

MB-LAMINAR-FLOW

LAMINAR FLOW UNDER INERTGAS CONDITIONS



- Down to cleanroom class 1 conditions (US-FED Standard 209E) or Particle class 2 according ISO 14644-1
- HEPA filter units from H13 up to U15
- HPL membrane technology for optimized gas flow uniformity
- Controlled gas flow under isothermal conditions
- Oxygen <1ppm
- Moisture <1ppm

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DESCRIPTION

Latest results from research centers and the accumulated experience from OLED manufacturers indicate that the presence of particles constitute a frequently underestimated problem. Not only do they have undesired effects on the quality of the organic devices (e.g. black spots) but can even reduce the overall yield of an entire manufacturing process.

Laminar gas flow conditions as they are commonly used in the semiconductor industries' cleanrooms set the standard for particle free environments.

MBRAUN adopted the well established cleanroom concepts, transferred the core technical elements into the inertgas technology and combined it with in-house developments like the HPL membrane.

Using this interdisciplinary approach it is possible to furnish systems from standardized R&D equipment up to complete production lines with inert laminar flow conditions, reducing the particle load on substrates and cover glasses to a minimum thus enhancing the quality of the involved processes considerably.

In cooperation with leading process tool suppliers integration solutions for nearly every system have been developed.

Amongst those are inkjets, dispensers, slit coaters, screen printers, lamination units, transfer robots and conveyor belts. Choosing the optimum sub-components cleanroom conditions better than class 1 can be achieved even in large scale manufacturing whilst having moisture and oxygen concentrations far below 1 ppm. Careful observation of the latest trends in OLED processes and close contacts to lead users ensure that MBRAUN extends its expertise in integrated inert laminar flow solutions continuously.



Available in reduced height configuration (H < 2,4 m)



Example: Laminar flow glovebox with slot die coater integrated

TECHNICAL DATA

Cleanroom class*	Better than class 1 (US-FED Standard 209E) or Particle class 2 according ISO 14644-1 (*: cleanroom class depending on integrated components)
Filter unit	Placed on the glovebox roof with gas circulation duct on backside (outside glovebox) Including: - Filter system ULPA U15 - HPL Membrane for optimized flow distribution on working area - Frequency controlled blower unit with integrated cooling system
Leak rate	<0,05Vol%/h according ISO 10648-2
Gas flow	Controlled 0.3 up to 0.5m/s
Purity level	O2 < 1ppm, H2O < 1ppm

Technical note: Dependent upon operating conditions.

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