

RAVEN 145

Loitering munition

This area denial kamikaze drone is a low-cost and long-range surveillance/assault weapon intended for real-time reconnaissance and strikes at a wide range of targets behind the front lines of a combat zone. It is designed for destruction of tanks and other armored vehicles, command posts, artillery positions, personnel, boats, drones, and other moving or stationary targets.

General characteristics:

• **Warhead (WH)**	**penetrability of more than 1000 mm behind ERA**
• **Long-range**	**120 km or a 50-minute flight, with one electrical motor** **150 km and 3 hours of cruising above the target, with a gasoline motor** **120 km at the speed of 160 m/s, with a turbo-jet motor**
• **Launching**	**fast and simple, volley fired from a launcher with 8, 12, 18 or 27 containers with UAVs**
• Max. flying height/ceiling	2000 m
• Starting mass	< 50 kg when loaded (35 kg when unloaded)
• Load, payload mass	15 kg
• Propulsion	solid fuel booster motor for the launching phase; electrical or gasoline or turbo-jet motor for the sustained/cruise flight phase
• Dimensions:	
- Length	2.2 m
- Wing span	2.4 m
- Height, with booster	0.4 m
• Guidance system	INS, GPS, GLONASS, with TV/IIR homing in the final phase of flight
• Approach angle	15° to 75° (Top Attack)
• Transport & package	Package suitable for transportation to the firing position, with the missile fully armed, batteries charged or tank filled, depending on the type.
• Combat use	When taking off from the launching container, the wings unfold, the booster motor is detached, and the sustainer motors are started. Based on the image data received from GSN, the operator selects the target, after which the UAV operates autonomously until the target is destroyed.

Warheads

Depending on the characteristics of the selected target, one of the 3 types of warheads (WHs) is used:

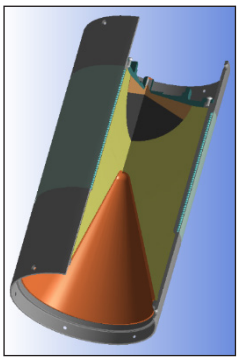
- Combined enhanced blast and fragmentation WH, with 130 mm steel balls, 10.5 kg mass
- Armor piercing tandem charge WH, 145 mm length, 6.4 kg mass
- Combined enhanced blast and fragmentation WH, 165 mm length, 13 kg total mass



Combined enhanced blast and fragmentation WH with steel balls, 130 mm length, 10.5 kg mass
BFWH



Armor piercing tandem charge WH with steel balls, 130 mm length, 10.5 kg mass, and a spare set of 1 WH and 2 TSCWH fuses



Combined enhanced blast and fragmentation WH, 165 mm length, 13 kg mass, BFSCWH

Homing heads

Depending on the situation and environmental conditions at the target position, one of the 2 types of homing heads (HHs) is used: TV or thermal imaging HH.

Please note that the TV HH is usable only at daylight.



Television homing head TV/IIR HH 145 mm



An image from an IIR HH immediately before hitting a moving target size 2x2 m



Thermal imaging homing head IIR HH 145 mm

Drone versions

	Reconnaissaince drone with gasoline motor (GM)	Drone with electric motor (EM)	Drone with gasoline motor (GM)	Drone with turbo-jet motor (TJ)
Model	1	2	3	4
Model designation	RAVEN 145 GM R	RAVEN 145 EM TSCWH RAVEN 145 EM BFWH RAVEN 145 EM BFSCWH	RAVEN 145 GM TSCWH RAVEN 145 GM BFWH RAVEN 145 GM BFSCWH	RAVEN 145 TM TSCWH RAVEN 145 TM BFWH RAVEN 145 TM FSCWH RAVEN 145 with a hunting rifle
Range	300	120	150	100
Speed (km/h)	150 (40 m/s)	160 (45 m/s)	150 (40 m/s)	570+ (150 m/s)
Time of flight (min)	240	50	240	10
GSN	TV	TV/IIRN	TV/IIRN	TV/IIRN
Precusor charge	-	50 mm	50 mm	50 mm
EO set –	AP & control unit	AP & control unit	AP & control unit	AP & control unit
Range of radio link with antenna (km)	150	120	150	100
Battery	+	++++++	+	+
WH	-	165 or 130 or tandem 145/50	165 or 130 or tandem 145/50	165 or 130 or tandem 145/50
Wings and control surfaces	Composite	Composite	Composite	Composite
Control section with fins	4 fins with 4 electric motors	4 fins with 4 electric motors	4 fins with 4 electric motors	4 fins with 4 electric motors
Booster motor	Gasoline motor Dual cylinder boxer motor 116 ccm, 10 KS	Brushless electric motor, 6 KW	Gasoline motor Dual cylinder boxer motor 116 ccm, 10 KS	Turbo-jet kerosene motor 40 DaN
Mission Abort Capabilities		By selecting another target (hitting any safe spot/object) 1. Arming the HH while approaching target 2. Self-destructing while in the air 3. Switching the HH to a safe mode of operation, and landing using the parachute		
Parachute	+			

Environmental conditions:

1. Operating temperature range from -20°C to +65°C
2. Sand, dust and waterproof
3. Vibration, shock and transport vibration-proof
4. Resistant to fungi, salt fog, fog
5. Resistant to spraying water and rain
6. Resistant to long exposure to sunshine and UV radiation