

# Vertiv™ Power Module H2

Zero On-site Emission Backup for Datacenters\*



**Vertiv™ Power Module H2** is a prefabricated backup power solution based on Proton Exchange Membrane (PEM) hydrogen fuel cell (FC) technology. Vertiv partnered with Ballard Power Systems, leading PEM fuel cell company, to ensure strong foundation for the system.

Vertiv Power Module H2 provides reliable, zero on-site emission backup as an alternative to diesel generator, enabling deployment of datacenter capacity in regions with environmental and power grid capacity constraints.

By integrating PEM FCs with power converters, bridging batteries, heat rejection, master controller into a single product, Power Module H2 reduces complexity for end user.

## ZERO ON-SITE EMISSION BACKUP POWER

Vertiv Power Module H2 output is pure water with zero Nitrogen and Sulphur oxides (NOx, SOx) and zero Particulate Matter (PM) emissions. This makes the system suitable for sites with environmental air permitting restrictions. Additionally, Vertiv Power Module H2 does not produce Scope 1 (on-site), Greenhouse Gas (GHG) emissions, helping achieve carbon emission avoidance goals.

## ZERO ON-SITE EMISSIONS GRID SUPPORT

Vertiv Power Module H2 generates zero on-site emissions, allowing datacenter operators to actively manage power consumption from the grid without environmental impact. A datacenter can then become flexible power consumer and offer services to grid operators, supporting electrical power grid. This capability can help unlock power capacity which is not accessible to non-flexible consumers.

## FROM CONCEPT TO REALITY

In 2024, Vertiv developed and tested Vertiv Power Module H2 500' (350kW net output). Power Module H2 platform can be expanded to 3000kW net output, matching the power rating of typical datacenter backup system.



Vertiv™ Power Module H2 500'



Vertiv™ Power Module H2 1500'

## Vertiv Power Module H2 Advantages

### Backup capable:

- Up to 10 seconds to start-up from Standby.
- Instant 100% load acceptance after startup.
- AI ready – stable output during load transients.
- Islanded or grid parallel operation.

### Clean on-site power:

- Zero on-site emissions (NOx, SOx, PM, CO2)
- Zero on-site Scope 1 carbon emissions.

### Grid support:

- Dispatchable, zero-emission on-site power.
- Instant response to multi-hour dispatch.

### Reliable:

- Up to 25 000h run hours before overhaul.
- Fewer moving parts than generators.
- Modular design, internal redundancy as option.

### Integrated, Modular and Prefabricated

- Several complex systems in a single product.
- From 400kW to 3000kW low voltage AC output.
- Factory manufactured and tested.
- Designed for seamless datacenter integration

\*Off-site emissions depend on the method of hydrogen generation and transportation to site.

