

## **MB200 IGMS & MB300 IGMS** INERT GAS MANAGEMENT SYSTEMS



**INERT GAS TECHNOLOGY**

- The market standard in high efficiency gas purifiers
- Introduced to the market in 2001 – now in its 5th generation
- Developed specifically for the demands of the OLED industry
- Unmatched safety, automation and capacity characteristics
- For enclosures up to 4m<sup>3</sup> (MB200 IGMS) and 10m<sup>3</sup> (MB300 IGMS)
- Attainable purity of oxygen (O<sub>2</sub>) and moisture (H<sub>2</sub>O) < 1 ppm

Working under pure atmosphere with oxygen and moisture levels below 1ppm is the prerequisite of processing high sensitive materials in the OLED industry.

The MBraun fully automatic IGMS gas purification systems are the worldwide recognized industrial standard in OLED production. A frequency controlled blower and two redundant reactors are used for continuous removal of oxygen and moisture during gas circulation.

The working pressure inside the inert gas enclosure is automatically controlled within a programmable range in over pressure as well as in under pressure. All process relevant parameters like oxygen, moisture and pressure are monitored by MBraun's proprietary designed sensors. In contrast to other commonly available gas purifiers the IGMS features a full control of all connected utilities like working gas, control gas and regeneration gas.

An automatic leak test (ALAS-test) can be performed to verify the leak tightness of the complete inert gas enclosure system.

The automatically controlled purge function and supervised change over to circulation guarantees the highest operational standard for the start up as well as during processing.

Optionally the MBraun IGMS can be equipped with a redundant solvent vapor removal system (LMF) to separate hydrocarbons from the inert gas atmosphere. The remaining capacity of the filters is detected by a special solvent sensor.

Further upgrades like multi-box-operation, vacuum interlock for working in combination with vacuum chambers, extended PLC control units (e.g. Mitsubishi Q-Series) or customized communication interfaces promote the MBraun IGMS to an unmatched all-rounder in the inert gas technology.



<b>MB200 IGMS &amp; MB300 IGMS Overview</b>	<b>MB200 IGMS</b>	<b>MB200 IGMS-LMF</b>	<b>MB300 IGMS</b>	<b>MB300 IGMS-LMF</b>
<b>Performance</b>				
Max. enclosure volume [m <sup>3</sup> ]	4	4	10	10
Blower capacity [m <sup>3</sup> /h]	84	84	120	120
Purity O <sub>2</sub> [ppm]	<1	<1	<1	<1
Purity H <sub>2</sub> O [ppm]	<1	<1	<1	<1
Capacity O <sub>2</sub> [NI]	100	100	275	275
Capacity H <sub>2</sub> O [g] <sup>(1)</sup>	2.400	2.400	7.000	7.000
Capacity LMF [g] <sup>(2)</sup>	-	1.600	-	4.000
<b>Sensors</b>				
O <sub>2</sub> ppm	•	•	•	•
O <sub>2</sub> %	•	•	•	•
H <sub>2</sub> O ppm	•	•	•	•
Pressure sensor	•	•	•	•
Solvent sensor	-	•	-	•
Utility monitoring	•	•	•	•
<b>Features</b>				
Automatic purge [l/min.]	200	200	500	500
ALAS leak test	•	•	•	•
Trend diagram H <sub>2</sub> O/O <sub>2</sub> ppm	•	•	•	•
Trend diagram box pressure	•	•	•	•
Automatic regeneration	•	•	•	•
Mitsubishi control (FX-series)	•	•	•	•
Multi color touch panel	•	•	•	•
Dry vacuum pump	•	•	•	•
<b>Options</b>				
Integrated 2-Box Operation	○	○	○	○ <sup>(3)</sup>
Integrated 3-Box Operation	○	○	○	○ <sup>(3)</sup>
Mitsubishi Q-Series control	○	○	○	○
MB-QP (Quick purge)	○	○	○	○
MB-APU (Air purge)	○	○	○	○
MB-SAPU	-	-	○	○
Vacuum interlock	○	○	○	○
VCR fittings	○	○	○	○

<sup>(1)</sup> per mfg specs <sup>(2)</sup> e.g. Toulene <sup>(3)</sup> customized

• included [o] option available [-] option not available

## M.Braun Inertgas-Systeme GmbH (Headquarters)

Dieselstr. 31 · 85748 Garching · Germany  
 Phone: +49 89 32669-0 · Fax: +49 89 32669-105  
 Web: www.mbraun.com · E-mail: info@mbraun.de

## M.Braun Incorporated

14 Marin Way · Stratham, NH · 03885 · USA  
 Phone: +1 603 773-9333 · Fax: +1 603 773-0008  
 Web: www.mbraun.com · E-mail: info@mbraunusa.com

MB200 IGMS & MB300 IGMS GAS PURIFIER-E2011/04 by Daniel Kacerovsky · © M. Braun GmbH · Subject to be changed

— turning ideas into solutions

**MBRAUN**

## **MB600 IGMS** INERT GAS MANAGEMENT SYSTEMS



**INERTGAS TECHNOLOGY**

- The market standard in high efficiency gas purifiers
- Introduced to the market in 2008 – now in its 2nd generation
- Developed specifically for the demands of OLED manufacturing
- Unmatched safety, automation and capacity characteristics
- For industrial enclosures up to 20m<sup>3</sup>
- Attainable purity of oxygen (O<sub>2</sub>) and moisture (H<sub>2</sub>O) < 1 ppm

The rise of OLED technology from R&D to large scale manufacturing defined the demands of enhanced inert gas equipment. Addressing this marked driven need the MBRAUN gas purification system MB600 IGMS was developed with the goal to purify industrial inert gas enclosures of up to 20m<sup>3</sup> whilst ensuring the well-established MBRAUN IGMS concept.

Utilizing MBRAUN's standardized components of the MB300 IGMS such as filter units, blowers, heat exchangers and control units aligned with the proven IGMS operating software ensures a high reliability and a stable performance.

All process relevant parameters like oxygen, moisture and pressure are monitored by MBraun's proprietary designed sensors. In contrast to other commonly available gas purifiers the IGMS features a full control of all connected utilities like working gas, control gas and regeneration gas.

Functions like the automatic leak test (ALAS) and the automatic purge function offer a maximum of process reliability.

For restricted spaces a compact version is available – the MB600 IGMS-RH. Its reduced overall height and a reinforced frame with castors the MB600 IGMS-RH allows easy move in and uncomplicated installation.

With its capacity and flexibility offered by additional options the MB600 IGMS is the system of choice to fulfill the requirements of industrial OLED production.



<b>MB600 IGMS &amp; MB300 IGMS Overview</b>	<b>MB300 IGMS</b>	<b>MB600 IGMS</b>
<b>Performance</b>		
Max. enclosure volume [m <sup>3</sup> ]	10	20
Blower capacity [m <sup>3</sup> /h]	120	200
Purity O <sub>2</sub> [ppm]	<1	<1
Purity H <sub>2</sub> O [ppm]	<1	<1
Capacity O <sub>2</sub> [NI]	275	550
Capacity H <sub>2</sub> O [g] <sup>(1)</sup>	7,000	14,000
Capacity LMF [g] <sup>(2)</sup>	-	-
<b>Sensors</b>		
O <sub>2</sub> ppm	•	•
O <sub>2</sub> %	•	•
H <sub>2</sub> O ppm	•	•
Pressure sensor	•	•
Solvent sensor	•	-
Utility monitoring	•	•
<b>Features</b>		
Automatic purge [l/min.]	500	500
ALAS leak test	•	•
Trend diagram H <sub>2</sub> O/O <sub>2</sub> ppm	•	•
Trend diagram box pressure	•	•
Automatic regeneration	•	•
Mitsubishi control (FX-series)	•	•
Multi color touch panel	•	•
Dry vacuum pump	•	•
<b>Options</b>		
Integrated 2-Box Operation	○	-
Integrated 3-Box Operation	○	-
Mitsubishi Q-Series control	○	○
MB-QP (Quick purge)	○	○
MB-APU (Air purge)	○	○
MB-SAPU	○	-
Vacuum interlock	○	○
VCR fittings	○	○

(1) per mfg specs (2) e.g. Toulene (3) customized

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## M. Braun Incorporated

14 Marin Way · Stratham, NH · 03885 · USA  
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 Web: www.mbraun.com · E-mail: info@mbraunusa.com