



- Cooled thermal camera
- Full HD day camera
- Two axis motorised Pan and Tilt
- 21.5Km vehicle detection thermal camera
- 19.2Km human detection thermal camera
- 24Km vehicle detection day camera
- 9.5Km human detection day camera

Cooled Multi Sensor Extra long Range Camera

ST-C1020-1000 is a field proven multi-sensors very long range surveillance system. This unrivalled modular product range combines, continuous zoom, cooled (Band II, MWIR) thermal and Full HD colour cameras, embedded on a precise and dynamic two-axis Pan & Tilt unit. The system can also be proposed with optional Laser Range Finder, GPS and Digital Magnetic Compass, laser pointer...

It allows very long distance surveillance, effective day and night, for protection and security of your sensitive sites.

Application areas

- Very long distance all-weather observation
- Monitoring of sensitive infrastructures (Oil and chemical industries, nuclear power plants)
- Monitoring of borders and coastal areas
- Ports and airports surveillance
- Counter – UAV applications



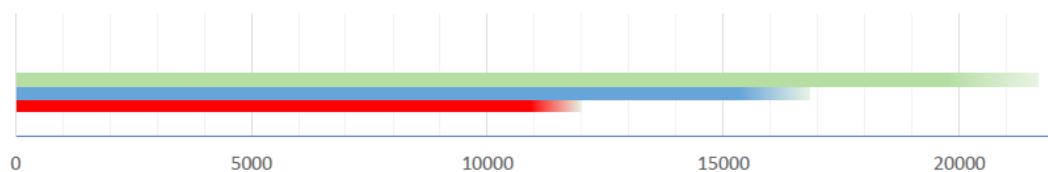
Multisensor Solution Component

- Band III cooled thermal camera
- Full HD color camera
- Pan & Tilt platform
- Washing and dry cooling system
- Laser Range Finder (Optional)
- Stabilization (Optional)
- Video Tracking Function (Optional)
- Associated Local Control Command Unit, with rugged composite cable, allowing power supply, controls and video signal transmission for Pan & Tilt and Cameras
- ST-SENS Management Software

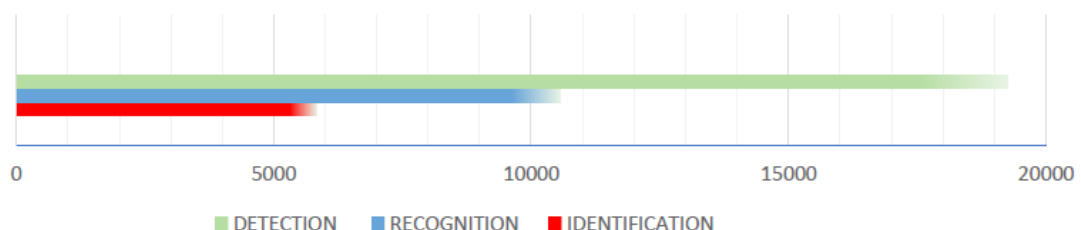
Cooled thermal camera module

We propose a waterproof and rugged cooled thermal camera working in the 3 to 5 μm band (MWIR), using a latest generation of sensor manufactured in France (no ITAR/EAR/BAFA restriction), resolution of 640 x 512 pixels with 15-micron pitch. Aluminum alloy housing with special interface to fit on pan & tilt, fitted with a sun and rain protective cap.

DRI Product Range- NATO Target 2.3m x 2.3m - Range given in meters



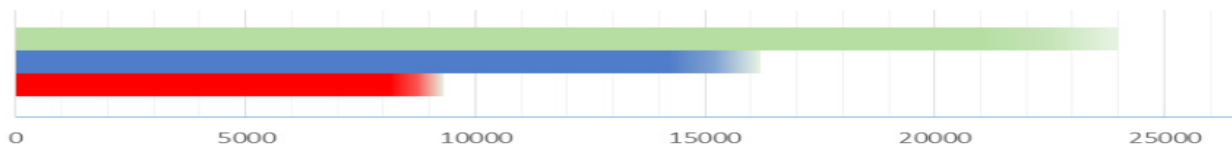
DRI - Human Being Target 1.8m x 0.5m - Range given in meters



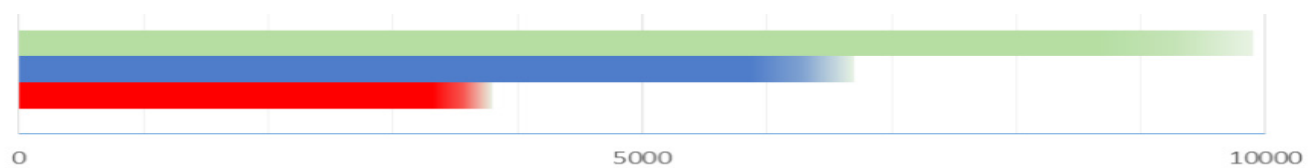
Full HD (FHD) day camera module

This camera features an aluminum alloy chassis with waterproof rear plate connector and a sun and rain protective cap. The housing includes a 2.1 megapixels day high definition IP camera with a progressive scan CMOS color sensor, allowing superb day shootings in any harsh environment and poor lighting conditions. It is associated to an optical 64x continuous zoom lens, with motorized zoom and autofocus functions.

NATO Target 2.3m x 2.3m



Human Being Target 1.8m x 0.5m



Pan & Tilt module

Pan & Tilt Platform designed to move a combination of different large sensors for long range observation applications.

This Pan and Tilt comes with waterproof connectors and wirings to the peripherals, protecting those from external aggression - UV rays - as well as salt and humidity.

The Pan & Tilt Platform is equipped with mechanical brackets to allow boresighting of the optical axis of each sensor (up to 3 sensors). Each sensor may be easily removed and replaced without any specific tools neither boresighting process.

Digital image stabilizer for both cameras (Option)

Considering the high magnification ratio of the zoom lenses and extremely narrow fields of view, a digital image stabilizer is necessary to decrease drastically blur due to vibration of the system on its pole (wind movements...) for visible FHD & thermal videos.

The stabilizer captures 2 x H264 RTSP video streams from cameras and delivers a stabilized real-time H264 video stream per camera to the video management software, with a latency lower than 100 ms.

It should be noted that stabilization is performed on line of sight and allows compensating vibration phenomena up to +/-10% of the image field of view.

This stabilizer is based on embedded computer that comes in a 1U 19" rack unit.

Laser Range Finder (LRF)(Option)

Laser Range Finder: for land and naval applications, designed for medium and long-distance measurements of static or moving targets in dynamic environments.

ST-SENS Middleware Software

ST-SENS is a middleware supervision and management software solution «all-in-one» to control optronic sensors and to interface with different softwares: video analysis software VMS market software, radar management software and target tracking solution.

Technical Specifications	
Cooled Thermal Camera	
Sensor	Cooled MCT
FRP Format	640 x 512 pixels
Pitch	15 μ m
Spectral Band	3 to 5 μ m
NETD	20 mK typical (<25 mK)
Focus control	Auto / Manual
Different continuous optical zooms available @F/5.5 (different zooms @F/4 available in option)	24x continuous optical zoom – F= 42 to 1020 mm, F/5.5 Horizontal Field Of View from 13° to 0.54° i.e min 9.6 x 7.2m @ 1000m
Day Camera	
Sensor	Progressive CMOS sensor – Approx 2.1 Mpixels
Resolution	1920 x 1080 pixels
Minimum Illumination	Color: 0.2 lux (sensor)
Continuous Zoom	Optical 64x / Digital 4x
Focus control	Auto / Manual
Maxi Aperture	F/2.8@WFOV
Field Of View (HxV)	@max FOV: 17.8° x 10° i.e 325 x 183m @ 1000m @min FOV: 0.29° x 0.16° i.e 5.1 x 2.85m @ 1000m
Pan & Tilt	
Pan Range	N x 360°
Tilt Range	+/-90° with software and mechanical stops
Pan speed	0.11°/s to 60°/s (payload dependent)
Tilt speed	0.07°/s to 40°/s (payload dependent)
Position Accuracy	<0.1° (1.75 mrad) typical
Resolution	0.005° (0.087 mrad)
PHYSICAL CHARACTERISTICS	
Sealing	IP67 with nitrogen sweep
Size (with option)	< 890 (w) x 800 (d) x 850 (h) mm
	< 85 kg
Operating Temperature	Standard version: -20°C to +65°C