

HIGHEST PERFORMANCE, FLEXIBLE DESIGN

micronAir®

MODULAR HUMIDIFIER SERIES FC HU-20 FOR PEMFC

FILTER TYPE	MODULE LENGTH	PORT DESIGN CONFIGURATION	FIBER PACKAGE CONFIGURATION
FC HU-20-184-2-1	184	2	1
FC HU-20-184-2-2			2
FC HU-20-254-2-1	254	2	1
FC HU-20-254-2-2			2
FC HU-20-331-2-1	331	2	1
FC HU-20-331-2-2			2



The application

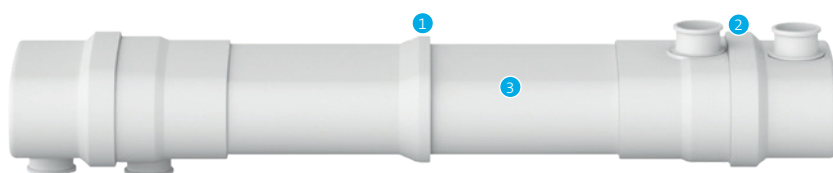
FC HU-20 humidifiers are intended for low-pressure fuel cell applications. The flow configuration involves dry air flowing through the membranes (tube-side) and wet air around the membranes (shell-side). This concept supports switch configuration.

The customer benefits

- Flexibility regarding design and attachment ports
- Tailormade performance by adjusted module length and membrane configuration
- No tooling costs

The modular concept

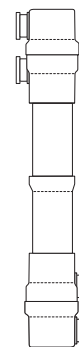
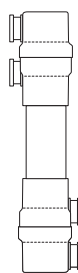
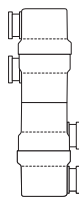
The FC HU-20-Series is based on a modular concept which offers tailormade performance to our customers.



- ① = Flexible length
- ② = Flexible attachment port design
- ③ = Flexible fiber configuration (membrane diameter, membrane number)

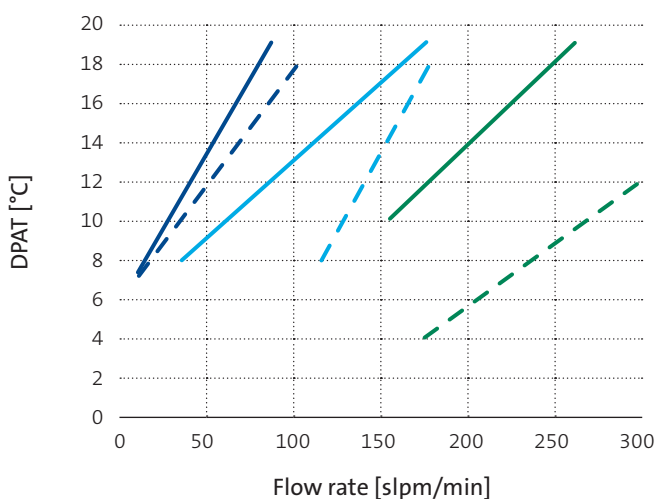
GEOMETRIES AVAILABLE		FC HU-20-184-2-X	FC HU-20-254-2-X	FC HU-20-331-2-X
Attachment port			Hose connector	
Size (L×W×H), approx.	mm	184×110×71	254×110×71	331×110×71
Nominal volume flow rate	slpm	0–80	80–200	200–300
Max. Pressure	kPa		~50	
Max. Temperature	°C		~80	

TECHNICAL HUMIDIFIER TEST DATA

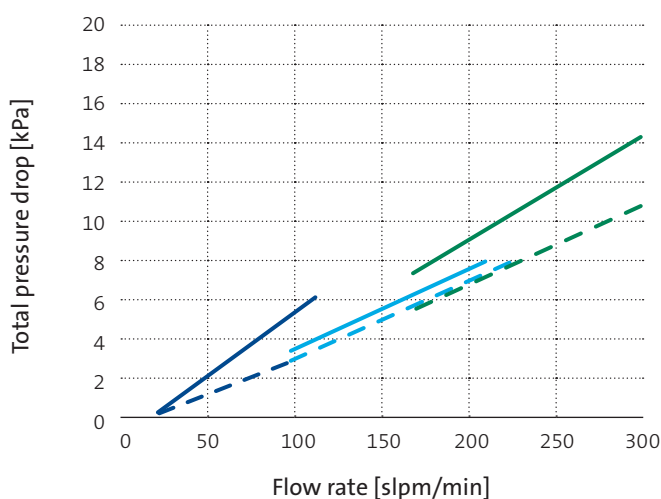


TECHNICAL DATA		FC HU-20-184-2-X			FC HU-20-254-2-X			FC HU-20-331-2-X		
PERFORMANCE		[slpm]	1	2	[slpm]	1	2	[slpm]	1	2
Fiber package configuration (X)	°C	30	10.7	9.7	135	16.0	11.2	214	15.1	6.5
	°C	40	11.9	10.3	150	17.2	13.6	238	17.1	8.0
	°C	50	13.8	12.0						
Dew point approach temperature	°C	30	10.7	9.7	135	16.0	11.2	214	15.1	6.5
	°C	40	11.9	10.3	150	17.2	13.6	238	17.1	8.0
	°C	50	13.8	12.0						
Total pressure drop	kPa	30	0.6	0.9	135	4.5	5.0	214	8.3	10.8
	kPa	40	0.9	1.6	150	5.1	5.6	238	9.3	12.1
	kPa	50	1.3	2.2						
Pressure drop tube-side	kPa	30	0.4	0.5	135	3.3	3.8	214	6.4	8.7
	kPa	40	0.5	0.8	150	3.8	4.3	238	7.1	9.6
	kPa	50	0.7	1.0						
Pressure drop shell-side	kPa	30	0.2	0.4	135	1.2	1.1	214	1.9	2.2
	kPa	40	0.4	0.8	150	1.3	1.3	238	2.2	2.5
	kPa	50	0.6	1.1						

Dew Point Approach Temperature (DPAT)



Total Pressure Drop



— FC HU-20-184-2-1 — FC HU-20-254-2-1 — FC HU-20-331-2-1
 - - FC HU-20-184-2-2 - - FC HU-20-254-2-2 - - FC HU-20-331-2-2

Secure connections and mounting are a customer responsibility. The humidifier should not be used as a supporting element or primary structure. All values represent averages which are subject to usual production tolerances. The individual performance of our humidifier depends strongly on operation conditions. Each customer should adequately test any product before regular use in the field. Since we are currently optimizing our products, we reserve the right to modify our product portfolio, production facilities or locations, products and respective processing procedures and respective information without prior information. The Fuel Cell Humidifiers listed here are only suitable for stationary applications. This document provides non-binding information. Freudenberg Filtration Technologies SE & Co. KG cannot accept any liability for the completeness and correctness of the statements made. Liability and warranty questions shall be governed solely by the provisions of the delivery relationships involved.