Product Catalog

General Defense Corp

Guided Munitions Family

Course Correction Kits

General Defense Corp

In Cooperation With

EM&E
ESCRIBANO MECHANICAL & ENGINEERING

General Defense Corp

Innovating Defense Solutions

Guided Munitions

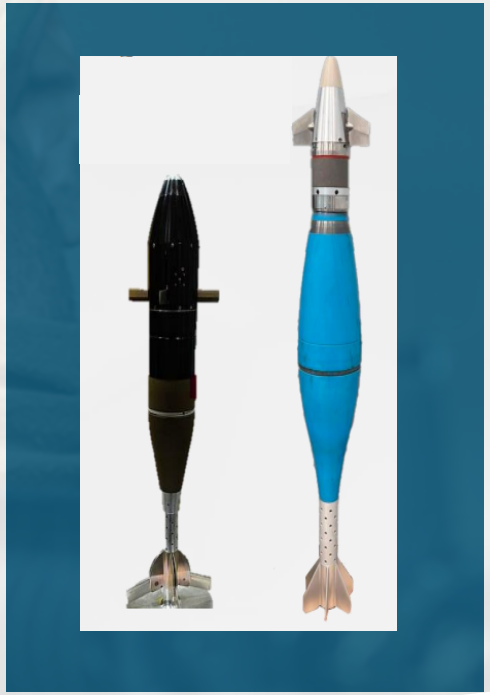
ALKON MORTARS & PROJECTILES

155mm Projectiles

- HE M107
- ER02A1
- JBMOU
- M109
- M198
- M777

120mm Guided Mortar

- HE GNSS/INSS Guidance
- SALK Assisted (Optional)



Guided Munitions

FAMILY OF SMART MUNITION KITS

GNSS/INSS Assisted

PROJECTILES

Applicable from 152mm to 155mm projectiles, including M107 and Extended Range versions

M107
M549
ER02A1
JBMoU

ROCKETS (MLRS)

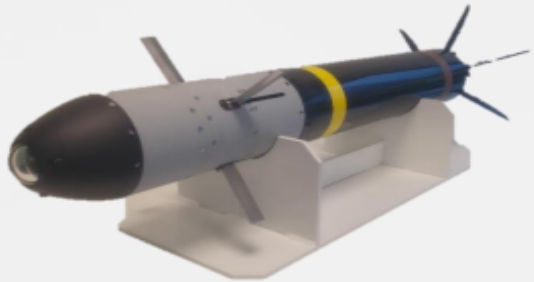
Applicable to 122-450mm rockets systems (F G K rocket version)

ASTROS II (Avibras, Brazil)
BM21 GRAD (different countries)
MC25 (Teruel, Spain)

Laser Assisted – Terminal Guidance

SMALL CALIBER AIR-GROUND OR AIR TO GROUND ROCKETS

70mm – 300mm



SMART RPG

S A L Terminal guidance
IR or Dual Seeker

LASER GUIDED BOMB KITS

S A L Terminal guidance only or GNSS/INSS assisted

Course Correction kits to improve accuracy of traditional ammunition

Guided Munitions

ALKON (FGK) 2D GNSS / INS based FuseGuidance Kit

- Trajectory Adjustment and Replacement fuze Capable
- Compatible with 152/155 projectiles
- Modular - 155mm, 152mm Artillery, 120mm Mortars, MLRS (122mm – 300mm)

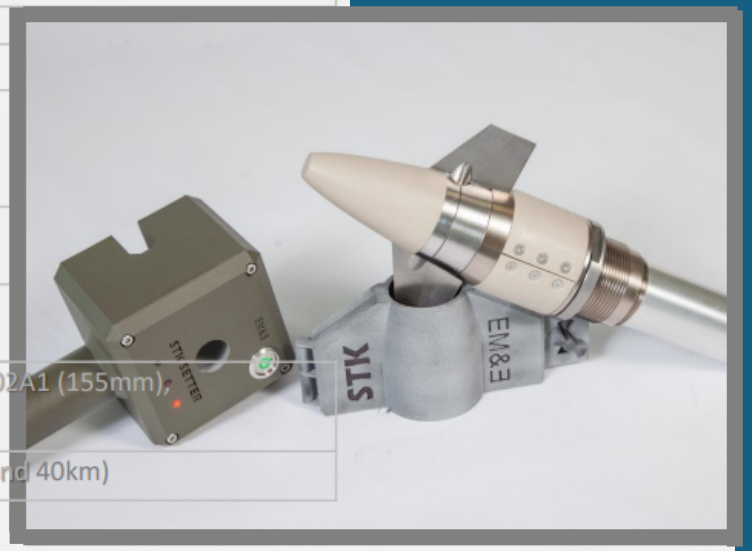
- Proven reduction of original CEP <20m (accuracy under 20m over 40km range)
- ITAR-Free product
- Mission data programmed via setter—wire or wireless
- Includes proprietary GNSS receiver (GPS Galileo) & IMU support for GPS denial or locally jammed scenarios

Guided Munitions

ALKON (FGK) 2D GNSS / INS based Fuse Guidance Kit

TECHNICAL DATA

System Type	Uncoupled 2D Course Correction kit replacing standard fuze for artillery shells and MLRS rockets.
Operation Modes	Maintenance, Mission Planning and Guidance
Positioning Method	GNSS multi-constellation (GPS, GALILEO etc.) in open bands hybridized with proprietary IMU
Autopilot	Attitude roll control and Proprietary Guidance system
Flight Controls	Electromechanically actuated control fins
Fuze Modes	Point Detonating (PD) and Delay (D); Proximity (Optional)
Accuracy	Reduces CEP to under 20m
Survivability	20,000 Gs and 300Hz
Weight / Dimensions	Weight increment < 1.500 g / Exposed length increment <100mm
Mechanical Interface	Compatible with standard mechanical threads for fuzes (2-12UNS-1A), with deep cavity STANAG 2916 Others on request
Power Supply	External power supply in Preparation Mode Power supply by internal batteries in Operation Mode
Mission setter	Induction, wireless or custom-tailored solution
Artillery Shells compatibility	M107 (155mm), Extended Range ER02A1 (155 mmm), Base Bleed ER02A1 (155mm), M114 155/23, M109 155/39, 155/ 52 SIAC Howitzer
MLRS Rocket compatibility	MC25 (140 mm), Astros II (127-450mm), BM-GRAD 21 (122mm – 20 and 40km)



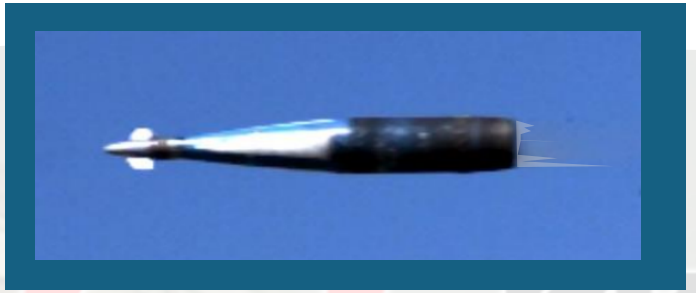
Guided Munitions

ALKON – Rocket Version (FGK)

Designed for and tested in multiple rocket types – from 122mm – 300mm

ASTROS II – SSS30
BM21 GRAD (including 40km ER)
MC25 (Teruel MLRS)
SS40G – 60 to 80km range AVIBRAS rocket

Guided Munitions

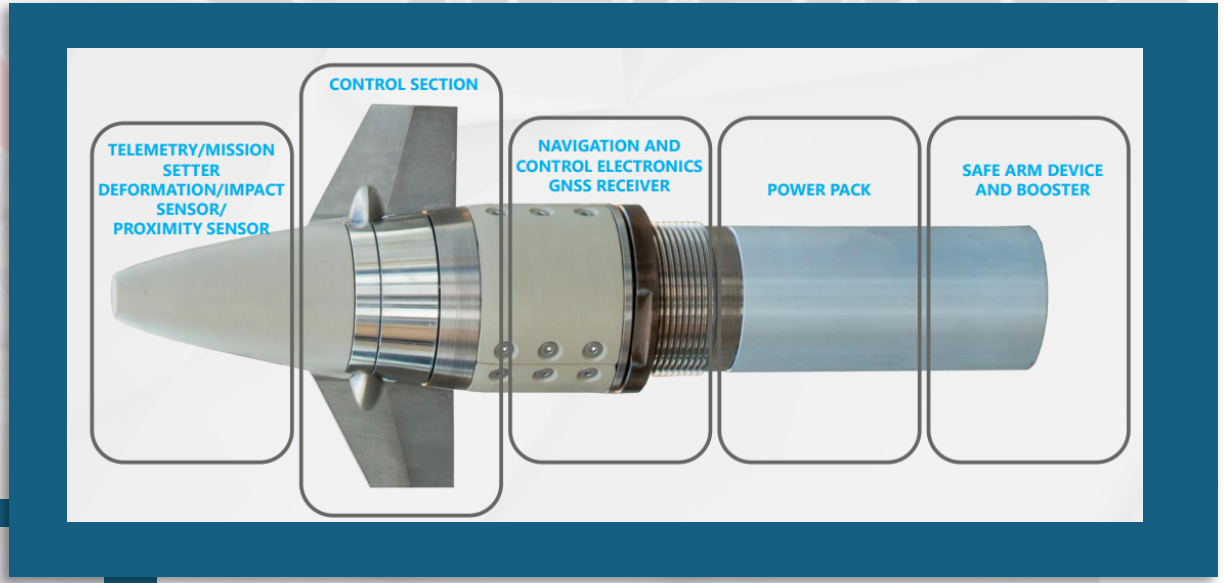


ALKON – FUZE GUIDANCE KIT

TECHNICAL DATA

155mm projectiles, 122mm rockets & 120mm mortars

- **Fuse and shell spin decoupling**
- **Improved Stability through fuze spin control technology**
- **Minimum range modification to original vector**

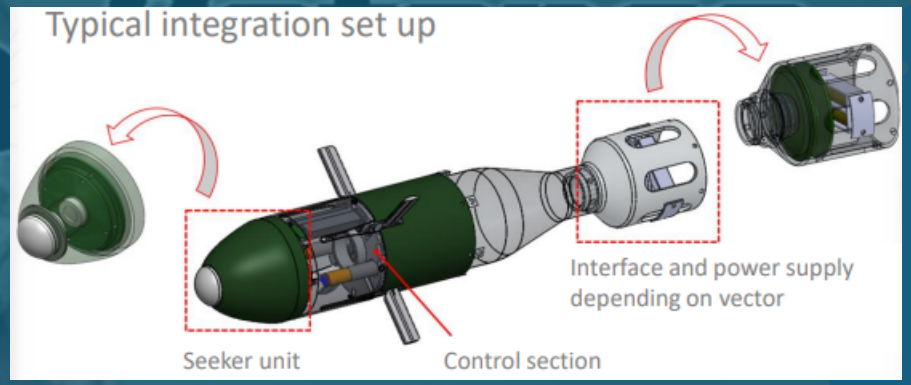


Guided Munitions

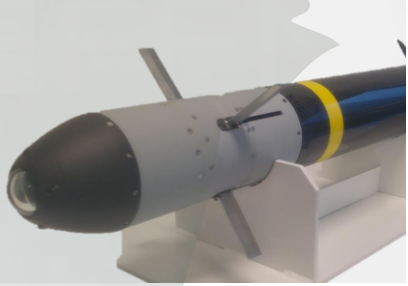
SEMI ACTIVE LASER KIT (SALK)

TECHNICAL DATA

System Type	Rocket or RPG from 70 to 300mm
Operation Modes	LOBL (Lock On Before Launch) or LOAL (Lock On After Launch) – Telemetry system for platform target communications
Positioning Method	Homing with S A L (1064nm) seeker compliant with STANAG 3733 INSS assisted GNSS compatible depending on platform configuration
Seeker type	Semi-active Laser 1064nm – 45mm optics – Sunlight resistant
Angle of sight	±15º linear response ±25º extended angle of sight
Detection range	6km
Autopilot	Proportional navigation terminal guidance, INSS supported version available
Flight Controls	4 active electrical controlled fins
Fuze Modes	Original fuze
Accuracy	CEP below 5m against static targets
Maximum Accelerations	Survives >200 Gs longitudinal
Weight	Below 2,500g
Dimensions	From 70 to 300 diameter – 250mm
Power Supply	Replaceable battery for stand-alone (no electric interface with platform)



- 1064mm-45mm optics
- 6km Detection Range
- CEP <5m vs Static Tgts
- <2,500g



Disposable Grenade Launcher Models

AT, TB, FRAG w/ Optics

General Defense Corp

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Disposable Grenade Launchers

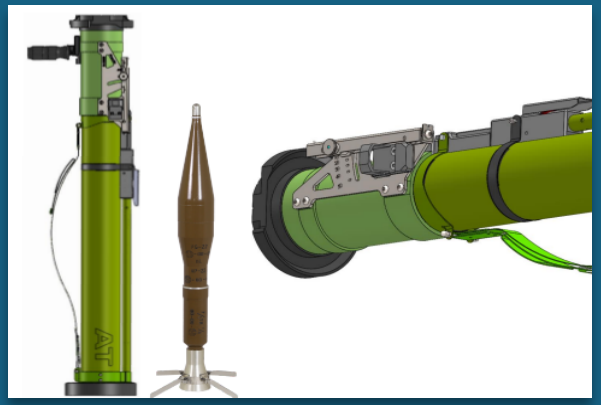
GFS-72 LMAT Rocket AT Round w/ PG-22 ATG

72.5

Max Range-500m

- **Anti-armor. Defeats bunkers, field shelters and urban-type brick-wall fortifications**

TECHNICAL CHARACTERISTICS:	
Caliber, mm	72,5
Rocket anti-tank grenade weight, kg	3,480
Grenade weight, kg	1,400
Sighting range max, m	350
Maximum distance, m	500
Armour penetration, mm	400
Muzzle velocity, m/s	137
Direct fire range, m	150
Safe operational temperature range, °C	-40…+50
Deployment time, s	8…10



- **Equipped with optical reflex for faster sighting and foregrip for stability**
- **Designed specifically for a close-range urban warfare**
- **Suitable for deployment in confined spaces**

Disposable Grenade Launchers

GFS-72 LMAP Rocket Fragmentation Round w/ OG-22M Grenade

TECHNICAL CHARACTERISTICS	
Caliber, mm	72,5
Number of fragments, pcs./kg	1060/0,4
Direct fire range, m	100
Maximum distance, m	650
Sighting range, m	500
Round weight, kg	4
Grenade weight, kg	2
Safe operational temperature range, °C	-40…+50
Deployment time, s	8…10

- Anti-personnel; defeats trenches, field shelters, light and unarmored vehicles

- Equipped with optical reflex for faster sighting and foregrip for stability

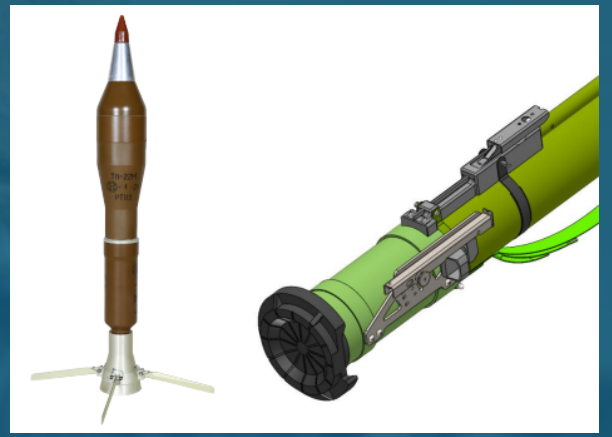
Disposable Grenade Launchers

GFS-72 LMTB Rocket Thermobaric Round w/ TB-22M Grenade

TECHNICAL CHARACTERISTICS:	
Caliber, mm	72,5
Weight of thermobaric mixture, g	750
Direct fire range, m	100
Sighting range, m	500
Round weight, kg	4,00
Grenade weight, kg	2,00
Safe operational temperature range, °C	-40...+50
Deployment time, s	8...10

- Defeats troops in the open; used for trenches, field shelters, light and unarmored vehicles

- Equipped with optical reflex for faster sighting and foregrip for stability



Mobile Mortar Solutions and Mortar Bombs

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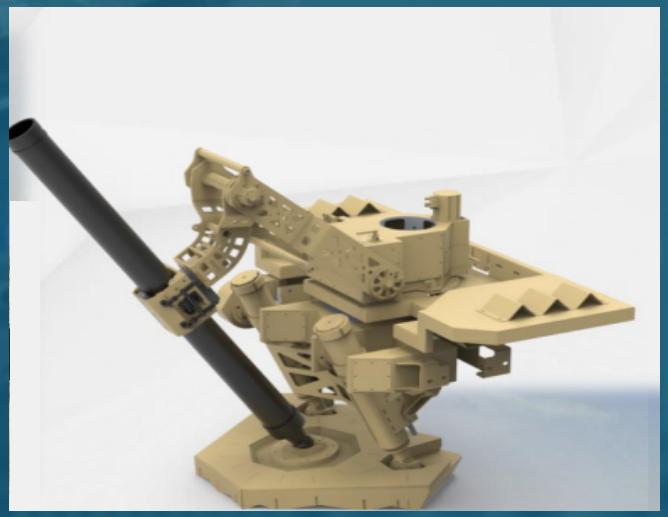
Mobile Mortar Solutions and Mortar Bombs

EMOC 120/81 Remote Mortar Carrier

ELECTRONIC AIMING SYSTEM	
Ballistic calculator	For multiple ammo types
Aiming time – barrel postioning	< 5 s.
Re – aiming	< 2 s.
Change target: barrel positioning time	8 s.

DEPLOY/RETRACT	
Mortar firing position	On the ground
Time to deploy from travel position	15 – 20 s.
Time to retract from firing to travel position	< 20 s.



Mobile Mortar Solutions and Mortar Bombs

Ammunition: 120mm | 81mm | 60mm

- Longest range for smoothbore ammunition
- Aerodynamic design and center of gravity balance technology
- Added stability during parabolic flight and increased accuracy
- Compatible with any mortar system: Smoothbore NATO and virtually all producers
- Used with portable mortars, towed or installed in vehicles.

HIGH EXPLOSIVE
(EM-120 HE)
(EM-81 HE)
(EM-60 HE)

TRAINING PRACTICE FUZE
(EM-120 TPF)
(EM-81 TPF)
(EM-60 TPF)

TRAINING PRACTICE
(EM-120 TP)
(EM-81 TP)
(EM-60 TP)

Remote Weapon Systems

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Maritime Remote Weapon Systems

Sentinels

SENTINEL 2.0

- Standard 12.7mm
- 7.62 or 14.5 (Op: 40mm GL)
- EOS:
  - *Cooled or Uncooled Thermal Camera*
  - *Day Sight Camera*
  - *LRF*
- LOS & LOF Independent
- Continuous Rotation
- Elevation from -20 degrees to 6 deg

Future F110 Frigates for the Spanish Navy to be equipped with Sentinel 2.0 & 30 RWS

SENTINEL 30

- 30mm Weapon (MK44 II/MK44S or 2A42)Standard 12.7mm
- EOS:
  - *Independent pan & titlt*
  - *Cooled Thermal Camera*
  - *Day Sight Camera LRF*
- Double Ammunition Feeder (140+60)
- Continuous Rotation
- Elevation from -20 degrees to 60 deg

Maritime Remote Weapon Systems

Sentinels

SENTINEL ASPIS

- Lightweight: <90kg)
- 5.56mm or 7.62mm
- EOS:
  - *Uncooled thermal Camera*
  - *Day Sight Camera*
  - *LRF*
- Continuous Rotation
- Elevation from -20 degrees to 60 degrees

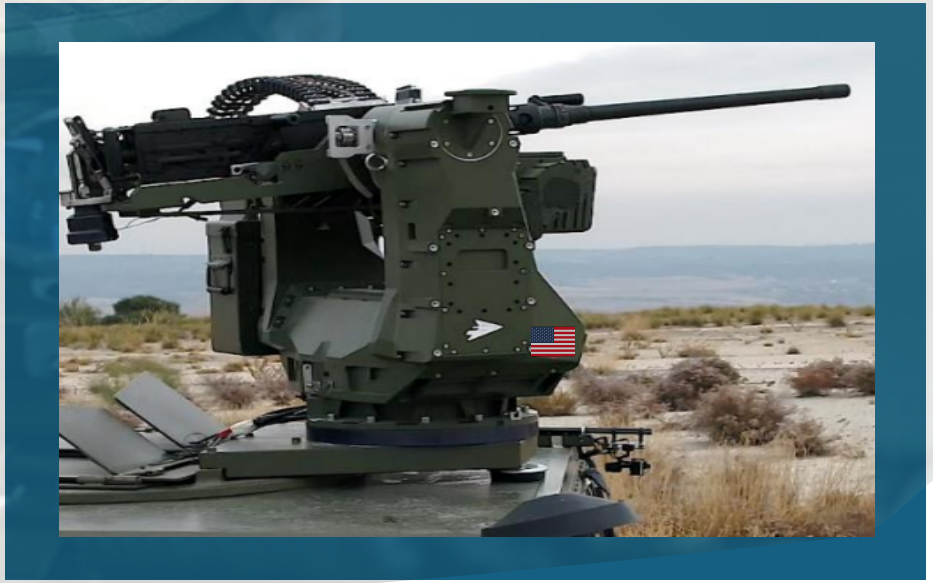
SENTINEL 20

- 20mm (Oerlikon)
- EOS:
  - *Independent pan & tilt*
  - *Cooled Thermal Camera*
  - *Day Sight Camera*
  - *LRF*
- Continuous Rotation
- Elevation from -20 degrees to 60 degrees

Ground Remote Weapon Systems *Guardian*

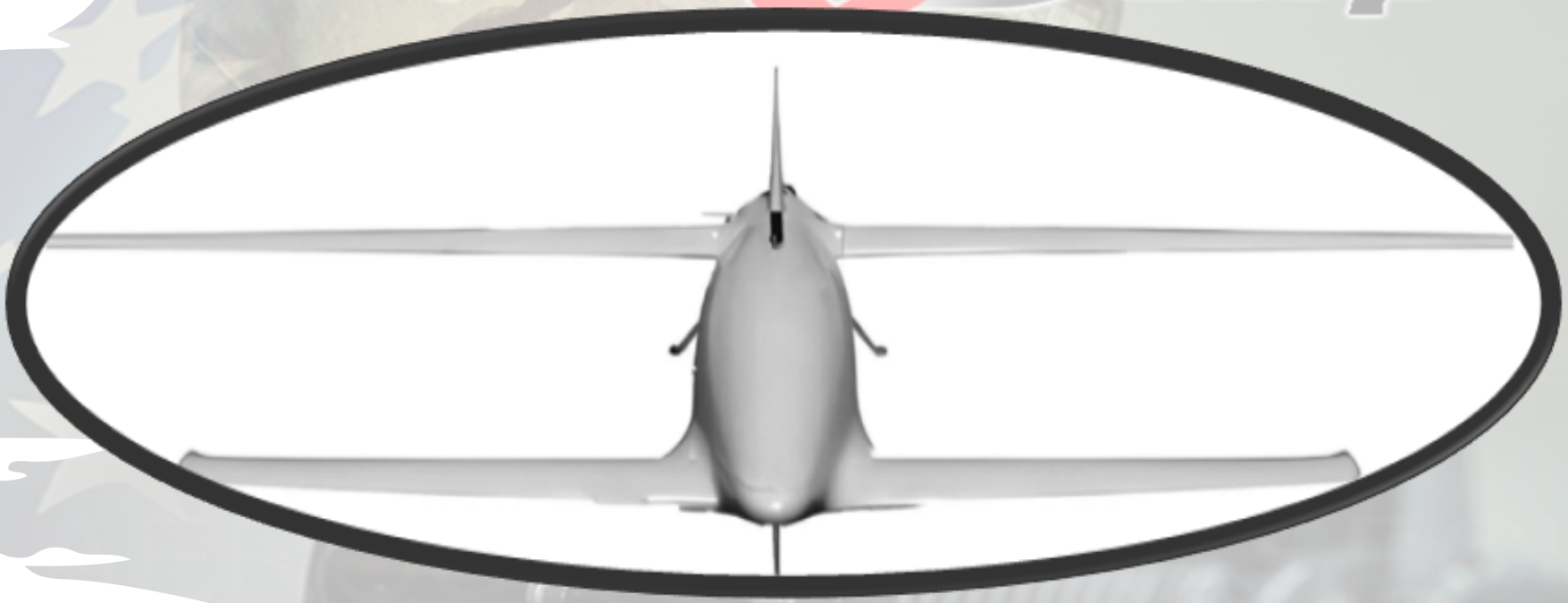
Guardian Land RWS • Vehicle mounted • 12.7mm or 30mm

- ***GUARDIAN RWS selected for Spanish VCR 8x8 Program "DRAGON"***



- ***During phase one, the Guardian RWS (12.7mm & 30mm) will be integrated with 348 VCR 8x8 vehicles***

Bi - Rotor Helicopters, UAVs, & Drones



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Bi - Rotor Helicopters, UAVs, & Drones

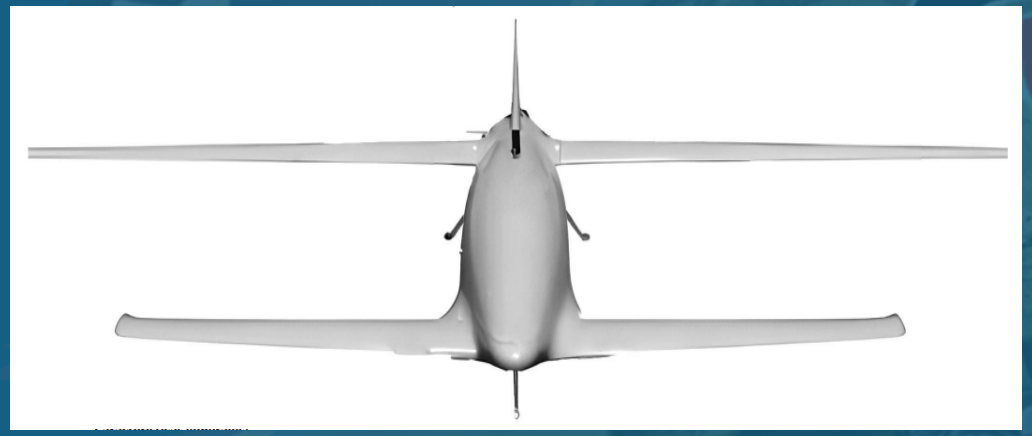
Birotor Tandem

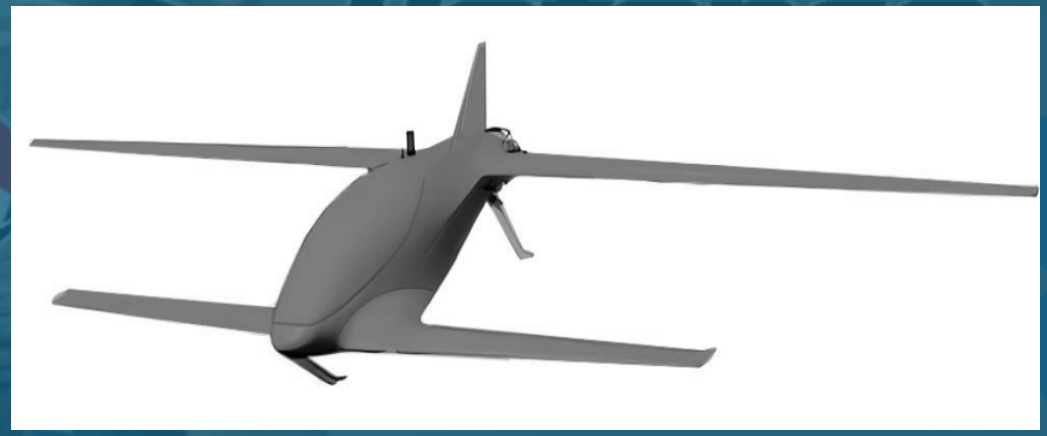
Birotor Coaxial

- Greater operating capacity in RANK and MTOW of any four-cylinder model
- Engine combinations: 2 rotary engines or one 160 hp four-cylinder engine (3 blades per each rotor)
- Efficient coaxial design & Reduced noise
- Compact (smaller OTG footprint)
- Ideal for naval roles: capable of operating in confined spaces

Bi - Rotor Helicopters, UAVs, & Drones

VTOL Canard





Composite Materials

hr.

Range: 1000km

Weight: 25kg

Endurance: 11 hrs.

Max Airspeed: up to 132km/

Altitude: 3200 meters

Payload: 10kg

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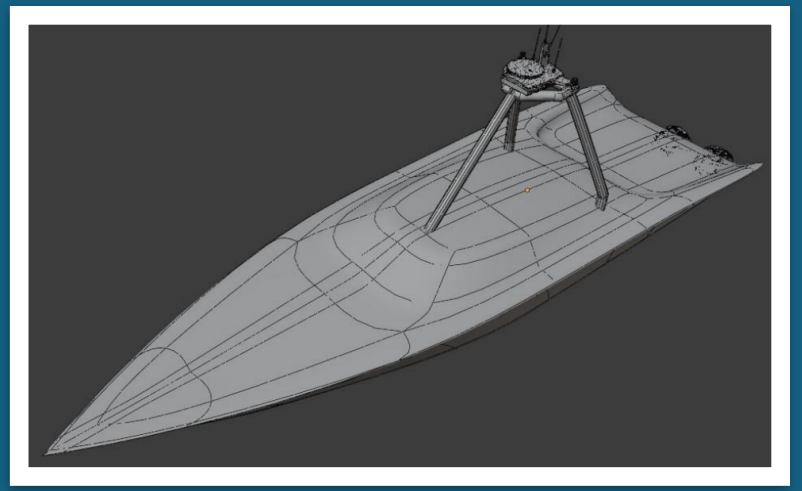
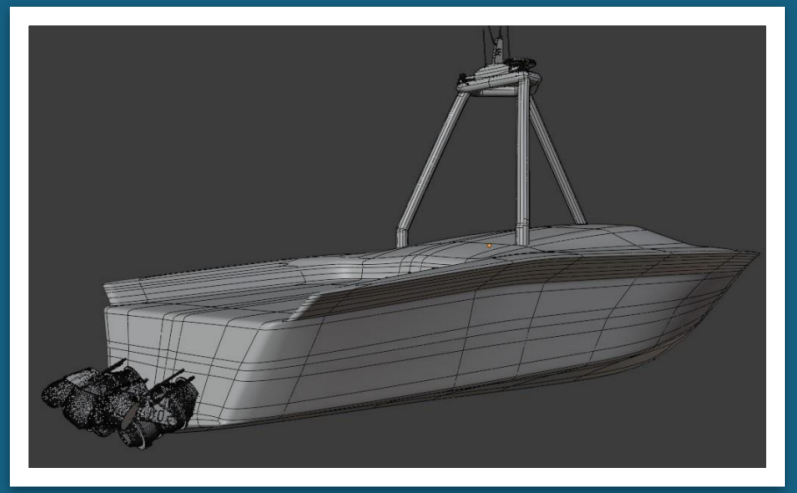
Bi - Rotor Helicopters, UAVs, & Drones

DRON General Defense





Characteristics:

Length: 15’

Draught: 1.7’

Maximum Height: 6.8’

Cruise Speed: 90 km/h

Max Speed: 144 km/h

Weight: 1,186 lbs.

Anti-Ship / Anti Helicopter Mines

General Defense Corp

In Cooperation With

HIGH TECH IMS

Innovating Defense Solutions

Anti-Ship / Anti Helicopter Mines

Limpet Mine MDM-10HP-08K (hydro-acoustic trigger)

- ***100-meter operational depth***
- ***Fuze Weight of 15 + 2%***
- ***Maximum Time to Detonation of 720 hrs.***

Operation depth, m	Up to 100
Electronic safety time, min	From 20 minutes to 59 minutes
Step for setting safety time	1 minute
Time till explosion - minimum	1 hour
Time till explosion - maximum	720 hours
Step for time setting time for explosion	1 hour
Power supply	Li batteries
Operation temperature, °C in water	-2 to + 40
Operation temperature,°C in air	From – 10°C to + 50°C
Storehouse temperature in conditions - 30°C to +60°C	2 years
Storehouse storage at +20°C ± 10°C	10 years

Anti-Ship / Anti Helicopter Mines
AHM-200 Sensor Range: 500

Anti-Helicopter

- ***Designed to destroy low flying helicopters within 100 m range.***
- ***Built-in unified fuze activated by combined acoustic & Doppler SHF sensor***
- Control system of the fuze processes and analyses the signals from the sensors and activates
- Modes for neutralization or self-destruction of the mine on expiration of the operation time can be selected and are field programmable
- Anti-removal feature
- Able to aim the combined sensor to a defined direction.
- Common housing for all parts
- Optional radio remote control activation

TECHNICAL CHARACTERISTICS	
Acoustic sensor range, m	Up to 500
Doppler sensor range, m	Up to 150
Safety time after transition into armed state, min	35
Maximum duration of armed state, days	30
Operation temperature, °C	From -20° to +50°
Storage temperature, °C	From -40° to +60°
Storage without maintainance:	
- In storehouse, years	10
- Under shed, years	2
Time for transition from transport into armed state, min	15
Option (AHM-200-1RC)	
One-way radio remote control for:	
- Activation;	
- Neutralization;	
- Detonation.	
Range of radio-controlled operation	Min 2 km (at a direct visibility)

GRAD Rockets 40km/20km

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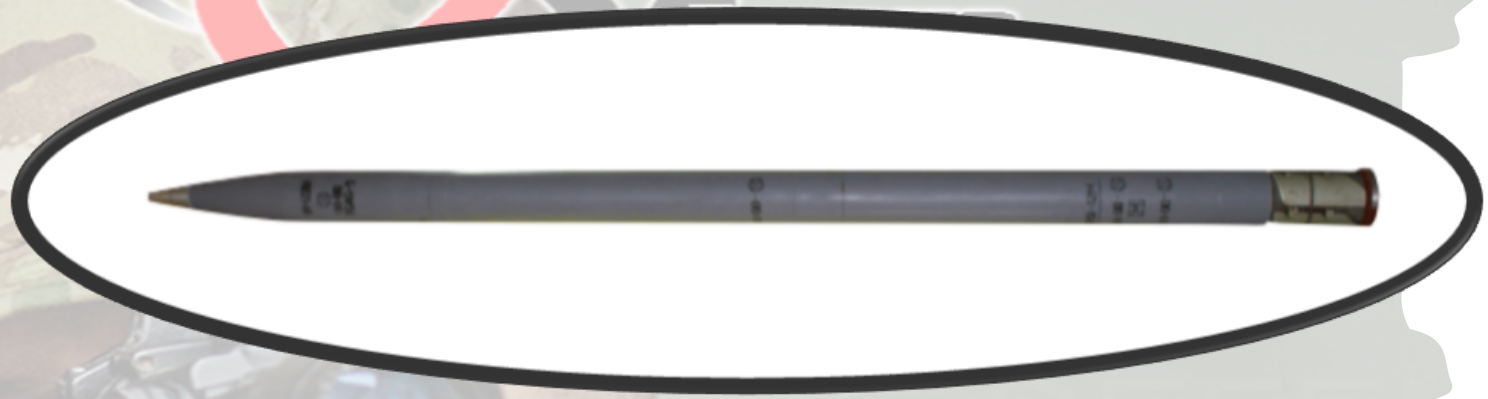

GRAD Rockets 40km/20km

122mm Round M-21 OF (20km) For MLRS BM-21 GRAD

- Prefabricated fragments
- Capable of neutralizing mortars, field and rocket artillery, light armor, defensive structures, concentrated military forces, and large-area group targets

TECHNICAL CHARACTERISTICS	
Caliber, mm	122
Weight of round, kg	66,180
Maximun range, m	20 127
Maximum velocity, m/s	690
Spoiler rings	Small and big one
Area of effect:	
– against manpower, m^2	670
against combat equipment, m^2	450
Safe operational temperature range, °C	-40…50
Weapon System	Multiple-Launch Rocket System BM-21 "GRAD"

GRAD Rockets 40km/20km

122mm Round HE (Extended Range-40km) for MLRS BM-21 GRAD

- Prefabricated fragments
- Capable of neutralizing mortars, field and rocket artillery, light armor, defensive structures, concentrated military forces, and large-area group targets

TECHNICAL CHARACTERISTICS	
Caliber, mm	122
Weight of round, kg	69,00
Maximun range, m	40 200
Maximum velocity, m/s	1 100
Fuze	MRV-U
Spoiler rings	Small and big one
Area of effect, m^2	3 600
Safe operational temperature range, °C	-30…50
Weapon System	Multiple-Launch Rocket System BM-21 "GRAD" and RM-70 or similar systems.

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