

Electrochemical Flow Cells



Technical Data

(V1_2017)



SPECIFICATIONS	Micro Flow Cell	Electro MP Cell	Electro Syn Cell	Electro Prod Cell
Electrical data				
Projected electrode area, min. [m ²] ¹⁾	0.001	0.01	0.04	0.4
Projected electrode area, max. [m ²] ²⁾	-	0.2	1.04	16
Current density, max. [kA/m ²] ³⁾	4	4	4	4
Electrode gap range [mm] ²⁾	0.7-8	2-16	1-5	1-10
Standard electrode gap [mm]	4	8	5	4
Dimensions				
Height [mm]	120	306	550	1030
Width [mm]	70	182	238	1040
Length [mm] ⁴⁾	> 33	> 38	> 43 ⁵⁾	> 300 ^{6), 7)}
Pipe connections				
Connections	female 1/8" NPT	female 1/2" NPT	G1 1/2" (union 32mm)	Flanges ⁸⁾
Outer pipe diameter ¹⁰⁾	-	-	32mm	90mm
Electrolyte flow data				
Max number of separate flows (compartments) ⁹⁾	4	4	2	3
Electrolyte Flow per max. module, stack [L/min] ^{3, 11)}	-	20-80	65-117	100-600
Electrolyte Flow per frame, Cell [L/min] ^{3, 11)}	0.18-1.5	1-4	5-9	5-30
Electrolyte volume per frame, Cell [L] ²⁾	0.01	0.2	0.6	-
Flow rate in each cell [m/sec] ³⁾	0.05-0.4	0.03-0.12	0.2-0.38	0.05-0.4
Pressure drop in a module (water 25C) [kPa]	-	5-50	8-50	0.5-16
Max working temperature ^{2, 3)}	-	-	-	-
Materials ⁹⁾				
Flow frame materials, standard	PTFE	PP, PVDF	PP, PVDF	PP, PVDF
Sealing, gasket materials, standard	EPDM, FPM (Viton)			
Ion exchange/selective membranes, diaphragms	Nafion, other various types			
End plate materials (not in contact with media)	Stainless steel			
Electrode materials:	Stainless steel, Ti, Ni, Hastelloy, Nb, Ta, graphite, Zn, Sn, Fe, Pb, Pt foil, ...			
Coated electrodes	Pt on Ti, DSA [®] for Cl ₂ or O ₂ evolution (Ir-, Ru-MMO), PbO ₂ , Boron Doped Diamond, ...			
3 dimensional electrode materials	Graphite/carbon (felt, granulate, RVC), Ni foam, Cu foam, ...			
GDE sheet materials	Catalyzed and uncatalyzed types with/without metal screens			

Remarks:

- 1) Area can be minimized/modified on request
- 2) Depends on configuration and choice of sealing and frame materials
- 3) Depends on application, configuration and choice of electrode materials etc.
- 4) Depends on configuration and stack size (excl. Pipe/ connectors)
- 5) Max length approx 280mm at 1.04m² stack size
- 6) Max length approx 1160mm for 2 compartment 16m² stack size
- 7) Max length approx 1120mm for 3 compartment 12m² stack size
- 8) DIN 2501 PN 10. Others on request
- 9) Depends on Cell type. Other materials on request
- 10) In general use piping with large openings (ID) in order to avoid back pressure and improve gas release
- 11) Max working pressure 0.5 bar (50 kPa). For higher pressure consult your local ElectroCell representative