Frequently Asked Questions

S.sensing® LeG

Airborne Legionella Monitoring System

A) Monitor Operation

1) Can it be installed in any type of industry?

Essentially yes. Be aware that the monitor is designed for operating in environments without excessive dust, to avoid interference with the optical monitor.

2) How often does the LeG periodically draw sample of air?

Every 5-15 minutes, depending on the needs of the facility. The LeG draws periodic samples of air over a long period of time. These microbursts of air are used to recycle the air being analysed in the disposable cartridge. By continuously analysing these microbursts of air you can monitor the general air condition of a room or area over a drastically extended period of time compared to traditional methods.

3) What is best practice for monitoring a new environment if I do not know the Legionella or pathogen levels?

If there is insufficient prior information on the microbiological load in the target environment it is advised to start with a Broadband cartridge before installing the Legionella cartridge. The atmosphere contains a lot of bacteria and microorganisms that do not affect human beings - total disinfection is rare in a cooling unit. Using the Broadband cartridge initially will allow you to determine the general levels of microbial contamination. Following this process, the specific Legionella cartridge can be used.

4) What happens if Legionella is detected?

There are 3 immediate notifications to prompt intervention:

i. The LCD display shows “Legionella detected - take action”
ii. An email alert is sent from My Kurita Portal to designated personnel list
iii. A Detection Report can be viewed on My Kurita Portal

The device will automatically cease air sampling and the cartridge door will be closed. The user is alerted to change the cartridge. Following the guide provided with the cartridge the slide tab is inserted to ensure no spores or pathogenic species can escape into the local environment. The cartridge is removed with care, inserted into the disposal bag as per instructions and disposed of to a biohazard waste bin.

5) How long does it take to receive an alert if contamination is present?

Sampling and analysis are ongoing and there are no external incubation steps. The full process of detecting Legionella typically takes 24-48 hours from point of sampling viable Legionella bacteria in the air. Once Legionella is detected an alert is issued immediately via My Kurita Portal.

6) Does the LeG make recommendations if a pathogen is detected?

No. The Detection Report can be accessed on the My Kurita Portal and includes the detection time and date together with the environmental conditions at time of detection. An on-demand report is available to assess an image of the pathogen if required.

Your Kurita representative can also be on the designated alert list to ensure proactive actions.

7) Do you use different testing methods to a laboratory?

The LeG combines fundamental laboratory practices and methodology of detection, with specifically engineered optical measurement technology to allow for remote and rapid monitoring. The LeG is a detection system, it is not a formal identification device.

The output is to determine the presence of Legionella as well as an image of the pathogen for further visual confirmation if required.

8) Does the system provide a pathogenic density level (CFU count)?

No. The LeG provides an alert and report when there is a positive result.

9) What is the facilitation media?

A customised agar vessel in the cartridge houses the growth facilitation media. The cartridge may be either Legionella agar, for standard monitoring, or Broadband agar, typically used for initial assessment of the environment before Legionella monitoring.

10) Does the device require calibration?

Each monitor carries out a robust auto-calibration procedure that occurs with every newly loaded cartridge to ensure correct operation of the optical system. Remote diagnostics also enable system performance monitoring.

B) Installation

1) What is the coverage / detection area for each monitor?

There is no strict recommendation on how many monitors are required per area – instead, it is recommended that an assessment of the environment should be carried out before installation. Areas where processes are taking place and potential microbiological hazards may be expected to occur are generally the best locations.

This type of assessment may be compared to what is recommended for settle plate testing. The advantage with the LeG system is that continuous monitoring is in place, rather than periodic testing.

2) Where should the monitor be installed?

In general, monitors should be distributed across areas with potential legionella risk.

For indoor installations, the monitor requires access to a power socket and internet connection via either an Ethernet port or GSM router.

The monitor is ideally located on an unobstructed and unshielded wall surface, ideally 2 metres away from any other instrumentation.

The height of the monitor should ideally be approximately 1.5 metres from the floor or whatever height is convenient for loading or unloading cartridges.

For outdoor installations, the monitor is housed in a specialised external enclosure with a self-contained GSM router. As such the location requires sufficient GSM signal strength and access to electrical power (connected by an electrician).

3) Do the monitors require connection to a hub?

No hub is required. Each monitor requires internet connection via connection to either a GSM router or Ethernet port.

4) What are the technical specifications of the GSM router (if used rather than Ethernet)?
Router specification can be found here: https://teltonika-networks.com/product/rut241/

C) Cartridge System

1) Is it possible to detect additional pathogens beyond those listed on your website?
Yes – the LeG is capable of detecting a range of bacteria, yeasts and moulds using bespoke cartridges.

2) Is the cartridge safe or is there a risk of it becoming an additional source of contamination after detection?
Once a detection alert is sent at the first signs of pathogen growth, the air flow through the cartridge is locked down via an automatic system. Following the guide provided the cartridge can be fully sealed before removing from the monitor using the plastic tab provided. It is recommended to remove the cartridge for disposal or further testing as soon as is practical.

3) Can one monitor house different cartridges?
One monitor can host only one cartridge per monitoring cycle. However, every monitor can be used with the full range of cartridges available.

4) How is one type of pathogen targeted?
The cartridges use a selective agar. This selective agar has optimal nutrition for the target organism and specific ingredients to prevent the growth of other bacteria. This selectivity coupled with characteristic optical analysis allows us to determine the pathogen within a fine margin of error.

5) How long do cartridges last once loaded in the monitor?
Under optimum conditions each cartridge will last up to 2 weeks.

6) What is the operational temperature for cartridges?
The LeG has a temperature management system (heating only) regulated to maintain a constant temperature independent from the outdoor temperature. This system is effective between 10°C and 37°C.

Each cartridge is accompanied by a 'standard operating environment' checklist. Installation in environments outside of this specification will likely affect the unit's ability to operate at full efficiency.

7) Operational temperature range is 10-37°C. What happens outside of this range?
The use of a specialised external enclosure is recommended to control the environmental temperature – either heating or cooling to bring it to its operational range.

Lower Temperatures:
If the temperature is lower than 10°C, Legionella may still be present in the water sample but in a dormant state. Air sampling can be paused during this temperature range – or if ongoing testing is required the addition of a heater unit to the outdoor enclosure will maintain a temperature range where incubation is possible.

Higher Temperatures:
Direct exposure to sunlight should be avoided and the equipment placed in a shaded area close to the cooling tower.

Above 37ºC growth may still be possible, but it is likely to negatively affect detection accuracy.

8) What is the expected incubation time?
The typical incubation time for Legionella is 24-48 hours from point of microbe collection.

9) Does incubation time change at +10 or +20 degrees?
No, the monitor maintains a constant temperature between 10-37ºC

10) Will dust affect the LeG
Excessive dust may impact the monitor's effectiveness.

11) How do I store my cartridges?
The cartridges are sterile and sealed. Refrigeration between 4-8°C is required for Legionella cartridges prior to use.

12) How do I dispose of cartridges?
Unused cartridges may be disposed of in general waste bins. Used cartridges should be disposed of as biohazardous waste to ensure safety.

13) Is specialist training required to manage installation and disposal of cartridges?
No specialist training is required. Each cartridge comes with full instructions on how to load and dispose of cartridges safely and can be performed by non-technical personnel.

D) Intervention

1) What action is appropriate in the event of an alert?
The LeG is designed to provide an early warning of Legionella risk. The monitor is not designed to report a microbial load or quantity. In the event of an alert, follow up testing at a laboratory by water sampling is recommended to determine the load level in the water.

Other appropriate actions may include:

- Inform your SHEQ department or related department in your company
- Inform other necessary departments of your organisation
- Ensure that necessary general safety measures and in case of need IPE are in place and used
- Contact your water treatment supplier so that the supplier may perform an assessment and define actions

In the case that your supplier is not available, you can reach Kurita anytime at: info@kurita.eu
We check this mailbox on a daily basis during European working hours. In this page you will find the phone numbers of the different regional customer support services and delegations. https://www.kurita.eu/en/us/

We also recommend that you take appropriate action in accordance with any local or national regulations concerning Legionella detection and apply the principle of Precaution (take the necessary IPE).

2) What do I do with the cartridge following an alert?
Once a detection alert is sent at the first signs of pathogen growth, the air flow through the cartridge is locked down via an automatic system.

The tab sticker must be removed and the tab inserted before removing the cartridge from the monitor. Please refer to the instructions provided with each cartridge.

Removal for disposal or further testing is recommended to be carried out as soon as is practical.