



# H<sub>2</sub>B<sub>2</sub>



**Main Characteristics** **EL20N**

<b>Electrolysis Type</b>	PEM (Proton exchange membrane, caustic free)
<b>Number of Cell Stacks</b>	1
<b>Hydrogen Gas Production</b>	
<b>Max. Nominal Hydrogen Flow</b>	20 Nm <sup>3</sup> /h (43 kg/day)
<b>Hydrogen Flow Range</b>	10 -100%
<b>Operating Pressure</b>	15 - 40 barg (217-580 psig)
<b>Hydrogen Purity (before Gas Purification)</b>	> 99.9% ; < 25 ppm O <sub>2</sub> ; H <sub>2</sub> O saturated
<b>Hydrogen Purity (after Gas Purification)</b>	99.999%; < 5 ppm O <sub>2</sub> ; < 5 ppm H <sub>2</sub> O
<b>Electrical Requirements</b>	
<b>Voltage</b>	3 x 400 VAC ± 10% (3Ph+N) / 3 x 480 VAC ± 10% (3Ph+N)
<b>Frequency</b>	50 Hz ± 5% / 60 Hz ± 3%
<b>Power (BoP + Stack)</b>	106.6 kW
<b>Stack Consumption (*)</b>	4.7 kWh/Nm <sup>3</sup> H <sub>2</sub>
<b>AC Power Consumption (BoP + Stack) (*)</b>	5.2 kWh/Nm <sup>3</sup> H <sub>2</sub>
<b>Feed Water - Demi Water (optional Water Treatment Plant is not included)</b>	
<b>Consumption</b>	< 1 L/Nm <sup>3</sup> H <sub>2</sub>
<b>Conductivity</b>	> 10 MΩcm (< 0.1 uS/cm); TOC < 30 ppb
<b>Pressure</b>	2-3 barg (29-43 psig)
<b>Temperature</b>	+5 °C to +40 °C (+41 °F to +104 °F)
<b>Control System</b>	
<b>PLC</b>	Fully automated and unattended with 7" color touch screen
<b>Communication</b>	Modbus TCP/IP or Profinet (RJ45 port)
<b>Environmental Conditions</b>	
<b>Ambient Temperature Range</b>	+5 °C to +45 °C (+41 °F to +113 °F)
<b>Humidity</b>	0 to + 95% (non-condensing)
<b>Air Ventilation</b>	Available from a non-hazardous area
<b>Installation Area</b>	Indoor/Outdoor
<b>Dimensions and weight</b>	
<b>Dimensions (LxWxH)</b>	20 ft container (6.0m x 2.4m x 2.9m) (19.7ft x 7.9ft x 9.5ft)
<b>Approx. Weight</b>	11,000 kg (24,251 lb)
<b>Standards &amp; Regulations</b>	
<b>Compliance</b>	CE, ISO 22734-1 / NFPA 2-2016 & NFPA 70
<b>Other Characteristics</b>	
<b>Duty Cycle</b>	100% (24/7)
<b>Start-up Time (from Stand-by)</b>	< 1 sec
<b>Cold Start Time</b>	< 5 min
<b>Nitrogen System</b>	For each purge, consumption is <0.2 kg at 3 barg (to be supplied by the customer)
<b>Instrumentation Air System</b>	Consumption 7 Nm <sup>3</sup> /h at 10 barg (to be supplied by the customer)

(\*) Electrical consumption at maximum current density and operating pressure at the stack; this is reduced if those are not required.

Included	Additional Options
Hydrogen Cooling System	Oxygen Processing System
Emergency Shutdown System	Hydrogen Purification System (SAE J2719 September 2011)
Overpressure Relief System	Water Treatment System
Redundancy on Critical Safety Parameters	Extreme Environmental Conditions Package (Low and High Temp)
Uninterruptible Power Supply (UPS)	Hydrogen Mass Flow Measure & Purity Measure (H <sub>2</sub> O & O <sub>2</sub> Sensors)
Heat Management (No Cooling Water is Needed)	Instrumentation Air System
Virtual Private Network (VPN) connection	Nitrogen System