

CAT EYE HORIZON 20
LERITY

CAT EYE™ HORIZON 20

Panoramic Extra-Long-Range Day/Night
Autonomous Surveillance System



See it to Believe it

cameras & vision systems

CAT EYE™ HORIZON 20

CAT EYE™ HORIZON 20 is designed to see clearly in the visible spectrum at extra-long ranges both day & night, and in all weather conditions.

Range-gated active imaging mode pierces through starless nights and cut through rain, haze, fog or snow.



Whether CAT EYE™ HORIZON 20 is operated manually or automatically with AI powered image analysis, it is the ultimate device for Detection, Recognition and Identification.

Equipped with the best of LERITY's technologies — state-of-the-art sensors, powerful image enhancement algorithms, 200W Laser Illuminators... — CAT EYE™ HORIZON 20 provides enhanced situational awareness in any condition.

INNOVATIONS

Continual Quest for Sensitivity Low light level expertise in the visible wide band spectrum

Even More Pixels Very high resolution sensors

Even More Visibility 200 W laser Illumination («narrow» and «ultra-narrow» fields for target designation)

Avant-Garde Technologies VIRTAMS(fusion of color/B&W, accurate zoom function)

Disruptive Technologies Super Resolution

APPLICATIONS

Observation

- 24/7 surveillance
- 40 Km By Day / 20Km By Night
- Adjustable surveillance area
- Panoramic surveillance
- Horizon scanning

Security

- Target acquisition and tracking
- Automatic event detection
- Multi-threat detection

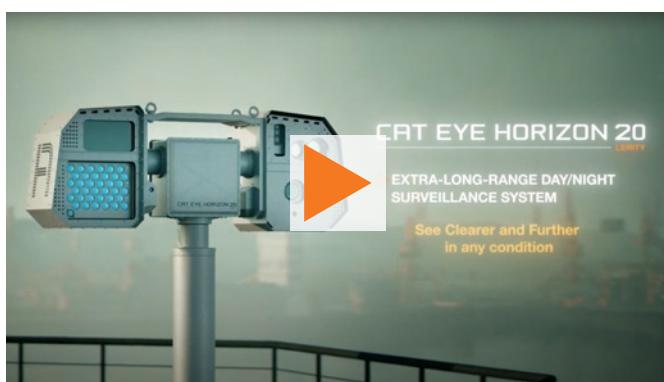
MISSIONS

- Coastal Surveillance
- Border Surveillance
- Sensitiv Site Protection (military compounds, nuclear power plants, oil & gas installations...)

FEATURES

- Range-gated Active Imaging (pulsed illumination of target)
- Visible & Infrared Camera
- Automatic Identification of targets with embedded Artificial Intelligence
- Eye-safe Laser Range Finder (class 1)
- Gyrostabilized turret
- Conformity to MIL-STD
- Compatibility with different sensors (radar, AIS...)
- Possibility of integration to different C2 systems / VMS Standard Protocols PELCO & ONVIF
- ITAR free
- Dimensions: 1,408 x 671 x 553 mm³
- Weight: < 150 kg

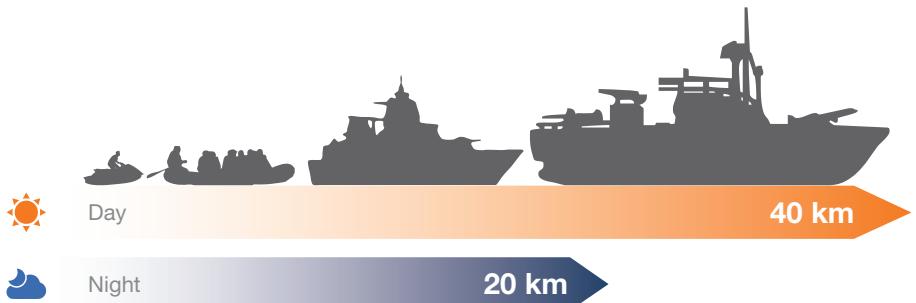
DISCOVER VIDEOS OF CAT EYE™ HORIZON 20



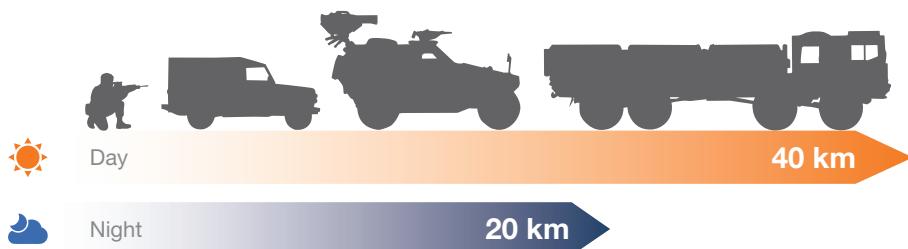
SEE CLEARER & FURTHER IN ANY CONDITION

Day & Night Identification Ranges*

SEA SURVEILLANCE



LAND SURVEILLANCE



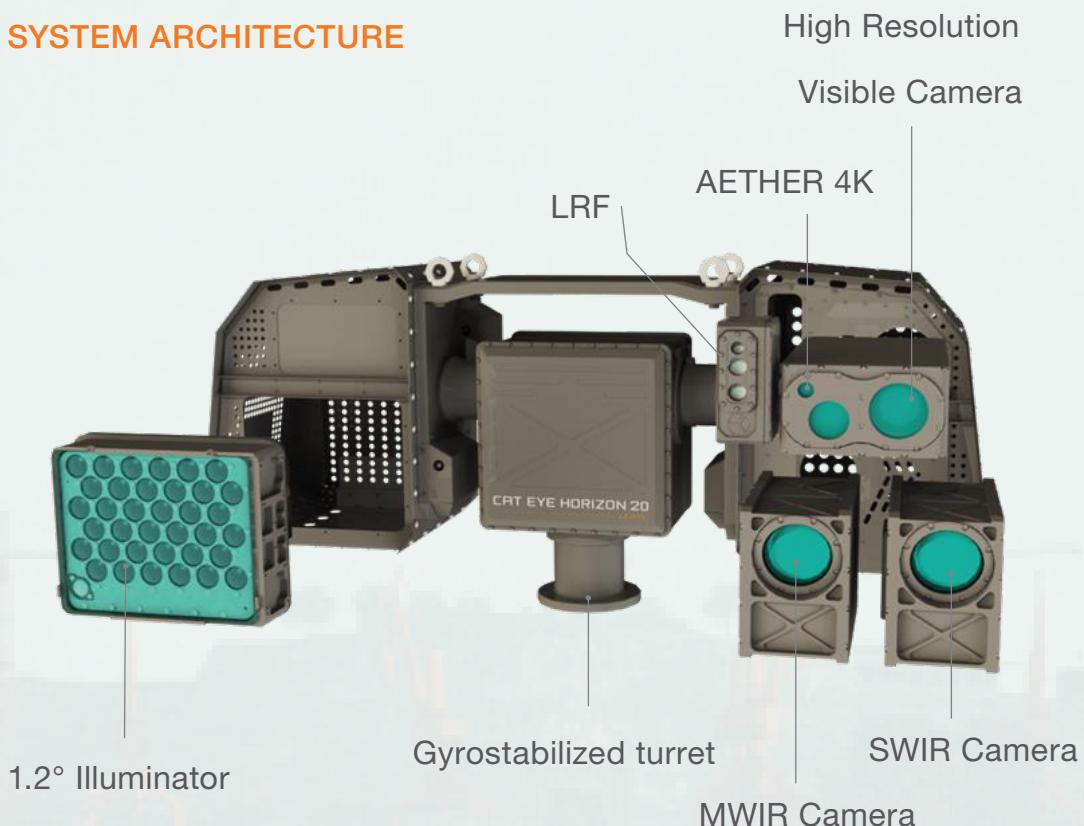
DAY: Visible camera in passive mode

NIGHT: Visible camera in active mode** (pulsed illumination) + Infrared camera

* Ranges correspond to camera positioned at elevated point

** Active mode, synchronizing a pulsed laser light source to the camera shutter openings, is activated by operator for better visibility in dark night or adverse weather conditions

SYSTEM ARCHITECTURE



ADVANCED FUNCTIONS



REAL-TIME IMAGE ENHANCEMENT

Advanced proprietary algorithms drastically improve image quality, sharply increasing detail recognition, and allowing for a quicker focus & enhanced detection and tracking



HIGH IMAGE QUALITY, DAY OR NIGHT

Very high image quality attained due to LERITY's powerful real-time image enhancement algorithms, the Range-Gated Active Imaging function at night & high-performance Dynamic Contrast Ratio during the day



AUTOMATIC, MULTI-TARGET DETECTION, TRACKING AND IDENTIFICATION WITH A.I.

Quickly and automatically follows any potential threat, day or night. Operator chooses which targets to track and the algorithms automatically perform the tracking. CAT EYE™ HORIZON 20 also functions entirely independently with A.I. image analysis and sends proven alerts when it self-identifies targets.



DUAL FIELD VISION & FUSION

Color Channel + Monochrome HR Channel
HR Fused Channel

Fusion of different visible channels (naturally-superior-in-resolution monochrome channel & color channel) for higher quality in color photo/video output.

OPERATION & MAINTENANCE

USER-FRIENDLY: Design and GUI allow for easy and efficient use

ON-SITE INSTALLATION & TRAINING: LERITY'S team comes on site for in-house tutorials and integration.

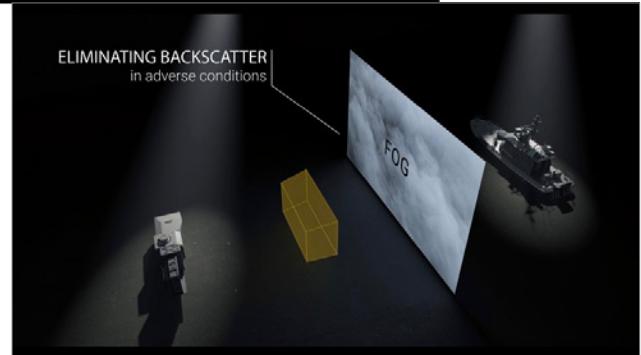
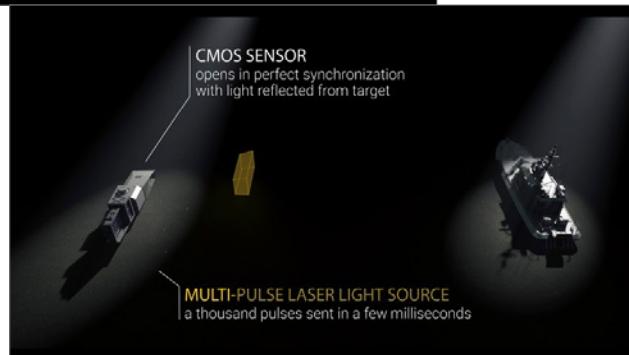
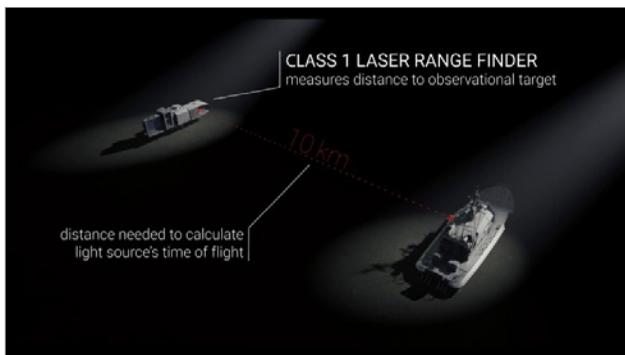
CUSTOMER SUPPORT DURING 5 YEAR GUARANTEE PERIOD: On-line assistance and help hotline for all MRO issues available via our after- sales service department. Trusted experience in long-term support.

REMOTE FAILURE DETECTION: With a long-distance diagnostic system, operator gives access to LERITY's service team, which intervenes to classify the failure and propose solutions.

LINE REPLACEABLE UNITS (LRU): Modularity of system means components can be easily repaired or replaced if needed. High MTBF for all units (40,000 hours in standard conditions).

RANGE-GATED ACTIVE IMAGING

The technology providing dark night vision in the visible spectrum & clear vision in adverse conditions (rain, haze, fog, snow...)



CAT EYE™ PRODUCT FAMILY

Three versions of CAT EYE™ are available

CAT EYE™ Handheld



CAT EYE™ System



CAT EYE™ HORIZON 20 JAMMER



From the first handheld version developed as of 2014 to CAT EYE™ System, developed with and for the French Naval forces, LERITY has gained considerable expertise in the domain of Active Imaging.

CAT EYE HORIZON 20 now takes the CAT EYE™ technology to the next level, by incorporating powerful laser light sources with narrow and ultra-narrow fields of illumination. This allows for target designation at up to 20 km away, providing incredible night vision and identification capacity from afar, at any hour and in any condition.

THE LERITY ADVANTAGE

With 35 years of experience in camera modules and systems, LERITY (French SME operating internationally) is far from being a simple integrator/assembler: Our 100% in-house expertise encompasses the entire electro-optics chain, from the early design phase to manufacturing. Working exclusively in the visible wide-band spectrum, LERITY is recognized for its proprietary algorithms in real-time image enhancement and its low light level expertise.

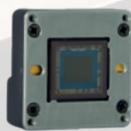
LERITY has a diverse portfolio of cameras and vision systems including HUD cameras for fighter and

trainer aircraft (such as the Rafale), cameras for submarine periscopes, Pilot cameras for aircraft/UAV vision (including take-off/landing), camera modules for mid-air refueling & for electro-optic payloads, the CAT EYE™ family line of active imaging vision systems for reconnaissance missions or for coastal/border/wide-area surveillance and protection of critical infrastructure and HEMISPACE™, a counter-drone detection, tracking & localization system complete with 12 optical sensors integrated into a hemispherical structure of 360° vision.



LERITY also has a vast array of off-the-shelf camera cores adaptable to virtually any client specifications and any environment.

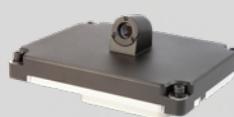
AETHER XS
Camera Core



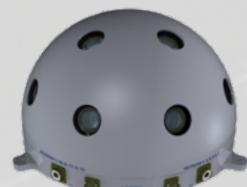
VIRTAMS -
Dual Field Vision



Head-Up Display
Camera



HEMISPACE™
Counter- Drone
Electro-Optical System



Read more on www.lerity-alcen.com

FEATURES

LERITY A-0 CAT EYE HORIZON 01/2026

VISIBLE / NEAR IR NARROW FIELD OF VIEW CHANNEL

	Field of View	Sensitivity	Input Light Range	Resolution
NFOV SENSITIVITY RESOLUTION	3.26°(H) x 1.84°(V)	Up to night level 3 in passive mode	0.01 to 100,000 Lux	8.3 MP 4K
	IFOV	VIS/NIR/BP	Focus	Sensor
	15 µrad	3-band selection	Manual/Automatic	sCMOS BSI Monochrome

VISIBLE COLOR WIDE FIELD OF VIEW COLOR CHANNEL

	Field of View	Sensitivity	Input Light Range	Resolution
WFOV SENSITIVITY RESOLUTION	11.9°(H) x 6.7°(V)	Up to night level 3 in passive mode	0.1 to 100,000 Lux	8.3 MP 4K
	IFOV	Bayer	Focus	Sensor
	54 µrad	LDI & Bilinear	Manual/Automatic	sCMOS BSI Color

PROXIMITY SURVEILLANCE VISIBLE CHANNEL 4K COLOR CAMERA

	Native Resolution	Field of View (FOV)	Focus	Image Processing
4K COLOR CHANNEL	3840 x 2160 pixels	45°	Manual / Automatic	LDI and bilinear algorithms for image processing

ILLUMINATOR**

	Wave Length	Illuminated field	Max Optical Power	NOHD
SOURCES EYE SAFETY MODE	808 nm	1.1°(H) x 1.1°(V)	200 W	120 m
	Mode 1	Mode 2	Mode 3	Eye Safety
	Automatic power control	Power guided by line of sight	Pulsed for range gating	Automatic shutdown
LRF	Wave Length	Detection Range	Safety	Divergence
DISTANCE MEASURE	1.556 nm	14.5 km (2.3 m x 2.3 m)	Class 1	0.35 mrad

PAN & TILT UNIT

	Pan Range & Speed	Tilt Range & Speed	Accuracy	Stabilization
RANGE – SPEED ACCURACY	N x 360° 0.001°/s to 100°/s	± 90° 0.001°/s to 80°/s	0.02°	± 300 µrad

COMMAND & CONTROL

	Real-time Observation – Full HD Restitution Format	Digital Map
MAIN FEATURES	PTZ/Focus, single picture, picture in picture, panoramic picture, sector scanning with presets	Multilayer support: map, target, exclusion and alarm zones, drawing and measurement tools Multi sensor support: radar, AIS, GPS
	Video Analysis and Recording	Video Surveillance Integration
	Automatic detection & video tracking, Video and snapshot recording: H264/MPEG/JPEG	Slew-to-cue mode Target tracking

INTERFACE / POWER / COMMUNICATION / MAINTENANCE

	Weight	Dimensions	Voltage	Power
WEIGHT DIMENSION INTERFACE COMMUNICATION	< 150 kg	1,495 x 694 x 562 mm ³	24 to 48 VDC	2,000 W
	Communication	Protocol	Workstation	Maintenance
	SMPTE ST 2081 6G SDI RS-232, RS-485/422	DCP-PT Protocol	Desktop PC 21" display	Comprehensive Built-in Test

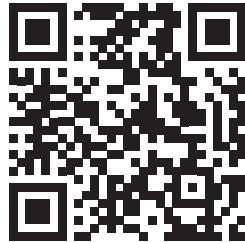
ENVIRONMENTAL

	Temperature	IP	Shocks & Vibration	EMI/EMC
TEMPERATURE SHOCKS VIBRATION	[-30°C – +55°C] functional 1,100 W/m ² Solar Radiation	IP66	MIL-STD 810 F	MIL-STD 461-F

IR CHANNEL

Infrared	Spectral Bande	Resolution	Technoly	Champ
Serial	MWIR	640 x 512	Cooling	Under NDA
Optional	SWIR	1280 x 1084	Non-cooling	Under NDA

** Information on effective ranges for day/night available under NDA. Please contact us.



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