

# AirPure Generation II

## Cathode air filters for fuel cell systems

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- ✓ Highly efficient
- ✓ Flexible adaption
- ✓ Simple and cost-effective

# MANN+HUMMEL AirPure Generation II

## Cathode air cleaner for the protection of fuel cells

Decades of experience with air filtration



Open the website for more information about products for electrified powertrains from MANN+HUMMEL.



Watch the video of the cathode air filters for fuel cell systems.



Visit our E-Mobility Onlineshop to check our offerings and buy directly.

MANN+HUMMEL memberships and partnerships in e-mobility and fuel cells:

Hydrogen Council

elektromobilität  
süd-west



Science for a  
moving society

European Clean  
Hydrogen Alliance



USHA  
UNITED STATES HYDROGEN ALLIANCE



Arbeitsgemeinschaft  
Brennstoffzellen

(Fuel Cell Working Group)

EUROPEAN  
BATTERY  
ALLIANCE | EBA250

brennstoffzelle  
BW

Leadership in Filtration

**MANN+**  
**HUMMEL**

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## Cathode air cleaner for the protection of fuel cells

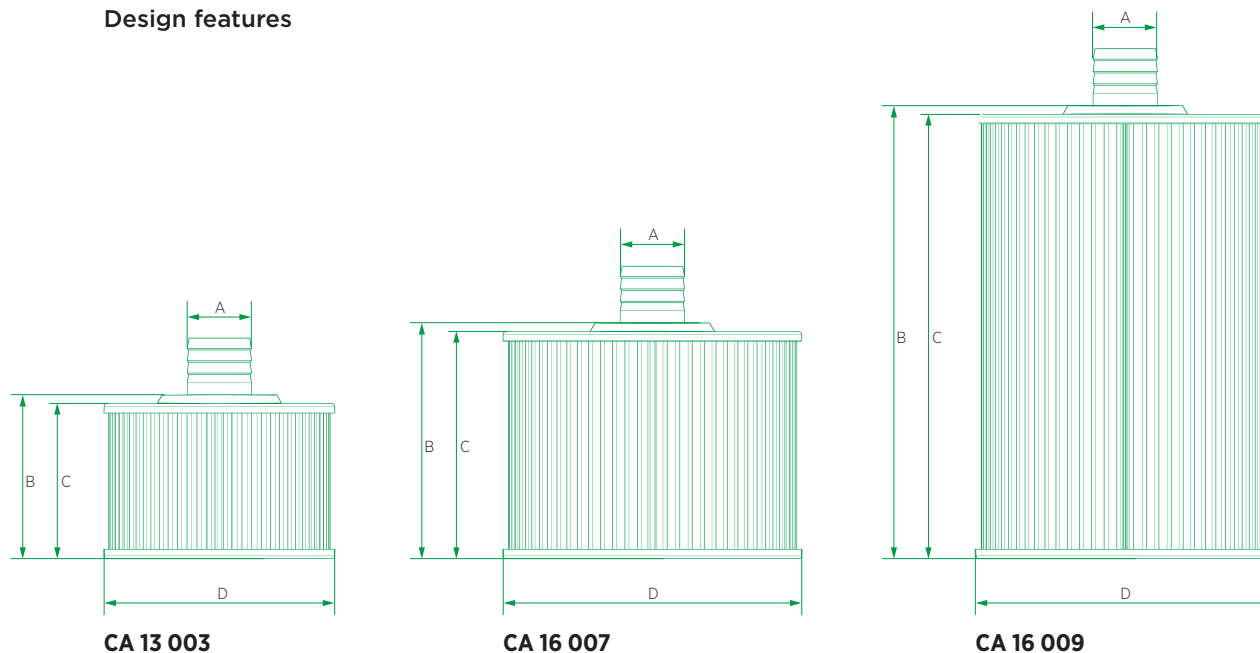
### Functional description

- **Protects the fuel cell system** from blocking of channels and wear by separation of particles from the cathode air.
- **Enhances the system lifetime** by protecting the catalyst from irreversible poisoning leading to power loss by adsorption of critical gases from the cathode air.



- 1 Outlet connector 34 mm / - 1 ¼ inch
- 2 High-performance filter media for particle filtration
- 3 High-quality activated carbon to adsorb harmful gases

### Design features



	A	B	C	D
CA 13 003	Ø 34 mm	86.7 mm	82 mm	Ø 122 mm
CA 16 007	Ø 34 mm	124.7 mm	120 mm	Ø 158 mm
CA 16 009	Ø 34 mm	239.7 mm	235 mm	Ø 158 mm

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### Differential pressure [Pa] @ air flow [m<sup>3</sup>/h]

	25	30	40	50	60	70	80	90	100	110	120
CA 13 003	507	667	1031	1490	2017	2650	3373	4180	-	-	-
CA 16 007	404	529	812	1158	1580	2080	2645	3261	-	-	-
CA 16 009	-	-	-	658	896	1159	1436	1791	2170	2594	3041

### Absorption capacity

		CA 13 003 @ 25 m <sup>3</sup> /h	CA 16 007 @ 40 m <sup>3</sup> /h	CA 16 009 @ 90 m <sup>3</sup> /h
<b>Toluene (C<sub>7</sub>H<sub>8</sub>)</b> 80 ppm	after 5 min	≈ 0.6 g/filter	≈ 0.98 g/filter	≈ 2.2 g/filter
		@ 96 % efficiency	@ 97 % efficiency	@ 98 % efficiency
	after 30 min	≈ 3.6 g/filter	≈ 5.9 g/filter	≈ 13.2 g/filter
		@ 94 % efficiency	@ 97 % efficiency	@ 96 % efficiency
	after 60 min	≈ 6.7 g/filter	≈ 11.6 g/filter	≈ 25.5 g/filter
		@ 64 % efficiency	@ 87 % efficiency	@ 80 % efficiency
<b>Sulfur Dioxide (SO<sub>2</sub>)</b> 30 ppm	after 5 min	≈ 0.15 g/filter	≈ 0.26 g/filter	≈ 0.57 g/filter
		@ 85 % efficiency	@ 97 % efficiency	@ 95 % efficiency
	after 30 min	≈ 0.8 g/filter	≈ 1.45 g/filter	≈ 3.2 g/filter
		@ 73 % efficiency	@ 86 % efficiency	@ 87 % efficiency
	after 60 min	≈ 1.5 g/filter	≈ 2.75 g/filter	≈ 6.13 g/filter
		@ 67 % efficiency	@ 82 % efficiency	@ 80 % efficiency

Technical Data according to DIN 71460-1 / ISO 11155-2

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### Absorption capacity

		CA 13 003 @ 25 m <sup>3</sup> /h	CA 16 007 @ 40 m <sup>3</sup> /h	CA 16 009 @ 90 m <sup>3</sup> /h
<b>Nitrogen Oxide (NO<sub>x</sub>)</b> 30 ppm	after 5 min	≈ 0.08 g/filter	≈ 0.14 g/filter	≈ 0.35 g/filter
		@ 67 % efficiency	@ 70 % efficiency	@ 79 % efficiency
	after 30 min	≈ 0.45 g/filter	≈ 0.75 g/filter	≈ 1.8 g/filter
		@ 60 % efficiency	@ 60 % efficiency	@ 68 % efficiency
	after 60 min	≈ 0.8 g/filter	≈ 1.35 g/filter	≈ 3.4 g/filter
		@ 49 % efficiency	@ 57 % efficiency	@ 62 % efficiency
<b>Ammonia (NH<sub>3</sub>)</b> 30 ppm	after 5 min	≈ 0.03 g/filter	≈ 0.05 g/filter	≈ 0.13 g/filter
		@ 50 % efficiency	@ 63 % efficiency	@ 64 % efficiency
	after 30 min	≈ 0.1 g/filter	≈ 0.2 g/filter	≈ 0.45 g/filter
		@ 18 % efficiency	@ 28 % efficiency	@ 27 % efficiency
	after 60 min	≈ 0.1 g/filter	≈ 0.3 g/filter	≈ 0.63 g/filter
		@ 8 % efficiency	@ 15 % efficiency	@ 15 % efficiency

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## MANN+HUMMEL Contact

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### **Sales**

Niklas Münch  
Sales Manager New Products  
[niklas.muench@mann-hummel.com](mailto:niklas.muench@mann-hummel.com)  
Phone: +49 7141 98-3169

### **Engineering**

Dr. David Nardini  
Lead Product Engineer Gas Adsorption  
[david.nardini@mann-hummel.com](mailto:david.nardini@mann-hummel.com)  
Phone: +49 9273 9656-495