Product Brief – MaestroGuard® Filter

MCF-100-316L-220

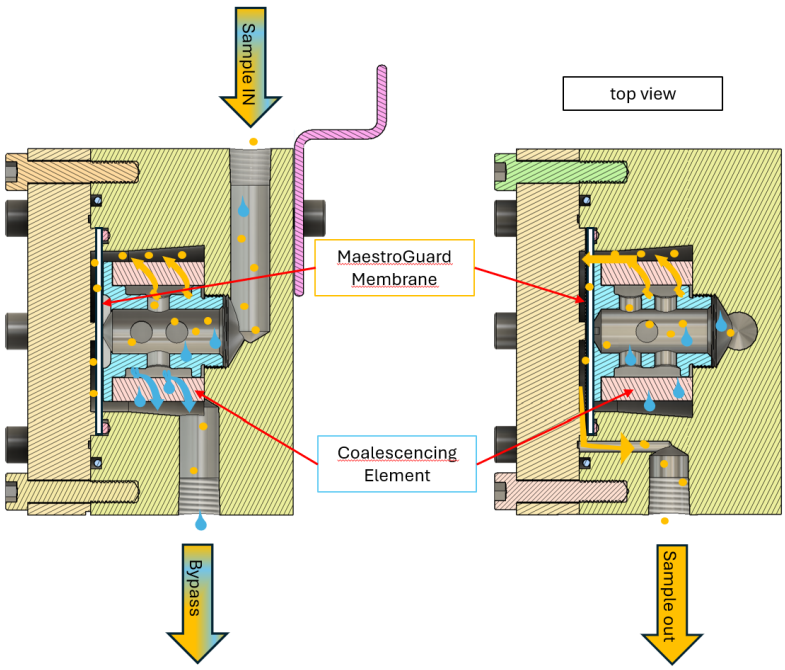
1. Product Overview

The **MCF-100-316L-220** is a high-efficiency gas filter designed for demanding process analysis applications. Equipped with the **MaestroGuard® Enhanced Membrane** and an integrated coalescing element, this filter provides a dual-stage barrier against liquids and aerosols. It effectively blocks water, oil, and fine particles to protect sensitive analytical systems from contamination.

The robust 316L stainless steel housing is rated for operating pressures up to **220 bar**, making it ideal for use in high-pressure industrial systems and laboratory environments requiring the highest gas purity. The **MCF-100-316L-220** ensures a continuous supply of **particle-free, and liquid-free gas**, even under extreme operating conditions.



Functional diagram illustrating the MCF-100-316L membrane - coalescence filter



2. Key Features

- **MaestroGuard® Membrane** – Effectively blocks oil and water while allowing gas to pass freely.
- **High Coalescing Efficiency** – Integrated borosilicate coalescer removes fine liquid aerosols by merging droplets into drainable form.
- **Chemical Resistance** – Suitable for aggressive gas compositions including solvents and corrosives.
- **Compact & Durable** – Designed in stainless steel 316L for rugged, high-pressure operation.
- **Easy Maintenance** – Tool-free membrane and element replacement; drain port optional.

3. Technical Specifications

Housing Material	Stainless Steel 316L (1.4404)
Filter Element	MaestroGuard® membrane and Coalescer type element
Filtration Efficiency	< 0.1 µm absolute - customizable
Max Operating Pressure	Up to 220 bar
Temperature Range	–200°C to 260°C (depending on seal)
Flow Rate*	160 L/h air @ 100mbar - customizable
Internal volume	16ml in coalescing system 4ml downstream MaestroGuard® membrane
Connections	NPT Female or on request
Seal Materials	FKM, FFKM, PTFE
Certificates / Compliance	EN 10204 3.1, CE, ATEX, PED 2014/68/EU, ISO 11114-4, ISO 15156 / NACE MR0175

No self-ignition hazard – compliant with requirements for explosive environments.
*Higher flow rates can be achieved by using a membrane with a larger pore size

4. Application Areas

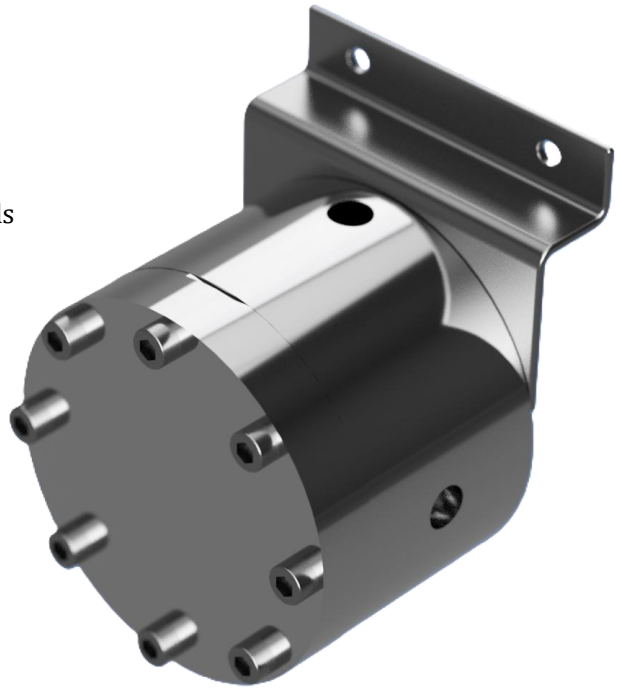
- **Gas Analysis Systems** – Removal of moisture and oil from corrosive or inert gases
- **Hydrogen Fuel Systems** – Prevents contamination from droplets and aerosols
- **Environmental Monitoring** – Ensures accurate NOx, SO_2, VOC measurements
- **Industrial Process Control** – Reliable filtering in moist, oil-laden or high-particulate streams
- **Pharmaceutical & Chemical Plants** – Dry gas supply for sensitive instrumentation

5. Ordering Information

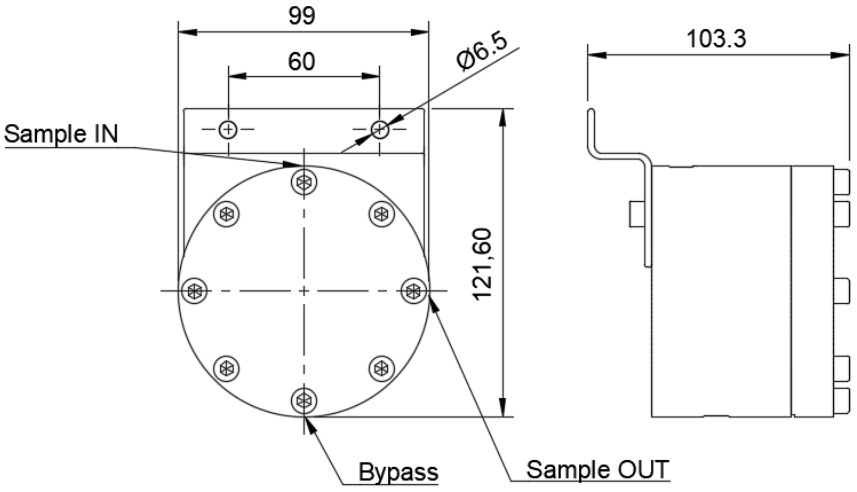
Order Number	**Description**
MCF-100-316L-220-FKM-V1	MCF-100 MaestroGuard® membrane / coalescing Filter, 220 bar, O-ring FKM
MCG-100-316L-220-FFKM-V1	MCF-100 MaestroGuard® membrane / coalescing Filter, 220 bar, O-ring FFKM
MCG-100-316L-220-PTFE-V1	MCF-100 MaestroGuard® membrane / coalescing Filter, 220 bar, O-ring PTFE
Option	
MB-MF/MCF-100-SS	MF / MCF-100 Mounting Bracket in Stainless Steel 316L
Spare Parts	
MK-MCF-100-FKM-01-V1	MCF-100 Service kit: MaestroGuard® Membrane Set 0,1µm, Coalescing Element, 2 x O-ring FKM
MK-MCF-100-FfKM-01-V1	MCF-100 Service kit: MaestroGuard® Membrane Set 0,1µm, Coalescing Element, 2 x O-ring FFKM
MK-MCF-100-PTFE-01-V1	MCF-100 Service kit: MaestroGuard® Membrane Set 0,1µm, Coalescing Element, 2 x O-ring PTFE
SS-MCF/MF-100-V1	MF / MCF-100 Support screen, 316L for MF amd MCF-100

6. Benefits

- Two-stage filtration in a single housing
- Long service life and low maintenance
- High protection for analyzers and sensors
- Fast response time – minimal dead volume
- Designed for field and laboratory use
- Chemically resistant to wide range of compounds
- Optimized for analytical precision



7. Dimensions



Specifications are subject to change without notice as part of our continuous improvement efforts.

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