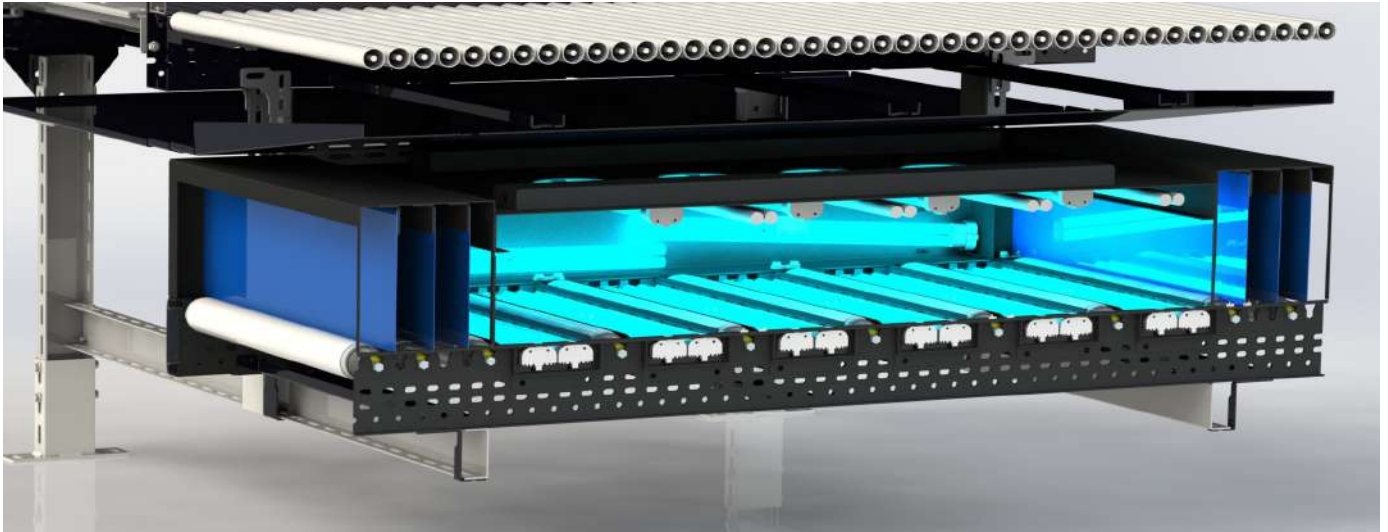


UV-Light Tray Disinfection

FOR AUTOMATIC TRAY RETURN SYSTEMS



Feature Highlights

- Kills up to 99.9% of bacteria and viruses
- Disinfects the interior and exterior of trays
- Helps to reduce virus transmission
- Integration into automatic tray handling systems
- Vendor-agnostic
- Shielding from UV light exposure following BS EN ISO 15858:2016

Smiths Detection Ultraviolet (UV) Light Upgrade Kits were developed to reduce transmission of bacteria and viruses by automatically disinfecting checkpoint trays to restore passenger and staff confidence.

Ultraviolet germicidal irradiation has been used in disinfection applications for over 100 years, often in medical sanitation and sterile work facilities with high hygiene requirements. The same, proven technology was leveraged by Smiths Detection to develop the UV Light Kits for tray disinfection. Low pressure mercury lamps emitting short-wavelength ultraviolet C light are used to kill or inactivate microorganisms by disrupting their DNA or RNA, leaving them unable to perform vital cellular functions.

To achieve deactivation of up to 99.9%, the system is designed to expose the trays to very high levels of UV-C light. We have tailored the system performance balancing exposure time and irradiance levels to achieve high doses while maintaining optimal lane throughput. The system has been designed to place the lamps around the tray, allowing the tray to be disinfected from all sides.

As UV-C light can be harmful, the kits are safely shielded from any leakage using robust metal housing and following relevant safety standards such as BS EN ISO 15858:2016. Interlocks automatically shut off the UV-C lamps in the event of an emergency stop, tray blockages on the conveyor or opening the module. Wavelengths shorter than 240nm, that are mainly responsible for the potentially harmful generation of ozone by UV light, are blocked by special materials within the construction of the lamps.

The kits can be seamlessly integrated into the tray flow without affecting the overall speed of the tray return system, the length of the lane or the operational efficiency. They have been designed to be vendor-agnostic and can be rapidly retrofitted into most existing tray handling systems.

Technical Data

Lamps

UVC lamp used	Philips TUV PL-L 55W/4P HF 1CT/25 or equivalent
Length of UVC Lamp	535mm
Quantity of UV lamps per module	26 (12 bottom, 10 top, 2 on each side)
Lamp lifetime	9000h (airport operation about 500+ days)

Curtains

UVC tray disinfection module comprises	1x disinfection module, 4x curtain modules, 1x installation kit
Curtain module	UVC-stable PVC
Curtain lifetime	12 months +

UVC tray disinfection module

Dimensions / weight	depending on tray handling system
Smiths Detection iLane.evo SD2	1400x553/541x335/133 - 37.5kg
iLane.evo SD3	Please consult factory
McH	2500x595x365/320mm - 40.25kg - tunnel is longer with systems without cladding to prevent reaching into module
Herbert	Please consult factory
Vanderlande	Please consult factory
Teknik Döküm	Please consult factory

Installation Data

CE Labelling/directives	Directive 2006/42/EC - Artificial Optical Radiation EMC Directive 2014/30/EU Low Voltage Directive 2014/35/EU BS EN12100:2010 Safety of machinery. General principles for design BS EN ISO 14121-1:2007 Safety of machinery. Principles for risk assessment BS EN 60204-1:2018 Safety of machinery. Electrical equipment of machines BS EN ISO 14120:2015 Safety of machinery Guards. General requirements for the design and construction of fixed and movable guards BS EN 61000-6-1:2001 Electromagnetic compatibility (EMC). Generic standards. Immunity for residential, commercial and light-industrial environments BS EN ISO 15858:2016 UV-C Devices. Safety information. Permissible human exposure
Environmental temperature	10°-25°C
Relative Humidity	40%-70% (non condensing)
Power Supply	standard: 200, 230, 240 VAC, optional: 120 VAC 10%/-15% - 50Hz/60Hz +/- 3Hz mains plug currently UK version; will be power cable with C13 plug for international application
Control Cabinet	600x300 control cabinet, in future no separate control box
Sound pressure	< 65 dB(A)
Power Consumption per module	1.6kW
Temperature / Heat development	36°C service temperature (42°C operating temp.) 9m3 no significant heat development

Mechanical construction

	metal sheet construction to fit into tray handling systems. Shielded to prevent UVC leakage
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Options/Accessories

	condition monitoring for health of UV lamps, custom colour, stainless steel version
	standalone Version for Checkpoints without tray return system