

FABRUM.
LIQUID HYDROGEN SOLUTIONS

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**HYDROGEN
LIQUEFIERS**

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Drawing from a legacy of over a decade in providing containerised cryogenics solutions worldwide, Fabrum's HLQ Liquid Hydrogen Plants are designed for point-of-use liquid hydrogen production and boil-off-gas management (BOGM) of existing liquid hydrogen storage systems.

At the core of these innovative systems lies a pulse-tube cryocooler, powered by our patented pressure-wave-generation technology, eliminating the necessity for sacrificial liquid nitrogen and marking a significant leap in efficiency. Equipped with an advanced boil off gas management (BOGM) technology for zero-loss operation.



APPLICATIONS

- Liquid hydrogen vehicle fuelling
- Energy storage
- Hydrogen transportation/distribution
- Research and development
- Mining
- BOGM



INDUSTRIES

- Aviation
- Mining
- Marine
- Heavy vehicle road transport
- Energy research



KEY BENEFITS

- High efficiency
- Low cost of ownership
- Rapid deployment/relocatable

The Fabrum Hydrogen Liquefiers deliver these attributes:

- 01** Utilisation of pulse-tube, Gifford-McMahon, and turbo-expander technologies for high efficiency cooling
- 02** Integration into existing operation
- 03** No requirement for sacrificial liquid nitrogen precooling
- 04** Rapid turn-up/turn-down response: ideal for renewable energy
- 05** Standby, zero-boil-off mode
- 06** Flexible liquefaction pressure

Innovating Hydrogen Liquefaction: Fabrum's Containerised HLQ Liquid Hydrogen Plants



PRODUCT SPECIFICATIONS

FABRUM HLQ75

FABRUM HLQ1000

Daily liquefier capacity (kg)	75	1000
Liquefaction pressure (barg)	5	1
Hydrogen supply purity requirement (%)	99.9	99.9
Turn-down available (%)	Yes	Yes
Minimum output (% of FS)	20	50
Storage included (L)	3000	70,000
Zero boil-off mode	Yes	No ¹
Footprint	1 x 40' ISO container	30 m x 24 m
Input voltage	400 VAC @50 Hz, 3 phase	400 - 480 VAC @60 Hz, 3 phase
Nominal power consumption (kW)	100	1,500
SEC for entire system (kWh/kg)	31	27 ²
Start up time	<1 hr	<1 day

¹Zero-boil-off while operating

²Including o-p conversion

“We operate at the bottom of the world but we perform at the top of it; and this is just the beginning of our story.”



Mission Critical Solutions.

Providing world leading solutions in engineering and cryogenic technology. Clever Solutions for a Better Future.

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