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## DAT-CON Multi sensor 150/A210



DAT - CON Multi sensor 150/A210 system provides maximum range performance with Uncooled LWIR Thermal Imager, high resolution colour zooms TV camera with low light capability and Laser rangefinder placed on a gyro stabilized movable platform. High resolution uncooled thermal camera enables clear sight picture in all weather conditions regardless of day or night use. System is also equipped with external video processing unit that is the “brain” of the system and allows you options like video tracking, image stabilization... This makes operators search for the target easier as it enables use of wide field of view when actual targeting takes place.

### General features

- Simultaneous preview of day/night camera and thermal
- Continuous zoom on both payloads
- Radar connectivity (Slew to Cue)
- Radar tracking possibility
- Target acquisition and tracking (auto or remote triggering)
- Rigid system design
- Analytics board: video stabilization, multi object tracking
- CE marked
- Control and picture streaming via TCP/IP
- Electronic image stabilization on both payloads
- Temperature range of the whole system: -32 to +55°C
- Maximum humidity of the whole system: 95%
- IP rating of the whole system: IP67

### System configuration

- Uncooled Thermal camera
- Day/Night camera
- External video processing unit (VPU-ST)
- Pan-tilt Tracer

Vibration test: IEC 60068-2-64

Shock test: IEC 60068-2-27

Icing test: NEMA 250

Salt fog test: IEC 60068-2-52

### Applications:

- Land observation
- Vehicle drive observation
- Naval
- Fixed installation



# 1. Un-Cooled LWIR Thermal Camera ULRT-150

The ULRT-Series are equipped with a highly reliable, long-wave, un-cooled Vanadium Oxide (VOx) detector which offers good long-range detection in all weather conditions. There is no maintenance required since there is no cooling device. The cameras offer a continuous zoom. This offers excellent situational awareness while also giving the possibility to zoom in at suspect activities, and have a closer look, once they are detected. The ULRT-series can be integrated into existing networks or used portably.



## Technical specifications

<b>Detector</b>	Uncooled LWIR VOx microbolometer
<b>Resolution</b>	640 x 512
<b>Frame rate</b>	25 Hz
<b>Detector pitch</b>	12 μm
<b>Spectral range</b>	8 to 14 μm
<b>NETD</b>	≤50mK
<b>Focal length</b>	30 – 150 mm
<b>Field of View</b>	14.6° - 3.0° (H)
<b>Continuous Optical Zoom</b>	Yes, up to 5x
<b>Continuous Digital Zoom</b>	Yes, up to 8x
<b>Focus</b>	Automatic or Manual (remote)
<b>Image stabilization</b>	Yes (using VPU/ST)
<b>Image processing</b>	Tuneable Digital Detail Enhancement Brightness Contrast Digital Noise Reduction Non uniformity correction White Hot / Black Hot Colour Palette OSD
<b>Video outputs</b>	Analog, RTSP H.264 Ethernet stream
<b>Control interface</b>	Serial, Ethernet
<b>Consumption</b>	15 W typical, < 60 W maximum with heaters / lens defrost
<b>Operating voltage</b>	18 - 48 Vdc
<b>Operating temperature range</b>	-32°C to +55°C
<b>IP rating</b>	IP67, built according to MIL-810
<b>Dimensions</b>	596 x 222 x 216 mm
<b>Weight</b>	14 kg

## DRI – Detection, recognition and identification



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Atmosphere Extinction coefficient	$\sigma = 0.2 / \text{km}$	$\sigma = 1.0 / \text{km}$
<b>DRI – NATO (VEHICLE) TARGET (2.3m x 2.3m)</b>		
Detection	11.15 km	4.20 km
Recognition	5.28 km	2.90 km
Identification	2.74 km	1.99 km
<b>DRI - HUMAN TARGET (1.8m x 0.5m)</b>		
Detection	6.35 km	3.19 km
Recognition	2.28 km	1.83 km
Identification	1.17 km	1.08 km
<b>DRI – DJI Phantom (0.4m x 0.3m)</b>		
Detection	2.49 km	1.88 km
Recognition	0.86 km	0.81 km
Identification	0.43 km	0.42 km

Method	<b>STANAG 4347</b>
Probability	<b>50 %</b>
delta T	<b>2 K</b>
Background temperature	<b>288 K</b>



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## 2. HD Day/Night Camera DAT – CON LRCS-A210

The LRCS is an integrated unit, based on a highly sensitive CMOS megapixel camera module. It is ideal for day/night surveillance of military camp, homeland security (border protection), and critical infrastructure protection (CIP) applications. It is designed to deliver high-performance images, even under the harshest conditions, in temperatures ranging from -32°C to +55°C with IP67 protection, built according to MIL-810 standards.



### Technical specification

<b>Sensor</b>	1/1.9" CMOS sensor
<b>Pixels</b>	1920 x 1080
<b>Sensitivity</b>	Colour 0.001 Lux @ (F1.5, 25 fps); B&W 0.0001 Lux @ (F1.5, 25 fps);
<b>Field of view</b>	59°- 2.25°
<b>Continuous Optical Zoom</b>	Yes, up to 30x
<b>Continuous Digital Zoom</b>	Yes, up to 8x
<b>Focus</b>	Automatic or Manual (remote)
<b>Image stabilization</b>	Yes* (using VPU/ST)
<b>Optical filters</b>	Colour: IR Cut filter / B&W: Defog Filter – NIR only
<b>Image processing</b>	Auto / Manual White Balance Auto / Manual Gain Control Wide Dynamic Range Digital Fog Removal / Auto Contrast Dynamic Noise Reduction
<b>Video outputs</b>	HD-SDI or analog, optional RTSP H.264 Ethernet stream (using VPU/ST)
<b>Control interface</b>	Serial, Ethernet
<b>Consumption</b>	15 W typical, < 60 W maximum with heaters / lens defrost
<b>Operating voltage</b>	18 - 32 Vdc
<b>Operating temperature range</b>	-32°C to +55°C
<b>IP rating</b>	IP67, built according to MIL-810
<b>Dimensions</b>	488 x 166x 172 mm
<b>Weight</b>	7.5 kg



### 3. Pan-Tilt TRACER

Simple and efficient is what describes pan-tilt Tracer. In fully marinated body lies a single powerful motion control driver. It is capable of handling payloads up to 35kg in full range of motion. Its compact design and low weight make it perfect for integration where space is limited. Multiple slipping options make it compatible with most payloads from high frequency antenna applications to Gigabit electro-optical head connections.



<b>Load capacity / Torque</b>	35 kg / 60 Nm
<b>Weight</b>	17 kg (without arms)
<b>Dimensions (H x W x L)</b>	323 x 220 x 336 mm (without arms)
<b>Materials</b>	Aluminium
<b>Operating temperature</b>	-32°C to +55°C
<b>Pan axis range / angle</b>	n x 360°
<b>Pan axis speed</b>	0.001°/s - 60 °/s
<b>Tilt axis range / angle</b>	± 90° (limited by application between ± 35° and ± 45°)
<b>Tilt axis speed</b>	0.001°/s - 60 °/s
<b>Accuracy</b>	0.02°
<b>Backlash</b>	None
<b>Brake</b>	Self-Locking
<b>Operating voltage</b>	18 - 32 VDC
<b>Maximum power</b>	160 W
<b>Communication to the unit</b>	Eth 10/100 Base-T, RS-232, RS-485, 422 (optional)
<b>Control protocol</b>	DC-PT protocol
<b>Protection / IP rating</b>	IP67, built according to MIL-810



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## 4. EXTERNAL VIDEO PROCESSING UNIT (VPU-ST)



Video processing unit (VPU-ST) is a hardware processing unit that is the “brains” of the multi sensor system. It combines all the payloads and Pan-Tilt unit into a single unit for the external observer and enable a single Ethernet connection to the whole unit including access to video streams and control of the entire system. VPU-ST enables dedicated advanced protocol that includes video as well as status and control. It has a powerful built in processor, that enables functions like video stabilization, H.264 encoding, video tracking.

- Power control and communication with each device
- Built in test for each device (BIT)
- Integrated Ethernet switch
- Communication interfaces: Ethernet (UDP), Serial
- H.264 Video encoding for all video payloads
- Two separated output video streams
- Control and video interface through Ethernet and serial (control only)
- Wide variety of video processing:
  - Video stabilization with roll correction
  - Advanced hardware scene and object video tracking
  - On Screen Display (OSD)
- Connectivity: four military standard connectors; 3 x input / 1 output
- Power: 18 – 32 Vdc; 30 W max.
- Environmental: IP 67, build with accordance to MIL-810
- Operating temperature range: -32 to 55°C
- Dimensions: 261 x 185 x 73 mm
- Weight: 3000 g



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## 5. Laser rangefinder LDC0/10

LDC0 represents the ultimate long-distance laser rangefinder. It is light weight and features ranging capability up to 32 km. With reduced measurement ranges LDC0 meets high continuous measurement rates up to 40 measurements per second in single mode and up to 200 Hz in burst mode.



### Technical specification

Eye safety	Laser Class 1
Measurement range	50m – 32 000m
Measurement range (Standard target):	10 000m – Target size 2.3 x 2.3 m, visibility 15 km, target reflectivity 30%, detection probability >90%
Precision	0.5 – 1.5 m depending on the distance and target reflectivity
Beam divergence	0.35 mrad
Wave length	1.54 $\mu$ m
Measurement rates	10 meas. per min (up to 40 meas. per min with reduced power / range)
Control interface	Serial, Ethernet
Operating voltage	18 - 32Vdc
Power consumption	3 W on standby, 7 W max on measurement
IP rating	IP67, built according to MIL-810
Operating temperature	-32°C + 55°C
Dimensions	172 x 151 x 75 mm with connector
Weight	2 kg

# SOVA

Command and  
control software



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# SOVA Command and control software

Developed specifically for the border police, coast guards and navy applications.



SOVA is a module based software package developed specifically for the border police, coast guards and navy applications. With its simple and effective design, SOVA is an efficient and easy to use tool.



#### Features and Modules:

- Real-time video observation
  - Pan/Tilt
  - Zoom/Focus
  - Single picture, picture-in-picture
- Video analysis module
  - Video tracking
  - Image stabilization
  - Motion detection
  - Change detection
  - Template matching
- Video overlay support
- Panorama picture
- Sector scanning
  - Position presets
    - Pan/Tilt
    - Zoom/Focus
    - Auto-patrol support
  - Contour auto-patrol
- Video recording/Snapshots with timestamps
- Multiple sensors support
  - Thermal imagers
  - Day/Night cameras
  - Laser range finders
  - GNSS modules
  - Pan-Tilt units
- Multiple video encoding types support



#### Features and modules:

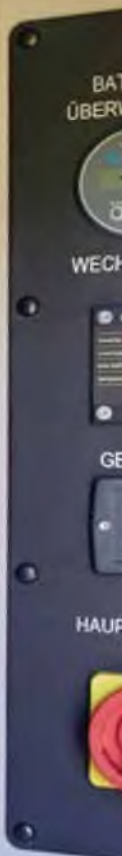
- Multilayer support
- Mil-Std-2525 B/C symbology supports
- Viewpoint calculation (based on 3D model)
- Measurement tools  
(distance, circumference, orientation, direction)
- Supported map formats:
  - Raster/Imagery (GeoTIFF, JPEG, etc.)
  - Vector (S57, VMAP, SHAPE, etc.)
  - Terrain (DTED, SRTM, Lidar, etc.)
  - 3D models
- Presentation layers:
  - Target layers (AIS, radar, UAV)
  - Surveillance platform layer
  - Map layers
  - Zones/Marks layer
  - Range/Bearing layer
  - Resources layer
- Multiple sensors support:
  - Radars,
  - AIS receivers,
  - RF terminals,
  - UAV systems
  - ...
- Drawing tools (geometric shapes, text)
- Alarm zones
- Exclusion zones
- Alarm management
- Sova Video Surveillance integration:
  - Slew-to-cue mode
  - Target tracking
- Positions presets




**Common features**

- Friendly, ergonomic and localized Graphical User Interface
- Day/Night mode
- Module based licensing







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