

General information regarding the Ground-Based Cannon Caliber 23 mm ZU-23-2 CP

Technical specifications of the product/commodity

1. Full name of the product/commodity:

The 23 mm ZU-23-2 Twin Anti-Aircraft Cannon (licensed version)

2. Photograph of the product/commodity

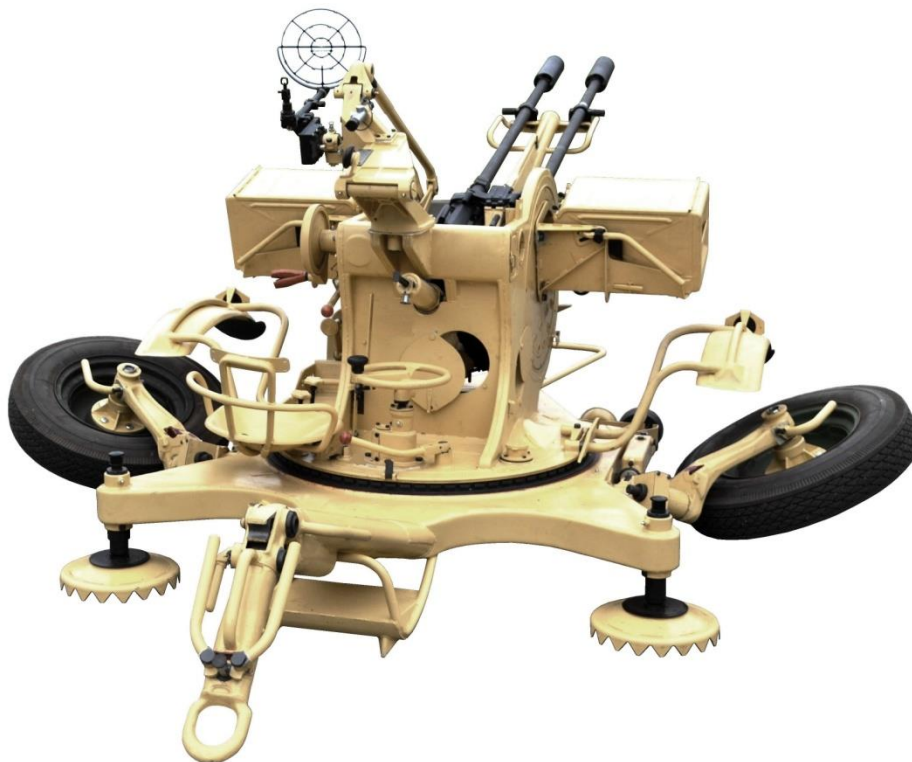


Photo.1. The 23 mm ZU-23-2 Twin Anti-Aircraft Cannon (rear view).



**Photo.2. The 23 mm the ZU-23-2 Twin Anti-Aircraft Cannon
(front view).**

3. Description and usage of the product/commodity:

The 23 mm ZU-23-2 Twin Anti-Aircraft Cannon is a powerful mean of combat against airborne targets within the distance of 2500 m and height of 1500 m. The weapon is designed for anti-aircraft defense especially for air-borne military forces. The constructional qualities of the weapon ensure usage against lightly-armored ground objects and firing posts within the distance of 2000 m. The 23 mm ZU-23-2 Twin Anti-Aircraft Cannon can be used against live force clusters as well uncovered as covered in lightly hidden outdoor locations. The weapon ensures effectiveness in the temperate climate and cold mesoclimate. Operating temperature range specification is approximately between $-30^{\circ} \div +50^{\circ}\text{C}$, while the maximum boundary temperature specification equals $50^{\circ} \div +65^{\circ}\text{C}$. The weapon must be operated by the squad of five operators: commander, guidance operator, sight operator, right-hand side loader, left-hand side loader.

4. Basic technical parameters and data of the product/commodity:

BASIC TACTICAL AND TECHNICAL PARAMETERS OF 23mm ANTI-AIRCRAFT TWIN CANNON ZU-23-2CP.

| | |
|--------------------------------------------|------------|
| Caliber | 23 mm |
| Number of threads | 10 |
| Barrel thread stroke (variable) | 50/30 cal. |
| Barrel length without the flash suppressor | 1880 mm |
| Barrel length with the flash suppressor | 2010 mm |
| Cannon length without the flash suppressor | 2425 mm |
| Cannon length with the flash suppressor | 2555 mm |

| | |
|---------------------------------------------------------------------------|--------------------------------|
| Maximum pressure in the barrel kG/cm ² | 3.1x10 ² MPa / 3100 |
| Shell's muzzle velocity | 970 m/s |
| Maximum vertical range | 1 500 m |
| Maximum angular range | 2500 m |
| Maximum horizontal range | 2000 m |
| Cartridge weight | 450 g |
| BZT shell weight | 190,0 g |
| OFZT shell weight | 188,5 g |
| Theoretical rate of fire (from both cannons) | 1600÷2000 rounds/min |
| Practical rate of fire up to | 400 rounds/min |
| Firing angle in the horizontal plane | 360° |
| Firing angle in the vertical plane | -10°÷+90° |
| Firing angle in the vertical plane over the wheels | -3°÷+90° |
| Aiming speed at two knob rotations per second: | |
| - in the horizontal plane with the first speed | 30°/s |
| - in the horizontal plane with the second speed | 60°/s |
| - in the vertical plane | 40°/s |
| Fire line height | 620 mm |
| Clearance | 360 mm |
| Wheelbase | 1670 mm |
| Cannon's dimensions in combat position: | |
| - Length | 4570 mm |
| - width | 1830 mm |
| - Height | 1220 mm |
| Cannon's dimensions in march position: | |
| - Length | 4570 mm |
| - width | 1830 mm |
| - height | 1870 mm |
| Maximum acceptable speed of towing by a truck /pick-up - all-terrain car: | |
| - on an asphalt road up to | 70 km/h*) |
| - on set up to | 40 km/h |
| - on un-paved roads up to | 35 km/h |
| - off-road to | 20 km/h |

*** Note: For towing vehicles, whose weight does not exceed double weight of the ZU-23-2CP set, the towing speed should not exceed 40 km/h.**

| | |
|---------------------------------------------------------------------------------|---------|
| One cannon weight | 75 kg |
| Swing assembly weight with two cannons | 240 kg |
| Rotation assembly weight with two cannons | 460 kg |
| Weight of ammunition case with belt loaded with 50 cartridges | 35.5 kg |
| Cannon's weight in march position (with a cover and filled ammunition cases) | ~950 kg |
| Time of rearranging from march position to combat position | 15÷20 s |

| | |
|------------------------------------------------------------|---------|
| Time of rearranging from combat position to march position | 35÷40 s |
| Heated barrel replacement time | 15÷20 s |
| Ammunition case replacement time | 5÷10 s |
| Tractor truck, pick-up, all-terrain | |

Ring target sight

| | |
|----------------------------------------------------------------------|----------|
| Target sight rings corresponding to specified speeds: - internal for | 70 m/s |
| - middle for | 170 m/s |
| - external for | ≥280 m/s |

Lighting at night tritium light sources

T-3 optical ground sight

| | |
|------------------------------------|-----------------------|
| Pupil's distance to the last lens | 72 mm |
| Magnification | 3 x |
| Field of view | 4°30' |
| Distance measurement range | 0÷2000 m |
| Side adjustments measurement range | ±0-10 artillery mrad. |
| Scale unit value | |
| - distances | 100 m |
| - side adjustments | 0-01 mrad. |

5. The 23 mm ZU-23-2 Twin Anti-Aircraft Cannon consists of the following principal units:

- Base/mount,
- 23 mm 2A14 Twin Anti-Aircraft Cannon with left-hand side feeding
- 23 mm 2A14 Twin Anti-Aircraft Cannon with right-hand side feeding
- Ring target sight
- T-3 optical ground sight
- Unitary ZCZ (spare parts kit).

For proper and effective use the system is equipped with three types of emergency parts (unitary kit, cluster kit and reparable kit. The individual kit of spare parts is placed in the box.

6. Advantages of the product/commodity:

The 23 mm ZU-23-2 Double Anti-Aircraft Cannon is characterized by high mobility, camouflage abilities, reliable functioning, high efficiency, great combat qualities and reliable tactical and technical qualities. The aforementioned features ensure effective action against suddenly appearing fast moving targets. The shooting itself is carried out at short intervals, on the spot, in different atmospheric conditions during any time of day and night. The ZU-23-2 cannons are very practical and mobile; the weapon can be used quickly on the move in all areal conditions. The weapon can be attached to off-road truck vehicles for towing. The transportation can be carried out by means of naval shipment or airborne aircrafts if possible as well.

8. Packing details

- Length - 4570 mm
- Width - 1830 mm
- Height - 1870 mm
- Weight - 960 kg

The equipment is packed in 6 wooden boxes:

| | Dimensions (mm) length x width x height | Qunatity | Gross weight (kg) |
|-----------|-----------------------------------------------------------------------------------------------|-----------------|--------------------------|
| 1. | 802 x 490 x 275mm (4511.0.1.1300) | 1 | 50 |
| 2. | 2360 x 510 x 255mm (4511.0.1.1500) | 1 | 59 |
| 3. | 1240 x 660 x 620 mm - (4511.0.1.1400 – ammunition container 8 pcs. – 2 pcs. on the gun system | 1 | 110 |
| 4. | 1126 x 320 x 342 mm(4211.0.1.1700 - Ammo links 630 pcs.) | 1 | 55 |
| 5. | 2140 x 383 x 336 mm (4211.0.1.1400 - 1 cannons + 2 barrels) | 2 | 147 |