Sorama L642Ex

SORAMA PRODUCT SPECIFICATION SHEET MARCH 2025 V.1

Certification pending

The Sorama L642Ex is designed to detect even the smallest unwanted emissions (leaks) in hazardous environments, aswell as detecting early anomalies in mechanical systems and high voltage systems (partial discharge). Powerful A.I. onboard computing enables you to check the mechanical health of any operating system.

Faster than traditional systems, the Sorama L642Ex reduces the time a service team is exposed in hazardous environments. The measurements and data output can be easily integrated in any customer ERP/MMS via API (e.g. sound maps, AI classification events). In addition we offer storage and analysis features via the Sorama Portal if you want to monitor and perform in depth analysis of the health status of your industrial assets.

- All-in-one acoustic monitoring
- Leak Inspection
- Partial Discharge Inspection
- Mechanical Inspection
- Visual light camera integrated

Sorama L642Ex

INVENTORY

Sorama L642Ex	1
Quick start guide	1

PHYSICAL PROPERTIES

Size	170 x 170 x 41 mm 6.9 x 6.9 x 1.6 inch	L x W x H
Weight	± 2.1 kg ± 4.6 Lb	
Connectivity	Wired Ethernet	IEEE 802.3 af

STORAGE

Internal	Approx. 7Gb

CAMERA

Video/image resolution	720p	
Camera field of view	65 degrees ± 3 degrees	
Camera resulution	640 x 480	

ACOUSTICS

SNR(A-weighted @1Khz)	66dB per channel	@ 1kHz, 94dB SPL
Sensitivity	-37 ±1 dB FS	At 1 kHz, 94 dB SPL
Acoustic overload point	132.5 dB SPL	At 1 kHz, <10% THD
Auto min/max	Auto or manual, user selectable	

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MEASUREMENT FEATURES

Frequency range	10 Hz - ≈ 60kHz
Frequency resolution	59Hz @ 60kHz, 110Hz @ 120Khz
Beamforming (far field)	Up to 60kHz
Operating distance	0.5m to 120m*

DATA FORMATS

Audio	.wav (audio verification)
Image	.jpeg
Video (L642Ex V and V+)	.mjpeg; .mkv; .webm

API FUNCTIONALITY

Rest API	Sorama API Documentation	https://dev.sorama.eu/api-docs/
Enabling multiple acoustic measurements	Running in the background e.g. 24/7 inspection.	
Customize actions	Configure events & alarms through the API	
Areas of Interest	Set your areas of interest including specif-ic AI models	

* Depends on environmental conditions.

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LEAK INSPECTION

On device leak inspection can be used to determine a type of leak in a pressurized system and estimate the leak's size. This capture mode is always subjected to environmental conditions. Depending on these conditions (distance, environmental noise), values such as leak rate should be seen as indicative.
Estimated flow based on distance and noise in the environment from field-testing:

Quiet environment	0.3m to 5m	0.02l/min to 0.1l/min
	5m to 10m	0.1l/min to 0.2l/min
Noisy environment	0.3m to 5m	0.05l/min to 0.15l/min
	5m to 10m	0.15l/min to 0.3l/min

PARTIAL DISCHARGE INSPECTION

On device partial discharge can be used to find and identify defects in High Voltage (HV) assets. Defects can include voids, gaps, splits, physical sharp points, imperfections or discharges in the open air on/within HV assets. The defect itself discharges as it is not able to insulate the voltage applied across it.

How this defect behaves over time can be made insightful with a phase-resolved partial discharge plot (PRPD). PRPD is a powerful tool used for analysing and diagnosing PD activity within HV insulation systems.

MECHANICAL INSPECTION

On device mechanical inspection tools can be used to identify and detect early faults in machines and assets (faulty or worn-out bearings, pump cavitation, faulty or worn-out rollers etc) over time.

Train the device on healthy machines or assets so that faults that can occur over time can be detected in advance. This allows for preventive maintenance of equipment and assets in order to keep them running and prevent any costly unplanned downtime from unexpected equipment failure.

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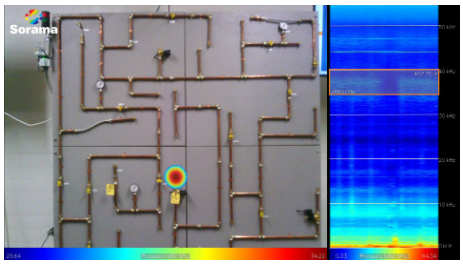
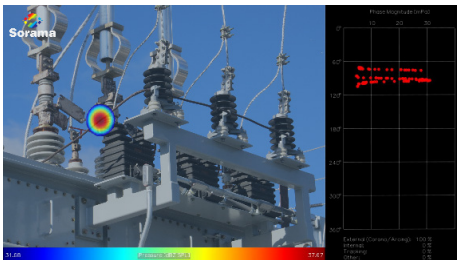
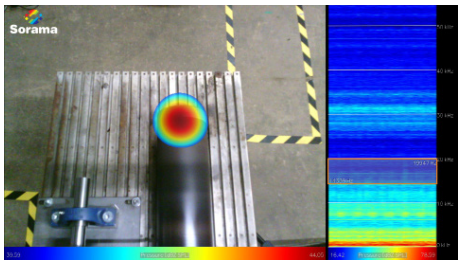


Leak Inspection



Partial Discharge Inspection



Mechanical Inspection

EXPLOSION SENSITIVE AREAS

Ex marking	II 2 G Ex ib mb IIC T4 Gb
Um	240V + other intrinsic safe parameters

OPERATING CONDITIONS

Temperature	-20° C to 60° C -4° F to 140° F