

Culver City Police Department CCPD Policy Manual

Military Equipment Funding, Acquisition and Use Policy (Draft Policy)

PURPOSE AND SCOPE

The purpose of this policy is to provide guidelines for the approval, acquisition, and reporting requirements of “military equipment” as defined in the California Government Code. (See Government Code §§ 7070- 7072). The Culver City Police Department does not possess any tactical equipment that it has obtained from the military, nor does it possess any equipment that is designed solely for military use.

PHILOSOPHY

The acquisition of military equipment and its deployment in our communities may impact the public’s safety and welfare. The public has a right to know about any funding, acquisition, or use of military equipment by local government officials, as well as a right to participate in any government agency’s decision to fund, acquire, or use such equipment. Decisions on whether and how to fund, acquire, or use military equipment will be made with strong consideration for the public’s welfare, safety, civil rights, and civil liberties and also account for the public’s input.

Members of the Culver City Police Department will only use military equipment in compliance with federal and state legal authorities, including the Fourth and Fifth Amendments of the U.S. Constitution; Article 1, Section 1 of the California Constitution; Government Code § 7286; and California Penal Code §§ 835a and 13652. Members of the Culver City Police Department will only use military equipment consistent with applicable Department rules and regulations, including the Use of Force Policy.

APPROVAL OF THE GOVERNING BODY

The Chief of Police or his/her authorized designee shall seek approval for this policy from the governing body in the form of an ordinance adopting the policy. As part of the approval-seeking process, the Chief of Police, or his/her authorized designee, will submit the proposed military equipment policy to the governing body and make it available on the Department website at least 30 days prior to any public hearing concerning the military equipment at issue (Government Code § 7071).

The governing body must approve the policy prior to the Department or its members engaging in any of the following (Government Code § 7071):

- (a) Requesting military equipment made available by the U.S. Department of Defense pursuant to 10 USC § 2576a.
- (b) Seeking funds for military equipment, including but not limited to applying for a grant, soliciting or accepting private, local, state, or federal funds, in-kind donations, or other donations or transfers.
- (c) Acquiring military equipment either permanently or temporarily, including by borrowing or leasing.
- (d) Collaborating with another law enforcement agency in the deployment or other use of military equipment within the jurisdiction of this department.
- (e) Using any new or existing military equipment for a purpose, in a manner, or by a person not previously approved by the governing body.
- (f) Soliciting or responding to a proposal for, or entering into an agreement with, any other person or entity to seek funds for, apply to receive, acquire, use, or collaborate in the use of military equipment.
- (g) Acquiring military equipment through any means not provided above.

DEFINITIONS

Definitions related to this policy include (Government Code § 7070):

Governing body – The City Council of Culver City.

Military equipment categories– Includes the following:

- Unmanned, remotely piloted, powered aerial or ground vehicles.
- Mine-resistant ambush-protected (MRAP) vehicles or armored personnel carriers.
- High mobility multipurpose wheeled vehicles (HMMWV), two-and-one-half-ton trucks, five-ton trucks, or wheeled vehicles that have a breaching or entry apparatus attached.
- Tracked armored vehicles that provide ballistic protection to their occupants
- Command and control vehicles that are either built or modified to facilitate the operational control and direction of public safety units.
- Weaponized aircraft, vessels, or vehicles of any kind.
- Battering rams, slugs, and breaching apparatuses that are explosive in nature. This does not include a handheld, one-person ram.
- Firearms and ammunition of .50 caliber or greater, excluding standard-issue shotguns and standard-issue shotgun ammunition.
- Specialized firearms and ammunition of less than .50 caliber, including firearms and accessories identified as assault weapons in Penal Code § 30510 and Penal Code § 30515, with the exception of standard-issue handguns.

- Any firearm or firearm accessory that is designed to launch explosive projectiles.
- Noise-flash diversionary devices and explosive breaching tools.
- Munitions containing tear gas or OC, excluding standard, service-issued handheld pepper spray.
- TASER® Shockwave, microwave weapons, water cannons, and long-range acoustic devices (LRADs).
- Kinetic energy weapons and munitions.
- Any other equipment as determined by a governing body or a state agency to require additional oversight.

POLICY

It is the policy of the Culver City Police Department that there are legally enforceable safeguards, including transparency, oversight, and accountability measures in place to protect the public's welfare, safety, civil rights, and civil liberties before military equipment is funded, acquired, or used.

The Department, through the designated Military Equipment Coordinator, will train members of the Department to use military equipment only in accordance with this Policy. Members using military equipment for uses not identified as approved uses in the Military Equipment Inventory are subject to discipline, up to and including termination. All instances of non-compliance will be reported to City Council via the annual military equipment report.

The City Council has independent oversight of the Department's compliance with this Policy.

MILITARY EQUIPMENT COORDINATOR

The Chief of Police will designate a member of this Department to act as the Military Equipment Coordinator ("Coordinator"). The responsibilities of the Coordinator include but are not limited to:

- (a) Acting as a liaison to the governing body for matters related to the requirements of this policy.
- (b) Identifying Department equipment that qualifies as "military equipment" as defined in Government Code § 7070, in the current possession of the Department, or the equipment the Department intends to acquire, that requires approval by the governing body.
- (c) Conducting an inventory of all military equipment at least annually.
- (d) Collaborating with any allied agency that may use military equipment within the jurisdiction of Culver City Police Department (Government Code § 7071).
- (e) Preparing for, scheduling, and coordinating the annual community engagement meeting to include:
 1. Publicizing the details of the meeting.
 2. Preparing for public questions regarding the department's funding, acquisition, and use of equipment.

- (f) Preparing the annual military equipment report for submission to the Chief of Police and ensuring that the report is made available on the department website (GovernmentCode § 7072).
- (g) Receive and timely response to public concerns, complaints, or questions regarding the use of military equipment.

PUBLIC COMPLAINTS, CONCERNS, AND QUESTIONS

Concerns, complaints, and questions regarding the use of military equipment may be submitted in writing to:

Attn: Military Equipment Coordinator

[Address]

[Email address]

Whenever practical, the Coordinator will respond to concerns, complaints, and questions within 30 calendar days of receipt. Responses may take longer depending on the nature and volume of concerns, complaints, and questions the Coordinator receives.

The Coordinator will track complaints, concerns, questions received, and the responses provided, in order to be able to include the information in the Annual Report described below.

MILITARY EQUIPMENT INVENTORY

The following constitutes a list of qualifying equipment in the possession of the Department:

See the section labeled: MILITARY EQUIPMENT INVENTORY.

COORDINATION WITH OTHER JURISDICTIONS

Culver City Police Department will not collaborate with other law enforcement agencies to use military equipment in this jurisdiction unless the military equipment is approved for use, and used in accordance with this policy. The following constitutes a list of qualifying equipment in the Department's possession that may be used in collaboration with another Department:

See attachment: MILITARY EQUIPMENT NOT OWNED BY DEPARTMENT SUBJECT TO COLLABORATIVE USE.pdf

ANNUAL REPORT

Upon approval of the military equipment policy, the Chief of Police or their authorized designee will submit a military equipment report to the governing body for each type of military equipment approved within one year of approval and annually thereafter, for as long as the military equipment is available for use (Government Code § 7072).

The annual military use equipment report will include, for each type of military equipment:

- (1) A summary of how the military equipment was used and the purpose of its use.
- (2) A summary of any complaints or concerns received concerning the military equipment.
- (3) The results of any internal audits, any information about violations of the military

equipment use policy, and any actions taken in response.

- (4) The total annual costs for each type of military equipment, including acquisition, personnel, training, transportation, maintenance, storage, upgrade, and other ongoing costs, and from what source funds will be provided for the military equipment in the calendar year following submission of the annual military equipment report.
- (5) The quantity possessed for each type of military equipment.
- (6) If the law enforcement agency intends to acquire additional military equipment in the next year, the quantity sought for each type of military equipment.

The Chief of Police or the authorized designee will make each annual military equipment report publicly available on the department website for as long as the military equipment is available for use. The report shall include all information required by Government Code § 7072 for the preceding calendar year for each type of military equipment in department inventory.

COMMUNITY ENGAGEMENT

Within 30 days of submitting and publicly releasing the annual report, the Department will hold at least one well-publicized and conveniently located community engagement meeting, at which the Department will discuss the report and respond to public questions regarding the funding, acquisition, or use of military equipment.

ATTACHMENTS

MILITARY EQUIPMENT INVENTORY PDF

1. Robot (Category 1): Not yet obtained. To be purchased after the acquisition of approved grant funds.
 - a. **Description, quantity, capabilities, and purchase cost:**

The Transcend Tactical Vantage F3 Robot is a remotely controlled unmanned machine that operates on the ground, which is utilized to enhance the safety of the community and officers. This device can be remotely operated from many hundred meters away, providing protection and safety to their operators. The utilization of this Robot allows for de-escalation and the peaceful surrender and arrest of a violent suspect while reducing the potential of an armed confrontation with officers that may lead to a lethal conclusion.
 - b. **Purpose:**

To be used as a de-escalation tool and to remotely gain visual/audio data, deliver CNT phone, open doors, disrupt packages, clear buildings and administer tear gas during a barricaded suspect incident (with explicit direction from Bureau Commander or Police Chief). While remote observation is the primary function of the Robot, these auxiliary roles of transporting communication devices or other resources (such as food or water) into an inherently unstable situation, will help promote a peaceful conclusion.
 - c. **Authorized Use:**
 - I. Can be operated after supervisor approval and only by trained officers during critical incidents or pre-planned tactical operations.
 - II. During Department-approved training exercises.
 - III. The Gas Deployment Accessory can only be used after approval from a Bureau Commander or Chief of Police.
 - d. **Expected Lifespan:**

N/A
 - e. **Fiscal Impact:**

Robot: \$25,000.00
Gas Deployment Accessory: \$6,000.00
NOTE: Robot and Accessory will be fully funded by Urban Areas Security Initiative (UASI) program grant.
2. Unmanned Aerial Vehicles (Category 1)
 - a. **Description, quantity, capabilities, and purchase cost:**
 1. DJI Matrice 210 unmanned aerial vehicle (UAV) Cost: \$7422.80 each. Quantity:
 2. The DJI Matrice 210 is a commercial-grade UAV. This UAV is a battery-powered, remote-operated device. Controller: GL800A Cendence controller with tablet holder attachment. The controller allows operators to control UAV and view a live feed from UAV-mounted cameras through an attached and connected tablet. Cameras (2): Zenmuse Z30 RGB camera and Zenmuse XT camera with

FLIR capabilities. The cameras allow operators to switch between standard RGB cameras and views based on the heat of objects within the frame. Flight time of approximately 15-25 minutes per battery, depending on weather and flight conditions. Capabilities: Commonly used by construction and utility companies for the inspection of buildings, powerlines, windmills, and other infrastructure. This UAV has also proven to be useful to public safety agencies in firefighting, search and rescue, pre-operational intelligence, and other tactical situations where aerial views enhance the safety and efficiency of law enforcement and fire personnel. The manufacturer's description is attached.

2. DJI Mavic 2 Enterprise Advanced unmanned aerial vehicle (UAV), cost: \$6240.00 each. Quantity: 4. The DJI Mavic 2 Enterprise Advanced is a commercial-grade UAV. This UAV is a battery-powered, remote-operated device. Controller: DJI Smart Controller All-in-one controller with 5.5- inch integrated screen. The controller allows operators to control UAV and view a live feed from UAV-mounted cameras. Cameras: Integrated M2EA camera with dual RGB and FLIR capabilities. The camera provides operators with the ability to switch between standard RGB camera and views based on the heat of objects within frame. Flight time of approximately 25-30 minutes per battery, depending on weather and flight conditions. Commonly used by construction and utility companies for the inspection of buildings, powerlines, windmills, and other infrastructure. This UAV has also proven to be useful to public safety agencies in firefighting, search and rescue, pre-operational intelligence, and other tactical situations where aerial views enhance the safety and efficiency of law enforcement and fire personnel. The manufacturer's description is attached.
3. DJI Phantom Pro 4 unmanned aerial vehicle (UAV), cost: \$1566.40 each. Quantity: 2. The DJI Phantom Pro 4 is a commercial-grade UAV. This UAV is a battery-powered, remote-operated device. Controller: DJI GL300F controller with tablet holder attachment. The controller allows operators to control UAV and view a live feed from UAV-mounted cameras through an attached and connected tablet. Cameras: Integrated camera with RGB capabilities. Flight time of approximately 25-30 minutes per battery, depending on weather and flight conditions. Commonly used by construction and utility companies for the inspection of buildings, powerlines, windmills, and other infrastructure. This UAV has also proven to be useful to public safety agencies in firefighting, search and rescue, pre-operational intelligence, and other tactical situations where aerial views enhance the safety and efficiency of law enforcement and fire personnel. The manufacturer's description is attached.
4. Sky-Hero Loki Mk2 unmanned aerial vehicle (UAV) Cost: \$9750.00. Quantity: 2 (sold as a set //two aircraft, one controller). The Sky-Hero Loki Mk2 is a commercial-grade UAV. This UAV is a battery-powered, remote-operated device. Controller: Sky-Hero controller with 5- inch integrated screen. The controller allows operators to control UAV and view a live feed from UAV-mounted cameras. Cameras: Integrated camera with dual RGB and IR capabilities. The cameras provide operators with the ability to see in low-light indoor environments. Flight time of approximately 15 minutes per battery. This UAV is a specialized indoor tactical reconnaissance vehicle. Intended use is for public safety agencies in indoor tactical operations, where the view from an unmanned vehicle will significantly enhance the safety of law enforcement personnel and others within the operational area. The manufacturer's description is attached.

b. **Purpose:**

To be deployed when its view would assist officers or incident commanders with the following situations, which include:

- I. Barricaded Suspects
- II. Active Shooter/ Mass Casualty Incidents
- III. Hostage Situations
- IV. Crime Scene Investigations
- V. Search & Rescue Operations
- VI. Fires
- VII. Disaster Management
- VIII. CBRNE Incident (chemical, biological, radiological, nuclear, and/or explosive)
- IX. Supporting Search and Arrest Warrant Operations
- X. Perimeter Searches for Armed and/or Felony Suspects
- XI. Routine Training (public places)

c. **Authorized Use:**

- I. Only assigned operators who have completed the required FAA training and have a current FAA Part 107 Remote Pilot Certificate shall be permitted to operate the above-listed UAVs during approved missions.
- II. Requests to deploy the UAV shall be approved by the on-duty Watch Commander, supervisor on scene, or the UAV Manager prior to accepting the mission.

d. **Expected Lifespan:**

10 years

e. **Fiscal Impact:**

No known annual maintenance cost.

3. Armored Personnel Carrier (Category 2 & 3)

a. **Description, quantity, capabilities, and purchase cost:**

NONE

b. **Purpose:**

N/A

c. **Authorized Use:**

N/A

d. **Expected Lifespan:**

N/A

e. **Fiscal Impact:**

N/A

4. Tracked Armored Vehicles (Category 4)

a. **Description, quantity, capabilities, and purchase cost:**

NONE

b. **Purpose:**

N/A

c. **Authorized Use:**

N/A

d. **Expected Lifespan:**

N/A

e. **Fiscal Impact:**

N/A

5. Command and Control Vehicles (Category 5)

a. **Description, quantity, capabilities, and purchase cost:**

Command Post Mobile Trailer: 2020 Forest River 30ft trailer w/ 2 Axles. There is no cost for the trailer as the State of California donated it. The trailer will be equipped with 3 monitors (2 interior/1 exterior), desks, chairs, IP phones, exterior spotlight, soundproof room, and initial wiring for a computer setup.

b. **Purpose:**

To be utilized during critical incidents, major disasters, pre-planned high-risk warrant operations, large-scale pre-planned events, natural disasters, and public relations/community outreach events.

c. **Authorized Use:**

- I. The Command Post Mobile trailer will be deployed by officers and staff who have received department training in pulling/deploying trailers.
- II. The driver of the vehicle shall have a valid California driver's license (class C)

d. **Expected Lifespan:**

30-year life span

e. **Fiscal Impact:**

Retrofitting cost \$15,894.15.

6. Weaponized aircraft or vessel (Category 6)

a. **Description, quantity, capabilities, and purchase cost:**

NONE

b. **Purpose:**

N/A

c. **Authorized Use:**

N/A

d. **Expected Lifespan:**

N/A

e. **Fiscal Impact:**

N/A

7. Breaching Apparatus: Slugs, Energetic Breaching Program (Category 7)

a. **Description, quantity, capabilities, and purchase cost:**

NONE

b. **Purpose:**

N/A

c. **Authorized Use:**

N/A

d. **Expected Lifespan:**

N/A

e. **Fiscal Impact**

N/A

8. Firearms and ammunition of .50 caliber or greater, excluding standard-issue shotguns and standard-issue shotgun ammunition (Equipment Category 8)

a. **Description, quantity, capabilities, and purchase cost:**

NONE

b. **Purpose:**

N/A

c. **Authorized Use:**

N/A

d. **Expected Lifespan:**

N/A

e. **Fiscal Impact:**

N/A

9. Specialized Firearms and Ammunition (Category 9)

a. **Description, quantity, capabilities, and purchase cost:**

- I. The Carbine Rifle is a firearm capable of accurately stopping an armed subject at various distances. The Carbine Rifle is a lightweight, air-cooled, magazine-fed, shoulder-fired weapon designed for semi-automatic fire. The .223 / 5.56 cartridge is used as a lethal option designed to stop a violent encounter. The projectile is capable of penetrating soft body armor being worn by armed subjects. Total Quantity: 123 (LWRCI M6IC-DI, quantity: 99; LWRCI M6IC-G, quantity: 15; Colt Commando, quantity: 1; Colt M4 Carbine, quantity: 4; Colt Sporter Lightweight, quantity: 1; Bushmaster XM15-E2S, quantity: 2; Double Star 15, quantity: 1). The manufacturer's description is attached.
- II. The Hornady 556 NATO, 75 grain, BTHP Tap Precision cartridge is the primary duty ammunition deployed during potential lethal encounters. Quantity: 2,200 rounds. The manufacturer's description is attached.
- III. The Hornady 556 NATO, 75 grain, Tap SBR cartridge is the primary training ammunition for the department. Quantity: 4,500 rounds. The manufacturer's description is attached.
- IV. The Winchester .223 Remington, 55 grain, Ranger RA223SF cartridge is the secondary training ammunition for the department, designated for indoor shooting. Quantity: 7,600 rounds. The manufacturer's description is attached.

- V. The Heckler & Koch MP5 is a magazine-fed, shoulder-fired weapon capable of stopping an armed suspect at various distances. This firearm utilizes a 9mm cartridge as a lethal option designed to stop a violent encounter. Quantity:6 (Not currently deployed by any department personnel)
- VI. The Sniper Rifle is a firearm used by ERT operators who are supplementally trained to engage armed suspects from a safe distance. Daniel Defense DD5V4; Caliber: 7.62 x 51mm; quantity: 2. The manufacturer's description is attached.

b. **Purpose:**

To be used as precision weapons to address a deadly threat with more precision and/or greater distances than a handgun, if present and feasible. Guns that are fired from shoulder level have a longer, grooved barrel intended to make bullets spin and thereby have greater accuracy over a long distance. Potential applications include hostage situations and an active shooter.

c. **Authorized Use:**

- I. Only members that have completed a POST-certified rifle course and, on an annual basis
- II. Having completed the department-approved range qualification, with the department's range staff are authorized to deploy a rifle.

d. **Expected Lifespan:**

- I. Carbine Rifle- No expiration (serviced or replaced when it fails or breaks)
- II. The Hornady 556 NATO, 75 grain, BTHP Tap Precision cartridge-15 years
- III. The Hornady 556 NATO, 75 grain, Tap SBR cartridge- 15 years
- IV. The Winchester .223 Remington, 55 grain, Ranger RA223SF cartridge-15 years
- V. MP5- No expiration
- VI. Sniper Rifle- No expiration (service or replaced when it fails or breaks)

e. **Fiscal Impact:**

- I. Carbine Rifle – No annual cost unless replacement purchases are necessary (Purchase price: \$1,554.96 each)
- II. The Hornady 556 NATO, 75 grain, BTHP Tap Precision cartridge - Annual cost approximately \$6,250.00
- III. The Hornady 556 NATO, 75 grain, Tap SBR cartridge - Annual cost approximately \$2,954.00
- IV. The Winchester .223 Remington, 55 grain, Ranger RA223SF cartridge - Annual cost approximately \$6,810.00
- V. MP5- No annual cost due to weapon not currently being deployed (Purchase price: \$2,800 each)
- VI. Sniper Rifle - No annual cost unless replacement purchases are necessary (Purchase price: \$1,949.22 each)

9. Any firearm or firearm accessory designed to launch explosives (Category 10)

a. **Description, quantity, capabilities, and purchase cost:**

NONE

b. **Purpose:**

N/A

c. **Authorized Use:**

N/A

d. **Expected Lifespan:**

N/A

e. **Fiscal Impact:**

N/A

10. Noise Flash Diversionary Device (Flashbangs) (Category 11)

a. **Description, quantity, capabilities, and purchase cost:**

A Noise Flash Diversionary Device (NFDD) is a device that creates a bright flash and loud sound to temporarily divert the attention of subjects in the immediate area. NFDDs are used to distract and temporarily disorient dangerous suspects by overwhelming their senses of vision and hearing. The distraction allows officers to seize a moment of opportunity to take control of high-risk situations.

- I. NFDD Defense Technology 8901SC emits a loud "bang" and a flash of light.
Quantity: 50

b. **Purpose:**

A distraction device is ideal for distracting dangerous suspects during assaults, hostage rescue, room entry or other high-risk arrest situations. To produce atmospheric over-pressure and brilliant white light and, as a result, can cause short-term (6 - 8 seconds) physiological/psychological, sensory deprivation to give officers a tactical advantage.

c. **Authorized Use:**

Diversionary Devices shall only be used:

- I. By ERT officers who have been trained in their proper use in accordance with POST guidelines and received annual training by a POST-certified instructor.
- II. In hostage and barricaded subject situations.
- III. In high-risk warrant (search/arrest) service where there may be extreme hazards to officers.
- IV. During other high-risk situations where their use would enhance officer safety.
- V. In extraordinary circumstances, which justify an accelerated deployment, otherwise, NFDDs shall not be utilized without prior authorization from the Chief of Police, his designee, or the ERU Commander (*Bureau Captain*)
- VI. During training exercises.
- VII. All other use must first be approved by a Bureau Captain.

d. **Expected Lifespan:**

NFDD Defense Technology 8901SC - 5 years

e. **Fiscal Impact:**

NFDD Defense Technology 8901SC – annual cost approximately \$283.00

11. Tear Gas (Category 12)

a. **Description, quantity, capabilities, and purchase cost:**

Chemical agent munitions, which are commonly referred to as "tear gas," are used by the Culver City Police Department as a non-lethal tool to disperse violent suspect(s) and/or on a felony barricaded suspect(s) to cause barricaded suspects to exit the barricaded structure/location. All chemical agents will be used only in compliance with Penal Code sections 13652.

The Culver City Police Department uses chemical agents which are used by law enforcement across the United States: CS (2-Chlorobenzylidenemalononitrile) and OC (Oleoresin Capsicum).

CS is an irritating agent and lachrymator that irritates the eyes and causes tears to flow. CS has been medically tested in the U.K. and U.S., specifically by the U.S. Army. There are no known allergic reactions to CS.

OC was de-regulated in California in 1996, is endorsed by the FBI, and is available to civilians to legally possess (2.5oz or less). OC is an inflammatory agent which causes involuntary closure of eyes for a duration of 2 to 5 minutes and respiratory inflammation, which subsides in approximately 2 minutes.

- I. CTS Combined Tactical Systems 5230B - Pyrotechnic grenade designed for indoor use delivering a maximum amount of irritant smoke throughout multiple rooms with minimal risk of fire. Quantity: 18
- II. Defense Technology Spede-Heat™ - 40mm short-range CS round incorporates an aluminum shell and utilizes black powder as the propellant. The Spede- Heat™ 40mm short-range round is designed to deliver one dual-ported chemical canister from a 40mm launcher 75 yards to the intended target zone. Quantity: 15
- III. Defense Technology Pocket Tactical – pyrotechnic grenade that is designed as a signaling or covering device. Quantity: 2
- IV. Defense Technology OC Vapor Aerosol - designed for indoor use delivering a high concentration of OC in the form of a mist. Quantity: 26

b. **Purpose:**

To prevent or limit the escalation of conflict where employment of lethal force is prohibited or undesirable. Situations for the use of the less-lethal weapon systems may include, but are not limited to:

- I. Self-destructive, dangerous and/or physically combative individuals.
- II. Violent riotous crowd control incidents when such weapons are necessary to defend against a threat to life or serious bodily injury to any individual, including a peace officer, or to bring a violent, dangerous and unlawful situation safely and effectively under control. Tear gas should not be used against individuals or groups who merely fail to disperse or do not reasonably appear to present a risk to the safety of officers or the public.
- III. Circumstances where members of the Emergency Response Team can obtain a tactical advantage during the following critical incidents: Barricaded felony suspect, vehicle barricade of a felony suspect, active shooter, or a hostage rescue operation.
- IV. Potentially vicious animals.
- V. Department-approved training exercises

- c. **Authorized Use:**
 - I. Chemical Agents shall only be used by officers who have received POST certification in the use of chemical agents and in a manner consistent with Department policy.
 - II. Use of chemical agents for the dispersal of riotous crowds must first be approved by the Chief of Police.
 - III. All other approved use of tear gas must first be approved by a Bureau Captain.
 - IV. During department-approved training exercises
 - d. **Expected Lifespan:**
 - I. CTS Combined Tactical Systems 5230B - 5 years
 - II. Defense Technology Spede-Heat™ - 5 years
 - III. Defense Technology Pocket Tactical – 5 years
 - IV. Defense Technology OC Vapor Aerosol – 5 years
 - e. **Fiscal Impact:**
 - I. CTS Combined Tactical Systems 5230B - annual cost between \$0 and \$360.00
 - II. Defense Technology Spede-Heat™ - annual cost between \$0 and \$346.00
 - III. Defense Technology Pocket Tactical - annual cost between \$0 and \$250.00
 - IV. Defense Technology OC Vapor Aerosol – annual cost between \$0 and \$430.00
12. PepperBall Launcher (Category 12)
- a. **Description, quantity, capabilities, and purchase cost:**

A system that uses high-pressure air to deliver PAVA powder projectiles (similar to a paintball delivery system). This system can launch projectiles at a subject up to 60'. In addition, the system is capable of area saturation up to 150'. Non-lethal option offers law enforcement officers the ability to deliver chemical agents and kinetic energy impacts to subjects in a potentially violent encounter. De-Escalation tool used to avoid further injuries or lethal options on a subject.

 - I. PepperBall TAC-SA™ Launcher – a semi-automatic platform that can fire multiple projectiles over expansive areas. Quantity: 4
 - II. Byrna SD Pepper Ball Launcher – semi-automatic (pistol-style) platform that can fire multiple projectiles. Quantity: 3
 - III. PepperBall Live Projectile - designed for direct impact and area saturation, especially in confined, interior spaces. The projectile has a direct impact of 30 ft and an area of saturation of 150+ft. The projectile contains 0.5% PAVA Powder. Quantity: 1500 rounds
 - IV. PepperBall Live-X Projectile - contains approximately 10x the PAVA of the Live projectile. This projectile is designed for direct impact or area saturation. The projectile has a direct impact of 60 ft and an area of saturation of 150+ft. The projectile contains 5% PAVA powder. Quantity: 3000 rounds
 - b. **Purpose:**

To limit the escalation of conflict where employment of lethal force is prohibited or undesirable. Situations for the use of the less-lethal weapon systems may include but are not limited to:

 - I. Self-destructive, dangerous and/or combative individuals.
 - II. Riot/crowd control and civil unrest incidents when such weapons are deemed necessary to defend against a threat to life or serious bodily injury to any individual, including a peace officer, or to bring an objectively dangerous and

- unlawful situation safely and effectively under control.
- III. Circumstances where a tactical advantage can be obtained.
- IV. Potentially vicious animals.
- V. Training exercises.

c. **Authorized Use:**

- I. Only by officers who have been trained in the use of PepperBall Launchers, in a manner consistent with Department policy, are authorized to use PepperBall Launchers.
- II. Deployment and use of the PepperBall launcher must first be approved by a Bureau Captain or the on-duty Watch Commander.
- III. Use of the PepperBall launcher for dispersal of riotous crowds must first be approved by the Chief of Police.

d. **Expected Lifespan:**

- I. PepperBall TAC-SA™ Launcher - No expiration
- II. Byrna SD Pepper Ball Launcher - No expiration
- III. Live Projectile - 1 year
- IV. Live-X Projectile - 1 year

e. **Fiscal Impact:**

- I. PepperBall TAC-SA™ Launcher - No annual cost unless replacement purchases are necessary (Purchase price: \$1,599.95)
- II. Byrna SD Pepper Ball Launcher – No annual cost unless replacement purchases are necessary (Purchase price: \$349.00)
- III. Live Projectile – annual cost approximately \$1,928.00
- IV. Live-X Projectile – annual cost approximately \$1,928.00

13. Taser Shockwave, microwave weapons, water cannons, and the Long-Range Acoustic Device (LRAD) (Category 13)

a. **Description, quantity, capabilities, and purchase cost:**

NONE

b. **Purpose:**

N/A

c. **Authorized Use:**

N/A

d. **Expected Lifespan:**

N/A

e. **Fiscal Impact:**

N/A

14. Projectile Launch platforms and associated munitions (Category 14)

a. **Description, quantity, capabilities, and purchase cost:**

The Projectile Launcher is not a firearm, but a Less-Lethal system that uses smokeless powder to deliver 40MM projectiles from a safe distance. The Less-Lethal launcher is capable of launching 40MM munitions at a subject up to 25 yards.

- I. B&T GL06 40MM Launcher, Quantity: 2
- II. Defense Technology Model 40 Launcher, Quantity: 6
- III. Defense Technology 6325 (Sponge Round) Projectile - 40mm direct-fire

round has a plastic body and sponge nose designed for crowd control, patrol, and tactical applications.

- IV. Defense Technology OC Crushable Projectile – 40 mm short-range round is a direct-fire munition that is designed to emit an irritant powder upon impact. Quantity: 26
- V. Defense Technology 6297 Projectile – contains 60-caliber rubber balls designed for crowd management

b. **Purpose:**

To limit the escalation of conflict where employment of lethal force is prohibited or undesirable.

c. **Authorized Use:**

- I. Only those officers who have been trained in the use of Projectile Launchers are authorized to use the Projectile Launchers, in a manner consistent with Department policy.
- II. Use for dispersal of riotous crowds must first be approved by the Chief of Police
- III. All other use of Projectile Launchers must first be approved by the on-duty Watch Commander or the on-scene Field Supervisor.

d. **Expected Lifespan:**

- I. B&T GL06 40MM Launcher - No expiration
- II. Defense Technology Model 40 Launcher - No expiration
- III. Defense Technology 6325 (Sponge Round) Projectile – 5 years
- IV. Defense Technology OC Crushable Projectile - 5 years
- V. Defense Technology 6297 Projectile – 5 years

e. **Fiscal Impact:**

- I. B&T GL06 40MM Launcher – No annual cost unless replacement purchases are necessary (Purchase price: \$1,375.00)
- II. Defense Technology Model 40 Launcher – No annual cost unless replacement purchases are necessary (Purchase price: \$805.00)
- III. Defense Technology 6325 (Sponge Round) Projectile – annual cost approximately \$2,650 [per quantity]
- IV. Defense Technology OC Crushable Projectile – annual cost approximately \$265.00 [per quantity]
- V. Defense Technology 6297 Projectile-annual cost approximately \$22.00 [per quantity]

MILITARY EQUIPMENT NOT OWNED BY DEPARTMENT SUBJECT TO COLLABORATIVE USE (Equipment Category 15)

The purpose of this section is to identify any defined military equipment that could possibly be used in Culver City, by a neighboring law enforcement agency, during a critical incident. Such critical incidents may include, but are not limited to, a high-risk search warrant operation, barricaded felony suspect, active shooter, bomb threat/suspicious package, or joint training exercise. Note that the below-described equipment is not owned by the Department or operated by Culver City Police Department personnel.

2. Robot (Category 1)

a. **Description, quantity, capabilities, and purchase cost:**

A remotely controlled unmanned machine that operates the ground, which is

utilized to enhance the safety of the community and officers. This device can be remotely operated from many hundred meters away, providing protection and safety to their operators. There is no cost to the Culver City Police Department for a neighboring agency use in this jurisdiction.

b. **Purpose:**

To be used to remotely gain visual/audio data, deliver CNT phone, open doors, disrupt packages, and clear buildings.

c. **Authorized Use:**

- IV. Only by a neighboring police agency in accordance with their existing policies and procedures.
- V. Approval to use a robot in Culver City, or in collaboration with the Culver City Police Department, must first be approved by a Bureau Captain and only during critical incidents
- VI. During Department-approved training exercises.

d. **Expected Lifespan:**

N/A

e. **Fiscal Impact:**

N/A

3. Armored Personnel Carrier (Category 2 &3)

a. **Description, quantity, capabilities, and purchase cost:**

An armored vehicle that seats 10-12 personnel with an open floor plan that allows for rescue of down personnel. It can stop various projectiles, which provides greater safety to citizens and officers beyond the protection level of a shield and personal body armor.

b. **Purpose:**

To be used in response to critical incidents to enhance officer and community safety, improve scene containment and stabilization, and assist in resolving critical incidents.

c. **Authorized Use:**

- I. Only by a neighboring police agency in accordance with their existing policies and procedures.
- II. Approval to deploy an Armored Personnel Carrier in Culver City, or in collaboration with the Culver City Police Department, must first be approved by a Bureau Captain and only during critical incidents
- III. During Department-approved training exercises.

d. **Expected Lifespan:**

N/A

e. **Fiscal Impact:**

N/A



Technical Specifications

B&T GL-06

Single Shot Launcher cal. 40 x 46 mm
manufactured by B&T AG, Switzerland



TS-2889.17

B&T AG
P.O. Box 174 • 3608 Thun
Switzerland
Fon +41 33 334 67 00
Fax +41 33 334 67 01
info@bt-ag.ch
www.bt-ag.ch

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Related documents

TM-2889 Operator Manual

SM-2889 Armorer Manual

TR-2889-1 Qualification Test Report

PC-2889 Parts Catalogue

Abbreviations:

HE: High Explosive. Warhead grenades, working at high pressure level.

LL: Less lethal. Munitions working at pressure levels 4 to 5 times lower than HE grenades.

1. General description

The GL-06 grenade launcher is intended to serve as a supplemental or squad weapon with less lethal munitions for all types of crowd management and law enforcement tasks.

The GL-06 is designed as a single shot break down weapon. Due to its design and strength of materials, the launcher works with all kind of 40 x 46 mm ammunitions. The trigger is of double-action-only style with non-exposed hammer for safe and simple operation.

There are different stock configurations, integrated NATO accessory rails and the possibility to install more rails and accessories to optimize the launcher specifically to each mission.

The ergonomics are state of the art: red dot sight for fast and accurate target acquisition, left and right side sling attachment points, large ambidextrous operating elements and a wide trigger guard for easy operation even with heavy protective gloves.

2. Nomenclature and technical data

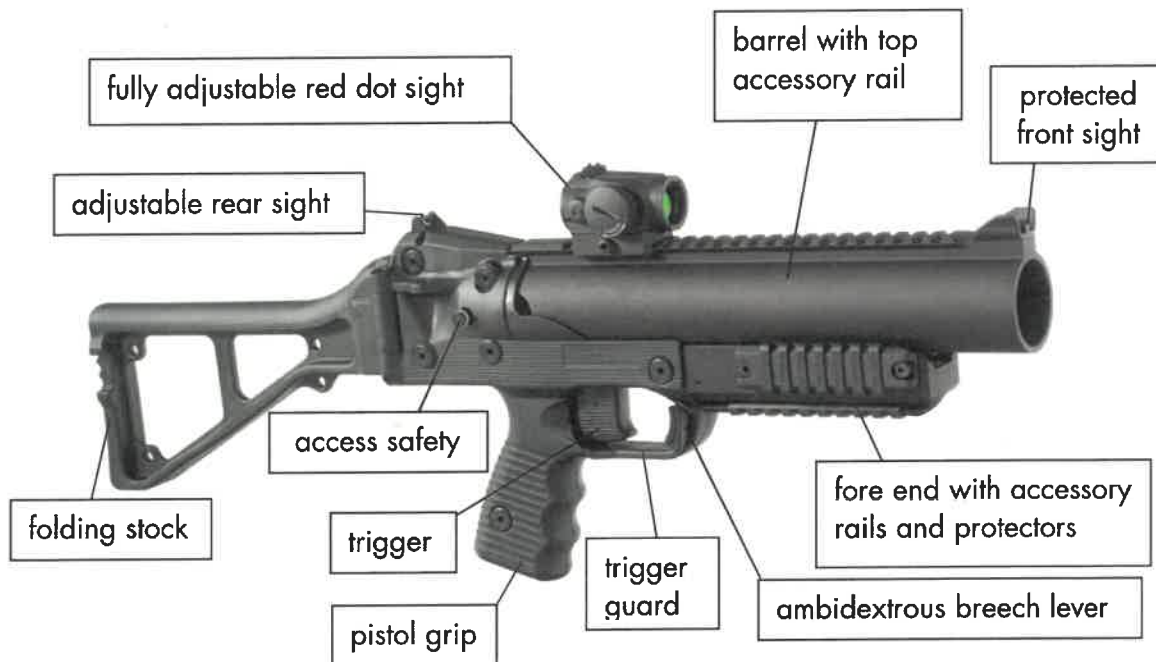


Fig. 2.1

Designation:	GL-06	
Manufacturer:	B&T AG, Switzerland	
Product ID:	BT-31000 black without access safety BT-31000-1 black with access safety BT-31000-2 yellow (RAL 1021) without access safety BT-31000-3 yellow (RAL 1021) with access safety	
NATO Stock Number:	1010-38-000-9860	
Caliber:	40 x 46 mm	
System:	Break-down single shot, double action only	
Barrel length [mm]:	280	
Twist rate [mm per turn]:	1200	
Rifling:	12 grooves, right hand	
Overall length [mm]:	590 (stock unfolded)	385 (stock folded)
Overall width [mm]:	60 (stock unfolded)	95 (stock folded)
Overall height [mm]:	200	
Weight [kg]:	2.15	
Sights:	Red dot sight Aimpoint Micro T-1 (dot size 4 MOA) Ghost ring iron sights (sight radius 339 mm), adj. in windage	
Interfaces:	4 NATO accessory rails STANAG 4694	
Standard supply:	Weapon complete with siderails, rail covers and carrying sling	

3. Operating principle

When the weapon is closed, the locking lug under the barrel is held in position by the two locking latches and the barrel is locked (ref. fig. 3.1). When pushing the breech lever forward, a rising wedge is spreading the two latches like a couple of shears, releasing the locking lug and thus unlocking the barrel (fig. 3.1). By the force of the barrel spring, the barrel snaps open and can be loaded manually.

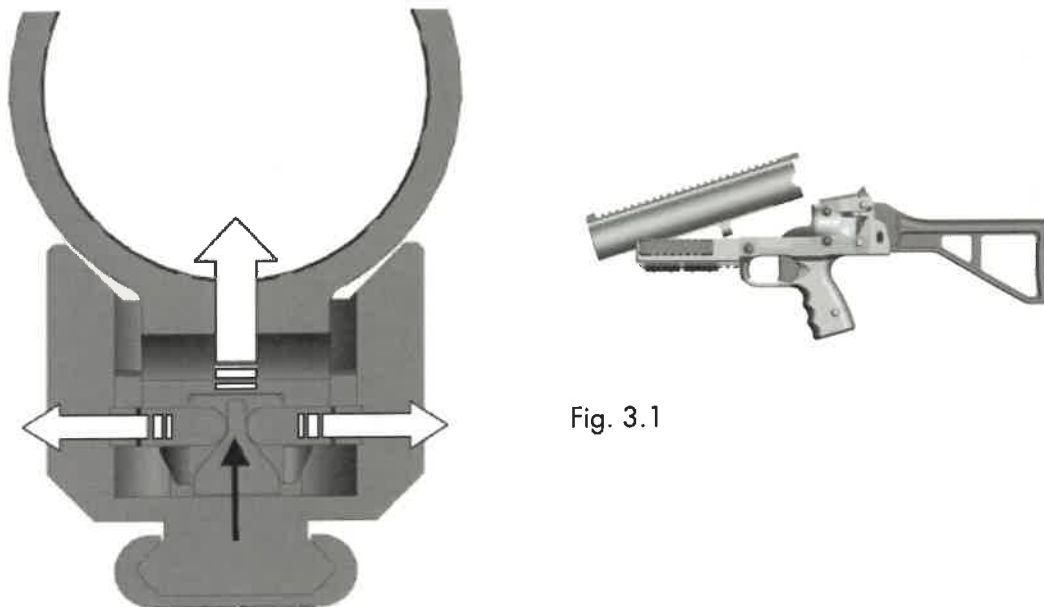


Fig. 3.1

When the launcher is loaded, the operator can release the shot simply by pulling the double action only trigger (fig. 3.2). The firing pin (part of the hammer) touches the primer of the cartridge only when the trigger releases the covert hammer, then it snaps immediately back in a safe position.



Fig. 3.2

In order to increase the operational safety of the launcher, a manual push-through safety is available which locks the hammer with the firing pin in safe distance of the primer.

Some comments about the operating principle of 40 x 46 mm grenades: Unlike conventional small arms cartridges, the case shows two chambers (see fig. 3.3). When the firing pin strikes on the primer, it ignites the propellant which is in the inner high pressure chamber. The combustion gases are then released by diffusers into the outer low pressure chamber. It is the force of the gases in the low pressure chamber which drive the projectile, which is set on top of this named chamber, through the barrel.

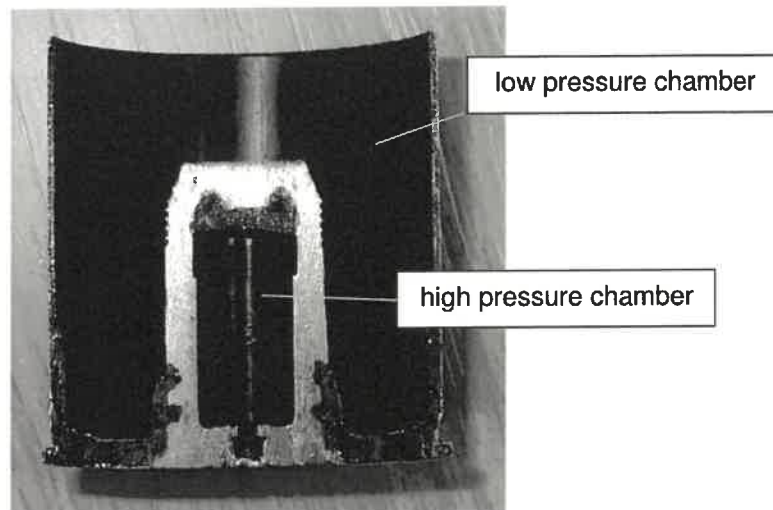


Fig. 3.3: Cut through fired 40 x 46 mm grenade

Concerning internal ballistics, recoil, mechanical stress on the weapon and quality control of the grenades, it is always the maximum pressure in the outer low pressure chamber to consider.

40 x 46 mm ammunitions exist in two distinctive qualities: One is warhead (HE) grenades with a payload of around 200 grams - typically an explosive projectile - and working with low chamber pressures of approx. 200 bar. The other is less lethal (LL) munitions with low mass kinetic energy projectiles or a chemical agent as payload; their working pressure is around four times lower than with HE grenades.

The GL-06 is designed for use with LL munitions but strong enough to withstand the pressure of a HE grenade.

4. Compatible ammunitions

Compatibility is limited by dimensions and maximum pressures.

The critical dimensions are outlined in fig. 4.1. Note that the cartridge overall length is of no importance: 40 x 46 mm munitions of any length can be loaded in the GL-06.

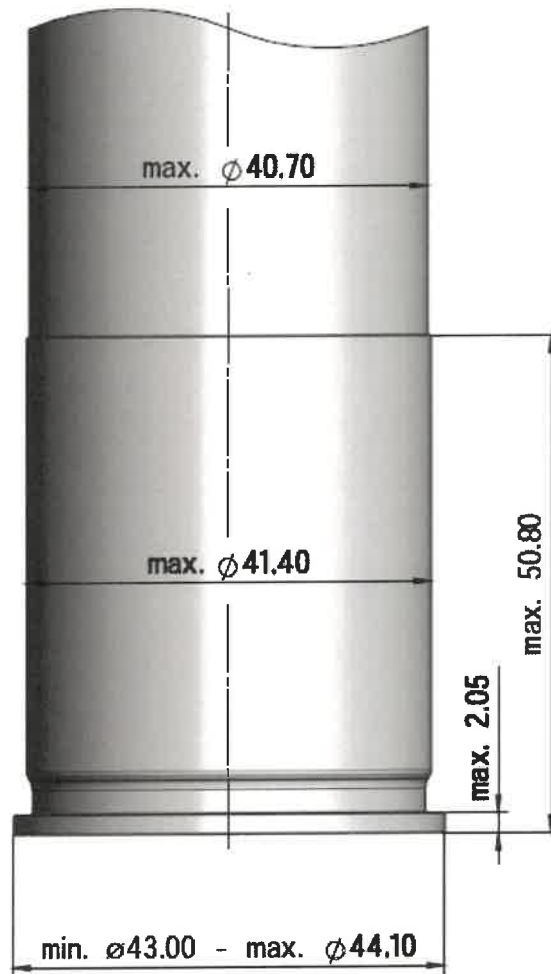


Fig. 4.1: Compatible dimensions

Regarding the pressure compatibility, the maximum pressure in the low pressure chamber at extreme service conditions (ESCP) is to consider. ESC is the most dangerous conform condition of ammunition (according to ammo manufacturer specs), e.g. after 24 h high temperature storage.

In an inspection lot of ten cartridges, the average (m) and the standard deviation (s) of ESCP must comply with

$$m_{\text{ESCP}} + 2.91 \cdot s_{\text{ESCP}} \leq 230 \text{ bar}$$

5. Ballistic data

The sights of the GL-06 launcher are set point blank to 25 m with SIR 40 mm (B&T BT-23510); ballistic data below.

x [m]	v [m/s]	E [J]	ED [J/mm²]	t [s]	dia_{0.99} [mm]
0	85	116	0.092	0.00	0
5	84	112	0.089	0.06	29
10	82	109	0.087	0.12	59
15	81	106	0.084	0.18	90
20	80	102	0.082	0.24	121
25	79	99	0.079	0.31	152
30	78	97	0.077	0.37	184
35	77	94	0.075	0.43	217
40	75	91	0.072	0.50	250
45	74	88	0.070	0.57	283
50	73	86	0.068	0.64	317

Table 5.1: Ballistic data of SIR impact round (projectile mass 32 grams)

x: Distance

v: Velocity

E: Kinetic energy

ED: Energy density

t: Flight time

dia_{0.99}: Diameter of circular target with hit probability of 99%

6. Exploded view and parts list

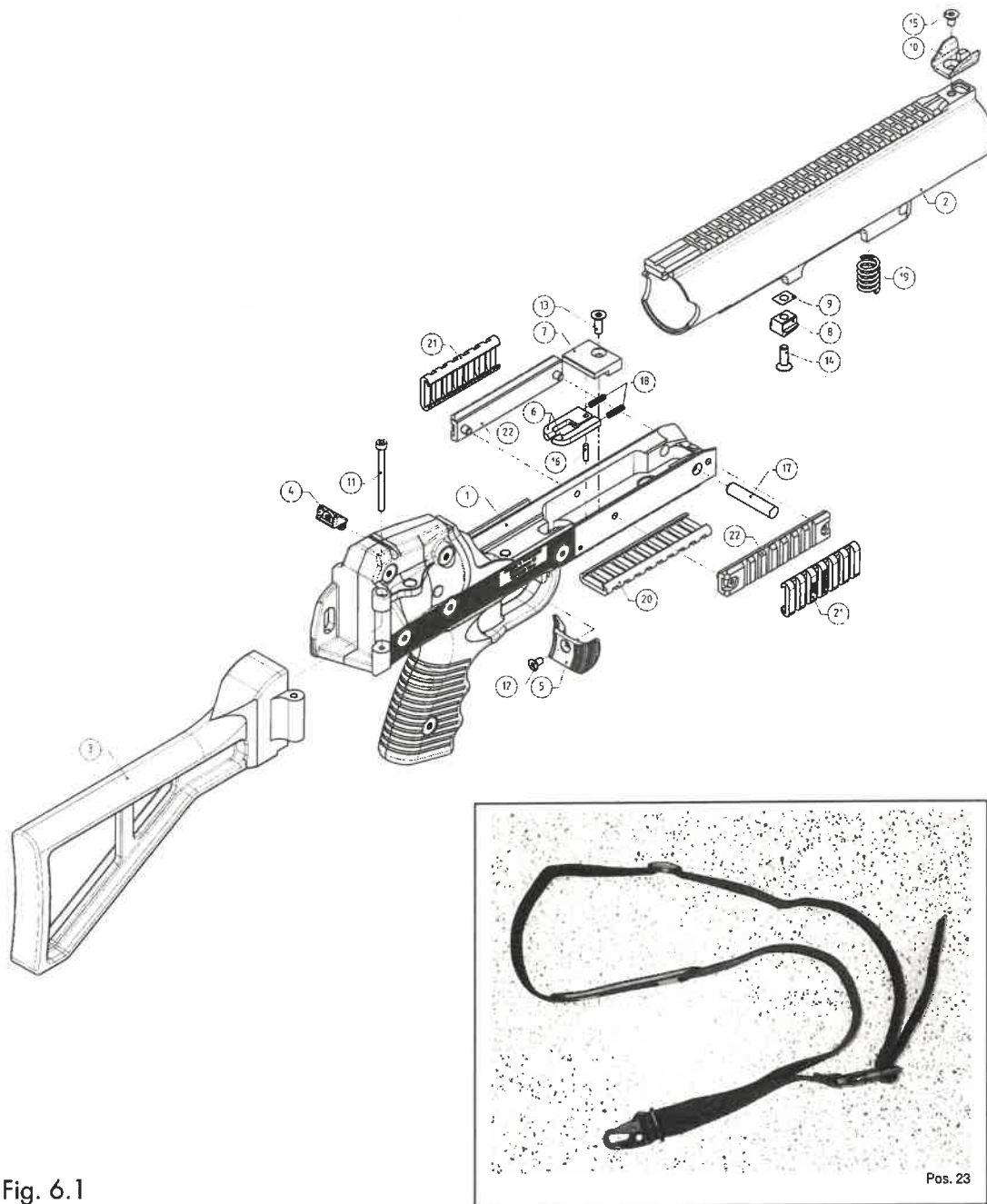


Fig. 6.1

Technical Specifications GL-06



Pos.	Designation	Part Number
1	Main assembly (for BT-31000 or BT-31000-1)	BT-31047
2	Barrel (only)	BT-31010
3	Folding stock complete	BT-20218
4	Rear sight assembly	BT-30223
5	Breech lever	BT-31012
6	Locking latches (left/right identical, two per weapon)	BT-31020
7	Locking latch retainer	BT-31022
8	Locking lug	BT-31013
9	Spacer (if necessary)	BT-31029
10	Front sight	BT-31008
11	Folding stock axle screw	BT-31031
12	Breech lever screw	BT-31032
13	Retainer screw	BT-31035
14	Locking lug screw	BT-31036
15	Front sight screw	BT-31033
16	Locking latch axle pin	BT-31040
17	Breech axle pin	BT-31043
18	Locking latch springs (two per weapon)	BT-31067
19	Barrel spring	BT-31049
20	Rail protector	BT-21204-3
21	Side rail protectors (two per weapon)	BT-21204-4
22	Side rails with screws (two per weapon)	BT-21731
23	Sling	BT-400967-1

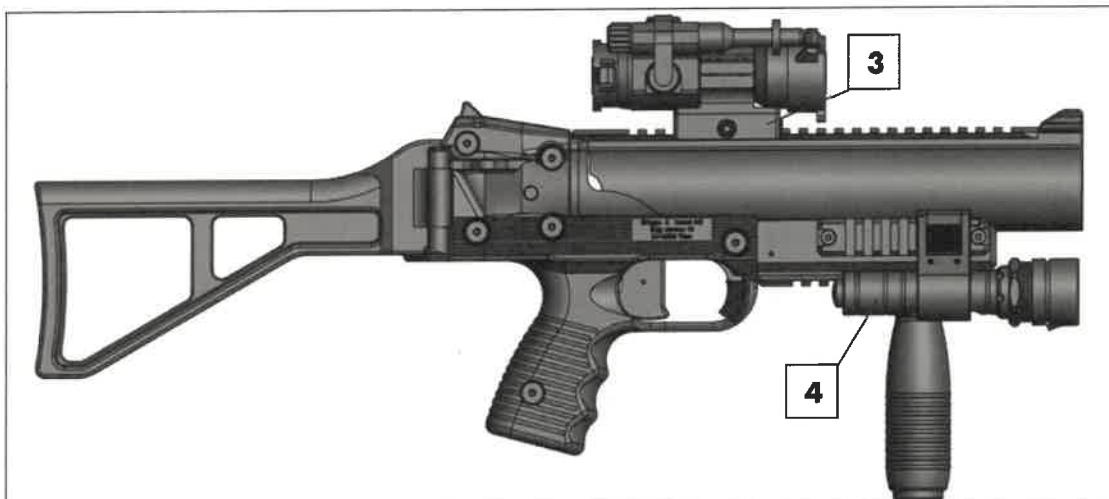
For more details refer to parts catalogue PC-2889.

7. Accessories

7.1 Tactical



Pos.	Description	Product ID
1	B&T quick detachable vertical handgrip	BT-21773
1a	B&T screw-on vertical handgrip NSN 1005-17-117-0959	BT-21203
2	B&T foldable ballistic helmet visor stock	BT-20222



Pos.	Description	Product ID
3	B&T quick detachable mounts for optical sights	various
4	B&T tactical light 6 V	BT-211017
	B&T tactical light 9 V	BT-211016
	B&T tactical light 6 V IR	BT-21803

B&T carrying bag for 1 launcher and 20 cartridges	tbd
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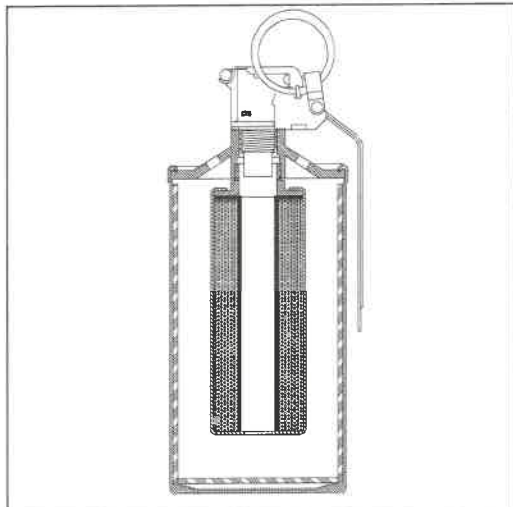
byrnaHD™

SPECIFICATIONS

Model Number:	HD68300
Size:	7.28" X 5.62" 185mm X 143mm
Loaded Weight:	1.3lb 597g
Housing Materials:	Glass-filled Nylon Rubber Overmold Grip
Component Materials:	Aluminum and Stainless Steel
Caliber:	.68
Speed of Projectile:	220-300 FPS
Weight of Projectile:	3.2 Grams
Force at Muzzle Velocity:	13 Joules
Composition of Chemical Rounds:	Byrna HD Max - 12% active ingredients: OC, CS, and PAVA Byrna HD Pepper - 5% OC
Magazine Capacity:	5 Rounds
Propulsion:	One (1) 8 Gram CO ₂ Cartridge
Puncture Mechanism:	Punctures CO ₂ Cartridge and fires first projectile all with first trigger pull.
Temperature Range, Effective Use:	0° F - 120° F -18° C - 49° C
Accessories:	Laser Pointers, Flashlights, Holsters (left and right hand carry)
Safety Lever:	Ambidextrous
Colors:	Safety Orange, Bright Yellow, Gray, Desert Tan, Black

Patents Pending

MODEL No.	DESCRIPTION:
5210B	Smoke Baffled Canister Grenade, Low Flame Potential
5220B	CN Baffled Canister Grenade, Low Flame Potential
5230B	CS Baffled Canister Grenade, Low Flame Potential
Revision D 5/21	



NOT TO SCALE

WARNING: CSI manufactures a variety of CTS less lethal products which are under pressure, pyrotechnic, incendiary, emit projectiles, generate smoke, or are explosive in nature. When used in accordance with CTS training guidelines and the individual agency's policy, they are intended to cause varying degrees of pain and injury, which are temporary. These products are restricted to law enforcement, corrections, and military personnel and are used to gain compliance, disperse crowds, restore order, or temporarily incapacitate dangerous persons. In rare circumstances, if used incorrectly, CTS less-lethal products may cause damage to property, serious bodily injury or death. Therefore, any person using the force option depicted on this page should receive proper training to ensure the safest and most effective use.

PHYSICAL & OPERATIONAL	
Type	Irritant & Smoke Pyrotechnic Grenades
Diameter	2.60" (66 mm)
Length	6.20" (157 mm)
Fuze Type	Model 201
Fuze Delay	1.5 +/- 0.3 sec. average
Launchable	Yes
Discharge Time	20 - 40 Seconds
Emission Ports	4
Overall Weight	395 gm
Warranty	5 Years From Shipment Date
All specifications are average and are subject to change without notice. All performance specifications are based on testing conducted in Jamestown, PA USA, At an elevation of 1,058 feet above sea level at ambient temperature conditions.	

SHIPPING INFORMATION	
Proper Shipping Name	Ammunition, Smoke
UN Number	0303
Hazard Class	1.4G
Labels Required	Explosive 1.4G
Quantity Per Package	24 Grenades
Total Package Weight	31 lb.
Package Type	UN Specification 1A2/Y36/S Metal Drum with Lever Lock Lid
Package Dimensions	19x12 (7 gal. drum also used for overnight packages)



All new DD5 rifles feature Superfinished & DLC Bolt Carrier Group so they are easy to clean and maintain. The patent pending bolt carrier buffer optimizes cycling.

All DD5 rifles include the innovative 4-Bolt Connection System securely attaches free-floating CHF barrel and handguard mounts securely to upper without a barrel nut.



Innovative 4-Bolt Connection System replaces barrel nut for increased stability and a uniform connection between the handguard, barrel, and receiver.

18" chrome-lined, heavy-phosphate-coated Strength-to-Weight-profile barrel for accuracy and extended range.

Independently ambi GRIP-N-RIP charging handle has anti gas features for a better shooting experience.

The DD5 V4, chambered in either 6.5 Creedmoor or 7.62x51mm NATO, provides users of the Daniel Defense semi-automatic platform even greater long range precision shooting capability. The highly popular 6.5 Creedmoor takes advantage of superior ballistic coefficients to offer both flatter trajectories and reduced wind drift at levels normally reserved for much heavier recoiling long action calibers.

NEW
DD5.V4.



**DEFENSE
TECHNOLOGY®**

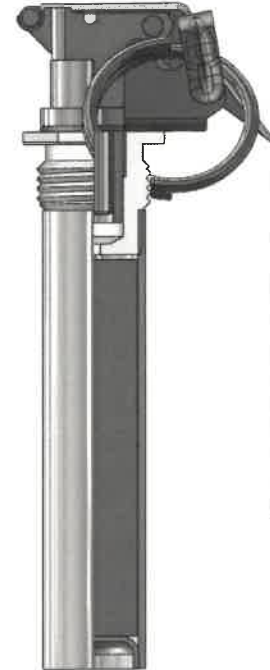
DISTRACTION DEVICE® RELOAD W/ SC 12-GRAM

PRODUCT SPECIFICATIONS	
Reload	Steel collar w/ cardboard tube
Diameter	0.78 in / 1.98 cm
Length	5.00 in / 12.7 cm
Canister	To be used with reloadable bodies
Fuze	M201A1 Type
Explosive Content	Flash Powder - 0.42 oz / 12 grams
Sound Level	175 dB at 5' (1.5m)
Light Level	6 – 8 million Candelas
Light Duration	10 milliseconds
Part No.	8901SC 8901SC-HH
Warranty	5 years from date of manufacture

ALL SPECIFICATIONS ARE AVERAGES AND SUBJECT TO CHANGE

The 12-Gram Distraction Device® Reload w/ Safety Clip utilizes an M201A1 type fuze that was designed for use with the Distraction Device reloadable steel body. The safety clip is designed to keep the pull-pin against the device body to prevent the pin from protruding and possibly snagging on other objects. The 12-Gram Distraction Device Reload w/ Safety Clip is only to be used when properly inserted and tightened into the Distraction Device body. **DO NOT** discharge the reload without the use of the steel body. The Distraction Device body should only be deployed in areas that have been visually observed to be clear of potential hazards. It is recommended that the immediate area for deployment be visually affirmed to be clear of personnel and that the device is delivered so that the ports are free from obstruction. If the bottom port is obstructed by an object or wall, the device body may move. The cleared area for deployment should be 5 - 6 feet around which the device is expected to come to rest.

A modified version of the 12-Gram Distraction Device Reload w/ Safety Clip is available for use in high humidity environments that incorporates a water resistant charge tube. These products are designated by 'HH' after the part number. The standard render safe practice involving 24 hour water submersion will no longer be effective for the high humidity devices, please consult the render safe procedure for incineration in the instructions.



WARNING

This product can expose you to chemicals including Lead Salts and Hexavalent Chromium, which are known to the State of California to cause cancer, and Lead Salts, which are known to the State of California to cause birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.



INDOORS/OUTDOORS



EXPLOSIVE

WARNING: TO BE USED BY TRAINED LAW ENFORCEMENT, CORRECTIONAL OR MILITARY PERSONNEL WHO HAVE SUCCESSFULLY COMPLETED A TRAINING PROGRAM FOR THE DEPLOYMENT OF DISTRACTION DEVICE® UNITS. IMPROPER USE OF THE DISTRACTION DEVICE UNIT CAN RESULT IN DEATH OR SERIOUS BODILY INJURY.

1855 South Loop Casper, WY 82601

www.defense-technology.com

800.347.1200

Safariland, LLC Rev. 06/20



**DEFENSE
TECHNOLOGY®**

POCKET TACTICAL GRENADE OC, CN, CS, SAF-SMOKE™ AND COLORED SMOKE

PRODUCT SPECIFICATIONS		
Diameter	1.4 in / 3.6 cm	
Length	4.75 in / 12 cm	
Fuze	M201A1 Type	
Active Agent	OC	0.25 oz / 7 g
	CN/CS	0.9 oz / 25.2 g
Discharge Time	20 – 40 Seconds	
Launchable	Yes	
Part No.	OC	1019
	CN	1015
	CS	1016
	Saf-Smoke™	1017
	Saf-Smoke™ Blue	1017B
	Saf-Smoke™ Green	1017G
	Saf-Smoke™ Red	1017R
	Saf-Smoke™ Yellow	1017Y
Warranty	5 years from date of manufacture	

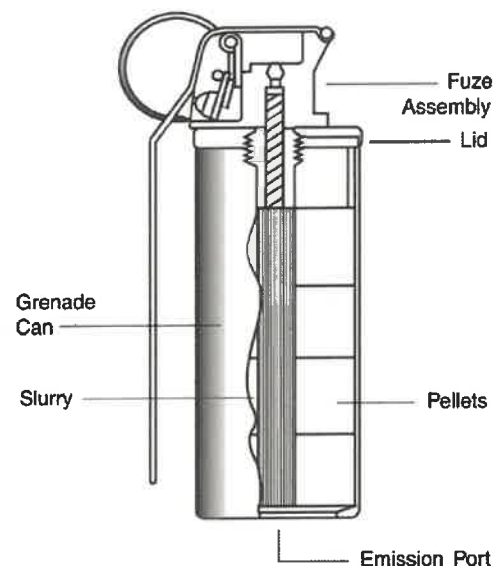
ALL SPECIFICATIONS ARE AVERAGES AND SUBJECT TO CHANGE

The Pocket Tactical Grenade is a quick burning, reduced volume, continuous discharge grenade available in OC, CN, CS, and Saf-Smoke™. Pelletized chemical agent or smoke is discharged through one (1) gas port located on the bottom of the canister.

The Pocket Tactical Grenade is a small, lightweight, easily carried device that provides a medium volume of chemical agent or smoke for certain situations. It was designed with the tactical team in mind for distraction, concealment, rescue, or signaling. The pocket grenade is not specifically intended as a crowd management device; however, it can be used in chemical configurations in conjunction with larger smoke canisters to “piggy back” chemical agent into a predominately smoke environment. This device should be deployed utilizing wind advantage.

It should NOT be deployed onto rooftops, in crawl spaces, or indoors due to its fire-producing capability. Hand throw or launch. The fuze should be removed prior to inserting the grenade into the launching cup, and then the open threaded end is inserted into the launching cup first. Launching of grenades will provide deploying officers additional standoff distances. This small canister affords good coverage and may also be used as a distraction device.

It may also be used as a distraction to focus attention away from other activities.



WARNING

This product can expose you to chemicals including Lead Salts and Hexavalent Chromium, which are known to the State of California to cause cancer, and Lead Salts, which are known to the State of California to cause birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

WARNING: THIS PRODUCT IS TO BE USED ONLY BY AUTHORIZED AND TRAINED LAW ENFORCEMENT, CORRECTIONS, OR MILITARY PERSONNEL. THIS PRODUCT MAY CAUSE SERIOUS INJURY OR DEATH TO YOU OR OTHERS. THIS PRODUCT MAY CAUSE SERIOUS DAMAGE TO PROPERTY. HANDLE, STORE AND USE WITH EXTREME CARE AND CAUTION. USE ONLY AS INSTRUCTED.



1855 South Loop Casper, WY 82601

www.defense-technology.com

800.347.1200

Safariland, LLC Rev. 06/20

SPEDE-HEAT™ GRENADE CONTINUOUS DISCHARGE OC, CN AND CS



PRODUCT SPECIFICATIONS

Diameter	2.62 in / 6.7 cm	
Length	6.12 in / 15.5 cm	
Fuze	M201A1 Type	
Active Agent	OC	1.09 oz / 31 g
	CN/CS	2.9 oz / 81.2 g
Discharge Time	20 – 40 Seconds	
Launchable	Yes	
Part No.	OC	1070
	CN	1071
	CS	1072
	Smoke	See Max. Smoke #1073
Warranty	5 years from date of manufacture	

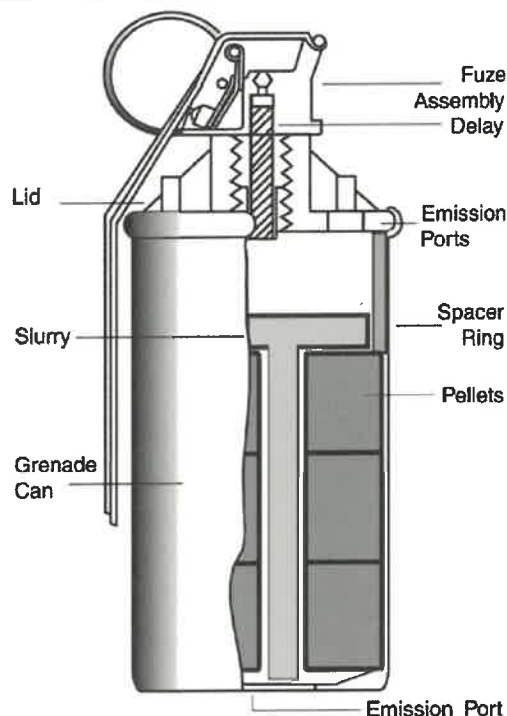
ALL SPECIFICATIONS ARE AVERAGES AND SUBJECT TO CHANGE

The Spede-Heat™ Grenade is a high volume, continuous discharge grenade available in OC, CN or CS.

In the OC, CN and CS configurations, pelletized chemical agent is discharged through four (4) gas ports located on top of the canister, three (3) on the side, and one (1) on the bottom.

Designed specifically for outdoor use in crowd control situations, the Spede-Heat™ Grenade is built on the old style larger canister. It is a high volume continuous burn device that expels its payload in approximately 20 - 40 seconds from a single source. The longer burn time may allow for throwback by individuals wearing burn protection such as a welder's mitt. The canisters may be protected from advancing individuals with the use of less lethal impact munitions. The device should be deployed utilizing wind advantage.

It should NOT be deployed onto rooftops, in crawl spaces, or indoors due to its fire-producing capability. Hand throw or launch. Launching of grenades will provide deploying officers additional stand-off distances. Affords very good coverage for large outdoor areas.



WARNING

This product can expose you to chemicals including Lead Salts and Hexavalent Chromium, which are known to the State of California to cause cancer, and Lead Salts, which are known to the State of California to cause birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.



WARNING: THIS PRODUCT IS TO BE USED ONLY BY AUTHORIZED AND TRAINED LAW ENFORCEMENT, CORRECTIONS, OR MILITARY PERSONNEL. THIS PRODUCT MAY CAUSE SERIOUS INJURY OR DEATH TO YOU OR OTHERS. THIS PRODUCT MAY CAUSE SERIOUS DAMAGE TO PROPERTY. HANDLE, STORE AND USE WITH EXTREME CARE AND CAUTION. USE ONLY AS INSTRUCTED.

1855 South Loop Casper, WY 82601

www.defense-technology.com

800.347.1200

Safariland, LLC Rev. 06/20



BARE GELATIN

Bullet: 75 gr. BTHP T2 TAP®
B.C.: .355 S.D.: .214
Muzzle Velocity: 2858 fps
Barrel: 16"
Twist Rate: 1:9"
Total Penetration: 10.5"
Max. Cavity: 5.5"
Depth to Max. Cav.: 5.5"
Entry: 0.75"
Retained Weight: 31.5 gr.

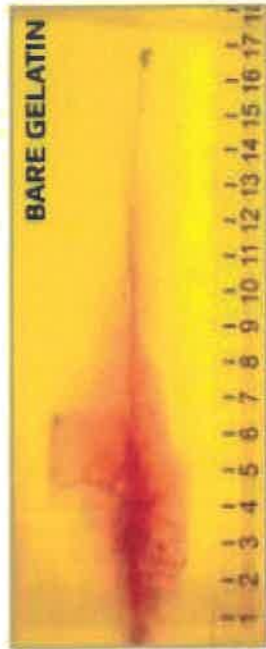


75gr. BTHP T2 TAP® ITEM #8126N

APPLICATION: PRECISION RIFLE

The T2 bullet profile is specifically designed to optimize function and feeding in M16/M4 variant guns. The cartridge's propellant technology is custom designed to enhance weapon operation, and delivers phenomenal temperature stability. The 75 gr. BTHP T2 bullet is designed to deliver rapid incapacitation upon impact.

75 gr. BTHP T2 TAP® 16" bbl DPMS AR-15	muzzle	100 yds	200 yds	300 yds	400 yds	500 yds
Velocity (fps)	2858	2600	2357	2127	1910	1708
Energy (ft lbs)	1360	1126	925	753	608	486
Trajectory (inches)	-1.5	0	-3.7	-13.6	-31.2	-58.5



BARE GELATIN

Bullet: 75 gr. TAP SBR®
 S.C.I. 230 S.D. 234
 Muzzle Velocity: 2310 fps
 Barrel: 10.5"
 Twist Rate: 1:7"
 Total Penetration: 17.0"
 Max. Cavity: 4.5"
 Depth to Max. Cav.: 4.5"
 Entry: 0.50"
 Retained Weight: 69.5 gr.



75gr. TAP SBR® ITEM #81295

APPLICATION: ENTRY, PATROL/DUTY | Meets FBI Protocol

Hornady® 5.56 NATO TAP SBR® is designed specifically for 10.5"-11.5" short-barreled rifles by using proprietary propellants and a bullet designed with technology from industry leading Critical Duty® FlexLock® bullets. TAP SBR® ammunition provides exceptional performance in suppressed or unsuppressed SBR's. With virtually no flash or residue, TAP SBR® ammunition dramatically reduces sound signature, will not foul or overheat suppressors, delivers uniform velocity and accuracy, and provides controllable rate of fire in automatic platforms. TAP SBR® is the optimum choice for 10.5"-11.5" barreled 5.56 rifles.

75 gr. TAP SBR® 10.5" bb LMT CQ8	muzzle	100 yds	200 yds	300 yds	400 yds	500 yds
Velocity (fps)	2310	1964	1653	1386	1179	1042
Energy (ft lbs)	888	643	455	320	231	181
Trajectory (Inches)	-1.5	0	-7.6	-28.1	-66.8	-130.5



PROJECTILES

LIVE™

The basic PepperBall® projectile, it contains 2% PAVA, and is excellent for direct impact and area saturation, especially in confined, interior spaces.

Available Color Options:



SPECIFICATIONS

Weight	Caliber	Payload	Shelf Life	Velocity	Direct Impact	Saturation	Kinetic Impact
3g	.68	2.5g	3 Years	280-300 FPS	60ft	150+ft	8.8-11ft lb/12-15J

FEATURES

- Ultrasonically Welded
- Shell Color Indicates Payload
- 100% Waterproof
- Non-flammable
- Operational Temperature of -30°F to 150°F

FORMULA

- 2% PAVA Powder

QUANTITIES

- **Jar:** 90/375
- **Case** 1500

 **MADE IN THE USA**

U.S. Sales (877) 887-3773 | International sales + 1 (858) 228-1439 | PepperBall.com

PepperBall® is a registered trademark of United Tactical Systems, LLC, exclusive worldwide manufacturer and supplier of genuine PepperBall products.

PLE120121



PepperBall®
SAFER OPTIONS

PROJECTILES **ROUND**



ROUND

LIVE-X™

Our most potent and powerful concentration of PAVA pepper powder. One round of LIVE-X™ contains the equivalent PAVA irritant chemical agent in 10 regular PepperBall® LIVE™ rounds.

SPECIFICATIONS:

CALIBER

68 Caliber

WEIGHT

3g

PAYLOAD

2.5g

SHELF LIFE

3 years

VELOCITY

280-320 FPS

KINETIC

10-15J

FORMULA

5% PAVA Powder

FEATURES

- ▶ Ultrasonically welded
- ▶ Shell color indicates payload
- ▶ 100% waterproof
- ▶ Operational temperature of -30°F to 150°F
- ▶ Non-flammable

QUANTITIES

JARS OF: 90 | 375

CARTON OF: 1500



MADE IN THE USA

PepperBall®

1-877-887-3773 | North America
+1 858-228-1439 | International

Sales@PepperBall.com
PEPPERBALL.COM

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IC-E IC-ENHANCED INDIVIDUAL CARBINE

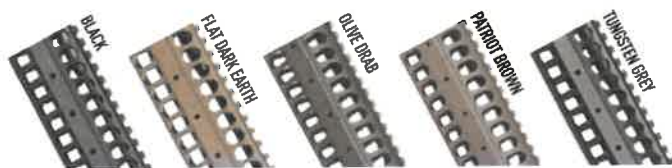
5.56 NATO

BARREL	14.7" 37.3cm	16.1" 40.9cm
WEIGHTS	7.0lbs 3.2kg	7.3lbs 3.3kg
LENGTHS	30.7"-34" 78.0-86.4cm	32.1"-35.4" 81.5-89.9cm

- Monoforge™ upper receiver with integrated rail-base is stronger than the standard-pattern upper
- All LWRCI™ forgings are coined: the material is struck twice in the die for precise dimensional accuracy and a superior surface finish
- LWRCI™ Skirmish Sights
- LWRCI™ Ambidextrous Charging Handle
- Patented LWRCI™ short-stroke gas piston system offers unparalleled reliability and easy maintenance
- LWRCI™ Enhanced Fire Control Group – Nickel-Teflon coated for a smooth, crisp trigger pull with positive reset
- LWRCI™ Advanced Trigger Guard is oversized to allow for easy operation with gloves
- Black Nitride treated LWRCI™ heavy-profile barrel is precisely torqued in our factory to a consistent torque setting. Cold hammer forged 1:7 twist stabilizes a wide range of bullet types
- Nickel-Boron coated bolt carrier for unparalleled wear resistance, corrosion resistance, and permanent lubricity
- Fully-ambidextrous lower receiver controls include the bolt catch and release, the magazine release, and the safety selector
- Magpul® MOE+® Grip combines reinforced polymer body construction with comfortable wrap-around rubber overmolding for maximum weapon control in adverse environments
- LWRCI™ Compact Stock



AVAILABLE COLORS



LWRCI.COM | 410.901.1348





LAUNCHERS

TAC-SA™

The PepperBall TAC-SA semi-automatic launcher is the perfect tool for crowd management, riot-control scenarios or any other situation requiring high-intensity engagement. The TAC-SA quickly disperses PAVA across expansive areas making it a solid tool for operational teams.

Available Color Options:

Availability may be limited.



SPECIFICATIONS

Weight	Caliber	Length	Height	Action	Power	Capacity	Kinetic Impact
6.3lbs/2.8kg	.68 Caliber	28"/71.1cm	12"/30.4cm	Semi-Auto	HPA	180 Rounds	7.3-11ft lb/10-15J

FEATURES

- Uses Standard Round Projectiles
- 30ci High Pressure Air System
- Compatible with Gravity and EL-2 Hoppers
- Variable Universal ASA with ON/OFF Valve
- No Recoil
- Cross Bolt Safety
- SplitShot™ Compatible
- MIL-STD-1913 Rail Platform
- Maximum Range of 60' for Direct Impact and 150'+ for Area Saturation

U.S. Sales (877) 887-3773 | International sales + 1 (858) 228-1439 | PepperBall.com

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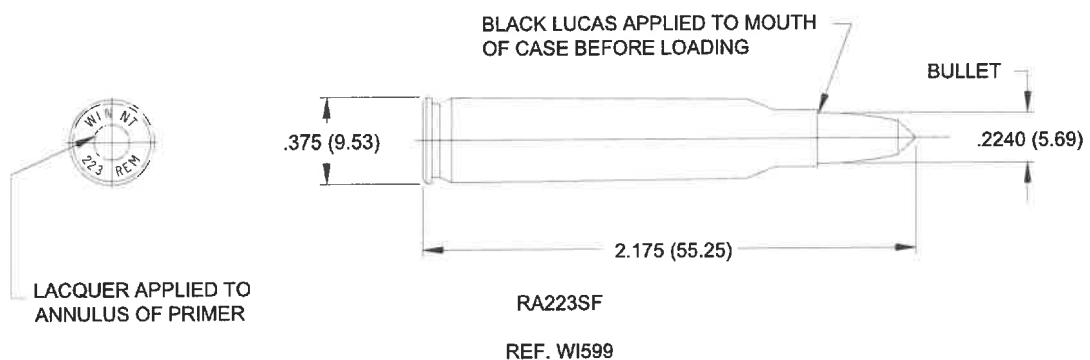
PLE0081021r



Winchester 223 Rem (55) Sinterfire Frangible

- Symbol: **RA223SF** – Winchester Ranger Sinterfire Frangible
- Shellcase: 223 Rem brass shellcase
- Bullet: 55 grain (3.6 gram) Frangible; 100% lead free; copper/tin composite
Diameter .2241 inch (5.69 mm)
- Powder: Clean burning, low flash
- Primer: Winchester lead free, heavy metal free priming mix; nickel plated cup; boxer type
- Accuracy: Product Mean of 2.0 inches (5.1 cm) Extreme Spread
5 shot targets at 100 yards (91.4m) from a 24.0 inch (61.0 cm) SAAMI test barrel
- Velocity: 3115 ft/sec (949 m/s) nominal at 15 ft (4.6 m)
Fired in a 24.0 inch (61.0 cm) SAAMI test barrel
- Energy: 1185 ft-lb (1607 joules)
- Pressure: 55,000 psi max. average (3792 bars)
- Waterproofing: Lacquer applied to primer annulus and Black Lucas applied to mouth of case

NOMINAL DIMENSIONS SHOWN



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PRODUCT INFORMATION SHEET #195
Rev. D 5-25-2004

OLIN CORPORATION • WINCHESTER DIVISION • 427 NORTH SHAMROCK STREET • EAST ALTON, IL 62024-1197
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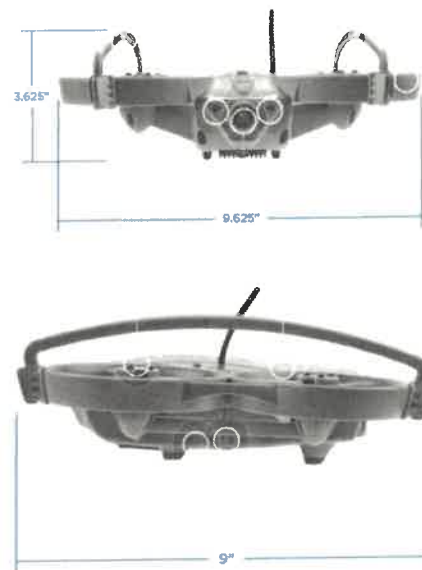
LOKI Mk2

Designed and built in conjunction with several of the world's top counter terrorism teams, LOKI Mk2 solves all problems associated with the tactical use of commercial UAS.

Purpose built for close quarter indoor tactical scouting missions, LOKI Mk2 features a highly sensitive Day-Night + IR sensor camera giving it the ability to fly and see in complete darkness.

Mk2 Features

- Forward-facing, .0008 lux day/night camera with 150° wide angle field of view
- On board extremely sensitive HD microphone
- Integrated flight stability/hover system using only onboard sensors
- Front and bottom selectable and dimmable IR LED's
- Turtle mode allowing the drone to automatically self-right in the event of a crash
- Integrated connector for additional payloads, sensors and actuators
- Ruggedized, user repairable cloverleaf body design



GCS Features

- Purpose-built flight controller requiring no internet service, GPS, cellular-phone or tablet
- No forced software or firmware updates providing 100% readiness
- Analog video and flight controls preventing lag and screen freezes
- AE256 control signal and scrambled video signal/relay
- Controls up to four LOKI UAS simultaneously from a single GCS
- Ergonomic and compact design for intuitive flight control
- No flight training required



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What end-
users are
saying about
the LOKI Mk2

LOKI 2.0 alone is a game changer for interior deployments. LOKI 2.0 plus a canine takes it to another level of effectiveness.

< Tactical Team Leader
Los Angeles County, CA. >

SOLE SOURCE
NORTH AMERICAN
DISTRIBUTOR

<https://www.aardvark.com/loki/>
This is the official LOKI 2.0 distributor for the United States and Canada.
sales@aardvarktactical.com
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MATRICE 200 SERIES SPECS

Honeywell

M200

AIRCRAFT

Model	M200
Package Dimensions	31.1x15.4x11.4inch (790x390x290mm)
Dimensions (unfolded)	34.9x34.6x14.9 inch (887x880x378 mm)
Dimensions (folded)	28.2x8.7x9.3 inch (716x220x236 mm)
Folding Method	Folded inward
Diagonal Wheelbase	25.3 inch (643 mm)
Number of Batteries	2
Weight (TB50)	Approx. 3.80kg
Weight (TB55)	Approx. 4.53kg
Max Takeoff Weight	6.14KG
Max Payload (2 TB50)	Approx. 2.34kg (with two standard batteries)
Max Payload (2 TB55)	Approx. 1.61kg (with two standard batteries)
Hovering Accuracy (P-mode with GPS)	Vertical: ±1.64 feet (0.5m) or ±0.33 feet (0.1m, Downward Vision System enabled) Horizontal: ±4.92 feet (1.5m) or ±0.98 feet (0.3m, Downward Vision System enabled)
Max Angular Velocity	Pitch: 300°/s ; Yaw: 150°/s
Max Pitch Angle	P Mode: 30° (Forward Vision System enabled: 25°) ; A Mode: 35° ; S Mode: 35°
Max Ascent Speed	16.4 ft/s (5 m/s)
Max Descent Speed	Vertical: 9.8 ft/s (3 m/s)
Max Speed	

GIMBAL

Compatible Gimbals	Zenmuse X4S Zenmuse X5S Zenmuse Z30 Zenmuse XT
--------------------	---

REMOTE CONTROLLER

Model	GL6010A
Operating Frequency	2.400-2.483 GHz 5.725-5.850 GHz
Max Transmitting Distance (unobstructed, free of interference)	2.4 GHz: 4.3 miles (7 km, FCC); 2.2 miles (3.5 km, CE); 2.5 miles (4 km, SRRC) 5.8 GHz: 4.3 miles (7 km, FCC); 1.2 miles (2 km, CE); 3.1 miles (5 km, SRRC)
EIRP	2.4 GHz: 26 dBm (FCC); 17 dBm (CE); 20 dBm (SRRC) 5.8 GHz: 28 dBm (FCC); 14 dBm (CE); 20 dBm (SRRC)
Video Output Ports	USB, HDMI
Power Supply	Built-in battery
Charging	DJI charger
Dual User Capability	Host-and-Slave connection
Mobile Device Holder	Tablet or Smart Phone
Max Mobile Device Width	170 mm
Output Power	9 W (Without supplying power to smart device)

	S Mode: 51.4mph (82.8kph) P Mode: 38mph (61.2kph) A Mode: 51.4mph (82.8kph)
Max Service Ceiling Above Sea Level	1,86 mi (3000m)
Max Wind Resistance	39.4 ft/s (12 m/s)
Max Flight Time (No Payload, with TB55)	27min
Max Flight Time (No Payload, with TB55)	38min
Max Flight Time (Full Payload, with TB55)	13min
Max Flight Time (Full Payload, with TB55)	24min
Motor Model	DJI 3515
Propeller Model	17605
Operating Temperature	-4° to 113° F (-20° to 45° C)
IP Rating	IP43

GIMBAL INSTALLATION

Downward Gimbal Mount	Supported
Upward Gimbal Mount	Not Supported
Downward Dual Gimbal	Not Supported

BATTERY (STANDARD)

Model	TB50
Capacity	4280 mAh
Voltage	22.8V
Battery Type	LiPo 6S
Energy	97.58 Wh
Net Weight	Approx. 520g
Operating Temperature	-4° to 113° F (-20° to 45° C)
Storage Temperature	Less than 3 months: -4° to 113° F (-20° to 45° C) More than 3 months: 72° to 82° F (22° to 28° C)
Charging Temperature	41° to 104° F (5° to 40° C)
Max Charging Power	180 W

CHARGER

Model	IN2C180
Voltage	26.1 V
Rated Power	180 W

FORWARD VISION SYSTEM

Obstacle Sensing Range	2.3-98.4 feet (0.7-30 m)
FOV	Horizontal 60° , Vertical 54°
Operating Environment	Surfaces with clear patterns and adequate lighting (> 15 lux)

DOWNWARD VISION SYSTEM

Velocity Range	<32.8 ft/s (10 m/s) at the height of 6.56 feet (2 m)
Altitude Range	<32.8 feet (10 m)
Operating Range	<32.8 feet (10 m)
Operating Environment	Surfaces with clear patterns and adequate lighting (> 15 lux)
Ultrasonic Sensor Operating Range	0.33-16.4 feet (10-500 cm)
Ultrasonic Sensor Operating Environment	Non-absorbing material, rigid surface (thick indoor carpeting will reduce performance)

M210

AIRCRAFT

Model	M210
Package Dimensions	31.1×15.4×11.4 inch (790×390×290mm)
Dimensions (unfolded)	34.9×34.6×14.9 inch (887×880×378 mm)

Operating Temperature	-4° to 104° F (-20° to 45° C)
Storage Temperature	Less than 3 months: -4° to 113° F (-20° to 45° C) More than 3 months: 72° to 82° F (22° to 28° C)
Charging Temperature	32° to 104° F (0° to 40° C)
Battery	6000mAh 2S LiPo
USB Supply Power	IOS: 1 A @ 5.2 V (Max); Android: 1.5 A @ 5.2 V (Max)

BATTERY (OPTIONAL)

Model	TB55
Capacity	7660 mAh
Voltage	22.8V
Battery Type	LiPo 6S
Energy	176.93Wh
Net Weight	Approx. 885g
Operating Temperature	-4° to 113° F (-20° to 45° C)
Storage Temperature	Less than 3 months: -20° C to 45° C More than 3 months: 22° C to 28° C
Charging Temperature	41° to 104° F (5° to 40° C)
Max Charging Power	180 W

DJI GO 4 APP

Name	DJI GO 4
Mobile Device System Requirements	iOS 9.0 or later, Android 4.4.0 or later
Supported Mobile Devices	iOS: iPhone 5s, iPhone SE, iPhone 6, iPhone 6 Plus, iPhone 6s, iPhone 6s Plus, iPhone 7, iPhone 7 Plus, iPad Air, iPad Air Wi-Fi + Cellular, iPad mini 2, iPad mini 2 Wi-Fi + Cellular, iPad Air 2, iPad Air 2 Wi-Fi + Cellular, iPad mini 3, iPad mini 3 Wi-Fi + Cellular, iPad mini 4 and iPad mini 4 Wi-Fi + Cellular. This app is optimized for iPhone 7, iPhone 7 Plus, Android: Samsung tabs 705c, Samsung S6, Samsung S5, Samsung NOTE4, Samsung NOTE3, Google Nexus 6p, Nexus 9, Google Nexus 7 II, Ascend Mate7, Huawei P8 Max, Huawei Mate 8, LG V20, Nubia Z7 mini, Sony Xperia Z3, MI 3, MI PAD, Smartisan T1.
	*Support for additional devices available as testing and development continues.

UPWARD INFRARED SENSOR

Obstacle Sensing Range	0-16.4 feet (0-5 m)
FOV	±5°
Operating Environment	Large-sized object with diffuse reflecting surface or high reflectance (>10%)

Dimensions (folded)	28.2x8.7x9.3 inch (716x220x236 mm)
Folding Method	Folded Inward
Diagonal Wheelbase	25.3 inch (643 mm)
Number of Batteries	2
Weight (TB50)	Approx. 3.84kg (with two standard batteries)
Weight (TB55)	Approx. 4.57kg (with two standard batteries)
Max Takeoff Weight	6.14KG
Max Payload (2 TB50)	Approx. 2.3kg (with two standard batteries)
Max Payload (2 TB55)	Approx. 1.57kg (with two standard batteries)
Hovering Accuracy (during safe flights)	Vertical: ± 0.5 , Downward Vision System enabled: ± 0.1 Horizontal: ± 1.5 , Downward Vision System enabled: ± 0.3
Max Angular Velocity	Pitch: 300°/s ; Yaw: 150°/s
Max Pitch Angle (Dual Downward Gimbals)	P Mode: 25° (Forward Vision System enabled: 25°) ; A Mode: 25° ; S Mode: 30°
Max Pitch Angle (Single Upward/Downward Gimbal)	P Mode: 30° (Forward Vision System enabled: 25°) ; A Mode: 30° ; S Mode: 35°
Max Ascent Speed	16.4 ft/s (5 m/s)
Max Descent Speed	Vertical: 9.8 ft/s (3 m/s)
Max Speed (Dual Downward Gimbals)	S Mode: 40.3mph (64.8kph) P Mode: 38mph (61.2kph) A Mode: 38mph (61.2kph)
Max Speed (Single Upward/Downward Gimbals)	S Mode: 51.4mph (82.8kph) P Mode: 38mph (61.2kph) A Mode: 51.4mph (82.8kph)
Max Service Ceiling Above Sea Level	1.06 miles (3000 m)
Max Wind Resistance	39.4 ft/s (12 m/s)
Max Flight Time (No Payload, with TB50)	27min
Max Flight Time (No Payload, with TB55)	38min
Max Flight Time (Full Payload, with TB50)	13min
Max Flight Time (Full Payload, with TB55)	24min
Motor Model	DJI 3515
Propeller Model	17605
Operating Temperature	-4° to 113° F (-20° to 45° C)
IP Rating	IP43

GIMBAL INSTALLATION

Downward Gimbal Mount	Supported
Upward Gimbal Mount	Supported
Downward Dual Gimbal	Supported

CHARGER

Model	IN2C180
Voltage	26.1 V
Rated Power	180W

FORWARD VISION SYSTEM

Obstacle Sensing Range	2.3-98.4 feet (0.7-30 m)
FOV	Horizontal 60° , Vertical 54°
Operating Environment	Surfaces with clear patterns and adequate lighting (> 15 lux)

DOWNWARD VISION SYSTEM

Velocity Range	<32.8 ft/s (10 m/s) at height of 6.56 feet (2 m)
Altitude Range	<32.8 feet (10 m)
Operating Range	<32.8 feet (10 m)
Operating Environment	Surfaces with clear patterns and adequate lighting (> 15 lux)
Ultrasonic Sensor Operating Range	0.33-16.4 feet (10-500 cm)
Ultrasonic Sensor Operating Environment	Non-absorbing material, rigid surface (thick indoor carpeting will reduce performance)

BATTERY

Model	TB50
Capacity	4280 mAh
Voltage	22.8V
Battery Type	LiPo 6S
Energy	97.58 Wh
Net Weight	Approx. 520 g
Operating Temperature	-20° C to 45° C
Storage Temperature	Storage Temperature Less than 3 months: -4° to 113° F (-20° to 45° C) More than 3 months: 72° to 82° F (22° to 28° C)
Charging Temperature	41° to 104° F (5° to 40° C)
Max Charging Power	180 W
Model	TB55
Capacity	7660 mAh
Voltage	22.8V
Battery Type	LiPo 6S
Energy	176.93 Wh
Net Weight	Approx. 885 g
Operating Temperature	-4° to 113° F (-20° to 45° C)
Storage Temperature	Less than 3 months: -20° C to 45° C More than 3 months: 22° C to 28° C
Charging Temperature	41° to 104° F (5° to 40° C)
Max Charging Power	180 W

DJI GO 4 APP

Name	DJI GO 4
Mobile Device System Requirements	iOS 9.0 or later, Android 4.4.0 or later
Supported Mobile Devices	iOS: iPhone 5s, iPhone SE, iPhone 6, iPhone 6 Plus, iPhone 6s, iPhone 6s Plus, iPhone 7, iPhone 7 Plus, iPad Air, iPad Air Wi-Fi + Cellular, iPad mini 2, iPad mini 2 Wi-Fi + Cellular, iPad Air 2, iPad Air 2 Wi-Fi + Cellular, iPad mini 3, iPad mini 3 Wi-Fi + Cellular, iPad mini 4 and iPad mini 4 Wi-Fi + Cellular. This app is optimized for iPhone 7, iPhone 7 Plus, Android: Samsung tabs 705c, Samsung S6, Samsung S5, Samsung NOTE4, Samsung NOTE3, Google Nexus 6p, Nexus 9, Google Nexus 7 II, Ascend Mate7, Huawei P8 Max, Huawei Mate 8, LG V20, Nubia Z7 mini, Sony Xperia Z3, MI 3, MI PAD, Smartisan T1. *Support for additional devices available as testing and development continues.

UPWARD INFRARED SENSOR

Obstacle Sensing Range	0-16.4 feet (0-5 m)
FOV	45°
Operating Environment	Large, diffuse and reflective obstacles (reflectivity > 10%)

CENDENCE

Type	GL800A
Operating Frequency	2.400-2.483 GHz; 5.725-5.825 GHz
Max Transmitting Distance (unobstructed, free of interference)	2.4 GHz: 4.3 miles (7 km, FCC); 2.2 miles (3.5 km, CE); 2.5 miles (4 km, SRRC) 5.8 GHz: 4.3 miles (7 km, FCC); 1.2 miles (2 km, CE); 3.1 miles (5 km, SRRC)
EIRP	2.4 GHz: 26 dBm (FCC); 17 dBm (CE); 20 dBm (SRRC) 5.8 GHz: 28 dBm (FCC); 14 dBm (CE); 20 dBm (SRRC)
Power Supply	Extended Intelligent Battery (Model: WB37-4920mAh-7.6V)
Intelligent Battery	4923 mAh LiPo
Charging	DJI charger
Output Power	20 W (supplying power to DJI CS550 monitor) 12 W (without supplying power to monitor)
Video Output Ports	USB, HDMI, SDI
USB Supply Power	iOS: 1 A, 5.2 V (Max); Android: 1.5 A, 5.2 V (Max)
Dual User Capability	Master-and-Slave connection
Operating Temperature	-4° to 104° F (-20° to 40° C)
Storage Temperature	Less than 3 months: -4° to 113° F (-20° to 45° C) More than 3 months: 72° to 82° F (22° to 28° C)

M210 RTK**AIRCRAFT**

Model	M210 RTK
Package Dimensions	31.1×15.4×11.4inch (790×390×290mm)
Dimensions (unfolded)	34.9×34.6×16.1 inch (Unfolded, 887×880×408 mm),
Dimensions (folded)	28.2×11.3×9.3 inch (Folded, 716×287×236 mm)
Folding Method	Folded Inward
Diagonal Wheelbase	25.3 inch (643 mm)
Number of Batteries	2
Weight (TB50)	Approx. 4.42 kg
Weight (TB55)	Approx. 5.51 kg
Max Takeoff Weight	6.14 kg
Max Payload (2 TB50)	Approx. 1.72 kg (with two standard batteries)
Max Payload (2 TB55)	Approx. 0.99 kg (with two optional batteries)
Hovering Accuracy (P-mode with GPS)	Vertical: ±1.64 feet (0.5 m) or ±0.33 feet (0.1 m, Downward Vision System enabled) or ±0.33 feet (0.1 m, RTK enabled) Horizontal: ±4.92 feet (1.5 m) or ±0.98 feet (0.3 m, Downward Vision System enabled) or ±0.33 feet (0.1 m, RTK enabled)
Max Angular Velocity	Pitch: 300°/s, Yaw: 150°/s
Max Pitch Angle (Dual Downward Gimbals)	P Mode: 25° (Forward Vision System enabled: 25°) ; A Mode: 25° ; S Mode: 30°
Max Pitch Angle (Single Upward/Downward Gimbal)	P Mode: 30° (Forward Vision System enabled: 25°) ; A Mode: 30° ; S Mode: 35°
Max Ascent Speed	16.4 ft/s (5 m/s)
Max Descent Speed	Vertical: 9.8 ft/s (3 m/s)
Max Speed (Dual Downward Gimbals)	S Mode: 40.3mph (64.8kph) P Mode: 38mph (61.2kph) A Mode: 38mph (61.2kph)
Max Speed (Single Upward/Downward Gimbal)	S Mode: 51.4mph (82.8kph) P Mode: 38mph (61.2kph) A Mode: 51.4mph (82.8kph)
Max Service Ceiling Above Sea Level	1.86 miles (3000 m)
Max Wind Resistance	39.4 ft/s (12 m/s)
Max Flight Time (No Payload, with TB50)	23min
Max Flight Time (No Payload, with TB55)	32min
Max Flight Time (Full Payload, with TB50)	13min
Max Flight Time (Full Payload, with TB55)	24min
Motor Model	DJI 3515
Propeller Model	1760S
Operating Temperature	-4° to 113° F (-20° to 45° C)
IP Rating	IP43

GIMBAL INSTALLATION

Downward Gimbal Mount	Supported
Upward Gimbal Mount	Supported
Downward Dual Gimbal	Supported

CHARGER

Model	IN2C180
Voltage	26.1 V
Rated Power	180 W

FORWARD VISION SYSTEM

Obstacle Sensing Range	0.7 - 30 m ;
FOV	Horizontal 60° , Vertical 54°

Charging Temperature	32 ° to 104 ° F (0 ° to 40 ° C)
Charging Time	About 2 hours and 24 minutes (using a 180 W charger)
Supply Power Time	About 4 hours (only Master remote controller function enabled and without supplying power to monitor)
Weight	1041 g

GIMBALS

Compatible Gimbals	Zenmuse X4S Zenmuse X5S Zenmuse Z30 Zenmuse XT
--------------------	---

BATTERY

Model	TB50
Capacity	4280 mAh
Voltage	22.8V
Battery Type	LiPo 6S
Energy	97.58 Wh
Net Weight	Approx. 520g
Operating Temperature	-4° to 113° F (-20° to 45° C)
Storage Temperature	Less than 3 months: -4° to 113° F (-20° to 45° C) More than 3 months: 72° to 82° F (22° to 28° C)
Charging Temperature	41° to 104° F (5° to 40° C)
Max Charging Power	180 W
Model	TB55
Capacity	7660 mAh
Voltage	22.8V
Battery Type	LiPo 6S
Energy	176.93 Wh
Net Weight	885g
Operating Temperature	-20°C to 45° C
Storage Temperature	Less than 3 months: -20° C to 45° C More than 3 months: 22° C to 28° C
Charging Temperature	41° to 104° F (5° to 40° C)
Max Charging Power	180 W

DJI GO 4 APP

Name	DJI GO 4
Mobile Device System Requirements	iOS 9.0 or later, Android 4.4.0 or later
Supported Mobile Devices	iOS: iPhone 5s, iPhone SE, iPhone 6, iPhone 6 Plus, iPhone 6s, iPhone 6s Plus, iPhone 7, iPhone 7 Plus, iPad Air, iPad Air Wi-Fi + Cellular, iPad mini 2, iPad mini 2 Wi-Fi + Cellular, iPad Air 2, iPad Air 2 Wi-Fi + Cellular, iPad mini 3, iPad mini 3 Wi-Fi + Cellular, iPad mini 4 and iPad mini 4 Wi-Fi + Cellular. This app is optimized for iPhone 7, iPhone 7 Plus, Android: Samsung tabs 705c, Samsung S6, Samsung S5, Samsung NOTE4, Samsung NOTE3, Google Nexus 6p, Nexus 9, Google Nexus 7 II, Ascend Mate7, Huawei P8 Max, Huawei Mate 8, LG V20, Nubia Z7 mini, Sony Xperia Z3, Mi 3, Mi PAD, Smartisan T1.

*Support for additional devices available as testing and development continues.

UPWARD INFRARED SENSOR

Obstacle Sensing Range	0-16.4 feet (0-5 m)
FOV	±5°
Operating Environment	Large-sized object with diffuse reflecting surface or high reflective rate (>10%)

CENDENCE

Type	GLB00A
Operating Frequency	2,400-2,483 GHz; 5,725-5,825 GHz

Operating Environment	Surfaces with clear patterns and adequate lighting (> 15 lux)	Max Transmitting Distance (unobstructed, free of interference)	2.4 GHz: 4.3 miles (7 km, FCC); 2.2 miles (3.5 km, CE); 2.5 miles (4 km, SRRC) 5.8 GHz: 4.3 miles (7 km, FCC); 1.2 miles (2 km, CE); 3.1 miles (5 km, SRRC)
DOWNWARD VISION SYSTEM			
Velocity Range	<32.8 ft/s (10 m/s) at height of 6.56 feet (2 m)	EIRP	2.4 GHz: 26 dBm (FCC); 17 dBm (CE); 20 dBm (SRRC) 5.8 GHz: 28 dBm (FCC); 14 dBm (CE); 20 dBm (SRRC)
Altitude Range	<32.8 feet (10 m)	Power Supply	Extended Intelligent Battery (Model: WB37-4920mAh-7.6V)
Operating Range	<32.8 feet (10 m)	Intelligent Battery	4923 mAh LiPo
Operating Environment	Surfaces with clear patterns and adequate lighting (> 15 lux)	Charging	DJI charger
Surfaces with clear patterns and adequate lighting (> 15 lux)	0.33-16.4 feet (10-500 cm)	Output Power	20 W (supplying power to DJI CS550 monitor) 12 W (without supplying power to monitor)
Ultrasonic Sensor Operating Environment	Non-absorbing material, rigid surface (thick indoor carpeting will reduce performance)	Video Output Ports	USB, HDMI, SDI
		USB Supply Power	IOS: 1 A, 5.2 V(Max); Android: 1.5 A, 5.2 V(Max)
		Dual User Capability	Master-and-Slave connection
		Operating Temperature	-4 ° to 104 °F (-20 ° to 40 °C)
		Storage Temperature	Less than 3 months: -4 ° to 113 °F (-20 ° to 45 °C) More than 3 months: 72 ° to 82 °F (22 ° to 28 °C)
		Charging Temperature	32 ° to 104 °F (0 ° to 40 °C)
		Charging Time	About 2 hours and 24 minutes (using a 180 W charger)
		Supply Power Time	About 4 hours (only Master remote controller function enabled and without supplying power to monitor)
		Weight	1041 g

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TUTORIALS



All Matrice 200 remote controllers are linked to the DJI GO app on a phone.

DJI Matrice 200 - Linking the Aircraft and the Remote Controller
2017-07-24

INTRO



DJI - M200 - Powerline Inspection Tool
2017-07-19



DJI Matrice 200 Series - Updating the Remote Controller Firmware
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DJI Matrice 200 - Activating the Aircraft
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DJI - Introducing the Matrice 200 Series (Extended Version)
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DJI Assistant 2 v.1.2.0
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DJAS

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AIRCRAFT

1. What cameras and gimbals is the M200 series compatible with? >
2. Does the M200 series have an Obstacle Avoidance/FlightAutonomy system? >
3. What is the difference between the M100, M200 and M600? >
4. Is a case included with my M200 Series drone? >
5. What is IP43 protection rating, and in what scenarios can the Matrice 200 series be protected under this rating? >
6. Can I use the Matrice 200 series on rainy days? And what are some factors to consider when flying in rainy weather? >
7. Will I be covered if my aircraft incurs water damage? >
8. Does my M200 Series drone need to be regularly checked when flying in sandy environments? >
9. Can I carry the M200 batteries on a commercial airplane? >
10. What happens if one battery fails? >
11. For the M210 RTK model, is there any extra setup required for this unit? >

APPLICATIONS

1. I'm a filmmaker, is this the best option for me? >
2. I'm a power line, telecom tower inspector and worry about interference affecting the safety of my inspection, which M200 Series model and payload will help me operate more safely? >
3. My business is interested in integrating drones into our business, where can we learn more? >

PAYLOADS

1. What cameras are compatible with the M200 series? >
2. What dual gimbal configurations are supported by the M210 models? >
3. How do I mount an upward payload? >
4. Can you fly with both the XT and Z30 at the same time? >
5. Can you mount a camera upwards and downwards at the same time? >
6. Can the Zenmuse XT camera be used with the M200 Series platform? >

SOFTWARE

1. What mobile software programs are compatible with the M200 series? >
2. What's new in the DJI Pilot app? >
3. What programs can I use for creating reproducible flight plans for automated flight? >
4. Where can I learn more about DJI FlightHub? >

OTHER

1. How long does it take to charge a remote controller? How long does it last on a full charge? >
2. Does my M200 Series drone come with a Micro SD card? >
3. What is the latency of the transmission system? >
4. Can you use batteries charged at different levels? >
5. Do I need to pair the batteries? >
6. Does the M200 Series support the Adobe CinemaDNG and Apple ProRes? >
7. Does the M200 have a RTH function? >
8. How do I enable autofocus? >

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ZENMUSE Z30

CLOSING THE DISTANCE



DJI - INTRODUCING ZENMUSE Z30



ZENMUSE Z30

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ZENMUSE Z30 SPECS

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GENERAL

Name	Zenmuse Z30
Dimensions	152×137×61 mm
Weight	556 g

CAMERA

Sensor	CMOS, 1/2.8" Effective Pixels: 2.13 M
Lens	30x Optical Zoom F1.6 (Wide) - F4.7 (Tele) Zoom Movement Speed: - Optical Wide - Optical Tele: 4.6 sec - Optical Wide - Digital Tele: 6.4 sec - Digital Wide - Digital Tele: 1.8 sec Focus Movement Time: - - near: 1.1 sec
FOV	63.7°(Wide) - 2.3°(Tele)
Digital Zoom	6x
Min. Working Distance	10 mm - 1200 mm
Photo Formats	JPEG
Video Formats	MOV, MP4
Working Modes	Capture, Record, Playback
Still Photography Modes	Single shot, Burst shooting: 3/5 frames, Interval (2/3/4/7/10/15/20/30 sec)
Exposure Mode	Exposure Mode Auto, Manual, Shutter priority, Aperture priority
Exposure Compensation	±2.3 (1/3 increments)

GIMBAL

Angular Vibration Range	±0.01°
Mount	Detachable
Controllable Range	Pitch: +40° to -90°, Yaw: ±320°
Mechanical Range	Pitch: +50° to -140°, Yaw: ±330°, Roll: +90° to -50°
Max Controllable Speed	Pitch: 180°/s, Yaw: 180°/s

ENVIRONMENTAL

Operating Temperature	14° to 113° F (-10° to 45° C)
Non-Operating Temperature	-4° to 140° F (-20° to 60° C)

Metering Mode	Center-weighted metering, Spot metering (Area option 12x8)
AE Lock	Supported
Electronic Shutter Speed	1/30 - 1/6000 s
White Balance	Auto, Sunny, Cloudy, Incandescent, Custom (2000K - 10000K)
Video Captions	Supported
TapZoom	Supported
TapZoom Range	1-5
Defog	Supported
One Key to 1x Image	Supported
Anti-flicker	50 Hz, 60 Hz
PAL/NTSC	Supported
Supported SD Cards	MicroSD (SD / SDHC / SDXC) Max. Capacity: 64 GB, Class 10 or UHS-1
Supported File Systems	FAT32 (≤ 32 GB) exFAT (> 32 GB)

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Z30 intro

2016-12-26

TUTORIALS



dji | ZENMUSE Z30

MOUNTING TO THE MATRICE 100

Zenmuse z30 Mounting To The Matrice 100

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Z30 Cell Tower Inspection

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CAMERA FIRMWARE

Zenmuse Z30 Firmware
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1. What kind of zoom does the Zenmuse Z30 have? How much does it zoom by? >
2. Can the Zenmuse Z30 be used on the Osmo handle? >
3. What applications and what kind of specific scenarios are the Z30 suited for? >
4. Is the Zenmuse Z30 compatible with the Inspire series? >
5. What is the difference between the Zenmuse Z30 and Zenmuse Z3? >
6. Will there be any video shake when using Zenmuse Z30? >
7. What intelligent features does the Zenmuse Z30 support when used with the DJI Matrice 600? >

ZENMUSE Z30

enterprise@dji.com

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UNLOCK THE POSSIBILITIES OF SIGHT

Thermal imaging from the air has never been as easy as it is with the DJI Zenmuse XT. By combining DJI's unrivaled expertise in gimbal technology and image transmission with the industry leading thermal imaging technology of FLIR, the Zenmuse XT is the ultimate solution for rapid and reliable aerial thermal imaging. Capture faster, with pinpoint precision, over large areas, then save them for analysis and reporting.



Introducing the DJI Zenmuse XT

ZENMUSE XT SPECS

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GENERAL

Model	Zenmuse XT
Dimensions	103 mm x 74 mm x 102 mm
Weight	270 g

GIMBAL

Angular Vibration Range	±0.03°
Mount	Detachable
Controllable Range	Tilt : +35° to -90°; Pan : ±320°; Roll : ±15°
Mechanical Range	Tilt : +45° to -135°; Pan : ±320°; Roll : ±45°
Max Controllable Speed	120°/s

CAMERA

Thermal imager	Uncooled VOx Microbolometer
FPA/Digital Video Display Formats	640 × 512 336 × 256
Analog Video Display Formats	720 × 480 (NTSC); 720 × 576 (PAL)
Pixel Pitch	17 μm
Spectral Band	7.5-13.5 μm
Full Frame Rates	640 × 512 : 30 Hz (NTSC) 25 Hz (PAL) 336 × 256 : 30 Hz (NTSC) 25 Hz (PAL)
Exportable Frame Rates	7.5 Hz NTSC; 8.3 Hz PAL
Sensitivity (NETD)	<50 mK at f/1.0
Scene Range (High Gain)	640 × 512 : -13° to 275°F (-25° to 135°C) 336 × 256 : -13° to 212°F (-25° to 100°C)
Scene Range (Low Gain)	-40° to 1022°F (-40° to 550°C)
Spot Meter	Temperatures measured in central 4x4
File Storage	Micro SD Card
Photo Format	JPEG, TIFF
Video Format	MP4

IMAGE PROCESSING & DISPLAY CONTROLS

NTSC/PAL (field switchable)	yes
Image Optimization	yes
Digital Detail Enhancement	yes
Polarity Control (black hot/white hot)	yes
Color & Monochrome Palettes (LUTs)	yes
Digital Zoom	640 × 512 : 2x, 4x, 8x
	336 × 256 : 2x, 4x

ENVIRONMENTAL

Operating Temperature Range	14° to 104°F (-10° to 40°C)
Non-Operating Temperature Range	-22° to 158°F (-30° to 70°C)
Temperature Shock	5°C/min
Humidity	5% to 95%

LENS MODELS

Lens Models		6.8 mm	7.5 mm	9 mm	13 mm	19 mm
17μ640x512	FoV	/	f/1.4 90° x 69°	f/1.4 69° x 56°	f/1.25 45° x 37°	f/1.25 32° x 26°
	IFoV	/	2.267 mr	1.889 mr	1.308 mr	0.895 mr
17μ336x256	FoV	f/1.4 49.1° x 37.4°	/	f/1.25 35° x 27°	f/1.25 25° x 19°	f/1.25 17° x 13°
	IFoV	2.519 mr	/	1.889 mr	1.308 mr	0.895 mr
Min Focus Distance		2.3 cm	2.5 cm	3.2 cm	7.6 cm	15.3 cm
Hyperfocal Distance		1.2 m	1.2 m	2.1 m	4.4 m	9.5 m
Hyperfocal Depth of Field		0.6 m	0.6 m	1.1 m	2.2 m	4.8 m

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2015-12-10

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1.What is the different between Infrared Camera and general camera?

>

2.Whether the aperture, focus length and shutter of ZENMUSE XT Camera can be adjusted?

>

3.Whether ZENMUSE XT is able to take photos and record video simultaneously?

>

4.How long is the flight time of Inspire 1 mounting with Zenmuse XT?

>

5.What kind of equipment does ZENMUSE XT Camera support?

>

6.Can the Zenmuse XT camera be used with the M200 Series platform?

>

7.Can the lens of ZENMUSE XT Camera be replaced?

>

8.Does the camera come with a standard SD card?

>

9.What is DDE?

>

10.What is SSO?

>

11.Why the maximum resolution is only 640×512 ?

>

12.Does the camera support 4K video recording?

>

13.What is Zenmuse XT's video format?

>

14.What is the option 'Palette'?

>

15.What is the option 'Scene'?

>

16.What is the option 'ROI'?

>

17.What is the 'Isotherm' mode?

>

18.What is TIFF format image?

>

19.What kind of softwares can open TIFF format images?

>

20.What is the accuracy and measurement range of TIFF format images?

>

21.What factors will affect temperature?

>

22. What is R-JPEG format image? >
23. Can the Zenmuse XT camera be used with the M200 Series platform? >

ZENMUSE XT EXPORT

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* Slow-rate thermal cameras (FLIR Tau 336 and 640 9 Hz models) sold by DJI are controlled under Department of Commerce, Bureau of Industry and Security Export Control Classification Number (ECCN) 6A993. These cameras may not be exported or re-exported to countries subject to U.S. economic sanctions, currently including Cuba, Iran, North Korea, Sudan, Syria, or the Crimea region of Ukraine. The cameras may not be transferred to prohibited parties or exported for a prohibited end use, as described in the U.S. Export Administration Regulations (EAR, 15 C.F.R. Parts 730 – 774).

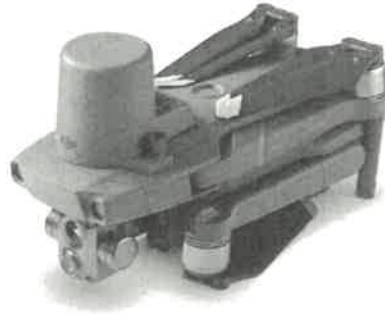
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Omnidirectional Obstacle Sensing

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Specs

Mavic 2 Enterprise Advanced

Aircraft

Takeoff Weight (Without Accessories)	909g
Max Takeoff Weight	1100g
Dimensions (L×W×H)	Folded: 214×91×84mm Unfolded: 322×242×84mm Unfolded+Spotlight: 322×242×114mm Unfolded+Beacon: 322×242×101mm Unfolded+Speaker: 322×242×140mm Unfolded+RTK Module: 322x242x125mm
Diagonal Distance	354 mm
Max Ascent Speed	6 m/s (S-mode) 5 m/s (P-mode) 4 m/s (S-mode with accessories) 4 m/s (P-mode with accessories)
Max Descent Speed	Descend Vertically 5 m/s (S-mode) 4 m/s (P-mode) Tilt 7 m/s (S-mode) 4 m/s (P-mode)
Max Speed	72 kph (S-mode, without wind) 50 kph (P-mode, without wind)
Max Service Ceiling Above Sea Level	6000 m
Max Flight Time	31 min (measured while flying at 25 kph in windless conditions) 28 min (RTK module attached) 29 min (with beacon turned on) 30 min (with beacon turned off) 24 min (with spotlight turned on) 28 min (with spotlight turned off) 27 min (with speaker turned on) 28 min (with speaker turned off)
Max Wind Speed Resistance	10 m/s (scale 5)
Max Tilt Angle	35°(S-mode, with remote controller) 25°(P-mode)
Max Angular Velocity	200°/s (S-mode) 100°/s (P-mode)
Operating Temperature	-10° to 40° C
GNSS	GPS+GLONASS
Hovering Accuracy Range	Vertical: ± 0.1 m (with RTK) ± 0.1 m (with Vision Positioning) ± 0.5 m (with GPS Positioning) Horizontal: ± 0.1 m (with RTK) ± 0.3 m (with Vision Positioning) ± 1.5 m (with GPS Positioning)

Operating Frequency	2.400-2.4835 GHz; 5.725-5.850 GHz
Transmitter Power (EIRP)	2.400 - 2.4835 GHz FCC: ≤26 dBm ; CE: ≤20 dBm ; SRRC: ≤20 dBm; MIC: ≤20 dBm 5.725 - 5.850 GHz FCC: ≤26 dBm; CE: ≤14 dBm; SRRC: ≤26 dBm
Internal Storage	24 GB

M2EA Thermal Camera

Sensor	Uncooled VOx Microbolometer
Focal Length	Approx. 9mm 35 mm format equivalent: Approx. 38mm
Sensor Resolution	640×512 @30Hz
Accuracy of Thermal Temperature	Measurement: ±2°C or ±2%, whichever is greater.
Scene Range	-40 °C to 150 °C (High Gain) -40 °C to 550 °C (Low Gain)
Digital Zoom	16 ×
Pixel Pitch	12 μm
Spectral Band	8-14 μm
Photo Format	R-JPEG
Video Format	MP4
Metering Method	Spot Meter, Area Measurement
FFC	Auto/Manual

M2EA Visual Camera

Sensor	1/2" CMOS, Effective Pixels: 48 M
Lens	FOV: 84° 35 mm format equivalent: 24 mm Aperture: f/2.8 Focus: 1 m to ∞
ISO Range	Video: 100-12800 (auto) Photos: 100-1600 (auto)
Digital Zoom	32×
Max Image Size	8000×6000
Still Photography Modes	Single shotInterval: 2/3/5/7/10/15/20/30/60 s Panorama: Sphere
Video Resolution	3840×2160@30fps 1920×1080@30fps
Photo Format	JPEG
Video Format	MP4

Gimbal

Mechanical Range	Tilt: -135°- +45° Pan: -100°- +100°
Controllable Range	Tilt: -90°- +30° Pan: -75°- +75°
Stabilization	3-axis (tilt, roll, pan)
Max control speed	120°/s
Angular Vibration Range	±0.005°

Sensing System

Sensing System	Omnidirectional Obstacle Sensing ^[2]
Forward	Precision Measurement Range: 0.5 - 20 m Detectable Range: 20 - 40 m Effective Sensing Speed: ≤ 14m/s FOV: Horizontal: 40°, Vertical: 70°
Backward	Precision Measurement Range: 0.5 - 16 m Detectable Range: 16 - 32 m Effective Sensing Speed: ≤ 12m/s FOV: Horizontal: 60°, Vertical: 77°
Upward	Precision Measurement Range: 0.1-8 m
Downward	Precision Measurement Range: 0.5 -11 m Detectable Range: 11-22 m
Sides	Precision Measurement Range: 0.5 - 10 m Effective Sensing Speed: ≤ 8m/s FOV: Horizontal: 80°, Vertical: 65°
Operating Environment	Forward, Backward and Sides: Surface with clear pattern and adequate lighting (lux > 15) Upward: Detects diffuse reflective surfaces(>20%) (walls, trees, people, etc.) Downward: Surface with clear pattern and adequate lighting (lux > 15)Detects diffuse reflective surfaces (>20%) (walls, trees, people, etc.)

Remote Controller

Operating Frequency	2.400 - 2.483 GHz; 5.725 - 5.850 GHz
Max Transmission Distance (unobstructed, free of interference)	2.400 - 2.483 GHz; 5.725 - 5.850 GHz FCC: 10000m CE: 6000m SRRC: 6000m MIC: 6000m
Transmission Power (EIRP)	2.400-2.4835 GHz : 25.5 dBm (FCC) ; 18.5 dBm (CE) 19 dBm (SRRC) ; 18.5 dBm (MIC) 5.725-5.850 GHz : 25.5 dBm (FCC) ; 12.5 dBm (CE) 18.5 dBm (SRRC)
Storage	ROM 16GB + microSD Extensible Storage
Video Output Port	HDMI Port
Built-in Battery	Type: 18650 Li-Po (5000 mAh @ 7.2 V) Charging Mode: Charged with USB charger at 12V/2A Rated Power 15 W Charging time: 2 hr (with a USB charger at 12V/2A)
Operating Current/Voltage	1800mA – 3.83V
Battery Life	Built-in Battery Approx. 2.5 hr

Operating Temperature	-20° C - 40° C
RC Size	Folded without Joystick: 177.5 x 121.3 x 40 mm Unfolded with Joystick: 177.5 x 181 x 60 mm
Weight	Approx. 630 g
Intelligent Flight Battery	Main Link: 17.6V – 3.41A or 17.0V–3.53A USB: 5.0 V – 2.0 A

Intelligent Flight Battery

Capacity	3850 mAh
Voltage	15.4V
Max Charging Voltage	17.6V
Battery Type	LiPo
Energy	59.29 Wh
Net Weight	297g
Charging Temperature	5°C - 40°C
Operating Temperature Range:	-10°C - 40°C
Heating Methods:	Manual Heating, Auto Heating
Heating Temperature	-20°C - 6°C
Heating duration	500s (Max)
Heating Power	55W (Max)
Charging Time	90 mins
Max Charging Power	80W

RTK Module

Dimensions	69 mm x 69 mm x 59mm
Connections	Micro USB Port
RTK Positioning Precision	In RTK FIX 1cm+1ppm (Horizontal) 1.5cm+1 ppm (Vertical)

M2EA Spotlight

Dimensions	68×60×41mm
Connections	Micro USB Port
Operating Range	30 m
Power	Max 26W
Illuminance	FOV17°, Max: 11lux @ 30m Straight

M2EA Beacon

Dimensions	68mm×40mm×27.8mm
Connections	Micro USB Port
Power	Avg. 1.6W

Controllable Range	5000 m
Light Intensity	Min Angle: 55 cd; Light intensity: 157cd

M2EA Speaker

Dimensions	68×55×65 mm
Connections	Micro USB Port
Power	Max 10W
Decibel	100 db @ 1 meter distance
Max Bitrate	16kbps

SD Cards

Supported SD Cards	Micro SD™ Supports a microSD with capacity of up to 128 GB. A UHS-I Speed Grade 3 rating microSD card is required.
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APP / Live View

Video Transmission System	OcuSync 2.0
Mobile App	DJI PILOT(Android Version)
Live View Quality	Remote Controller: 720p@30fps / 1080p@30fps
Max Live View Bitrate	40Mbps
Latency	120 - 130 ms
Required Operating System	ios 10.0 or later Android 5.0 or later

Others

Footnotes	[1] The accuracy of the temperature measurement is measured at a distance of 5m against a blackbody with an emissivity of 0.95 under ideal conditions. The actual accuracy is also affected by various environmental factors such as temperature and humidity, and needs to be corrected by post-processing software. Under ideal conditions, the temperature accuracy can reach $\pm 2^{\circ}\text{C}$ or $\pm 2\%$, whichever is greater. [2] Omnidirectional Obstacle Sensing includes left/right, up/down, and forward/backward obstacle sensing. Sensing for left/right directions is only available in Tripod Mode. Omnidirectional Obstacle Sensing does not fully cover the circumference of a 360-degree arc. And left and right obstacle sensing system only works in specific modes and environments. DJI warranty does not cover any loss caused by crashing when flying left or right, even when Tripod mode is activated. Please be aware of your surroundings and App notifications when operating the Mavic 2 to ensure safety.
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Consumer
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Components

Service Place

DJI Care Refresh
DJI Care Refresh +
DJI Care Pro
Osmo Shield

Where to Buy

DJI Online Store
Flagship Stores
DJI-Operated Stores
Retail Stores
Enterprise Retailers
Agricultural Drone Dealer
Pro Retailers
DJI Store App

Support

Fly Safe

Fly Safe
DJI Flying Tips
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PHANTOM 4 PRO SPECS

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AIRCRAFT

Weight (Battery & Propellers Included)	1388 g
Diagonal Size (Propellers Excluded)	350 mm
Max Ascent Speed	S-mode: 6 m/s P-mode: 5 m/s
Max Descent Speed	S-mode: 4 m/s P-mode: 3 m/s
Max Speed	S-mode: 45 mph (72 kph) A-mode: 36 mph (58 kph) P-mode: 31 mph (50 kph)
Max Tilt Angle	S-mode: 42° A-mode: 35° P-mode: 25°
Max Angular Speed	S-mode: 250°/s A-mode: 150°/s
Max Service Ceiling Above Sea Level	19685 feet (6000 m)
Max Wind Speed Resistance	10 m/s
Max Flight Time	Approx. 30 minutes
Operating Temperature Range	32° to 104°F (0° to 40°C)
Satellite Positioning Systems	GPS/GLONASS
Hover Accuracy Range	Vertical: ±0.1 m (with Vision Positioning) ±0.5 m (with GPS Positioning) Horizontal: ±0.3 m (with Vision Positioning) ±1.5 m (with GPS Positioning)

GIMBAL

Stabilization	3-axis (pitch, roll, yaw)
Controllable Range	Pitch: -90° to +30°
Max Controllable Angular Speed	Pitch: 90°/s
Angular Control Accuracy	±0.02°

INFRARED SENSING SYSTEM

Obstacle Sensory Range	0.6 - 23 feet (0.2 - 7 m)
FOV	70° (Horizontal), ±10° (Vertical)
Measuring Frequency	10 Hz
Operating Environment	Surface with diffuse reflection material, and reflectivity > 8% (such as wall, trees, humans, etc.)

REMOTE CONTROLLER

Operating Frequency	2.400 - 2.483 GHz and 5.725 - 5.825 GHz
Max Transmission Distance	2.400 - 2.483 GHz (Unobstructed, free of interference) FCC: 4.3 mi (7 km) CE: 2.2 mi (3.5 km) SRRC: 2.5 mi (4 km) 5.725 - 5.825 GHz (Unobstructed, free of interference) FCC: 4.3 mi (7 km) CE: 1.2 mi (2 km) SRRC: 3.1 mi (5 km)

VISION SYSTEM

Vision System	Forward Vision System Backward Vision System Downward Vision System
Velocity Range	≤31 mph (50 kph) at 6.6 ft (2 m) above ground
Altitude Range	0 - 33 feet (0 - 10 m)
Operating Range	0 - 33 feet (0 - 10 m)
Obstacle Sensory Range	2 - 98 feet (0.7 - 30 m)
FOV	Forward: 60°(Horizontal), ±27°(Vertical) Backward: 60°(Horizontal), ±27°(Vertical) Downward: 70°(Front and Rear), 50°(Left and Right)
Measuring Frequency	Forward: 10 Hz Backward: 10 Hz Downward: 20 Hz
Operating Environment	Surface with clear pattern and adequate lighting (lux>15)

Operating Temperature Range	32° to 104°F (0° to 40°C)
Battery	6000 mAh LiPo 2S
Transmitter Power (EIRP)	2.400 - 2.483 GHz FCC: 26 dBm CE: 17 dBm SRRC: 20 dBm MIC: 17 dBm 5.725 - 5.825 GHz FCC: 28 dBm CE: 14 dBm SRRC: 20 dBm MIC: -
Operating Current/Voltage	1.2 A@7.4 V
Video Output Port	GL300E: HDMI GL300F: USB
Mobile Device Holder	GL300E: Built-in display device (5.5 inch screen, 1920×1080, 1000 cd/m², Android system, 4 GB RAM + 16 GB ROM) GL300F: Tablets and smart phones

CAMERA

Sensor	1" CMOS Effective pixels: 20M
Lens	FOV 84° 8.8 mm/24 mm (35 mm format equivalent) f/2.8 - f/11 auto focus at: 1 m - ∞
ISO Range	Video: 100 - 3200 (Auto) 100 - 6400 (Manual) Photo: 100 - 3200 (Auto) 100 - 12800 (Manual)
Mechanical Shutter Speed	8 - 1/2000 s
Electronic Shutter Speed	8 - 1/8000 s
Image Size	3:2 Aspect Ratio: 5472 × 3648 4:3 Aspect Ratio: 4864 × 3648 16:9 Aspect Ratio: 5472 × 3078
PIV Image Size	4096×2160(4096×2160 24/25/30/48/50p) 3840×2160(3840×2160 24/25/30/48/50/60p) 2720×1530(2720×1530 24/25/30/48/50/60p) 1920×1080(1920×1080 24/25/30/48/50/60/120p) 1280×720(1280×720 24/25/30/48/50/60/120p)
Still Photography Modes	Single Shot Burst Shooting: 3/5/7/10/14 frames Auto Exposure Bracketing (AEB): 3/5 bracketed frames at 0.7 EV Bias Interval: 2/3/5/7/10/15/20/30/60 s
Video Recording Modes	H.265 C4K:4096×2160 24/25/30p @100Mbps 4K:3840×2160 24/25/30p @100Mbps 2.7K:2720×1530 24/25/30p @65Mbps 2.7K:2720×1530 48/50/60p @80Mbps FHD:1920×1080 24/25/30p @50Mbps FHD:1920×1080 48/50/60p @65Mbps FHD:1920×1080 120p @100Mbps HD:1280×720 24/25/30p @25Mbps HD:1280×720 48/50/60p @35Mbps HD:1280×720 120p @60Mbps H.264 C4K:4096×2160 24/25/30/48/50/60p @100Mbps 4K:3840×2160 24/25/30/48/50/60p @100Mbps 2.7K:2720×1530 24/25/30p @80Mbps 2.7K:2720×1530 48/50/60p @100Mbps FHD:1920×1080 24/25/30p @60Mbps FHD:1920×1080 48/50/60p @80Mbps FHD:1920×1080 120p @100Mbps HD:1280×720 24/25/30p @30Mbps HD:1280×720 48/50/60p @45Mbps HD:1280×720 120p @80Mbps
Max Video Bitrate	100 Mbps
Supported File Systems	FAT32 (≤32 GB); exFAT (≥32 GB)
Photo	JPEG, DNG (RAW), JPEG + DNG
Video	MP4/MOV (AVC/H.264; HEVC/H.265)
Supported SD Cards	MicroSD Max Capacity: 128GB Write speed ≥15MB/s, Class 10 or UHS-1 rating required
Operating Temperature Range	32° to 104°F (0° to 40°C)

INTELLIGENT FLIGHT BATTERY

Capacity	5870 mAh
Voltage	15.2 V
Battery Type	LiPo 4S
Energy	89.2 Wh
Net Weight	468 g
Charging Temperature Range	41° to 104°F (5° to 40°C)
Max Charging Power	160 W

hdmi

CHARGER

Voltage	17.4 V
Rated Power	100 W

APP / LIVE VIEW

Mobile App	DJI GO 4
Live View Working Frequency	2.4 GHz ISM, 5.8 GHz ISM
Live View Quality	720P @ 30fps
Latency	Phantom 4 Pro: 220 ms (depending on conditions and mobile device) Phantom 4 Pro V2: 160-180 ms
Required Operating Systems	iOS 9.0 or later Android 4.4.0 or later

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TUTORIALS

SHOWCASE



DJI - Phantom 4 Pro - How to Fly - Safe Flight Advice
2017-03-08



DJI - Introducing Phantom 4 Pro
2016-11-15



DJI - Phantom 4 Pro - Narrow Sensing
2017-03-08



DJI - Phantom 4 Pro - ActiveTrack
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DJI - Phantom 4 Pro - Hawaiian Lava
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DOCUMENTS & MANUALS

Phantom 4 Pro/Pro+ Release Notes
2017-12-25

[ZIP](#) [PDF](#)

Phantom 4 Pro/Pro+ User Manual v1.4
2017-10-17

[ZIP](#) [PDF](#)

Phantom 4 Pro Quick Start Guide v1.0
2017-01-25

[ZIP](#) [PDF](#)

Phantom 4 Pro+ Quick Start Guide v1.0
2017-01-25

[ZIP](#) [PDF](#)

Phantom 4 Pro/Pro+ Disclaimer and Safety
Guidelines v1.2
2017-10-02

[ZIP](#) [PDF](#)

Phantom 4 Pro In the Box
2017-01-25

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Phantom 4 Pro+ In the Box
2017-01-25

[ZIP](#) [PDF](#)

Phantom 4 Series Intelligent Flight Battery Safety
Guidelines v1.0
2017-01-25

[ZIP](#) [PDF](#)

D-Log Grading Guide
2017-06-08

[ZIP](#) [PDF](#)

FIRMWARE

Phantom 4 Pro+ Remote Controller Firmware
v01.02.02.00
2017-09-30

[ZIP](#)

How to Update Phantom 4 Pro+ Remote
Controller Firmware
2017-03-07

[ZIP](#) [PDF](#)

STRAIGHT-FROM-THE-PHANTOM-4-PRO

Straight-from-the-Phantom-4-Pro
2016-11-16

[ZIP](#)

SOFTWARE

DJI Assistant 2 Release Notes
2017-12-29

[ZIP](#) [PDF](#)



DJI Assistant 2 v1.2.0
2017-12-29

[ZIP](#) [EXE](#)



DJI Assistant 2 v1.2.0
2017-12-29

[DMG](#)

APP / LIVE VIEW

iOS Version v4.1.20.

Requires iOS 9.0 or later. Compatible with iPhone 5s, iPhone SE, iPhone 6, iPhone 6 Plus, iPhone 6s, iPhone 6s Plus, iPhone 7, iPhone 7 Plus, iPad Air, iPad Air Wi-Fi + Cellular, iPad mini 2, iPad mini 2 Wi-Fi + Cellular, iPad Air 2, iPad Air 2 Wi-Fi + Cellular, iPad mini 3, iPad mini 3 Wi-Fi + Cellular, iPad mini 4 and iPad mini 4 Wi-Fi + Cellular, iPod touch (6th generation). This app is optimized for iPhone 7, iPhone 7 Plus.

Android Version v4.1.22.

Android version 4.4.0 or later. Compatible with Samsung S8, Samsung S7 edge, Samsung S7, Samsung S6, Samsung S5, Samsung NOTE4, Samsung NOTE3, Samsung tabs 705c, Ascend Mate 9, Ascend Mate 7, Huawei Honor 8, Huawei P8 Max, Vivo X7, Xiaomi 5, Google Nexus 6p, Nexus 9, Google Nexus 7 II, LG V20.

*Support for additional devices available as testing and development continues.



PHANTOM 4 PRO FAQ

Home / Products / Phantom 4 Pro / FAQ

PRODUCT

1. What are the main differences between the Phantom 4 and Phantom 4 Pro?



2. What, if any, are the main differences between the Phantom 4 Pro and Phantom 4 Pro Obsidian?



3. Which Micro SD cards are supported?



4.Does the Phantom 4 Pro Obsidian come with similar looking matte grey accessories?

CAMERA

1.What is new about the Phantom 4 Pro's camera?

2.What advantages does the Phantom 4 Pro have for shooting video?

3.What is the resolution and format of the photos captured while recording video?

4.What is the advantage using the new H.265 video format?

5.What's the benefit of having a mechanical shutter?

6.Does the Phantom 4 Pro support focus?

7.What are the main features of the Phantom 4 Pro camera lens?

OBSTACLE SENSING SYSTEM

1.When do the infrared sensing system work during flight?

2.How do the infrared sensing system work?

3.What improvements have been made to the Phantom 4 Pro's obstacle sensing system?

4.Is there any difference between the front and rear obstacle sensing systems?

REMOTE CONTROLLER

1.Are the Phantom 4 and Phantom 4 Pro remote controllers compatible with each other?

2.What's new in the Phantom 4 Pro remote controller?

3.Can I detach the integrated display from the Phantom 4 Pro 's remote controller?

4.Can I connect an iOS device or Android device to the Phantom 4 Pro 's remote controller to use DJI GO 4?

5.Does the Phantom 4 Pro 's remote controller have a built-in loudspeaker and microphone?

6.What is the resolution of the Phantom 4 Pro 's remote controller display?

7.What apps are preloaded on the Phantom 4 Pro 's screen remote controller display?

8.What operating system does the Phantom 4 Pro 's remote controller display use?

9.Is the remote controller's screen display's brightness adjusted automatically or manually?

10.Can I download other apps onto the Phantom 4 Pro 's remote controller display?

11.Does the Phantom 4 Pro 's remote controller support Wi-Fi and Bluetooth connectivity?

INTELLIGENT FUNCTIONS

1.What new Intelligent Flight Modes are on the Phantom 4 Pro?



2.How is Phantom 4 Pro's Smart Return Home improved?



3.How to use Narrow Sensing?



PROPULSION SYSTEM

1.Can use Phantom 4 propellers on the Phantom 4 Pro?



2.How is Phantom 4 Pro's propulsion system optimized?



VIDEO TRANSMISSION SYSTEM

1.What is difference between Phantom 4 and Phantom 4 Pro Lightbridge systems?



BATTERIES AND BATTERY CHARGER

1.Are the Phantom 4 Pro batteries and battery charger compatible with the Phantom 4?



2.What is the capacity of the Phantom 4 Pro battery? How much has the flight time been extended compared to the Phantom 4?



FIRMWARE UPGRADE

1.During upgrading, if the level of flight battery or controller battery drops below 50%, will the upgrading process fail?



2.What if battery firmware is not consistent with the upgraded aircraft?



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OC VAPOR AEROSOL GRENADE



*OC DELIVERY IN CONFINED AREAS
WITH SHORT TERM EFFECTS*

OC VAPOR AEROSOL GRENADE

The Defense Technology® OC Vapor Aerosol Grenade delivers a very high concentration of Oleoresin Capsicum (OC) in a powerful mist. This inflames the mucous membranes and exposed skin, resulting in an intense burning sensation. Inhalation of the OC Vapor produces an immediate respiratory effect, which resolves within minutes when the subject is removed from the affected area to fresh air. Minimal decontamination of personnel or material is required after deployment. The OC Vapor Aerosol Grenade is ideal for cell extractions or barricade situations where the use of pyrotechnic, powder or liquid devices is not practical or desired.

FEATURES

- Delivers a very high concentration of OC in a powerful mist
- Immediate incapacitating effects
- Minimal decontamination
- Non-flammable
- For indoor use

WARNING: This product can expose you to chemicals including Lead Salts and Hexavalent Chromium, which are known to the State of California to cause cancer, and Lead Salts, which are known to the State of California to cause birth defects or other reproductive harm. For more information go to <http://www.P65Warnings.ca.gov>



Pistols Submachine Guns Assault Rifles Machine Guns Precision Rifles 40 mm Systems



Overview Technical Data Accessories

MP5 | Technical Data

MP5A3 – CAL. 9 MM X 19

General

Calibre	9 mm x 19
Operating principle	Delayed roller locked bolt
Magazine capacity	15/30 rounds
Modes of fire	0-1-D
Rate of fire	approx. 800/min
Sights	D
Buttstock	R
Dimensions	
Length min./max.	approx. 550/690 mm
Width	approx. 67.0 mm
Height	approx. 230.0 mm
Barrel length	approx. 225 mm
Sight radius	approx. 340.0 mm
Weight	
Weapon	approx. 3,100 g
Magazine	approx. 120/170 g

MP5A4 – CAL. 9 MM X 19

General

Calibre	9 mm x 19
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MP5

MP5	
MP5SD	
MP5K	

Submachine Guns

MP7A1	
UMP	
MP5	

Modes of fire	0-1-3-D
Rate of fire	approx. 800/min
Sights  	D
Buttstock 	FX
Dimensions	
Length min./max.	approx. 675 mm
Width	approx. 67.0 mm
Height 	approx. 230.0 mm
Barrel length	approx. 225 mm
Sight radius	approx. 340.0 mm
Weight	
Weapon 	approx. 2,895 g
Magazine 	approx. 120/170 g

MP5A5 – CAL. 9 MM X 19

General	
Calibre	9 mm x 19
Operating principle	Delayed roller locked bolt
Magazine capacity	15/30 rounds
Modes of fire	0-1-3-D
Rate of fire	approx. 800/min
Sights  	D
Buttstock 	R
Dimensions	
Length min./max.	approx. 550/690 mm
Width	approx. 67.0 mm
Height 	approx. 230.0 mm
Barrel length	approx. 225 mm
Sight radius	approx. 340.0 mm
Weight	
Weapon 	approx. 3,100 g
Magazine 	approx. 120/170 g

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