

# Sorama L642Ex

SORAMA PRODUCT SPECIFICATION SHEET JULY 2024 V.1

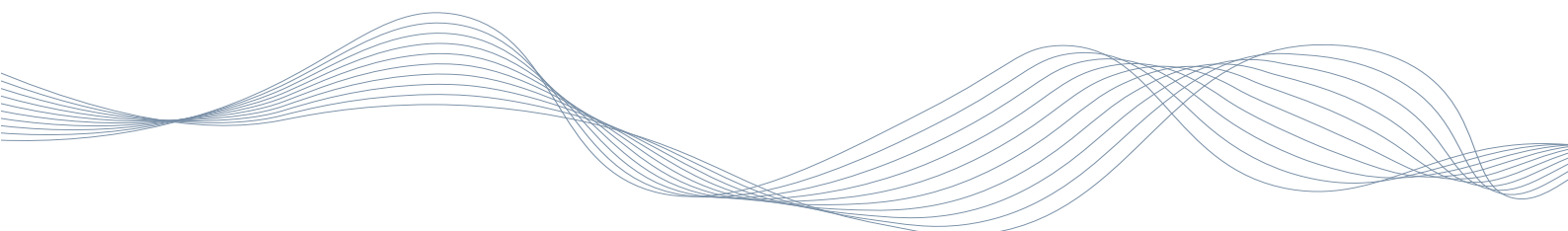
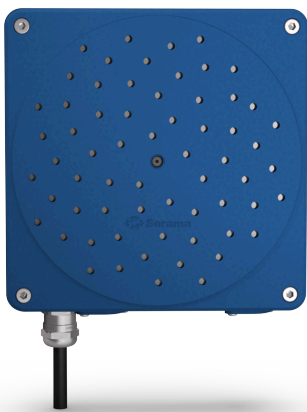


Certification pending

The Sorama L642Ex is designed to detect even the smallest unwanted emissions (leaks) in hazardous environments, as well 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 Detection (LD)
- > Partial Discharge Detection (PDD)
- > Mechanical Inspection
- > Visual light camera integrated



## Sorama L642Ex



### INVENTORY

Sorama L642Ex	1
Quick start guide	1

### PHYSICAL PROPERTIES

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

### STORAGE

<b>Internal</b>	Approx. 7Gb
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### CAMERA

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

### ACOUSTICS

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

## Sorama L642Ex



### MEASUREMENT FEATURES

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<b>Frequency range</b>	10 Hz - $\approx$ 60kHz
<b>Frequency resolution</b>	59Hz @ 60kHz, 110Hz @ 120kHz
<b>Beamforming (far field)</b>	Up to 60kHz
<b>Operating distance</b>	0.5m to 120m*

### DATA FORMATS

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

### API FUNCTIONALITY

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

\* Depends on environmental conditions.

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### LEAK DETECTION (LD)

On device leak detection 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:

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

### PARTIAL DISCHARGE DETECTION (PDD)

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

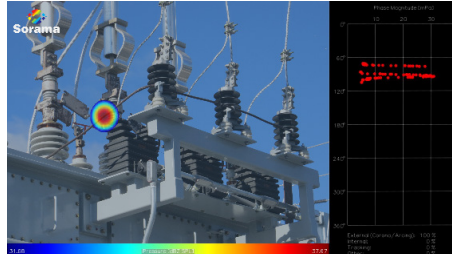
On device mechanical inspection tools can be used to identify and detect early faults in machines and assets (faulty or worn-out bearings, pump cavitation, faulty or worn-out rollers etc) over time.

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.

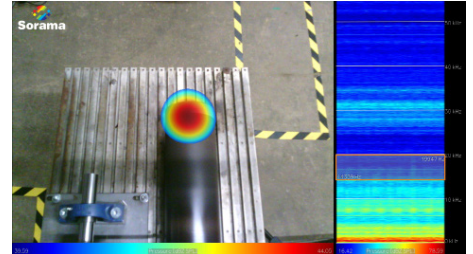
## Sorama L642Ex



Leak Detection



Partial Discharge Detection



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

-40° C to 60° C  
-40° F to 140° F