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 Codes § 7286 and 12525.2; and California Penal Codes §§ 835a and 13652 as well as the Culver City Police Department’s Duty Manual and General Orders. 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 (Section 300) contained in the Culver City Police Department Duty Manual.

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, the Culver City Police Department Duty Manual, as well as federal, state, and local laws and ordinances. 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:

(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 Use of force and ensuring that the report is made available on the department website (Government Code § 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
4040 Duquesne Ave, Culver City, CA 90232
Email: Chief.police@culvercity.org

Telephonic complaints regarding the use of military equipment may be made by calling the Culver City Police Department Professional Standards Unit at (310) 253-6211.

Whenever practical, the Coordinator will respond to concerns, complaints, and questions within 30 calendar days of receipt. As outlined in Culver City Duty Manual Section 1008, all complaints will be thoroughly investigated in accordance with federal, state, local laws, and ordinances.

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):
   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.
      IV. In compliance with Department policy and procedures, as well as federal, state, and local laws and ordinances.

   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.
   III. In compliance with Department Policy 349 (Unmanned Aerial Vehicle Operations), as well as federal, state, and local laws and ordinances.

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:
Two (2) Ford Transit Vans 350HD, extended roof, V6, 6-speed automatic, outfitted and equipped with the following: NIJ III level vehicle armor, 360-degree exterior camera system, upgraded HD hinges, breaching tool storage, rear bench seating with seatbelts, interior grab rails, automatic door opening system, rear compartment A/C and heater, medical supplies and equipment, HD tires with run-flat tire inserts, HD removable side, and rear steps, front push-bars, custom exterior side grab rails, emergency roof escape hatch, police lights and siren packages, police communication radios (front & rear) and ATF approved bench storages.

Both armored vans seat 10-12 people with an open floor plan that allows for the rescue of down personnel. In addition, the vans can stop various projectiles, which provides greater safety to citizens, officers, and EMS personnel beyond the protection level of a shield and/or personal body armor.

b. Purpose:
To be deployed when it would assist officers, EMS personnel, or the Incident
Commander with the following situations, which include:

I. Active shooter/mass casualty incidents
II. Rescue operations
III. Supporting search and arrest warrant operations
IV. Barricaded suspect operations
V. Hostage operations
VI. During encounters with self-destructive, violent, dangerous, and/or combative subjects
VII. During department-approved training exercises

c. **Authorized Use:**
   I. Armored vans will be deployed by officers who have received department training in the vans’ operation.
   II. The driver of the vehicle shall have a valid California driver’s license (class C)
   III. The on-duty Watch Commander shall approve requests to deploy an armored van(s)

d. **Expected Lifespan:**
   7-10 years *(depending on usage and normal wear and tear)*

e. **Fiscal Impact:**
   Two (2) Ford Transit Vans 350HD cost: $427,000 (Asset forfeiture funds). Annual maintenance costs $6,000 each.

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:**
   IV. The Command Post Mobile trailer will be deployed by officers and staff who have received department training in pulling/deploying trailers.
   V. The driver of the vehicle shall have a valid California driver's license (class C)
   VI. In compliance with Department Policy 703 (Vehicle Use), as well as federal, state, and local laws and ordinances.

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
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 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.
   III. In compliance with Department Policies 307 (Firearms), 416 (Rifles), and 300 (Use of Force), as well as federal, state, and local laws and ordinances.
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. 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. 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. During encounters with self-destructive, violent, dangerous and/or combative subjects.
   II. 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.
   III. Circumstances where the Emergency Response Team members can obtain tactical advantage during the following critical incidents: Barricaded violent felony suspect, vehicle barricade of a felony suspect, active shooter, or a hostage rescue operation.
   IV. During department-approved training exercises.
   V. NFDDs shall not be used for crowd dispersal.
   VI. All uses of NFDDs must first be approved by a Bureau Captain.
   VII. In compliance with department policy (705 Noise Flash Diversionary Devices) as well as federal, state, and local laws and ordinances.

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 section 13652 and Government Code Section 12525.2.

   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 lacrimator 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-mounted 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

b. **Purpose:**
To act as, and shall be limited to, a de-escalation and less lethal option during the following situations:

I. Self-destructive, dangerous, violent, 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 shall 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 violent 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
V. In compliance with Department Policies 350, (Control Devices/Chemical Agents) and 300 (Use of Force) as well as federal, state, and local laws and ordinances.

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

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 $348.00
III. Defense Technology Pocket Tactical - annual cost between $0 and $250.00

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 to deliver chemical agents and kinetic energy impacts to subjects in a potentially violent encounter. De-Escalation tools are 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 act as, and shall be limited to, a de-escalation and less lethal option during the following situations:
I. Self-destructive, violent, 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. Potentially vicious animals.
IV. Department-approved 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 the on-duty Watch Commander or the on-scene Field Supervisor.
III. Use of the PepperBall launcher for dispersal of riotous crowds must first be approved by the Chief of Police.
VI. In compliance with Department Policies 304, (Control Devices-Impact Weapons), 350 (Control Devices -Chemical Agents), and 300 (Use of Force) as well as federal, state, and local laws and ordinances.

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 act as, and shall be limited to, a de-escalation and less lethal option during the following situations:
      
      I. Self-destructive, violent, 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. Potentially vicious animals.
      IV. Department-approved training exercises.
   
   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.

IV. In compliance with Department Policies 304, (Control Devices-Impact Weapons) and 300 (Use of Force) as well as federal, state, and local laws and ordinances.

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 should be limited to high-risk search warrant operations, 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:**
   V. Only by a neighboring police agency in accordance with their existing policies and procedures.
   VI. 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.
   VII. 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

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
Technical Specifications GL-06

Table of Contents:

1. General description ........................................ 3
2. Nomenclature and technical data ............................ 4
3. Operating principle .......................................... 5
4. Compatible ammunitions ..................................... 7
5. Ballistic data .................................................. 8
6. Exploded view and parts list ................................... 9
7. Accessories ......................................................
   7.1 Tactical .................................................. 11
   7.2 Training ................................................... 12
   7.3 Maintenance ............................................... 12
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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 ammunition. 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

![Diagram of a firearm with labels for various parts:]
- Fully adjustable red dot sight
- Adjustable rear sight
- Accessory rail
- Barrel with top accessory rail
- Protected front sight
- Folding stock
- Trigger
- Trigger guard
- Pistol grip
- Fore end with accessory rails and protectors
- Ambidextrous breech lever

**Fig. 2.1**

<table>
<thead>
<tr>
<th>Designation:</th>
<th>GL06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer:</td>
<td>B&amp;T AG, Switzerland</td>
</tr>
<tr>
<td>Product ID:</td>
<td></td>
</tr>
<tr>
<td>BT-31000 black without access safety</td>
<td></td>
</tr>
<tr>
<td>BT-31000-1 black with access safety</td>
<td></td>
</tr>
<tr>
<td>BT-31000-2 yellow (RAL 1021) without access safety</td>
<td></td>
</tr>
<tr>
<td>BT-31000-3 yellow (RAL 1021) with access safety</td>
<td></td>
</tr>
<tr>
<td>NATO Stock Number:</td>
<td>1010-38-000-9860</td>
</tr>
<tr>
<td>Caliber:</td>
<td>40 x 46 mm</td>
</tr>
<tr>
<td>System:</td>
<td>Break-down single shot, double action only</td>
</tr>
<tr>
<td>Barrel length [mm]:</td>
<td>280</td>
</tr>
<tr>
<td>Twist rate [mm per turn]:</td>
<td>1200</td>
</tr>
<tr>
<td>Riffling:</td>
<td>12 grooves, right hand</td>
</tr>
<tr>
<td>Overall length [mm]:</td>
<td>590 (stock unfolded) 385 (stock folded)</td>
</tr>
<tr>
<td>Overall width [mm]:</td>
<td>60 (stock unfolded) 95 (stock folded)</td>
</tr>
<tr>
<td>Overall height [mm]:</td>
<td>200</td>
</tr>
<tr>
<td>Weight [kg]:</td>
<td>2.15</td>
</tr>
<tr>
<td>Sights:</td>
<td>Red dot sight Aimpoint Micro T-1 (dot size 4 MOA)</td>
</tr>
<tr>
<td></td>
<td>Ghost ring iron sights (sight radius 339 mm), adjustable in windage</td>
</tr>
<tr>
<td>Interfaces:</td>
<td>4 NATO accessory rails STANAG 4694</td>
</tr>
<tr>
<td>Standard supply:</td>
<td>Weapon complete with sidemount, rail covers and carrying sling</td>
</tr>
</tbody>
</table>
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.

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 covery hammer, then it snaps immediately back in a safe position.
Technical Specifications GL-06

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 diffusors 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.

![Diagram of high and low pressure chambers]

**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 GLO6 launcher are set point blank to 25 m with SIR 40 mm (B&T BT-23510); ballistic data below.

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

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_{99%}: Diameter of circular target with hit probability of 99%
6. Exploded view and parts list

Fig. 6.1
# Technical Specifications GL-06

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

For more details refer to parts catalogue PC-2889.
7. Accessories

7.1 Tactical

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Description</th>
<th>Product ID</th>
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<tbody>
<tr>
<td>1</td>
<td>B&amp;T quick detachable vertical handgrip</td>
<td>BT-21773</td>
</tr>
<tr>
<td>1a</td>
<td>B&amp;T screw-on vertical handgrip NSN 1005-17-117-0959</td>
<td>BT-21203</td>
</tr>
<tr>
<td>2</td>
<td>B&amp;T foldable ballistic helmet visor stock</td>
<td>BT-20222</td>
</tr>
<tr>
<td>3</td>
<td>B&amp;T quick detachable mounts for optical sights</td>
<td>various</td>
</tr>
<tr>
<td></td>
<td>B&amp;T tactical light 6 V</td>
<td>BT-211017</td>
</tr>
<tr>
<td>4</td>
<td>B&amp;T tactical light 9 V</td>
<td>BT-211016</td>
</tr>
<tr>
<td></td>
<td>B&amp;T tactical light 6 V IR</td>
<td>BT-21803</td>
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</table>

B&T carrying bag for 1 launcher and 20 cartridges  

---

---
<table>
<thead>
<tr>
<th>Model Number:</th>
<th>HD68300</th>
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<tbody>
<tr>
<td>Size:</td>
<td>7.28&quot; X 5.62&quot;</td>
</tr>
<tr>
<td></td>
<td>1.3lb</td>
</tr>
<tr>
<td>Loaded Weight:</td>
<td></td>
</tr>
<tr>
<td>Housing Materials:</td>
<td>Glass-filled Nylon</td>
</tr>
<tr>
<td></td>
<td>Rubber Overmold Grip</td>
</tr>
<tr>
<td>Component Materials:</td>
<td>Aluminum and Stainless Steel</td>
</tr>
<tr>
<td>Caliber:</td>
<td>.68</td>
</tr>
<tr>
<td>Speed of Projectile:</td>
<td>220-300 FPS</td>
</tr>
<tr>
<td>Weight of Projectile:</td>
<td>3.2 Grams</td>
</tr>
<tr>
<td>Force at Muzzle Velocity:</td>
<td>13 Joules</td>
</tr>
<tr>
<td>Composition of Chemical Rounds:</td>
<td>Byrna HD Max - 12% active ingredients: OC, CS, and PAVA</td>
</tr>
<tr>
<td></td>
<td>Byrna HD Pepper - 5% OC</td>
</tr>
<tr>
<td>Magazine Capacity:</td>
<td>5 Rounds</td>
</tr>
<tr>
<td>Propulsion:</td>
<td>One (1) 8 Gram CO₂ Cartridge</td>
</tr>
<tr>
<td>Puncture Mechanism:</td>
<td>Punctures CO₂ Cartridge and fires first projectile all with first trigger pull.</td>
</tr>
<tr>
<td>Temperature Range, Effective Use:</td>
<td>0°F - 120°F</td>
</tr>
<tr>
<td>Accessories:</td>
<td>Laser Pointers, Flashlights, Holsters (left and right hand carry)</td>
</tr>
<tr>
<td>Safety Lever:</td>
<td>Ambidextrous</td>
</tr>
<tr>
<td>Colors:</td>
<td>Safety Orange, Bright Yellow, Gray, Desert Tan, Black</td>
</tr>
</tbody>
</table>

Patents Pending
# PRODUCT SPECIFICATIONS

## PHYSICAL & OPERATIONAL

<table>
<thead>
<tr>
<th>Type</th>
<th>Imitant &amp; Smoke Pyrotechnic Grenades</th>
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<tbody>
<tr>
<td>Diameter</td>
<td>2.60&quot; (66 mm)</td>
</tr>
<tr>
<td>Length</td>
<td>6.20&quot; (157 mm)</td>
</tr>
<tr>
<td>Fuze Type</td>
<td>Model 201</td>
</tr>
<tr>
<td>Fuze Delay</td>
<td>1.5 +/- 0.3 sec, average</td>
</tr>
<tr>
<td>Launchable</td>
<td>Yes</td>
</tr>
<tr>
<td>Discharge Time</td>
<td>20 - 40 Seconds</td>
</tr>
<tr>
<td>Emission Ports</td>
<td>4</td>
</tr>
<tr>
<td>Overall Weight</td>
<td>395 gm</td>
</tr>
<tr>
<td>Warranty</td>
<td>5 Years From Shipment Date</td>
</tr>
</tbody>
</table>

---

### WARNING:

CIS 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, rar 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.

---

### SHIPPING INFORMATION

<table>
<thead>
<tr>
<th>Proper Shipping Name</th>
<th>Ammunition, Smoke</th>
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<tbody>
<tr>
<td>UN Number</td>
<td>0303</td>
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<tr>
<td>Hazard Class</td>
<td>1.4G</td>
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<tr>
<td>Labels Required</td>
<td>Explosive 1.4G</td>
</tr>
<tr>
<td>Quantity Per Package</td>
<td>24 Grenades</td>
</tr>
<tr>
<td>Total Package Weight</td>
<td>31 lb</td>
</tr>
<tr>
<td>Package Type</td>
<td>UN Specification 1A2Y36/S Metal Drum with Lever Lock Lid</td>
</tr>
<tr>
<td>Package Dimensions</td>
<td>19x12 (7 gal. drum also used for overnight packages)</td>
</tr>
</tbody>
</table>

---

CTS is a Division of Combined Systems, Inc.
388 Kinsman Rd.
Jamestown, PA 16134 USA
TEL (724) 932-2177
FAX (724) 932-2166
EMAIL Sales@combinedsystems.com
www.combinedsystems.com
Innovative 4-Bolt Connection System replaces barrel nut for increased stability and uniform connection between the handguard, barrel, and receiver.

18" chrome-lined, heavy-phosphate-coated 5.56mm NATO barrel for accuracy and extended range.

Independently ambidextrous GRIP-M-REP charging handle and 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.
DISTRACTION DEVICE® RELOAD W/ SC
12-GRAM

PRODUCT SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reload</td>
<td>Steel collar w/ cardboard tube</td>
</tr>
<tr>
<td>Diameter</td>
<td>0.78 in / 1.98 cm</td>
</tr>
<tr>
<td>Length</td>
<td>5.00 in / 12.7 cm</td>
</tr>
<tr>
<td>Canister</td>
<td>To be used with reloadable bodies</td>
</tr>
<tr>
<td>Fuze</td>
<td>M201A1 Type</td>
</tr>
<tr>
<td>Explosive Content</td>
<td>Flash Powder - 0.42 oz / 12 grams</td>
</tr>
<tr>
<td>Sound Level</td>
<td>175 dB at 3 feet / 1.5m</td>
</tr>
<tr>
<td>Light Level</td>
<td>6 – 8 million Candelales</td>
</tr>
<tr>
<td>Light Duration</td>
<td>10 milliseconds</td>
</tr>
<tr>
<td>Part No.</td>
<td>89015C</td>
</tr>
<tr>
<td></td>
<td>89015C-HH</td>
</tr>
<tr>
<td>Warranty</td>
<td>5 years from date of manufacture</td>
</tr>
</tbody>
</table>

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 Sulfate and Hexavalent Chromium, which are known to the State of California to cause cancer, and Lead Sulfate, 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: 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.
# Pocket Tactical Grenade

**OC, CN, CS, SAF-SMOKE™ and Colored Smoke**

## Product Specifications

<table>
<thead>
<tr>
<th>Diameter</th>
<th>1.4 in / 3.6 cm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>4.75 in / 12 cm</td>
</tr>
<tr>
<td>Fuze</td>
<td>M201A1 Type</td>
</tr>
<tr>
<td>Active Agent</td>
<td>OC 0.25 oz / 7 g</td>
</tr>
<tr>
<td></td>
<td>CN/CS 0.9 oz / 25.2 g</td>
</tr>
<tr>
<td>Discharge Time</td>
<td>20 – 40 Seconds</td>
</tr>
<tr>
<td>Launchedable</td>
<td>Yes</td>
</tr>
</tbody>
</table>

## 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 minimum 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 Sulfides and Hexavalent Chromium, which are known to the State of California to cause cancer, and Lead Sulfides, 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

<table>
<thead>
<tr>
<th>Diameter</th>
<th>2.62 in / 6.7 cm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>6.12 in / 15.5 cm</td>
</tr>
<tr>
<td>Fuze</td>
<td>M201A1 Type</td>
</tr>
<tr>
<td>Active Agent</td>
<td>OC 1.09 oz / 31 g</td>
</tr>
<tr>
<td></td>
<td>CN/CS 2.9 oz / 81.2 g</td>
</tr>
<tr>
<td>Discharge Time</td>
<td>20 – 40 Seconds</td>
</tr>
<tr>
<td>Launchable</td>
<td>Yes</td>
</tr>
<tr>
<td>Part No.</td>
<td>OC 1070</td>
</tr>
<tr>
<td></td>
<td>CN 1071</td>
</tr>
<tr>
<td></td>
<td>CS 1072</td>
</tr>
<tr>
<td>Smoke</td>
<td>See Max. Smoke #1073</td>
</tr>
</tbody>
</table>

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
75gr. BTHP T2 TAP®

**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.

<table>
<thead>
<tr>
<th>Velocity (fps)</th>
<th>muzzle</th>
<th>100 yds</th>
<th>200 yds</th>
<th>300 yds</th>
<th>400 yds</th>
<th>500 yds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy (ftlbs)</td>
<td>1360</td>
<td>1126</td>
<td>925</td>
<td>733</td>
<td>608</td>
<td>486</td>
</tr>
<tr>
<td>Trajectory (inches)</td>
<td>1.5</td>
<td>0</td>
<td>3.7</td>
<td>13.6</td>
<td>31.2</td>
<td>58.5</td>
</tr>
</tbody>
</table>

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

APPLICATION: ENTRY, PATROL/DUTY | Meets FBI protocols

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.

<table>
<thead>
<tr>
<th>Velocity (fps)</th>
<th>muzzle</th>
<th>100 yds</th>
<th>200 yds</th>
<th>300 yds</th>
<th>400 yds</th>
<th>500 yds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2310</td>
<td>1964</td>
<td>1853</td>
<td>1386</td>
<td>1179</td>
<td>1042</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Energy (ft lbs)</th>
<th>muzzle</th>
<th>100 yds</th>
<th>200 yds</th>
<th>300 yds</th>
<th>400 yds</th>
<th>500 yds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>888</td>
<td>643</td>
<td>455</td>
<td>320</td>
<td>231</td>
<td>181</td>
</tr>
</tbody>
</table>

| Trajectory (inches) | -1.5 | 0 | -7.6 | -28.1 | -66.8 | -130.5 |

Bullet: 75 gr. TAP SBR®
B.C.: 0.230 S.O.A. = 0.214
Muzzle Velocity: 2310 fps
Barrel: 10.5" Twist Rate: 1/2"
Total Penetration: 17.0"
Max. Cavity: 4.5"
Depth to Max. Cav.: 4.5"
Entry: 0.50"
Retained Weight: 69.5 gr.
PROJECTILES

LIVE™

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

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Weight</th>
<th>Caliber</th>
<th>Payload</th>
<th>Shelf Life</th>
<th>Velocity</th>
<th>Direct Impact</th>
<th>Saturation</th>
<th>Kinetic Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>3g</td>
<td>.68</td>
<td>2.5g</td>
<td>3 Years</td>
<td>280-300FPS</td>
<td>60ft</td>
<td>150+ft</td>
<td>8.8-11 ft lb/12-15J</td>
</tr>
</tbody>
</table>

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.
**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.

<table>
<thead>
<tr>
<th>SPECIFICATIONS</th>
<th>FEATURES</th>
<th>QUANTITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ultrasonically welded</td>
<td>JARS OF: 90</td>
</tr>
<tr>
<td>CALIBER</td>
<td>Shell color indicates payload</td>
<td></td>
</tr>
<tr>
<td>68 Caliber</td>
<td>100% waterproof</td>
<td></td>
</tr>
<tr>
<td>PAYLOAD</td>
<td>Operational temperature of -30°F to 150°F</td>
<td></td>
</tr>
<tr>
<td>2.5g</td>
<td>Non-flammable</td>
<td></td>
</tr>
<tr>
<td>VELOCITY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>280-320 FPS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FORMULA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5% PAVA Powder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WEIGHT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SHELF LIFE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>KINETIC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-15J</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feature</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>BARREL</td>
<td>14.7&quot; / 37.3cm</td>
<td>16.1&quot; / 40.9cm</td>
</tr>
<tr>
<td>WEIGHT</td>
<td>7.0lbs / 3.2kg</td>
<td>7.3lbs / 3.3kg</td>
</tr>
<tr>
<td>LENGTH</td>
<td>30.7&quot; - 34&quot; / 78.0 - 86.4 cm</td>
<td>32.1&quot; - 35.4&quot; / 81.5 - 89.9 cm</td>
</tr>
<tr>
<td>Monoforge™ upper receiver</td>
<td>With integrated rail-base is stronger than the standard-pattern upper</td>
<td></td>
</tr>
<tr>
<td>All LWRCI™ forgings are coined: the material</td>
<td>Struck twice in the die for precise dimensional accuracy and a superior surface finish</td>
<td></td>
</tr>
<tr>
<td>LWRCI™ Skirmish Sights</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LWRCI™ Ambidextrous Charging Handle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LWRCI™ Patented LWRCI™ short-stroke gas</td>
<td>Pisto System offers unparalleled reliability and easy maintenance</td>
<td></td>
</tr>
<tr>
<td>LWRCI™ Enhanced Fire Control Group</td>
<td>Nickel-Teflon coated for a smooth, crisp trigger pull with positive reset</td>
<td></td>
</tr>
<tr>
<td>LWRCI™ Advanced Trigger Guard is oversized</td>
<td>To allow for easy operation with gloves</td>
<td></td>
</tr>
<tr>
<td>Black Nitride treated LWRCI™ heavy-profile</td>
<td>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</td>
<td></td>
</tr>
<tr>
<td>Nickel-Boron coated bolt carrier for</td>
<td>Unparalleled wear resistance, corrosion resistance, and permanent lubricity</td>
<td></td>
</tr>
<tr>
<td>Fully-ambidextrous lower receiver controls</td>
<td>Include the bolt catch and release, the magazine release, and the safety selector</td>
<td></td>
</tr>
<tr>
<td>Magpul® MOE® Grip combines reinforced</td>
<td>Polymer body construction with comfortable wrap-around rubber overmolding for maximum weapon control in adverse environments</td>
<td></td>
</tr>
<tr>
<td>LWRCI™ Compact Stock</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Available Colors:

[Image of available colors]
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

<table>
<thead>
<tr>
<th>Weight</th>
<th>Caliber</th>
<th>Length</th>
<th>Height</th>
<th>Action</th>
<th>Power</th>
<th>Capacity</th>
<th>Kinetic Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3lbs/2.8kg</td>
<td>.68 Caliber</td>
<td>28&quot;/71.1cm</td>
<td>12&quot;/30.4cm</td>
<td>Semi-Auto</td>
<td>HPA</td>
<td>180 Rounds</td>
<td>7.3-11ft lb/10-15J</td>
</tr>
</tbody>
</table>

FEATURES

- Uses Standard Round Projectiles
- 30cf 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-1613 Rail Platform
- Maximum Range of 60° for Direct Impact and 150° for Area Saturation

U.S. Sales (877) 867-3773 | 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.
Winchester 223 Rem (55) Sinterfire Frangible

Symbol: RA223SF – Winchester Ranger Sinterfire Frangible Shellcase: 223 Rem brass shellcase Bullet: 55 grain (3.8 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

INFORMATION PUBLISHED HEREIN IS SUBJECT TO CHANGE AT MANUFACTURER’S DISCRETION WITHOUT NOTICE.

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

OLIN CORPORATION • WINCHESTER DIVISION • 427 NORTH SHAMROCK STREET • EAST ALTON, IL 62024-1197 TELEPHONE: 815 258-2000 • WEB SITE: www.winchester.com
THE WORLD'S FIRST PURPOSE BUILT TACTICAL sUAS.

AVAILABLE FROM

SOLE SOURCE NORTH AMERICAN DISTRIBUTOR
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% real-time
- 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
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 canister takes it to another level of effectiveness.

Tactical Team Leader
Los Angeles County CA.
MATRICE 200 SERIES
BUILT TO ENDURE. ENGINEERED TO ADAPT

MATRICE 200 SERIES SPECS

M200 AIRCRAFT

M200
21.1x8.4x14.0in (540x213x361mm)
26.0x11.0x19.0in (660x280x483mm)
28.2x14.0x19.0in (715x356x483mm)
Folded length: 33.3in (849mm)

GIMBAL

Remote controller

REMOTE CONTROLLER

https://www.dji.com/matrice-200-series/info
**GIMBAL INSTALLATION**

- Downward Forward Gimbal: Supported
- Downward Central Mount: Not Supported
- Downward Dual Gimbal: Not Supported

**BATTERY (STANDARD)**

- Model: TB50
- Capacity: 4280mAh
- Voltage: 22.8V
- Weight: 198g
- Battery Type: LIPO
- Max Capacity: 57.36 Wh
- Max Voltage: 25.98V
- Max Current: 20C
- Max Charge Current: 20C
- Max Discharge Current: 20C

**BATTERY (OPTIONAL)**

- Model: TB47D
- Capacity: 6400mAh
- Voltage: 22.2V
- Weight: 236g
- Battery Type: LIPO
- Max Capacity: 140.8 Wh
- Max Voltage: 25.92V
- Max Current: 20C
- Max Charge Current: 20C
- Max Discharge Current: 20C

**CHARGER**

- Model: PD5100
- Voltage: 24.1V
- Rated Power: 100W

**UPWARD INFRARED SENSOR**

- Sensor: 3X.L (3x6)
- Coaxial Sensing Range: 0-16 ft (0-5 m)
- Viewing Angle: 45°
- Operating Environment: Large-size objects with diffuse reflecting surfaces or high reflective race track

**FORWARD VISION SYSTEM**

- Obstacle Sensing Range: 3.2 ft (1 m)
- FOV: Horizontal 60°, Vertical 45°
- Operating Environment: Suitable for clear patterns and adequate lighting (15 lux)

**DOWNDOWN VISION SYSTEM**

- Velocity Range: 0.3 m/s
- Altitude Range: 0.2 m
- Operating Range: 10 m
- Operating Environment: Suitable for clear patterns and adequate lighting (15 lux)
- Non-albino/antimatter/digital surfaces (excluding ice) will reduce performance

**M210 AIRCRAFT**

- Model: M210
- Frame Dimensions: 31.3 in x 31.3 in x 1.6 in (799 x 799 x 41 mm)
- Dimension Folded: 34.3 in x 19.6 in x 15.4 in (870 x 498 x 390 mm)

**GIMBALS**

<table>
<thead>
<tr>
<th>Gimbal</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZEISS</td>
<td>345</td>
</tr>
<tr>
<td>ZEISS</td>
<td>500</td>
</tr>
<tr>
<td>ZEISS</td>
<td>120</td>
</tr>
<tr>
<td>ZEISS</td>
<td>45</td>
</tr>
</tbody>
</table>

https://www.dji.com/matrice-200-series/info
BATTERY
- Mode: T350
- Capacity: 4280 mAh
- Voltage: 22.8 V
- Weight: 57.56 Wh
- Approx. Weight: 550 g
- Storage Temperature: Between -20°C to 40°C
- Operating Temperature: Between -20°C to 40°C
- Charging Temperature: Max 40°C (90°F)
- Model: CW2P
- Voltage: 22.8 V
- Battery Type: LiPo
- Charging: CW2P
- Max Charging Power: 100 W

DJIGO 4 APP
- Name: DJI GO 4
- Minimum Android System Requirement: 4.4.4
- Supported Mobile Devices: Android 4.4 or later

UPWARD IRREDNCE SENSOR
- Operation Range: 0.1-50 ft (0-15 m)
- Field of View (FOV): 36°
- Operating Environment: -4°F to 140°F (-20°C to 60°C)

CENDENCE
- Type: GLASS
- Operating Frequency: 1.25 GHz
- Max. Sensing Distance: 0.5 mi (0.8 km)
- Effective Range: 0.5 mi (0.8 km)
- Power Supply: LiPo
- Intelligible Battery: 4530 mAh
- Charging: 220V (110V or 220V AC)
- Data Output: USB, HDMI, SDI
- Motion and Status: LED: 1.5, 2.5, 8, 10, 12, 15, 18, 20, 24 W

FORWARD VISION SYSTEM
- Operating Range: 2-9.8 ft (0.7-3 m)
- Field of View (FOV): 89°
- Operating Environment: Non-assisted (support for assisted environment)

DOWNSWING VISION SYSTEM
- Lower Range: 0.04 feet (0.01 m)
- Upper Range: 2.5-5.8 feet (0.7-1.8 m)
- Operating Environment: Non-assisted (support for assisted environment)
### M210 RTK

**AIRCRAFT**

<table>
<thead>
<tr>
<th>Model</th>
<th>M210/RTK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Package Dimension</td>
<td>31.1x31.1x13.1 in (792x800x331mm)</td>
</tr>
<tr>
<td>Dimensions (folded)</td>
<td>54.1x21.6x6.1 in (1,372x549x154mm)</td>
</tr>
<tr>
<td>Folding Method</td>
<td>T-shaped</td>
</tr>
<tr>
<td>Diagonal Wheebee</td>
<td>25.5 in (643 mm)</td>
</tr>
<tr>
<td>Number of Batteries</td>
<td>2</td>
</tr>
<tr>
<td>Weight (Total)</td>
<td>Approx. 4.44 lb</td>
</tr>
<tr>
<td>Max Weight</td>
<td>Approx. 5.0 lb</td>
</tr>
<tr>
<td>Max Payload (13.2 lb)</td>
<td>Approx. 3.2 lb</td>
</tr>
<tr>
<td>Max Payload (16.5 lb)</td>
<td>Approx. 2.0 lb</td>
</tr>
</tbody>
</table>

**BATTERY**

- **Model**: 18650
- **Capacity**: 4000 mAh
- **Voltage**: 3.7V
- **Energy**: 15.18 Wh
- **Max Weight**: 0.15 lb
- **Operating Temperature**: -5° to 45°C
- **Storage Temperature**: -20° to 70°C
- **Charging Temp Range**: 0° to 40°C
- **Max Charging Power**: 150W

**GIMBALS**

- **Compatibility**: Y4S, Y4SL, Y4X, Y4XL, Y4L, Y6, Y6X, Y6SL, Y6XL, Y6L
- **Weight**: Approx. 0.25 lb

**GIMBAL INSTALLATION**

- **Downward/Mont/Horizontal Mount**: Supported
- **Upward/Vertical Mount**: Supported
- **Downward/Vertical Mount**: Supported

**CHARGER**

- **Model**: B5C107W
- **Voltage**: 26.1 V
- **Power**: 100W

**FORWARD VISION SYSTEM**

- **Obstacle Sensing Range**: 50 ft
- **Field of View**: Horizontal 60°, Vertical 14°

**UPWARD INFRARED SENSOR**

- **Type**: GL1600A
- **Frequency**: 2,400-2,483 GHz, 5.725-5.825 GHz

**CENDENCE**

- **Type**: GL1600A
- **Frequency**: 2,400-2,483 GHz, 5.725-5.825 GHz

---

https://www.dji.com/matrice-200-series/info

1/8/2018
DOWNWARD VISION SYSTEM

Maximum Distance
Dependable-Free-Flight-Scence

- <32.8 lbs (15 kg) or height: 4.56 ft (1.4 m)
- <65.6 lbs (30 kg) or height: 9.14 ft (2.8 m)
- Surfaces with clear patterns and adequate lighting (>15 lux)
- 22.7 ft (7 m)
- 44.7 ft (14 m)
- 66.6 ft (20 m)

Video Output Power
USB Supply Power
Inertial Sensing
Operating Temperature
Storage Temperature
Charging Temperature
Charging Time
Battery Type
Battery Weight
3.4 Gbps (6 ms) (4 km, 20 km)
5.8 Gbps (6 ms) (4 km, 20 km)
Extended Battery: 45V 40650 (2.8 kg)
450g
DJI Aircraft
2D/3D (supplying power to) CS500 controller
17 W (without supplying power to monitor)
USB, HDMI, SDI
ION: 1A, 5.2 V (Max) Android; 1.5 A, 5.2 V (Max)
Master-and-Slave connection
-4 to 104 °F (-20 to 40 °C)
-4 to 104 °F (-20 to 40 °C)
32 to 104 °F (0 to 40 °C)
32 to 104 °F (0 to 40 °C)
30 minute (60 minute)

About 2 hours and 24 minutes (using a 18650 battery)
About 4 hours when using the Battery Charger enabled and video is supplied to monitor

Matrice 200 Series Videos

Tutorials

All videos are protected by copyright laws. Use of these videos is intended for the sole purpose of learning.

DJI Matrice 200 - Linking the Aircraft and the Remote Controller

https://www.dji.com/matrice-200-series/info

1/8/2018
MATRICE 200 SERIES FAQ

Home / Product / Matrice 200 Series / FAQ

AIRCRAFT

1. What aircraft and gimbal is the M200 series compatible with?
2. Does the M200 series have an Onboard Recorder/Digital Video Recording feature?
3. What is the difference between the M200, M200P and M200T?
4. Is a camera included with my M200 Series drone?
5. What is the flight duration rating, and in what scenarios can the Matrice 200 series be protected under these ratings?
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 be covered if my aircraft incurs water damage?
8. Does the 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 M200P/F model, is there an extra setup required for DJI Pilot?

APPLICATIONS

1. I'm a filmmaker, is this the best option for me?
2. I'm a power line/infrastructure inspector and worry about interference affecting the safety of my mission. Which M100 Series model and payload will help me operate more safely?
3. I own a small photography business and want to integrate drones into our business. What can we learn more?
PAYLOADS
1. What cameras are compatible with the M300 series?
2. What dual gimbal configurations are supported by the M210 models?
3. How do I mount an external payload?
4. Can you fly with both the T and Z30 at the same time?
5. Can you mount a camera up to 13kg in weight in the same branch?
6. Can the 2 mini HD cameras be used with the M600 Series platform?

SOFTWARE
1. What mobile software programs are compatible with the M300 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 FlightShell?

OTHER
1. How long does it take to charge a remote controller? How long does it last on a full charge?
2. Does my M300 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 M300 Series support the Adobe CinemaDNG and Apple ProRes?
7. Does the M300 have a RTI function?
8. How do I enable autofocus?
### Zenmuse Z30

#### Closing the Distance

---

### Zenmuse Z30 Specs

**General**

<table>
<thead>
<tr>
<th>Name</th>
<th>Zenmuse Z30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance</td>
<td>120°(1.7x)</td>
</tr>
<tr>
<td>Weight</td>
<td>570g</td>
</tr>
</tbody>
</table>

**Camera**

<table>
<thead>
<tr>
<th>Sensor</th>
<th>CMOS, 1/3.6&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lens</td>
<td>3.5x (optical) 10, 65°</td>
</tr>
<tr>
<td>D/N</td>
<td>6x</td>
</tr>
<tr>
<td>Max Working Distance</td>
<td>10mm - 1000mm</td>
</tr>
<tr>
<td>White Balance</td>
<td>AWB, Koke</td>
</tr>
<tr>
<td>Working Mode</td>
<td>Capture, Record, Playback</td>
</tr>
<tr>
<td>Video Recording</td>
<td>Single shot, Burst shooting, 30fps, 157 frames/second</td>
</tr>
<tr>
<td>Exposure Mode</td>
<td>Exposure Mode Auto, Manual, Shutter priority, Aperture priority</td>
</tr>
<tr>
<td>Exposure Compensation</td>
<td>±2.1 (1/2 increment)</td>
</tr>
</tbody>
</table>

---

**Gimbal**

- Angular Vibration Range
- Motor
- Compass Range
- Mechanical Range
- Max Speed

- 360°
- Dec/ODR
- Pitch: +145° to -45°, Yaw: ±360°
- Pitch: +145° to -45°, Yaw: ±360°, Roll: +90° to -90°
- Placement: 150°

---

**Environmental**

- Operating Temperature
- Storage Temperature

- 14°F to 113°F (-10°C to 45°C)
- -4°F to 158°F (-20°C to 70°C)

---

[https://www.dji.com/zenmuse-z30/info](https://www.dji.com/zenmuse-z30/info)

1/8/2018
Zenmuse Z30 - Specifications, FAQs, Tutorials, Downloads and DJI GO - DJI

- Weeked: 10-1000s
- White balance: Auto, Sunny, Cloudy, Incandescent, Custom (2600K - 10000K)
- Video Capture: Supported
- Tilt limit range: 1S
- Brightness: Supported
- Audio input: 3.5mm audio input
- PAL/NTSC: Supported
- Supported SD cards: SDHC/SDXC
- Supported file systems: FAT16/32

ZENMUSE Z30 VIDEOS

INTRO

TUTORIALS

ZENMUSE Z30

 Mounting To The Matrice 100

Zenmuse Z30 Mounting To The Matrice 100
2016-03-29

Z30 Cell Tower Inspection
2016-03-29

Z30 Firefighter Inspection
2016-03-29

https://www.dji.com/zenmuse-z30/info

1/8/2018
ZENMUSE Z30 Downloads

Documents and Manuals
- [ZIP] [PDF]
  - Zm30_20161226
  - 2016-12-26
- [ZIP] [PDF]
  - Zm30_20161220
  - 2016-12-20
- [ZIP] [PDF]
  - Zm30_20161217
  - 2016-12-17
- [ZIP] [PDF]
  - Zm30_20161216
  - 2016-12-16

Camera Firmware
- [ZIP]
  - Zm30
  - 2016-08-30

ZENMUSE Z30 FAQ

1. What kind of controller does the Zenmuse Z30 have? How many does it come with?

2. Can the Zenmuse Z30 be used on other drones?

3. What applications and what kind of specific movements does the Z30 support?

4. Is the Zenmuse Z30 compatible with the Inspire series?

5. How can I improve the performance of the Zenmuse Z30 for the Zenmuse Z3?

6. What is the difference between the Zenmuse Z30 and Zenmuse Z3?

7. What is the airspeed of the Zenmuse Z30 when using Zenmuse Z30?

8. What intelligent features does the Zenmuse Z30 support when used with the DJI Matrice 600?

Contact us for more information

Zenmuse Z30
enterprise@dji.com

https://www.dji.com/zenmuse-z30/info
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 global 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 precise prediction, over large areas, then save them for analysis and reporting.

Introducing the DJI Zenmuse XT

ZENMUSE XT SPECS

GENERAL

Model
Zenmuse XT

Dimensions
Length: 480 mm, Width: 102 mm, Height: 270g

CAMERA

Thermal Imaging
- Frame Rate: 256x256
- Resolution: 640x512
- Temperature Range: -40°C to 100°C

Specs
- Temperature Range: -40°C to 100°C
- Operating Temperature: 0°C to 40°C
- Storage Temperature: -40°C to 60°C
- Storage Humidity: 0% to 95%

IMAGE PROCESSING & DISPLAY CONTROLS

- 80" Screen
- Display: 80"
- Image Optimization
- FLIR Image Quality
- Color & Monochrome (Preset & User Define)
- High D-I 

https://www.dji.com/zenmuse-xt/info
ENVIRONMENTAL
Operating Temperature Range
-4°F to 113°F (-20°C to 45°C)
Non-Operating Temperature Range
-22°F to 138°F (-30°C to 70°C)
*Vibration Shock
5G (1Gals)
10G (1Gals)

LENS MODELS

<table>
<thead>
<tr>
<th>Lens Model</th>
<th>8.8 mm</th>
<th>2.5 mm</th>
<th>Ø mm</th>
<th>13 mm</th>
<th>19 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>17ly4800512</td>
<td>F4</td>
<td>0.4</td>
<td>0.46</td>
<td>0.48</td>
<td>0.52</td>
</tr>
<tr>
<td>17ly2500500</td>
<td>F2.8</td>
<td>0.37</td>
<td>0.4</td>
<td>0.45</td>
<td>0.48</td>
</tr>
</tbody>
</table>

Min Focus Distance
2.0 m
2.6 m
3.0 m
3.6 m
4.2 m

Hyperfocus Distance
1.7 m
2.1 m
2.5 m

Hyperfocus Depth of Field
0.6 m
1.0 m
1.2 m

ZENMUSE XT VIDEOS
Introducing the DJI Zenmuse XT
2015-12-14

ZENMUSE XT DOWNLOADS

FIRMWARE
ZENMUSE XT Firmware V1.24.0 (Beta) 10-11-13
2016-10-22
ZENMUSE XT firmware V1.24.0 (Beta) 10-11-13
2016-12-21
ZENMUSE XT firmware V1.24.0 (Beta) 10-11-13
2016-12-22
Zenmuse XT firmware for Matrice 200 Series
2017-06-29

DOCUMENTS & MANUALS
Zenmuse XT Support Guide
2017-06-28
Zenmuse XT Quick Start Guide
2016-07-11
Zenmuse XT Quick Start Guide
2016-04-20
Zenmuse XT Quick Start Guide
2016-04-14
Zenmuse XT Quick Start Guide
2016-03-22

https://www.dji.com/zenmuse-xt/info
1/8/2018
1. What is the difference between Infrared Camera and general Camera?

2. What is the aperture, focal length, and distance of ZENMUSE XT Camera can be adjusted?

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

4. How many is the light time of exposure? Meaning with Zennus XT?

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

6. Can the ZENMUSE XT Camera be used with the M100 Series platform?

7. Can the ZENMUSE XT Camera be replaced?

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

9. What is DDE?

10. What is DDS?

11. Why do maximum resolution only 4k @ 5 fps?

12. Does the camera support 4K video recording?

13. What is Zenmuse XT's Lifetime warranty?

14. What is the optical zoom range?

15. What is the optical 'level ?

16. What is the option 'ROTI ?

17. What is the 'bothering' mode?

18. What is TIF format image?

19. What kind of software can open TIF format images?

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

21. What is the effective wavelength?
What is it JPEG format image?

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

ZENMUSE XT EXPORT

Home / Products / Zenmuse XT / EXPORT

* Slow-motion thermal cameras (EIRI Tau 23s and 640 60 Hz models) sold by DJI are controlled under Department of Commerce, Bureau of Industry and Security Export Control Classification Number (ECCN) 4A999A. 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).

* Full-rate thermal cameras (EIRI Tau 23s and 640 60 Hz models) sold by DJI are controlled for export under ECCN 6A001.b. These cameras may not be exported or re-exported to any country other than Canada without authorization from the U.S. government (in the form of a license or through use of a valid license exception). The cameras may not be transferred to prohibited parties or exported for a prohibited end use, as described in the EAR.

* For additional information regarding export restrictions applicable to these products, consult the EAR and the various sanctions regulations administered by the U.S. Department of Treasury’s Office of Foreign Assets Control (31 C.F.R. Parts 500 – 599).

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- Professional
- Enterprise
- Components

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- Rapid Store
- Store Locator

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- Help Center
- Product Support
- Repair Services
- Help Purchasing
- After Sales Service Policies

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- Events

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- DJI Forum
- DJI Academy
- Developer

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https://www.dji.com/zenmuse-xt/info

1/8/2018
MAVIC 2 ENTERPRISE ADVANCED

Dual Imaging, Reimagined

640 x 512 px Thermal Camera
48 MP Visual Camera
32x Digital Zoom
Centimeter-level Positioning with RTK
10 km HD Transmission
Omni-directional Obstacle Sensing

Buy Now

Order Your Mavic 2 Enterprise Advanced Today

The Mavic 2 Enterprise Advanced is available for order through official DJI Dealers. Contact us below for the team to reach out.

Name *

Company *

Email *

Industry *

North America

United States

State *
Specs
Mavic 2 Enterprise Advanced

Aircraft

Takeoff Weight (Without Accessories) 999g

Max Takeoff Weight 1100g

Dimensions (LxWxH)
- Folded: 214x91x84mm
- Unfolded: 322x242x84mm
- Unfolded+Spotlight: 322x242x114mm
- Unfolded+Beacon: 322x242x101mm
- Unfolded+Speaker: 322x242x140mm
- Unfolded+RTK Module: 322x242x125mm

Diagonal Distance 354mm

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; 5.725-5.880 GHz

Transmitter Power (ERP)
2.400-2.4835 GHz
FCC: ≤26 dBm;
CE: ≤20 dBm;
SRRC: ≤26 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
640x512 @30Hz

Accuracy of 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 x

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: 100-1660 (auto)

Digital Zoom
32x

Max Image Size
8000x6000

Still Photography Modes
Single shot Interval: 2/3/5/7/10/15/20/30/60 s
Panorama: Sphere

Video Resolution
d@30fps
1920x1080@60fps

Photo Format
JPEG

Video Format
MP4

Gimbal
<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
</table>
| Mechanical Range    | Tilt: 135°-+45°  
Pole: -100°-+100°  |
| Controllable Range  | Tilt: -90°-+30°  
Pole: -75°-+75°  |
| Stabilization       | 3-axis (tilt, roll, pan)  |
| Max control speed   | 120°/s  |
| Angular Vibration Range | ±0.005°  |

**Sensing System**

<table>
<thead>
<tr>
<th>Direction</th>
<th>Precision Measurement Range</th>
<th>Detectable Range</th>
<th>Effective Sensing Speed</th>
<th>FOV: Horizontal</th>
<th>FOV: Vertical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward</td>
<td>0.5 - 20 m</td>
<td>20 - 40 m</td>
<td>≤14 m/s</td>
<td>≥40°</td>
<td>≥70°</td>
</tr>
<tr>
<td>Backward</td>
<td>0.5 - 16 m</td>
<td>16 - 32 m</td>
<td>≤12 m/s</td>
<td>≥60°</td>
<td>≥70°</td>
</tr>
<tr>
<td>Upward</td>
<td>0.1 - 8 m</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Downward</td>
<td>0.5 - 11 m</td>
<td>11 - 22 m</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sides</td>
<td>0.5 - 10 m</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Operating Environment**
- 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**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
</table>
| 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 (ERP) | 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  |
| 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: 5.0V = 2.0 A

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 FPK
  - 1cm +1 ppm (Horizontal)
  - 1.5 cm +1 ppm (Vertical)

M2EA Spotlight:
Dimensions: 68x60x41mm
Connections: Micro USB Port
Operating Range: 30 m
Power: Max 26W
Illuminance: FOV 17°, Max: 11 lux @ 30m Straight

M2EA Beacon:
Dimensions: 68mm x 40mm x 27.8mm
Connections: Micro USB Port
Power: Avg. 1.6W
Controllable Range: 5000 m
Light Intensity: Min Angle: 55 cd; Light Intensity: 157 cd

**M2EA Speaker**
- **Dimensions**: 68×55×65 mm
- **Connections**: Micro USB Port
- **Power**: Max 10W
- **Decibel**: 100 db @ 1 meter distance
- **Max Bitrate**: 15kbps

**SD Cards**
- **Supported SD Cards**: Micro SD™
- **Support**: Supports a microSD with capacity of up to 128 GB.
- **Grade**: A UHS-I Speed Grade 3 rating microSD card is required.

**APP / Live View**
- **Video Transmission System**: OcuSync 2.0
- **Mobile App**: DJi PHILoT (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 ±2° or ±4°C, 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 Triged 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 Triged mode is activated. Please be aware of your surroundings and App notifications when operating the Mavic 2 to ensure safety.
PHANTOM 4 PRO
VISIONARY INTELLIGENCE.
ELEVATED IMAGINATION.

PHANTOM 4 PRO SPECS

AIRCRAFT
- Weight: 1.368 kg
- Max Speed: 390 km/h
- Max Ascent Speed: 6 m/s
- Max Decent Speed: 5 m/s
- Max Tilt Angle: 30°
- Max Operational Altitude: 5000 m
- Max Horizontal Speed: 20 km/h
- Max Flight Time: 30 minutes
- Max Inaccuracy Range: 32' (10m)
- GPS/ Compass

GIMBAL
- 3-axis (pitch, roll, yaw)
- Pan Range: -60° to +60°
- Tilt Range: -10° to +45°
- Max Control Accuracy: 0.1°

INFRARED SENSING SYSTEM
- Obstacle Sensory Range: 0-6.35m (2-21 ft)
- Tilt (Horizontal): ±15° (Vetical): ±15°
- Surface Value: 0.1m (0.1 ft)
- Environmental: 10km
- Surface: hard, flat, smooth, textured, or non-reflective.

REMOTE CONTROLLER
- Operating Frequency: 2.400-2.4835 GHz
- Transmission Mode: ISM band
- Transmission Range: 7 km (5 miles)
- Infrared (visible, infrared)
- FCC: 3.1 GHz (ISM)
- ETSI: 3.1 GHz (ISM)

https://www.dji.com/phantom-4-pro/info

1/8/2018
**VISION SYSTEM**

- **Forward Vision System**
- **Baseline Vision System**
- **Deflection Vision System**
- **Velocity Range**
  - 0.5 to 80 mph (0.8 to 128 km/h)
- **Altitude Range**
  - 0 to 20 feet (0 to 6 m)
- **Operating Range**
  - 2.5 to 50 feet (0.8 to 15 m)
- **Obstacle Sensing Range**
  - Forward: 0.09 feet (0.03 m)
- **FOV**
  - Forward: 0.09 feet (0.03 m)
- **Measuring Resolution**
  - Forward: 0.14 feet (0.04 m)
- **Fcling Environment**
  - Surface with clear pavement and adequate lighting

**CAMERA**

- **1.0 CMOS**
- **Effective pixels**: 2000
- **3.39 mm x 4.46 mm (19 mm x 19 mm) at 1.71 mm**
- **F/2.8**
- **1/3.95 (effective) field of view**
- **Mechanical Shutter Speed**
  - 8 to 12000 s
- **Images type**
  - JPG/RAW
- **ISO Range**
  - 100 to 3200 (A2N5)
- **Effective Resolution**: 4096 x 3072
- **Data Sheet**
  - 2.56 GB per minute

**INTELLIGENT FLIGHT BATTERY**

- **Capacity**
  - 5000 mAh
- **Voltage**
  - 13.2 V
- **Battery Type**
  - LiPo
- **Energy**
  - 68.4 Wh
- **Charging Current**
  - 1000 mA
- **Max Charging Current**
  - 1.4 A
- **Charging Temperature Range**
  - 45°F to 104°F (-2°C to 40°C)
- **Operating Temperature Range**
  - 32°F to 122°F (-0°C to 50°C)
- **Operating Current (DRP)**
  - 2 A
- **Video Output Post**
  - 12 V
- **Power Output**
  - 12 V
- **Measuring Unit**
  - Surface with clear pavement and adequate lighting

**CHARGER**

- **Input Voltage**
  - 12.6 V
- **Input Power**
  - 300 W

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https://www.dji.com/phantom-4-pro/info

1/8/2018
**APP / LIVE VIEW**

- Mobile App
- QR code scanning / AR experience
- Live view / Quality
- Library
- Support / OS / languages

**PHANTOM 4 PRO VIDEOS**

- DJI - Phantom 4 Pro - How to Fly - Safe Flight Advice
  2018-11-15

- DJI - Introducing Phantom 4 Pro
  2018-11-15

- DJI - Phantom 4 Pro - How to Scan
  2018-10-10

- DJI - Phantom 4 Pro - ActiveTrack
  2018-09-22

- DJI - Phantom 4 Pro - Hawaiian Lava
  2018-11-15

- DJI - Phantom 4 Pro - Sharper Vision
  2018-11-15

**TUTORIALS**

**SHOWCASE**

**PHANTOM 4 PRO DOWNLOADS**

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1/8/2018
PHANTOM 4 PRO FAQ

PRODUCT

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

2. What are the material differences between the Phantom 4 Pro and Phantom 4 Pro Obstacle?

3. Which micro SD cards are supported?

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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 4K video?
7. What are the major features of the Phantom 4 Pro camera heart?

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 remote controller?
4. Can I connect an iOS device or Android device to the Phantom 4 Pro remote controller to use DJI GO 4?
5. Does the Phantom 4 Pro remote controller have a built-in loudspeaker and microphone?
6. What is the resolution of the Phantom 4 Pro remote controller display?
7. What apps are pre-installed on the Phantom 4 Pro remote controller display?
8. What operating system does the Phantom 4 Pro remote controller display run?
9. Is the remote controller's screen brightness automatically adjusted automatically?
10. Can I download other apps on the Phantom 4 Pro remote controller display?
11. Does the Phantom 4 Pro remote controller support Wi-Fi and Bluetooth connectivity?

https://www.dji.com/phantom-4-pro/info

1/8/2018
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 Sending?

PROPELLER SYSTEM
1. Can we replace Phantom 4 propellers on the Phantom 4 Pro?

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

VIDEO TRANSMISSION SYSTEM
1. What is the difference between Phantom 4 and Phantom 4 Pro's Lightbridge systems?

BATTERIES AND BATTERY CHARGER
1. Are the Phantom 4 Pro's batteries and battery charger compatible with the Phantom 4?

2. What is the capacity of one 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 compatible with the upgraded device?

BUY PHANTOM 4 PRO
VISIONARY INTELLIGENCE. ELEVATED IMAGINATION.
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 [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).
MP5 | Technical Data

MP5A3 – CAL. 9 MM X 19

General
Calibre
Operating principle
Magazine capacity
Modes of fire
Rate of fire
Sights
Buttstock
Dimensions
Length min./max.
Width
Height
Barrel length
Sight radius
Weight
Weapon
Magazine

9 mm x 19
Delayed roller locked bolt
1500 rounds
0-1-0
approx. 800 m/min
D
R
approx. 500/800 mm
approx. 67.0 mm
approx. 230.0 mm
approx. 225 mm
approx. 340.0 mm
approx. 3.100 g
approx. 120/170 g

MP5A4 – CAL. 9 MM X 19

General
Calibre

9 mm x 19
MODES OF FIRE
RATES OF FIRE
SIGHTS
BUTTSTOCK
DIMENSIONS
LENGTH MIN./MAX.
WIDTH
HEIGHT
BARREL LENGTH
SIGHT RADIUS
WEIGHT
WEAPON
MAGAZINE

MP5A5 – CAL. 9 MM X 19

GENERAL
CALIBRE
8 mm x 19
OPERATING PRINCIPLE
Delayed rotary bolt
MAGAZINE CAPACITY
15/30 rounds
MODES OF FIRE
0-1-3-D
RATES OF FIRE
approx. 800/min
SIGHTS
D
BUTTSTOCK
R
DIMENSIONS
LENGTH MIN./MAX.
approx. 590/890 mm
WIDTH
approx. 67.0 mm
HEIGHT
approx. 225 mm
BARREL LENGTH
approx. 340.0 mm
SIGHT RADIUS
approx. 2,205 g
WEIGHT
approx. 1,200/170 g
WEAPON
approx. 3,109 g
MAGAZINE
approx. 120/170 g

SUBJECT TO MODIFICATION
Armored Ford Transit Tactical Van

International Armored Group’s armored Ford Transit van offers the most interior volume in its class and has more interior room than many of the larger style SWAT vehicles. The interior configuration can accommodate various set-ups including a built-in command center that allows the vehicle to link to other departmental assets and provide live video feeds.

With many departments looking for a discrete approach to an armored vehicle, the armored Ford Transit van provides departments with safety and the payload capacity they need for personnel and equipment, as well as, the space required to effectively perform their jobs.