

PORKKA BLUE

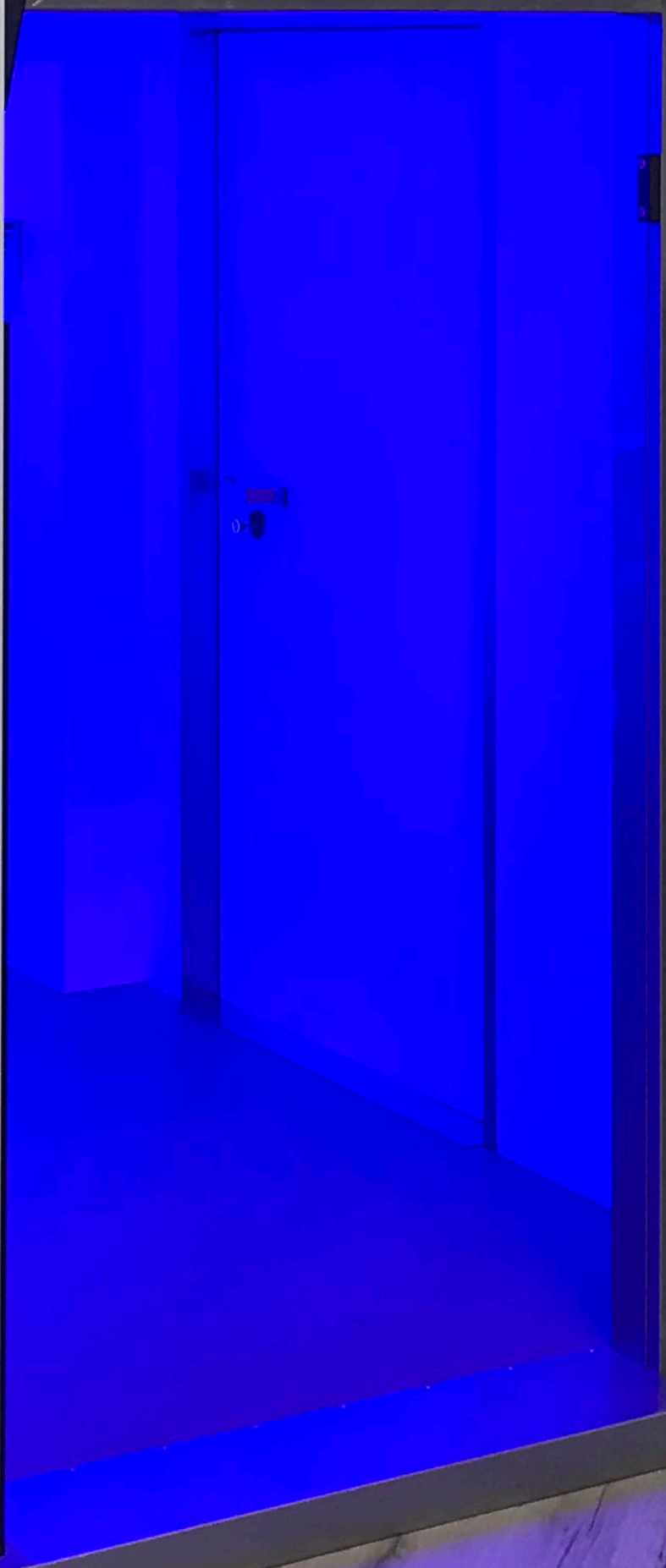
ANTIMICROBIAL SOLUTION

Porkka BLUE

For refrigerated appliances

The new, safer, more efficient and more cost effective method for disinfecting in commercial kitchens and supermarkets.

PORKKA



PORKKA BLUE ANTIMICROBIAL SOLUTION

The new, safer, more efficient and more cost effective method for disinfecting spaces and surfaces



Sources:

1) Led Tailor 12 April 2017. 2) Liebmann et al., 2010. Blue-Light Irradiation Regulates Proliferation and Differentiation in Human Skin Cells. *J Invest Dermatol.* 2010 Jan;130(1):259-69. doi: 10.1038/jid.2009.194.

Read a study: Blue light alone can eliminate MRSA without inactivation of human keratinocytes (<https://link.springer.com/article/10.1007%2Fs10103-019-02774-9>).

PORKKA BLUE photon disinfection system deploys blue light whenever the targeted space is not in use.

PORKKA BLUE photon disinfection luminaires are harmless to humans and materials. The lights are typically controlled either manually (with a switch) or automatically (with a timer).

Blue light has been shown to destroy bacteria, molds and yeasts with high efficiency. Its power can be enhanced to destroy also viruses and endospores. The antimicrobial properties of blue light have been known for decades, but only the latest developments in LED technology have made disinfection with blue light a cost-effective solution.

The best solution for surface disinfection in refrigerated appliances and similar used in eg. the following environments: nursing homes, schools and day care centers, dental clinics, veterinary clinics, grocery stores, restaurants and kitchens, supermarkets, food industry, indoor air quality, issue sites, refrigerated waste material storages, scientific and medical cabinets in hospitals, laboratories and cleanrooms.

Safe for materials and humans

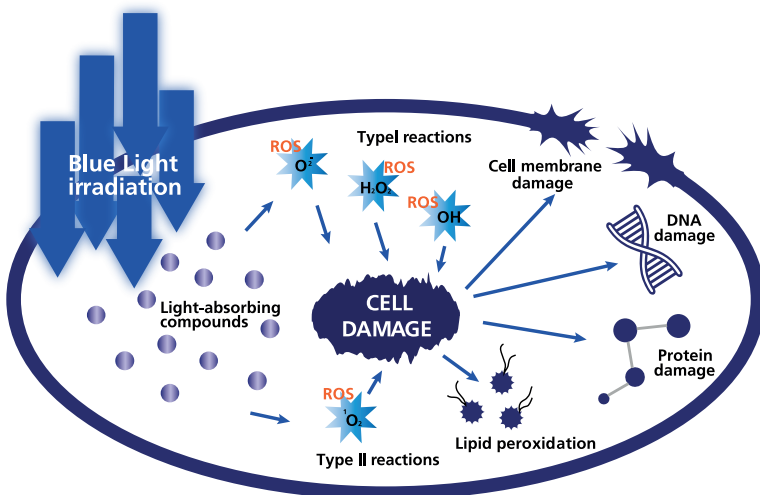
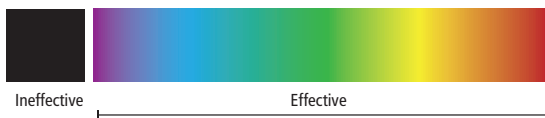
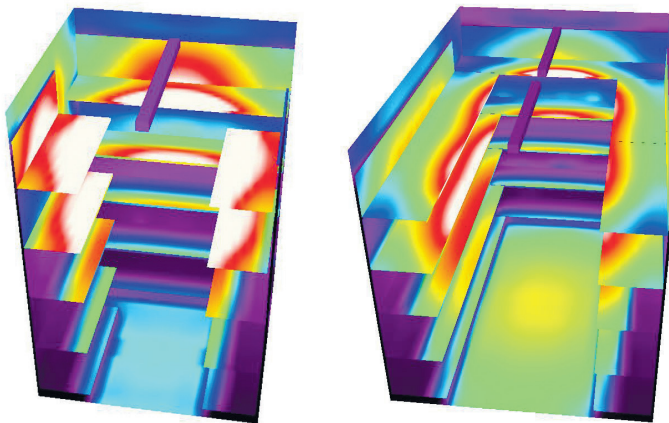
Porkka BLUE light does not use UV wave length light for added safety.

The Finnish Radiation and Nuclear Safety Authority (STUK) tested ¹⁾ PORKKA BLUE technology of photon disinfection luminaires in its laboratory. The test report shows that the radiation is non-ionizing.

The effects of blue light on human cells have been tested at high dosages. Even doses ten times higher than that used in PORKKA BLUE's solutions caused no harmful or toxic changes to the cells ²⁾.

ABOUT BLUE LIGHT

Extremely well-studied ³⁾ subject, more than 1,800 scientific publications



The ability of blue light to destroy microbes is based on its ability to energize naturally light-sensitive compounds inside the microbe so that they start producing reactive oxygen species (ROS) inside the cell. Oxygen species are extremely reactive and destroy vitally essential components of the cell (cell membrane, DNA/RNA, protein structures).

Sources:

3) 03/2020 PubMed service with search terms:

"antimicrobial" and "blue" and "light"

4-5) to be published 2020

Blue light has been shown to destroy bacteria, molds and yeasts with high efficiency. Its power can be enhanced to destroy also viruses and endospores. The antimicrobial properties of blue light have been known for decades, but only the latest developments in LED technology have made disinfection with blue light a cost-effective solution.

PORKKA BLUE disinfection system deploys blue light at night or whenever the targeted space is not in use. PORKKA BLUE disinfection luminaires are harmless to humans and materials. The lights are typically controlled either manually (with a switch) or automatically (with a timer or a presence detector).

Extremely well-studied ³⁾ subject, more than 1,800 scientific publications.

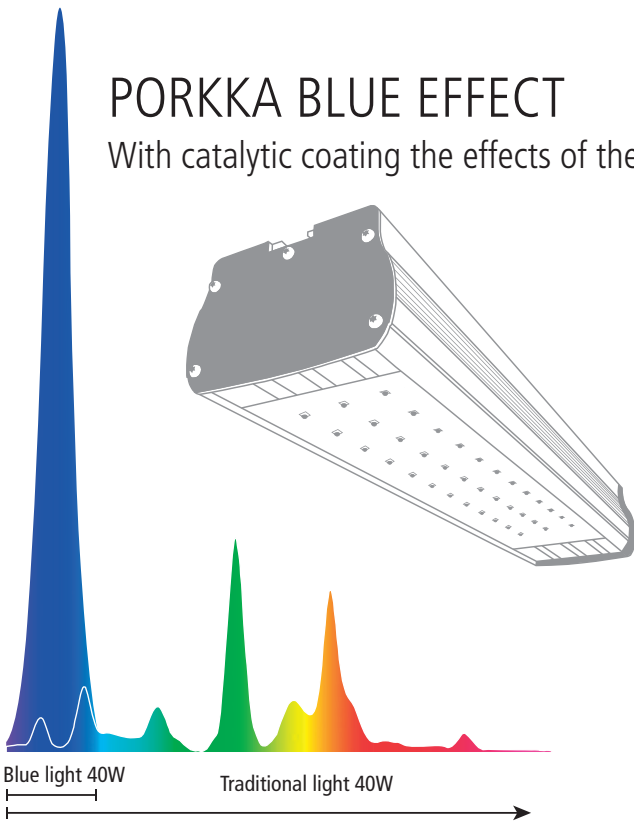
EFFICIENCY OF THE PORKKA BLUE

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University of Eastern Finland (UEF) has studied ⁴⁾ the effect of blue light in cold food storage temperatures to several bacteria and fungi (ATCC Cultures): within 24 hours all pathogenes are inactivated.

PORKKA BLUE EFFECT

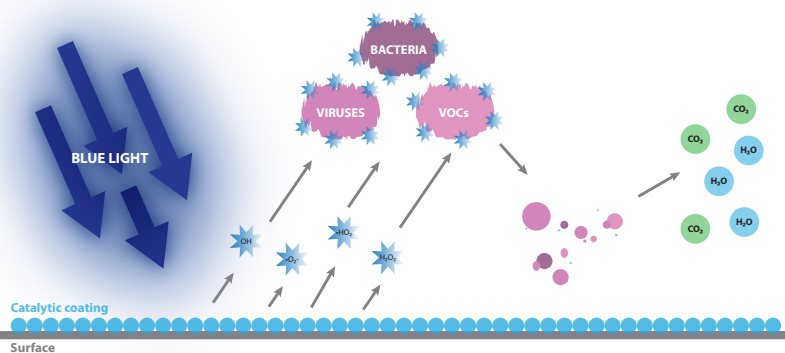
With catalytic coating the effects of the blue light is enhanced



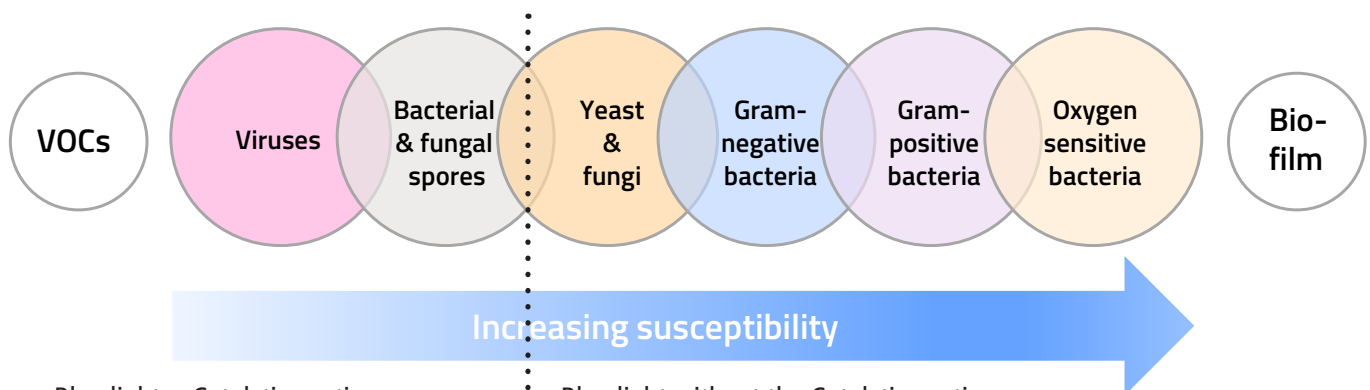
- Scientific threshold value of antimicrobial effects is decrease of 3 log cfu/ml or more (10000 units > 10 units) 5)
- Independent scientific studies show PORKKA BLUE light has a clear antimicrobial effect, eg. Salmonella enterica up to 3,5-5,6 log cfu/ml
- PORKKA BLUE effect is often comparable to UV light.
- The complex structure of the food makes it more difficult to inactivate microbes.
- PORKKA BLUE light is especially suitable for colorful food stuff.

ADDED BENEFITS OF THE PORKKA BLUE CAT

Catalytic coating enhance the effects of blue light



The efficiency of the PORKKA BLUE disinfection system can be enhanced by applying a Catalytic coating (CAT) to surfaces. The coating utilizes a phenomenon known as photocatalysis, in which the energy on light triggers a chemical reaction that produces short-lived reactive oxygen species.



Blue light + Catalytic coating combined is effective on all micro-organisms, including viruses and spores.

Reaction also destroys odours and VOC's from the air.

Blue light without the Catalytic coating is effective on all bacteria, fungi, mold and yeast.

Blue light also penetrates biofilm.

APPLICATIONS

FOOD PROCESSING AND STORAGE AREAS

SUPERMARKET, COMMERCIAL KITCHENS

Food handling areas

PORKKA COLD ROOMS: Dual purpose solution

White light – when persons are in room,
white light is activated for convenience

Blue light – for improved hygiene when door
is closed and no person in the room

BLAST CHILLERS / FREEZERS

Blue light active when in process or storage mode
to avoid microbial contamination

SCIENTIFIC Medical cabinets

Manual control available

Blue light active when in process or storage
mode to avoid microbial contamination

PORKKA

Porkka is an internationally recognised designer and manufacturer of professional refrigeration solutions. Key target industries include HoReCa, Medical and Research and Marine. Porkka's products are well known on its long life cycle, high quality and technical advantage.

Porkka brand is well known for its quality and reliability throughout the world. The success of Porkka is based on decades of experience, customer focused design and continuous product development. The materials used in Porkka products are as recyclable and eco-friendly as possible. The recyclability of our product is more than 95%.



Porkka solutions are designed and manufactured according to a quality standard ISO 9001:2015, controlled and certified by Lloyd's Register Quality Assurance. Porkka also holds the environmental certificate ISO 14001:2015, issued also by LRQA.

Porkka reserves the right to make any changes without prior notice.