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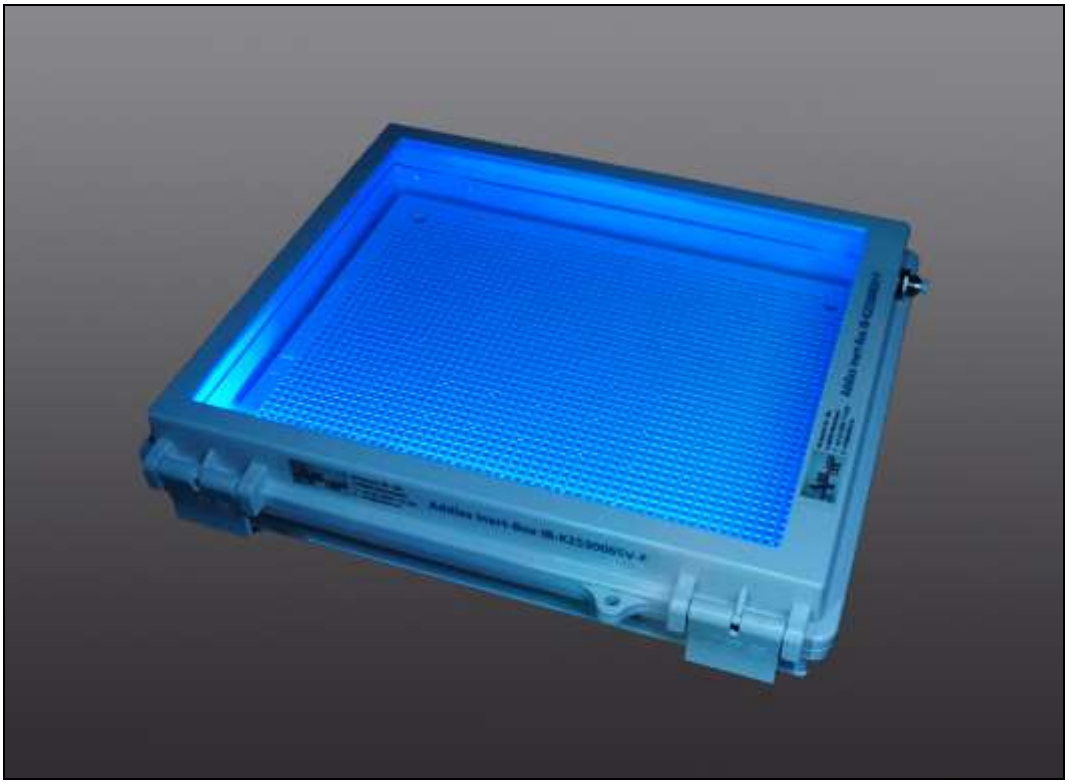
Technical Data Sheet

Addixx Inert Box

IB-K253006SV-F*



Versions

IB-K253006SV-F (Glass window) **IB-K253006SV-F-Qz (Quartz window)**

*** Patent pending**

Version: 2022, October 17

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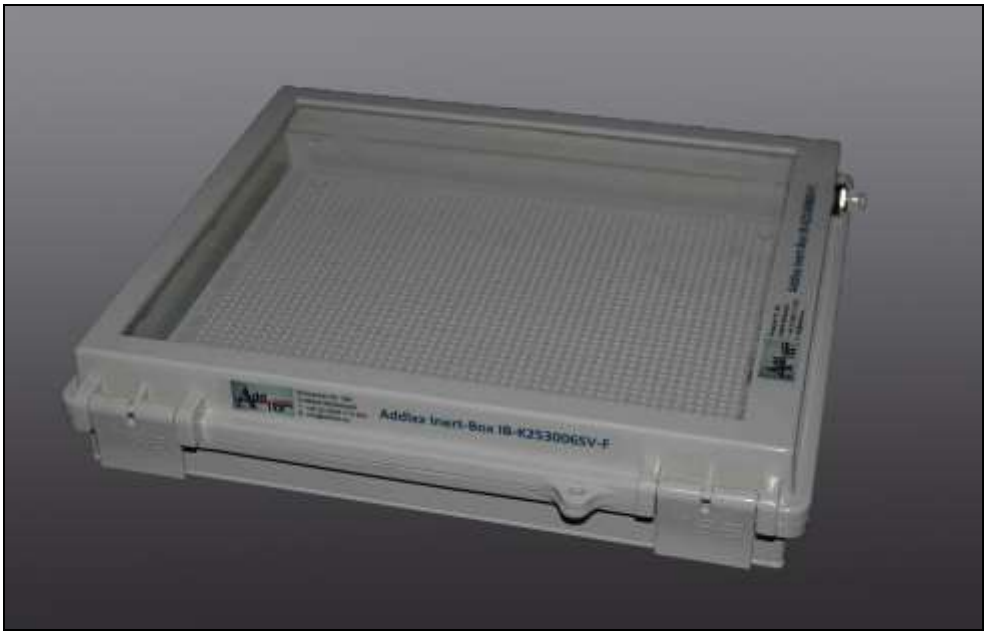

IB-K253006SV-F

The Inert Box **IB-K253006SV-F**, for which a patent application has been filed, can be used for processing **flat substrates** under inert conditions, for example for UV or electron beam curing (EB) or for works which must be carried out under inert conditions (exclusion of aerial oxygen). Gases such as nitrogen (N_2), carbon dioxide (CO_2) or noble gases can be used as inert gases.

The Inert Box **IB-K253006SV-F** consists of a bottom part with a perforated bottom plate (for fixing substrates) and a lid (top); it is equipped with a gas inlet and a gas outlet, as well as a window for irradiating substrates (special-purpose glass) in the lid. The Inert Box can be closed quickly and airtightly by means of two snap closures.

The Inert Box may be used both for stationary and mobile processing, e.g. on conveyorised systems. To that end, for example, a lacquer coated substrate (e.g. wood, glass, metal, paper, etc., is put into the Inert Box. The Inert Box is connected to an inert gas source, filled with inert gas, and subsequently irradiated.

For **stationary** operation, the Inert Box is connected directly to an inert gas cylinder or to any other inert gas source. At the gas outlet, the inert gas can be released by means of a hose to the exhaust or through a window outside. Irradiation is done directly during inertisation.

For **mobile** operation, for example, on conveyorised systems (conveyor belts), optionally two closing valves are supplied together with the box (version **IB-K253006SV-F-2V**). Inertisation is done until a defined residual O_2 concentration has been reached. As soon as it has been achieved, the valves are closed manually, the inlet valve is separated from the inert gas source, the Inert Box is placed on the conveyor belt, and then run with constant residual oxygen (O_2) concentration at a specified speed under the irradiation source.

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The measurement of the residual O_2 concentration in the Inert Box **IB-K253006SV-F** can easily be made ”externally” by means of our oxygen measuring cell **IB-MZ-001** (see separate data sheet). For this purpose, gas is introduced from an inert gas source through the open gas inlet valve into the Inert Box. The open gas outlet valve is connected with the measuring cell by means of a hose and it is flooded with the gas from the Inert Box **IB-K253006SV-F**. While doing so, the current residual O_2 concentration is continuously determined and displayed. The escaping gas is then released by means of a hose to an exhaust or through a window outside. When the desired residual O_2 concentration has been achieved, the two lock valves of the Inert Box are closed, and the Inert Box is separated from the gas source and the measuring cell. Subsequently, e.g. UV curing can be performed on a conveyor belt.

Dimensions of Inert Box IB-K253006SV-F:

Interior dimensions bottom area: approx. 304x254 mm (LxW)
Interior dimensions bottom part of the box (upper edge): approx. 304x254 mm (LxW)
Overall dimensions: approx. 340x290mm (LxW)
Dimensions window for irradiating: approx. 270x235 mm (LxW)
Overall minimum height: approx. 58 mm
Recommended max. dimensions of substrate: approx. 297x245x10 mm (LxWxH) (DIN A4)

The Inert Box **IB-K253006SV-F** will be delivered normally **without** UV equipment.

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Handling and Safety Instructions:

1. When dealing wih inert gases, it is absolutely necessary to ensure a good ventilation of the rooms or that the inert gases are released to an exhaust or outside.

   You must never work in any unventilated rooms!!

   Please make sure to always observe the safety instructions of the inert gas supplier

   and to perform measurements of the gas concentration in the work area, if applicable, in particular in connection with heavy inert gases (argon, carbon dioxide, etc.)!!
2. The Inert Box **IB-K253006SV-F** is made of plastic (polycarbonate) and a glass panel glued into the box. A result thereof is a sensitivity to very extreme mechanical strain! Therefore the Inert Box should not be thrown on the floor or dropped! If there are any cracks in the glass panel, no constant tests can be made due to leakage of the Inert Box. In this case or in case of any destruction of the plastic housing, the Inert Box must be replaced. Danger of injury!!
3. The Inert Box **IB-K253006SV-F** is made of polycarbonate, and accordingly it must not be cleaned with any solvents, such as acetone or butyl acetate. We recommend to clean the Inert Box and the glass panel with alcohols, such as ethanol or isopropanol.
4. When closing the Inert Box **IB-K253006SV-F**, please make sure that there are no parts of the body (fingers, etc.) or pieces of clothing (ties, etc.) in the closure area. Attention!! Danger of injury!!
5. Before use of the Inert Box **IB-K253006SV-F**, please make sure to carefully remove the protective foil from the glass panel of the window, and prior to any use, the glass panel should (always) be thoroughly cleaned on both sides, e.g. with a cloth soaked with isopropanol or glass cleaning agents!
6. When flooding the Inert Box with inert gas, you should always only work with low gas pressure (max. 0.1 – 0.3 bar pressure) in order to prevent e.g. that the hose connections blow off the Inert Box or that the Inert Box is “blown up”!

7. **Attention**: **The Inert Box IB-K253006SV-F must not be flooded with any reactive or caustic gases (e.g. F_2, Cl_2, Br_2, fluorocarbons (FCs), SO_x, H_2S, HF, HCl, HBr, etc.), outgassing products, and with any solvents or gases of solvents!! Do not use any explosive gas mixtures!!**

   Inert gases should be used only!!

Subject to technical changes.
No liability whatsoever shall be assumed for any misprints and for any damage possibly resulting therefrom.

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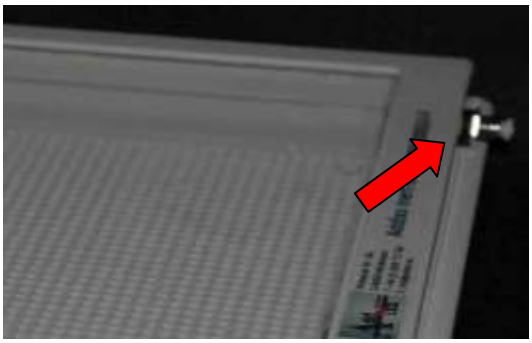
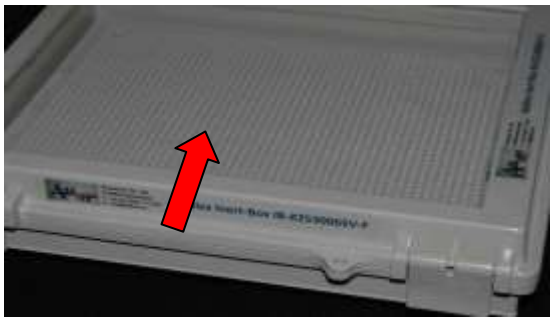
Photographs:

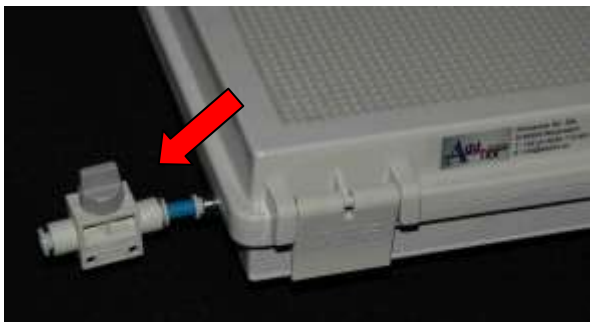
IB-K253006SV-F Gas inlet



IB-K253006SV-F Gas outlet



IB-K253006SV-F Window for irradiating



IB-K253006SV-F Gas inlet valve

IB-K253006SV-F Open Inert-Box

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