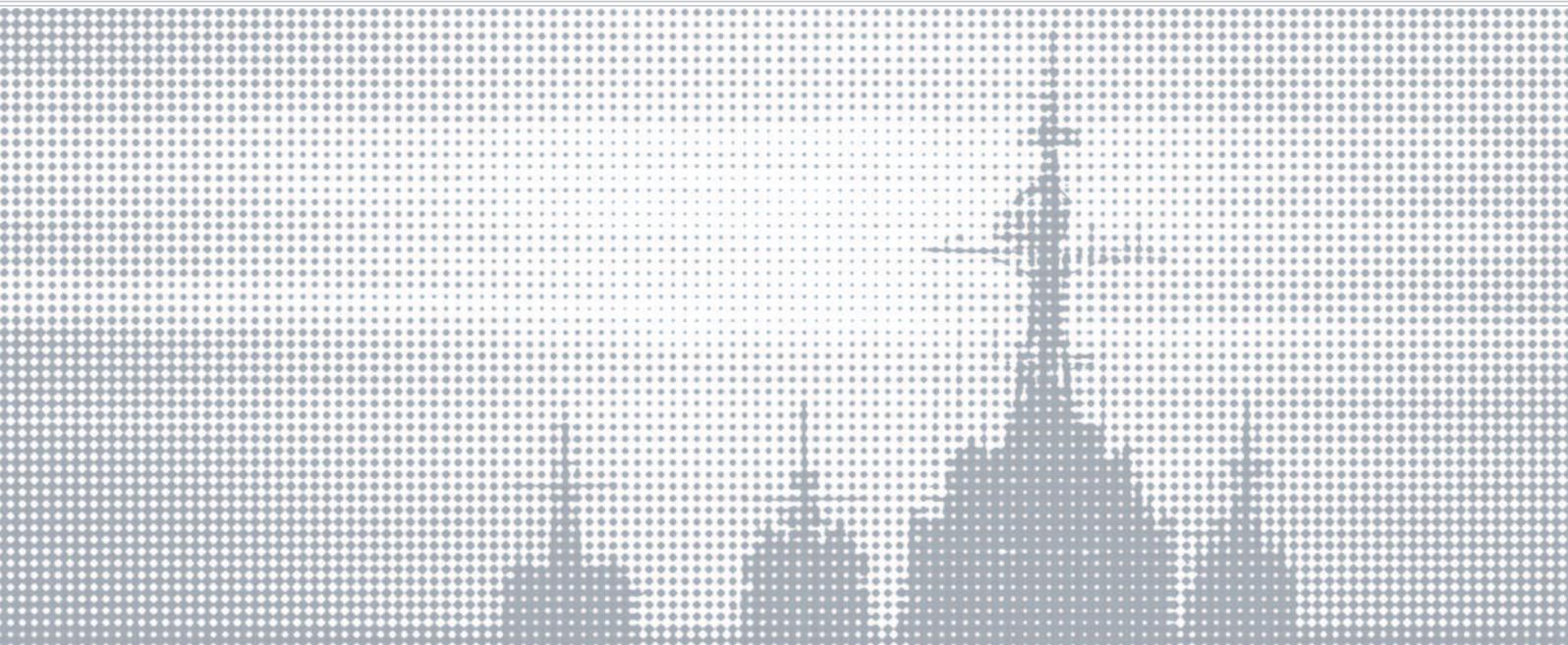




## New Standards With Ruggedized CST Electro-Optical Cameras



# CST ruggedized electro-optical cameras for long-range surveillance and critical infrastructure protection

CST has a successful history as the market leader in the area of electro-optical CCTV cameras for demanding ruggedized solutions targeted for local situational awareness applications and remote weapon stations in particular. CST will continue to focus on providing the critical components which make system providers' projects and solutions a success for their customers.

CST now offers electro-optical cameras for a broader range of applications through co-operations with system suppliers targeting Border Protection, Critical Infrastructure Protection, Perimeter Protection and Offshore applications such as Wind Turbine Surveillance.

With the emergence of this broader market, based on the advanced CST electro-optical cameras, CST can make your solutions an even greater success with your customers by providing proven solutions which meet the demand for ruggedized solutions. The threat of hostile intrusion is present for many nations and critical to monitor. This is for instance the case for governments seeking to follow activities along their national borders. The same need for high security and safety goes for protection of critical national infrastructure such as oil, power, dams, bridges and water supplies.

Perimeter protection of critical civil traffic areas such as airports and shipping ports has also become increasingly important for nations to observe with long-range surveillance solutions.





### Offshore Surveillance

Offshore wind turbines need long-range surveillance to avoid collisions by providing early warning of approaching vessels and timely notification of real threats. The cameras for offshore wind turbine surveillance need to be ruggedized in order to operate optimally under rough weather conditions and be hermetically sealed, all of which are within CST's core competencies.

### Border Protection

The need for both border and coastal surveillance, in order to protect a nation's borders has never been higher. Border protection prevents terrorism, entry of illegal goods and unauthorized people, keeping the nation safe.

## Long-range surveillance | A response to new threats

As new risks and global threats emerge, governments are calling for a higher level of security at the border and coastal lines in order to reinforce the protection of the homeland security.

Prevention of unlawful cross-border activities and the fight against criminal organizations at land and maritime borders entails the implementation of thorough and comprehensive surveillance and control systems.

By using long-range surveillance systems with electro-optical image recognition for day and night vision, cross-border surveillance can be extremely effective. Surveillance systems are often placed in remote places and demand ruggedized camera solutions, which is one of our core competencies at CST.

Long-range surveillance is also demanded for perimeter protection of airports and naval ports, in large offshore wind turbine parks, etc.

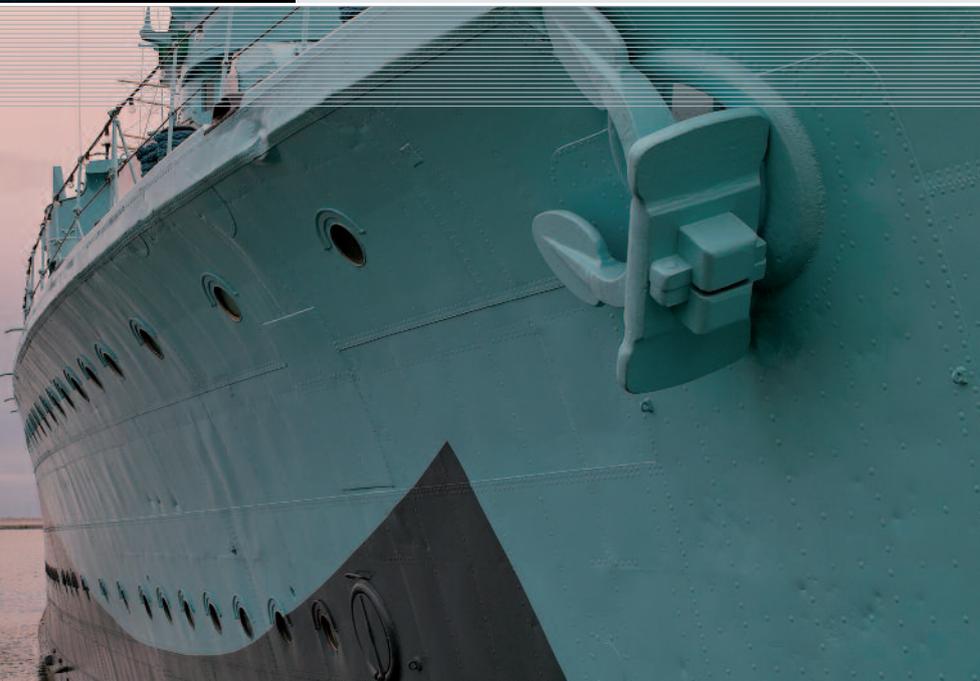


### Perimeter Protection

Perimeter protection at ports and airports is increasing to prevent terrorist attacks. The intrusion detection system will identify possible intruders or terrorists and secure human lives and assets.

### Naval Surveillance

To protect the maritime crew and assets, it is necessary to focus on maritime security and detect sea threats and piracy by surveillance systems. Cameras can also be used to control and observe the engine room of the vessel with fewer personnel engaged.



# Critical Infrastructure Protection | Securing continuity in society

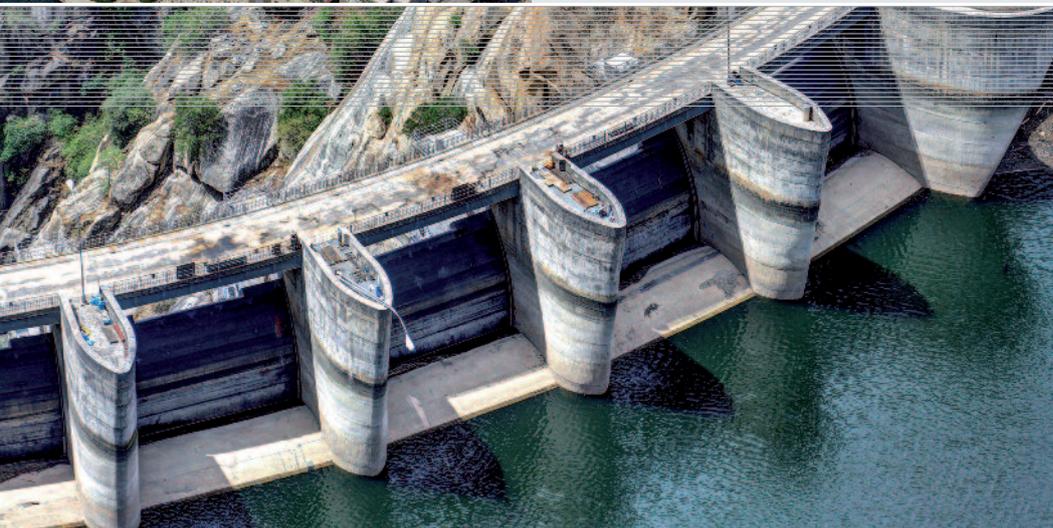
Critical infrastructure is an asset or system which is essential for the maintenance of vital societal functions. Damage to critical infrastructure, its destruction or disruption by natural disasters, terrorism, criminal activity or malicious behavior may have a significant negative impact for the security of the nation and the well-being of its citizens.

Long-range surveillance systems are effective at reducing the vulnerability of critical infrastructure increasing their resilience and remaining functional is one of the major objectives for many nations in the world.



## Critical Infrastructure Protection

Protecting the critical infrastructure such as power, water supply, bridges, dams or general infrastructure is critical for any nation. Long-range surveillance systems which can detect, track and identify intruders can be a way to a safer society.



## Key features in CST electro-optical solutions

- Up to 1000 mm focal length
  - Recognise a human at 8 km distance
- Wide operating temperature range, -40°C to 70°C
- True Day/Night Mode
  - Switchable colour and Near-IR imaging
- High-speed motorized zoom and focus, "Autofocus-on-Demand"
- Protective, sealed housing meeting highest protection standards
- Bore-sight retention within  $\pm 0,2$  mrad correspondent to staying within a target area of  $\pm 20$  cm at a distance of 1 km when zooming in

## Defense applications | Securing and protecting people and assets

Camp surveillance provides rapid and effective protection of people and assets in the same time as it allows forces to concentrate on their primary mission. It also neutralizes a wide range of land-based threats, with fewer personnel engaged in surveillance.

Remote Weapon Stations must react instantly, which sets high requirements for the camera solution. The CST series of integrated zoom and precise bore-sighted cameras for Remote Weapon Stations live up to the high requirements of operating under extreme conditions such as temperature, shock and vibration on both tracked and wheeled vehicles.



### Key features in CST electro-optical solutions

- Distortion-free panoramic 170° horizontal Field-of-View
- Dawn-to-Dusk operation plus Extended Night Mode
- Heated protective window prevents build-up of ice
- Rugged low-profile housing
- Wide temperature range, -40°C to +70°C
- High vibration and shock tolerance, to MIL-STD 810

### Remote Weapon Stations

The CST camera system is rugged and can be mounted directly on Remote Weapon Stations, for use on all types of platforms including vehicles, vessels or more static placements both on land and offshore.

### Camp Protection

Cameras provide rapid and effective protection of areas like camps and compounds, neutralizing a wide range of land-based threats, requiring fewer personnel engaged in surveillance.

## Situational awareness | A lifesaver for vehicle crews

The need to maintain or improve situational awareness is important with the increased number of missions carried out in an urban environment, where troops need to understand the situation before the ramp or the rear doors are opened, to be prepared for threats and save lives.

Situational awareness is also relevant for the Navy, where piracy detection and prevention is a priority. For navigating unmanned vehicles situational awareness is needed to do reconnaissance or remove landmines to save people and assets.

### Local Situational Awareness

The vehicle crew and assets are protected by mounting an array of cameras on the vehicle hull. The cameras provide 360° view over the near surroundings while the hatches are closed, assuring the crew will be prepared before leaving the vehicle.



### Unmanned Vehicles

Unmanned and remotely operated vehicles are coming on strongly for many defense applications such as mine disposal vehicles and civil applications. In order for the UMV to operate with its full potential, it is crucial to have the optimal situational awareness and receiving the images in real time to navigate the vehicle.





## Copenhagen Sensor Technology is characterized by three core features:

**Ruggedized cameras** – CST is specialized in ruggedized cameras for demanding applications

**Reliability** – the technology is proven in the field

**Flexibility** – together we can create a solution that provides the best performance to match your needs

**CST is a Danish company specializing in the development, manufacturing, and marketing of high-performance rugged electro-optical solutions for demanding battlefield and surveillance applications.**

**The advanced cameras are sold through system providers, vehicle manufacturers and a worldwide distributor network.**

Scan the QR code to see the product range

