



## ZENORO HYBRID MARINE GENERATOR

### 6068SFM85 Variable Speed Marine Generator Set

206 - 227 ekW / 1200 - 2600 rpm


**Model: ZAJDRA227VHEOU**


**DIMENSIONS**  
 1751 x 1000 x 1824 mm 


**WEIGHT**  
 dry weight 1800 kg 


**VIBRATIONS**  
 low 



 **POWER**  
 206 - 227 ekW

 **EMISSION**  
 IMO II / IMO III optional

 **COLOURS**  
 RAL 9010 or custom

 **ENCLOSURE**  
 Optional aluminium modular design

#### GENERATOR RATINGS PRIME

Variable speed 1200 - 2600 rpm  
 100% power 206 ekW (rated genset power output)  
 110% power 227 ekW (overload, unlimited)

#### JOHN DEERE ENGINE SPECIFICATION

##### INLINE 6 CYLINDERS, 4 CYCLE-DIESEL

Engine type	6068SFM85
Prime Power	239 kWm
Emissions	IMO Tier II
Firing order	1-5-3-6-2-4
Displacement	6.8 L (415 cu. in.)
Rated engine speed	2600 rpm
Bore	106 mm (4.21 in.)
Stroke	127 mm (5.00 in.)
Aspiration	Turbocharged-seawater after cooled
Combustion	Direct injection
Governor	Electronic
Cooling system	Heat exchanged Refill capacity
- Cooling system	28 L (7.40 US GAL)
- Lube oil system	19 L (5.02 US GAL)
Coolant change interval	Up to six years or 6000 hours of operation with John Deere COOL-GARD™ II Premix, COOL-GARD II PG Premix and COOL-GARD II Concentrate
Oil change interval	375 hours with John Deere Plus-50 II Oil & use of Low Sulphur fuel < 1000 ppm Rotation (from flywheel end) Counter clockwise

#### ENGINE ELECTRICAL

Battery voltage	24 volt isolated ground
Battery charging	50 amps
Battery recommendation	925 CCA

#### COOLING SYSTEM

Seawater pump	Gear driven
Max. seawater pump suction lift	3.0 m(10ft)
Seawater pump flow	361 L/min (95 US GAL/min)
Seawater temp maximum engine in	32 °C

#### FUEL

Fuel recommended	EN 590 or ASTM D975
Fuel injection system	HPCR
Recommended fuel line Inside diameter	>8 mm
Max. fuel Inlet Restriction	20 kPa
Total fuel flow	192 L/hr (50.72 US GAL/hr)
Maximum fuel height above transfer pump	2.4 m
Fuel pre-filter yard supply	Min. 30 micron recom.10 micron

#### OPERATION REQUIREMENTS

##### AIR REQUIREMENTS

Engine combustion air	19 m³/min
Max air intake restriction(dirty)	6.25 kPa
Exhaust flow	46.4 m³/min
Exhaust temperature	439 °C
Maximum exhaust backpressure	7.5 kPa
Engine crankcase ventilation system	Closed to eliminate engine room contamination

##### FUEL CONSUMPTION

Diesel fuel at 110% load	63 L/hr
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All above values at rated speed and power at standard conditions per SAE J1995 unless otherwise noted.



## ZENORO STANDARD FEATURES

- Engine marine white painted
- Single service side (oil filter, fuel filter & air filter)
- Double walled fuel lines + leak detection
- Steel foundation frame to support engine & Electrical Machine
- Approved vibration isolators
- Emergency button

## STANDARD ENGINE SAFETY SYSTEM

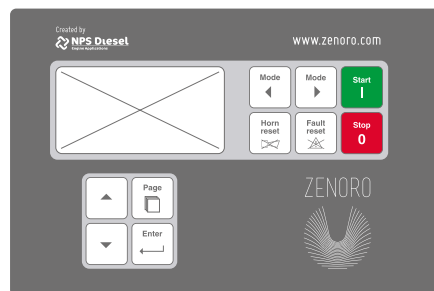
- Engine oil pressure low warning & shutdown
- Engine coolant temperature high warning & shutdown
- Engine coolant level low warning
- Fuel oil leakage from double walled fuel lines warning
- Over speed shutdown
- Belt guard

## STANDARD INTERCONNECTIONS

- Fuel connections, fuel inlet/outlet
- Seawater inlet pipe hose connection
- Seawater outlet
- Oil drain

## ENGINE CONTROLLER PLATFORM FEATURES

- Certified marine engine controller with redundant microprocessor based control for complete engine protection and control certified marine engine



## DISPLAY / USER INTERFACE

- Graphic 128 × 64 pixels display
- 2 languages, user changeable from PC; default English
- Buttons with mechanical feedback

## COMMUNICATION INTERFACES

- Generator ready to start (pot. free contact)
- Engine running (pot. free contact)
- Common warning (pot. free contact)
- Common shutdown (pot. free contact)
- External variable speed setpoint command
- Modbus (RS 232)

## ENGINE CONTROL & PARAMETERS

- Engine fault code descriptions and codes
- Black out start, 3 start attempts
- Remote start & stop

Engine parameters are visualized on display and/or Modbus RS 232 as:

- |                        |                       |
|------------------------|-----------------------|
| - Engine running hours | - Engine status       |
| - Oil pressure         | - Coolant temperature |
| - Rpm                  | - Engine load %       |
| - Battery voltage      | - Fuel consumption    |

## HISTORY LOGS

- Event based history (200 records)
- Reason, date and time + all important values are stored
- Battery backed-up RTC

## PERMANENT MAGNET MACHINE

Manufacturer	Randax
Pole number	8
Back-emf Voltage	480 V @ 2600 rpm
Rated Current	343 amps
Winding connection	Delta inside
Efficiency	up to 97%
Min. PWM converter freq.	3 kHz
Coolant flow	12 L/min
Max. coolant temperature	45 °C
Insulation class	H
Bearing	Double bearing design
Coupling	Flexible coupling
IP	55
Space heater*	2 x 65 W

\*To be connected by yard

## PERMANENT MAGNET MACHINE FEATURES

- Water cooled
- PM machine cooling integrated with engine sea water circuit through heat exchanger
- Interior Permanent Magnet design
- High efficiency
- Compact & low weight
- One insulated bearing and grounded shaft
- 2 x Pt100 temperature sensor and 2 x PTC thermistor per winding
- Configurable as one 3 phase winding or two galvanically separated 3 phase windings
- Permanently greased bearings
- Resolver position sensor

## GENERAL

- Plastic wrap packing
- Manuals supplied in cd rom format with instruction, operation and maintenance manual (in PDF format only)
- Factory quality report

## OPTIONAL

- Drip pan underneath oil & fuel filter(s)
- Engine coolant level low warning by Murphy gauge
- Engine oil temperature sensor warning & display
- Duplex fuel oil filter switchable
- Engine oil drain with hose & hand pump
- Sea water flow sensor
- Modbus converter for RS 485 protocol
- Optional Internet/Ethernet connection for remote monitoring
- Outside muffler & water separator
- Classification: Lloyds, ABS, RINA
- Unit certificates for certain notations
- Manuals in hard copy format
- Other electrical machine winding configuration to match different DC bus voltage level

## EXHAUST AFTERTREATMENT SYSTEM

- IMO Tier III compliant emissions with XEAMOS SCR (Selective Catalytic Reduction) system
- Optionally combined with XEAMOS DPF Soot filter with electrical or fuel burner regeneration

## REFERENCE CONDITIONS

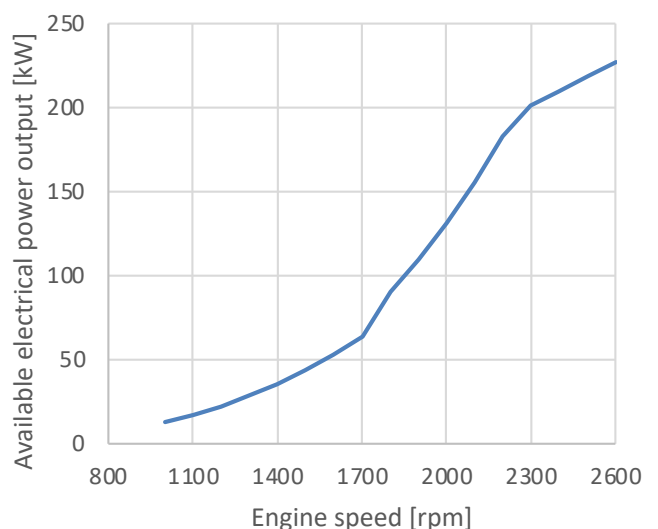
- Rated speed and power
- Gross Power guaranteed within +/-5% at SAE J1995 and ISO3046
- J1995 and ISO 1346 conditions:
  - 25 °C (77 °F) air inlet temperature
  - 99 kPa (29.31 in. Hg) barometric pressure
  - 40 °C (104 °F) fuel inlet temperature
  - 0.853 fuel specific gravity @ 15 °C (60 °F)

Ambient air temperature is defined to be the temperature of ambient air close to operating vessel that is not influenced at any manner by operating characteristics of the vessel (free field temperature).

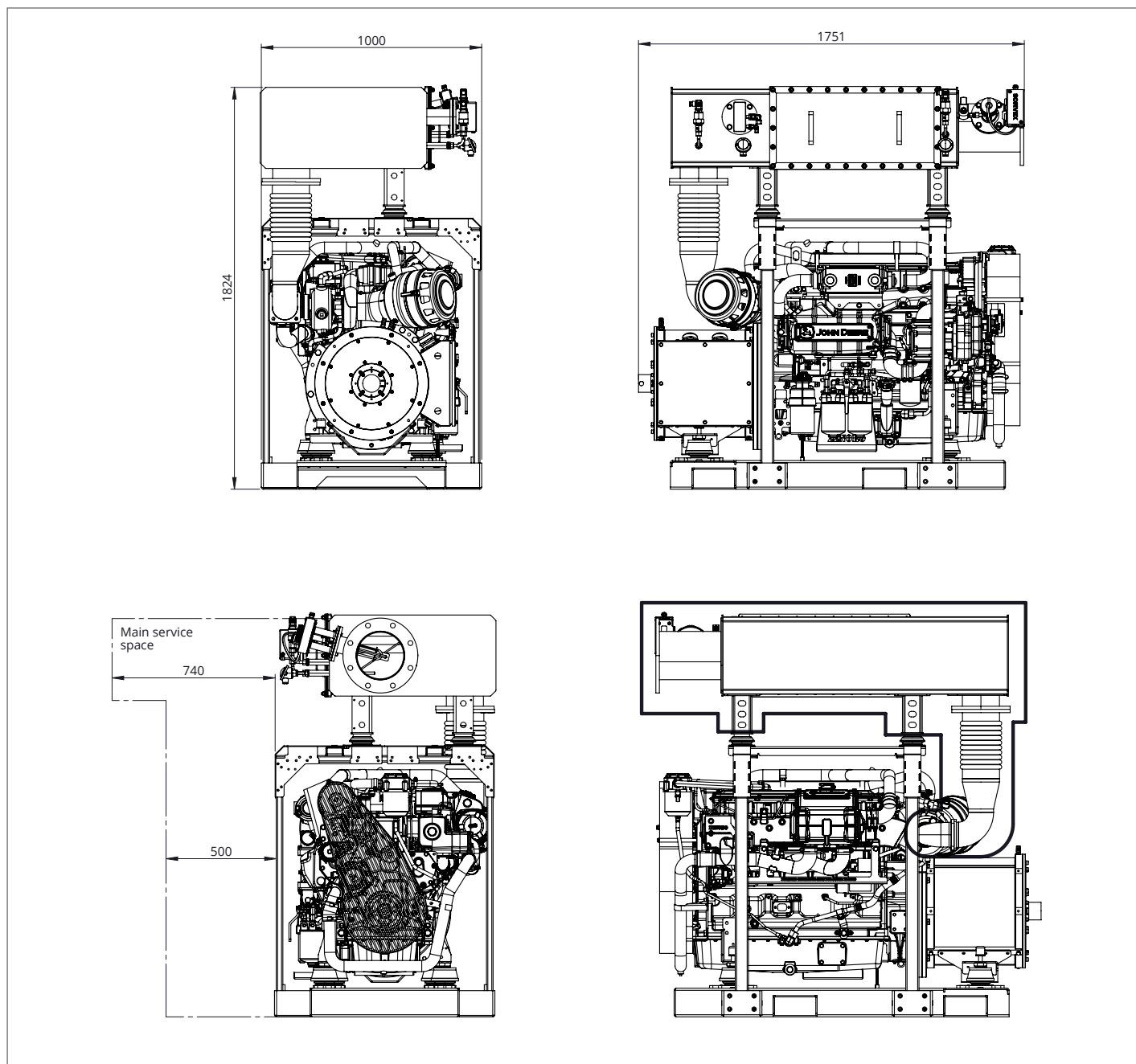
All values from current available data. Subject to manufacturing and measurement variations and to change without notice. Actual performance is subject to application and operation conditions outside of Zenoro control.

## RATINGS

Propeller-law operated main or auxiliary engine. Suitable for applications that typically operate between 2,000-4,000 hours per year and have load factors up to 55 percent with respect to the rated genset output. This rating is for applications that use full power for no more than 4 hours out of each 12 hours of operation. Certified according to ISO 8178 E3 test cycles.



## DIMENSIONS



NOTE: Generator sets to be installed above waterline. If not consult factory.

This drawing is provided for reference only and is not intended for installation purpose. Contact us either your local distributor for detailed information.

ZENORO | De Hammen 1 | 5371 MK Ravenstein | The Netherlands | +31 (0)486 201 600 | [info@zenoro.com](mailto:info@zenoro.com) | [www.zenoro.com](http://www.zenoro.com)

Edition 2022v1  
 ZAJDRA227VHEOU



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