# 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 stacks developers we experienced first-hand the limitation of not being able to test reactors fast and simultaneously on independent channels. "Cube" is engineered to eliminate this bottleneck.

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)<br>• Automatic fault detection with safe shutdown and depressurization<br>• 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<br>• $O_2$ outlet: 6 mm push-in fitting<br>• $H_2$/H2O purge: G1/8 female thread<br>• $H_2$ outlet: G1/8 female thread<br>• Drain/ Refill electrolyte: Male NW 3.2 - 1/8" barb connection<br>• 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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|---|---|
| **e-Mail** | Letstalk@h2rema.ch |
| **Website** | https://www.h2rema.ch/ |


[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).