SYTRA

SANITIZE THROUGH LIGHT

The light that protects **those who help**



DIGICERTO

MADE IN ITALY

BIOVITAE®

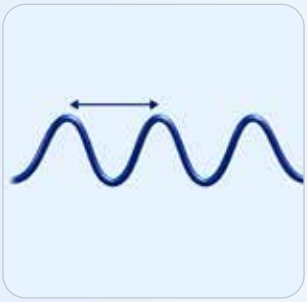
Key words to understand SYTRA BIOVITAE® TECHNOLOGY

Before we see how it works, let's look at a few simple terms.



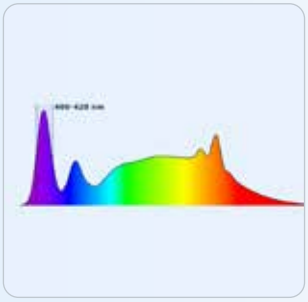
VISIBLE LIGHT

The part of the electromagnetic spectrum our eyes can see: from about 380 to 780 nm. Each wavelength is a colour.



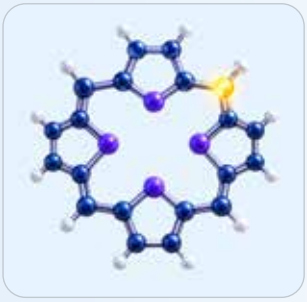
NANOMETRE (nm)

The unit used to measure light waves. A nanometre is one billionth of a metre.



400–420 nm

A narrow band of blue-violet visible light, known as the Soret band: it is the light that porphyrins absorb most. This is the light that acts against microorganisms.



PORPHYRINS AND FLAVINS

Natural molecules found in bacteria that capture blue-violet light and become charged with energy.



ROS – TINY OXIDATIVE SPARKS

Reactive oxygen species. They last a fraction of a second and damage the membrane, proteins and DNA of microorganisms.



PHOTODYNAMIC PROCESS

The complete sequence: light charges the microorganism's "antennas", oxidative sparks form and the microorganism is damaged.



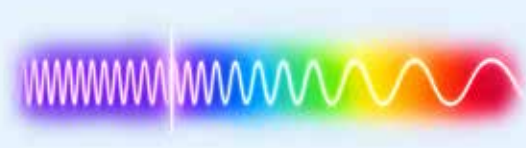
MEMBRANE AND ENVELOPE

The outer shell that protects bacteria and some viruses, such as coronaviruses and influenza. This is where the light strikes.



SANITISATION

Reducing harmful microorganisms to safe levels. A healthy environment is not one without microbes: it is one where harmful microbes are kept under control.



WHAT ABOUT UV?
UV – ultraviolet radiation

It has shorter wavelengths than visible light and more energy: it can damage skin and eyes, so it requires precautions.
SYTRA uses only visible light, with no UV

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HOW IT WORKS

Light triggers a natural process

Here is how SYTRA puts microorganisms out of action, in 4 steps.

1 LIGHT REACHES THE MICROORGANISM



SYTRA's white light contains a small blue-violet component, between 400 and 420 nm. It lights the room like an ordinary lamp and, when it reaches a microorganism, it is captured by its natural "antennas": porphyrins and flavins.

2 THE "ANTENNAS" CHARGE UP



Porphyrins and flavins absorb the energy of the blue-violet light and move into a "charged" state, like small, freshly recharged batteries. It is a natural process: these are molecules the microorganism already has, so nothing needs to be added.

3 OXIDATIVE SPARKS FORM



The charged "antennas" pass their energy to the surrounding oxygen and turn it into ROS, reactive oxygen species. These are tiny oxidative sparks: they last a fraction of a second, but immediately attack everything they touch.

4 THE MICROORGANISM IS OUT OF ACTION



The sparks damage the microorganism's membrane, proteins and DNA, so it loses vitality and can no longer multiply. As long as the light is on, the process repeats, day and night, even with people present.

CONTINUOUS
Works day and night, whenever the light is on.

WITH PEOPLE INSIDE
Visible light only, no UV: the facility does not need to be cleared.

NO CHEMICALS
No products, no residues, no extra work.



SYTRA integrates Biovitae® antimicrobial technology into the lighting of field facilities

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WHY IT IS DIFFERENT

Safe for those who live and work under its light

No one has to leave the room: SYTRA uses only visible light, with no UV.

UV OR SYTRA? YOU CAN SEE THE DIFFERENCE



WITH UV LAMPS

- The field tent is closed and cleared
- Activities stop during treatment
- Can damage skin and eyes
- Sanitisation in shifts, then people go back in
- Microorganisms return between treatments
- Requires safety procedures and trained staff
- Can damage tent fabric and plastics over time
- One more device to manage



WITH SYTRA

- The field tent stays operational
- Activities carry on without interruption
- Visible light only, no UV
- Sanitises continuously, day and night
- Keeps working as people come and go
- Just switch it on, like an ordinary lamp
- Compatible with fabrics, plastics and equipment
- Lights and sanitises: a single device

Same room, same goal.
With SYTRA, work never stops.

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WHAT THE STUDIES SAY

Tested in the laboratory and in the field

Military and civilian research centres have put Biovitae® technology to the test

99%[1]
Covid-19 virus inactivated
After 60 minutes of light

99.9%[2]
On surfaces too
Virus on plastic inactivated in 90 minutes

99.6%[3]
Tuberculosis bacillus
In 60 minutes, without chemicals

82.5%[4]
In a real emergency department
Surfaces with good hygiene levels, up from 40% before

Sources: 1. Italian Army – FOI (Sweden) – Bundeswehr (Germany), Journal of Photochemistry and Photobiology, 2021 · 2. CEA (France), 2021 · 3. Applied Microbiology and Biotechnology, 2026 · 4. VTT (Finland), Fiumicino Airport, 2019. Results obtained with Biovitae® technology under defined experimental conditions (distance, exposure time, environment). Values may vary in real-world use.

Read the studies

WHAT IT ACTS ON

BACTERIA
Reduces bacteria on surfaces, including resistant ones such as the tuberculosis bacillus.

MOULDS AND YEASTS
Helps reduce moulds and yeasts, which thrive in closed, damp spaces such as tents.

ENVELOPED VIRUSES
Inactivates viruses protected by a thin "envelope", such as the Covid-19 virus.

SYTRA does not replace cleaning: it completes it.

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WHERE IT IS USED

Safer spaces wherever they are needed

SYTRA fits into tents, modules and field facilities for emergencies.



ADVANCED MEDICAL POSTS

Triage and first aid, even during examinations.



FIELD HOSPITALS

Inpatient care and assistance for days or weeks.



RECEPTION CENTRES

Families and displaced people in crowded shared spaces.



SLEEPING TENTS

Many people close together: it keeps working at night too.



CANTEENS AND KITCHENS

Where meals are prepared and served.



SANITARY FACILITIES

Damp spaces where moulds and bacteria grow.



MODULES AND CONTAINERS

Where rescuers and displaced people live for long periods.



STORES AND SUPPLIES

Medicines, food and materials kept in cleaner spaces.



OPERATIONS CENTRES

Where the emergency is coordinated, day and night.

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WHY SYTRA

Built for those who cannot stop

Light and sanitisation in a single device, for those working in emergencies.



SAFE FOR PEOPLE
Visible light only, no UV: it can be used with everyone present.

ALWAYS ON DUTY
Sanitises continuously, day and night, as long as it is on.

NO CHEMICALS
No products, no residues, no waiting time.

ONE SINGLE DEVICE
Lights and sanitises: less to carry and install.

EASY TO USE
Installs like any other lamp.

BUILT FOR THE FIELD
For tents, modules and damp environments.

Switch on the light.
SYTRA does the rest.

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TECHNICAL DATA

Model	SYTRA	Optics	120°
Technology	Biovitae® + Digicerto lighting	CRI	>90 (typical of Biovitae® systems)
Active spectrum	400–420 nm (visible light)	Photobiological safety	IEC 62471
LEDs	High-efficiency Gen6 SMD	Use	Continuous, with people present
Luminous flux	2200 – 8000 lm	Service life	50,000 ore
Colour temperature	3000K 4000K	IP rating	IP66/IP69K
Power supply	220–250 V	UV-C emission	None
Power	15W 30W 60W	Intended use	Military and civil emergency use
Frequency	50/60 Hz	Dimensions	Length approx. 65 cm, diameter approx. 6 cm
Housing	PMMA ASA	Weight	approx. 1.3 kg
Operating temperature	-25°C / +50°C		



DIGICERTO

BIOVITAE®

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