Cube 1.0 | Rema

Electrolysis Reactor Testing Rig

Description

Cube 1.0 is a modular water electrolysis testing rig (dry cathode) derived from Rema's field-proven Be1 AEM electrolyzer system. Delivered as a stand-alone unit or as part of a modular configuration, it enables testing across a wide range of cells and stacks on a single and cost-effective platform.

As electrochemical cells and stacks developers we experienced first-hand the limitation of not being able to test reactors fast and simultaneously on independent channels. That's why "Cube" is engineered to eliminate the bottleneck of limited parallel testing channels for businesses working on the development of electrochemical reactors.

Full process instrumentation, integrated control software, and a built-in safety system are included as standard. The system ensures reliable cell and stack characterization, without the complexity, effort, cost and unreliability of a DIY setup.

Starting price = 19'900 EUR (EXW, VAT excl.)

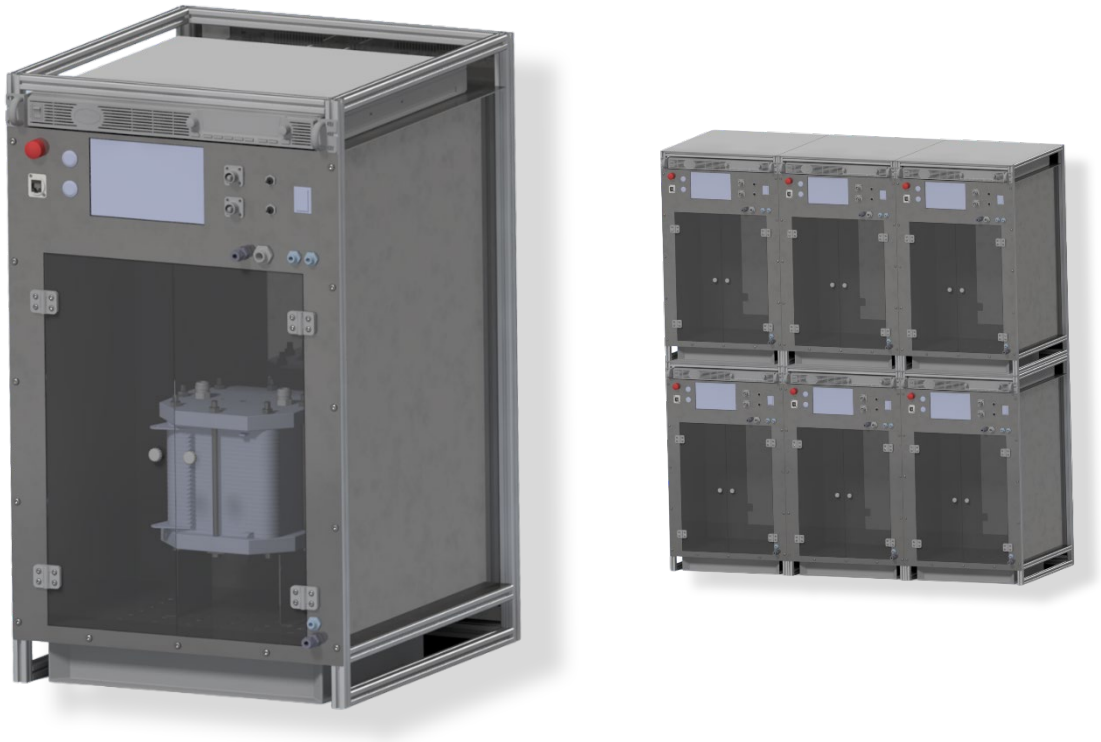


Figure 1: (Left) REMA Cube 1.0 (Right) Cube 1.0 clustered for compact parallel testing.

Standard specifications

Cell operation mode	Dry cathode
Electrolyte temperature	Amb. - 80 °C
KOH concentration	3 M (max.)
H2 concentration measurement	0 - 2.5 % *(H2 in O2 gas line)*
DI water refill system	Automatic | Pressure range: 1 - 4 bar(g)
Human machine interface	10" touchscreen | REMA's developed interface for operation, live process monitoring, alarm management and data logging
Safety & protection	• Real-time monitoring of critical process values (incl. hydrogen and electrolyte leakage detection, hydrogen-in-oxygen concentration) • Automatic fault detection with safe shutdown and depressurization • Independent hardwired emergency shutdown circuit (incl. E-stop)
Communication	• Ethernet (TCP/IP): remote monitoring and control via REMA's app
Input voltage	• 210 - 240 VAC | 50/60 Hz | single phase
Process interfaces	• H_2O inlet: 6 mm push-in fitting • O_2 outlet: 6 mm push-in fitting • H_2/H2O purge: G1/8 female thread • H_2 outlet: G1/8 female thread • Drain/ Refill electrolyte: Male NW 3.2 - 1/8" barb connection • Electrical: Panel-Mount IEC C14
Ambient operating temperature	• 5 - 40 °C
System dimensions	• 485 (W) × 520 (D) × 810 (H) mm
Experiment working area dimensions	• 440 (W) × 330 (D) × 495 (H) mm
Weight	• ~ 65 kg

Configuration options[1]

Power supply	☐	0 – 6 VDC | 0 – 200 A	+ 2'480 EUR
	☐	0 – 20 VDC | 0 – 120 A	+ 3'760 EUR
	☐	0 – 60 VDC | 0 – 85 A	+ 6'050 EUR
	☐	0 – 30 VDC | 0 – 170 A	+ 6'050 EUR
	☐	Custom power supply[2]	TBD
Electrolyte flow rate	☐	0.01 – 0.5 L/min	+ 2'310 EUR
	☐	0.02 – 1 L/min	+ 2'310 EUR
	☐	1 - 5 L/min	Included
	☐	0.02 - 5 L/min (double pump)	TBD
H2 pressure outlet	☐	Up to 35 bar *(user-adjustable, electronic)*	+ 1'810 EUR
	☐	Up to 35 bar *(user-adjustable, manual)*	+ 630 EUR
	☐	Up to 30 bar (non-return preset valve)	+ 330 EUR
	☐	Non pressurized (vented)	Included
Electrolyte conductivity measurement	☐	0.1 - 2000 mS cm^{-1} (max medium temp. 60 °C)	+ 1'255 EUR
	☐	0.1 - 1000 mS cm^{-1} (max medium temp. 80 °C)	+ 2'130 EUR
DI water conductivity measurement	☐	0.1 - 50 µS cm^{-1}	+ 400 EUR

Contact details

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[1] Max one option for each category. Prices of options are to be considered as estimates and could be subject to change.
[2] Discuss requirements with REMA. Lower-cost (up to 50% cheaper) industrial PSU options available for long-term stack testing (reduced V–I range).