

# GREEN BIRD SYSTEMS



# Muotse

High-Performance Modular Helicopter

# An Introduction to Muotse

Unmanned Aerial Systems are vital assets in modern military operations, offering crucial capabilities in intelligence, surveillance, reconnaissance, offensive maneuvers, and border protection. Muotse is a multi-mission, semi-autonomous 200 kg class helicopter made with this in mind.

It operates without mechanical gearboxes, uses a redundant gas-electric hybrid power system for an endurance of up to 14 hours, and has both long-range and high-altitude capabilities.

With a payload capacity of 90 kg, multiple sensor options, and its integrated camera which delivers real-time imagery and data, Muotse is suitable for a wide array of missions, aiding in informed decision-making.

## Technical Specifications

Dimensions:	L 500 cm W 80 cm H 130 cm
Rotor Disc Size:	400 cm
MTOW:	200 kg
Endurance:	Up to 14 hours
Payload Capacity:	90 kg
Maximum Speed:	135 km/h
Operational Altitude:	Up to 6500 m
Powertrain:	Battery electric hybrid with turbocharged 4-stroke engine

## Competitive Comparison

Model	Service Ceiling	MTOW	Endurance	Payload Capacity	Max Speed	Max Range
RUAV-200	6000 m	200 kg	3 hours	40 kg	100 km/h	400 km
UMS Skeldar V-200	3000 m	245 kg	6 hours	40 kg	140 km/h	100 km
Camcopter S-100	5486 m	200 kg	6 hours	50 kg	102 km/h	200 km
APID One	2800 m	210 kg	5 hours	73 kg	79 km/h	395 km
Muotse	6500 m	200 kg	14 hours	90 kg	135 km/h	1840 km





# Design and Technology Overview

## Hybrid Power System

Combining battery-powered electric motors with a four-stroke engine, Muotse ensures maximum efficiency and endurance for extended missions.

## Utilizing Terrain for Reconnaissance Concealment

Equipped with an extendable mast at the rotor center, Muotse can telescope a sensor up to two meters above the rotor, making it possible to hide behind trees, islands, and other structures while conducting reconnaissance.

## Versatile Military Applications

Muotse is designed to support ISR, offensive actions, marine rescue and more.

## Weapons and Sensor Integration

Muotse supports attachment of weapons like rockets, small missiles and bombs, such as the Martlet (LMM), allowing for customization depending on mission requirements.

# Use Cases

**Scenario:** Army units are deployed in a hostile territory to gather intelligence on enemy positions and activities.

**Use Case:** Muotse is deployed to conduct long-endurance reconnaissance missions over the designated area. Equipped with high-resolution cameras and advanced sensors, it provides real-time imagery and data to army commanders, allowing for informed decision-making and mission planning. The UAS's extended flight time and covert surveillance capabilities enable it to operate deep behind enemy lines, gathering critical intelligence without detection.

**Scenario:** Army units are engaged in offensive operations to neutralize enemy targets and disrupt hostile activities.

**Use Case:** Muotse is armed with various weapons and deployed as part of a combined arms assault. Operating in coordination with ground forces, it conducts aerial reconnaissance and target acquisition, identifying high-value enemy targets. Once the targets are confirmed, Muotse engages, delivering precision strikes and neutralizing enemy positions.

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**Scenario:** Army units are deployed along a border region to prevent illegal crossings and smuggling activities.

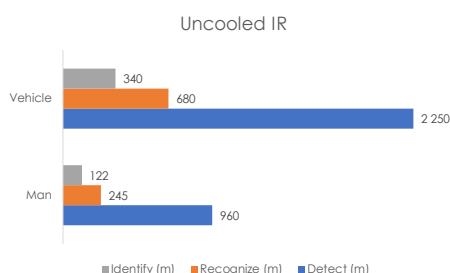
**Use Case:** Muotse is deployed for border patrol missions, conducting aerial surveillance and monitoring activities along the border. Equipped with long-range cameras and the integrated long-range surveillance camera, it scans the border area for unauthorized crossings, suspicious movements, and potential threats.



# Gimbal Options

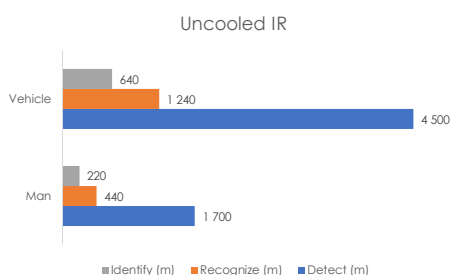
## ESSG-M135

Axes:	2
Stabilisation:	75 $\mu$ rad
IP Class:	IP44
Weight:	< 2 kg
EO Camera:	Full HD, FOV 2.3 – 64°
IR Camera:	Uncooled LWIR, FOV 25° or wider
LRF Range:	3.3 km



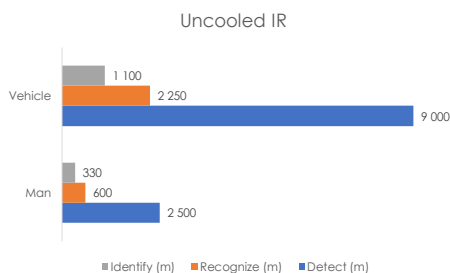
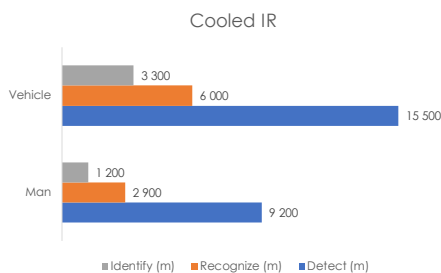
## ESSG-M170

Axes:	2
Stabilisation:	75 $\mu$ rad
IP Class:	IP55
Weight:	< 3 kg
EO Camera:	Full HD, FOV 2.3 – 64°
IR Camera:	Uncooled LWIR ZOOM, FOV 10.4 – 33° or uncooled LWIR, FOV 18°
LRF Range:	3.3 km



## ESSG-M200

Axes:	2
Stabilisation:	75 $\mu$ rad
IP Class:	IP55
Weight:	< 5 kg
EO Camera:	Full HD, FOV 2.3 – 64°
IR Camera:	Cooled MWIR, FOV 2.0 – 25° or uncooled LWIR, FOV 6.0 – 25°
LRF Range:	8 km



## ESSG-M250

Axes:	4
Stabilisation:	25 $\mu$ rad
IP Class:	IP65
Weight:	< 9 kg
EO Camera:	Full HD, FOV 2.3 – 64°
IR Camera:	Cooled MWIR, FOV 2.0 – 25° or uncooled LWIR, FOV 4.3 – 25.3°
LRF Range:	12 km

