



Technical description of the C50 self-loading rifle

The C50 is revolutionary self-loading rifle with a Bull Pup setup and long barrel recoil, rotating bolt and an internal hammer. The rifle's ammunition is fed from a five round magazine. The barrel is guided by rails that engage only around the chamber, providing the same characteristics as a conventional free floating barrel regarding vibration characteristics and precision. During trials with high quality barrel/ammunition combinations (Lothar Walther/LFB Jaguar) a sub 1 MOA accuracy was achieved.

The cycling process is strictly blowback operated without any gas driven parts resulting in additional precision and a better performance of the ammunition due to no loss of propelling gas. The manual safety of the firearm can be operated comfortably even with gloved hands. An additional, internal automatic safety is added to deny out of battery firing.



The C50 with the barrel retracted is amazingly compact.

During the development process great care was taken to achieve the highest amount of precision and manoeuvrability through an unmatched light weight for a firearm in this calibre and extraordinary balance for swift target acquisition even in close range. The design team also focused on parts being easy and swift to manufacture with tools and machinery that is readily available. Because of the unique operation mechanism without the need for a gas port the barrel length is highly customizable regarding the user's needs without any negative effects to reliability. The C50 Light, a 15 cm shorter version of C50 is already developed.



The design of the C50 rifle includes a fully adjustable muzzle break that can be matched with the desired ammunition type giving the firearm an enormous increase in versatility and reliability. The threaded muzzle crown also allows for the installation of a wide range of suppressors. The upper receiver is fitted with a full length, monolithic NATO standard MIL-STD-1913 Picatinny rail for a variety of optical and electro optical devices.



Additional rails are attached to the sides for lasers or lights and one rail is placed under the receiver enabling the user to mount bipods or tripods for stationary use or attach the firearm to weapon ports or stations. The extraction port is fitted with an additional automatic dust cover sealing while the next round is chambered to enhance protection against debris.





Size comparison between the C50 Light and a machine gun.



Size comparison between the C50, C50 Light and a AR-15 carbine.

Technical specifications:

Caliber: 12,7 x 99 mm (12,7x108 and 14,5 mm have been successfully tested)

C50 Barrel length: 730 mm

C50 Light Barrel length: 600 mm

V0: 800 m/s (with standard ammunition out of a 730 mm barrel)

E0: 14000 (with standard ammunition out of a 730 mm barrel)

C50 Overall length: 1115 mm (barrel extended), 910 mm (barrel retracted)

C50 Light Overall length: 985 mm (barrel extended), 780 mm (barrel retracted)

Magazine capacity: 5/6

Height: 225 mm

Width: 90 mm

C50 Weight: 8300 g

C50 Light Weight: 7600 g

Tactical application

The C50 will provide today's warfighter with a revolutionary weapon that is unmatched in the field of versatility, size, flexibility and firepower. With the advanced design technology a multitude of missions can be covered in all dimensions from ground combat to maritime and even areal roles in all climate and weather conditions, by day or night. The flexibility of the system is not only applicable to the ever evolving threats of today's armed conflicts but also when it comes to interfacing with existing components. Therefore the C50 is fully compatible with all existing military and law enforcement uniforms, ballistic and CBRN protection systems.

The C50 is capable of performing all the below listed combat roles and more with just one rifle:

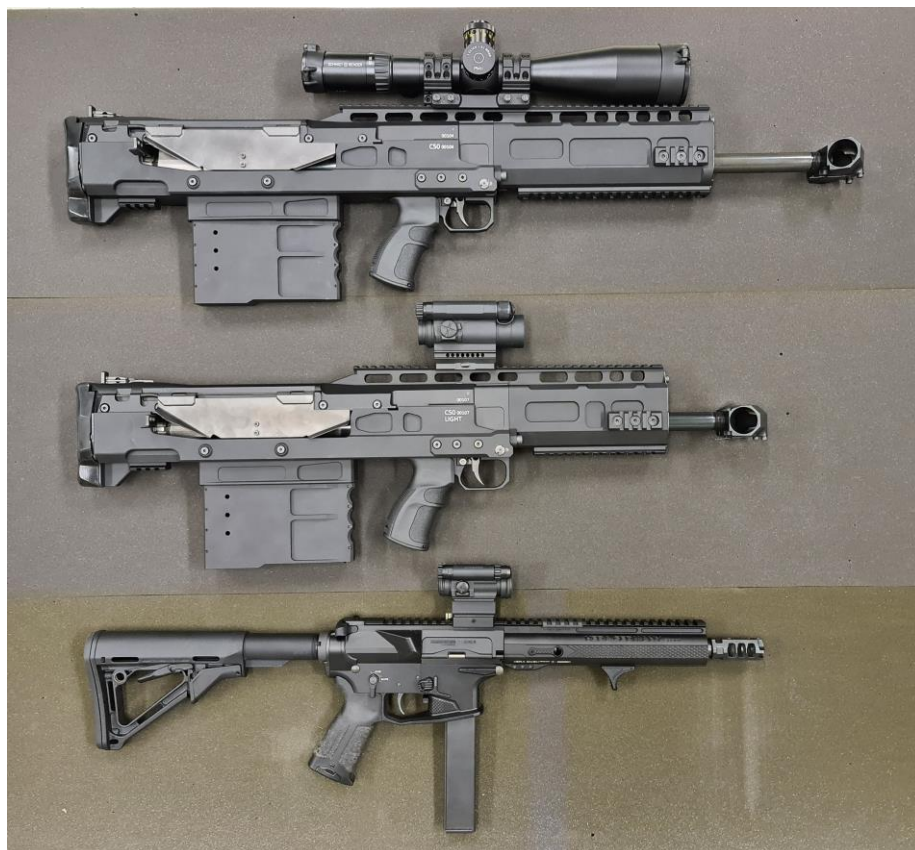
- Classic and enhanced anti material role
- Heavy calibre sniping
- Countersniping
- Advanced Overwatch
- Advanced CQB/ FIBUA (Close Quarte Battle and Fighting In Built Up Area)

The C50 is a force multiplier. Its compact design and light weight is perfectly suited to give infantry elements like special or specialized forces, mechanised or light, airmobile units an extra punch regarding range, precision and penetration capabilities to empower the existing weapons mix on squad or platoon level.

With its compact dimensions it can be deployed for distant engagements as well as close quarter encounters where firepower and penetration is needed to penetrate build structures, light armoured vehicles or field fortifications. With its precision the C50 can be deployed against slow moving or hovering aircraft. The utilization of armour piercing ammunition provides the user with an extra edge when it comes to armoured combat helicopters. In the maritime role the C50 is perfectly fitted for multi range and threat harbour protection duties. With its long range and heavy hitting calibre it can be used to interdict light vessels movements and damage key assets like sensors and high value weaponry on bigger ships. With a single operator on board of a regular light patrol craft it enhances the combat capabilities of the vessel significantly without altering its signature in any way. Boarding teams profit from the same manoeuvrability and penetration capability like any other infantry unit.



The C50 has a minimal signature compared to any other rifle in this calibre. With retracted barrel, the user can easily get into a car holding the C50. The length of the C50 is shorter than a carbine.



In the law enforcement segment all the mentioned qualities provide the officer with the ability to stop threats like VBIEDs from a distance while still be agile enough to conduct close range fire fights with devastating ballistic effect without compromising on multi range counter sniper capabilities even through barriers and hardened cover. The C50 will even provide small personal security details with an unprecedented amount of tactical flexibility, range and firepower.



The carbon polymer composite magazine had been successfully developed for the C50. The magazine made by 3D print technology.



On the right the original aluminium magazine, on the left the carbon polymer composite magazine.