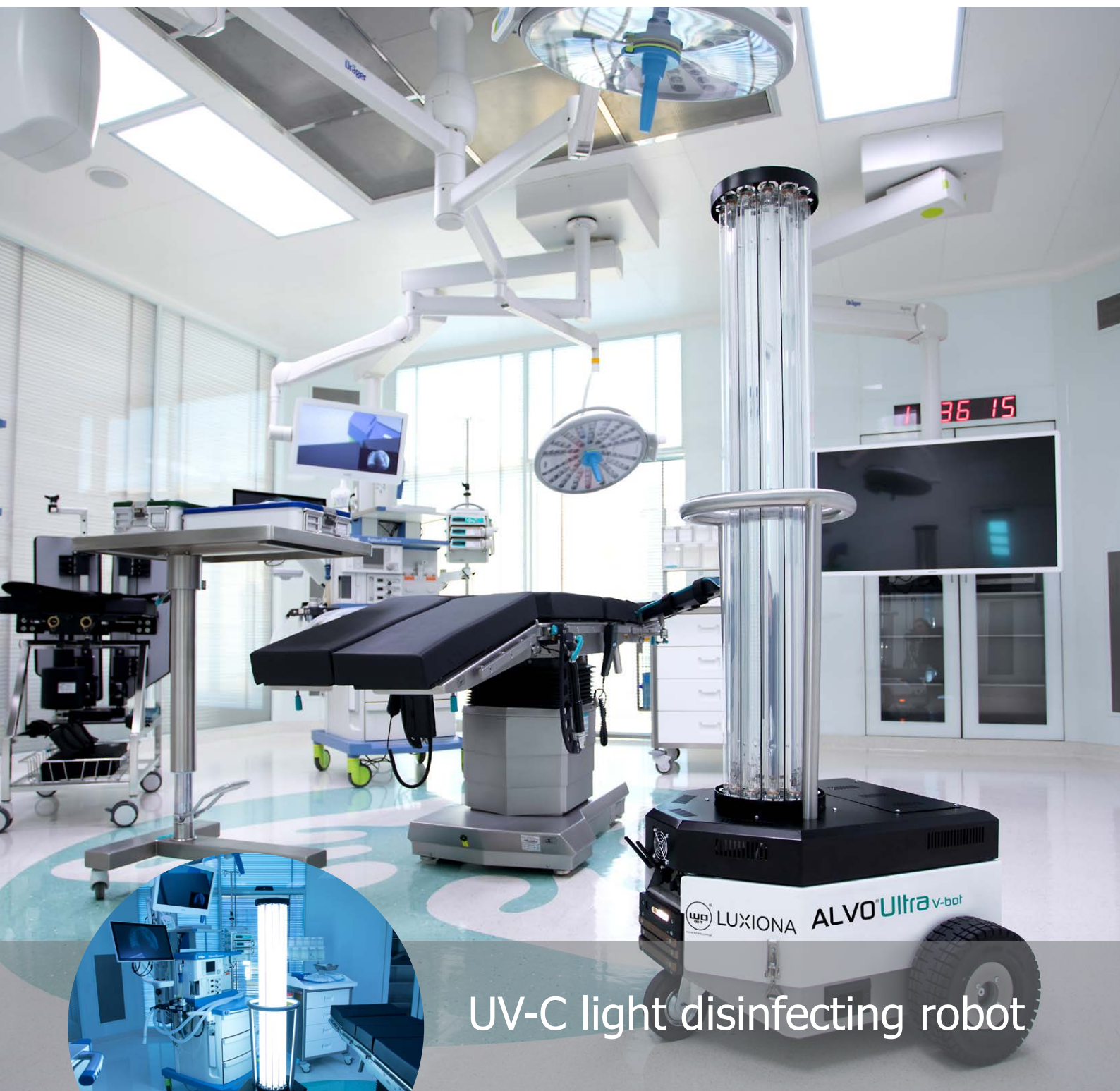UV-C light disinfecting robot

LUXIONA

╳ What is a purification robot?

ALVO® Ultra V-bot is a lightweight antiseptic robot applied to disinfect with the help of UV-C radiation with 254nm long emission wave, which in this range is the most effective in killing bacteria, viruses and funguses by vegetative destruction of nucleic acid in DNA. Technologically, robot is able to monitor and adjust the process to provide the most optimal results in reduction of surface and air pollution. After every disinfection process, a report is generated and allows us to monitor and optimize hygiene plans.

╳ Technology

The bases of ALVO® Ultra V-bot functioning are its sensors and scanners. Owing to them, the robot creates a virtual map of the environment. Having this map, operator with help of an app, is able to appoint points for disinfection, to whom robot is obliged to reach.

The source of UV-C rays are radiators, which generate light with 254nm wavelength. This technology is used in Luxiona company UV-C disinfection setting, a professional manufacturer of specialistic and hospital lighting, which possesses perennial experience in illumining objects like Clean Room as well as having a medical certificate ISO 13485.

╳ Functioning and support

The whole boot up process is held with the help of a dedicated application which functions on a tablet and a Wi-Fi communication with a robot. Embedded security systems and autonomous navigation render that robot avoids all obstacles and safely moves around the room. ALVO® Ultra V-bot works based on:
a) service and programing software
b) applied software

Application qualities:
• easy to use
• communication with a robot with the help of Wi-Fi
• fast room mapping
• embedded memory of decontaminated rooms.

╳ Technical specifications

• Dimensions: 727,5 x 641 x 1653,5 mm
• Weight: 95 kg
• Working time: ~ 3 h
• Batteries: Battery pack Li-Ion 40 Ah/ 44,4 V
• Charger: manual 20 A (standard), automatic charger (option)
• Battery charging time: ~4 h (2,5 h with automatic docking stattion)
• Speed: 5,65 km/h
• Communication: Wi-Fi, 2.4 GHz
• Navigation: autonomic – LMS system (area laser mapping)
• Software/Application: remote control via tablet (User application)
• No. of UV-C beams: 12
• Life cycle of the UV-C beams: 9000 h
• Lamps: wavelenght 254 nm
• Disinfection area : 360°
• Safety: laser safety scanner, 2D camera, emergency disactivating button
• Electric power: 12 x 36 W
• Light output: 12 x 12 W
• Standby time: ~ 40 hours
• Rated power: 500 W
• Drive: 2x servo motor (brushless)
• Sensors: 2D laser scanner for navigation with safety function. Optical sensors
• Signalling: 1x buzzer, 1x speaker (voice / music messages), 2x turn signal
• Antistatic, supermobile wheels: 2x driven (250 mm), 1x swivel (140 mm)

╳ Autonomy

After successful programing, robot starts working and moves autonomously, which allows saving time of the personnel who can focus on another task. Decontamination is conducted remotely; therefore no one from surroundings is subject to direct contact with pathogens or UV-C radiation.

Big wheels are systematically disinfected, for during work they are constantly in radiation extent when robot is moving around the room and a big tread eases overcoming obstacles and uneven floor.
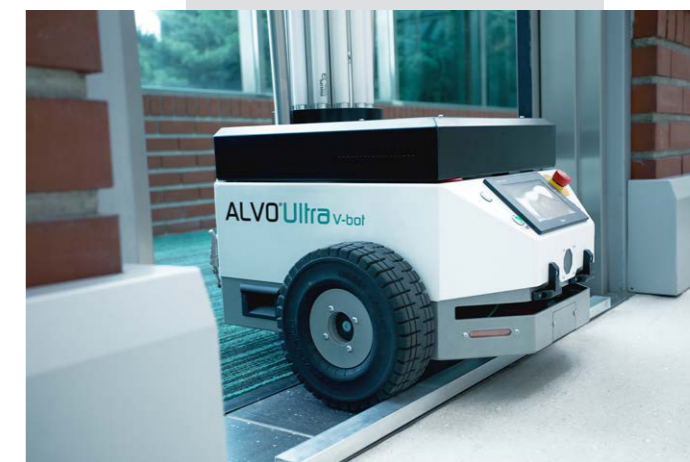
╳ Safety

• **Lack of UV-C radiation exposition:** robot is remotely activated with a help of tablet.
• **Security sensors:** automatic detection of obstacles in robot's working field.
• **Timer:** admeasures time for leaving the room.
• **Alarming signal:** information about the necessity of leaving the room.
• **Security button:** immediate shut off of robot.
• **Manual transfer of robot**: possibility of moving when a device is not working.
• **Two impulsive wheels** with 250 mm diameter with tread which eases overcoming brinks.
• **Rear rotating wheel** Ø 140 mm allows fast and smooth change in robot's orientation in place.

LUXIONA

LUXIONA

Wide range of use

Clean rooms free from dangerous pathogens are not only hospitals and treatment rooms. In an epidemic situation we need to disinfect all public use objects : concert halls, schools, production facilities, sports centers, laboratories etc.

RECOMMENDED USE
• Hospitals, Patient rooms
• Intensive Care Units
• Surgical wards
• Warehouses
• Airports
• Sportsclubs, fitness, concert halls
• Offices, conference rooms
• Hotels

Time and risk management in multiple areas

• Short time of disinfecting rooms thanks to the intensity of UV-C.
• Decontamination time of a room with a bathroom: around 30 minutes.
• Decontamination time of a bathroom: around 8 minutes
• Decontamination time of a hospital sluice: around 15 minutes.
• Possible disinfection of large thruput areas, e.g. emergency unit, intensive care unit, gym.
• Does not require disinfection of tightening ventilation heads and fire sensors in rooms.

Proven effectiveness

In real-time device allows:
• Monitoring the exposition of UV-C radiation
• Measuring the exposition in order to remove shadows and moving larger distances troublefree.
• Drawing a map of decontaminated area. The whole process of disinfection is detailed and repetitive, also documented.
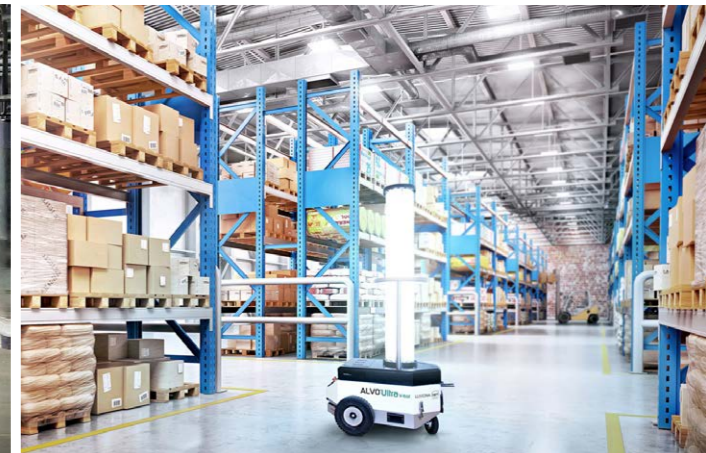
LUXIONA

LUXIONA

ALVO®Ultra V-bot

Prevent infection. Protect reputation and budget of a hospital.
The direct medical cost related to Healthcare-Associated Infections (HAIs) in US hospitals exceeds $10 billion annually.
ALVO® Ultra V-bot significantly lowers the risk of dangerous, preventable infections transmitted by contaminated surfaces.
This way saving hospitals from vital costs.

Clean and safe public area.

Technology partners:

ALVO MEDICAL

LUXIONA

WOBIT ®
www.wobit.com.pl