ST Engineering

COUNTER-DRONE LASER EFFECTOR SYSTEM

Rapid and Precise Countermeasures
to Micro-Aerial Threats

MODULAR DESIGN,

FLEXIBLE INTEGRATION

With the rapid proliferation of drones for both civilian and military purposes, countering aerial threats has become more critical than ever before. Tackling the challenges of drone defence poses several significant obstacles and considerations. A robust and agile counter-drone system is needed to precisely detect and take down diverse drones, handle swarm attacks, operate efficiently in urban environments and to ensure disruption-free neutralisation of drone threats.

The Counter-Drone Laser Effector (CDLE) is a compact system designed to detect and neutralise all types of drones including micro-Unmanned Aerial Vehicles (UAVs). The system combines a sighting system for the detection of target (up to 2km), and a laser effector (up to 5kW) for neutralisation of micro-UAVs at a range of up to 1km. By utilising innovative laser technology, it minimises the need for expensive consumables and maintenance, ensuring long-term affordability and cost-effectiveness without compromising on performance. By utilising a laser-based approach, the system neutralises drones without affecting any other communication systems, ensuring seamless operations.

KEY BENEFITS

- Rapid response time, precise detection and targeting capabilities
- Specifically designed to handle small, low-flying, stealthy and/or swarm attacks effectively
- Engineered to operate flawlessly in urban settings, providing comprehensive protection to critical infrastructure, public spaces and high-risk areas
- A cost-effective solution utilising innovative laser technology
- Designed to be agnostic to commercially available industrial laser sources

TECHNICAL SPECIFICATIONS

Infrared Camera

Provides ability to see targets in day and night conditions, allowing for 24/7 operations.

Visible HD Zoom

Offers situational awareness and Infrared Frequency capabilities at high resolution.

Laser Range Finder

Determines accurate range to target to achieve take down in the shortest possible time.

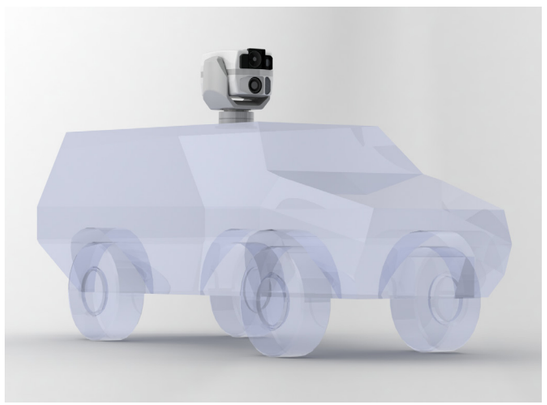
High Energy Laser Aperture

Focuses and directs the laser beam onto target.

Visible-Near Infrared Camera

Unique common aperture design ensures that what you see is where you are firing at.

- **Size, Weight and Power:** The system can be placed at the rear of the vehicle with its compact volume and weight.
- **Electrical Energy System:** The system uses a battery and a 3-phase power inverter for the laser source and other system equipments.
- **Thermal Energy Storage:** The laser source is cooled with proprietary technology.



Beam Director

- Large aperture (Φ130mm) for small spot diameter over distance
- Large elevation angle (-10˚ to 60˚)
- Short focus distance of 50m

Laser Optics and Narrow Field Of View Camera

- Large 130mm diameter with long effective focal length
- High laser transmission
- Co-Axial Visible-Near Infrared Camera and with Line of Sight fine steering

Surveillance Sensors

- Day Colour Camera
- Uncooled Thermal Camera

KEY APPLICATIONS

Para-Military and Defence

Public Safety and Security

Airports and Seaports

Border Security and Control

Ad Hoc Events/ Meetings, Incentives, Conferences, and Exhibitions

Critical Infrastructure

FEATURES

5H

Surveillance time before charging

10MIN

Total firing time before charging

TOTAL SYSTEM WEIGHT <1000KG

Weight that allows CDLE to be integrated into a Class 3 vehicle

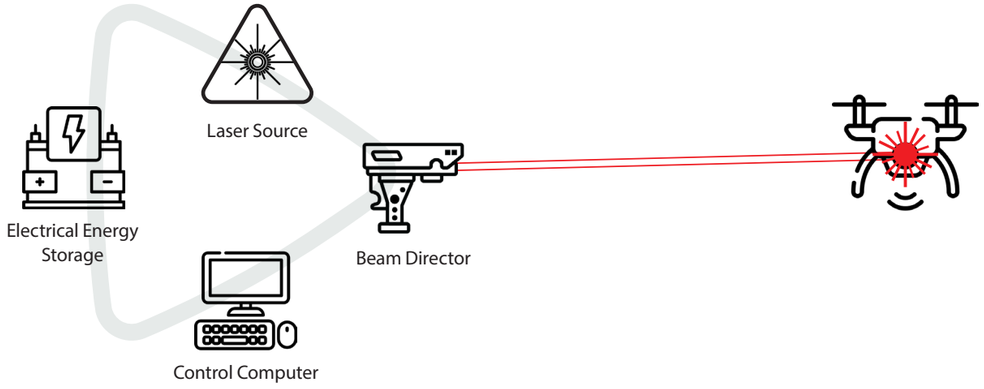
UP TO 1000M

Engagement distance of Class 1 UAS

UP TO 5KW

Agnostic laser input

DEPLOYMENT SCENARIO



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