

SereneU

Fuel Cell
Clean Power with Liquid Fuel



**Low Cost, Green
Power for
Telecom Backup,
Critical Infrastructure,
Off-Grid, Remote,
& Portable
Applications**

- Uses liquid methanol to **minimize logistics and service costs** (cuts CO₂ up to 100%)
- Can be **zero-emissions ready** with green methanol or hydrogen tomorrow
- **Operates reliably in extreme environments**, where backup power and remote power are mostly needed



ADVENT

serene.advent.energy



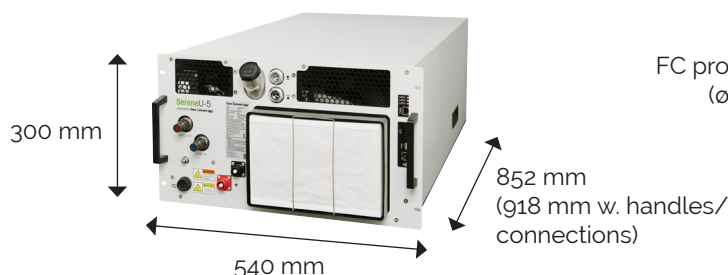
Methanol-powered hydrogen fuel cell unit

- 5kW Scalable Unit up to 125kW for Telecoms, Critical Infrastructure, Portable, Marine;
- Methanol-powered hydrogen fuel cell based on Advent's high-temp MEA technology;
- Succeeds in extreme conditions of -20°C to 50°C, and dense air pollution and heavy humidity;
- Fuel flexible to use methanol and biomethanol today, and hydrogen/eFuels in the future;
- Eco-friendly by lowering CO₂ emissions by 80%-100%, and eliminating nitrogen (NO_x)/sulfur oxides (SO_x) emissions and particulate matter by 100%;
- Low noise at <50 dB(A) vs. 85 dB(A) of a diesel generator;
- Low operational costs with a 30%-80% fuel savings versus diesel and far lower maintenance requirements.
- With more than 1000 SereneU units in service globally, it is the most tried and trusted system in the market today.

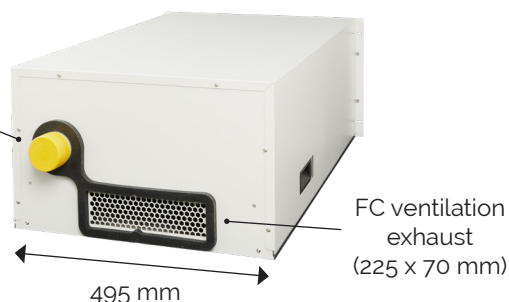
About Advent's Serene Product Line

Advent's line of Serene solutions includes the core SereneU unit, which is a 5kW fourth generation methanol-powered hydrogen fuel cell that can be configured and/or stacked to meet energy needs up to 250kW. The SereneU is based on Advent Technology's proprietary membrane electrode assembly (MEA) and high-temperature proton electrode membrane (HT-PEM), which together not only allow for higher efficiency and performance in extreme temperatures, but also for a lower total cost of ownership and start-up time, while offering true fuel flexibility.

Dimensions



FC process exhaust
(ø 70 mm)



PERFORMANCE

Max power output ¹ [kW]	5
Nominal output [kW]	3.75
Output Voltage ² [VDC]	40 - 58
Power turndown [%]	0 - 100
IP rating	IP-20

1. Max power at beginning of life

All numbers related to kW or kWh is electrical power / Energy delivered at unit terminals (kWe / kWh_e)

2. Contact Advent for other voltage variants.

WEIGHT & DIMENSIONS

Height [mm]	300
Width [mm]	495
Length ⁴ [mm]	852
Weight [kg]	80
Volume [l]	126,5

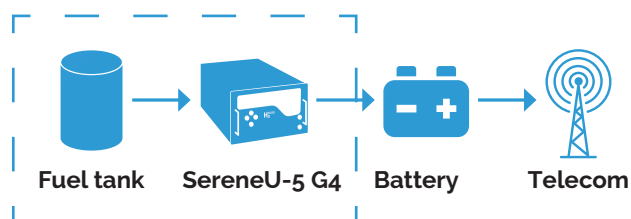
4. Length excluding handles, connectors on front and exhaust pipes on rear

OPERATIONS

Fuel mix	60% vol methanol, 40% vol deionized water
Fuel consumption ³ [l/kWh]	0.9
Net electric efficiency ³ [%]	41
Ambient temperature [°C]	-20°C and up to 50°C
Interfaces	GPIO, HTTP/SNMP/Ethernet IP, CANopen, USB

3. At beginning of life and nominal load

Typical set-up



Cabinet: Find more information on SereneS data sheet