

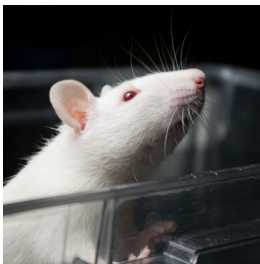
# Environmental Sensor Array (ESA)

The Sable Environmental Sensor Array (ESA) provides the unique ability to detect subtle or significant signals in the experimental operating environment that may influence research quality or confound its analysis. Intrusive disturbance, variations in temperature or barometric pressure, the impact of sound or light level: You will be able to see and document possible triggers for anomalous animal or cellular behaviors that typically go unexplained. Now you have an indicator of relevance or irrelevance. Now you can evaluate the data and avoid the debate.

## How Does it Work?

The ESA acts as an environmental “hexacorder”, capturing 6 different parameters at once: humidity, barometric pressure, temperature, light, occupancy and sound. Information captured is integrated and synchronized with Sable’s Promethion MetaScreen, CaloScreen or SableScreen data collection and analysis software applications, allowing researchers to correlate environmental changes with study data.

## Reproducible, Reliable Results



The ESA captures the data needed to build confidence that the integrity of your data aligns with the planned quality of your study design. Collaborators, peer review and animal care committees will rest assured by the fact that you are constantly monitoring environmental variables.

The ESA is easy to use and extremely versatile, allowing application in a broad range of study types. It can be teamed with any Sable system for use in mouse and rat metabolic phenotyping, room calorimetry, genomics, metabolomics, cellular metabolism studies and more.



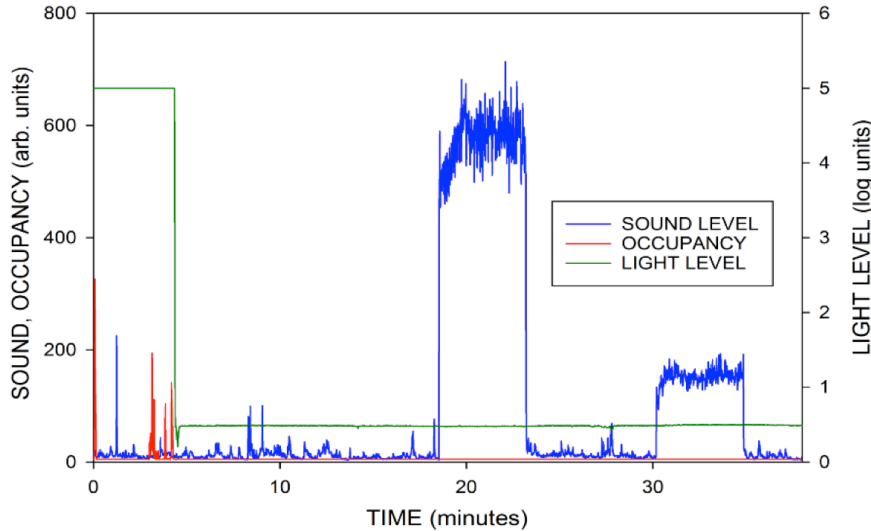
### Records:

- Humidity
- Pressure
- Temperature
- Light Level
- Occupancy
- Sound

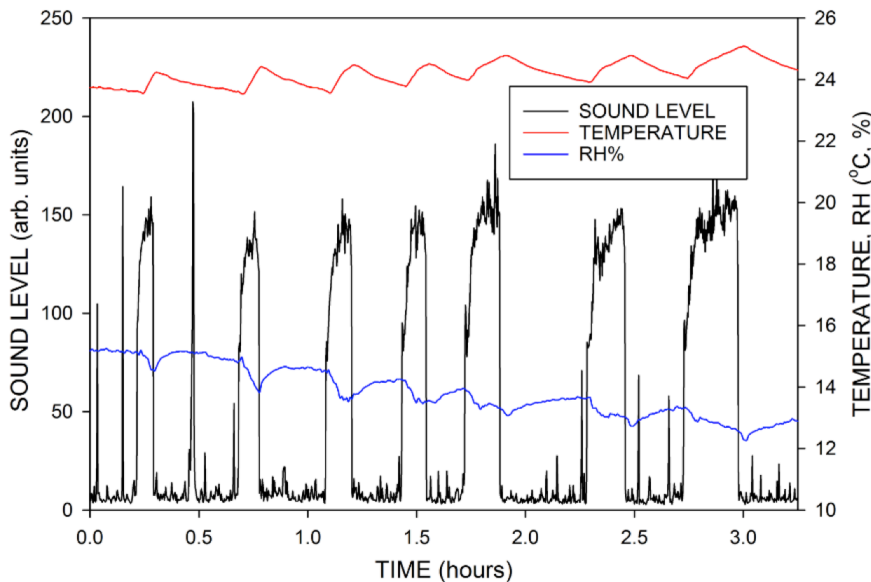
- Provides surveillance over the study environment, enabling researchers to determine if environmental conditions are within the desired range
- Detects environmental changes that may affect study results
- Integrates with Sable Classic and Promethion systems for correlation with respirometry, calorimetry, metabolic and behavioral data
- Compatible with any Sable Systems data acquisition software
- Includes flexible tripod mount for precise positioning

# Environmental Sensor Array (ESA)

The ESA was placed in an office. The occupant moved around the office (red trace = PIR occupancy sensor; blue trace = sound levels), then turned off the office light (green trace). Occupant shut the door, then opened it slightly to allow dim light from an exit sign to enter the room (~4 minutes). The sound trace shows background sound levels, and intermittent operation of an air conditioning unit (~20 and ~35 minutes).



The interplay between sound level (black; air conditioner noise barely audible to the human ear), temperature (red) and relative humidity (blue); note that location was in Las Vegas, hence the low RH.



## SPECIFICATIONS

### DIMENSIONS

2.2 x 3.5 x 1 in. (57 x 90 x 26 mm) W x D x H

### MATERIALS

Anodized aluminum chassis and end caps;  
ABS bezels

### OPERATING TEMPERATURE

0° C to 65° C

### SENSOR RESOLUTION

- Temperature resolution 0.01 C
- RH sensor with 0.01% resolution, switchable to WVP at 0.001 kPa (RMS)
- BP sensor with 0.001 kPa resolution
- Light sensor with 0.05 Lux – 1 Lux resolution (autoranging)
- Sound sensor with 20 – 100+ dB range
- Occupancy sensor with 10 m human detection range

### COMMUNICATIONS

SableCAN protocol via TRRS cable



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