



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



Main Characteristics		EL60N	
Electrolysis Type	PEM (Proton exchange membrane, caustic free)		
Number of Cell Stacks	2		
<b>Hydrogen Gas Production</b>			
Max. Nominal Hydrogen Flow	63.3 Nm <sup>3</sup> /h (136.58 kg/day)		
Hydrogen Flow Range	10 -100%		
Operating Pressure	15 - 40 barg (217-580 psig)		
Hydrogen Purity (before Gas Purification)	> 99.9%; < 25 ppm O <sub>2</sub> ; H <sub>2</sub> O saturated		
Hydrogen Purity (after Gas Purification)	99.999%; < 5 ppm O <sub>2</sub> ; < 5 ppm H <sub>2</sub> O		
<b>Electrical Requirements</b>			
Voltage	3 x 400 VAC ± 10% (3Ph+N) / 3 x 480 VAC ± 10% (3Ph+N)		
Frequency	50 Hz ± 5% / 60 Hz ± 3%		
Power (BoP + Stack)	329.2 kW		
Stack Consumption (*)	4.7 kWh/Nm <sup>3</sup> H <sub>2</sub>		
AC Power Consumption (BoP + Stack) (*)	5.2 kWh/Nm <sup>3</sup> H <sub>2</sub>		
<b>Feed Water - Demi Water (optional Water Treatment Plant is not included)</b>			
Consumption	< 1 L/Nm <sup>3</sup> H <sub>2</sub>		
Conductivity	> 10 MΩcm (< 0.1 uS/cm); TOC < 30 ppb		
Pressure	2-3 barg (29-43 psig)		
Temperature	+5 °C to +40 °C (+41 °F to +104 °F)		
<b>Control System</b>			
PLC	Fully automated and unattended with 15" color touch screen		
Communication	Modbus TCP/IP or Profinet (RJ45 port)		
<b>Environmental Conditions</b>			
Ambient Temperature Range	+5 °C to +45 °C (+41 °F to +113 °F)		
Humidity	0 to + 95% (non-condensing)		
Air Ventilation	Available from a non-hazardous area		
Installation Area	Indoor/Outdoor		
<b>Dimensions and weight</b>			
Dimensions (LxWxH)	20 ft container (6.0m x 2.4m x 2.9m) (19.7ft x 7.9ft x 9.5ft)		
Approx. Weight	13,000 kg (28,860 lb)		
<b>Standards &amp; Regulations</b>			
Compliance	CE, ISO 22734-1 / NFPA 2-2016 & NFPA 70		
<b>Other Characteristics</b>			
Duty Cycle	100% (24/7)		
Start-up Time (from Stand-by)	< 1 sec		
Cold Start Time	< 5 min		
Nitrogen System	For each purge, consumption is <0.2 kg at 3 barg (to be supplied by the customer)		
Instrumentation Air System	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.			
<b>Included</b>		<b>Additional Options</b>	
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		