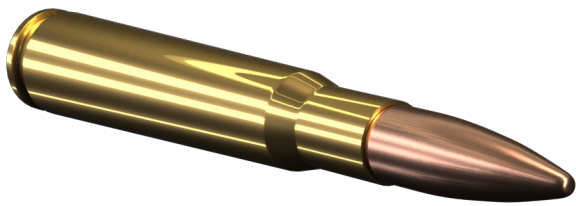# CALIBER

Cal. 12.7x99 mm

M 33 Ball, M 17 Tracer, M 8 API, M 20 APIT, M 2 AP

BLANK AMMUNITION

M1A1 BLANK

CALIBER

12.7x99 mm M 33 Ball, M 17 Tracer, M 8 API, M 20 APIT, M 2 AP

BALLISTIC DATA

Cal. 12.7 with bullet	$V_{23.77}$ (m/s)	P_{max} 3Sd (bar)	Accuracy Rs	Tracer visibility
M 33 Ball	885,4 ± 9,14	Max. 4 450	Max 30 cm at 550 m Sdx/Sdy	-
M 17 Tracer	885,4 ± 9,14	Max. 4 450	Max 40 cm at 550 m Sdx/Sdy	Visible trace of full luminosity from a point not greater than 200m from the muzzle of the weapon to a point not less than 1500 m from the muzzle.
M 8 API	885,4 ± 9,14	Max. 4 450	Max 30 cm at 550 m Sdx/Sdy	-
M 20 APIT	885,4 ± 9,14	Max. 4 450	Max 40 cm at 550 m Sdx/Sdy	Visible trace of full luminosity from a point not greater than 200m from the muzzle of the weapon to a point not less than 1000m from the muzzle.
M 2 AP	885,4 ± 9,14	Max. 4 450	Max 40 cm at 550 m Sdx/Sdy	-

Penetration (M8 & M2 & M20): The bullet core or bullet of the cartridge shall completely perforate 22 mm of armor plate, hardness 321-375 HB, place at 100 m from the muzzle of the weapon.

Incendiary flash (M8 API): The incendiary composition of bullets shall ignite produce an incandescent flash when fired against an Al- target at 160 m.

TECHNICAL DATA

ELEMENT		MATERIAL				
		M 33	M 17	M 8	M 20	M 2
Bullet	Jacket	Tombac				
	Core	Steel	Steel	Steel	Steel	Steel
	Tracer	-	Tracer compos.	-	Tracer compos.	-
	Foil	Lead	Tombac	Lead	Tombac	Lead
	Inced. Compo.	-	-	Thermit compos.	Thermit compos.	-
Cartridge case		Brass				
Propelling charge		NCD powder				
Primer		Boxer non corrosive				

Cartridge

Ball, M 33

Tracer, M 17

Armor piercing
incendiary, M 8

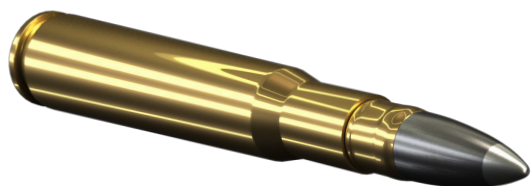
Armor piercing
incendiary tracer, M 20

Armor piercing, M 2

Weight (g)					Length (mm)				
M 33	M 17	M 8	M 20	M 2	M 33	M 17	M 8	M 20	M 2
~42,31 g 653 gr	~40,05 g 618 gr	~42,80 g 661 gr	~40,20 g 620 gr	~42,50 g 656 gr	58,67	58,67	58,67	58,67	58,67
55,10					99,31				
15,10	14,90	15,10	14,90	15,10	-				
1,23					5,54				
Average Q (100) ± 2g					**138,43**				

Packaging

Version 1	Version 2	Version 3
• 140 rounds in metal box M2A1 • 2 metal boxes (280 rounds) in wire bound wooden box	• 10 rounds in cardboard box • 5 cardboard boxes (50 rounds) in PVC bag • 2 PVC bags (100 rounds) in carton case	• 100 rounds in metal link belt (M9) • 1 metal link belts in metal box M2A1 • 2 metal boxes in wire bound wooden box (200 rounds)

Packaging and marking could be done according to the special buyer's request too!

CALIBER

12.7x99 mm SPECIAL bullets(SOLID): BALL, AP, API

BALLISTIC DATA

Cal. 12.7 with bullet	P_{max} 3Sd (bar)	Accuracy mean radius
BALL		$R_{mean} \leq 1 MOA$ $R_{mean} \leq 32.01$ at 1100 m (1200 yards)
AP	Average P_{max} $_{cor} \pm 3Sd \leq$ 4500 bara	$R_{mean} \leq 1.05 MOA$ $R_{mean} \leq 33.61$ at 1100 m (1200 yards)
API		$R_{mean} \leq 1.1 MOA$ $R_{mean} \leq 35.21$ at 1100 m (1200 yards)
Used for Sniper RIFLES Caliber 12.7mm (.50)		

Penetration (AP i API): The bullet core or bullet of the cartridge shall completely perforate 20mm of armor plate (hardness 302-341 HB) placed at 500 m from the muzzle of the weapon.

Incendiary (API): At 500 m, the incendiary composition of bullets shall ignite cloth soaked in petrol located behind the armor plate (80%).
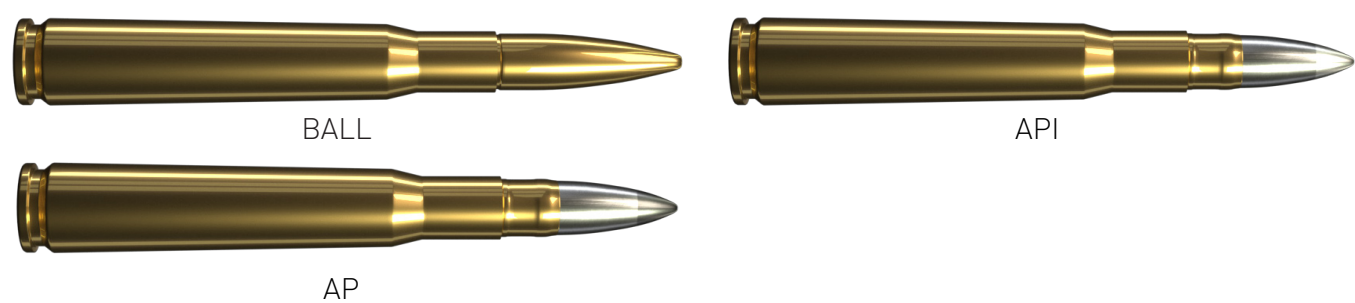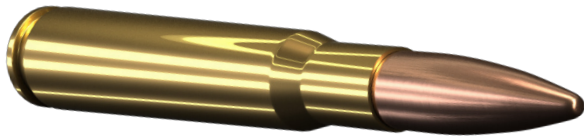
TECHNICAL DATA

ELEMENT		MATERIAL			Weight (g)			Length (mm)		
		API	AP	Ball	API	AP	Ball	API	AP	Ball
Bullet	Jacket	Brass	Brass	CuZn 39 Pb3	~46 g 710 gr	~47,1 g 727 gr	~52,6	59,31	59,31	67,03
	Core	Steel tungsten	Steel tungsten							
	Foil	Thermit	-							
Cartridge case		Brass			55,10			99,31		
Propelling charge		NCD powder			~15,10			-		
Primer		Boxer non corrosive			1,23			5,54		
Cartridge					Average 100 pcs ±2g			138,43		

Packaging

Version 1	Version 2
• 10 round in cardboard box • 10 cardboard boxes (100 rounds) in metal box M2A1 • 2 metal boxes (200 rounds) in wire bound wooden box	• 10 rounds in cardboard box • 5 cardboard boxes (50 rounds) in PVC bag • 2 PVC bags (100 rounds) in carton case

Packaging and marking could be done according to the special buyer's request too!

BALL

API

AP

CALIBER
12.7x99 mm M33 SNIPER

BALLISTIC DATA

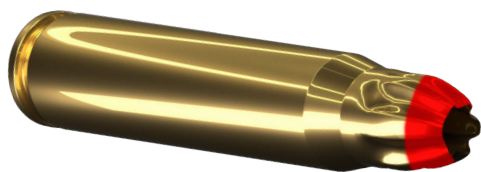| Cal. 12.7 with bullet	P_{max} (bar)	Accuracy Rs
M 33 SNIPER	Average P_{max} $cor \pm 3Sd \leq$ 4500 bara	$R_{mean} \leq 1.2$ MOA $R_{mean} \leq 19.2$ at 550 m (600 yards)
Used for Sniper RIFLES Caliber 12.7mm (.50)		

TECHNICAL DATA

ELEMENT		MATERIAL
Bullet	Jacket	Tombac
	Core	Steel
	Foil	Borax
Cartridge case		Brass
Propelling charge		NCD powder
Primer		Boxer non corrosive
Cartridge		

Packaging

Version 1	Version 2
• 140 rounds in metal box M2A1 • 2 metal boxes (280 rounds) in wire bound wooden box	• 10 rounds in cardboard box • 5 cardboard boxes (50 rounds) in PVC bag • 2 PVC bags (100 rounds) in carton case

Packaging and marking could be done according to the special buyer's request too!

CALIBER

12.7 mm
M1A1 BLANK

BALLISTIC DATA

Cyclic rate
The blank cartridge shall operate the M2 HB machine gun at an average cycle rate of not less than 450 cartridges per minute, and not more that 600 cartridges per minute at -18°C to +52°C.
Used for 12.7 x 99 mm caliber weapon

TECHNICAL DATA

ELEMENT	MATERIAL	Weight (g)	Length (mm)
Cartridge case	Brass	~55,10	99,46
Propelling charge	NC powder	2,80	-
Primer	Boxer non corrosive	1,23	-
Cartridge			99,30

Packaging

Version 1

- 140 rounds in metal box M2A1
- 2 metal boxes (280 rounds) in wire bound wooden box

Version 2

- 10 rounds in cardboard box
- 5 cardboard boxes (50 rounds) in PVC bag
- 2 PVC bags (100 rounds) in carton case

Version 3

- 100 rounds in metal link belt (M9)
- 1 metal link belts in metal box M2A1
- 2 metal boxes in wire bound wooden box (200 rounds)

Packaging and marking could be done according to the special buyer's request too!