

## ZENORO PREMIUM MARINE GENERATOR

### 6090SFM85 Marine Generator Set

200 ekW / 50 Hz / 1500 rpm

Xeamos DEATS-EH 2-2-65

DIMENSIONS  
2850 x 1210 x 2032 mm



WEIGHT  
dry weight 3350 kg



SOUND REDUCTION  
equal or > than 20 dB(A) at  
1 meter free field condition



VIBRATIONS  
yacht standard



**Model: ZAJDLS2005HESE**

POWER  
200 ekW / 400 V / 50 Hz

EMISSION  
NOx Certification IMO II & III  
PM reduction >97% (measured as PM 10)

COLOURS  
RAL 9010 or custom

ENCLOSURE  
modular design

Exhaust sound attenuation DPF/SCR  
35 dB(A)+/-3

#### GENERATOR RATINGS PRIME (KVA AT POWER FACTOR 0.8)

Voltage	Phase	Amps	ekW / kVA
400 / 230	3	360	200 / 250
380 / 220	3	379	200 / 250
415 / 240	3	347	200 / 250

#### JOHN DEERE ENGINE SPECIFICATION

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

Engine type	6090SFM85
Prime Power	222 kWm
Emission	IMO Tier II
Firing order	1-5-3-6-2-4
Displacement	9.0 L (549 cu. in.)
Rated engine speed	1500 rpm
Bore	118.4 mm (4.66 in.)
Stroke	136 mm (5.35 in.)
Aspiration	Turbocharged-aftercooled
Combustion	Direct injection
Governor	Electronic
Cooling system	Heat exchanged
Refill capacity	
- Cooling system	30 L (7.9 US GAL)
- Lube oil system	31 L ( 8.19 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 Oils" & use of Low Sulphur fuel <1000 ppm.
Rotation (from flywheel end)	Counter clockwise
Engine crankcase ventilation system	Closed to eliminate engine room contamination

##### ENGINE ELECTRICAL

Battery voltage	24 volt isolated ground
Battery charging	100 amps
Battery recommendation	Min.: 24V@32 °F (0 °C) 750 amps

#### COOLING SYSTEM

Seawater pump	Gear driven impeller type
Max. seawater pump suction lift	3.0 m (10 ft)
Seawater pump flow	295 L/m (78 US GAL/m)
Sea water temp maximum engine in	32 °C

#### FUEL

Fuel recommended	EN 590 or ASTM D975
Fuel injection system	HPCR
Recommended fuel line inside diameter	9 mm
Max. fuel inlet restriction	20 kPa
Total fuel flow	221 L/hr (58.4 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

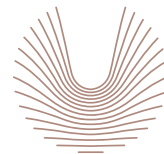
##### AIR REQUIREMENTS

Engine combustion air	14.8 m³/min
Max air intake restriction (dirty)	6.25 kPa
Ambient temperature max.	45 °C
Cooling air flow required for generator	31 m³/min set at 45 °C
Exhaust flow	36.4 m³/min
Exhaust temperature max	477 °C
Maximum exhaust backpressure	7.5 kPa
- with exhaust aftertreatment	15 kPa

##### FUEL CONSUMPTION

Diesel fuel consumption at % load		
100%	56.7 L/hr	(15.0 US GAL/hr)
75%	43.5 L/hr	(11.5 US GAL/hr)
50%	29.3 L/hr	(7.7 US GAL/hr)
25%	15.6 L/hr	(4.1 US GAL/hr)

All above values at rated speed and power at standard conditions per SAE J1995 unless otherwise noted.



## ZENORO STANDARD FEATURES

- Engine and alternator marine white painted
- Single service side (oil filter, fuel filter & air filter)
- Double walled fuel lines
- Steel frame to support engine & alternator
- Approved vibration isolators
- Dry exhaust to Exhaust After Treatment System
- Junction box & controller box in one piece, central service connector
- Emergency button
- ABS, BV, RINA classification, other classification societies by option

## 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 POSITION OF INTERCONNECTIONS

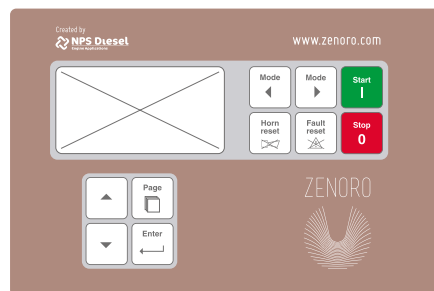
- Fuel connections, fuel inlet/outlet
- Seawater inlet/outlet pipe hose connection
- Oil drain
- Opening for AC-load leads
- Opening for battery cables

## STANDARD HIGH QUALITY HEAVY DUTY SOUND ENCLOSURE

- High quality modular sound enclosure with aluminium extrusion profiles & standard zincor panels
- RAL 9010 standard color , 2 layers powder coating
- Easily built up & dismantle
- Heavy duty service panels, easy removable
- Non-combustible insulation material according IMO (oil & vapour proof)
- Separate generator & engine compartment

## ENGINE CONTROLLER PLATFORM FEATURES

- Certified marine engine controller with redundant microprocessor based control for complete engine protection and control
- Engine settings available for droop load sharing either isochronous load sharing



## DISPLAY / USER INTERFACE

- Graphic 128 × 64 pixels display
- English language
- Buttons with mechanical feedback

## COMMUNICATION INTERFACES

- Engine speed up/down voltage or current controlled
- Generator ready to start (pot. free contact)
- Engine running (pot. free contact)
- Common warning (pot. free contact)
- Common shutdown (pot. free contact)

## ENGINE CONTROL & PARAMETERS

- 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 in %
  - Battery voltage
  - Fuel consumption

## HISTORY LOGS

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

## IMPORTANT

- Engine controller only, no generator protection, no voltage & power & current measurements.
- No paralleling functions. Yard responsibility

## ALTERNATOR SPECIFICATION

Manufacturer	Leroy Somer
Type	LSAM46.3 M8
Electrical output	200 ekW / 200 - 250 kVA
Power factor	0.8
Automatic Voltage Regulator	D350 digital AVR
	Regulation accuracy (+/- 0.25%)
Type of regulation	AREP
Temp Rise	115 °C
Insulation Class	H
Bearing	Single roller bearing
Coupling	Flexible disc
IP	23
Space heater*	250 W / 230 - 240 VAC

\*To be connected & switched by yard

## ALTERNATOR FEATURES

- Compact & low weight
- Standard 12 wire re-connectable winding, 3-phase brushless, 2/3 pitch windings
- High efficiency
- Short circuit current up to 300% of rated current for 10 seconds
- Permanently greased bearings up to 20,000 h

## GENERAL

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

## OPTIONAL

- Drip pan underneath 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
- Seawater flow sensor
- Modbus converter for RS 485 protocol
- Optional Internet/Ethernet connection for remote monitoring
- Electric cable penetrations with Roxtec
- Wet mixer loose supply & sensor for high temperature
- Muffler & water separator (external)
- PTO (power take off front)
- Other Classification societies as Lloyds, GL-DNV
- Unit certificates for certain notations
- Manuals in hard copy format
- Leroy Somer equipped with D-510 digital Automatic Voltage Regulator (AVR)
- Stainless steel baseplate for single elastic mounting
- Sound enclosure with aluminium panels
- Double elastic mounts (2 layers)

## EXHAUST AFTER TREATMENT SYSTEM

- Xeamos DEATS-EH 2-2-65
- Integrated Dual (SCR and SOOT filter) Exhaust Aftertreatment System(DEATS)
- Electrical regeneration (fuel burner optional)
- NOx sensor
- For system details, see [www.xeamos.com](http://www.xeamos.com)

## INTEGRATION DEATS

Proper engineered carrying frame in Sound enclosure to carry housing DPF + SCR reactor / silencer (combined)

- Esthetic design
- Custom exhaust compensator
- Elastic mounts
- For component details, see [www.xeamos.com](http://www.xeamos.com)

## 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.

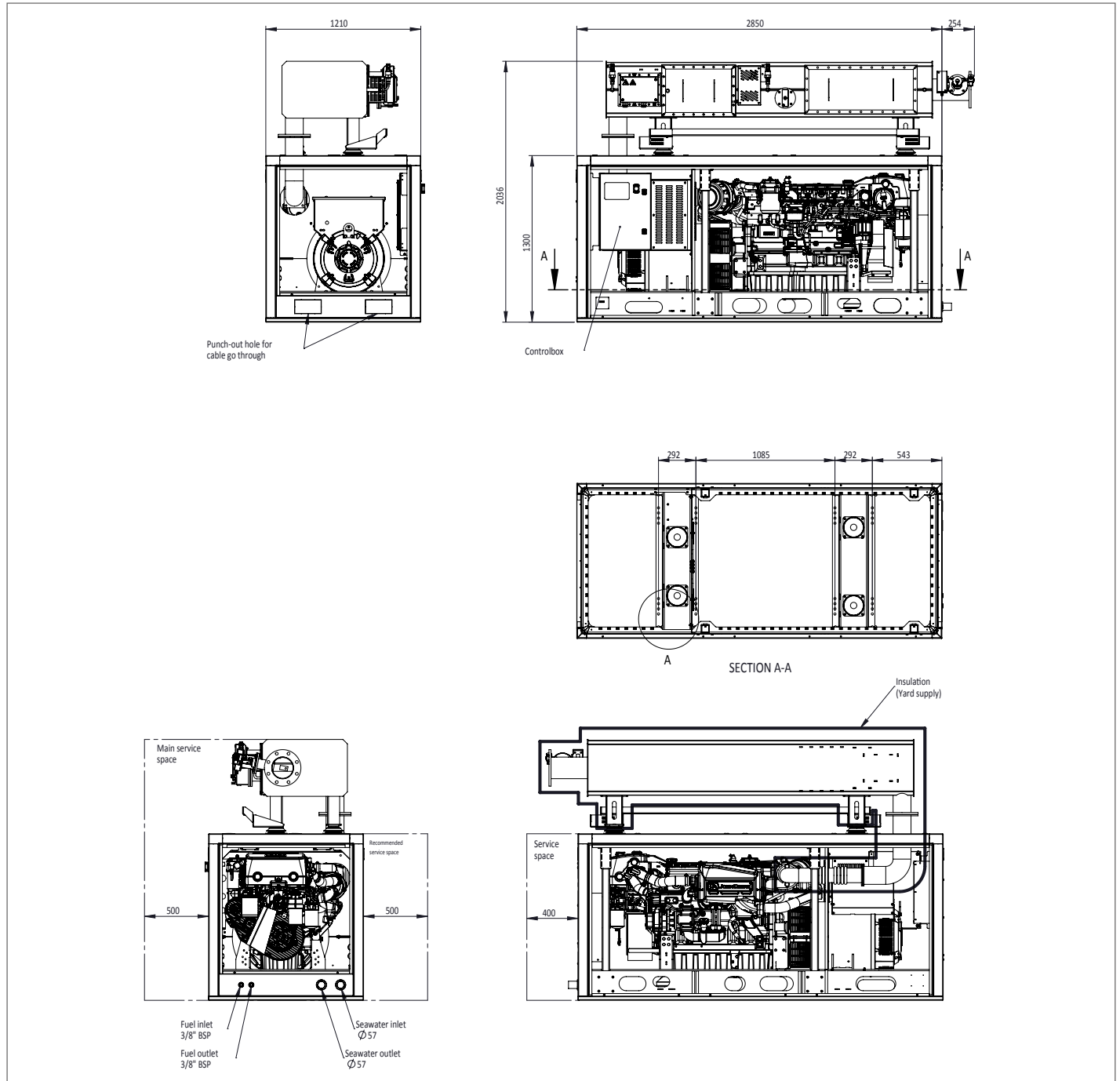
## RATINGS

Marine generator: the marine generator engine rating is the power available under normal varying electrical load factors for an unlimited number of hours per year in commercial applications.

This rating incorporates a 10% overload capability, and conforms to ISO 8528 prime power. Average load over a 24-hour period shall not exceed 67% of the prime rating, of which no more than 2 hours are between 100% and 110% of the prime rating.

The marine generator rating is restricted to generator applications only. The criteria used to establish marine generator application ratings are the same used to establish industrial prime power generator application ratings.

## DIMENSIONS



NOTE: Generator sets to be installed above waterline. If not consult factory. Minimum space required to remove air panels 200 mm, non air panels 80 mm. This drawing is provided for reference only and is not intended for installation purpose. Contact us either your local distributor for detailed information.

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Edition 202-08  
ZAJDLS2005HESE



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