

## MTM Mini Thermal Monocular w/ Visible Red Marking Laser

Insight Tech-Gear's hand-held thermal imager provides stationary man-sized target detection performance over 400 meters. It's compact, lightweight form and exceptional image quality make the MTM a versatile tool for a wide range of missions, including reconnaissance, surveillance, and search & rescue.

### **Features & Benefits:**

- Quick start up - fully operational and imaging in less than 5 seconds from power up
- Standby operating mode
- High resolution 320 x 240 focal plane array
- Adjustable focus
- 2X Digital Zoom
- Integrated visible marking laser (Infrared optional)
- Detachable 3.5" LCD display module
- Integral tripod mount
- Menu function for customized operation
- Ergonomically designed for handheld operation
- Rechargeable 123 Lithium Ion batteries with external AC/DC charger
- 4 Hours continuous operation using two 3-Volt lithium batteries (disposable)
- Lightweight/pocket size
- Waterproof up to 3 feet (66 feet option available)
- Ruggedized
- Soft carrying case - capable of attaching to an individual's load bearing equipment
- Digital image capture & download package (optional)



**PART #: MVP-MTM-000-A4**



Shown with 2x Magnifier Lens – not included



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This data sheet is approved for unlimited release. Specifications subject to change without notice.

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### Digital Zoom

The MTM has the ability to provide two times digital zoom.. The circuitry replicates the IR pixels in both the horizontal and vertical dimension thereby doubling the number of video pixels in each dimension. This feature is useful in close up examination of details within the imagery.

### Hand-free Use

The MTM incorporates a 1/4-20 threaded adapter enabling it to be mounted onto standard tripods. This threaded adapter may also be used to clip to the standard AN/PVS-7 and AN/PVS-14 helmet mount providing hands free operation.

### Field of View (FOV)

The MTM field of view of 29.6 degrees, coupled with the 320 x 240 detector array, provides the resolution required to meet established detection and recognition objectives and still provides the situational awareness required in a surveillance device. Sensitivity and size is optimized in the selection of the F/# of 1.05. Using the 320 x 240 format of the focal plane array, this translates into a 23.4 horizontal field of view and a 17.6 vertical field of view.

- Focus range: 18 inches to ∞
- Operational temperature: -10C to +50C
- Storage temperature: -34C to +71C
- Adjustable focus - provides a focus adjust range of 2 feet to infinity

### Adjustable Diopter

The design incorporates a diopter adjustment of +4.0 to -6.0 at a 1 inch eye relief to allow use by a large population of viewers without the need for corrective lenses.

### Video Out

The MTM provides a sealed electrical connector which outputs analog RS-170 for use by remote monitoring or display equipment. Also provided on this connector are contacts for RS-232 to receive and transmit signals allowing for the downloading of the digital still images into a PC through a COM port. The MTM circuitry contains two discrete amplifiers for the generation of the video signals, one that provides the signal to the OLED display and a second independent amplifier for remote use. This provides isolation between the two video paths thereby providing immunity of the displayed video from possible interference caused by the remote video equipment or wiring.

### Reticle and Laser

The MTM has an integrated 840 (+ 10 / -20) nm laser adjusted for 0.5 mW output optical power. The laser diode is capable of 50 mW but is tuned down for class I eye safe considerations. The laser diode has an integral photo-detector to monitor the output power thereby providing closed loop control of the optical power over temperature and the life of the unit.

As part of the electronic symbology, an aiming reticle is provided which designates the position of the laser pointer. During the assembly process, the laser is aligned to the center of the thermal field of view.

Because of the potential danger to the mission and the potential for inadvertent use of the laser source, the MTM incorporates two distinct indicators. The first consists of alternating white and black squares in both the lower left and upper right corner of the display. The contrasting colors ensure the operator will see the designation even in the presence of a saturated hot or cold scene. The second indicator, if the operator is not looking into the display, is a low intensity green LED directed out of the rear of the MTM which alerts the operator that the laser is active.

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### Ease of Use

The MTM menu structure has been optimized for ease of use with the more frequently accessed functions readily available to the operator. The POWER button is multifunctional and produces different effects depending on the system status (i.e., ON, OFF) and how the button is pressed.

### Battery Life

The MTM operates for greater than 2 hours at 32°F. The MTM utilizes low power, highly integrated circuit designs to achieve a long run time on only two DL-123 batteries. The measured current draw at ambient temperature with the unit imaging at 1/2 scale brightness is 0.25 amps at 6 volts (1.5 watts). With the laser activated, the current increases to 0.28 amps (1.68 watts). At full operation with lasers on, using the standard battery power, the run time is predicted to be 7 WHrs / 1.68 W or 4.2 hours. The low battery indicator displays the LOW POWER message when the battery voltage reaches 4.1 volts. The unit will usually remain operational until the voltage drops to below 3.0 volts.

### System Controls

Use of raised, tactile frame enclosures around the switches allows the operator to 'feel the switch' in blacked out conditions. Recessing the switches helps prevent inadvertent activation. Noise free operation required the use of more supple switch domes with a depression force less than 200 grams. To mitigate the unwanted power turn-on at underwater pressures, a double tap ON feature has been added to the software. Under pressure, the switch remains closed and the unit will POWER DOWN within 10 seconds thereby preserving the battery life.

### Body Finish

The MTM is constructed from an advanced engineering polymer that has a matte finish through and through and will not reveal a silver or metallic base metal when scratched. All exposed aluminum or steel components are black anodized to reduce reflection.

### Noise Emissions

While operating, the MTM does not produce noise detectable by anyone other than the operator. When operating in a steady state, the MTM does not emit any noise at all.

**Estimated Annual Operating Costs:** Less than \$50/yr for rechargeable batteries (cost varies with use).

**Additional Equipment Required:** None

**Target Audience:** This product is NOT intended for use in active firefighting environments. Recommended for law enforcement and search & rescue.



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