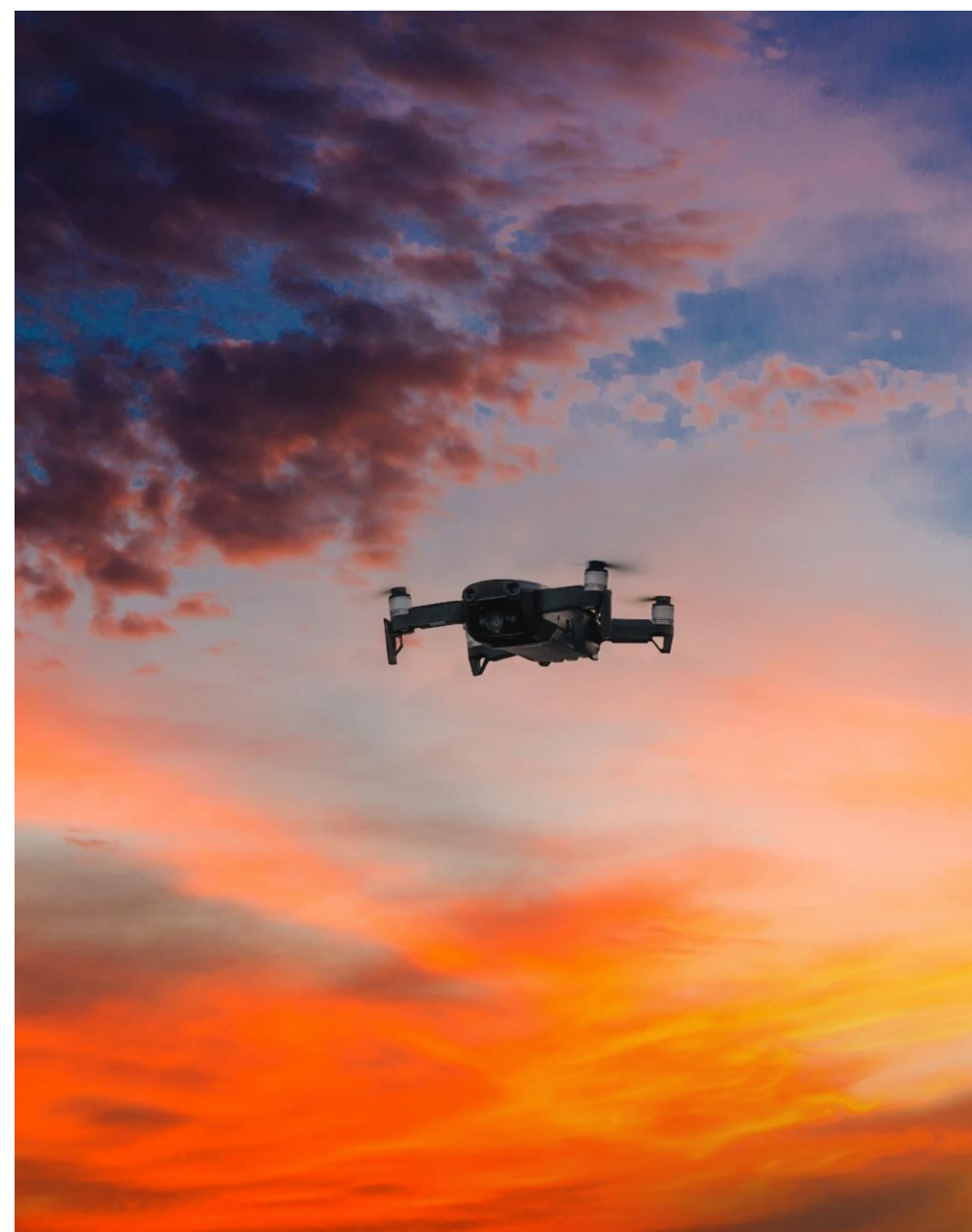


Poland is accelerating the development of unmanned systems through new structures and deregulation

Pertinent activities are coordinated by the Inspectorate for Unmanned Weapon Systems of the Armed Forces General Command (established on 1 January 2025) with a view to developing the capabilities of the Polish Armed Forces related to unmanned systems.

The Ministry of National Defense has also announced the establishment of an Autonomous Systems Center based on military research institutes, the main purpose of which will be to stimulate and coordinate the drone innovation ecosystem. Furthermore, over 30 deregulation proposals have been put forward (concerning, for instance, tax changes, amendments to aviation law, facilitation of licensing and export approvals, and amendments to public procurement law with regard to unmanned systems).

Depending on how and when they are ultimately implemented, these changes might significantly contribute to the growth of some of the entities we have covered herein. Among the key factors for at least some of the companies will be to obtain orders that would enable them to ramp up their manufacturing capacity. This will both improve the quality of the proposed solutions and build a stable base for amplified output in crisis situations. Such changes should be effected as quickly as possible, although one should not expect to see manufacturing capacity grow as significantly as is the case now in Ukraine, because such outcome is not desirable in peacetime. The entities we have covered showcase ideas and products that might significantly strengthen Poland's armed forces. Moreover, further (controlled) growth of the sector is crucial in the context of national security.



“Drone solutions” described herein – summary

As part of our technical review, **26 drone solutions** from 13 different entities operating on the domestic market have been looked at. The list includes a broad range of modern unmanned systems, from aerial platforms and ground vehicles to maritime and support systems.

Features of the review:

12

unmanned aerial vehicles (UAVs)

7

unmanned ground vehicles (UGVs)

4

surface and underwater vehicles (USVs and ROVs)

3

systems combining different technologies into coherent solutions

Each of the solutions has been described in a manner that enables an assessment of its potential use. The review contains technical parameters, information on price, manufacturing and warranty conditions as well as data on the origin of key components and structural elements. In some cases, selected technical information has been omitted due to its sensitive nature. The content of this report enables a direct comparison of selected devices with regard to technical and functional aspects, and illustrates the structure and development of the domestic drone market. As a result, it not only presents the current situation of the drone market in Poland, but also serves as a reference point for further comparative analyses, development planning and potential activities related to implementing new unmanned solutions.





Spider Tube V4

- Ultralight reconnaissance drone, equipped with an FPV camera, designed for rapid response in the field,
- When folded, the drone may be stored in an 80 mm diameter tube, which can be slung over the shoulder and carried to another location,
- It is equipped with a quick-release battery or payload module, enabling extended operation without having to return to base.



Monthly production: **50 units**



Price: **PLN 9,600** per unit (PLN 8,320 for orders of at least 100 units)



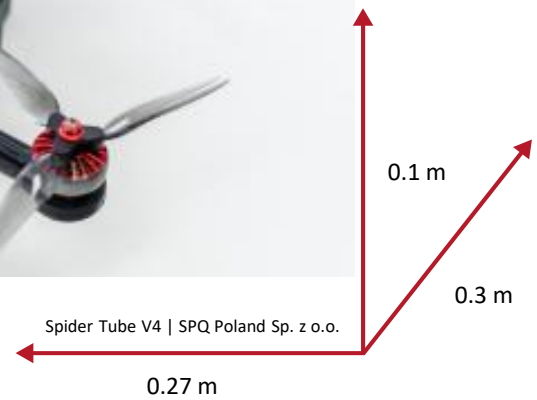
Order fulfillment time: **2 months**



Warranty period: **3 years or 800 flight hours, 2 years for the rechargeable battery**



Service center location: **Bielsko-Biala**





Spider Tube V4

SPECIFICATIONS

Max. take-off weight	2.9 kg
Flight time	Up to 15 mins
Propeller motors	4x brushless 1,450 kV, 7-inch propellers
Frame	Composite, carbon fiber/Kevlar/plastic polymer
Operational readiness	In less than 10 seconds
Software	Proprietary DRONET, based on ArduPilot, compatible with the MAVLink protocol
Navigation	Supports UBLOX GPS, Galileo and GLONASS

ORIGIN OF KEY COMPONENTS

Most components are manufactured in Poland

Optics	Czechia
Flight controller	Mexico
Propulsion systems, power supply components	Taiwan



Tested in Ukraine in actual combat conditions



Compliant with **MIL-STD and CE**



Security features include secure LTE/GSM or radio links, encrypted communication and the option to install a Neuron Chip hardware module for additional layers of encryption



FireFighter v2B

- Operational drone designed for rescue units operating in high-risk environments, including the Military Fire Service working in areas where military bases, ammunition depots and critical infrastructure are located
- Operating modes: manual, autonomous, remote control,
- The system enables modification of the mission plan during flight, without the need to land or return to base,
- The modular architecture enables quick replacement of heads (IR, optical camera with 10x zoom), while live image sharing allows simultaneous viewing by multiple users,
- Adapted to work in difficult terrain, day and night, in rain, dust and limited visibility.



Monthly production: **10 units**



Price: **PLN 85,000** per unit



Order fulfillment time: **2 months**



Warranty period: **3 years or 800 flight hours, 2 years for the rechargeable battery**



Service center location: **Bielsko-Biala**





FireFighter v2B

SPECIFICATIONS

Max. take-off weight	5.5 kg
Flight time	Up to 25 mins
Propeller motors	4x brushless 360 kV, 17-inch propellers
Frame	Composite, carbon fiber/Kevlar
Operational readiness	In less than 60 seconds
Software	Proprietary DRONET, based on ArduPilot, compatible with the MAVLink protocol
Navigation	Supports UBLOX GPS, Galileo and GLONASS

ORIGIN OF KEY COMPONENTS

Most components are manufactured in Poland

Optics	Czechia
Flight controller	Mexico
Propulsion systems, power supply components	Taiwan



Performed test antiseptic spraying of urban facilities in Katowice during the COVID-19 pandemic



Compliant with **MIL-STD and CE**



Security features include secure LTE/GSM or radio links, encrypted communication and the option to install a Neuron Chip hardware module for additional layers of encryption



Thor V4

- Medium-range reconnaissance drone, designed to conduct observation and reconnaissance missions in open, urbanized and difficult environmental conditions,
- Operating modes: manual, autonomous, remote control, with support for independent LTE/5G connectivity and NeuroLink architecture,
- During missions, capable of immediately changing the route or abort the task without having to return to base,
- Operates with a broad range of modular optoelectronic heads,
- Its light weight, composite construction and the ability to turn off positional lighting ensure high discretion, mobility and resistance to detection.



Monthly production: **10 units**



Price: **PLN 112,000** per unit



Order fulfillment time: **2 months**



Warranty period: **3 years or 800 flight hours, 2 years for the rechargeable battery**



Service center location: **Bielsko-Biala**





Thor V4

SPECIFICATIONS

Max. take-off weight	11.5 kg
Flight time	Up to 55 mins
Propeller motors	4x brushless 260 kV, 26-inch propellers
Frame	Composite, carbon fiber/Kevlar
Operational readiness	In less than 3 seconds
Software	Proprietary DRONET, based on ArduPilot, compatible with the MAVLink protocol
Navigation	Supports UBLOX GPS, Galileo and GLONASS

ORIGIN OF KEY COMPONENTS

Most components are manufactured in Poland

Optics	Czechia
Flight controller	Mexico
Propulsion systems, power supply components	Taiwan



Used by Ukrainian operators to identify areas where Russian electronic warfare stations were operating



Compliant with **MIL-STD and CE**



Security features include secure LTE/GSM or radio links, encrypted communication and the option to install a Neuron Chip hardware module for additional layers of encryption



Hermes II V8

- Transport drone for special tasks, designed to carry out autonomous missions beyond visual range, even in built-up areas,
- Performs transport and specialized missions even in difficult weather and environmental conditions,
- In 2020, Hermes II V8 was the first unmanned aerial vehicle in Europe to complete several successful transport flights over Warsaw in BVLOS and autonomous modes.



Monthly production: **10 units**



Price: **PLN 163,000** per unit



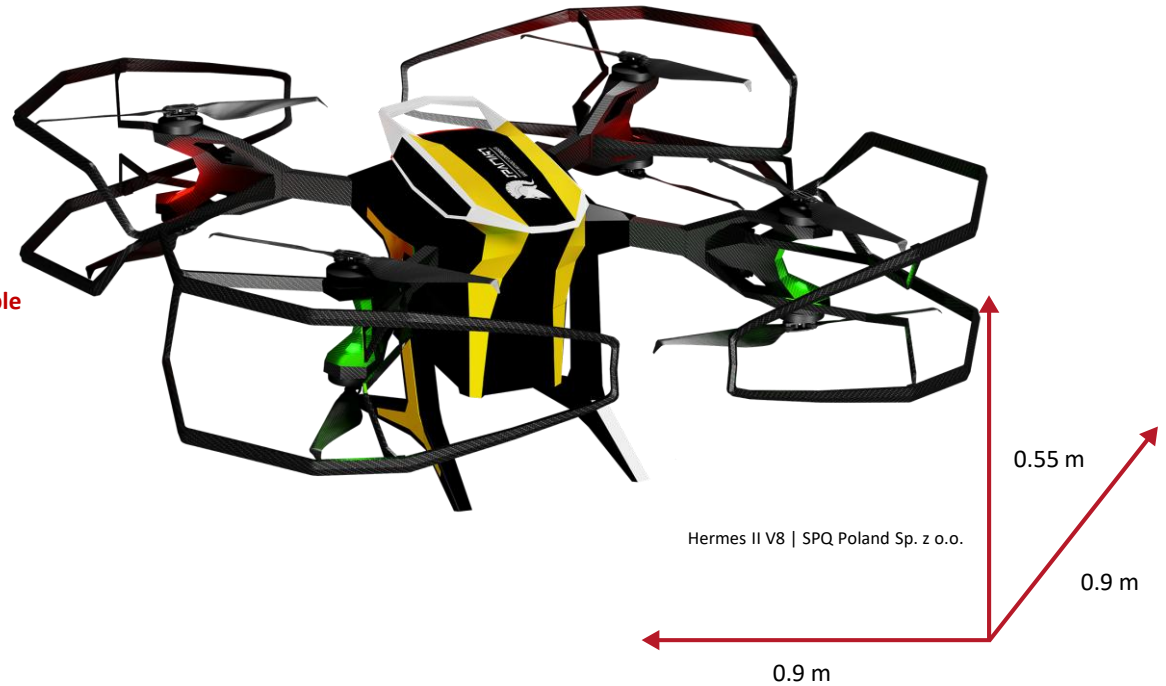
Order fulfillment time: **2 months**



Warranty period: **3 years or 800 flight hours, 2 years for the rechargeable battery**



Service center location: **Bielsko-Biala**





Hermes II V8

SPECIFICATIONS

Max. take-off weight	20.5 kg
Flight time	Up to 50 mins
Propeller motors	8x brushless 280 kV, 24-inch propellers
Frame	Composite, carbon fiber/Kevlar
Payload	Up to 8 kg
Software	Proprietary DRONET, based on ArduPilot, compatible with the MAVLink protocol
Navigation	Supports UBLOX GPS, Galileo and GLONASS

ORIGIN OF KEY COMPONENTS

Most components are manufactured in Poland

Optics	Czechia
Flight controller	Mexico
Propulsion systems, power supply components	Taiwan



Used in Poland and Ukraine, also for medical transport during the COVID-19 pandemic



Compliant with **MIL-STD and CE**



Security features include secure LTE/GSM or radio links, encrypted communication and the option to install a Neuron Chip hardware module for additional layers of encryption



Dronoid OWL VISION II V8 | OWL VISION II V8 SEAL

- Drone for autonomous operation in difficult weather conditions,
- Suitable for industrial, inspection, transport and specialized applications,
- Remotely controlled via LTE/5G network,
- Capable of operating two optical heads simultaneously, e.g. an IR camera and a camera with 30x optical zoom, with real-time image access,
- Available in several versions for ground and maritime missions.



Monthly production: **10 units**



Price: **PLN 297,000** per unit



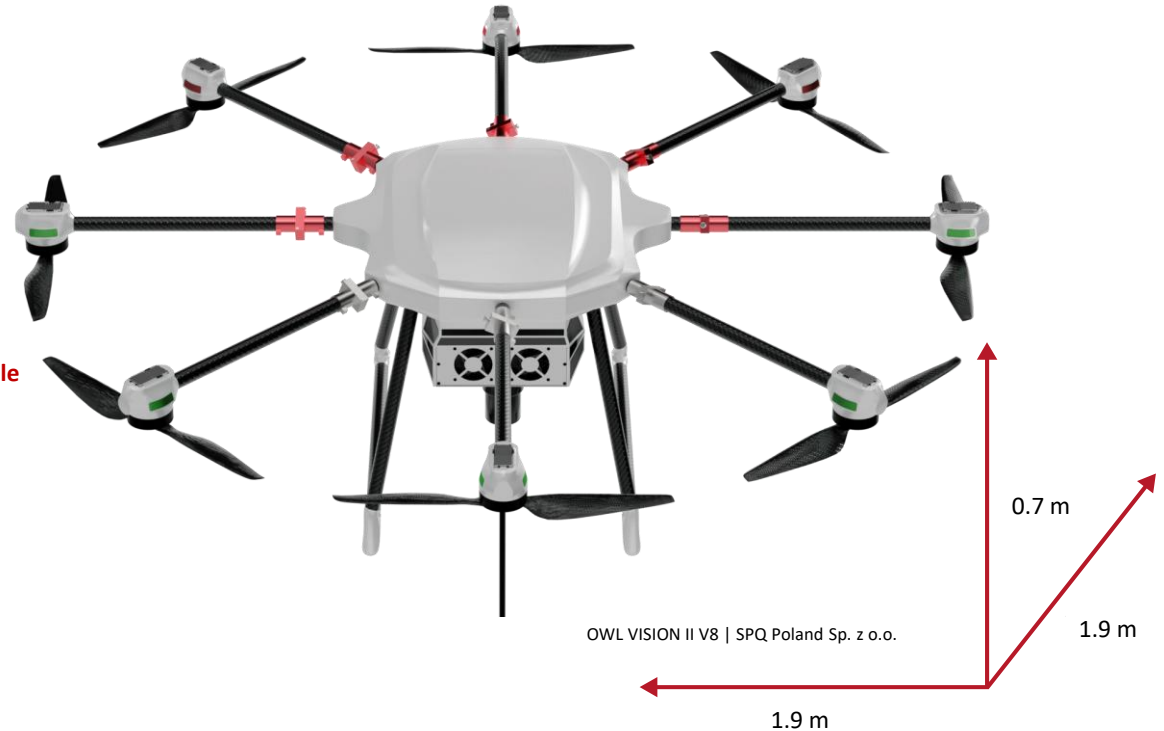
Order fulfillment time: **2 months**



Warranty period: **3 years or 800 flight hours, 2 years for the rechargeable battery**



Service center location: **Bielsko-Biala**





Dronoid OWL VISION II V8 | OWL VISION II V8 SEAL

SPECIFICATIONS

Max. take-off weight	47 kg
Flight time	Up to 1 h 10 mins
Frame	Composite, carbon fiber/Kevlar/aluminum
Lift capacity	25 kg
Software	Proprietary DRONET, based on ArduPilot, compatible with the MAVLink protocol
Navigation	Supports UBLOX GPS, Galileo and GLONASS

ORIGIN OF KEY COMPONENTS

Most components are manufactured in Poland

Optics	Czechia
Flight controller	Mexico
Propulsion systems, power supply components	Taiwan



Participated in Polish Border Guard operations and received favorable opinions from operators



Compliant with **MIL-STD and CE**



Security features include secure LTE/GSM or radio links, encrypted communication and the option to install a Neuron Chip hardware module for additional layers of encryption



Unmanned aerial vehicle for tactical reconnaissance

- Unmanned aerial vehicle designed for carrying out tactical reconnaissance, capable of performing combat missions in difficult weather conditions or limited visibility,
- May be used to observe the battlefield, monitor enemy movements, assess the situation in real time and support ground units,
- Owing to the use of modern sensors and data transmission systems, it enables the rapid collection and transmission of key information, increasing the situational awareness of the command,
- Capable of operating in an environment of electronic warfare interference.



Monthly production: **1,000 units**



Price: **ca. PLN 128,000 (EUR 30,000)** per unit



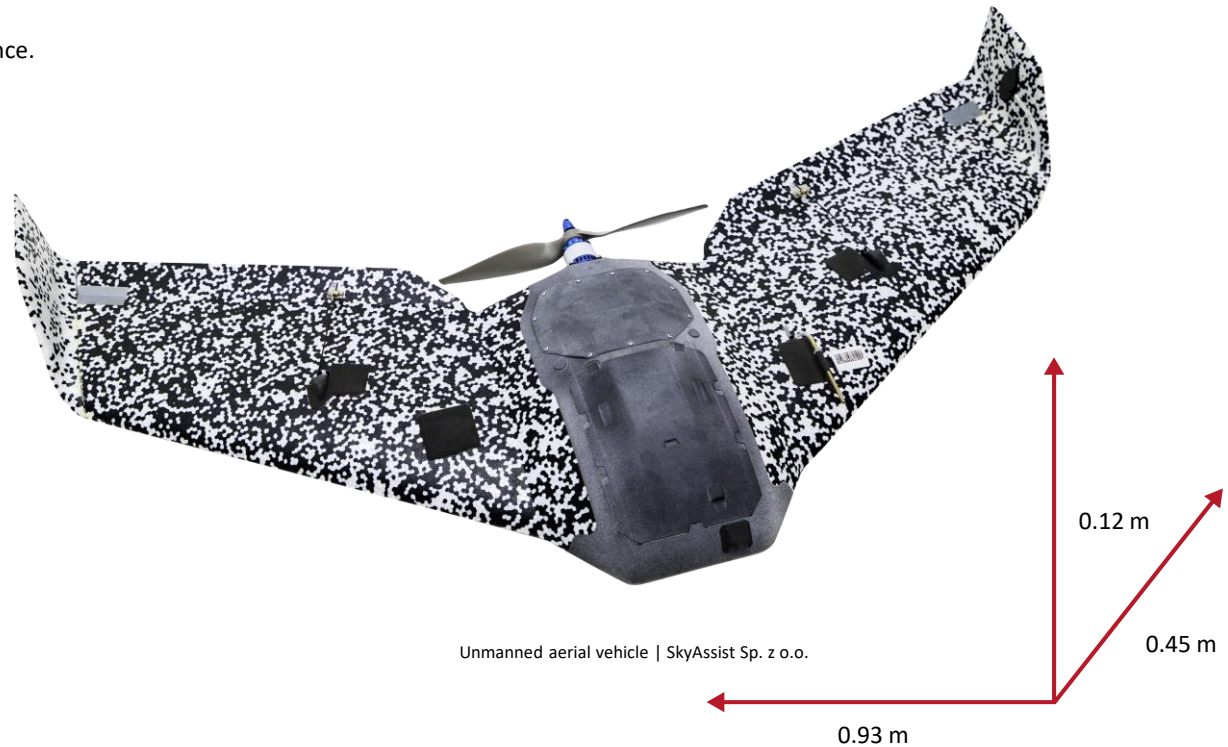
Order fulfillment time: **up to 30 business days**



Warranty period: **12 months**



Service center location: **Rzeszów**





Unmanned aerial vehicle for tactical reconnaissance

SPECIFICATIONS	
Max. take-off weight	1.35 kg
Flight time	1.5–2 h
Tactical range	Up to 30 km
Software	Proprietary
Navigation	Multi-layer system, GNSS, main satellite modules, algorithms to combat false information

ORIGIN OF KEY COMPONENTS	
Frame, GPS, Compass, Transmitter, Receiver, Battery	Ukraine
Motor, Propellers	Poland
Controller, Regulators, System	United States
Camera	Ukraine, Czechia
Lidar	Taiwan, United States



Used in combat operations in Ukraine



Fulfills Class 1 requirements in accordance with applicable standards



System protected against any external interference
Type and algorithm of protection are classified

OGAR 3

Type: Aerial



- Micro-class unmanned aerial vehicle observation system used for reconnaissance,
- Water landing option enabling safe landing and takeoff from the water surface,
- Product designed from scratch and manufactured in Poland,
- Optimal dimensions and light weight enabling hand launch,
- Door-to-door service incapable of reading the user's encrypted sensitive data.



Monthly production: **100 units**



Price: up to **PLN 522,000** per unit (depending on the version)



Order fulfillment time: **1-24 months** (depending on the version)



Warranty period: **24 months**



Service center location: **Tarnowskie Góry/Gliwice**





OGAR 3

SPECIFICATIONS

Max. take-off weight	1.7 kg
Flight time	38 mins on a single battery
Tactical range	Up to 8 km
Flight readiness	Less than 45 seconds
Resilience	Resilient to spoofing, jamming, precipitation, temperature and wind

ORIGIN OF KEY COMPONENTS

Designed and manufactured mostly by Prodron, approx. 70% of the product value originates from and remains in the EEA



Used by Special Forces units, passed field tests in difficult conditions



Compliant with **ISO 9001:2015, CE, IEC 60529**



AES-256 encryption (for transmission and data)



Wasper-1

- Designed as a strike drone, available in kamikaze and bomb modes, may be used in other types of missions after hardware modifications,
- Equipped with an AI-based tracking system that tracks a target manually selected by the operator based on camera images,
- Once the target is selected and attack mode is activated, no signal from the operator is required. If the mission is pre-programmed and a GPS signal is available, no signal from the operator is required either,
- Features a swarming capability and terminal guidance,
- Operates in electronic warfare conditions and GNSS-denied environments.



Monthly production: **150 units**



Price: **PLN 38,500** per unit



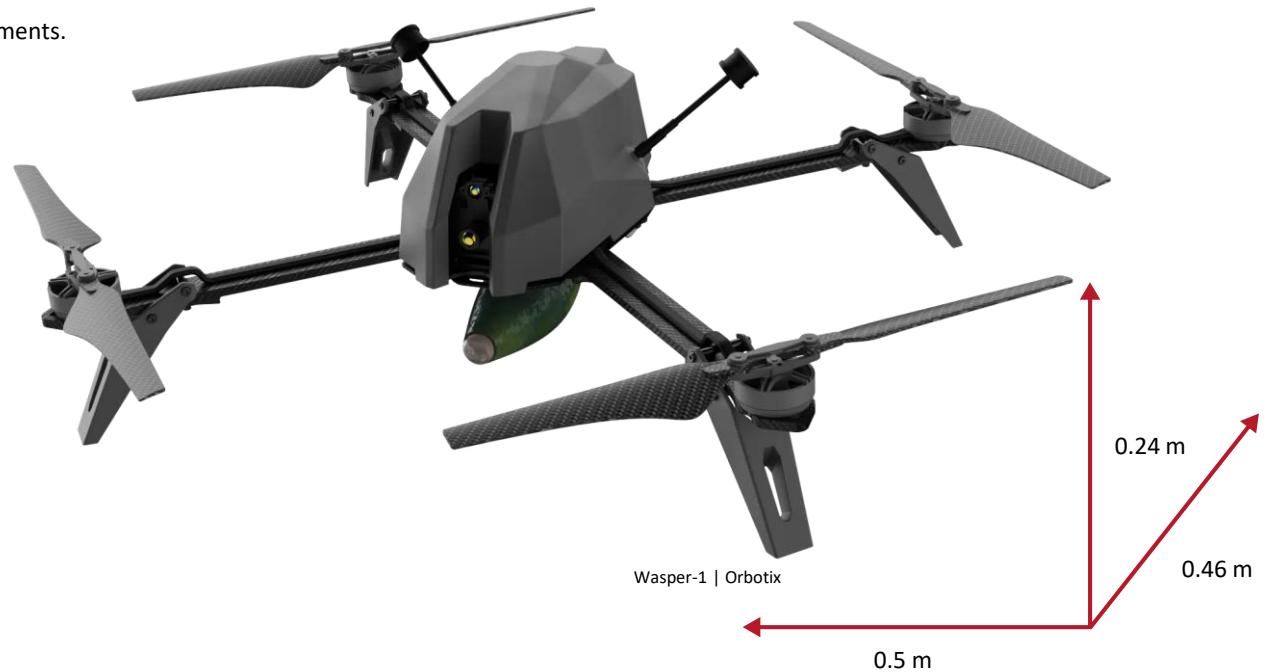
Order fulfillment time: **1.5 months**



Warranty period: **12 months**



Service center location: **Mazowieckie Voivodship**





Wasper-1

SPECIFICATIONS

Weight	2.3 kg
Flight time	35 min
Speed	70 km/h
Range	15 km
Load	<1.7 kg
Software	Proprietary, interoperable with publicly available tools
Navigation	Based on GNSS and inertial measurement units (IMU), uses VIO technology

ORIGIN OF KEY COMPONENTS

Key components of the device are manufactured locally in the EU (possibly Poland) as well as in China, Japan and Canada. Work is currently underway to replace Chinese components with components manufactured in Poland or the EU



Tested in Ukraine



Lack of certificates confirming compliance with standards



Multi-layered protection mechanisms, including encrypted communication channels, user authentication protocols and regular software updates. Data protected during storage and transmission.





HAASTA


- Multi-purpose long-range UAV system dedicated to reconnaissance, diversion and combat operations,
- Operates in a group of up to 7 platforms with full radio communication, handled from a single ground control station (GCS),
- The Haasta Hunter “fighter jet” version is designed to destroy enemy UAVs in the air, well in advance, at a great distance from the protected zone, using kinetic means (rockets, firearms) carried by the aircraft.

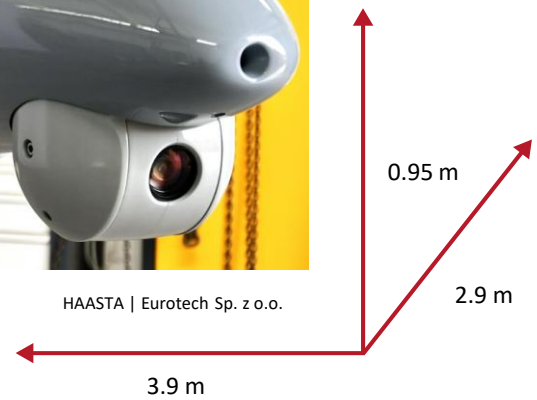
 Monthly production: **5 units** (in 2025), scheduled increase to **10 units** (in 2026) and **50 units** (in 2027)

 Price: **NDA**

 Order fulfillment time: **6-10 months**

 Warranty period: **12-24 months**

 Service center location: **Eurotech facility in Mielec**





HAASTA

SPECIFICATIONS

Max. take-off weight	Up to 150 kg
Flight time	Up to 10 h
Speed range	From 120 km/h to 280 km/h
Range	Up to 2000 km (radio range: 200 km)
Ceiling	Up to 6,000 m
Payload	Up to 50 kg
Software	Proprietary
Navigation	Produkt Eurotech Sp. z o.o.

ORIGIN OF KEY COMPONENTS

Key components of the device are manufactured in Poland

Payload (gimbal, cameras, lidar)	NATO or Taiwan
Batteries	NATO or Taiwan



No information on testing



Compliant with selected **STANAG and MIL-STD**



No information on protection features



MROŻNY

- Six-rotor drone designed for mobility and functionality,
- Owing to its foldable umbrella-shaped arms, the device is easy to transport and quick to prepare for flight.



Monthly production: **4 units**



Price: **ca. PLN 40,000** (minimum price) per unit



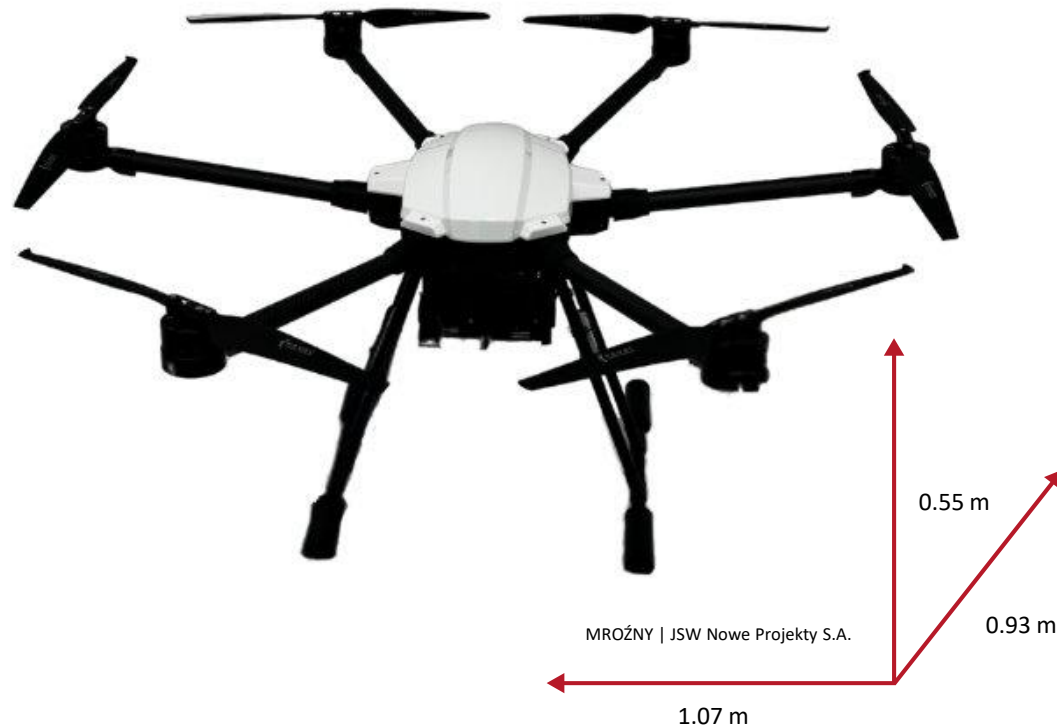
Order fulfillment time: **2 months**



Warranty period: **2 years for the structure, 6 months for propellers and batteries**



Service center location: **Warsaw**





MROŻNY

SPECIFICATIONS

Max. take-off weight	10 kg
Payload	2 kg
Operating time	Up to 35 mins
Flight distance	Up to 15 km
Maximum speed	22 m/s
Wind resistance	Up to 15 m/s
Transmission range	Up to 20 km
Navigation	Based on a GNSS receiver

ORIGIN OF KEY COMPONENTS

Frame, Motor, Propellers, Controllers, GPS, Communication, Batteries	China
Controller	Taiwan



No information on testing



Compliant with **ISO 9001:2015**



No information on protection features



ŚWISTAK

- Aerial drone with built-in floats for safe landing and take-off from the water surface,
- May be used, e.g., for water body inspections, coastline monitoring or rescue operations.



Monthly production: **4 units**



Price: **ca. PLN 60,000** (minimum price) per unit



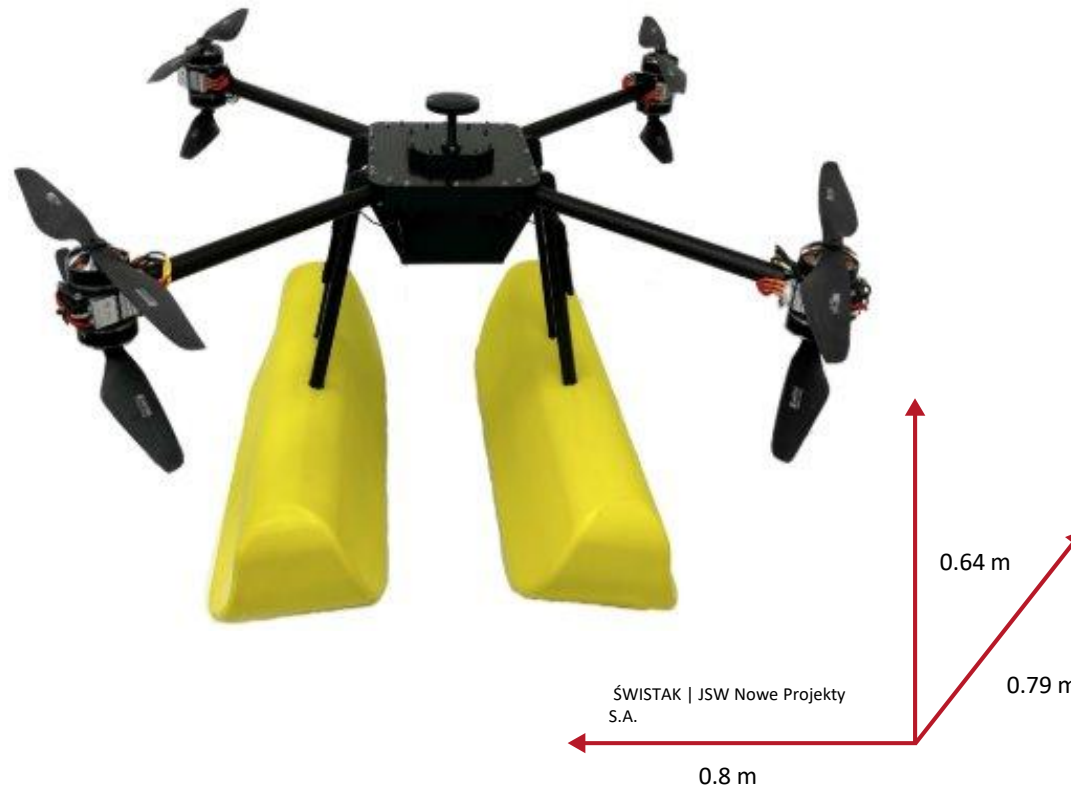
Order fulfillment time: **2 months**



Warranty period: **2 years for the structure, 6 months for propellers and batteries**



Service center location: **Warsaw**





ŚWISTAK

SPECIFICATIONS	
Max. take-off weight	15 kg
Payload	4 kg
Operating time	Up to 40 mins
Flight distance	Up to 25 km
Maximum speed	23 m/s
Software	Based on market solutions, may be integrated with a proprietary application
Navigation	Based on a GNSS receiver

ORIGIN OF KEY COMPONENTS	
Motor, Propellers, Controllers, GPS, Batteries	China
Frame, Software	In-house manufacturing
Receiver, Transmitter	China/United States
Controller	Taiwan



No information on testing



Compliant with **ISO 9001:2015**



No information on protection features



WIELKI

- UAV designed for transport, measurement and rescue missions
- Allows the connection of any device and may be integrated with floats, enabling takeoff and landing from the water surface
- Possibility of installing a proprietary winch enabling measurement in an aquatic environment both from the air and on the water



Monthly production: **2-4 units**



Price: **ca. PLN 110,000** (minimum price) per unit



Order fulfillment time: **2 months**



Warranty period: **2 years for the structure, 6 months for propellers and batteries**



Service center location: **Warsaw**





WIELKI

SPECIFICATIONS

Max. take-off weight	25 kg
Payload	8 kg
Operating time	Up to 40 mins
Flight distance	Up to 15 km
Maximum speed	20 m/s
Software	Based on a proprietary application for UAV control and management
Navigation	Based on a GNSS receiver

ORIGIN OF KEY COMPONENTS

Motor, Propellers, Controllers, GPS, Batteries	China
Frame, Software	In-house manufacturing
Receiver	China/United States
Controller	Taiwan



No information on testing



Compliant with **ISO 9001:2015**



Protection against unauthorized access in the form of authorization to access the GCS application

USV 300

Type:
Maritime



- Unmanned surface vehicle with increased seaworthiness, prepared for the installation of larger hydroacoustic devices,
- Hull shaped in a manner ensuring high mobility and great adaptability with regard to equipment and operation in confined and coastal waters,
- May be controlled manually via radio equipment and may independently follow a set route in automatic mode using GPS/GNSS RTK



Monthly production: **1 unit**



Price: **PLN 349,000–449,000** per unit



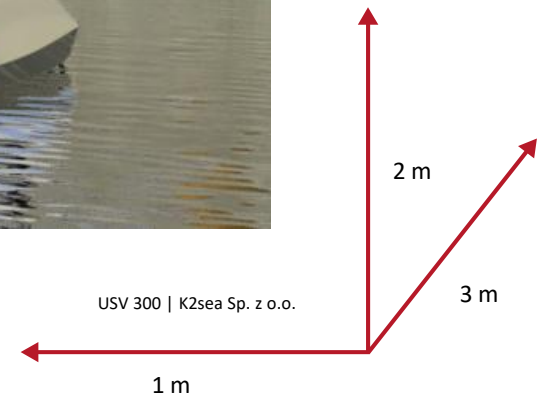
Order fulfillment time: **4 months**



Warranty period: **12/24 months**



Service center location: **Poland, NDA**





USV 300

SPECIFICATIONS	
Maximum speed	5.0 kn*
Measurement speed	3.5 kn*
Power supply	Lithium-ion batteries
Operating time	Min. 6 h
Software	Open-source, compatibility with measurement systems
Navigation	Compatible with open-source drone control software

* kn – knot

ORIGIN OF KEY COMPONENTS	
Hull, structural components	Poland
Autopilot module	Australian company, manufactured in Taiwan
Radio equipment	China
Propulsion system control	Poland
Propellers	Manufactured in China



The equipment has not been used in crisis situations



A certificate is issued for the vehicle



System safety is based on multiple types of control over the vessel's movement, enabling it to remain under control even in the event of deliberate or accidental interference on any of the channels. Standard methods of ensuring a secure connection are used for internet communication

mKurs

Type:
Maritime



- It is a small vessel with high seaworthiness, prepared to perform various types of measurement work on water, such as bathymetric measurements,
- Its design enables the installation of multiple measuring devices,
- Owing to the fully electric propulsion, the vessel may be used in quiet zones with zero carbon footprint,
- Its small size makes the launch possible anywhere, even in locations where access is difficult.



Monthly production: **4 units**



Price: **PLN 249,000–299,000** per unit



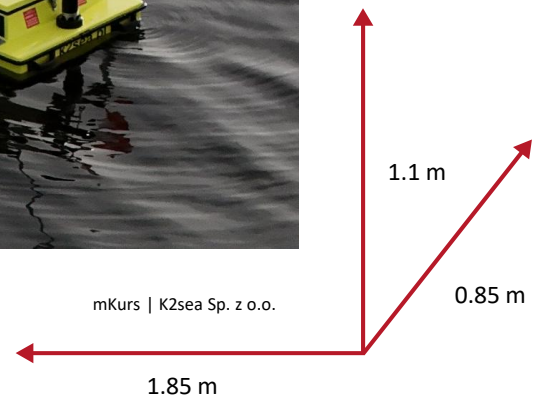
Order fulfillment time: **2 months**



Warranty period: **12/24 months**



Service center location: **Poland, NDA**





mKurs

SPECIFICATIONS

Maximum speed	5.0 kn*
Measurement speed	3.5 kn*
Power supply	Lithium-ion batteries
Operating time	Min. 6 h
Software	Open-source, compatibility with measurement systems
Navigation	Compatible with open-source drone control software
Draft	0.3 m

* kn – knot

ORIGIN OF KEY COMPONENTS

Hull, structural components	Poland
Autopilot module	Australian company, manufactured in Taiwan
Radio equipment	China
Propulsion system control	Poland
Propellers	Norwegian company, manufactured in China



The equipment has been used in marine and harsh environments



CE certified



System safety is based on multiple types of control over the vessel's movement, enabling it to remain under control even in the event of deliberate or accidental interference on any of the channels. Standard methods of ensuring a secure connection are used for internet communication

Aquarius ROV

Type:
Maritime



- Underwater drone that revolutionizes the way inland and marine waters and underwater infrastructure are monitored,
- The drone is capable of reaching hard-to-reach places and is equipped with a camera, lighting and devices for analyzing ecosystems, infrastructure, ships or protecting critical facilities,
- The use of Aquarius eliminates the need for direct human contact with contaminated water or work in hazardous conditions. The device may be operated by one person on shore, via an application, ensuring comfortable operation.



Monthly production: **2 units**



Price: **PLN 38,130** per unit



Order fulfillment time: **1 month**



Warranty period: **2 years**



Service center location: **Płock**



Aquarius ROV

SPECIFICATIONS	
Weight	13 kg
Maximum depth	100 m
Operating time	3 h
Remote control	Using a controller or screen via a compact base station
Software	Proprietary, uses open-source libraries
Navigation	GPS system operating on the surface, underwater system calculating position based on data from the device

ORIGIN OF KEY COMPONENTS	
Battery	Germany
Controller	China
Motors	China
Structure	In-house and outsourced manufacturing
GPS	China



Not tested in emergency conditions



Compliant with the following directives:
EMC 2014/30/EU, LVD 2014/35/EU, RED 2014/53/EU, RoHS 2011/65/EU



System secured by data encryption and user authorization; communication protected from interception by the communication cable used

HydroDron

Type:
Maritime



- Unmanned surface vehicle (USV), designed for hydrographic operations, environmental monitoring and special operations on marine and inland waters (e.g. bathymetric and sonar surveys, LiDAR measurements for inspection of objects above the water surface),
- Enables detailed bathymetric measurements, inspection of hydrotechnical infrastructure and environmental monitoring owing to its precise sensors and measurement systems,
- Radio communication system enabling remote control and real-time data transmission over a distance of several kilometers. Moreover, satellite communication may be used as a complementary solution to enable data transmission and basic system control over much greater distances.



Monthly production: **1 unit**



Price: **PLN 1,230,000** per unit



Order fulfillment time: **8 months**



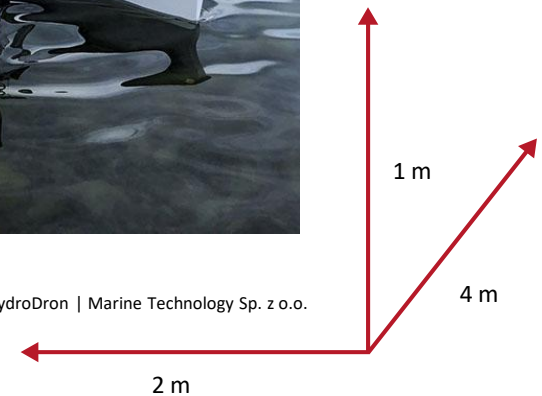
Warranty period: **2 years for the hull, 3 years for electronic components**



Service center location: **Company facility in Gdynia**



HydroDron | Marine Technology Sp. z o.o.





HydroDron

SPECIFICATIONS	
Weight	~ 300 kg
Speed	Maximum: 14 kn*; cruising: 6 kn*; while performing measurement operations: 3-4 kn*
Remote control	Up to 40 km, onboard data transmission up to 6 km
Software	Hypack – for hydrographic and surface work Mission Planner – for autonomous missions
Navigation	Based on Pixhawk controller, compatible with GPS/GLONASS and GNSS

ORIGIN OF KEY COMPONENTS	
Communication and data transmission	Polish distributors
Positioning, navigation, autonomous control	United States
Cameras	Poland
Hydrographic equipment	United States, Canada, Norway
Positioning system	France
Electric motors, batteries	Germany

* kn – knot



Tested in harsh weather conditions and on the Baltic Sea



Compliant with **ISO 9001, IP67/IP68, ROHS, ISO 12217**



Equipped with basic security features against unauthorized access, such as software access control, individual user names and device passwords. Additional security features may be implemented.



FENIX

- Robot designed for reconnaissance operations in areas inaccessible to humans, with a tracked system,
- Enables reconnaissance in direct contact with troops, penetration of areas inaccessible to humans, transmission of data from reconnaissance sensors via wireless audio and video data transmission to the operator's console and movement in various terrains,
- Design enabling transportation in the troop compartments of military vehicles as well as carrying by a single soldier,
- Compatible with C2/BMS in accordance with STANAG and STANREC, including BMS Legion, ATAK and Jaśmin, enabling the integration of robots and systems with military command and information exchange networks.



Monthly production: **6 units** (more if necessary)



Price: quoted on a case by case basis, depending on the volume of orders and the configuration required by the customer



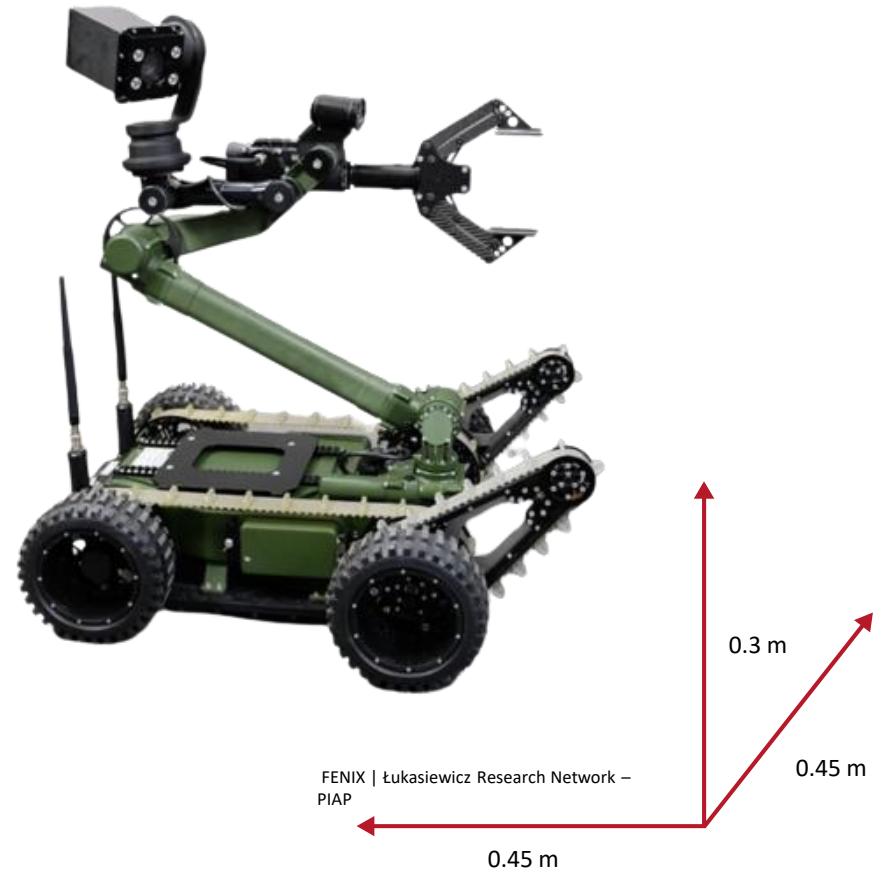
Order fulfillment time: **6-8 months**



Warranty period: **24 months and 8 years of access to parts**



Service center location: **Łukasiewicz Research Network – PIAP facility, Warsaw**





FENIX

SPECIFICATIONS

Weight	20 kg
Operating time	Up to 5 h
Maximum range	Up to 600 m
Maximum lifting capacity	2 kg
Maximum speed	Up to 5 km/h
Software	Proprietary, based on GNU/Linux
Navigation	Navigation modules compatible with GPS, GLONASS, GALILEO, BeiDou

ORIGIN OF KEY COMPONENTS

Key components of the device are manufactured in Poland at Łukasiewicz – PIAP	
PCB boards	Poland, EU
Thermal imaging cameras	Poland
Propulsion system components	EU

Łukasiewicz-PIAP owns full intellectual property rights to the whole system. All components and software are developed under the full control of Łukasiewicz-PIAP. System components may be easily replaced in the event of problems with the supply chain of foreign components



Used by Polish security services and abroad



Compliant with **AQAP 2110:2016** and **ISO 9001:2015**



Comprehensive system security for various attack vectors, e.g. logging in with a PIN or NFC token, password protection, encryption of mass storage content and communication in the MESH network



Gryf

- Robot used for reconnaissance of terrain and hard-to-access places,
- Equipped with a wheeled-tracked system with a gripper feature,
- Enables reconnaissance in direct contact with troops, penetration of areas inaccessible to humans, transmission of data from reconnaissance sensors via wireless audio and video data transmission to the operator's console and movement in various terrains,
- Design enabling transportation in the troop compartments of military vehicles as well as carrying by a single soldier,
- Compatible with C2/BMS in accordance with STANAG and STANREC, including BMS Legion, ATAK and Jaśmin, enabling the integration of robots and systems with military command and information exchange networks.



Monthly production: **3.5 units** (more if necessary)



Price: quoted on a case by case basis, depending on the volume of orders and the configuration required by the customer



Order fulfillment time: **6 months**



Warranty period: **24 months and 8 years of access to parts**



Service center location: **Łukasiewicz Research Network – PIAP facility, Warsaw**





Gryf

SPECIFICATIONS

Weight	47 kg
Operating time	Up to 2 h
Maximum range	Up to 800 m
Maximum lifting capacity	15 kg
Maximum speed	Up to 5 km/h
Software	Proprietary, based on GNU/Linux
Navigation	Navigation modules compatible with GPS, GLONASS, GALILEO, BeiDou

ORIGIN OF KEY COMPONENTS

Key components of the device are manufactured in Poland at Łukasiewicz – PIAP

PCB boards	Poland, EU
Thermal imaging cameras	Poland
Propulsion system components	EU

Łukasiewicz-PIAP owns full intellectual property rights to the whole system. All components and software are developed under the full control of Łukasiewicz-PIAP. System components may be easily replaced in the event of problems with the supply chain of foreign components



Used by Polish security services and abroad



Compliant with **AQAP 2110:2016** and **ISO 9001:2015**



Comprehensive system security for various attack vectors, e.g. logging in with a PIN or NFC token, password protection, encryption of mass storage content and communication in the MESH network



Patrol

- Tracked robot used for detection and neutralization
- Assists humans in dangerous operations,
- Enables reconnaissance in direct contact with troops, penetration of areas inaccessible to humans, transmission of data from reconnaissance sensors via wireless audio and video data transmission to the operator's console and movement in various terrains,
- Design enabling transportation in the troop compartments of military vehicles as well as carrying by a single soldier,
- Compatible with C2/BMS in accordance with STANAG and STANREC, including BMS Legion, ATAK and Jaśmin, enabling the integration of robots and systems with military command and information exchange networks.



Monthly production: **2 units** (more if necessary)



Price: quoted on a case by case basis, depending on the volume of orders and the configuration required by the customer



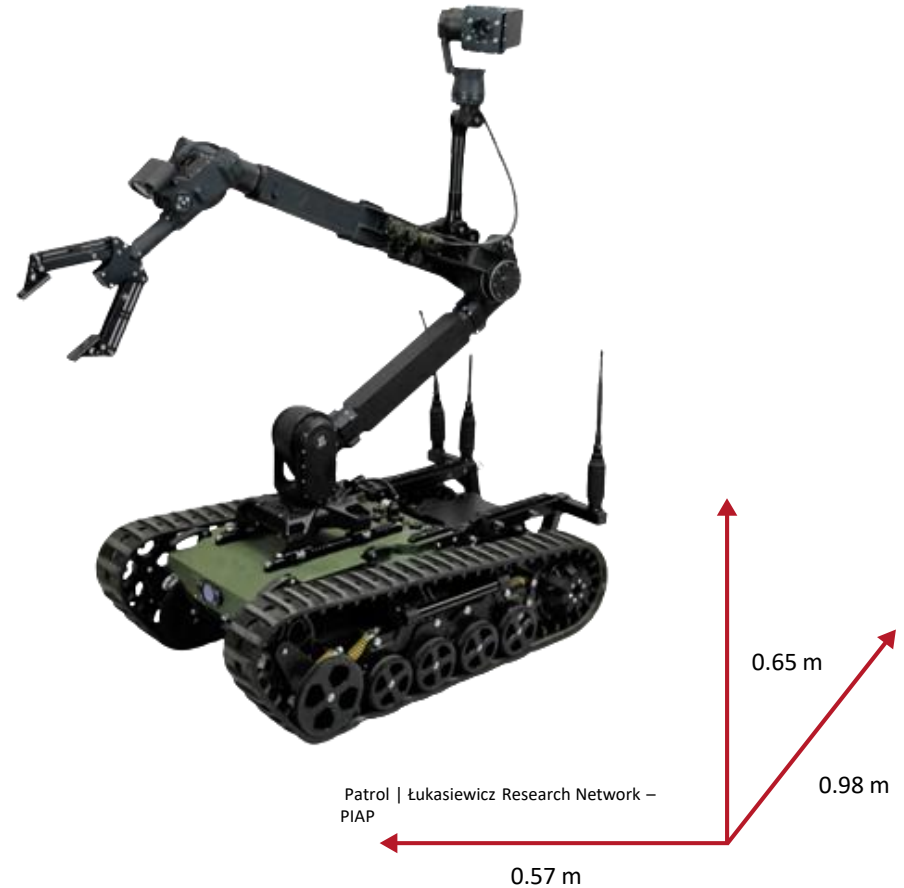
Order fulfillment time: **6 months**



Warranty period: **24 months and 8 years of access to parts**



Service center location: **Łukasiewicz Research Network – PIAP facility, Warsaw**





Patrol

SPECIFICATIONS

Weight	95 kg
Operating time	Up to 5 h
Maximum range	800 m
Maximum lifting capacity	30 kg
Software	Proprietary, based on GNU/Linux
Navigation	Navigation modules compatible with GPS, GLONASS, GALILEO, BeiDou

ORIGIN OF KEY COMPONENTS

Key components of the device are manufactured in Poland at Łukasiewicz – PIAP

PCB boards	Poland, EU
Thermal imaging cameras	Poland
Propulsion system components	EU

Łukasiewicz-PIAP owns full intellectual property rights to the whole system. All components and software are developed under the full control of Łukasiewicz-PIAP. System components may be easily replaced in the event of problems with the supply chain of foreign components



Used by Polish security services and abroad



Compliant with **AQAP 2110:2016** and **ISO 9001:2015**



Comprehensive system security for various attack vectors, e.g. logging in with a PIN or NFC token, password protection, encryption of mass storage content and communication in the MESH network

IBIS

Type: Ground



- Wheeled vehicle for pyrotechnic and reconnaissance operations, enabling reconnaissance in direct contact with troops, penetration of areas inaccessible to humans, transmission of data from reconnaissance sensors via wireless audio and video data transmission to the operator's console and movement in various terrains,
- Equipped with 6 wheels and independent drive and suspension, offering off-road mobility and high tractive force,
- Capable of transporting large and dangerous loads,
- Compatible with the Łukasiewicz-PIAP vehicle ecosystem, meaning that it may be controlled using PIAP-mesh, military, satellite and fiber optic radio communications,
- Compatible with C2/BMS in accordance with STANAG and STANREC, including BMS Legion, ATAK and Jaśmin, enabling the integration of robots and systems with military command and information exchange networks.



Monthly production: **1 unit** (more if necessary)



Price: quoted on a case by case basis, depending on the volume of orders and the configuration required by the customer



Order fulfillment time: **6 months**



Warranty period: **24 months and 8 years of access to parts**



Service center location: **Łukasiewicz Research Network – PIAP facility, Warsaw**





IBIS

SPECIFICATIONS

Weight	320 kg
Operating time	Up to 5 h
Maximum range	8 m
Maximum lifting capacity	70 kg
Software	Proprietary, based on GNU/Linux
Navigation	Navigation modules compatible with GPS, GLONASS, GALILEO, BeiDou

ORIGIN OF KEY COMPONENTS

Key components of the device are manufactured in Poland at Łukasiewicz – PIAP

PCB boards	Poland, EU
Thermal imaging cameras	Poland
Propulsion system components	EU

Łukasiewicz-PIAP owns full intellectual property rights to the whole system. All components and software are developed under the full control of Łukasiewicz-PIAP. System components may be easily replaced in the event of problems with the supply chain of foreign components



Used by Polish security services and abroad



Compliant with **AQAP 2110:2016** and **ISO 9001:2015**



Comprehensive system security for various attack vectors, e.g. logging in with a PIN or NFC token, password protection, encryption of mass storage content and communication in the MESH network



HUNTeR

- Unmanned ground vehicle for observation and patrolling of borders, military or urban areas and fire support (including critical infrastructure facilities),
- When fitted with sensors (e.g. battlefield management systems), it may serve as a source of data for Polish BMSs (such as Jaśmin, ATAK),
- Compatible with Łukasiewicz-PIAP vehicle ecosystems, meaning that it may be controlled using PIAP radio communication, long-distance fiber optic communication and satellite communication,
- Product in development phase.



Monthly production: **<1 unit** (3 units annually, more if necessary)



Price: quoted on a case by case basis, depending on the volume of orders and the configuration required by the customer



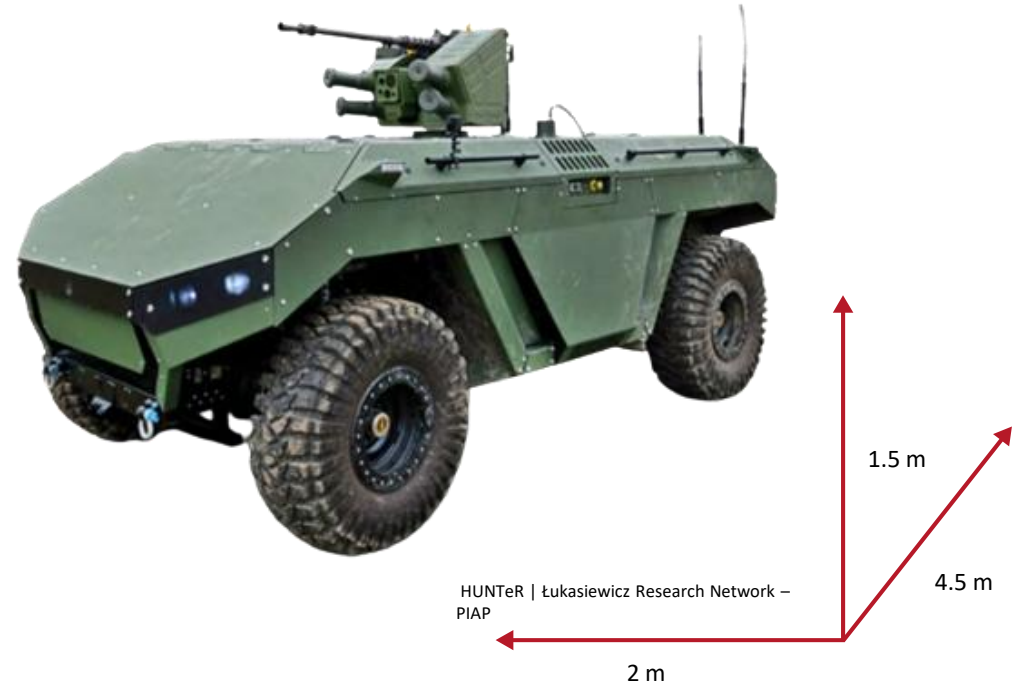
Order fulfillment time: **NDA**



Warranty period: **NDA**



Service center location: **Łukasiewicz Research Network – PIAP facility, Warsaw**





HUNTeR

SPECIFICATIONS

Weight	5500 kg
Operating time	Up to 7 days/300 km
Hybrid power supply	Electric drive + traction battery + diesel generator
Maximum lifting capacity	1000–1500 kg
Reliable communication	Optical fiber, secure PIAP-mesh network, military and satellite communications
Software	Proprietary, based on GNU/Linux
Navigation	Navigation modules compatible with GPS, GLONASS, GALILEO, BeiDou

ORIGIN OF KEY COMPONENTS

Key components of the device are manufactured in Poland at Łukasiewicz –

PIAP

PCB boards	Poland, EU
Thermal imaging cameras	Poland
Propulsion system components	EU

Łukasiewicz-PIAP owns full intellectual property rights to the whole system. All components and software are developed under the full control of Łukasiewicz-PIAP. System components may be easily replaced in the event of problems with the supply chain of foreign components



Used by Polish security services and abroad



Compliant with **AQAP 2110:2016** and **ISO 9001:2015**



Comprehensive system security for various attack vectors, e.g. logging in with a PIN or NFC token, password protection, encryption of mass storage content and communication in the MESH network



GNOM

- Remote-controlled electric vehicle capable of carrying GX-1 DG warheads,
- Compact dimensions and maneuverability enabling it to reach hard-to-access places,
- Combines reconnaissance and combat functions, difficult to detection, capable of quickly changing camouflage,
- Capable of striking targets in various terrains,
- Equipped with interchangeable warheads from the GX-1 family, enabling quick adaptation to the nature of the mission, and with special straps for easy carrying by soldiers as a backpack.



Monthly production: **40 units**



Price: **PLN 85,317** per vehicle with warhead, **PLN 36,303** per command station



Order fulfillment time: **3 months**



Warranty period: **12 months**



Service center location: **MACRO-SYSTEM facility in Warsaw**





GNOM

SPECIFICATIONS

Weight with warhead	7 kg
Maximum speed	Up to 80 km/h
Control range	500 m radio, 5 km fiber optic cable
Video communication	Via a mounted camera
Software	Proprietary, based on a ready-made solution
Navigation	Proprietary application using GPS

ORIGIN OF KEY COMPONENTS

Structure	Poland
Batteries	China
Drive system components	United States
Vehicle suspension	United States
Console	Poland
Video components, goggles	China



The equipment has not been used in crisis situations



Compliant with **ISO 9001:2015** and **ISO 27001**




Protection against unauthorized access based on encrypted communication, access codes, electronic components permanently protected against external factors

UNL/GOBLIN


Type: Ground




- Advanced, remote-controlled, unmanned electric vehicle,
- Variety of uses: from reconnaissance and combat operations, transport, ammunition delivery, accompanying smaller units in difficult terrain to fighting infantry and lightly armored targets at a distance of up to 800 m,
- Powered by six independent electric motors, may reach a maximum speed of 30 km/h and perform maneuvers,
- Compact and easy to transport due to its dimensions,
- The GOBLIN is equipped with a ZMU-07 remote weapon module with a 7.62 mm machine gun,
- Its 27 kWh battery provides 10 hours of vehicle operation without the need for frequent recharging; a system of replaceable power packs enables quick and easy replacement of a dead battery.

 Monthly production: **10 units**

 Price: **PLN 1,600,000** per unit

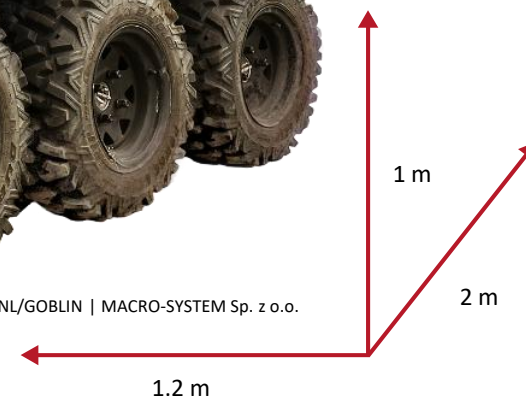
 Order fulfillment time: **6 months**

 Warranty period: **12 months**

 Service center location: **MACRO-SYSTEM facility in Warsaw**



UNL/GOBLIN | MACRO-SYSTEM Sp. z o.o.





UNL/GOBLIN

SPECIFICATIONS

Curb weight	830 kg
Maximum speed	30 km/h, off-road: 5 km/h
Payload	300 kg
Battery capacity	27 kWh
Operating time	10 h
Software	Proprietary, based on Android/Linux
Navigation	Own application using GPS, capable of integration with the ATAK app

ORIGIN OF KEY COMPONENTS

Structure, batteries	Poland
Computer	Taiwan
Drive system components, antennas, connectors	Germany
Vehicle suspension	Poland, the Netherlands
Cameras	Canada
Electronic parts	United States
Communication modules	United Kingdom
Console	Denmark



The equipment has not been used in crisis situations



Compliant with **ISO 9001:2015** and **ISO 27001**



Protection against unauthorized access based on encrypted communication, access codes, encrypted disks. Fiber optic cable may be used

AquaCore



- Waterproof and water-resistant controller that enables the building of surface and underwater drones operating in harsh conditions without waterproof enclosures, making it much easier and faster to develop such drones and ensuring they always remain modular,
- Consists of an onboard computer with waterproof connectors enabling quick connection of external expansion modules,
- Each element of the ecosystem is sealed and designed to work underwater, facilitating the prototyping process of marine drones,
- May be used to build niche drones with modules designed for carrying out specific missions.



Monthly production: **50 units**



Price: **PLN 400** per unit



Order fulfillment time: **12 months**



Warranty period: **12 months**



Service center location: **Warsaw**



AquaCore | AquaHub



AquaCore

SPECIFICATIONS

Interfaces	i2c, PWM, GPIO, UART, USB, SPI, CAN
Water resistance	
Software	No proprietary software; equipped with a development module for uploading the customer's own software
Navigation	Proprietary navigation module

ORIGIN OF KEY COMPONENTS

PCB	China
Integrated circuits	China, Europe, United States
Casings	Germany, Poland
Final assembly	Poland



The equipment has not been used in crisis situations



No information on compliance with standards



Due to its hermetic design (thermally conductive resin), the vehicle is resilient to certain attacks, such as protocol sniffing between components. Protection against attacks resulting from connectors leading out of the device should be ensured by the user



Integrated measurement module

- Optoelectronic module designed for laser scanning of the area under the UAV, enabling the scanning of operational areas,
- Multi-sensor observation and measurement system enabling local processing and archiving of data in real time due to the synchronization of measurement components,
- May be applied in aerial, ground and marine vehicles,
- Lightweight, compact and modular design enabling integration with various UAV platforms,
- Equipped with an independent power supply, an on-board computer, a satellite navigation system with a motion sensor and software for saving measurements,
- The system may be used for reconnaissance missions, terrain mapping, critical infrastructure monitoring and detection of illegal activities in the border zone.



Monthly production: **1 unit**



Price: **PLN 172,200** per unit



Order fulfillment time: **2 months**



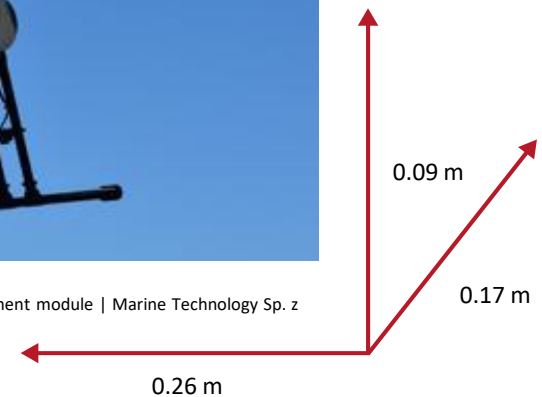
Warranty period: **2 years for the module and equipment**



Service center location: **Company facility in Gdynia**



Integrated measurement module | Marine Technology Sp. z o.o.





Integrated measurement module

SPECIFICATIONS

Weight	3-4 kg
Structure	Aluminum
LiDAR range	Up to 100 m
Operation	8 h
Power supply	Lithium-ion battery
Software	Hypack for LiDAR system operation, QGrandControl for autonomous missions
Navigation	Dual-antenna RTK-GNSS system with IMU, compatible with GPS/GLONASS/Galileo

ORIGIN OF KEY COMPONENTS

Lithium-ion battery	Germany
Dual-antenna RTK-GNSS system	France
Positioning system	France
LiDAR system	United States
Onboard computer	United States



No information on testing



Compliant with **ISO 9001**,
IP67 / IP68, ROHS



Equipped with basic security features against unauthorized access, such as software access control, individual user names and device passwords. Additional security features may be implemented.

Drone Buster



- System for countering threats from drones, designed to protect critical infrastructure and public spaces,
- Based on a 90° tilt VTOL platform, combining the advantages of a multi-rotor drone (vertical takeoff and hovering) with the efficiency of fast horizontal flight,
- Uses AI algorithms to automatically detect, classify and track drones and other low-profile objects, even in situations of GPS signal loss and electromagnetic interference,
- Neutralization is achieved through a controlled kinetic collision in a safe operating scenario.



Monthly production: **120 units**



Price: **ca. PLN 29,750 – 38,250 (EUR 7,000 – 9,000)** per unit



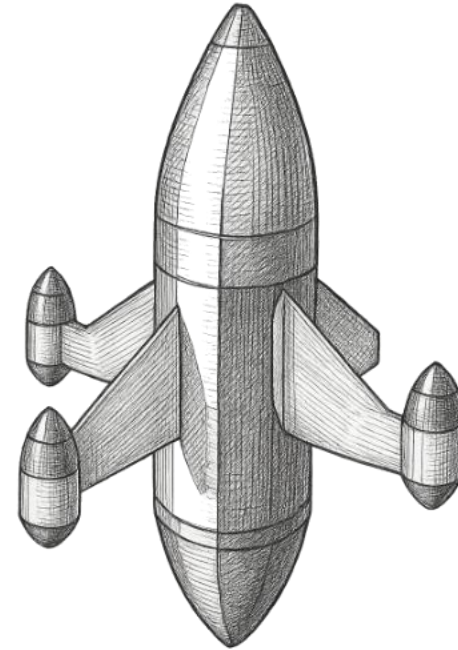
Order fulfillment time: **6 weeks**



Warranty period: **12 months**



Service center location: **Company facility in Chorzów**



Visualization: Drone Buster | Oderon



Drone Buster

SPECIFICATIONS

Operating range	Up to 5,000 m
Response time	<20 seconds
Neutralization type	Kinetic collision
Software	Proprietary, developed with own resources
Navigation	Proprietary or developed by affiliated companies located in Poland/EU. Guidance is based on sensor fusion, without reliance on satellite navigation.

ORIGIN OF KEY COMPONENTS

Key components made in Poland, EU countries, South Korea, Taiwan and the United States. At least 70% of the components are manufactured in own plants or affiliated companies in Poland or the EU.



FAT/SAT, functional and environmental tests have been performed



Compliant with the operational requirements of the special **UAV** category and with EU Regulations **2019/947 and 2019/945**

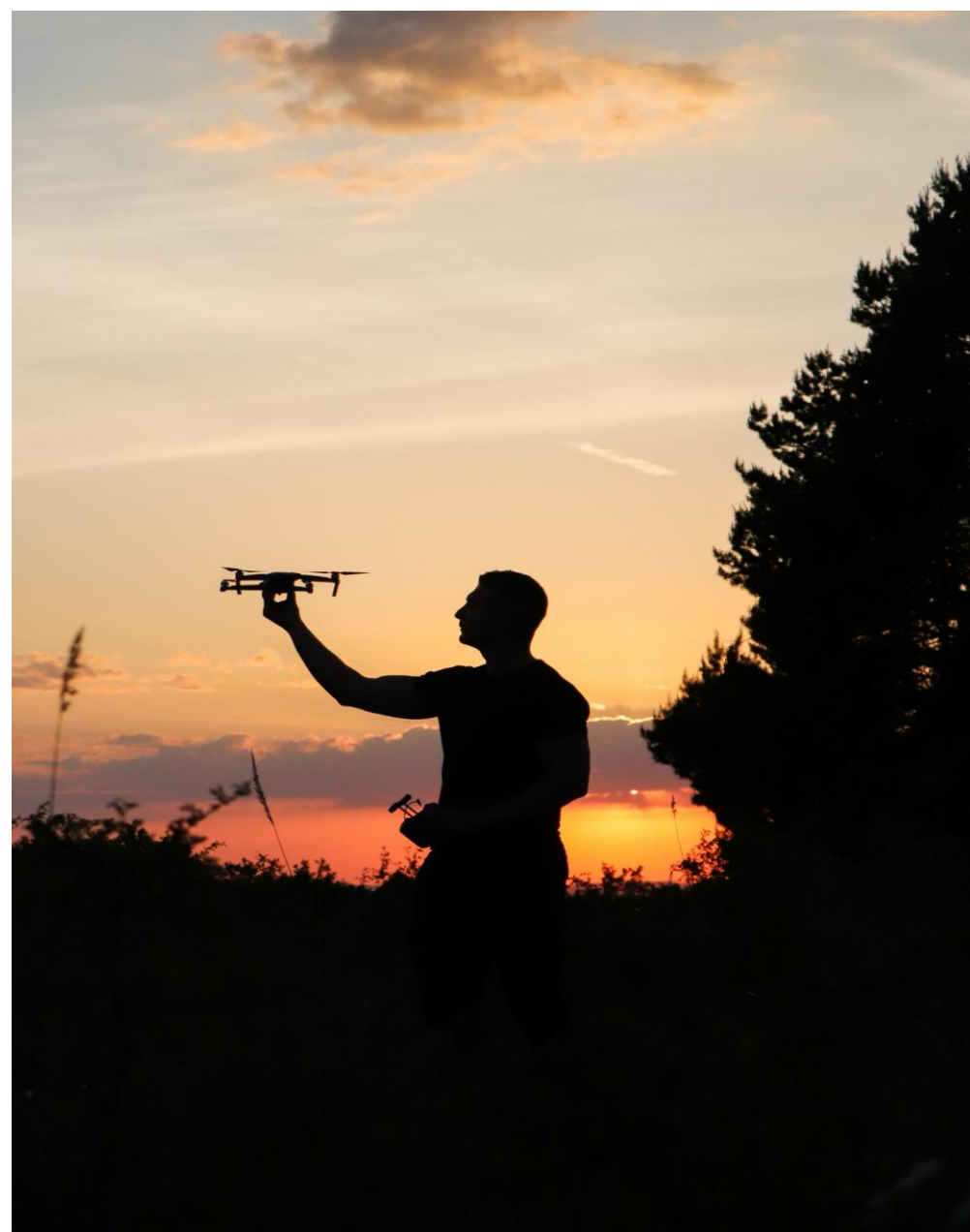


System protected against unauthorized access using mechanisms appropriate for this class of solutions

Polish drone manufacturing startups are not keeping pace with the rapid changes in the standards of “drone warfare”

In the course of work on our report, numerous manufacturers of unmanned solutions have been interviewed and information on the sector has been reviewed. Despite the limitations indicated, these endeavors have enabled us to formulate certain general conclusions about the state of the sector in Poland:

1. In terms of manufacturing capacity, the Polish drone manufacturing startup sector is currently unprepared to ensure the extensive use of such solutions in the event of armed conflict. According to publicly available data, in the second half of 2025, approximately 200,000 drones (of all types, although the overwhelming majority are “disposable” strike drones) are being manufactured monthly for the Ukrainian Armed Forces. The total manufacturing capacity of the companies included in our report is approximately 1,600 units per month (!).* Because manufacturing largely relies on startups, this ensures the necessary flexibility, yet due to their low “starting base,” their capacity to scale remains limited. It would be reasonable to assume that, in a crisis situation, a significant increase in manufacturing capacity – even disregarding financial constraints – would take many months, if not years, of change, especially given that the available solutions have for the most part not been operationally tested. As mentioned in the introduction to this report, it does not purport to review the full manufacturing capacity of the drone sector (as it does not take into account strictly military production), but even when all is taken into account, the sector’s manufacturing capacity is far from that of Ukraine.
2. For the most part, the drone concepts presented herein fail to keep up with the latest standards on the front lines and raise concerns that a significant portion of the available solutions would be unsuitable for mass use in combat operations. This is particularly true of the development of the concept of drone use, which has undergone a huge change in recent years. This issue requires a slightly broader commentary.



FPV drones have dominated the battlefield and changed the nature of frontline operations

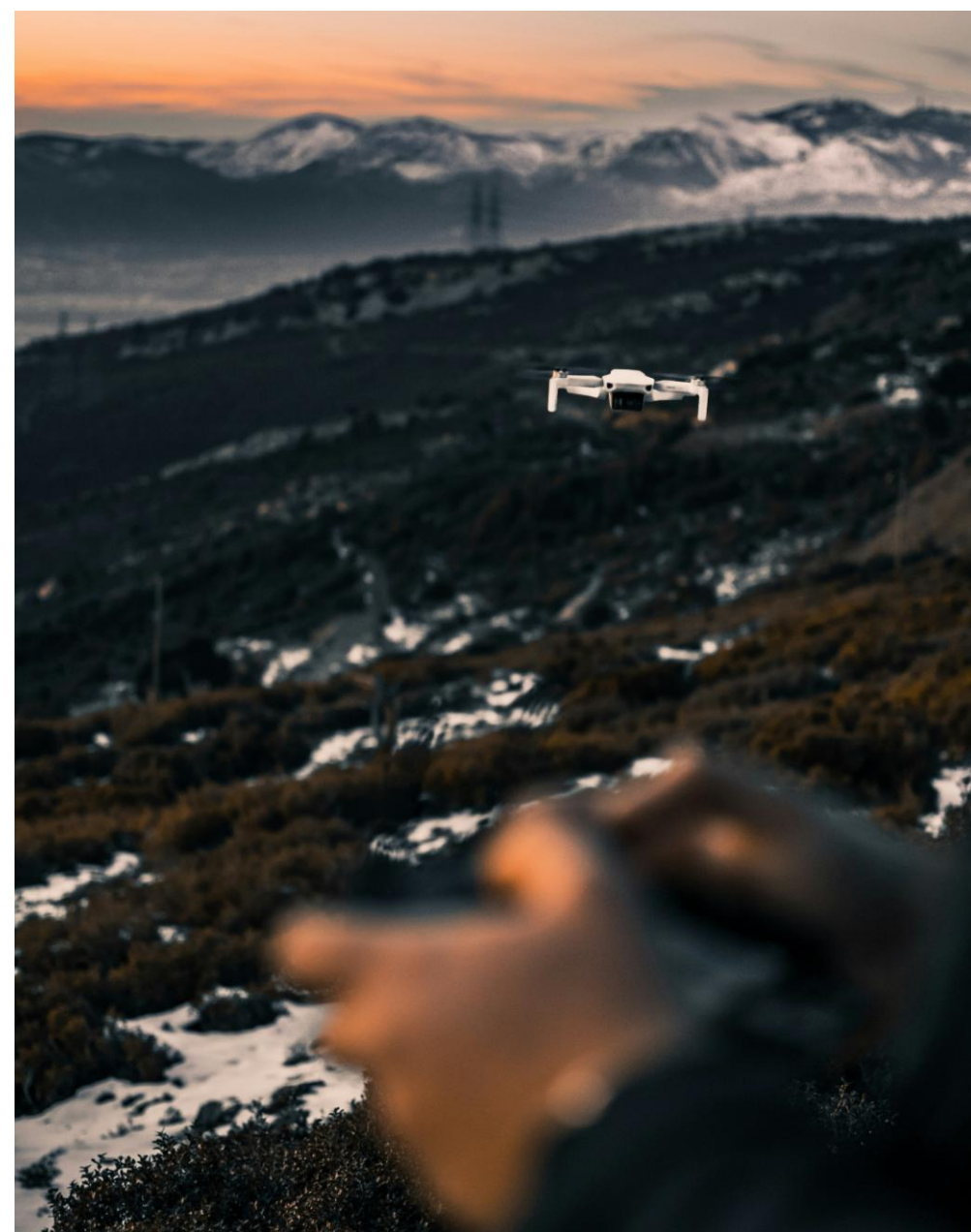
The concept of “modern drone warfare” version 1.0 took shape 5-10 years ago and was based largely on “large” reconnaissance and combat drones (of which probably the best-known was American MQ-1 Predator, which may successfully combine both of these functions, but is most effective in situations where one side enjoys air superiority). This was associated with the increasing adoption of drones by the world’s leading armies. Also, drones designed for kinetic attacks on enemy forces also began to appear on a larger scale. For instance, during the Karabakh war in 2020, “large” MALE drones were used extensively for both reconnaissance and strike roles. The onset of the conflict in Ukraine triggered the development of the mass use concept of small commercial drones for reconnaissance or artillery fire correction.

During the first phase of the conflict, strike units were also used, both based on commercial solutions and dedicated platforms (although the first months of the conflict revealed that even the solutions used by the world’s leading military powers were in many cases ineffective on the front line due to their high cost-to-capabilities ratio).

As the conflict progressed, around 2024 it evolved into “version 2.0,” where drones largely dominated

the frontline area and effectively hampered maneuver warfare due to their ability to precisely strike even individual soldiers or detect the formation of combat groups.

The mass use of drones for counter-battery operations curbed the ability to operate artillery in the frontline area. Moreover, the emergence of fiber optic-based solutions reduced the sensitivity of these systems to electromagnetic interference (in contrast, increasingly effective jamming solutions exerted a strong adverse impact on the accuracy of artillery and satellite-guided missiles).



Drone development should be supported by building AI competencies

In 2025, the first signs of another change (phase 3.0) are appearing on the front lines in the form of the first mass-produced solutions based on AI analysis systems. Such drones do not rely on a radio or fiber optic link to the operator. Rather, they are capable of attacking selected targets completely autonomously. Such solutions are currently rare, but their proliferation is expected. In parallel, most of the solutions available in Poland are at stage 2.0. In the longer term, more advanced solutions will also proliferate into Poland, which may put us in a state of permanent technological delay in relation to the continued evolution of the operating concept (cooperating drone swarms? autonomous maritime/underwater drones?). This applies not only to the production of drones, but also to the concept of drone combating solutions, which is largely based on jamming radio communications, whereas it seems that cheap solutions based on the capacity of physical elimination of drones should be sought (as mentioned, the new solutions are largely jamming-resistant).

3. Rapid changes in the concept of drone use necessitate changes in the training system. Polish drone manufacturing capacity, although small, far exceeds the capabilities of the training system, especially when it comes to the use of the most innovative solutions. Notably, changes in the manner of conducting operations are currently resulting in higher losses among drone operators, as opposed to the early stages of the conflict in Ukraine, when drone operators were relatively safe. Currently, attacking them is a priority for both sides (which will be partially prevented by AI-based solutions that do not require constant supervision). An analysis of the capabilities of the training system extends beyond the scope of this report, and thus will not be discussed further.



Even the best solutions will fail to survive without military procurement

4. On the one hand, the market's high fragmentation results in the emergence of independent and innovative concepts, but on the other hand, they are often proposed by entities that will be unable to continue their work unless supported by military procurement in the relatively short term. At the same time, as the civilian market is dominated by drones from large commercial manufacturers (largely made in Asia), it is difficult for such companies to offer civilian solutions that would ensure the stability of their business. This causes instability in the sector, with even good solutions often being unable to survive.
5. Most of the companies presented in this report face challenges in reaching military decision-makers and providing them with their solutions for testing. This is largely due to the market's decentralized and fragmented structure, but it is also related to the challenges arising from the rules for the procurement and use of drones by individual military units (this challenge began to be partially addressed in the second half of 2025).
6. Our report also contains a description of solutions designed for detecting and combating drones. Such concepts are particularly relevant in light of the events related to the intrusion of Russian drones into Poland on 9-10 September 2025. In this context, it is clear that such solutions are not widespread and their development is significantly more complicated than the manufacturing of unmanned vehicles. This results in the absence of a significant number of such solutions and lack of a uniform concept for their development.



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Glossary of abbreviations

AES – Advanced Encryption Standard
AI – Artificial Intelligence
AQAP – Allied Quality Assurance Publications
UAV – Unmanned Aerial Vehicle
BVLOS – Beyond Visual Line of Sight
CE – Conformité Européenne – European Conformity
EEA – European Economic Area
FPV – First Person View
GNSS – Global Navigation Satellite Systems
GPS – Global Positioning System
GSM – Global System for Mobile Communications
IMU – Inertial Measurement Unit
IR – Infrared
ISO – International Organization for Standardization
LiDAR – Light Detection and Ranging

LTE – Long Term Evolution
MALE – Medium Altitude Long Endurance
MIL-STD – Military Standard
MON – Polish Ministry of National Defense
NFC – Near Field Communication
GCS – Ground Control Station
PCB – Printed Circuit Board
PIN – Personal Identification Number

PFR – Polski Fundusz Rozwoju/Polish Development Fund
ROHS – Restriction of Hazardous Substances
ROV – Remotely Operated Vehicle
RP – Republic of Poland
RTK – Real Time Kinematic
UAV – Unmanned Aerial Vehicle
EU – European Union
UGV – Unmanned Ground Vehicle
USV – Unmanned Surface Vehicle
VIO – Visual-Inertial Odometry
VTOL – Vertical Take-Off and Landing



Authors



Aleksander Mokrzycki
Vice-President of the PFR Ventures
Management Board



Jan Domanik
Director of the Strategy Department



Paweł Huras
Director of the Innovation Development
Department



Marta Lipowska
Junior Analyst



Weronika Mystek
Senior Specialist

Substantive consultation*



Sławomir Kosieliński
President of the Board of the Mikromakro Institute
Foundation

* The consultations concerned the conclusions of the report and the descriptions contained in the Introduction (pages 2-4) and Summary (pages 58-61).
The analysis of each entity was performed independently by PFR.

