



Large Renewable Energy Transformer
Technical Data Sheet



LARET Large Renewable Energy Transformer

Technical data sheet of sample dimensions of 50 MW

Version: July, 2014

MESY reserves the right at any time to adjust the data current developments.

Electrolyser Array ~11,000 Nm ³ /h	Dimensions	Values
LARET® electrolysis array consisting of:		
Number of arrays	count	1
Number of clusters	count	5
Electrolysis units per cluster	count	5
Total number of electrolyser stacks	count	25
LARET® connected load (final development)		
LARET® connected load (final development)	MW	~ 50
Electrolysis input connected load (nominal)	MW	~ 49
Stack efficiency	%	> 80
Degradation of model plant assets	%	18 years ca. 8%
Cluster capacity hydrogen production (nominal)	Nm ³ /h	a 2,000
Cluster capacity oxygen production (nominal)	Nm ³ /h	a 1,000
Cluster power consumption	MW	10
Total H ₂ -gas production capability (nominal)	Nm ³ /h	10,000.00
Total H ₂ production range	Nm ³ /h	25 – 13,330
Maximum operating pressure (output electrolyser unit)	barg	30
Operating temperature	°C	a 80
Ambient temperature	°C	-25 / +40
Room temperature	°C	+5 / +40
Electrolyte (KOH solution) concentration	% w	25 - 30
O ₂ in H ₂ directly from stack	vol. %	< 0,1
H ₂ in O ₂ directly from stack	vol. %	< 0,6
KOH in H ₂ directly from stack	mg/Nm ³	< 1
Purity gas production: hydrogen directly from stack	vol.%	99,6 +/- 0,2
Purity gas production: oxygen directly from stack	vol.%	99,4 +/- 0,3
Hydrogen purity downstream dryer	vol.%	99.998
After dryer: Oxygen	ppm(v)	< 5
After dryer: Water vapour	ppm(v)	< 50
Specific energy consumption (DC) first year of operation	kWh/Nm ³ (H ₂)	4.425 +/- 1%
Demin water approx.	l/Nm ³ H ₂	1
Cooling water approx.	l/Nm ³ H ₂	84
Dimensions		
Total dimensions of plant (depending of country standards) include infrastructure, streets, gas head end.	m (x, y)	160 x 140