

## AR-014-04

Multifunctional Networked Observation System

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- Vanadium oxide uncooled microbolometer array
- 4-megapixel CMOS progressive scan
- 44x zoom
- Object recognition and tracking
- IP67 protection
- Pan:  $\pm 175^\circ$ ; tilt:  $\pm 30^\circ$
- Positioning error  $< 0.06^\circ$

The device is a multifunctional observation system comprising daylight and thermal cameras integrated with a pan-tilt system, a rangefinder, a Global Positioning System (GPS), and automatic calculation of object geographic coordinates. The system also supports network-based control, providing real-time data transmission and remote operation.

| Technical Data                       |                                |        | Visible imaging      |                                                                |        |
|--------------------------------------|--------------------------------|--------|----------------------|----------------------------------------------------------------|--------|
| Thermal imaging                      |                                |        |                      |                                                                |        |
| Microbolometer array type (detector) | Vanadium oxide, uncooled (VOx) |        | Detector type        | 1/1.8" Sony Starvis progressive CMOS                           |        |
| Array resolution                     | 640(H) x 512 (V)               |        | Maximum resolution   | 1920(H) x 1080 (V)                                             |        |
| Pixel size                           | 12 μm                          |        | Pixel count          | 4.17 megapixels                                                |        |
| Spectral range                       | 8 μm - 14 μm                   |        | Minimum illumination | Color:<br>0.005 lm/F1.5<br>Black and white:<br>0.0005 lm/ F1.5 |        |
| Sensitivity                          | ≤ 35 mK                        |        | Detection range      | Human                                                          | 2930 m |
| Focal length                         | 75 mm                          |        |                      | Vehicle (tank)                                                 | 6400 m |
| Field of view                        | H: 5.8 °<br>V: 4.6 °           |        | Recognition range    | Human                                                          | 1150 m |
| Digital zoom                         | 2x, 4x, 8x                     |        |                      | Vehicle (tank)                                                 | 2530 m |
| Detection range                      | Human                          | 3500 m | Identification range | Human                                                          | 580 m  |
|                                      | Vehicle (tank)                 | 6500 m |                      | Vehicle (tank)                                                 | 1300 m |
| Recognition range                    | Human                          | 1000 m | Focal length         | 6.8 mm - 300 mm                                                |        |
|                                      | Vehicle (tank)                 | 2100 m | Field of view        | H: 59.6° - 1.5°<br>V: 35.7° - 0.8°<br>D: 66.7° - 1.7°          |        |
| Identification range                 | Human                          | 500 m  |                      | Optical zoom                                                   | 44x    |
|                                      | Vehicle (tank)                 | 100 m  |                      |                                                                |        |

| Rangefinder                                |                                |
|--------------------------------------------|--------------------------------|
| Laser safety class                         | Class 1 (eye-safe)             |
| Maximum measurement range                  | 12000 m                        |
| Accuracy                                   | < 0.5 m                        |
| Vehicle (2.3 m x 2.3 m) ranging capability | 4000 m                         |
| Medium-size structures ranging capability  | 8000 m                         |
| Pan-tilt system                            |                                |
| Pan and tilt angular range                 | Pan: +/-175°<br>Tilt: +/-30°   |
| Minimum speed                              | 0.1°/s                         |
| Maximum speed                              | 15°/s                          |
| Positioning accuracy                       | 0.06 °                         |
| Power and operating conditions             |                                |
| Power source                               | DC 12/24 V<br>AC 220 V / 50 Hz |
| Power consumption                          | < 36 W                         |
| Operating temperature                      | -30°C to +60°C                 |
| Operating humidity                         | ≤95%                           |
| Continuous operation                       | 24/7                           |
| Storage temperature                        | -40°C to +70°C                 |
| Ingress protection rating                  | IP67                           |
| Video                                      |                                |
| Video compression                          | H.265 / H264H / H264B          |
| Frame rate                                 | 50 Hz                          |

| Image resolution               | Thermal imaging:<br>Main stream: 1280x1024<br>Substream: 640x512  |
|--------------------------------|-------------------------------------------------------------------|
|                                | Visible imaging:<br>Main stream: 1920x1080<br>Substream: 1280x720 |
| Specifications                 |                                                                   |
| Coordinate calculation         | WGS84 or SK42                                                     |
| Global Navigation System (GPS) | Integrated                                                        |
| Picture-in-picture (PIP)       | Supported                                                         |
| Interoperability               | Onvif; Aragats SDK                                                |
| Network protocol               | HTTP; HTTPS; TCP;<br>RTSP; UDP; SMTP                              |
| Storage                        | SSD: 1TB                                                          |
| Fault detection                | Network fault detection<br>and storage-capacity<br>monitoring     |
| Solar panel integration        | Supported                                                         |