HyServe

Lumitester™ PD-30 + LuciPac™ PEN

Innovative hygiene monitoring using ATP-AMP measurement

Discover a new dimension in hygiene monitoring

Come clean with HACCP

Do you manufacture cosmetics, juice or foods? Do you prepare water? Do you transport foodstuffs in tankers? Do you inspect cleaning in production? Are you responsible for hygiene in hospitals? Do you need quick and safe results in hygiene monitoring?

The degree of cleanliness plays an important role wherever HACCP concepts (Hazard Analysis and Critical Control Points) have to be implemented. Lumitester PD-30 and LuciPac Pens (LuciPac Pen: for dry and moist surfaces; LuciPac Pen AQUA: for liquids and water; LuciPac Pen LS: for endoscopes and hard-to-access locations) provide you with certainty within the shortest time that these areas are hygienically clean.
Food manufacturers use these to measure bacterial contamination, as do employees at leisure facilities such as spas, saunas and swimming pools. Restorers can verify contamination on works of art. Airlines can check the cleanliness of kitchens and toilets in real time. And large kitchens, hospitals, medical and pharmaceutical companies use them to ensure high levels of hygienic safety.

Cleanliness can be measured! The Luminometer PD-30 can be used according to DIN 10124:2009-12.


Mode:001
#0040
RLU
1085
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3000
1500
Lumitester PD-30
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MODE
F
kikkoman

Safety in just five steps!

Hygiene monitoring in 30 seconds

Take a sample from a surface using the sterile cotton bud (LuciPac Pen) or use the sterile LuciPac Pen AQUA sampler to take a sample from a liquid or water. Then the respective sampler is inserted into the first reaction chamber, which is sealed with aluminium foil. This contains a strong detergent solution and breaks down any bacteria that may be present in the sample in order to render accessible the ATP.

In the next step, this mixture reacts with the freeze-dried enzymes located in the lower chamber. Here the luminescence to be measured is released in an enzymatic cycle.

The degree of luminescence is in direct proportion to the amount of ATP-AMP present, and can be quantified using the Lumitester PD-30 as relative light units (RLUs). The more bio-luminescence that is measured, the larger the degree of contamination. The entire process takes less than 30 seconds.

After no longer than half a minute, and without enrichment or incubation, you will know the degree of contamination from organic residues, such as bacteria. Compared to conventionally-available luciferase, the patented, manufactured, genetically engineered enzyme of the firefly is tolerant to various detergents. Thus any residues of cleaning products will not, in general, inhibit the reaction, and the measurement and result will not be distorted (patent no. EP 1 041 151 A1).

1

Moisten the swab with water (if the surface being investigated is dry).

2

Wipe the swap over the object to be tested. Put the swab back in its cover and push it through both aluminium foils as far as the end stop.

3

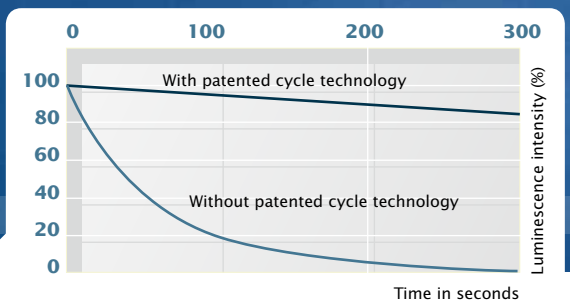
Shake the LuciPac Pen several times (vertical movement up and down) so that all of the liquid flows into the reaction chamber. As soon as the enzymes have dissolved, put the LuciPac Penrod in the device.

4

Press "Start". It takes just 10 seconds to measure the level of cleanliness.

5

The measurement of invisible contamination is displayed as a numerical value in RLUs.



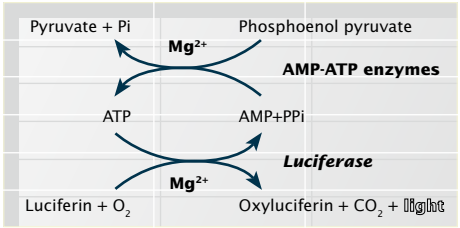
Luminescence stability

The patented cycle technology and the measurement of AMP allows an increase in sensitivity, better detection of possible food residues and a stable light signal.

What is measured, and how?

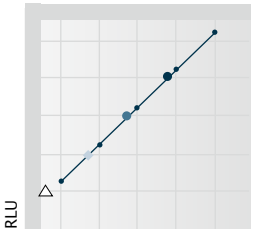
The patented procedure of the Lumitester PD-30 is based on the measurement of bio-luminescence. This is produced through the enzymatic breakdown of adenosine triphosphate (ATP) and adenosine monophosphate (AMP) using luciferase and pyruvate phosphate dikinase (PPDK, patent no. US6054305).

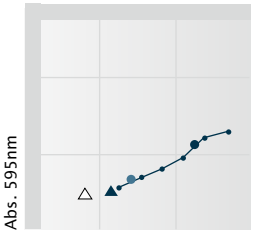
ATP and AMP are molecules that are present in the cells of all living organisms – irrespective of whether they are animals, plants, moulds, yeasts or bacteria. AMP is produced from ATP in bacteria when these are in a state of rest and are shutting down their energy budget. ATP breaks down into AMP in heat-treated foods by the action of heat and enzymes. These food residues form an ideal nutrient substrate for ubiquitous microbes, whose growth contaminates further process products. Classic ATP measurements do not detect this AMP in organic residues and therefore provide a less accurate assessment of cleanliness. Protein detection through staining requires a longer measurement period and is significantly less sensitive.
Using the Lumitester PD-30 and the LuciPac Pens, you can measure the degree of contamination. Through simultaneous measurement, you can have a reliable indication and meet legal conditions in an exemplary way.



Patented AMP-ATP cycle technology

Lumitester PD-30 lets you measure ATP and AMP as part of the ATP cycle. This offers users increased security.





ATP-AMP detection v. protein detection

The detection of ATP and AMP is much more sensitive compared to protein detection using staining. ATP-AMP measurement is characterised by outstanding linearity over the entire measurement range.

What the measured value says about the degree of hygiene

You establish the limit values that are to apply to the cleaned surface. For flat and smooth surfaces (such as glass and metal), a limit value of 200 RLUs is normally sufficient.
In the case of uneven surfaces (such as plastic products, or in the case of scratches), 500 RLUs should not generally be exceeded. In areas where sterility / the highest levels of cleanliness should be present, a result below 20 / 50 RLUs should be achieved.

Always carry out monitoring before disinfection and after cleaning. Only then can you obtain meaningful values. Then establish appropriate measures dependent on the results.

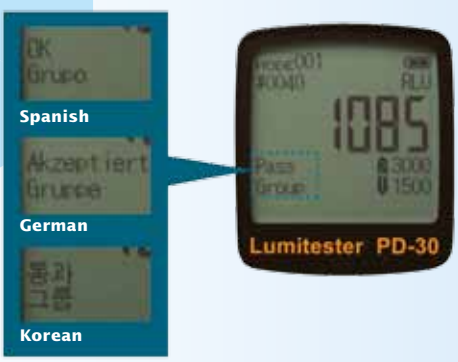
New functions

Temperature compensation
One property of the reagent is that the luminescence varies dependent on the temperature. The temperature dependency of the reagent can be corrected using temperature compensation. The factory setting of the temperature compensation is switched to "OFF" and it works in the range from +10 to +40 °C.

Self-diagnosis
Self-diagnosis is a function for inspecting for possible contamination in the measuring chamber. This function actively investigates the cleanliness of the measuring chamber.

Eight languages
Eight languages are available for the display, and can be selected through the display after switching on:
English, German, French, Spanish, Korean, Japanese, Chinese
(simplified and traditional)

Example:

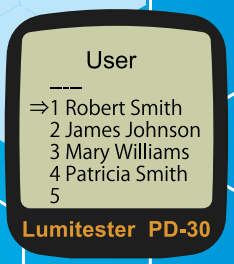


Data-analysis software – Inspection site

The inspection site is shown on the display after appropriate programming.

Data-analysis software – User

Processing plans can be programmed for different users.



Benefits at a glance

Particularly simple and fast hygiene monitoring

Benefits for you from the combination of Lumitester PD-30 and LuciPac Pens:

1. Very simple and safe to operate
2. Patented simultaneous measurement of AMP and ATP for increased sensitivity
3. Patented and detergent-tolerant luciferase for validated results
4. Patented cycle technology increases the luminescence stability and extends the signal
5. The world's lightest and smallest device
6. Extremely fast and accurate measuring method

Image to scale

Lumitester PD-30 protective cover

The protective cover of the Lumitester PD-30 is included.

Lumitester PD-30 + LuciPac Pen / LuciPac Pen AQUA
LuciPac Pen-LS at a glance

Lumitester PD-30

- ***NEW*** ▪ Temperature compensation
- ***NEW*** ▪ Self-diagnosis
- ***NEW*** ▪ 8 languages
- ***NEW*** ▪ Data-analysis software
- ▪ Reliable monitoring of liquids, and dry and moist surfaces
- ▪ Patented measurement of ATP and AMP increases the sensitivity
- ▪ 2,000 memory spaces
- ▪ 400 modes
- ▪ Measurement in RLUs – relative light units
- ▪ Smallest device in the world
- ▪ Lightest device in the world
- ▪ Ready for use in 8 seconds
- ▪ Auto-calibration
- ▪ For auditing, the device can be sent to us for recalibration and certification
- ▪ Data transmission via USB to PC
- ▪ Documentation of the results
- ▪ Optional graphic analysis of the data
- ▪ Excel-based software is easy to operate
- ▪ Software in English facilitates international use
- ▪ Definition of your own limit values to monitor individual checking samples
- ▪ 2 year guarantee
- ▪ CE mark and produced to ISO 9001
- ▪ Meets DIN 10214: 2009-12
- ▪ Supplied with self-supporting protective cover

LuciPac Pen-LS (Long Swab)

LuciPac Pen / LuciPac Pen AQUA / LuciPac Pen LS (Long Swab)

- ▪ **LuciPac Pen:** For dry and moist surfaces
- ▪ **LuciPac Pen AQUA:** For liquids and water
- ▪ **LuciPac Pen LS:** For endoscopes and hard-to-access locations
- ▪ Heat-sealed and unbreakable swab
- ▪ Swabs can be removed individually from resealable packaging
- ▪ Detergent-tolerant enzymes – low inhibition from detergent residues
- ▪ High stability of swab at room temperature
- ▪ Greatest sensitivity due to patented simultaneous measurement of AMP and ATP
- ▪ Shelf life: 15 months at 2 – 8°C; 14 days at 25°C; 5 days at 30°C.
  The product has a shelf life of up to 30 days at temperatures of 20°C or less.
  If the swabs are cooled again, the labelled shelf life of 15 months then reapplies!

LuciPac Pen AQUA

Product overview

Lumitester™ PD-30 + LuciPac™ PEN

COMBINED PACKAGE

Cost-saving opportunity with the option of requesting swabs within one year:

Lumitester PD-30 +
10 x LuciPac Pen kits (20 x 5 swabs)

ID number: 1 402 655

Lumitester™ PD-30 + LuciPac™ PEN AQUA

COMBINED PACKAGE

Cost-saving opportunity with the option of requesting swabs within one year:

Lumitester PD-30 +
10 x LuciPac Pen AQUA kits (20 x 5 swabs)

ID number: 1 402 656

	Lumitester™ PD-30
Detection limit	10^{-15} mol/ATP/test
Measurement time	10 seconds
Measurement result in	RLUs – relative light units
Memory spaces	2000
Display	LCD
Data transmission	USB cable
Energy	2 x AA batteries
Size	65 x 175 x 32 mm
Weight	235 g (excluding batteries)
Package	2 x AA alkaline batteries, cleaning brush, strap, short instructions, CD-ROM with analysis software for PC, protective cover
ID number	1 402 653

	LuciPac™ PEN / LuciPac™ PEN AQUA / LuciPac™ PEN LS
Product form	Swab, ATP extraction reagent, integrated typtest reagent, including luminescence reagent
Packaging	**LuciPac™ PEN / LuciPac™ PEN AQUA** One kit contains 5 aluminium pouches; one pouch contains 20 swabs (100 swabs in total). The swabs and pouches can be extracted and resealed individually. **LuciPac™ PEN LS** The Lucipac Pen LS kits consist of 40 individually packed sterile rods The 40 cm-long swabs are available in two different diameters: Ø 2.8 mm and Ø 3.2 mm. In addition, the kit contains 40 (2 x 20) Lucipac Pen AQUA.
Storage	Up to 15 months from production at 2–8° C; 14 days at 25° C; 5 days at 30° C. At 20° C or cooler, the product will keep for up to 30 days. The swabs must not be frozen.
ID number	1 002 671 **LuciPac™** PEN 1 002 672 **LuciPac™** PEN-AQUA 1 502 673 **LuciPac™** PEN-LS ø 2.8 mm / 400 mm 1 502 674 **LuciPac™** PEN-LS ø 3.8 mm / 400 mm

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