

Hydrogen Refuelling Station

CAPABILITY SHEET · H35 DISPENSING · 500 BAR STORAGE · ENGINEERED TO ORDER

THE STATION

WHAT	Hydrogen in from a tube trailer at ~350 bar(g) or an on-site electrolyser at ~20 bar(g); conditioned, compressed, banked at high pressure, chilled, and delivered into a fuel-cell vehicle at H35 in about the time a diesel fill takes.
THE CORE IDEA	Storage pressure is not fuel pressure. Gas only flows down a gradient, so inventory is banked at ~500 bar(g) to drive a complete 350 bar fill to the end. That gap is the whole reason the compressor exists.
STATUS	Engineered to order. Reference configuration, not yet built - engineered against repeated Indian green-mobility requirements; no order followed, so no delivered station is claimed.

ENVELOPE

CAPACITY	Reference station ~150 kg/day in a containerised layout, scaling upward, with back-to-back refuelling about 5 minutes apart. Dispensing at H35 (350 bar) through two nozzles for heavy and light duty, used non-simultaneously, with exchangeable nozzle receivers.
COMPRESSION & STORAGE	Non-contaminating diaphragm compressor, triple-layer metallic diaphragm with leak detection, nominally 140 Nm ³ /h, 0-100 % turndown, 24 h duty, discharge ~500 bar(g). PESO-approved Type 1/Type 3 vessels on a skid, from about 40 kg upward in modular banks, TPRD where Type 3.
PRE-COOLING	Chiller sized to deliver the T20 category (about -20 degC) AT THE NOZZLE after ambient loss, through a diffusion-bonded or printed-circuit heat exchanger placed as close to delivery as the pipework allows.

HOW IT WORKS

CONDITION	Decant panel with trailer pigtails and a separate nitrogen purge set, Coriolis mass flow meter, inlet filter with differential-pressure indication for carry-over rust, and an online gas analyser to ISO 14687 - fuel-cell catalysts are poisoned by CO and sulphur at parts per billion.
REDUCE	
SEQUENCE	Algorithm-based panel choosing, fill by fill, between the trailer, the storage banks and direct compressor discharge according to the state of the vehicle - with one rule above the optimisation: filling the vehicle takes precedence over refilling the cascade.

SAFETY, CODES & ENGAGEMENT

SAFETY	
CODES	ISO 19880 parts 1/3/5/8, ISO 14687, ASME B31.12, NFPA 2, ISO/TR 15916, SAE J2600, SAE J2601 parts 1-4, SAE J2719, ISO 17268, SAE J2799. PESO approval is carried in the scope of supply - it is not a certificate held in advance.
ENGAGEMENT	Send the fleet, its duty cycle and your hydrogen supply route to sales@neometrixgroup.com - compliance matrix within two working days.

PROJECTS DESK

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