

Pre-Production



FCe™ 50F Fuel Cell Engine

The Leading Fuel Cell Engine for Commercial Vehicles

Purposed-built for medium duty vehicles shock and vibration environment

Combustion-Less Engine providing Zero Emission Electric Power

The 50kW Fuel Cell engine is our most robust engine with 20 kW/sec transient power capabilities offering a fully integrated freeze capable system with a rapid startup design and industry leading power density specifically designed for medium duty, shuttle bus, port trucks, GSE, ports and logistics equipment and off-road applications.

Performance Characteristics

● Electrical

| | |
|----------------|---|
| Output Power‡ | 5 - 50kW |
| Output voltage | 300 - 750V _{DC} (Integrated dc-dc converter) |
| Ramp rate | 20 kW/sec |

● Efficiency

| | |
|--------------------|-----------------------------------|
| System Efficiency† | 56.9 to 46.3% (10% to full power) |
|--------------------|-----------------------------------|

● Temperature

| | |
|---------------------|------------------------|
| Ambient Temperature | -40 to 55°C |
| Cooling Inlet | Up to 60°C (50/50 WEG) |

● Fuel

| | |
|---------------|----------------------------|
| Fuel Flow | 3.0 kg/hr @ full power |
| Fuel Pressure | 1200 ±200 kPa _g |
| Fuel Type | SAE J2719 Hydrogen |

● Physical Characteristics

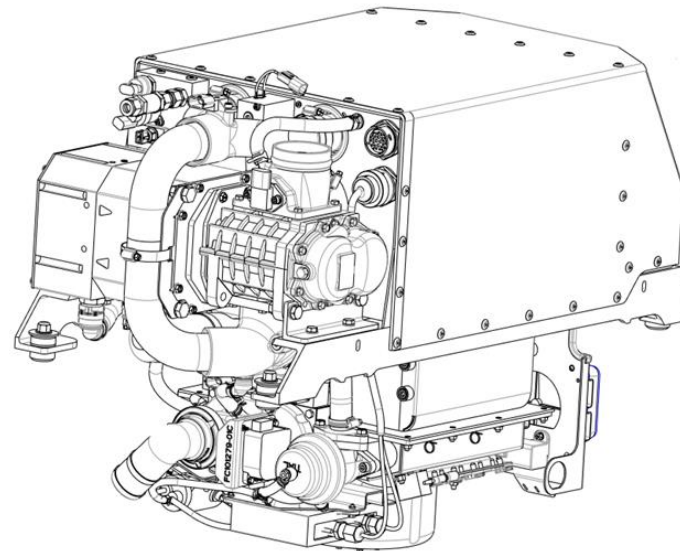
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| Dimensions (L x W x H) | 993 x 455 x 692 mm |
| Weight | 148 kg, (including Isolated dc-dc converter) |

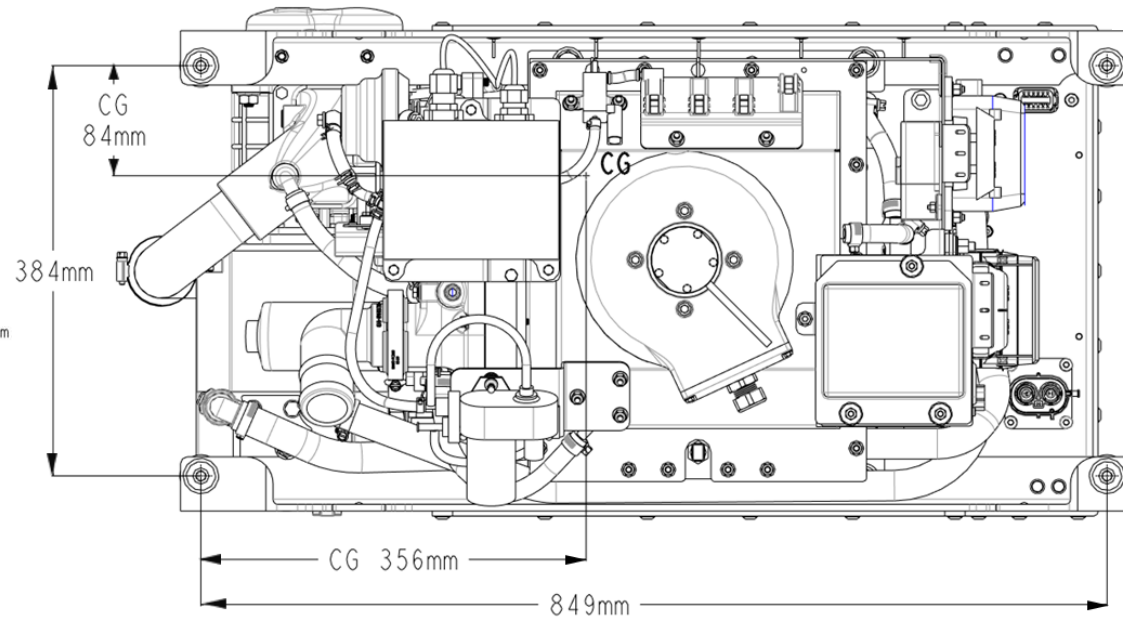
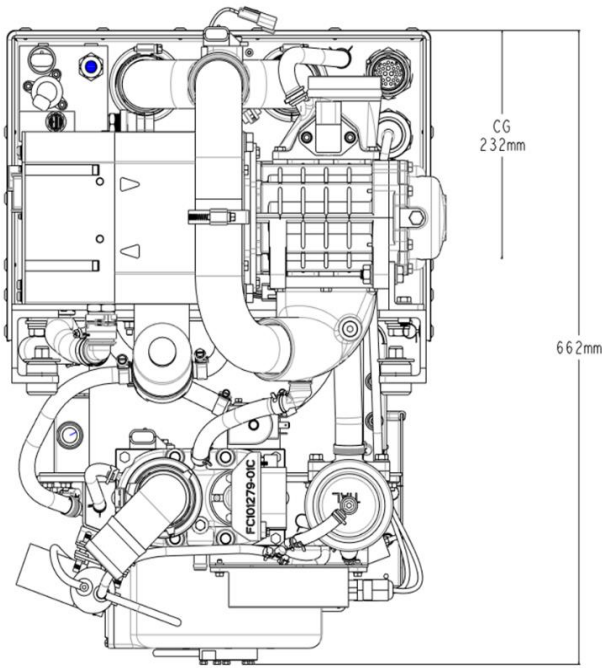
● Interface

| | |
|------------------------|---------------|
| Vehicle Communications | CAN SAE J1939 |
|------------------------|---------------|

● Startup / Shutdown

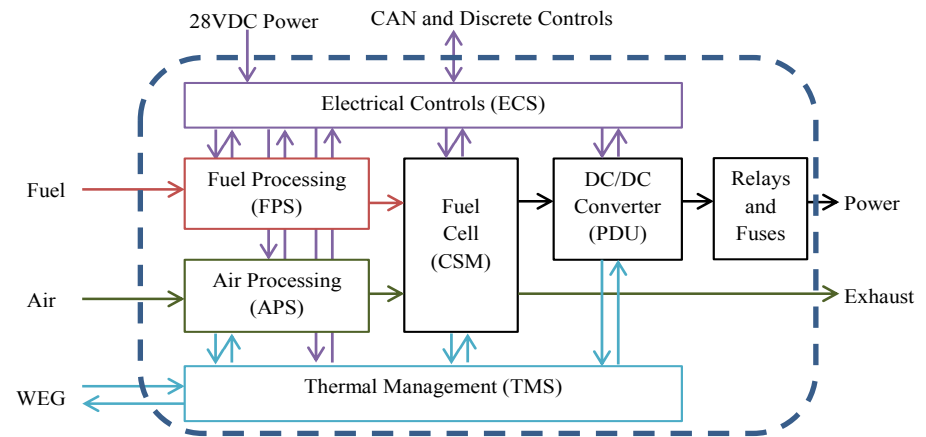
| | |
|--------------------------|------------|
| Startup Time | 10 seconds |
| Startup from Frozen Time | 3 minutes |
| Shutdown Time | 30 seconds |





FCe™50 is an integrated fuel cell engine that is purposed-built for medium-duty vehicles meeting SAE J1455 shock and vibration and environmental requirement. The FC engine includes the integrated dc-dc converter and the safety disconnect and protection system.

The FCe™50 engine is the most efficient fuel cell engine with all BOP components integrated and no demand from the vehicle. The low-pressure operation allows fast transient response with high efficiency even at low power range. The FC engine design allows easy installation, command and control as a conventional engine. Cooling is 50/50 WEG system with no external DI water-cooling or circulation pump



FCe™50 Integrated FC engine diagram

† System efficiency represents energy delivered per energy fed in the form of hydrogen (calculated on a LHV basis).

‡ Full power is the maximum power the electric engine can continuously deliver.

US Hybrid reserves the right to change the specification without notice. Rev: 191104

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