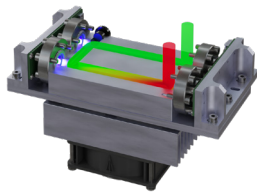
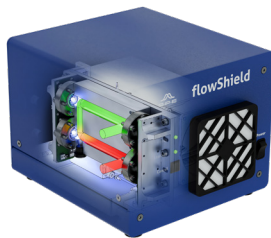


# flowShield

## UV-C decontamination for germ-free cell sorting

### Introduction



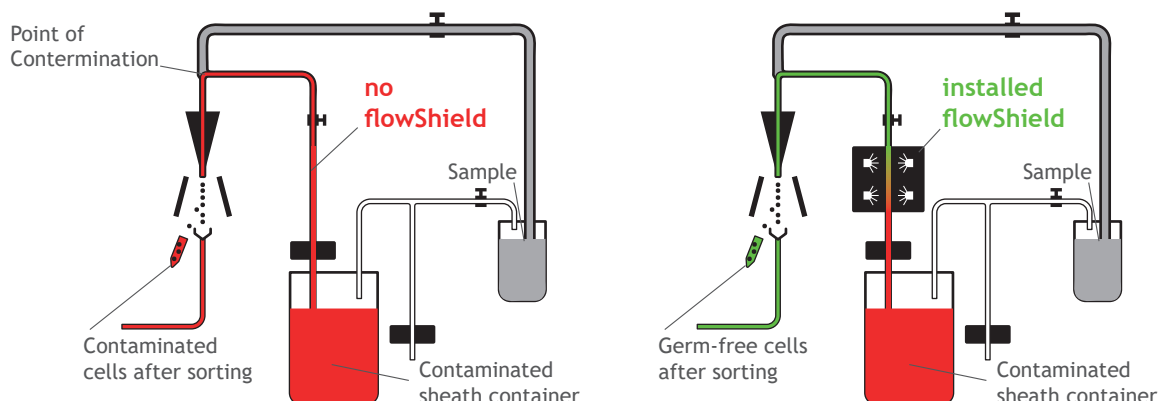
*Flow-through reactor  
equipped with 4 UV-C LEDs*

Aseptic cell sorting provides the prerequisites for antibiotic-free cell cultivation after sorting. However, potential contamination of the cell sorting liquid by microorganisms such as bacteria, yeast, viruses and fungi can inhibit the cultivation of the sorted cells. Such contamination can happen, for example, when the sheath fluid reservoir is opened for refilling or through contamination by compressed air that is required for cell sorter operation. For this reason, decontamination is usually accomplished by regular flushing the fluidics with sodium hypochlorite or ethanol, which is a time-consuming procedure and residues of cleaning reagents in the fluidics are toxic for the cells of interest.

The lethal effect of UV-C light is well known for inactivating microorganisms without the side effects of a chemical treatment. The antimicrobial effect of UV-C light is based on the absorption of photons in the wavelength range of 200 - 280 nm by the DNA, resulting in the formation of pyrimidine dimers which inhibit DNA replication and consequently block transcription to RNA. This principle is used by the flowShield: UV-C emitting high-power LEDs are combined in a flow-through reactor to continuously irradiate the sheath fluid of a cell sorter or contaminated liquid waste. The resulting UV-C dose of four LEDs enables the reduction of *P. aeruginosa* by log 5.8.

### Advantages

The flowShield effectively prevents the negative effects of germs on your cell culture. Using flow-through irradiation with UV-C LEDs to decontaminate the sheath fluid and liquid waste is an easy-to-use, robust, reliable and energy saving method. Conventional inactivation of contaminated liquid waste (autoclaving, chemical inactivation) is energy and labor intensive. Waste inactivated using flowShield is user friendly and guarantees that no harmful pathogens or genetically modified organisms (GMOs) enter the wastewater system or the surrounding ecosystem.



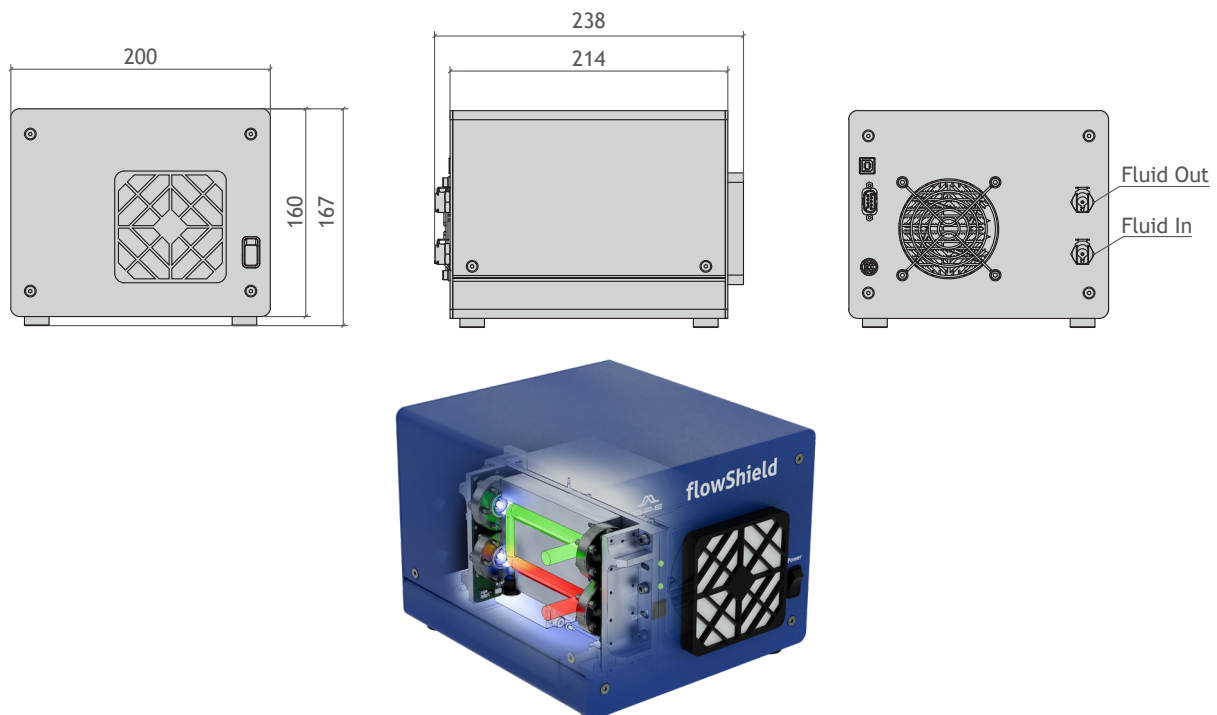
# flowShield

## UV-C decontamination for germ-free cell sorting

### Specifications

Size (W x H x D):	200 x 167 x 238 mm
Weight	5.7 kg
Reactor material	stainless steel
Wavelength range	(260 ± 5) nm
Max. operating pressure:	8 bar
Max. flow rate	250 ml/min
Installation	horizontal
Power source voltage	100 VAC - 240 VAC
Max. power consumption	120 W

### Technical drawing



- UV-C dose up to 40 J/cm<sup>2</sup>
- Proven 5.8 log reduction of bacteria (*P. aeruginosa*) in sheath fluid
- Easy integration into the fluidic system via quick connectors
- Reliable stainless steel reactor including sheath fluid cooling
- Separate power supply and temperature controller

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