

LaraSystems – Continuous Ventilation Hygiene

Executive Summary

The quality of a hotel's indoor environment directly affects guest comfort, complaint management and brand perception. In ventilation systems serving guest rooms, public areas, conference facilities and wellness zones — often operating continuously and under varying loads — the microbiological condition of hidden surfaces inside air handling units and ductwork can be difficult to monitor.

1. Hotel-Specific Hygiene Risks

High and fluctuating guest occupancy, seasonal peak periods, events, as well as wellness and humidified areas create very different operating conditions. A microbiological issue may result in guest complaints, targeted inspections, extraordinary cleaning, the temporary closure of affected areas or reputational risk. Actual risk should therefore always be assessed individually for each building, air handling unit and the zones it serves.

Regardless of guest occupancy, seasonal variations in outdoor temperature and humidity, together with the temperature difference between indoor and outdoor air, can also influence condensation on internal surfaces within air handling units and ductwork. Even during periods of low occupancy or in intermittently used hotel wings, these conditions may favour the development of microbiological contamination, particularly in systems serving wellness and humidified areas.

Traditional duct cleaning remains important, but it is generally periodic and requires physical access to the ductwork. Maintaining regular microbiological control between cleaning interventions represents an additional operational challenge, particularly where continuity of service and uninterrupted use of guest areas are essential requirements.

2. The Role of LaraSystems in Hotel Operations

LaraSystems products are automated air-duct disinfection systems designed for integration into existing air handling units and ductwork. They atomise a mixture of mains water and Sanosil Super 25 Ag hydrogen peroxide-based biocidal solution into the airflow. Treatment cycles can be scheduled in advance and fully logged.

The Lara APP provides real-time status monitoring, notifications, automatic cycle scheduling and a complete disinfection log. Multiple devices, plant rooms or properties can be monitored from a single interface, and the system can also be integrated with a Building Management System (BMS). This is particularly valuable for hotels with multiple wings, areas serving different functions, or portfolios consisting of several properties.

3. Reference Results and System Design

The system is designed on the basis of an on-site survey and adapted to the specific conditions of each property. According to documented reference measurements from an operational Lara System installation, **after one treatment cycle the bacterial load decreased from 550 to 10 CFU/m³, while mould levels decreased from 70 to 10 CFU/m³. After 12 days, the bacterial count had increased to 90 CFU/m³.**



This represents a specific, documented on-site result and is provided as an indication of the potential effect of the treatment. Actual results in any individual building may vary depending on local conditions.

Where certification, quality assurance or internal documentation requirements justify it, on-site baseline and follow-up measurements can also be provided as a separate, chargeable service.

4. Operational and Portfolio-Level Value

Automated operation reduces the need for ad hoc organisation and manual intervention. Treatment dates and parameters are fully traceable, while equipment status and disinfectant consumption can be monitored continuously. These records can be incorporated into the hotel's internal hygiene, maintenance and quality-management documentation.

Centralised supervision of multiple devices or properties can also support more consistent reporting and clearer allocation of operational responsibilities.

For developments following WELL, LEED or BREEAM principles, recorded consumption and hygiene data may provide relevant supporting information. However, whether such data can formally contribute to certification must always be determined according to the requirements of the applicable certification scheme and the project auditor.

5. Integration with Other Hotel Systems

LaraSystems products can be integrated with the Building Management System, enabling device-level status monitoring, user access management, notifications and traceable treatment logs.

The same information is also available through the proprietary Lara APP.

6. System Sizing and Operating Conditions

Hotels typically operate several air handling units of different capacities. Selecting the appropriate Lara System model and determining the required treatment points therefore requires an on-site assessment.

For a two-channel Lara System — meaning a system with two treatment points — operating once per week, calculated annual water consumption is 104 litres, while annual electricity consumption is 55.5 kWh.

Actual consumption depends on the selected model, the number of treatment points and the treatment schedule.

Maintenance is required after the consumption of 5 litres of disinfectant, but no later than one year after commissioning.

7. Scope of Application and Safe Operation

LaraSystems products support the microbiological hygiene treatment of internal surfaces within air handling units and ductwork. The system can treat the surface of a drain pan; however, it does not disinfect standing water contained within the pan. In a hotel environment, treatment points, treatment timing, the use of affected zones and all relevant safety protocols must be defined and documented specifically for each installation.

The Sanosil solution is dosed automatically in controlled quantities within a closed system. During the process, hydrogen peroxide decomposes into water and oxygen.

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LaraSystems

Predictable, measurable and documented ventilation hygiene for hotel operations.

Breathe safe. Live better.

