# ATP CLEANING VERIFICATION

## WHAT DOES CLEAN REALLY MEAN?

### Implementing ATP Cleaning Verification in Janitorial and Sanitation Processes

### Step 1: Understanding ATP Cleaning Verification

ATP Cleaning Verification Systems are used to help organizations achieve optimal standardized cleaning levels. These systems use bioluminescence technology to identify and measure adenosine triphosphate, commonly known as ATP. This measurement helps organizations understand if a surface has been cleaned properly and is safe for use, or if it needs further corrective action such as re-cleaning.

**What is ATP?**
ATP is an energy molecule found in all living cells that allows cellular metabolism to take place. All organic matter contains ATP. In healthcare facilities, organic matter such as bodily fluids, blood, and bacteria left on surfaces can become a point of crosscontamination between patients and staff, which can lead to infections if not properly cleaned. Therefore, the detection of ATP on a surface after cleaning is an indication of cleaning efficancy.

**What is bioluminescence?**
ATP tests contain an enzyme called luciferase which produces a bioluminescence (light-producing) reaction when it comes into contact with ATP. The light emitted from the reaction is measured and quantified in the luminometers. The unit of measurement for the emitted light is Relative Light Units (RLU).

**Higher Contamination = Higher RLU**
The quantity of light generated by the bioluminescence reaction is directly proportional to the amount of ATP present in the sample. The reaction is immediate, allowing results to be processed in real-time. Results are then expressed numerically on the screen in RLU.

**How are test results tracked?**
Test results can be tracked on your luminometer and software by location, plan, and user. This information allows users to clearly associate results with the specific location, or group of locations tested, and who performed the tests.

- **Locations:** Test locations are test points, from which you take a sample for testing. These are surfaces that are highly trafficked. An example of a location is “Front door-handle”.
- **Plans:** Test plans are groups of locations that are tested one after each other, grouped together, or tested on a specific day or site. An example of a plan is, “Building 1 – First Floor. Although not mandatory, Plans are helpful to analyze data when generating reports within SureTrend.
- **Users:** Users are the people using the luminometer and performing the testing or the people cleaning.

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## Step 2: Setting RLU Limits and Identifying Test Locations

Your luminometer comes with default upper and lower limits for quantifying results; values less than the lower limit are designated as “pass”; results greater than the upper limit are designated as “fail” and results between the lower and upper limits are designated as “caution”.

These default limits of are based on years of food & beverage processing and healthcare experience, and third-party studies. Below are examples of RLU limits for each system. We recommend that you determine your own custom limits based on the instructions below.

| | EnSURE™ Touch | EnSURE™ | SystemSURE Plus |
|---|---|---|---|
| **Default Upper RLU Limit** | 60 | 60 | 30 |
| **Default Lower RLU Limit** | 20 | 20 | 10 |

### Setting RLU Limits

Setting appropriate RLU limits is a fundamental part of running a successful ATP program. RLU limits will be different for each type of surface. Although ATP systems are set with default RLU limits, we recommend that ”gold standard” limits be determined for each type of surface that you will be testing.

### How to determine the lower RLU limit

Calculate the average RLU for each location based on 5-10 test results after cleaning intervention. The lower RLU limit should be set to the average of these results.

There are two options for determining the upper limit:

**1.** Multiply the lower limit by 3

**2.** Determine the standard deviation from the test results, multiply the standard deviation by 3, and add this to the lower limit.

*Note: When establishing upper and lower limits, it is important to take into account the type of surface and its condition. Older, more pitted surfaces (older stainless steel surfaces ) can be harder to clean and get low RLU values than newer, hard-topped surfaces (new stainless steel counters).*

### Suggested Test Locations

- Elevator Buttons
- Door Handles
- Refrigerator Handle
- Bathroom Surfaces
- Desks
- Light Switches
- Common Area Tables
- Laundry Room Surfaces
- Chairs
- Keyboards/Mice
- Mailboxes/Trays
- Handrails

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## Step 3: Performing a Test – See Product Instructions for Full Details

Running an ATP Test on an ATP Cleaning Verification System can be done by following these steps:

1. Power on your luminometer and grab the desired amount of ATP Test swabs.
2. Sample Collection – remove the swab from the tube and swab a 4 x 4 inch area on the desired test surface. Then replace the swab back into the tube.
3. Sample Activation – Break the Snap-Valve at the top of the test by bending it forward and backwards and then squeeze the bulb to expel the liquid into the tube. Shake the tube for 5 seconds to allow the liquid to come in contact with the swab tip.
4. Measurement – If you have inputted plans and locations, select the desired location. Insert the swab into the read chamber and close the lid. Hold the luminometer upright, and press "OK" to initiate the test. Once the on-screen count-down has completed, your test results will be shown on the screen.

## Example of Acceptable RLU Values for High-Touch Areas

A study was done on a senior living facility to assess cleanliness with an ATP Cleaning Verification System in which over 200 ATP samples were collected before and after cleaning. Surfaces were cleaned to acceptable levels (Results on the SystemSURE plus <50 RLU are considered acceptable in a non-operating room healthcare environment).

If an EnSURE or EnSURE Touch is being used, <100 is considered acceptable due to their increased sensitivity.

*Figure 1: Effect of Intervention on Cleanliness Levels by Specific Location*