

Table 1: Φ values in a rectangular channel as a function of γ' , from Han et al.

$\gamma' = S/B$	Φ
1.000	0.0752
0.750	0.0735
0.500	0.0660
0.250	0.0427
0.125	0.0227
0.000	0.0099

Table 2: Geometric details of the electrolyzer used in this work

		Printed Electrolyzer
L	Electrode length	10 cm
B	Electrode width (breadth)	4 cm
S	Electrode spacing	0.5 cm
A	Electrode area	40 cm ²
γ	Electrode aspect ratio B/L	0.40
d_H	Hydraulic diameter $2 \cdot B \cdot S / (B + S)$	0.89 cm
L/d_H	Length number L/d_H	11.25

Table 3: Physical properties of the electrolyte, relevant constants

ρ	Density of the electrolyte	1029.8 kg/m ³ [16-17]
ν	Kinematic viscosity	9.52 * 10 ⁻⁷ m ² /s [17]
T	Temperature	298 K
$C_{(III)}$	Concentration of hexachloroiridate(III)	1.0 mM
$C_{(IV)}$	Concentration of hexachloroiridate(IV)	0.5 mM
D	Diffusion coefficient of hexachloroiridate(IV)	8.38 * 10 ⁻¹⁰ m ² /s
Sc	Schmidt number of the electrolyte	1011

Table 4: Literature correlations of parallel plate electrolyzers and their geometric data

Reference	a	b	c	d [‡]	Reynolds	S (mm)	L (mm)	B (mm)	dH (mm)	Le
[13] Dev. Laminar (Pickett) [†]	2.10	0.33	0.33	0.33	58 - 2000	7	149	40	12	12.51
[13] Dev. Turb. Le >12 (Pickett)	0.023	0.8	0.33	-	2000 - 20000	7	149	40	12	12.51
[13] Dev. Turb. Le <10 (Pickett)	0.125	0.66	0.33	0.25	4000 - 20000	7	60	40	12	5.04
[1] FM01-LC (Hammond)	0.174	0.68	0.33	-	120 - 450	6	160	40	10	16.55
[18] FM01-LC (Brown)	0.22	0.71	0.33	-	200 - 1000	6	160	40	10	16.55
[22] FM01-LC (Griffiths)	0.18	0.73	0.33	-	500 - 2200	6	160	40	10	16.55
[22] FM01-LC (Szanto)	0.24	0.7	0.33	-	200 - 1000	6	160	40	10	16.55
[5] ElectroSyn (Carlsson)*	0.39	0.63	0.33	-	70 - 800	9	297	148	17	17.50
[1] Filterpress (Ralph)	0.28	0.7	0.33	-	148 - 6109	20	100	100	33	3.00
[23] DiaCell (Santos)	0.141	0.7	0.33	-	100 - 2500	7	130	94	13	9.98
[28] Unbaffled (Wragg)	0.19	0.812	0.33	-	1250 - 6900	15	150	150	27	5.50
[28] Baffled (Wragg)	0.46	0.66	0.33	-	3000 - 15000	15	450	50	23	19.50
[26] Unbaffled (Oduoza)	0.49	0.7	0.33	-	900 - 10000	15	150	150	27	5.50
[26] Baffled (Oduoza)	0.91	0.6	0.33	-	2500 - 20000	15	450	50	23	19.50
[4] UA200.08 (González)	0.35	0.7	0.33	-	94 - 804	8	120	180	15	7.83
[21] UA16.15 (Frías-Ferrer)	1.08	0.61	0.33	-	272 - 2571	15	40	40	22	1.83
[21] UA63.15 (Frías-Ferrer)	0.84	0.63	0.33	-	170 - 1664	15	90	70	25	3.64
[21] UA63.03 (Frías-Ferrer)	0.17	0.82	0.33	-	117 - 629	3	90	70	6	15.64
[27] 3D Printed (Ponce de Leon)	1.22	0.65	0.33	0.25	150 - 800	14	70	70	23	3.00

Note [†]: The correlation for developed laminar flow is based on eq. 3a, with

$$a = 1.467 \left(\frac{2}{1+\gamma} \right)^{0.33}, \text{ where } \gamma \text{ is calculated for the dimensions of the printed electrolyzer.}$$

Note [‡]: Only nonzero d-coefficients are shown. d-Coefficients that are zero are marked with 'a'.

Note *: For the Electrosyn cell a different correlation is given in reference [1] compared to reference [5]. Here we report the latter.