



**indra**

DEFENSE AND SECURITY

# **UNCOOLED THERMAL SYSTEM**

Advanced observation and aiming for armoured vehicles

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# UNCOOLED THERMAL SYSTEM



Thermal sensor

The MVT-075-OP uncooled thermal system enhances the operability of any armoured vehicle while protecting it from threats such as those encountered in semi-urban and asymmetric conflicts

## Thermal vision since 1980

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Indra is the Spanish leading company in thermal vision systems manufacturing and integration. Indra's extensive expertise in designing and manufacturing electro-optical equipment goes back over 30 years, during which time they have been providing these solutions to all types of armoured vehicles in international and Spanish armed forces.

The MVT-075-OP system was originally conceived as an upgrade for the Spanish Light Armoured Wheeled Vehicles, known as BMR, in their new tasks during peace

missions, such as observation, surveillance, and patrolling. Previously, these vehicles possessed only intensified tube technology for night vision. With the Indra MVT-075-OP uncooled thermal system upgrade, these vehicles now possess 3rd generation IR/Thermal Night Vision capabilities (in addition to the intensified tube technology): a considerable gain in performance and operability.

Although the MVT-075-OP was originally conceived for the BMR upgrade, it is the

right solution for any similar armoured vehicle which requires an upgrade from intensified tube technology to 3rd generation IR/Thermal Night Vision. The Indra MVT-075-OP uncooled thermal system can provide any armoured vehicle in existence with advanced observation and night-aiming capabilities, allowing the vehicle to accurately identify potential threats at all times, thus reducing its vulnerability and the probability of collateral damage.

## Configuration

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The MVT-075-OP uncooled thermal system is made up of a thermal sensor and two monitor displays: one for the gunner and another for the vehicle commander.

The gunner's monitor has the following characteristics:

- A reduced-size, high-resolution screen installed in the vehicle tower.
- Integrated monitor and sensor control (focus, shine, contrast...)

The vehicle commander will, at all times, have access to the same thermal image displayed on the gunner's monitor.

## System

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The MVT uncooled thermal technology provides an excellent price-performance ratio for this application, and guarantees maximum reliability while providing a very high MTBF (an order of magnitude higher than equivalent cooled thermal sensors).

The MVT-075-OP system allows for night-time observation and surveillance, hence improving the vehicle's defences. It can also be used in day-time conditions that have limited visibility, or to detect covert threats, such as those hidden by disguise, mist, or smoke.

In night conditions, or with poor visibility (dust...), the gunner sees a thermal image of the target from the infrared radiation the target emits.

The MVT-075-OP system has a dual FOV (Field-of-View): a Narrow-FOV for surveillance, identification, and aiming and a Wide-FOV for reconnaissance and detection. It also has a 2X electronic zoom for fast zooming in both Fields-of-View.

Although the Indra MVT-075-OP system was originally designed for the APC vehicle machine gun tower, it can easily be adapted to any other vehicle or weapon. Installing an MVT-075-OP system on a vehicle, such as the APC, does not cancel its Day-time aiming periscope PP-03 (previously supplied by Indra) which is kept as a back-up system if there should ever be a power failure.

Installation on the vehicles takes only a few hours and requires minimum tools. For this reason, the MVT-075-OP system can be installed On-Field, reducing downtime and reducing maintenance costs.

## Main characteristics

### The most important characteristics of the thermal sensor are as follows

Latest generation uncooled technology and minimal consumption (no chopper nor mobile parts).

High reliability and sturdiness.

Operation in long-wave IR (8 - 12 microns); optimum sensitivity and minimum influence from high/low temperatures.

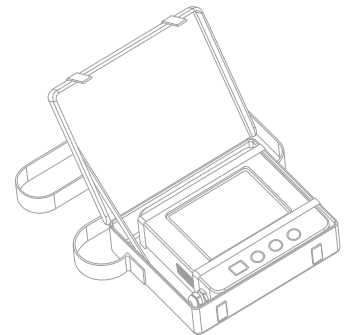
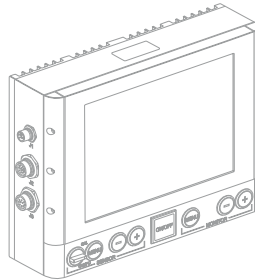
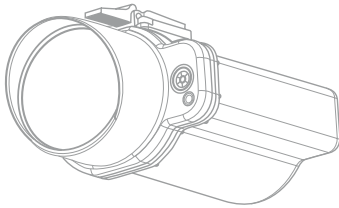
Highest-quality compact optics with a fast-acting dual Field-of-View.

Digital image processing:

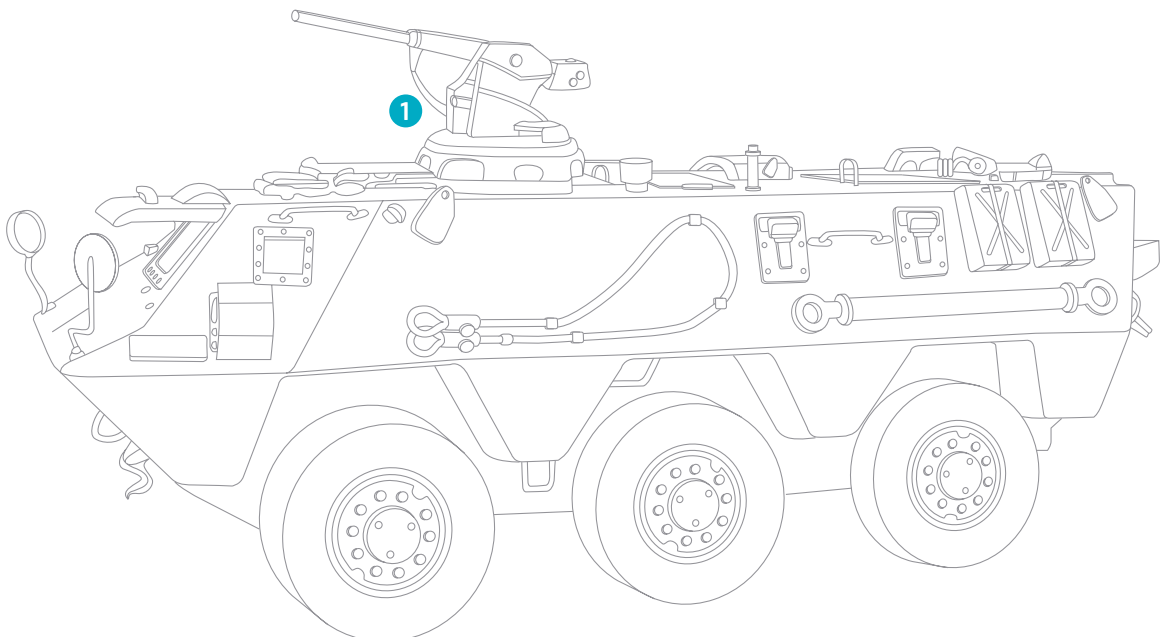
- Automatic contrast and shine control (manual override)
- Non-uniformity correction (automatic and manual)
- Electronic zoom
- Standard video output (PAL or NTS)

Ranges:

- Detection person: 3 Km
- Detection vehicle (small): 5 Km
- Vehicle surveillance (small): 3 Km
- Vehicle identification (small): 1.5 Km



### 1 MVT-075-OP





Integrated monitor and sensor control



Reduced-size, high-resolution screen



ISO 9001:2000



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