



# PHOENIX

AIR SUPPORT COMPLEX



COMPLEX  
SYSTEMS

GROUP OF COMPANIES



BG-OPTICS



PHOENIX 3



PHOENIX 3M



PHOENIX  
SPP

AIR SUPPORT COMPLEX BASED  
ON "PHOENIX" UAV



Russian scientific research and production company.  
Part of the "Complex systems" group of companies.

It develops and manufactures multirotor UAVs as well as key components, including:

- ◆ composite airframes and propellers;
- ◆ integrated onboard electronic systems;
- ◆ payloads for various applications.

#### Company advantages:

- ◆ own scientific, technological, and production facilities;
- ◆ proven quality and reliability through joint testing with the Ministry of Defense of the Russian Federation, the Federal Security Service of Russia, and the Federal Protective Service of Russia;
- ◆ high scientific potential of BG-Optics specialists, including professors, PhD and ScD holders in physics, mathematics, and engineering.

The scientific expertise and practical experience of our team in developing and manufacturing high-tech products ensure reliable and timely solutions to a wide range of complex and non-standard tasks.

## OUR PRODUCTS



**"PHOENIX 3"**



**"PHOENIX 3M"**



**"PHOENIX SPP"**

# The "PHOENIX 3" quadcopter

The "PHOENIX 3" quadcopter is ideally suited for continuous target monitoring, providing the system operator with complete real-time information on the observed object, even in challenging weather conditions, enabling informed decision-making.

Cruising speed	42 km/h
Maximum speed	72 km/h
Maximum flight altitude	3000 m
Maximum flight time	2 hours 30 min
Flight range (per mission)	76 km
Takeoff weight	9,7 kg
Maximum payload	7 kg



## "PHOENIX 3" quadcopter capabilities



### Mobility

The system can be transported in a folded state in a special case (850 × 250 × 250 mm) by a single person and can be deployed into operational mode within 5 minutes without additional equipment.



### Cargo delivery and release

Rapid delivery of small cargo up to 7 kg (with a maximum takeoff weight of 17 kg) over distances up to 12 km, with return to the launch point. Supports the setup of an automated "cargo line".



### Autonomous operation

Equipped with automation systems for autonomous flight missions along pre-set routes, including patrol operations.



### Multifunctionality

Capable of carrying a wide range of payloads to meet various customer-specific tasks.

# The "PHOENIX 3M" quadcopter

The "PHOENIX 3M" quadcopter is ideally suited for continuous target monitoring, providing the system operator with complete real-time information on the observed object, even in challenging weather conditions, enabling informed decision-making.

Cruising speed	42 km/h
Maximum speed	72 km/h
Maximum flight altitude	3000 m
Maximum flight time	3 hours 15 min
Flight range (per mission)	115 km
Takeoff weight	9,2 kg
Maximum payload	10 kg



## "PHOENIX 3M" quadcopter capabilities



### Mobility

The system can be transported in a folded state in a special case (850 × 250 × 250 mm) by a single person and can be deployed into operational mode within 5 minutes without additional equipment.



### Cargo delivery and release

Rapid delivery of small cargo up to 10 kg (with a maximum takeoff weight of 20 kg) over distances up to 20 km. Supports the setup of an automated "cargo line".



### Autonomous operation

Equipped with automation systems for autonomous flight missions along pre-set routes, including patrol operations.



### Multifunctionality

Capable of carrying a wide range of payloads to meet various customer-specific tasks.

# "PHOENIX 3" and "PHOENIX 3M" delivery kit

## Delivery kit

1. Assembled unit - 1 pc.
2. LION 7S 22 Ah Battery - 4 pcs.\*
3. Right-hand rotation propellers - 2 or 4 pcs.\*
4. Left-hand rotation propellers - 2 or 4 pcs.\*
5. Cargo release device (hook) - 1 pc.
6. Charger for power batteries - 1 pc.
7. Adapter for the charger for power batteries - 2 pcs.
8. Power battery charger mains cable - 1 pc.
9. NSU - 1 pc.\*
10. Charger for NSU - 1 pc.
11. Adapter for NSU Charger - 1 pc.
12. Cable for NSU Charger - 1 pc
13. Set of directional antennas with cables and mounting accessories - 1 pc.
14. A8 video camera - 1 pc.\*
15. Transport case (hard) - 1 pc.



\* depending on the configuration

# The "PHOENIX SPP" tethered quadcopter

The "PHOENIX SPP" quadcopter is designed for continuous aerial monitoring and signal relay at altitudes **up to 150 m**. Image transmission, power supply, and UAV control are carried out via the power cable in **24/7 mode**.

Carrier dimensions ..... **1300 x 1300 x 400 mm**

Flight hover time ..... **unlimited**

Maximum flight altitude ..... **150 m**

Mass of the carrier in basic configuration ..... **6 kg**

Deployment time ..... **no more than 10 minutes**

Maximum payload weight  
(depends on altitude) ..... **up to 4 kg**

Maximum wind load ..... **12 m/s**

Temperature range ..... **-20 / +40° C**



## "PHOENIX SPP" quadcopter capabilities

- ✓ Perimeter security solutions integrated with the "WOLF" perimeter protection system and other security systems.
- ✓ Organization of mobile and stationary security and video surveillance posts for strategically important facilities.
- ✓ Establishment of a communication system in areas without infrastructure during emergency situations.
- ✓ Detection and identification of ground and aerial perimeter intruders in real time.
- ✓ Monitoring and coordination of civilian and military ground services during disaster response and training exercises.
- ✓ Deployment of local navigation networks.

# In-house production

## Electric motor production



Intermediate gears



Gear welded using a Laserstore machine



Stator core steel



Stator



Stator



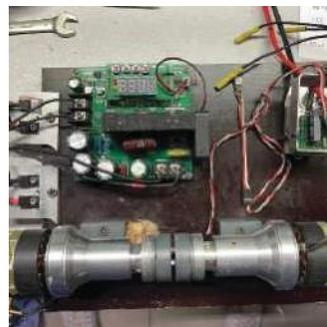
Gearbox housing



Gearbox



Motor assembly



Stand for rolling-in gearbox gears



# In-house production

## Production of composite material products

