NAMMO AMMUNITION HANDBOOK

Edition 3, 2015

Nammo

SECURING THE FUTURE

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LARGE CALIBER AMMUNITION

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OTHER PRODUCTS AND SERVICES

The Nammo Group

Nammo is a leading international technology group specializing in high performance defense and space solutions.

The Nammo Group's broad portfolio includes shoulder launched munition systems, military and sports ammunition, rocket motors for military and space applications, and environmentally friendly demilitarization services.

Nammo continues to be driven by precision engineering, a dedication to safe-guarding the environment, and the development of innovative, global solutions.

The Group employs 2,200 experts in 22 facilities from 10 countries.

Core Business




AMMUNITION

Nammo is a superior quality producer of small, medium and large caliber ammunition products.

SHOULDER-LAUNCHED MUNITION SYSTEMS

Nammo has a broad range of SLMS covering most of the warfighters' needs in today's scenarios.

ROCKET MOTORS

Nammo has unique competence within engineering, analysis and manufacturing of high performance rocket motors and space applications.

DEMILITARIZATION

Nammo is a world leader within environmentally friendly demilitarization.

4.6 mm x 30 Ball Non Toxic 2 HP

MISSION

Close combat ammunition for military units. The projectile has high penetration capability which penetrates the NATO CRISAT body armor target at 200 m. The cartridges can be delivered in 10 round clips for quicker magazine loading.

TECHNICAL CHARACTERISTICS

Projectile weight	2 g
Muzzle velocity	670 m/s
Max. dispersion	SD < 35 mm at 100 m
Penetration	Crisat Protective Vest at 200 m
Service temperature	-54°C/+52°C
Safety temperature	-54°C/+71°C

STATUS

In service with Norwegian Defense Forces.
In production.

4.6 mm x 30

Plastic Blank Ammunition

MISSION

Plastic Blank Ammunition is non-lethal ammunition designed to provide military forces and law enforcement communities realistic training and maximum safety at low cost. Plastic Blank Ammunition allows training such as force on force exercises and firearm familiarization.

TECHNICAL CHARACTERISTICS

Service temperature	Operational temperature -30°C/+63°C
Safety temperature	-46°C/+71°C
Storage temperature	Temperature and storage conditions as for live ammunition

STATUS

Qualified for use in HK MP 7 with Blank Firing Attachment.

5.56 mm x 45 Armor Piercing 3

M995

MISSION

Significantly increases the war fighters' lethality. Optimized projectile design with a tungsten carbide core for penetration of hard targets. Penetrates 12 mm RHA 300HB at 100 m and light body armor at normal combat distances.

TECHNICAL CHARACTERISTICS

Projectile weight	3 g
Muzzle velocity	1030 m/s
Max. dispersion	SD < 200 mm at 550 m
Penetration	12 mm RHA at 0° at 100 m
Service temperature	-54°C/+52°C
Safety temperature	-54°C/+71°C

STATUS

Type classified by US Army 1996 as M995. Nammo has been sole supplier since then. In service in several countries. Combat proven and in production.

5.56 mm x 45 Armor Piercing 45

MISSION

Incorporating Nammo's knowledge on tungsten carbide technology as well as that on lead free projectile design, the 5.56 mm AP 45 provides a cost effective armor piercing round for use in assault rifles and machine guns. Military specified (STANAG 4172). The heavy projectile provides increased performance at long ranges.

TECHNICAL CHARACTERISTICS

Projectile weight	4.5 g
Muzzle velocity	915 m/s
Max. dispersion	SD < 200 mm at 550 m
Penetration	NATO plate at 900 m, 7 mm RHA at 200 m
Service temperature	-54°C/+52°C
Safety temperature	-54°C/+71°C

STATUS

In production.

5.56 mm x 45 Ball 5 Long Range

MISSION

Military specified (STANAG 4172) cartridge with a FMJ projectile providing excellent accuracy at long ranges. Suitable for semi-automatic rifles (DMR) or machine guns. The high projectile weight increases the impact energy by 40% at 550 m compared to standard ball (M855).

TECHNICAL CHARACTERISTICS

Projectile weight	5 g (77 grain)
Muzzle velocity	835 m/s
Max. dispersion	≤ 1 MOA
Penetration	N/A
Powder	Extruded temperature stable
Service temperature	-54°C/+52°C
Safety temperature	-54°C/+71°C

STATUS

In production.

5.56 mm x 45 NATO Ball

MISSION

Standard Ball Round of M855 type. Can be delivered linked together with Tracers, Dim-Tracers or AP rounds in any combination required to fit the specific need. Also available in battle packs like the M249 plastic magazine.

TECHNICAL CHARACTERISTICS

Projectile weight	4 g
Muzzle velocity	> 930 m/s
Max. dispersion	SD ≤ 200 mm at 550 m
Penetration	3.5 mm NATO plate at 570 m
Service temperature	-54°C/+52°C
Safety temperature	-54°C/+71°C

STATUS

In production and NATO qualified as AC/225-127A.

5.56 mm x 45 Ball Non Toxic 4 HP MK2

MISSION

Second generation of the Non Toxic – Lead Free High Performance 5.56 mm cartridge. Optimized cartridge with flatter trajectory and enhanced effect in all targets.

TECHNICAL CHARACTERISTICS

Projectile weight	4 g
Muzzle velocity	930 m/s
Max. dispersion	SD ≤ 200 mm at 550 m
Penetration	3.5 mm NATO plate at 725 m
Service temperature	-54°C/+52°C
Safety temperature	-54°C/+71°C

STATUS

In production. Qualified by Norwegian Defense Forces as NM255.

5.56 mm x 45 Ball Non Toxic 4 HP

MISSION

The cartridge has an improved performance compared to standard NATO Ball and is 100% Lead Free. Exists in all three NATO calibers – both as Ball and Tracer.

TECHNICAL CHARACTERISTICS

Projectile weight	4 g
Muzzle velocity	930 m/s
Max. dispersion	SD ≤ 200 mm at 550 m
Penetration	3.5 mm NATO plate at 625 m
Service temperature	-54°C/+52°C
Safety temperature	-54°C/+71°C

STATUS

World's first NATO qualified 5.56 mm "Green round" totally free from lead. In service with Swedish and Norwegian Defense Forces. Combat proven and NATO qualified as AC/225-128A.

5.56 mm x 45 Dim Tracer 4

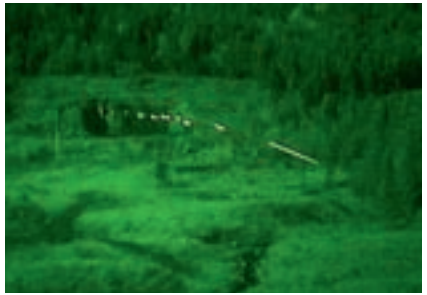
MK301 Mod 0

MISSION

The Dim/IR tracer is totally invisible to the naked eye. Can only be seen with Night Vision Devices (NVD's) giving the user clear advantages as a stealth fighter at night. Instant ignition for short combat distances.

TECHNICAL CHARACTERISTICS

Projectile weight	3.9 g
Muzzle velocity	930 m/s
Max. dispersion	SD ≤ 300 mm at 550 m
Tracer	13 m – 600 m (typical visible to 950 m)
Service temperature	-54°C/+52°C
Safety temperature	-54°C/+71°C



STATUS

Type classified by US Army and USMC (Mk301 Mod 0). In service with US, Swedish, Norwegian and UK Defense Forces. Combat proven. Also available as a Non Toxic – Lead Free cartridge.

5.56 mm x 45 NATO Tracer

MISSION

Standard tracer that supports the gunner during firing engagements with a distinct and clear trace, giving full trajectory control out to normally 800 m.

TECHNICAL CHARACTERISTICS

Projectile weight	4 g
Muzzle velocity	> 900 m/s
Max. dispersion	SD ≤ 300 mm at 550 m
Tracer	140 m – ≥ 600 m
Service temperature	-54°C/+52°C
Safety temperature	-54°C/+71°C

STATUS

In production.

5.56 mm x 45 Tracer Non Toxic 4

MISSION

A Non Toxic – Lead Free tracer that supports the gunner during firing engagements with a distinct and clear tracer giving full trajectory control out to normally 800 m. Also available as direct ignition tracer suitable for MOUT with short combat distances.

TECHNICAL CHARACTERISTICS

Projectile weight	3.9 g
Muzzle velocity	920 m/s
Max. dispersion	SD ≤ 300 mm at 550 m
Tracer	140 m – ≥ 600 m
Service temperature	-54°C/+52°C
Safety temperature	-54°C/+71°C

STATUS

In production and in service with Swedish and Norwegian Defense Forces.

5.56 mm x 45

Plastic Blank Ammunition

MISSION

Plastic Blank Ammunition is non-lethal ammunition designed to provide military forces and law enforcement communities realistic training and maximum safety at low cost. Plastic Blank Ammunition allows training such as force on force exercises and firearm familiarization.

TECHNICAL CHARACTERISTICS

Service temperature	Operational temperature -30°C/+63°C
Safety temperature	-46°C/+71°C
Storage temperature	Temperature and storage conditions as for live ammunition

STATUS

Qualified for use in Colt M 16/M 4 – C7/C8 – FN Minimi, HK G36 Family, HK 416 N/K and Steyr AUG. Nammo provides BFA for HK 416 N/K.

5.56 mm x 45

Plastic Short Range Training Ammunition (P-SRTA)

MISSION

P-SRTA is lethal and must not be used against human targets. The P-SRTA is designed to give military forces and security forces cost effective training at a low cost. Weapon danger area is 200 m. P-SRTA allows training in dedicated training areas for suburban and built up areas with low or no ricochet danger. The ammunition is ballistically matched to live ammunition out to 50 m with a reduced maximum range.

TECHNICAL CHARACTERISTICS

Projectile weight	0.3 g
Service temperature	Operational temperature -30°C/+63°C
Safety temperature	-46°C/+71°C
Storage temperature	Temperature and storage conditions as for live ammunition

STATUS

The ammunition is qualified to be used in Colt M 16/M 4 – C7/C8 – FN Minimi, HK G36 family, HK 416 N/K, Sig 550/551, 552 family, and Steyr aug. 13.

7.62 mm x 51 NATO Ball

MISSION

NATO qualified standard ball Round of M80 type. Can be delivered linked together with Tracers, Dim-Tracers or AP rounds in any combination required to fit the specific need.

TECHNICAL CHARACTERISTICS

Projectile weight	9.45 g
Muzzle velocity	> 810 m/s
Max. dispersion	SD ≤ 200 mm at 550 m
Penetration	3.5 mm NATO plate at 550 m
Service temperature	-54°C/+52°C
Safety temperature	-54°C/+71°C

STATUS

In production and NATO qualified as AC/116-29A.
First Article approved by US Government.

7.62 mm x 51 Ball 11 Long Range

MISSION

Military specified (STANAG 2310) cartridge with a FMJ projectile providing excellent accuracy at long ranges. Suitable for semi-automatic rifles (DMR), sniper rifles and machine guns.
The high projectile weight increases the impact energy by 40 % at 800 m compared to standard Ball (M80).

TECHNICAL CHARACTERISTICS

Projectile weight	10.9 g (168 grain)
Muzzle velocity	805 m/s
Max. dispersion	≤ 1 MOA
Penetration	3.5 mm NATO plate at 550 m
Powder	Extruded temperature stable
Service temperature	-54°C/+52°C
Safety temperature	-54°C/+71°C

STATUS

In production. Qualified by Norwegian Defense Forces as NM258.

7.62 mm x 51 Armor Piercing 11 Long Range

M993

MISSION

Combining Nammo's Long Range technology with world leading tungsten carbide AP technology this cartridge provides superior penetration capabilities as well as excellent accuracy at long ranges. Military specified (STANAG 2310) cartridge with a FMJ projectile. Suitable for semi automatic rifles (DMR), sniper rifles and machine guns.

TECHNICAL CHARACTERISTICS

Projectile weight	10.9 g (168 grain)
Muzzle velocity	805 m/s
Max. dispersion	≤ 1.5 MOA
Penetration	18 mm RHA at 80 m, 7 mm RHA at 600 m 3.5 mm NATO plate at 1100 m
Powder	Extruded temperature stable
Service temperature	-54°C/+52°C
Safety temperature	-54°C/+71°C

STATUS

In production.

7.62 mm x 51 Armor Piercing 10

MISSION

Utilizing Nammo's knowledge on tungsten carbide technology as well as that on lead free projectile design, the 7.62 AP 10 provides a cost effective armor piercing round for use in assault rifles and machine guns. Military specified (STANAG 2310). The heavy projectile gives increased performance at long ranges.

TECHNICAL CHARACTERISTICS

Projectile weight	9.85 g
Muzzle velocity	845 m/s
Max. dispersion	SD ≤ 200 mm at 550 m
Penetration	7 mm RHA at 300 m
Service temperature	-54°C/+52°C
Safety temperature	-54°C/+71°C

STATUS

In production.

7.62 mm x 51 Armor Piercing 8

M993

MISSION

Significantly increases the war fighters' lethality. Optimized projectile design with a tungsten carbide core for penetration of hard targets. Penetrates 18 mm RHA 300HB at 100 m and heavy body armor at normal combat distances.

TECHNICAL CHARACTERISTICS

Projectile weight	8.3 g
Muzzle velocity	930 m/s
Max. dispersion	SD ≤ 200 mm at 550 m
Penetration	18 mm RHA at 100 m 7 mm RHA at 500 m
Service temperature	-54°C/+52°C
Safety temperature	-54°C/+71°C

STATUS

Type classified by US Army 1996 as M993. Nammo has been sole supplier. In service in several countries. Combat proven and in production. Also available as a Non Toxic – Lead Free round.

7.62 mm x 51 Ball Non Toxic 9 HP

MISSION

The cartridge has an improved performance compared to standard NATO Ball and is 100 % Lead Free. Exists in all three NATO calibers – both as Ball and Tracer.

TECHNICAL CHARACTERISTICS

Projectile weight	9 g
Muzzle velocity	860 m/s
Max. dispersion	SD ≤ 200 mm at 550 m
Penetration	3.5 mm NATO plate at 900 m
Service temperature	-54°C/+52°C
Safety temperature	-54°C/+71°C

STATUS

World's only NATO qualified 7.62 mm "Green" Ball round totally free from lead. In service with Swedish and Norwegian Defense Forces. Combat proven and NATO qualified as AC/116-32A.

7.62 mm x 51 NATO Tracer

MISSION

Standard tracer that supports the gunner during firing engagements with a distinct and clear tracer, giving full trajectory control out to normally 800 m.

TECHNICAL CHARACTERISTICS

Projectile weight	9 g
Muzzle velocity	> 820 m/s
Max. dispersion	SD ≤ 300 mm at 550 m
Tracer	140 m – ≥ 775 m
Service temperature	-54°C/+52°C
Safety temperature	-54°C/+71°C

STATUS

In production and NATO qualified as AC/116-30A.

7.62 mm x 51 Tracer Non Toxic 9

MISSION

A Non Toxic – Lead Free Tracer that supports the gunner during firing engagements with a distinct and clear tracer giving full trajectory control out to normally 800 m. Also available as instant ignition Tracer suitable for MOUT with short combat distances.

TECHNICAL CHARACTERISTICS

Projectile weight	8.7 g
Muzzle velocity	850 m/s
Max. dispersion	SD ≤ 300 mm at 550 m
Tracer	140 m – ≥ 775 m
Service temperature	-54°C/+52°C
Safety temperature	-54°C/+71°C

STATUS

World's only NATO qualified "Green" Tracer round totally free from lead. In service with Swedish and Norwegian Defense Forces. Combat proven and NATO qualified as AC/116-37A.

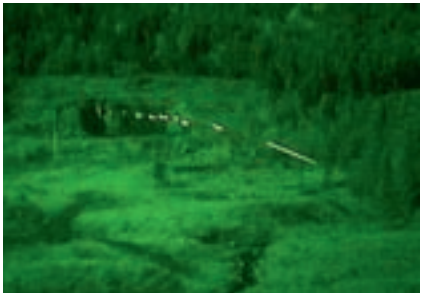
7.62 mm x 51 Dim Tracer 9

MISSION

The Dim / IR Tracer is totally invisible to the naked eye. Can only be seen with Night Vision Devices (NVD's), giving the user clear advantages as a stealth fighter at night. Instant ignition for short combat distances.

TECHNICAL CHARACTERISTICS

Projectile weight	9 g
Muzzle velocity	840 m/s
Max. dispersion	SD ≤ 300 mm at 550 m
Tracer	13 m – 775 m (typically visible to 1250 m)
Service temperature	-54°C/+52°C
Safety temperature	-54°C/+71°C



STATUS

In service with Swedish, Norwegian and UK Defense Forces. Combat proven. Also available as a Non Toxic – Lead Free cartridge.

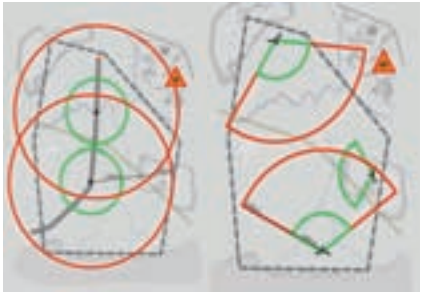
7.62 mm x 51 Ball Non Toxic 6 Reduced Range

MISSION

Lead free cartridge that has the same performance as NATO Ball up to a distance of 200 m, but with a safety fan of maximum 1500 m (compared to 4300 m for a NATO Ball). For use in populated sensitive areas, protection of airports, harbours, embassies and dangerous goods transports. Excellent cartridge for training on small ranges, restricted areas and from moving platforms e.g. RWS.

TECHNICAL CHARACTERISTICS

Projectile weight	6.2 g
Muzzle velocity	880 m/s
Max. dispersion	SD ≤ 30 mm at 100 m
Trajectory	Match NATO Ball up to 200 m
Service temperature	-20°C/+52°C
Safety temperature	-54°C/+71°C



STATUS

In production.

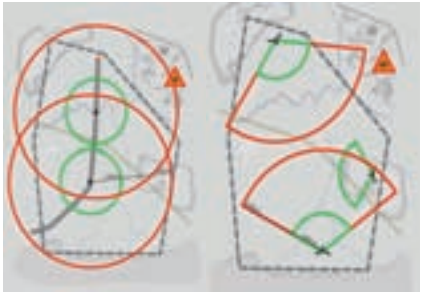
7.62 mm x 51 Tracer Non Toxic 6 Reduced Range

MISSION

Lead free cartridge that has the same performance as NATO Tracer up to a distance of 200 meters, but with a safety fan of maximum 1500 m (compared to 4300 m for a NATO Ball). For use in populated sensitive areas. Excellent cartridge for training in small ranges, restricted areas and from moving platforms e.g. RWS. Preferably linked together with 7.62 Ball Non Toxic 6 Reduced Range for use in machine guns.

TECHNICAL CHARACTERISTICS

Projectile weight	5.9 g
Muzzle velocity	880 m/s
Max. dispersion	SD ≤ 45 mm at 100 m
Trajectory	Match NATO Ball up to 200 m
Tracer	40 m - ≥ 200 m
Service temperature	-20°C/+52°C
Safety temperature	-54°C/+71°C



STATUS

In production.

7.62 mm x 51

Plastic Blank Ammunition

MISSION

Plastic Blank Ammunition is non-lethal ammunition designed to provide military forces and law enforcement communities realistic training and maximum safety at low cost. Plastic Blank Ammunition allows training such as force on force exercises and firearm familiarization.

TECHNICAL CHARACTERISTICS

Service temperature	Operational temperature -30°C/+63°C
Safety temperature	-46°C/+71°C
Storage temperature	Temperature and storage conditions as for live ammunition

STATUS

Ammunition is qualified for these weapons: HK G3 and MG 3; FN MAG/Minimi. Nammo provide and deliver Blank Firing Attachment, Practice Bolt and Cartridge Discriminator.

7.62 mm x 51

Plastic Short Range Training Ammunition (P-SRTA)

MISSION

P-SRTA is lethal and must not be used against human targets. The P-SRTA is designed to give military forces and security forces cost effective training at a low cost. The ammunition is live ammunition with reduced training distance. Weapon danger area is 200 m. P-SRTA allows training in dedicated training areas for suburban and built up areas with low or no ricochet danger. The ammunition is ballistically matched to live ammunition out to 50 m.

TECHNICAL CHARACTERISTICS

Projectile weight	0.7 g
Service temperature	Operational temperature -30°C/+63°C
Safety temperature	-46°C/+71°C
Storage temperature	Temperature and storage conditions as for live ammunition

STATUS

Nammo supplies Firing Attachment and Practice Bolt for HK G3. Nammo supplies Firing Attachment for MG3.

.308 Winchester D46

7.62 mm x 51

MISSION

Often copied, never equaled. The legendary D46 in caliber 7.62 is the one by which all others of its type are measured. Manufactured to the strictest tolerances for concentricity, uniformity of shape and weight, it has shot its way into the record books since the 1930's.

TECHNICAL CHARACTERISTICS

Projectile weight	12.0 g / 185 gr
Projectile type	D46 (FMJBT)
Muzzle velocity	760 m/s (2490 fps)
Accuracy @ 300 m (10 rds)	≤ 85 mm

STATUS

In production already for over 80 years and still used by professionals.

.308 Winchester HPS-Ti

7.62 mm x 51

MISSION

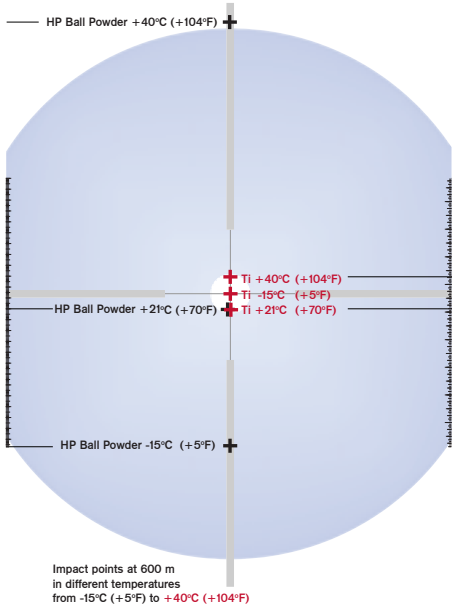
Velocity variations typically associated with temperature changes are nearly eliminated in the new HPS-Ti (High performance Sniper-Temperature Insensitive) ammunition. This results in greatly reduced changes of the impact point on the target, a critical factor in long range applications.

TECHNICAL CHARACTERISTICS

Projectile weight	11.0 g / 170 gr
Projectile type	B476 (FMJBT)
Muzzle velocity	840 m/s (2756 fps)
Accuracy @ 300 m (10 rds)	≤ 95 mm

STATUS

For shooters operating in extreme temperatures.



.308 Winchester Lock Base

7.62 mm x 51

MISSION

Unbeatable accuracy over extra long distances. Lock Base tail structure provides exceptional accuracy also at high pressures and high muzzle velocities. FMJBT configuration reduces drag and provides a flatter trajectory.

TECHNICAL CHARACTERISTICS

Projectile weight	9.7 g/150 gr	11.0 g/170 gr
Projectile type	B466 (FMJBT)	B476 (FMJBT)
Muzzle velocity	850 m/s (2790 fps)	840 m/s (2756 fps)
Accuracy @ 300 m (10 rds)	< 105 mm	< 95 mm

STATUS

B476 is regular service ammunition for several Armed Forces.

.308 Winchester Scenar

7.62 mm x 51

MISSION

Scenar is an extremely accurate OTM (Open-Tip Match) bullet. Boat tail base gives an outstanding ballistic coefficient. Nammo's Scenar projectiles deliver superb results at long ranges.

TECHNICAL CHARACTERISTICS

Projectile weight	10.0 g/155 gr 11.3 g/175 gr	10.85 g/167 gr 12.0 g/185 gr
Projectile type	GB491 (OTM) GB550 (OTM)	GB422 (OTM) GB432 (OTM)
Muzzle velocity	860 m/s (2820 fps) 793 m/s (2602 fps)	820 m/s (2690 fps) 755 m/s (2475 fps)
Accuracy @ 300 m (10 rds)	< 85 mm average < 60 mm average	< 70 mm average < 70 mm average

STATUS

Used by multiple Special Forces around the world.

.308 Winchester SEMI-AUTO

7.62 mm x 51

MISSION

Designed for optimum ballistic performance in shorter barrels (12- 20"). Tailored powder type and charge weight to reduce muzzle blast and flash while still delivering outstanding accuracy and velocity.

TECHNICAL CHARACTERISTICS

Projectile weight	11.0 g/170 gr
Projectile type	B476 (FMJBT)
Muzzle velocity	754 m/s (2474 fps)
Accuracy @ 300 m (10 rds)	< 85 mm

STATUS

Nammo's latest special purpose cartridge is developed for short barreled semi-auto rifles.

.308 Winchester Armor Piercing

7.62 mm x 51

MISSION

Nammo's AP is the most accurate armor piercing ammunition that is manufactured using proven match grade technology. It provides excellent penetration against extra hard targets.

TECHNICAL CHARACTERISTICS

Projectile weight	10.7 g/165 gr
Projectile type	AP492
Muzzle velocity	870 m/s (2850 fps)
Penetration	> 15 mm at 100 m Steel plate HB400
Accuracy @ 300 m (10 rds)	≤ 120 mm

STATUS

Used by several Armed Forces and Police needing extreme penetrating power and accuracy. Extra hard Tungsten Carbide based penetrator.

.308 Winchester Subsonic

7.62 mm x 51

MISSION

This ammunition is the most widely used 7.62 mm caliber subsonic ammunition for military and law enforcement special operations. Designed specifically for specialized short barrel tactical rifles that have sound suppressors.

TECHNICAL CHARACTERISTICS

Projectile weight	13.0 g/200 gr
Projectile type	B416 (FMJBT)
Muzzle velocity	325 m/s (1066 fps)
Accuracy @ 100 m (10 rds)	≤ 60 mm
Barrel length	300-450 mm/12-17"
Twist	200-250 mm/8-10"

STATUS

Most sold and most accurate factory Subsonic ammunition in this caliber.

.338 Lapua Magnum Lock Base

8.6 mm x 70

MISSION

Unbeatable accuracy over extra long distances. Lock Base tail structure provides exceptional accuracy also at high pressures and high muzzle velocities. FMJBT configuration reduces drag and provides a flatter trajectory.

TECHNICAL CHARACTERISTICS

Projectile weight	16.2 g/250 gr
Projectile type	B408 (FMJBT)
Muzzle velocity	900 m/s (2953 fps)
Accuracy @ 300 m (5 rds)	< 95 mm

STATUS

Service ammunition of several Armed Forces.
In operation since 1998.

.338 Lapua Magnum Scenar

8.6 mm x 70

MISSION

Scenar is an extremely accurate OTM (Open-Tip Match) bullet. Boat tail base delivers an outstanding ballistic coefficient. Lapua Scenar bullets deliver superb results at long ranges.

TECHNICAL CHARACTERISTICS

Projectile weight	16.2 g/250 gr	19.4 g/300 gr
Projectile type	GB488 (OTM)	GB528 (OTM)
Muzzle velocity	905 m/s (2970 fps)	830 m/s (2723 fps)
Accuracy @ 300 m (5 rds)	< 85 mm average	< 85 mm average

STATUS

Used by multiple Special Forces around the world.

.338 Lapua Magnum Solid

8.6 mm x 70

MISSION

Bullet construction with valve design provides a maximum shock effect over a wide terminal velocity range (500-1000m/s).
For operational purposes, the solid frame construction enables straight bullet path through laminated glass without fragmentation.

TECHNICAL CHARACTERISTICS

Projectile weight	15.0 g/231 gr
Muzzle velocity	920 m/s (3018 fps)
Accuracy @ 100 m (5 rds)	< 50 mm average

STATUS

Used for glass penetration.

.338 Lapua Magnum Armor Piercing

8.6 mm x 70

MISSION

Nammo's AP is the most accurate armor piercing ammunition that is manufactured using proven match grade technology. It provides excellent penetration against extra hard targets.

TECHNICAL CHARACTERISTICS

Projectile weight	16.4 g/253 gr	19.4 g/300 gr
Projectile type	AP485	AP529
Muzzle velocity	905 m/s (2970 fps)	830 m/s (2723 fps)
Penetration	> 12 mm at 550 m Steel plate HB400	> 12 mm at 600 m Steel plate HB500
Accuracy @300 m (5 rds)	< 120 mm average	< 120 mm average

STATUS

Used by several Armed Forces needing extreme penetrating power and accuracy. Extra hard Tungsten Carbide based penetrator of special design.

.338 Lapua Magnum Armor Piercing Incendiary

8.6 mm x 70

MISSION

Designed to be used against vehicles and structures in situations when excellent penetration, incendiary and point of impact indication are required. The API bullet is designed to meet current insensitive munitions standards. Classified as 1.4S.

TECHNICAL CHARACTERISTICS

Projectile weight	16.4 g/253 gr
Projectile type	API526
Muzzle velocity	895 m/s (2935 fps)
Penetration	> 10 mm at 500 m Steel plate HB400
Accuracy @ 300 m (5 rds)	< 130 mm
Special characteristics	Observable flash at hard targets. Ignition of vaporized fuel.

STATUS

Latest development in this caliber used by top professionals.

.338 Lapua Magnum – Proof, Drill & Blank

8.6 mm x 70

MISSION

High Pressure Proof, Drill and Blank cartridges complete the .338 Lapua Magnum family.

STATUS

Produced on request.

9 mm x 19 Ball 7 HP

MISSION

Optimized to penetrate body armor. Penetrates more than 50 layers of Para-Aramide at 6 m or 3 mm steel at 75 m. Suitable for SF or police units using weapons like Glock, MP-9 and HK MP5.

TECHNICAL CHARACTERISTICS

Projectile weight	6.75 g
Muzzle velocity	450 m/s
Max. dispersion	SD < 50 mm at 46 m
Penetration	3 mm mild steel at 75 m 50 layers of Para-Aramide at 6 m
Service temperature	-54°C/+52°C

STATUS

In service with several forces. Combat proven.

9 mm x 19 Ball Non Toxic 7 HP

MISSION

A 100 % Lead Free High Performance cartridge penetrating more than 50 layers of Para-Aramide at 6 m or 3 mm steel at 75 m. Suitable for SF or police units using weapons like Glock, MP-9 and HK MP5.

TECHNICAL CHARACTERISTICS

Projectile weight	7.1 g
Muzzle velocity	410 m/s
Max. dispersion	SD < 50 mm at 46 m
Penetration	3 mm mild steel at 75 m 50 layers of Para-Aramide at 6 m
Service temperature	-54°C/+52°C

STATUS

World's only NATO qualified 9 mm "Green" round totally free from lead. In service with several forces. Combat proven and NATO qualified as AC/116-XVIA.

12.7 mm × 99 Ball (.50 cal)

MISSION

Standard .50 caliber ball round for general purpose use in machine guns, which can be linked together with or without tracer rounds.

TECHNICAL CHARACTERISTICS

Projectile weight	~42 g
Muzzle velocity	~903 m/s
Max. dispersion at 550 m	SD ≤ 300 mm
Penetration	N/A
Tracer	N/A
Service temperature	-54°C/+63°C
Safety temperature	-54°C/+71°C

STATUS

Qualified for use in in Browning M2 HB, M2 QCB, M2 Flex & Turret, M2 Manroy QCB, M2 CIS-50 and M3A3. First Article approved by US Government. Equivalent to M33.

12.7 mm x 99 SG Ball (.50 cal)

NM241 Grade A (Match Grade)

MISSION

Ball round for use against soft targets with extreme accuracy at long ranges.

TECHNICAL CHARACTERISTICS

Projectile weight	~46 g
Muzzle velocity	~903 m/s
Max. dispersion	< 1.8 MOA
Penetration	N/A
Tracer	N/A
Service temperature	-54°C/+63°C
Safety temperature	-54°C/+71°C

Figure 15 – Cumulative Probability og
Hit Contour Map (Range = 1200 m, View Angle = 45°)

STATUS

Qualified in Barrett M82, Barrett M107, Al AW-50, Al AX-50, AS-50, HECATE PGM, McMillan TAC-50, Rangemaster .50 and Steyr .50. Combat proven.

12.7 mm × 99 Tracer (.50 cal)

MISSION

Standard .50 caliber tracer round, ballistically matched to the standard ball rounds, for use in machine guns, which can be linked together with ball rounds.

TECHNICAL CHARACTERISTICS

Projectile weight	~40 g
Muzzle velocity	903 m/s
Max. dispersion at 550 m	SD ≤ 400 mm
Penetration	N/A
Tracer	N/A
Service temperature	-54°C/+63°C
Safety temperature	-54°C/+71°C

STATUS

Qualified for use in Browning M2 HB, M2 QCB, M2 Flex & Turret, M2 Manroy QCB and M2 CIS-50. Equivalent to M17.

12.7 mm x 99 SG-T Ball Tracer (.50 cal)

NM242 Grade A (Match Grade)

MISSION

Ball round with tracer for use against soft targets with extreme accuracy at long ranges. The tracer has a dark zone from 50-200 m and burns out to minimum 1500 m.

TECHNICAL CHARACTERISTICS

Projectile weight	~43 g
Muzzle velocity	~903 m/s
Max. dispersion	≤ 2 MOA
Penetration	N/A
Tracer	Visible 50-200, ≥1500
Service temperature	-54°C/+63°C
Safety temperature	-54°C/+71°C

STATUS

Qualified in Barrett M82, Barrett M107, AI AW-50, AI AX-50, AS-50, HECATE PGM, McMillan TAC-50, Rangemaster .50 and Steyr .50. Combat proven.

12.7 mm x 99 Ball-DT (IR) (.50 cal)

NM260 Grade A (Match Grade) & Grade B (Linked)

MISSION

Ball round with tracer for use against soft targets with extreme accuracy at long ranges. The IR tracer is only visible with Night Vision Equipment and completely invisible to the naked eye. The IR tracer burns for more than 1000 m, making the gunner position not traceable as well as not lighting up the surroundings as conventional tracers. This makes the round ideal for night operations.

TECHNICAL CHARACTERISTICS

Projectile weight	~43 g
Muzzle velocity	~903 m/s
Max. dispersion at 550 m	Grade A ≤ 2 MOA/Grade B SD ≤ 250 mm
Penetration	N/A
Tracer	Infrared, visible with NVG ≤ 200, ≥ 1000
Service temperature	-54°C/+63°C
Safety temperature	-54°C/+71°C

STATUS

Qualified in Browning M2HB, M2 QCB, M2 NM218, FNH M3M & M3P, CIS-50, Barrett M82, Barrett M107, AI AW-50, AI AX-50, AS-50, HECATE PGM, McMillan TAC-50, Rangemaster .50 and Steyr .50. Combat proven.

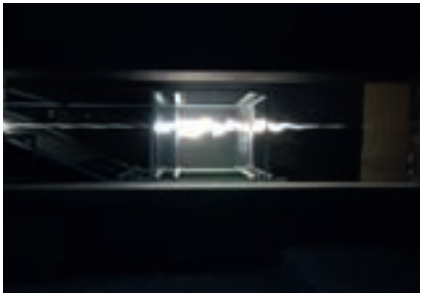
12.7 mm × 99 API (.50 cal)

MISSION

Armor Piercing /Incendiary round for machine gun use. The hard steel core together with the incendiary composition provide excellent performance against material/light armor targets.

TECHNICAL CHARACTERISTICS

Projectile weight	~42 g
Muzzle velocity	903 m/s
Max. dispersion at 550 m	SD ≤ 300 mm
Penetration	22 mm (321-375 HB) at 100 m
Tracer	N/A
Service temperature	-54°C/+63°C
Safety temperature	-54°C/+71°C



STATUS

Qualified for use in Browning M2 HB, M2 QCB, M2 Flex & Turret, M2 CIS-50 and M3A3. First Article approved by US Government. Equivalent to M8.

12.7 mm × 99 API-T (.50 cal)

MISSION

Tracer round ballistically matched to the API round, for use in machine guns, which can be linked together with the API rounds.

TECHNICAL CHARACTERISTICS

Projectile weight	~40 g
Muzzle velocity	903 m/s
Max. dispersion at 550 m	SD ≤ 400 mm
Penetration	22 mm (321-375 HB) at 100 m
Tracer	Visible from 200 m to 1500 m
Service temperature	-54°C/+63°C
Safety temperature	-54°C/+71°C

STATUS

Qualified for use in Browning M2 HB, M2 QCB, M2 Flex & Turret, M2 Manroy QCB and M2 CIS-50. Equivalent to M20.

12.7 mm x 99 AP-S (.50 cal)

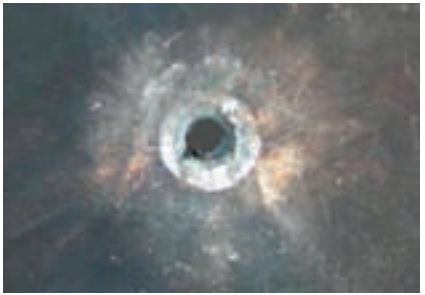
NM185 Grade A (Match Grade) & Grade B (Linked)

MISSION

Armor Piercing round for extreme accuracy and high penetration capability against material targets. A large tungsten carbide penetrator provides excellent armor penetration (22 mm armored steel at 900 m). Targets range from light material to light armored vehicles.

TECHNICAL CHARACTERISTICS

Projectile weight	~47 g
Muzzle velocity	~893 m/s
Max. dispersion at 550 m	Grade A ≤ 1,8 MOA/Grade B SD ≤ 200 mm
Penetration	22 mm RHA @ 0° @ 900m
Tracer/self destruct	N/A
Service temperature	-54°C/+63°C
Safety temperature	-54°C/+71°C



STATUS

Qualified in Browning M2HB, M2 QCB, M2 NM218, FNH M3M & M3P, CIS-50, Barrett M82, Barrett M107, AI AW-50, AI AX-50, AS-50, HECATE PGM, McMillan TAC-50, Rangemaster .50 and Steyr .50. More than 15 user countries in different applications. Combat proven.

12.7 mm x 99 APi-S (.50 cal)

NM173 Grade A (Match Grade) & Grade B (Linked)

MISSION

Armor Piercing round for extreme accuracy and high penetration capability against material targets. A large tungsten carbide penetrator provides excellent armor penetration (22 mm armored steel at 900 m) with an incendiary/marker effect for spotting purposes. Targets range from light material to light armored vehicles.

TECHNICAL CHARACTERISTICS

Projectile weight	~47 g
Muzzle velocity	~893 m/s
Max. dispersion at 550 m	Grade A ≤ 1,8 MOA/Grade B SD ≤ 200 mm
Penetration	22 mm RHA @ 0° @ 900 m
Tracer	N/A
Service temperature	-54°C/+63°C
Safety temperature	-54°C/+71°C

STATUS

Qualified in Browning M2HB, M2 QCB, M2 NM218, FNH M3M & M3P, CIS-50, Barrett M82, Barrett M107, AI AW-50, AI AX-50, AS-50, HECATE PGM, McMillan TAC-50, Rangemaster .50 and Steyr .50. More than 15 user countries in different applications. Combat proven.

12.7 mm x 99 MP (.50 cal)

NM140F2 Grade A (Match Grade) & Grade B (Linked) US MK211

MISSION

The Multipurpose round is for use against material targets. The high explosive together with a tungsten carbide penetrator and incendiary compositions give blast, fragmentation and incendiary effects as well as excellent armor penetration capabilities and extreme accuracy at long ranges. With the Multipurpose characteristics and the superb accuracy, this is the ideal choice for Weapon station use as well as Anti Material Rifles (AMR).

TECHNICAL CHARACTERISTICS

Projectile weight	~43 g
Muzzle velocity	~903 m/s
Max. dispersion at 550 m	Grade A ≤ 1,5 MOA/Grade B SD ≤ 200 mm
Penetration	10.6 mm RHA @ 30° @ 1000m
Tracer	N/A
Service temperature	-54°C/+63°C
Safety temperature	-54°C/+71°C

STATUS

Qualified in Browning M2HB, M2 QCB, M2 NM218, FNH M3M & M3P, CIS-50, Barrett M82, Barrett M107, AI AW-50, AI AX-50, AS-50, HECATE PGM, McMillan TAC-50, Rangemaster .50 and Steyr .50. More than 15 user countries in different applications. Combat proven.

12.7 mm x 99 MP-T (.50 cal)

NM160F2 Grade A (Match Grade) & Grade B (Linked) US MK300

MISSION

Multipurpose round with tracer is for use against material targets. The high explosive together with a tungsten carbide penetrator and incendiary compositions give blast, fragmentation and incendiary effects as well as excellent armor penetration capabilities and extreme accuracy at long ranges. The tracer has a dark zone from 50-200 m and burns out to minimum 1500 m.

TECHNICAL CHARACTERISTICS

Projectile weight	~44 g
Muzzle velocity	~903 m/s
Max. dispersion at 550 m	Grade A ≤ 2 MOA/Grade B SD ≤ 250 mm
Penetration	10.6 mm RHA @ 30° @ 1000 m
Tracer	Visible 50-200, ≥1500
Service temperature	-54°C/+63°C
Safety temperature	-54°C/+71°C

STATUS

Qualified in Browning M2HB, M2 QCB, M2 NM218, FNH M3M & M3P, CIS-50, Barrett M82, Barrett M107, AI AW-50, AI AX-50, AS-50, HECATE PGM, McMillan TAC-50, Rangemaster .50 and Steyr .50. More than 15 user countries in different applications. Combat proven.

12.7 mm x 99 MP-DT (IR) (.50 cal)

Grade A (Match Grade) & Grade B (Linked)

MISSION

Multipurpose round with an infrared tracer is for use against material targets. The high explosive together with a tungsten carbide penetrator and incendiary compositions give blast, fragmentation and incendiary effects as well as excellent armor penetration capabilities and extreme accuracy at long ranges. The IR tracer burns for more than 1000 m, making the gunner position not traceable as well as not lighting up the surroundings as conventional tracers. This makes the round ideal for night operations.

TECHNICAL CHARACTERISTICS

Projectile weight	~44 g
Muzzle velocity	~903 m/s
Max. dispersion at 550 m	Grade A ≤ 2 MOA/Grade B SD ≤ 250 mm
Penetration	10.6 mm RHA @ 30° @ 1000 m
Tracer	Infrared, visible with NVG ≤ 200, ≥ 1000
Service temperature	-54°C/+63°C
Safety temperature	-54°C/+71°C

STATUS

Qualified in Browning M2HB, M2 QCB, M2 NM218, FNH M3M & M3P, CIS-50, Barrett M82, Barrett M107, AI AW-50, AI AX-50, AS-50, HECATE PGM, McMillan TAC-50, Rangemaster .50 and Steyr .50. Combat proven.

12.7 mm x 99 SG–M (.50 cal)

Grade A (Match Grade) & Grade B (Linked)

MISSION

Ball round with marker/spotter function, extreme accuracy at long ranges. Upon impact the round will produce a marker flash making it easy to spot.

TECHNICAL CHARACTERISTICS

Projectile weight	~43 g
Muzzle velocity	~903 m/s
Max. dispersion at 550 m	Grade A ≤ 1,8 MOA/Grade B SD ≤ 200 mm
Penetration	N/A
Tracer	N/A
Service temperature	-54°C/+63°C
Safety temperature	-54°C/+71°C

STATUS

Qualified in Browning M2HB, M2 QCB, M2 NM218, FNH M3M & M3P, CIS-50, Barrett M82, Barrett M107, AI AW-50, AI AX-50, AS-50, HECATE PGM, McMillan TAC-50, Rangemaster .50 and Steyr .50. Combat proven.

12.7 mm x 99 RR (.50 cal)

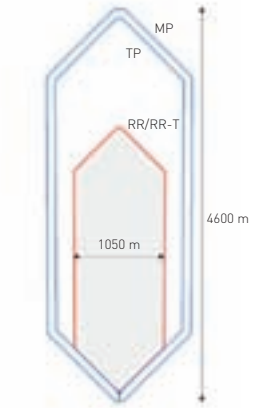
NM243 Grade A (Match Grade) & Grade B (Linked)

MISSION

Reduced range ball round with enhanced accuracy for use in both training and operational environment. Ballistics match standard ball round out to 800 m. Maximum Ricochet Range 3100 m.

TECHNICAL CHARACTERISTICS

Projectile weight	~38 g
Muzzle velocity	~940 m/s
Max. dispersion at 550 m	Grade A ≤ 1.8 MOA/Grade B SD ≤ 250 mm
Penetration	N/A
Tracer	N/A
Service temperature	-54°C/+63°C
Safety temperature	-54°C/+71°C



STATUS

Qualified in Browning M2HB, M2 QCB, M2 NM218, FNH M3M & M3P, CIS-50, Barrett M82, Barrett M107, AI AW-50, AI AX-50, AS-50, HECATE PGM, McMillan TAC-50, Rangemaster .50 and Steyr .50. Combat proven.

12.7 mm x 99 RR-T (.50 cal)

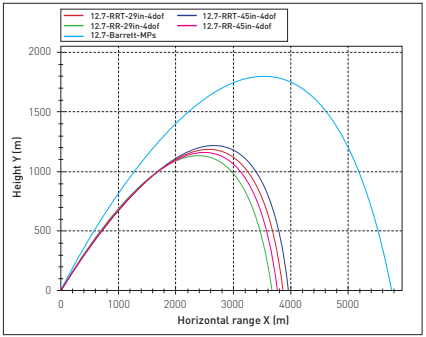
NM244 Grade A (Match Grade) & Grade B (Linked)

MISSION

Reduced range ball round with enhanced accuracy for use in both training and operational environment. Ballistics match standard ball round out to 800 m. Maximum Ricochet Range 3200 m. The tracer has a 50 m dark zone, which prevents gunner blindness and traceability from the target area. The tracer burns for more than 1000 m, making it ideal for night operations.

TECHNICAL CHARACTERISTICS

Projectile weight	~38 g
Muzzle velocity	~940 m/s
Max. dispersion at 550 m	Grade A ≤ 2.2 MOA/Grade B SD ≤ 300 mm
Penetration	N/A
Tracer	Visible 50-200, ≥1000
Service temperature	-54°C/+63°C
Safety temperature	-54°C/+71°C



STATUS

Qualified in Browning M2HB, M2 QCB, M2 NM218, FNH M3M & M3P, CIS-50, Barrett M82, Barrett M107, AI AW-50, AI AX-50, AS-50, HECATE PGM, McMillan TAC-50, Rangemaster .50 and Steyr .50. Combat proven.

12.7 mm x 99 RR-DT (.50 cal)

Grade A (Match Grade) & Grade B (Linked)

MISSION

Reduced range ball round with enhanced accuracy for use in both training and operational environment. Ballistics match with standard ball round out to 800 m. Maximum Ricochet Range 3200 m. The IR tracer is only visible with Night Vision Equipment and completely invisible to the naked eye. The IR tracer burns for more than 1000 m, making the gunner position not traceable as well as not lighting up the surroundings as conventional tracers. This makes the round ideal for night operations.

TECHNICAL CHARACTERISTICS

Projectile weight	~38 g
Muzzle velocity	~940 m/s
Max. dispersion at 550 m	Grade A ≤ 2.2 MOA/Grade B SD ≤ 300 mm
Penetration	N/A
Tracer	Infrared, visible with NVG ≤ 200, ≥ 1000
Service temperature	-54°C/+63°C
Safety temperature	-54°C/+71°C

STATUS

Qualified in Browning M2HB, M2 QCB, M2 NM218, FNH M3M & M3P, CIS-50, Barrett M82, Barrett M107, AI AW-50, AI AX-50, AS-50, HECATE PGM, McMillan TAC-50, Rangemaster .50 and Steyr .50. Combat proven.

12.7 mm x 99 (.50 cal)

Plastic Blank Ammunition

MISSION

Plastic Blank Ammunition is non-lethal ammunition designed to provide military forces and law enforcement communities realistic training and maximum safety at low cost. Plastic Blank Ammunition allows training such as force on force exercises and firearm familiarization.

TECHNICAL CHARACTERISTICS

Service temperature	Operational temperature -30°C/+63°C
Safety temperature	-46°C/+71°C
Storage temperature	Temperature and storage conditions as for live ammunition

STATUS

Ammunition for use in cal .50 M2 and QCB weapons. Nammo has developed plastic link and adapted the cartridge thus reducing the wear and tear of the feeding system. Nammo delivers Recoil Amplifiers, Blank Firing attachement and cartridge discriminator.

12.7 mm x 99 (.50 cal)

Plastic Short Range Training Ammunition/Tracer (P-SRTA-T)

MISSION

P-SRTA-T is lethal and must not be used against human targets. P-SRTA is designed to give military forces and security forces cost effective training and a reduced wear and tear of the weapons. The ammunition is live ammunition with a reduced safety zone. The ammunition and weapon can only be used with a dedicated amplifier. The use of P-SRTA-T allows training in dedicated training areas for suburban areas as well as in built up areas. It can be used on standard 5.56 mm/7.62 mm firing ranges at training ranges up to 150 m and a weapon danger area of 700 m.

TECHNICAL CHARACTERISTICS

Projectile weight	3.4 g Ball I 4.3 g Tracer
Service temperature	Operational temperature -30°C/+63°C
Safety temperature	-46°C/+71°C
Storage temperature	Temperature and storage conditions as for live ammunition

STATUS

For use with Firing Attachment supplied by Nammo. Lethal within training distance.
In service.

20 mm x 102 MP LD M70 A1

MISSION

The 20 mm x 102 Multipurpose low-drag round is the superior aircraft ammunition designed to defeat multi-spectrum target types up to light armored vehicles. The low drag design of the projectile maintains a higher velocity and reduces the time of flight compared to the M50 series ammunition. Reduced time of flight gives higher probability of hit and higher impact velocity improves the lethality. The round is initiated by pyrotechnics and has a natural delay ensuring delivery of the incendiary, blast and fragmentation effects inside the target.

TECHNICAL CHARACTERISTICS

Projectile weight	Approx 100 g
Muzzle velocity	1039 m/s
Max. dispersion	Mean R 0.167 m at 200 m
Penetration	Min. 10 mm RHA at 1000 m
Service temperature	-54°C/+71°C

STATUS

Qualified for use in M61, M197 and M39 guns.

20 mm x 102 MP LD M70

MISSION

The 20 mm x 102 Multipurpose low-drag ammunition is designed to defeat multi-spectrum target types up to light armored vehicles. This ammunition is equal to 20 mm MP LD M70 A1 except that the driving band is made of copper. The round is initiated by pyrotechnics and has a natural delay ensuring delivery of the effects inside the target.

TECHNICAL CHARACTERISTICS

Projectile weight	Approx 100 g
Muzzle velocity	1039 m/s
Max. dispersion	Mean R 0.167 m at 200 m
Penetration	Min. 10 mm RHA at 1000 m
Service temperature	-54°C/+71°C

STATUS

Qualified for use in M61, M197 and M39 guns.

20 mm x 102 MP M70 A2

MISSION

The 20 mm x 102 Multipurpose ammunition is designed to defeat targets ranging from different kinds of aircraft targets to light armored vehicles. The projectile has ballistics equal to M50 series rounds and are used on both fighters and attack helicopters.
– Initiated by pyrotechnics with a natural delay ensuring delivery of the effects inside the target.

TECHNICAL CHARACTERISTICS

Projectile weight	Approx 102 g
Muzzle velocity	1030 m/s
Max. dispersion	Mean R 0.139 m at 200 m
Service temperature	-54°C/+71°C

STATUS

Qualified for use in M61, M197 and M39 guns.

20 mm x 102 TP-RRR LD M2

MISSION

The 20 mm x 102 TP-RRR ammunition is designed for training purposes and has a Reduced Ricochet Risk. The projectile disintegrates when impacting the target, creating high drag fragments with no ballistic properties and unable to reach the aircraft flight path. The round has also been successfully used in offensive missions when low collateral damage is of great importance. It is a ballistic match to the 20 mm MP LD M70 A1.

TECHNICAL CHARACTERISTICS

Muzzle velocity	1039 m/s
Max. dispersion	Mean R 0.167 m at 200 m
Service temperature	-54°C/+71°C

STATUS

Qualified for use in M61, M197 and M39 guns.

20 mm x 102 TP-RRR LD

MISSION

The 20 mm x 102 TP-RRR ammunition is designed for training purposes with a Reduced Ricochet Risk. This round is equal to the 20 mm x 102 TP-RRR LD M2 except that the driving band is made of copper. It is a ballistic match to the 20 mm MP LD M70.

TECHNICAL CHARACTERISTICS

Muzzle velocity	1039 m/s
Max. dispersion	Mean R 0.167 m at 200 m
Service temperature	-54°C/+71°C

STATUS

Qualified for use in M61, M197 and M39 guns.

20 mm x 102 TP LD M12

MISSION

The 20 mm x 102 TP LD is training ammunition equal to the PGU 27A/B. With its low drag design, it is a ballistic match to the 20 mm MP LD M70 A1.

TECHNICAL CHARACTERISTICS

Projectile weight	Approx 101 g
Muzzle velocity	1039 m/s
Max. dispersion	Mean R 0.167 m at 200 m
Service temperature	-54°C/+71°C

STATUS

Qualified for use in M61, M197 and M39 guns.

20 mm x 102 TP-T LD M13

MISSION

The 20 mm x 102 TP-T LD is training ammunition with tracer which is equal to the PGU 30A/B and is used mainly for intercept missions.

TECHNICAL CHARACTERISTICS

Projectile weight	Approx 101 g
Muzzle velocity	1039 m/s
Max. dispersion	Mean R 0.167 m at 200 m
Service temperature	-54°C/+71°C

STATUS

Qualified for use in M61, M197 and M39 guns.

20 mm x 102 TP

MISSION

Training ammunition for use on aircraft equipped with 20 mm Vulcan guns.

TECHNICAL CHARACTERISTICS

Projectile weight	~100 g
Muzzle velocity (24 m)	1030 m/s
Max. dispersion	0.5 mils a 200 m
Penetration	N/A
Tracer	N/A
Service temperature	-54°C/+71°C

STATUS

Qualified for M61 & M39 guns.

20 mm x 102 TP-T

MISSION

Traced training ammunition for use on aircraft equipped with 20 mm Vulcan guns.

TECHNICAL CHARACTERISTICS

Projectile weight	~96,4 g
Muzzle velocity (24 m)	1030 m/s
Max. dispersion	0.5 mils a 200 m
Penetration	N/A
Tracer	>1.9 sec
Service temperature	-54°C/+71°C

STATUS

Qualified for M61 & M39 guns.

20 mm × 128 TP/TP-T

MISSION

Training ammunition for use on Oerlikon anti-aircraft guns. Ballistically matched to the HEI/SD / HEI-T/SD / API-T / SAPHEI/SD combat rounds.

TECHNICAL CHARACTERISTICS

Projectile weight	~125 g
Muzzle velocity	1050 or 1100 m/s
Max. dispersion	Typical H&V deviation < 1 mils
Penetration	N/A
Tracer	> 4 s
Service temperature	-54°C/+71°C

STATUS

Qualified for use in Oerlikon 20/85 & Oerlikon 20/120 by Spanish MoD.

20 mm × 128 HEI/SD / HEI-T/SD

MISSION

Highly efficient High Explosive/Incendiary rounds for antiaircraft use on the Oerlikon guns.

TECHNICAL CHARACTERISTICS

Projectile weight	~102 g/~112 g
Muzzle velocity	1050 or 1100 m/s
Max. dispersion	Typical H&V deviation < 1 mils
Penetration	N/A
Tracer/self-destruction	> 2.5 s/Between 4 s and 9 s
Service temperature	-54°C/+71°C

STATUS

Qualified for use in Oerlikon 20/85 & Oerlikon 20/120 by Spanish MoD.

20 mm × 128 API-T

MISSION

Traced Armor Piercing/Incendiary round for anti-aircraft use on 20 mm Oerlikon guns.

TECHNICAL CHARACTERISTICS

Projectile weight	~112.5 g
Muzzle velocity	1050 or 1100 m/s
Max. dispersion	Typical H&V deviation < 1 mils
Penetration	40 mm NATO plate at 30° at 200 m
Tracer	> 2.5 s
Service temperature	-54°C/+71°C

STATUS

Qualified for use in Oerlikon 20/85 & Oerlikon 20/120 by Spanish MoD.

20 mm × 128 SAPHEI/SD

MISSION

Amor Piercing/High Explosive/Incendiary round for antiaircraft use on 20 mm Oerlikon guns.

TECHNICAL CHARACTERISTICS

Projectile weight	~128 g
Muzzle velocity	1050 or 1100 m/s
Max. dispersion	Typical H&V deviation < 1 mils
Penetration	20 mm NATO plate at 30° at 150 m
Tracer/self-destruction	N/A / Between 4 s and 9 s
Service temperature	-54°C/+63°C
Safety temperature	-54°C/+71°C

STATUS

Qualified for use in Oerlikon 20/85 & Oerlikon 20/120 by Spanish MoD.

20 mm x 139 MP-T SD NM75 F2/DM91

MISSION

The 20 mm x 139 Multipurpose ammunition with tracer and self-destruct device is designed to defeat a broad specter of targets, ranging from all kinds of soft skinned air and ground targets and up to light armored and semi hard targets. The tracer gives the shooter target correction information and the self-destruct device minimizes the risk for collateral damage. The hardened steel body with explosive filling gives significant penetration, blast, incendiary and fragmentation effects. The pyrotechnical initiation chain gives a natural delay ensuring all effects are delivered inside the target.

TECHNICAL CHARACTERISTICS

Muzzle velocity	1045 m/s
Tracer and self-destruct	min 3.7 sec. max 5.3 sec.
Max. dispersion	< 0,2 m x 0.6745 fired at 200 m
Fragments	6 to 40 fragments penetrating 19 mm thick chipboard plate
Service temperature	-40°C/+50°C

STATUS

Designated by BAAINBW in Germany with the number DM91 and the Norwegian army with NM75 F2. Qualified for use in the Mk 20 Rh202 and the Giat F2 gun.

25 mm x 137 MP-T SD MK2

MISSION

The 25 mm x 137 Multipurpose ammunition with tracer and self-destruct device, is designed to defeat a broad range of targets ranging from all kinds of soft skinned targets and up to semi-hard armored targets and building constructions. The round is well known for its low dispersion and the self-destruct function minimizes the risk for collateral damage.
– Initiated by pyrotechnics with a natural delay ensures delivery of the incendiary, blast and fragmentation effects inside the target.

TECHNICAL CHARACTERISTICS

Muzzle velocity	1100 m/s
Tracer and self destruction	Min. visible in 5.3 sec. Self destruction after min. 5.3 sec.
Max. dispersion	Max. 1.0 m at a range of 1000 m. (H & V)
Penetration	20 mm RHA at 400 m, 16 mm at 1000 m and 11 mm at 1700 m.
Service temperature	-54°C/+70°C

STATUS

Qualified for use in Bushmaster M242 and the KBA-gun.

25 mm × 137 HEI/HEI-T

MISSION

Superior performance High Explosive/Incendiary rounds with steel cartridge case for anti-personnel and anti-materiel use in Bushmaster and Oerlikon KBA guns.

TECHNICAL CHARACTERISTICS

Projectile weight	~180 g/~198 g
Muzzle velocity	1100 m/s
Max. dispersion	Typical H&V deviation < 0.8 mils
Penetration	N/A
Tracer	> 1.7 s
Service temperature	-54°C/+71°C

STATUS

Qualified for use in Bushmaster M242 & Oerlikon KBA.

25 mm × 137 HEI/SD / HEI-T/SD

MISSION

Superior performance High Explosive/Incendiary rounds with steel cartridge case for anti-personnel and anti-materiel use on Bushmaster and Oerlikon KBA guns.

TECHNICAL CHARACTERISTICS

Projectile weight	~180 g
Muzzle velocity	1100 m/s
Max. dispersion	Typical H&V deviation < 0.8 mils
Penetration	N/A
Tracer/Self-destruction	> 1.7 s/Between 4.5 s and 11 s
Service temperature	-54°C/+71°C

STATUS

Qualified for use in Bushmaster M242 & Oerlikon KBA.

25 mm × 137 SAPHEI/SD / SAPHEI-T/SD

MISSION

Armor Piercing/High Explosive/Incendiary rounds with steel cartridge case for use against a variety of targets (light armor and materiel) in Bushmaster and Oerlikon KBA guns.

TECHNICAL CHARACTERISTICS

Projectile weight	~170 g/~180 g
Muzzle velocity	1100 m/s
Max. dispersion	Typical H&V deviation < 0.8 mils
Penetration	10 mm NATO plate at 60° at 200 m
Tracer/Self-destruction	> 1.7 s/Between 5 s and 11 s
Service temperature	-54°C/+71°C

STATUS

Qualified for use in Bushmaster M242 and the KBA-gun.

25 mm × 137 SAPHEI/SAPHEI-T

MISSION

Semi Armor Piercing/High Explosive/Incendiary rounds with steel cartridge case for use against a variety of targets (light armor and materiel) in Bushmaster and Oerlikon KBA guns.

TECHNICAL CHARACTERISTICS

Projectile weight	~180 g
Muzzle velocity	1100 m/s
Max. dispersion	Typical H&V deviation < 0.8 mils
Penetration	10 mm NATO plate at 60° at 200 m
Tracer/Self-destruction	> 1.7 s/Between 5 s and 11 s
Service temperature	-54°C/+71°C

STATUS

Qualified for use in Bushmaster M242 and Oerlikon KBA.

25 mm x 137 APEX

PGU-47/U

MISSION

The APEX is designed to defeat a multi-spectrum of target types ranging from air targets to both soft and armored ground targets. It has an explosive filled warhead, with a delayed initiation, so the blast, fragments and incendiary effect are delivered inside the target. A penetrator in the nose gives enhanced penetration capabilities. The APEX is designed specifically for the F-35 fighter, but it may also be used on platforms with a M242 Bushmaster gun.

TECHNICAL CHARACTERISTICS

Projectile weight	222 g
Muzzle velocity	970 m/s for the F-35
Max. dispersion from single barrel	< 0.5 mils
Penetration	14 mm steel 45° NATO @ 9000 ft 8 mm RHA 45° NATO @ 9000 ft
Tracer	> 3 s
Service temperature	-62°C/+80°C

STATUS

Ongoing integration activities for all three F-35 variants.

25 mm x 137 TP-T RRR

MISSION

The ultimate choice of training ammunition for the F-35 with a ballistic match to 25 mm x 137 APEX/PGU-47/U. The Reduced Ricochet Risk concept is developed into the 25 mm x 137 caliber, resulting in an extremely safe training round with significant offensive capabilities. The penetration of armored targets and fragmentation in softer targets makes this round a good supplement to the combat round in scenarios were low collateral damage is of great importance. It is the only REACH compliant TP round available for the F-35.

TECHNICAL CHARACTERISTICS

Projectile weight	223 g
Muzzle velocity	970 m/s for the F-35
Max. dispersion from single barrel	< 0.5 mils
Tracer	> 3 s
Service temperature	-62°C/+80°C

STATUS

Undergoing ground qualification in the GAU-22/A and will be qualified in the F-35 CTOL.

25 mm × 137 TP/TP-T

MISSION

Steel case training ammunition for use on armored vehicles equipped with Bushmaster or Oerlikon KBA guns. Ballistically matched to the HEI and SAPHEI rounds.

TECHNICAL CHARACTERISTICS

Projectile weight	~190 g/~180 g
Muzzle velocity	1100 m/s
Max. dispersion	Typical H&V deviation < 0.8 mils
Penetration	N/A
Tracer	> 1.7 s
Service temperature	-54°C/+71°C

STATUS

Qualified for use in Bushmaster M242 and Oerlikon KBA.

25 mm x 137

Plastic Blank Ammunition

MISSION

Plastic Blank Ammunition is non-lethal ammunition designed to provide military forces and law enforcement realistic training and maximum safety at low cost. Plastic Blank Ammunition allows training such as force on force exercises and firearm familiarization.

TECHNICAL CHARACTERISTICS

Service temperature	Operational temperature -30°C/+63°C
Safety temperature	-46°C/+71°C
Storage temperature	Temperature and storage conditions as for live ammunition

STATUS

Qualified in 25 mm M242 Bushmaster Automatic Cannon equipped with ATK Hangfire Override Module (HOM), which gives original rate of fire (200rpm). In service.

25 mm x 137

Plastic Short Range Training Ammunition /Tracer (P-SRTA-T)

MISSION

P-SRTA-T is lethal and must not be used against human targets. P-SRTA-T is designed to give military forces and security forces cost effective training and a reduced wear and tear of the weapons. The ammunition is live ammunition with a training distance of 300 m and a reduced safety zone. This allows training in dedicated training areas such as suburban or in built up areas. There is low ricochet danger and it has a weapon danger area of 1200 m.

TECHNICAL CHARACTERISTICS

Projectile weight	27.5 g
Service temperature	Operational temperature -30°C/+63°C
Safety temperature	-46°C/+71°C
Storage temperature	Temperature and storage conditions as for live ammunition

STATUS

The 25 mm M242 Bushmaster Automatic Cannon equipped with ATK Hangfire Override Module (HOM) gives original rate of fire (200 rpm). Lethal within the training distance. Under development.

27 mm x 145, DM73, MP

MISSION

The 27 mm x 145 Multipurpose ammunition is the ideal choice for defeating both aircraft and semi-hard ground targets. The round has a large HE charge giving it a powerful blast, incendiary and fragmentation effect, and the pyrotechnical initiation with delay ensures the effects are delivered inside the target.

TECHNICAL CHARACTERISTICS

Projectile weight	Approx 260 g
Muzzle velocity	1025 m/s
Max. dispersion	Max. 1.0 m at a range of 1000 m (H & V)
Penetration	Min 20 mm RHA
Service temperature	-63°C/+70°C

STATUS

Qualified for use in Eurofighter Typhoon and the Tornado aircraft.

27 mm x 145, DM68, TP-RRR

MISSION

The 27 mm x 145 TP-RRR ammunition is designed for training purposes and has a Reduced Ricochet Risk. The projectile disintegrates when impacting the target, creating high drag fragments with no ballistic properties and unable to reach the aircraft flight path.

TECHNICAL CHARACTERISTICS

Projectile weight	Approx 260 g
Muzzle velocity	1025 m/s
Max. dispersion	Max. 1.0 m at a range of 1000 m (H & V)
Service temperature	-63°C/+70°C

STATUS

Qualified for use in the BK 27 gun. The qualification process for this ammunition for the JAS Gripen aircraft is ongoing.

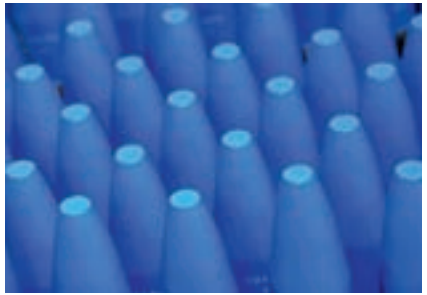
30 mm × 113 TP/TP-T

MISSION

Steel case training ammunition for use in airborne DEFA guns.

TECHNICAL CHARACTERISTICS

Projectile weight	~245 g
Muzzle velocity	800 m/s
Max. dispersion at 100 m	Typical H&V deviation ≤ 50 cm
Penetration	N/A
Tracer	> 4 s
Service temperature	-54°C/+71°C



STATUS

Qualified for use in DEFA guns.

30 mm × 173 HEI/HEI-T

MISSION

Steel case High Explosive/Incendiary rounds suitable for anti-materiel/anti-personnel use on Bushmaster II and MAUSER MK30 guns.

TECHNICAL CHARACTERISTICS

Projectile weight	~378 g
Muzzle velocity	1100 m/s
Max. dispersion	Typical H&V deviation < 0.5 mils
Penetration	N/A
Tracer	> 4 s
Service temperature	-46°C/+63° C

STATUS

Qualified for use in Mauser MK30.
Tested in Bushmaster II MK44.

30 mm × 173 HEI/SD / HEI-T/SD

MISSION

Steel case High Explosive/Incendiary rounds suitable for anti-materiel/anti-personnel use in Bushmaster II and MAUSER MK30 guns.

TECHNICAL CHARACTERISTICS

Projectile weight	~363 g
Muzzle velocity	1100 m/s
Max. dispersion	Typical H&V deviation < 0.5 mils
Penetration	N/A
Tracer/self destruct	> 4 s/Between 4 s and 9 s
Service temperature	-46°C/+63° C

STATUS

Qualified for use in Mauser MK30.
Tested in Bushmaster II MK44.

30 mm × 173 SAPHEI/SD / SAPHEI-T/SD

MISSION

Armor Piercing/High Explosive/Incendiary rounds with steel cartridge case for use against a variety of targets (light armor and materiel) in Bushmaster II and Mauser MK30.

TECHNICAL CHARACTERISTICS

Projectile weight	~363 g
Muzzle velocity	1100 m/s
Max. dispersion	Typical H&V deviation < 0.5 mils
Penetration	30 mm NATO plate at 30° at 200 m 20 mm NATO plate at 60° at 200 m
Tracer/self destruct	> 3 s/Between 4 s and 9 s
Service temperature	-46°C/+63° C

STATUS

Qualified for use in Mauser MK30.
Tested in Bushmaster II MK44.

30 mm x 173 MP-T/SD

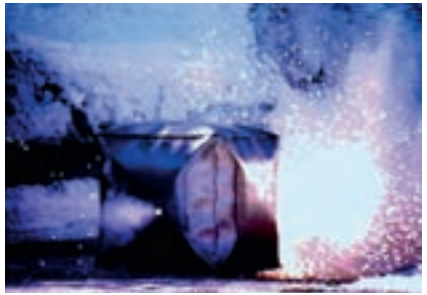
NM 222/MK 264

MISSION

This round is the ultimate choice for different target scenarios. The MP-T/SD round provides excellent penetration, blast, fragmentation and incendiary effects against a multiple range of targets.

TECHNICAL CHARACTERISTICS

Projectile weight	363 g
Muzzle velocity	1070 m/s
Max. dispersion	< 0.4 mils at 1000 m
Penetration	10 mm RHA 60° NATO at 1000 m
Tracer/self destruct	+ 3000 m
Service temperature	-46°C/+63° C



STATUS

Qualified in Bushmaster II MK44, Mauser MK 30-2 and DLS CAMGUN 30 GI-30. More than 13 user countries in different applications. Combat proven.

30 mm x 173 APFSDS-T

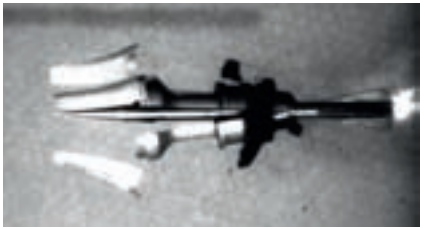
NM225/MK258 Mod 0

MISSION

The 30 mm x 173 APFSDS-T is designed to defeat the armor threats of today and tomorrow such as infantry fighting vehicles, armored helicopters and other vehicles with heavy protection. The round has an extremely low drag co-efficient giving short time of flight, high accuracy and superior penetration capabilities out to more than 4000 m. The tungsten penetrator is designed to provide high energy and maximum penetration capability.

TECHNICAL CHARACTERISTICS

Projectile weight	230 g
Muzzle velocity	1430 m/s
Max. dispersion	< 0.3 mils at 1000 m
Penetration	>100 mm RHA at 1000 m
Tracer/self destruct	N/A
Service temperature	-46°C/+63° C



STATUS

Qualified for use in the Bushmaster II MK44 and DLS CAMGUN 30 GI-30.

30 mm x 173 APFSDS-T

MK258 Mod 1 “Swimmer”

MISSION

The MK258 Mod 1 APFSDS-T Swimmer round is the most advanced ammunition technologies available. It will be effective towards various surface threats, small to medium sized boats, personal watercrafts that can be loaded with explosives, submerged targets, or it can be fired through the waves before impacting the target. The tungsten penetrator provides short time of flight, high impact energy and maximum penetration capability out to more than 4000 m.

TECHNICAL CHARACTERISTICS

Projectile weight	230 g
Muzzle velocity	1430 m/s
Max. dispersion	< 0.4 mils at 1000 m
Penetration	>100 mm RHA at 1000 m
Service temperature	- 46°C/+63° C

STATUS

Qualified for use in the Bushmaster II / MK44 and DLS CAMGUN 30 GI-30

Qualified for service with US NAVY/USMC

30 mm x 173 TP-T

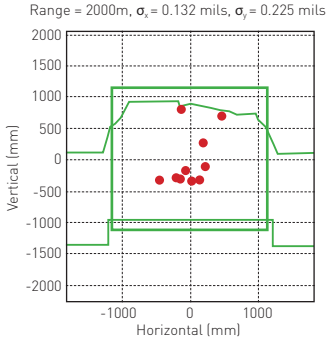
NM219/MK270

MISSION

The 30 mm x 173 TP-T round is developed to be a ballistic match to the MP-T/SD NM222/MK264. Precision tests show superb accuracy out to distances of 3000 m.

TECHNICAL CHARACTERISTICS

Projectile weight	363 g
Muzzle velocity	1070 m/s
Max. dispersion	< 0.4 mils at 1000 m
Penetration	N/A
Tracer/self destruct	N/A
Service temperature	-46°C/+63° C



STATUS

Qualified for the Bushmaster II MK44, Mauser MK30-2 and DLS CAMGUN 30 GI-30.

30 mm x 173 TPDS-T/APDS-T

NM245/MK320

MISSION

This round offers realistic and effective training with a ballistic match to the APFSDS-T out to 1200 m. It reduces the need for specific training areas with kinetic energy penetrators. It has the same safety template as the TP-T with a maximum range of 8500 m. It also features short range war capabilities against a wide range of armor targets.

TECHNICAL CHARACTERISTICS

Projectile weight	190 g
Muzzle velocity	1480 m/s
Max. dispersion	< 0.4 mils at 1000 m
Penetration	> 70 mm RHA at 1000 m
Tracer/self destruct	N/A
Service temperature	-46°C/+63° C

STATUS

Qualified for use in the Bushmaster II MK44 and DLS CAMGUN 30 GI-30.

30 mm x 173

Plastic Short Range Training Ammunition /Tracer (P-SRTA-T)

MISSION

P-SRTA-T is lethal and must not be used against human targets. P-SRTA-T is designed to give military forces and security forces cost effective training and a reduced wear and tear of the weapons. With the use of the HOM, the cannon will operate as with live ammunition. There is low ricochet danger. It may be used on standard 5.56 mm/7.62 mm firing ranges at training ranges up to 300 m and a weapon danger area of 1200 m.

TECHNICAL CHARACTERISTICS

Tracer self-destruction	Tracer burning to approx. 400 m
Service temperature	Operational temperature -30°C/+63°C
Storage temperature	Temperature and storage conditions as for live ammunition

STATUS

The 30 mm MK44 Bushmaster Automatic Cannon/ Bushmaster II equipped with ATK Hangfire Override Module (HOM) gives original rate of fire (200 rpm). Lethal within training distance.

30 mm x 173

Plastic Blank Ammunition

MISSION

Plastic Blank Ammunition is non-lethal ammunition designed to provide military forces and law enforcement communities realistic training and maximum safety at low cost. Plastic Blank Ammunition allows training such as force on force exercises and firearm familiarization.

TECHNICAL CHARACTERISTICS

Service temperature	Operational temperature -30°C/+63°C
Storage temperature	Temperature and storage conditions as for live ammunition

STATUS

Qualified in 30 mm Mk II Bushmaster Automatic Cannon/Bushmaster II. ATK Hangfire Override Module (HOM) gives original rate of fire (200rpm). Without the ATK Hangfire Override Module (HOM) original rate of fire is reduced (60 rpm).

35 mm × 228 HEI/SD / HEI-T/SD

(Point or Base detonating fuze)

MISSION

High Explosive/Incendiary rounds, with Point Detonating or Base Detonating fuze, suitable for anti-materiel/anti-personnel use in Oerlikon guns.

TECHNICAL CHARACTERISTICS

Projectile weight	~550 g/~535 g
Muzzle velocity	1180 m/s
Max. dispersion	Typical H&V deviation < 1 mils
Penetration	N/A
Tracer/Self destruction	> 4 s/Between 6 s and 12 s
Service temperature	-46°C/+63°C

STATUS

Qualified for use in Oerlikon guns 35/90 KDB type GDF-001, GDF-005 & GDF-007.

35 mm × 228 SAPHEI/SD

MISSION

Armor Piercing/High Explosive/Incendiary rounds for use against a variety of targets (light armor and materiel) in Oerlikon guns.

TECHNICAL CHARACTERISTICS

Projectile weight	~550 g
Muzzle velocity	1180 m/s
Max. dispersion	Typical H&V deviation < 1 mils
Penetration	40 mm NATO plate at 100 m
Tracer/Self destruction	N/A / Between 6 s and 18 s
Service temperature	-46°C/+63°C

STATUS

Qualified for use in Oerlikon guns 35/90 KDB type GDF-001, GDF-005 & GDF-007.

35 mm × 228 TP/TP-T

MISSION

Training ammunition for use in 35 mm Oerlikon guns. Successfully tested on Bushmaster III. Ballistically matched to the HEI and SAPHEI rounds.

TECHNICAL CHARACTERISTICS

Projectile weight	~550 g
Muzzle velocity	1180 m/s
Max. dispersion	Typical H&V deviation < 1 mils
Penetration	N/A
Tracer	> 6 s
Service temperature	-46°C/+63°C

STATUS

Supplied to Spanish MoD for 35 mm Oerlikon KDB gun. (Successfully tested on Bushmaster III.)

40 mm x 53 MK285 PPHE

Programmable Pre-fragmented High Explosive Airburst

MISSION

The MK285 Airburst ammunition is specifically designed for the MK47 gun. The MK285 round gives excellent fragmentation and provides airburst with pinpoint accuracy. The MK285 is designed to take out targets in defilade, with a fragment distribution sideways and rearwards.

TECHNICAL CHARACTERISTICS

Projectile weight	241 g
Muzzle velocity	240 m/s
Max. dispersion	1.0 mils
Number of fragments	1450
Tracer /self destruct	Optional/Electronic SD
Airburst accuracy	1 millisecond resolution
Service temperature	-32°C/+63°C
Safety temperature	-46°C/+71°C

STATUS

Qualified by the US Navy in 2006.
More than 100 000 rounds produced and in service.

40 mm x 53 C171 PPHE-RF

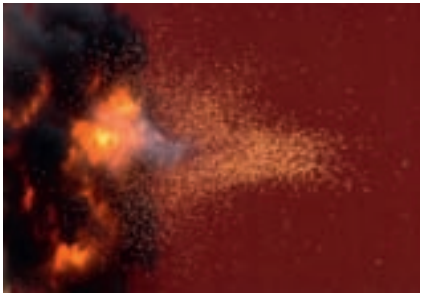
Programmable Pre-fragmented Airburst – Radio Frequency

MISSION

Airburst ammunition designed for use in any 40 mm AGL weapons. The wireless programming unit is easily adaptable to any fire control system. The C171 round gives excellent fragmentation and provides airburst with pinpoint accuracy. The C171 is designed to take out targets in defilade, with a fragment distribution sideways and rearwards.

TECHNICAL CHARACTERISTICS

Projectile weight	242 g
Muzzle velocity	240 m/s
Max. dispersion	1.0 mils
Number of fragments	1450
Tracer /self destruct	Optional/Electronic SD
Airburst accuracy	1 millisecond resolution
Service temperature	-32°C/+63°C
Safety temperature	-46°C/+71°C



STATUS

Qualified in the H&K AGL weapon.
In service.

40 mm x 53 MK314 HEDP-AB

High Explosive Dual Purpose Airburst

MISSION

The HEDP Airburst ammunition is specifically designed for the MK47 gun system. The MK314 HEDP round provides airburst with pinpoint accuracy. The HEDP warhead provides fragmentation, penetration, blast and incendiary effect with a high reliability. This allows for different target scenarios with only one type of 40 mm round.

TECHNICAL CHARACTERISTICS

Projectile weight	247 g
Muzzle velocity	240 m/s
Max. dispersion	1.0 mils
Number of fragments	1200
Penetration	> 65 mm RHA
Tracer /self destruct	NA/Electronic SD
Airburst accuracy	1 millisecond resolution
Service temperature	-32°C/+63°C
Safety temperature	-46°C/+71°C

STATUS

Qualification tests for the US Navy completed in June 2012.

40 mm x 53 HEDP-RF

High Explosive Dual Purpose Airburst – Radio Frequency

MISSION

The HEDP Airburst ammunition is designed for use in any 40 mm AGL weapon. The wireless programming unit is easily adaptable to any fire control system. The HEDP-RF round provides airburst with pinpoint accuracy. The HEDP warhead provides fragmentation and penetration with high reliability. This allows for different target scenarios with only one type of 40 mm round.

TECHNICAL CHARACTERISTICS

Projectile weight	247 g
Muzzle velocity	240 m/s
Max. dispersion	1.0 mils
Number of fragments	1200
Penetration	> 65 mm RHA
Airburst accuracy	1 millisecond resolution
Service temperature	-32°C/+63°C
Safety temperature	-46°C/+71°C

STATUS

Internal qualification by Nammo in 2013.

40 mm × 53 HEDP/HEDP-SD

MISSION

Dual Purpose HV grenades for use on Automatic Grenade Launchers against a variety of targets (Light Armor/Materiel/ Dismounted Infantry). Available with standard PD or selfdestruct fuzes.

TECHNICAL CHARACTERISTICS

Projectile weight	~245 g
Muzzle velocity	240 m/s
Max. dispersion	Typical H&V deviation < 1 mils
Penetration	50 mm (HB 269-352) at 65 m
Tracer/Self destruction	N/A / ~14 s
Service temperature	-46°C/+63°C
Safety temperature	-54°C/+71°C

STATUS

Qualified for use in grenade launcher MK19 and LAG 40. Tested in MK47 and H&K grenade launcher. HEDP round homologated by Spanish MoD.

40 mm × 53 HE / HE/SD

MISSION

HV High Explosive grenades for anti-personnel/anti-materiel use on Automatic Grenade Launchers. Available with standard PD or self-destruct fuzes.

TECHNICAL CHARACTERISTICS

Projectile weight	~240 g
Muzzle velocity	240 m/s
Max. dispersion	Typical H&V deviation < 1 mils
Penetration	N/A
Tracer/Self destruction	N/A / ~14 s
Service temperature	-46°C/+63°C
Safety temperature	-54°C/+71°C

STATUS

Qualified for use in grenade launcher MK19 and LAG 40. Tested in MK47 and H&K grenade launcher. HE round homologated by Spanish MoD.

40 mm × 53 TP / TP-T

MISSION

40 mm x 53 HV training ammunition suitable for use with NATO standard Automatic Grenade Launchers, such as the MK19, MK47, LAG 40 and H&K.

TECHNICAL CHARACTERISTICS

Projectile weight	~245 g/~249 g
Muzzle velocity	240 m/s
Max. dispersion	Typical H&V deviation < 1 mils
Penetration	N/A
Tracer	> 4 s
Service temperature	-46°C/+63°C
Safety temperature	-54°C/+71°C

STATUS

Qualified for use in grenade launcher MK19 and LAG 40. Tested in MK47 and H&K grenade launcher. TP-T round homologated by Spanish MoD.

40 mm x 53 TP-T

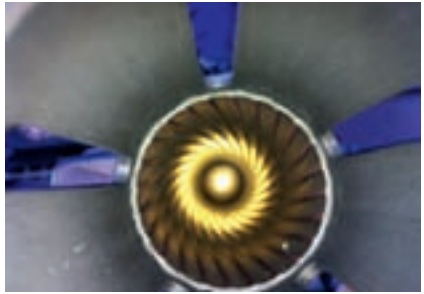
Target Practice with Tracer & marker function

MISSION

Training ammunition designed for use in any 40 mm AGL weapons. The cartridge has similar ballistic characteristics as standard 40 mm rounds. The TP-T has an environmental friendly impact signature and tracer capability.

TECHNICAL CHARACTERISTICS

Projectile weight	247 g
Muzzle velocity	240 m/s
Max. dispersion	1.0 mils
Impact signature	Orange
Tracer	> 10s
Service temperature	-46°C/+63°C
Safety temperature	-54°C/+71°C



STATUS

Qualified in the H&K AGL weapon.

40 mm × 53 Drill cartridge

MISSION

The 40 mm x 53 drill cartridge is used as a drill round to train users in handling ammunition and loading the automatic grenade launcher, such as the MK19, H&K GMG and the MK47. The cartridge is completely inert and simulates a loaded round of 40 mm HE ammunition in size, shape and weight. The round can be reused by twisting and pushing the link back to the initial position.

TECHNICAL CHARACTERISTICS

Cartridge weight	350 g

40 mm L/60

HEI and HE-T

MISSION

Nammo offers a variety of 40 mm L/60 ammunition, both for training and combat situations.
The High Explosive Round (HE), equipped with an Impact fuze, can be delivered:

- With or without Impact delay function
- With or without Self-destruct function (SD)
- With or without Tracer (T)
- With or without Incendiary effect (I)

TECHNICAL CHARACTERISTICS

Total weight	Approx. 2.1 kg
Total length	447 mm
Muzzle velocity	860 m/s
Tracer	Tracer > 4s
Service temperature	-40°C/+60°C

STATUS

Nammo 40 mm ammunition is qualified for all 40 mm Bofors guns.

40 mm L/60

APHC/APHC-T

MISSION

Nammo offers a variety of 40 mm L/60 ammunition, both for training and combat situations.
The Armor Piercing High Capacity round (APHC) consists of an aluminum alloy shell body and a heavy metal Armor Piercing Slug. As a side effect, the aluminum may provide an incendiary effect in the target.

TECHNICAL CHARACTERISTICS

Total weight	Approx. 2.1 kg
Total length	427 mm
Muzzle velocity	860 m/s
Penetration (APHC-T)	> 40 mm at 0%NATO Dist:1000 m (H_B300)
Tracer	Tracer > 4s
Service temperature	-40°C/+60°C

STATUS

Nammo 40 mm ammunition is qualified for all 40 mm Bofors guns.

40 mm L/60

TP-T

MISSION

Nammo offers a variety of 40 mm L/60 ammunition, both for training and combat situations.
The Target Practice (TP) round can be used for low-cost practice firing against surface and aerial targets. Tracer function is optional.

TECHNICAL CHARACTERISTICS

Total weight	Approx. 2.1 kg
Total length	447 mm
Muzzle velocity	860 m/s
Tracer	Tracer > 4s
Service temperature	-40°C/+60°C

STATUS

Nammo 40 mm ammunition is qualified for all 40 mm Bofors guns.

40 mm L/70

HE-T

MISSION

Nammo offers a variety of 40 mm L/70 ammunition, both for training and combat situations.
The High Explosive Round with Tracer (HE-T), equipped with an Impact fuze, can be delivered:

- With or without Impact delay function
- With or without Self-Destruct function (SD)
- With or without Incendiary effect (I)

TECHNICAL CHARACTERISTICS

Total weight	Approx. 2.5 kg
Total length	534 mm
Muzzle velocity	1005 m/s
Tracer	Tracer > 4s
Service temperature	-40°C/+60°C

STATUS

Nammo 40 mm ammunition is qualified for all 40 mm Bofors and Breda L/70 guns.

40 mm L/70

MP-T

MISSION

Nammo offers a variety of 40 mm L/70 ammunition, both for training and combat situations.
The 40 mm Multipurpose round (MP) has a superb effect on a broad scale of targets. Besides normal targets, it also has an armor penetrating capability with a devastating behind target effect due to heavy fragments and incendiary components.

TECHNICAL CHARACTERISTICS

Total weight	Approx. 2.5 kg
Total length	534 mm
Muzzle velocity	1005 m/s
Tracer	Tracer > 4s
Service temperature	-40°C/+60°C

STATUS

Nammo 40 mm ammunition is qualified for all 40 mm Bofors and Breda L/70 guns.

40 mm L/70

TP-T

MISSION

Nammo offers a variety of 40 mm L/70 ammunition, both for training and combat situations.
The Target Practice Tracer round (TP-T) is ballistically matched to the HE shell but with the explosives removed and the fuze replaced with a nose plug.

TECHNICAL CHARACTERISTICS

Total weight	Approx. 2.5 kg
Total length	534 mm
Muzzle velocity	1005 m/s
Tracer	Tracer > 4s
Service temperature	-40°C/+60°C

STATUS

Nammo 40 mm ammunition is qualified for all 40 mm Bofors and Breda L/70 guns.

57 mm L/70

HE

MISSION

This ammunition is designed for all versions of the Bofors 57 mm L/70 guns, which are used by Navies world-wide. Nammo, together with BAE-Systems Bofors, are the only OEM's of ammunition for the Bofors 57 mm L/70 guns.
The High Explosive (HE) round with the High sensitive Impact fuze can be delivered:

- With or without Impact delay function
- With or without Self-destruct function (SD)

TECHNICAL CHARACTERISTICS

Total weight	Approx. 6.1 kg
Total length	675 mm
Muzzle velocity	1025 m/s
Service temperature	-40°C/+60°C

STATUS

Nammo 57 mm ammunition is qualified for all 57 mm Bofors guns.

57 mm L/70

TP-T

MISSION

This ammunition is designed for all versions of the Bofors 57 mm L/70 guns, which are used by Navies world-wide. Nammo, together with BAE-Systems Bofors, are the only OEM's of ammunition for the Bofors 57 mm L/70 guns.
The Target Practice Tracer round (TP-T) is ballistically matched to the HE shell, but with the explosives removed and the fuze replaced with a nose plug.

TECHNICAL CHARACTERISTICS

Total weight	Approx. 6.1 kg
Total length	675 mm
Muzzle velocity	1025 m/s
Service temperature	-40°C/+60°C

STATUS

Nammo 57 mm ammunition is qualified for all 57 mm Bofors guns.


Nammo
155 mm

120 mm IM HE-T

Insensitive Munition High Explosive-Tracer

MISSION

The 120 mm IM HE-T complements the tank's current main gun ammunition with an IM compliant full bore HE – Multipurpose warhead capable of defeating a target set that includes bunkers, fortifications, light armor, technical vehicles and personnel. The IMHE-T will increase the flexibility and capacity of using the main battle tank in current and future combat environments.

TECHNICAL CHARACTERISTICS

Cartridge weight	Approx. 26.7 kg
Projectile weight	Approx. 15.9 kg
Muzzle velocity	1030 m/sec
Target accuracy	Typical at 2000 m ≤ 0,30 mils
Fuze	Dual-mode. Superquick and delay
Tracer	Burning distance > 3500 m
Service temperature	-46ºC/+63ºC
Safety temperature	-54ºC/+71ºC

STATUS

Qualified.
The round is in service in several countries.

120 mm IM TP-T

Insensitive Munitions Target Practice-Tracer

MISSION

The IM TP-T is a cost effective full bore inert round with ballistic match to the IM HE-T. It has an inert fuze, but with the possibility of setting it in delay or superquick mode. The IM TP-T is a perfect round for realistic training and target practice.

TECHNICAL CHARACTERISTICS

Cartridge weight	Approx. 26.7 kg
Projectile weight	Approx. 15.9 kg
Muzzle velocity	1030 m/sec
Target accuracy	Typical at 2000 m ≤ 0,30 mils
Tracer	Burning distance > 3500 m
Service temperature	-46ºC/+63ºC
Safety temperature	-54ºC/+71ºC

STATUS

Qualified.
The round is in service in several countries.

120 mm KE-TP

Kinetic Energy Target Practice

MISSION

The KE-TP is a cost effective round which fulfills modern training needs for the crews operating main battle tanks. The round meets the strict requirements for a training round regarding ballistic match, dispersion and safety range.

TECHNICAL CHARACTERISTICS

Cartridge weight	18.3 kg
Projectile weight	6.1 kg
Muzzle velocity	1700 m/sec
Max. dispersion	< 0,30 mils
Tracer	Burning distance > 3000 m
Safety range	< 8000 m
Service temperature	-40°C/+51°C
Safety temperature	-40°C/+63°C

STATUS

Qualified.
In serial production.
Produced under license from Nexter.

120 mm IM Canister

The 120 mm Close Combat round

MISSION

The 120 mm Canister is effective against multiple targets in close combat terrain. Originally it was designed for close-in defense of tanks against assaulting infantry and as an anti-structure round with limited collateral damage. In current operations, it has also shown its superiority on other targets. The Canister round makes the main battle tank more flexible in current and future combat environments.

TECHNICAL CHARACTERISTICS

Cartridge weight	22.9 kg
Muzzle velocity	1410 m/s
Tungsten balls	Approx: 1100
Effective range	500 m
Service temperature	-46ºC/+63ºC
Safety temperature	-54ºC/+71ºC

STATUS

Qualified.
Based on GD-OTS's M1028

155 mm IM HE-ER

Insensitive Munition High Explosive Extended Range

MISSION

Designed and optimized for maximum range and minimum dispersion, allowing the shell to defeat light armor and personnel at ranges up to 40 km, when fired from an L52 gun (PzH 2000, Archer e.g). Incorporates interchangeable base bleed and hollow base.

TECHNICAL CHARACTERISTICS

Projectile weight with fuze	44.4 kg
Muzzle velocity	950 m/s (DM72/6 in L52)
Max. Range with Base bleed	L52 gun: 41 km/L39 gun: 30 km
Max. Range with Hollow base	L52 gun: 32 km/L39 gun: 22 km
IM Explosive	10 kg MCX-6100
Service temperature	-46°C/+63°C

STATUS

Qualification in progress.
Expected completed by Q1 2016.

155 mm Illum-ER/IR Illum-ER

Illumination Extended Range/ IR Illumination Extended Range

MISSION

Long range illumination shell that precisely delivers the illumination payload at long distances (up to 40 km), giving instant and intense light over a large area. Available in two versions; white- and IR-light with interchangeable Base bleed and Hollow base

TECHNICAL CHARACTERISTICS

Projectile weight with fuze	44.4 kg
Muzzle velocity	950 m/s (DM72/6 in L52)
Max. Range with Base bleed	L52 gun: 40 km/L39 gun: 30 km
Illumination time	White light: 60s/IR light: 90 s
Illuminating area	White light/IR: > 1500 m
Intensity	2,2*10^8 cd
Service temperature	-46ºC/+63ºC

STATUS

Qualification in progress.
Expected completed by Q1 2018.

155 mm RP Smoke-ER

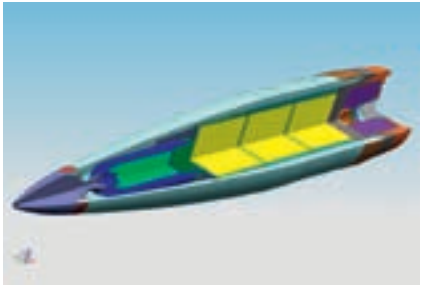
Red Phosphorus Smoke-Extended Range

MISSION

Long range smoke shell that precisely delivers the smoke canisters at long distances (up to 40 km), effectively establishing a multispectral smoke screen. The smoke canisters have braking flaps, making them effective in deep snow and marsh. The shell also incorporates interchangeable Base bleed and Hollow base.

TECHNICAL CHARACTERISTICS

Projectile weight with fuze	44.4 kg
Muzzle velocity	950 m/s (DM72/6 in L52)
Max. Range with Base bleed	L52 gun: 40 km/L39 gun: 30 km
Effective smoke time	> 120 s
Smoke composition	Red phosphorus
Smoke canisters	3 with braking flaps
Service temperature	-46ºC/+63ºC



STATUS

In development.
Payload delivered by BAE Systems.
Expected completed by Q1 2018.

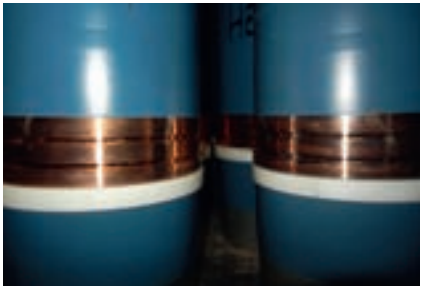
155 mm TP-T

MISSION

· Cost effective training round with ballistic match to IM HE-ER.
· Avaiable in two versions: inert (no energetics) or with a small explosive spotting charge.
· Modular design: Interchangable Base bleed & hollow base.

TECHNICAL CHARACTERISTICS

Projectile weight with fuze	44.05 kg
Projectile length	906 mm
Small explosive charge	DPX 3, Type 2 (Optional)
Max Range with base bleed (L52) 6 x DM72	> 40 km
Max Range with hollow base (L52) 6 x DM72	> 30 km
Dispersion in length	< 0.4% at 20 km
Deflection	< 0.08% at 20 km
Operating temperature	-46ºC/+63ºC
Storage temperature	-54ºC/+71ºC



STATUS

Qualification in progress.
Expected completed by Q1 2016.

Propelling Charges

Nammo offers a wide and comprehensive range of products for field artillery and mortar systems. Product portfolio also includes training propelling charges for safe and easy mortar training. Propelling charge production in Nammo is consolidated at the Vihtavuori Plant. The Nammo products are a result of long experience, continuous development in close cooperation with Nammo customers, and modern, flexible manufacturing processes.

STATUS:
All artillery propelling charges are qualified.

Mortar Rounds

MISSION

Nammo mortar rounds are packed and delivered with the propelling charge which enables easy use during firing. On impact the cast iron shell body provides optimal, effective fragmentation. The shell body can be filled with explosive with IM-properties or with conventional explosive. The main propellant of the propelling charge is loaded into horseshoe shaped containers made of combustible material. The design of the primary ignition cartridge and the tail guarantees a reliable ignition of all increment charges, which yields a very regular behavior of the gas pressure during the internal ballistic cycle. Nammo is also capable of producing illumination and smoke rounds for mortars.

Nammo also provides practice bombs for mortar firing drills. The practice bomb consists of a reusable inert shell with characteristics equal to live bombs to ensure realistic feeling during firing drills. The propelling charge of the practice bomb gives a muzzle velocity which makes target practice with very short ranges and minimum safety areas possible. The impact fuse of the bomb creates signal (bang, smoke, flash) without any risk of fragmentation, resulting in excellent ammunition handling experience without safety threats.

Mortar Practice Ammunition

Full Range and Short Range for 60 mm, 81 mm, and 120 mm

MISSION

Provides safe, realistic and low cost training for mortar crews, forward observers and fire direction control personnel. This ammuntion is full caliber (not a sabot) and is ready to fire in all weather conditions. Pyrotechhnic impact signature does not cause fragments and provides excellent fire adjustment training. The Short Range Rounds can be reused for additional cost savings.

TECHNICAL CHARACTERISTICS

Caliber	Range Scale	Max. Range	Min. Range	No. of Ranges	Re-use
120 mm	Full	7.200	200	5	No
	Short	850	130	5	No
81 mm	Full	5.600	70	5	No
	Short	500	50	4	Yes
60 mm	Full	3.500	70	5	No
	Short	530	50	4	Yes

STATUS

Qualified for use in all 60 mm, 81 mm, and 120 mm smooth bore mortar systems.

M72A5 LAW

MISSION

The Nammo M72A5 LAW combines decades of innovation and Nammo expertise to deliver a world-leading close combat weapon. The system is disposal, easy to operate, and extremely lightweight. The M72A5 LAW offers precision, power and capability in a single system, and is effective against armor vehicles, concrete walls and light armored personnel carriers.

TECHNICAL CHARACTERISTICS

System Weight and Caliber	3.6 kg, 66 mm
Carry/Extended Length	780 mm/980 mm
Warhead Type (Explosive)	Light-Armor, Shaped Charge/Multi-Purpose (315 g Octol)
Fuze	M412A1, single safety, point impact w/grace
Muzzle Velocity	200 m/s (21°C)
Dispersion	< 1,5 mils at 250 m
Penetration	300 mm RHA, > 200 mm Reinforced Concrete/Earth
Minimum, Effective and Maximum range	15, 350 and 1200 m
Service temperature	-40°C/+60°C

STATUS

NATO Qualified: NSN 1340-25-150-1250.
Combat proven and in production.

M72A6 LAW

MISSION

The Nammo M72A6 LAW combines decades of innovation and Nammo expertise to deliver a world-leading close combat weapon. The system is disposal, easy to operate, extremely lightweight and powerful. The M72A6 LAW is used by the warfighter as a multipurpose weapon and is effective against concrete walls, light armored personnel carriers and technical vehicles.

TECHNICAL CHARACTERISTICS

System Weight and Caliber	3.6 kg, 66 mm
Carry/Extended Length	780 mm/980 mm
Warhead Type (Explosive)	Light-Armor, Shaped Charge/Multi-Purpose (315 g Octol)
Fuze	M412A1, single safety, point impact w/grace
Muzzle Velocity	200 m/s (21°C)
Dispersion	< 1,5 mils at 250 m
Penetration	150 mm RHA, > 200 mm Reinforced Concrete/Earth
Minimum, Effective and Maximum range	15, 350 and 1200 m
Service temperature	-40°C/+60°C

STATUS

NATO Qualified: NSN 1340-25-143-0596.
Combat proven and in production.

M72A7 LAW

MISSION

The Nammo M72A7 LAW combines decades of innovation and Nammo expertise to deliver a world-leading close combat weapon. The single soldier system is disposable, easy to operate, extremely lightweight, powerful, and cost effective. The M72A7 variant is used by the warfighter as a multipurpose weapon and is effective against technical vehicles, concrete walls and light armoured personnel carriers.

TECHNICAL CHARACTERISTICS

System Weight and Caliber	3.5 kg, 66 mm
Carry/Extended Length	780 mm/981 mm
Warhead Type (Explosive)	Light-Armour, Shaped Charge/Multi-Purpose (PBXN-9)
Fuze	M412A1, single safety, point impact w/graze
Muzzle Velocity	200 m/s (21°C)
Dispersion	< 1,5 mils at 250 m
Penetration	150 mm RHA, > 200 mm Reinforced Concrete/Earth
Minimum, Effective and Maximum range	15, 350 and 1200 m
Storage temperature	-45°C/+70°C

STATUS

US Type Classified:
NSN 1340-01-497-7630 – DODIC HA29.
Combat proven and in production.

M72A9 LAW

MISSION

The Nammo M72A9 LAW combines decades of innovation and Nammo expertise to deliver a world-leading close combat weapon. The single soldier system is disposable, easy to operate, extremely lightweight, powerful, and cost effective. The M72A9 variant is an Anti-Structure Munition (ASM) suitable for defeating brick, adobe, solid core and steel fire doors as well as earthen fortifications and technical vehicles. This variant offers more payload on target with optimized blast effects.

TECHNICAL CHARACTERISTICS

System Weight and Caliber	4.3 kg, 66 mm
Carry/Extended Length	780 mm/981 mm
Warhead Type (Explosive)	Anti-Structure/Fragmenting Case (Aluminized HE)
Fuze	Electronic, Single Safety, Preset Detonation Delay Time w/ Dud-Safe Logic
Muzzle Velocity	130 m/s
Minimum, Effective and Maximum range	15, 200 and 600 m
Storage temperature	-45°C/+70°C

STATUS

Limited Release:
NSN 1340-01-538-4308 – DODIC-HA48.
Combat proven and in production.

M72 ASM RC

MISSION

The Nammo M72 ASM RC combines decades of innovation and Nammo expertise to deliver a world-leading close combat weapon. The system is disposal, easy to operate, extremely lightweight and powerful. The M72 ASM RC variant is an Anti-Structure Munition Reduced Calibre (ASM RC) suitable for defeating brick, adobe, earthen fortifications and technical vehicles. The carbon fiber warhead gives low collateral damage. The dual safe Fuze and on-axis trigger equip the warfighter with an improved weapon system that is both safe and effective.

TECHNICAL CHARACTERISTICS

System Weight and Caliber	3.7 kg, 42 mm
Carry/Extended Length	780 mm/980 mm
Warhead Type (Explosive)	Anti-Structure (415 g DPX-6, Aluminized HE)
Fuze	Electronic Piezo Fuze, Dual mode (short and long delay), Dual safe with graze function
Muzzle Velocity	170 m/s (21°C)
Dispersion	< 1,5 mils at 150 m
Minimum, Effective and Maximum range	14, 350 and 1000 m
Service temperature	-40°C/+60°C

STATUS

NATO Qualified: NSN 1340-25-152-8309.
Combat proven and in production.

M72 EC LAW

MISSION

The Nammo M72 EC LAW combines decades of innovation and Nammo expertise to deliver a world-leading close combat weapon. The system is disposal, easy to operate, extremely lightweight and powerful. The M72 EC LAW is an Enhanced Capacity variant which may penetrate up to 450 mm RHA. The dual safe Fuze and on-axis trigger equip the warfighter with an improved weapon system that is both safe and effective.

TECHNICAL CHARACTERISTICS

System Weight and Caliber	3.4 kg, 66 mm
Carry/Extended Length	780 mm/980 mm
Warhead Type (Explosive)	Heavy-Armor, Shaped Charge (315 g PBXW-11)
Fuze	Electronic Piezo Fuze, Dual safe with graze function
Muzzle Velocity	200 m/s (21°C)
Dispersion	< 1,5 mils at 250 m
Penetration	450 mm RHA (M72 EC LAW MK1), 300 mm RHA (M72 EC LAW MK2)
Minimum, Effective and Maximum range	20, 350 and 1200 m
Service temperature	-40°C/+60°C

STATUS

NATO Qualified: NSN 1340-25-152-8486 (MK1).
NSN 1340-25-160-4778 (MK2).
Combat proven and in production.

M72 Training System

MISSION

The M72 training system with the 21 mm sub caliber rocket gives a truly similar experience as the live round. The new on-axis trigger launcher may be adapted to use the 21 mm training rocket. The training system has the same weight as the combat system. This type of training is extremely cost effective and safe for the user. The training launcher is reloadable multiple times.

TECHNICAL CHARACTERISTICS

System Weight and Caliber	3.5 kg, 21 mm
Projectile Weight	0.16 kg
Carry/Extended Length	780 mm/980 mm
Warhead Type	Steel rod with tracer
Muzzle Velocity	220 m/s (21°C)
Dispersion	< 1,5 mils at 150 m
Training range	50-700 m
Maximum range	1000 m
Service temperature	-30°C/+60°C

STATUS

NATO Qualified:
Legacy Launcher
NSN 1055-25-148-0378.
New Launcher (EC/RC)
NSN 1340-25-160-4775.

Bunker Defeat Munition (BDM) M141

MISSION

BDM is the first lightweight shoulder fired weapon system with true multipurpose effectiveness, and uses the same High Explosive Dual Purpose (HEDP) rocket as in the USMC SMAW. The HEDP rocket is packaged in a rugged, compact telescoping, disposable launcher that has all gunner controls needed to aim and fire the weapon. The BDM is highly effective against double reinforced concrete, triple brick, solid adobe, earthen fortifications, caves, and technical vehicles.

TECHNICAL CHARACTERISTICS

System Weight and Caliber	7.2 kg, 83 mm
Carry/Extended Length	812 mm/1372 mm
Warhead Type (Explosive)	Anti-Structure/Anti-Fortification (Aluminized HE)
Fuze	M420, Dual Safety, Self-Discriminating at Impact (Delay or Impact)
Muzzle Velocity	220 m/s
Minimum, Effective and Maximum range	15, 250 and 2000 m
Storage temperature	-45°C/+70°C

STATUS

US Type Classified:
NSN 1340-01-443-5477 DODIC HA08.
Combat proven and in production.

SMAW Ammunition

MISSION

Nammo SMAW ammunition has combat proven performance, providing accuracy and reliability to demolish bunkers, breach fortifications, and defeat armored vehicles. Ammunition variants include High Explosive Dual Purpose (HEDP), Novel Explosive (NE), High Explosive Anti-Armor (HEAA), and the Common Practice Round (CPR). The crew served, man portable, reusable launcher weapon system is lightweight, versatile, and effective.

TECHNICAL CHARACTERISTICS

Ammunition Variant	HEDP	NE	HEAA	CPR
Encased Rocket Weight	5.9 kg	8.6 kg	6.3 kg	6.0 kg
Encased Rocket Length	746 mm	812 mm	842 mm	749 mm
NSN 1340-01	-158-0577	-503-0809	-227-8870	-227-8871
Caliber	83 mm	83 mm	83 mm	83 mm
DODIC	HX05	HA34	HX06	HX07
HEDP Target Set	Self-Discriminating Fuze defeats Bunkers, Reinforced Concrete, Brick Walls, Light Armor			
NE Target Set	Enhanced blast explosive charge designed to penetrate solid brick, brick faced hollow block, and other light clad walls to detonate on the backside of the target.			
HEAA Target Set	Heavy Armor Penetrator			

STATUS

US Type Classified, in production.
Combat proven.

HGF60-3,5

HGF165-3,5

FRAGMENTATION HAND GRENADES (HGF)

HGF165-3,5 and HGF60-3,5

MISSION

HGF are meant for defensive use and provide a dense cloud of fragments with a nearly even 360° distribution. The steel bodies are uniformly pre-fragmented to provide optimized penetration performance with a distribution of near equal sized fragments. HGF60-3,5 with a compact size and weight is designed to be used in urban surroundings.

STATUS

HGF165-3,5 is qualified with the Finnish Defence Forces.
NSN 1330-58-000-1750

TECHNICAL CHARACTERISTICS

	HGF165-3,5	HGF60-3,5
Dimensions	height with fuze approx 93 mm steel body diameter approx 63 mm	height with fuze approx 85 mm steel body diameter approx 40 mm
Weight	approx 450 g	approx 190 g
Explosive filling	Comp B (heksotol 60/40) or PBXN-110 approx 165 g	Comp B (heksotol 60/40) or PBXN-110 approx 60 g
Delay	3.5 ± 0.5 s	3.5 ± 0.5 s
Total Number of fragments	2500	900
Service temperature	-40°C/+63°C	-40°C/+63°C
Storing temperature	-54°C/+71°C	-54°C/+71°C

OFFENSIVE HAND GRENADES (HGO)

HGO225-3,5, HGO115-3,5 and HGO50-3,5

HGO225-3,5

HGO115-3,5

MISSION

HGO provide an intensive shock effect with a very limited number of fragments. These grenades are also used for light wall and door breaching and clearing of IEDs.

STATUS

HGO225-3,5 and HGO115-3,5 are qualified and used in several countries.

TECHNICAL CHARACTERISTICS

	HGO225-3,5	HGO115-3,5
Dimensions	height with fuze approx. 135 mm body diameter approx. 53 mm	height with fuze approx. 85 mm/module body diameter approx. 53 mm
Weight	approx 350 g with fuze	approx 205 g with fuze
Explosive filling	Comp B (heksotol 60/40) approx 225g or PBXN-11, approx 260 g	Comp B (heksotol 60/40), 115 g or PBXN-11, 130g
Delay	3.5 ± 0.5 sec	3.5 ± 0.5 sec
NSN	1330-58-000-1749 with metallic handle	N/A
Service temperature	-40°C/+63°C	-40°C/+63°C
Storing temperature	-54°C/+71°C	-54°C/+71°C

SOHG

SCALABLE OFFENSIVE HAND GRENADES (SOHG)

MISSION

SOHGs provide over pressure effects for a variety of uses by connecting 1 – 3 body modules together. Each module can be fuzed and grenades can be used either separately or by attaching two to three modules together.

STATUS

SOHG are qualified and used in several countries.

TECHNICAL CHARACTERISTICS

SOHG (1 – 3 modules can be attached together)

Dimensions	height with fuze approx. 85 mm/module body diameter approx. 53 mm
Weight	approx 205 g/module with fuze and 140 g/module without fuze
Explosive filling	PBXN-11, 130 g/module
Delay	3.5 ± 0.5 sec
NSN	N/A
Service temperature	-40°C/+63°C
Storing temperature	-54°C/+71°C

Training Grenades for
all Tactical Grenades

TRAINING HAND GRENADES

MISSION

Training Hand Grenades provide a low cost and realistic option for instructing Soldiers in the proper and safe handling of hand grenades. These training grenades use production parts and inert fill to match tactical grenades with the correct weigh and balance. Training Fuzes use all production parts and the same 3.5 second delay element plus a small powder charge to produce an audible report when thrown. Training grenades arrive in tactical packaging and include a User Manual in their safe and proper use. These modules are reusable multiple times by replacing the training fuze assembly. Training grenades are safe for use on size restricted training ranges.

STATUS

Training Hand Grenades are qualified with the Finnish Defence Forces

Hystrix

In the Hystrix system, Nammo is presenting P3-technology (Protect – Prevent – Preserve) which describe the concept to secure new situations and challenges in modern missions. The Hystrix system fires pre-fragmented grenades to a target area. Since Hystrix grenades operate as an air-burst munition, these grenades are effective over all kind of terrains such as sand, water, bushes and snow.

Illumination Parachute Rockets

· HELIOS · HORIZON · NYX

The illuminating rockets can be used for target identification by military, police force, border control and security purposes.

HELIOS is one of the strongest illuminating hand fired parachute rocket on the market.
Emission of visible light is maximized to ensure a large illuminated area as well as quick spotting of target.

TECHNICAL CHARACTERISTICS

Range (to point of deployment)	> 300 m
Burning time	25 sec
Visual light intensity	> 300 kcd
Rate of decent	3-5 m/s
Size	277x47 mm
Weight	460 g
Trajectory time	4 sec

The **Horizon** Rocket has a range of 1000 meters and has no signature after 60 meters.
The rocket provides a very large and highly illuminated area which allows for quick spotting of the target.

TECHNICAL CHARACTERISTICS

Range (to point of deployment)	800-1000 m
Burning time	30 sec
Visual light intensity	450 kcd
Rate of decent	3-5 m/s
Size	380x47 mm
Weight	750 g
Trajectory time	8 sec

NYX is a parachute rocket with a cool burning flare emitting nearly invisible light to the non-assisted eye.This near infrared illuminating rocket can be used in night combat or surveillance situations, providing enhancement of image intensifiers such as night vision goggles.

TECHNICAL CHARACTERISTICS

Range (to point of deployment)	300 m
Burning time	20-40 sec
Visual light intensity	40-150 cd
Rate of decent	3-5 m/s
Size	277x47 mm
Weight	384 g
Trajectory time	4 sec

Shock Tube Systems

The Shock Tube System is an non electric, self sufficient, initiation system, insensitive to electrical and electromagnetic influence. The ST Starter can, without any preparation, be directly combined with other types of Shock Tube Units for many different types of blasting operations;
EOD, Cutting, Demolition, Fortification work, Rock Blasting operations etc.
Single charges are initiated directly by the ST Starter, while charges connected in parallel or in series are initiated via a connector unit that maximises the number of combinations.

PRODUCTS

ST Starter – ranging from a couple of meters up to 320 meters.
ST Detonator – available with a variety of delay times and lengths.
Rapid Firing System (RFS 10m) – Is a rapid firing system with a 10 meter Shock tube integrated into a spool. Can easily be extended by inserting a detonator from another RFS unit into the spool barrel.

Aircraft Ejector Release Cartridges

Cleaner burning release cartridges CBC 1 and CBC 4

MISSION

Cleaner Burn Cartridges, CBC 1 and CBC 4 for Aircraft Store Ejector Release Units have been especially developed in conjunction with the UK MOD to replace the ARD 446 with a cleaner more compliant 1a-1w cartridge. The CBC 1 and 4 cartridges are cleared for use on the Tornado and Typhoon and earlier on the Harrier and Jaguar to give a consistent release pressure with less debris in the release unit leading to a reduction in maintenance.

TECHNICAL CHARACTERISTICS

	CBC 1	CBC 4
Ignitor	1A-1W	1A-1W
Compliance with EM.	Yes	Yes
Time to ignition	< 10 ms	< 10 ms
Peak Pressure, mean	60 MPa	85 MPa
Service Temp Range	-54ºC/+93ºC	-54ºC/+93ºC

STATUS

In service with the UK RAF and other Air forces on the Tornado and Typhoon fast jets. Direct replacement for the ARD 446.

70 mm Warheads

Nammo has proven technology to develop, qualify and manufacture advanced Warheads for different applications.
The current product portfolio includes a family of 70 mm (2,75") Rocket Warheads – MPP (Multi Purpose Penetrator) – which is offered in different configurations with both pyrotechnic and electronic fuzes adapted to either conventional unguided system or the new generation of guided 70 mm Rocket systems. Inert practice Warheads can also be offered.
MPP represents a product evolution from Nammo's legacy RA79 Warhead, but with even better penetration capabilities and significantly improved IM (Insensitive Munitions) response. IM will be increasingly important for all modern weapon systems, and Nammo has developed and qualified unique technologies which significantly improves IM properties for Warheads according to the applicable NATO standards.
Nammo's 70 mm Rocket Warhead family has proven excellent penetration capabilities in heavy targets and MPP is capable of penetrating up to 1 m (40 inches) of reinforced concrete, 25 mm Steel (1 inch) or 2 m (80 inch) Earth and Timber Bunker Target. MPP is also highly effective towards a broad range of lighter targets, including vehicles, due to the sensitivity of the fuze.

STATUS

NSN No 1340-01-562-1680.
Combat proven and in production.

Rocket Motors

Nammo has developed and produced advanced Rocket Motors, primarily for the NATO market. Since the early 1960's Nammo's main niche products (within tactical propulsion technologies) are Rocket Motors for short-range Air-to-Air missiles and Boosters for medium to large size Naval Missiles, both with and without Thrust Vector Control (TVC) systems. Nammo's product line contains a broad range of propulsion systems for advanced tactical missiles as well as rocket motors for space applications. Nammo is currently responsible for the Rocket Motor design/production in the following programs:

- **AMRAAM** (Advanced Medium Range Air-to-Air missile) – Raytheon
- **ESSM** (Evolved Sea Sparrow Missile) – Raytheon
- **IRIS-T** (Air to Air Missile with TVC) – Diehl BGT Defence
- **IRIS-T SL** (Ground based Air Defence Missile with TVC) – Diehl BGT Defence
- **IDAS** (Interactive Defence & Attack for Submarines) – Diehl BGT Defence
- **EXOCET MM40 Block 3** (Anti Ship Missile with TVC) – MBDA
- **Sidewinder AIM-9L** (Air to Air Missile) – Diehl BGT Defence
- **Penguin MK2/Mod7 Rocket Motor** (Anti Ship Missile) – Kongsberg
- **NSM Booster** (Naval Strike Missile) – Kongsberg
- **ARIANE 5** (Separation & Acceleration Boosters) – EADS Space Transportation
- **LMM** (Light Multi-role Missile) - Thales
- **Hybrid Rocket Motors for Space Launch** (utilizing Hydrogen Peroxide) – ESA

Demilitarization

SERVICES

Nammo specializes in destroying excess, outdated and obsolete conventional ammunition including cluster bombs. The processes used by Nammo encompass the highest standards of safety and environmental consideration which comply, and in many cases exceed, European Union laws and regulations.
Our services also include turn key demilitarization plant/process/equipment projects including consultancy, design, planning, delivery, supervision, start-up and on-site project management as well as operator training and through life operational support.

KNOW-HOW

Disposing of stockpiled obsolete, aged or surplus ammunition in a responsible manner is a principle that is shared by many countries. Nammo is able to rapidly, safely and cost effectively dispose of such products while avoiding any damage to the environment. Unquestionably Nammo has both the industrial know-how and capacity to solve all of your demilitarization opportunities either at one of our core sites in Germany, Norway or Sweden or through supplying and supporting ammunition disposal plants or equipment and processes in other countries.

APPROACH

Nammo's philosophy in processing the ammunition is to remove the explosive content and then where possible recycle and/or reuse materials including the energetics. This is known as the R3 (Resources, Recovery and Recycling) and R4 (Resources, Recovery, Recycling and Reuse) philosophies within Nammo's business and is in most cases the most cost effective approach for Nammo's customers.

The Lapua® Brand

Nammo Group Small Caliber Division facilities in Lapua, Finland and Schönebeck, Germany manufacture premium small caliber centerfire and rimfire ammunition under the Lapua brand.

FOR SPORT SHOOTERS, HUNTERS, DEFENCE FORCES AND LAW ENFORCEMENT

The Lapua brand is focused primarily on manufacturing premium quality small caliber ammunition for Sport Shooters, Hunters, Defence Forces and Law Enforcement authorities. Lapua® cartridges and cartridge components have been on the market for over nine decades, and are world renowned for their superb quality and consistency. Lapua® ammunition has won numerous Olympic and World Championship medals for competition shooters around the world.

NOT JUST ACCORDING TO TOUGHEST STANDARDS

Lapua® is a pioneer in the development and manufacture of sniper ammunition. All Lapua special purpose ammunition is produced to the same match grade requirements as Lapua target ammunition. Lapua's much-copied paragon of quality and accuracy is the .338 Lapua Magnum, the preferred choice of professionals.

Lapua® quality is appropriately certified as well as approved by several special forces and armies worldwide. Long-term cooperation with various defense organizations helps Lapua understand the special requirements of the military and other professional users. The goal is not to meet requirements but to exceed them.

www.lapua.com

Vihtavuori Powder

Nammo Vihtavuori is a well-known manufacturer of propellants for both civil and military use since 1922. Vihtavuori® military powders cover medium and large caliber purposes and provide excellent performance fulfilling the toughest professional needs and military specifications.

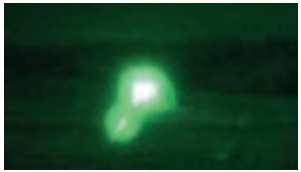
Within the civilian area we recommend the Vihtavuori powders for reloading.
The selection covers more that 20 different types – a right choice for all disciplines, guns and shooting styles.

THE VIHTAVUORI RELOADING POWDERS

- Are manufactured by highly qualified employees
- Ensure clean burning and repeatable shooting properties in all weathers and conditions
- Have uniform and superb quality based on full control of the whole production chain beginning from the production of nitrocellulose to the bottling of the end product
- Strict quality acceptance limits have helped reloaders and cartridge manufacturers to achieve similar loads regardless of the production lot for more than 90 years
- Have achieved a strong position among top class shooters around the world
- Are available with 26 different powder types, which can be divided to four different product families

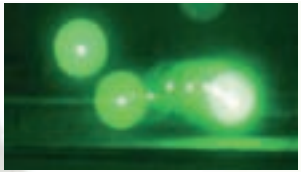
Standard Tracer – Visible

IR Tracer – Invisible to the naked eye



Standard Tracer - Burst towards target

IR Tracer - Burst towards target



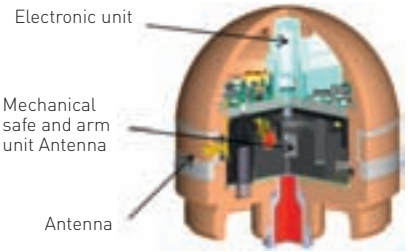
Standard Tracer - Burst over a field

IR Tracer - Burst over a field

Dim Trace Concept

To a large extent, today's combat units are using Night Vision Devices [NVD's] to enable stealthy night combat operations. This requires adapting traditional visible tracer ammunition to new operational scenarios. Nammo has met that requirement with the development of the latest IR/Dim Trace technology. This tracer is totally invisible to the naked eye which solves several operational combat obstacles, giving the user clear advantages in stealth combat scenarios.

· Not visible to enemies without NVD's
· No tracking of own firing position.
· No disturbance in friendly forces NVD's
· Maintain target location and observation after opening of fire.
· No backwards illumination by your own tracers.
· Reduced muzzle flash
· Minimal exposure of own units reducing the possibility for enemy to judge your numbers or see the size of attacking force
· Optimal aiming aid in night combat at short distances



Airburst Concept

In combat situations, troops struggle to neutralize an enemy that is hiding behind obstacles to avoid direct fire. Something more than artillery and mortar was required. Nammo has developed an airburst concept that is reliable, secure and effective that will help solve this tactical challenge with an excellent product on 40 mm AGL systems.

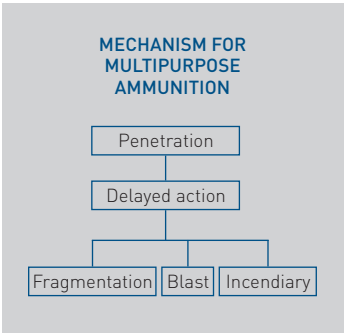
The Nammo airburst concept incorporates a radio frequency to program the ammunition which has proved to be a reliable concept and easy to integrate on existing weapon platforms in the modern battlefield.

The advantage of Nammo's airburst solutions are:

· Very easy to integrate on existing weapon platforms and fire control systems as well as a cost effective solution
· Reliable programming
· Accurate airburst position
· Multiple possibilities for a string of pearls
· Very low dud rate

STATUS

40 mm airburst ammunition is qualified and in operational use.
30 mm and 120 mm airburst are in the early stages of development.



FRAGMENTATION OF MP

Multipurpose (MP) Concept

20 mm Multipurpose M70 was developed and qualified for the RNAF F-5 Aircraft in 1970. Thereafter, Nammo developed a range of ammunition for Air Force, Navy and Army applications ranging from 12.7 mm up to 40 mm. The last caliber to enter the MP family was 30 mm x 173 MPT/SD.

The MP concept (pyrotechnical ignition train instead of traditional mechanical Safe & Arm device) is extremely effective as well as relatively inexpensive to manufacture.

BURNING OF THE MP-AMMUNITION

The pyrotechnic ignition train results in a DEFLAGRATION (not detonation) of the round creating larger fragments than a detonation.

- Low burning propagation velocity of both the pyrotechnic charges and the explosive gives the delayed action of the MP round
- Slow pressure build up gives the characteristic MP fragmentation pattern which is a 20-30 degree cone along the line of fire.


CARE
dedication
precision
PRECISION
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Edition 3, 2015

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