

ZENORO COMMERCIAL MARINE GENERATOR

6090AFM85 Marine Generator Set

175 ekW / 50 Hz / 1500 rpm

Model: ZAJDMG1755HEOU

DIMENSIONS
2349 x 1131 x 1247 mm



WEIGHT
dry weight 2065 kg



VIBRATIONS
low



POWER
175 ekW / 400 V / 50 Hz

EMISSION
IMO II

COLOURS
RAL 9016 or custom

GENERATOR RATINGS PRIME (KVA AT POWER FACTOR 0.8)

Voltage	Phase	Amps	ekW / KVA
400 / 230	3	316	175 / 218.8
380 / 220	3	332	175 / 218.8
415 / 240	3	304	175 / 218.8

JOHN DEERE ENGINE SPECIFICATION

INLINE 6 CYLINDERS, 4 CYCLE-DIESEL

Engine type	6090AFM85
Prime power	195 kWm
Emission	IMO II
Firing order	1-5-3-6-2-4
Displacement	9 L (549 cu. in.)
Rated engine speed	1500 rpm
Bore	118 mm (4.65 in.)
Stroke	136 mm (5.35 in.)
Aspiration	Turbocharged and aftercooled
Combustion	Direct injection
Governor	Electronic
Cooling system	Heat exchanged refill capacity
-Cooling system	42 L (11.1 US GAL)
-Lube oil system	40 L (10.6 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	Up to 500 hours with John Deere Plus-50 II Oil with Oilscan™ & use of Low Sulphur fuel <0.05%
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	750 CCA

COOLING SYSTEM

Seawater pump	Gear driven impeller type
Max. seawater pump suction lift	3.0 m (10 ft)
Seawater pump flow	299 L/m (79 US GAL/m)
Sea water temp maximum engine in	32 °C
Ambient temperature max.	45 °C

FUEL

Fuel recommended	EN 590 or ASTM D975
Fuel injection system	Denso HP4
Recommended fuel line inside diameter	8.34 mm*
*Max. fuel inlet restriction	20 kPa
Total fuel flow	240 L/hr (63.4 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	17.0 m³/min
Max air intake restriction (dirty)	6.25 kPa
Air flow through generator	0.48 m³/sec
Total radiated heat	37 kw
Exhaust flow	40 m³/min
Exhaust temperature max Maximum	453 °C
Exhaust backpressure	7.5 kPa

FUEL CONSUMPTION

Diesel fuel consumption at % load		
100%	53.1 L/hr	(14.0 US GAL/hr)
75%	38.0 L/hr	(10.0 US GAL/hr)
50%	25.5 L/hr	(6.7 US GAL/hr)
25%	14.3 L/hr	(3.8 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 white painted
- Heat exchanged engine
- Single service side (oil filter, single fuel filter & air filter)
- Double walled fuel lines
- Steel frame black painted to support engine & alternator
- Vibration isolators
- Wet exhaust manifold & dry exhaust elbow (not insulated with matress)
- Junction box & controller box in one piece, central service connector, pillar mounted
- Emergency button

STANDARD ENGINE SAFETY SYSTEM

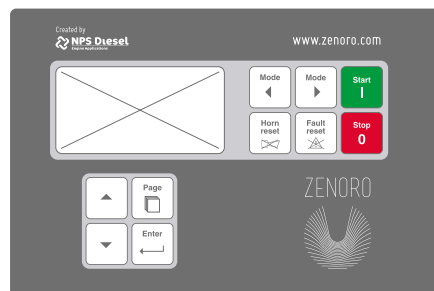
- Horn for alarm warnings
- Engine oil pressure low warning & shutdown
- Engine oil temperature sensor warning & display
- Engine coolant temperature high warning & shutdown
- Fuel oil leakage from double walled fuel lines warning
- Over speed shutdown
- Belt guard

STANDARD POSITION OF INTERCONNECTIONS, SEE DRAWING

- Fuel connections, fuel inlet/outlet
- Seawater inlet/outlet via engine connection points
- Oil drain

ENGINE CONTROLLER PLATFORM FEATURES

- Industrial engine controller 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

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 |

ENGINE FAULT CODE DESCRIPTIONS AND CODES

- Black out start, 3 start attempts
- Remote start & stop

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 S5
Electrical output	175 ekW / 218.8 kVA
Power factor	0.8
Voltage regulator	D310 +/- 1%
Type of regulation	AREP
Temp Rise	110 °C
Insulation Class	H
Bearing	Single roller bearing
Coupling	Flexible disc
IP	23

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 for lifetime

GENERAL

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

OPTIONAL

- Custom painted
- Engine coolant level low warning by Murphy gauge
- Duplex fuel filter switchable
- Drip pan underneath fuel filter(s)
- Exhaust compensator
- Exhaust insulation with mattresses
- Wet exhaust elbow
- Wet exhaust temperature sensor
- Engine block heating with plug standard John Deere (to be connected & switched by yard)
- Engine oil drain with hose & hand pump
- Seawater flow sensor loose supply with engine controller settings prepared
- 60 Hz execution with 440 V or other voltage
- Keel cooled engine either radiator cooling (mechanical driven)
- Modbus converter for RS 485 protocol
- Alternator equipped with PMG excitation system
- Alternator with regulation precision of +/-0.5% instead of standard +/-1%
- Alternator in IP-44 execution
- Space heater for alternator (to be connected & switched by yard)
- Roxtec frame mounted in alternator for AC-load leads
- Remote monitoring with Internet/Ethernet connection
- Wet exhaust components, muffler & water separator
- PTO (power take off front) direct drive, hydraulic or electric clutch
- ABS, BV, GL-DNV-Lloyds classification
- Certified marine engine controller
- Industrial or marine generator set controller

- Circuit breaker (un-motorized or motorised)
- Manuals in hard copy format
- Electrical zero soot system (loose supply)
- Zincor sound enclosure

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.

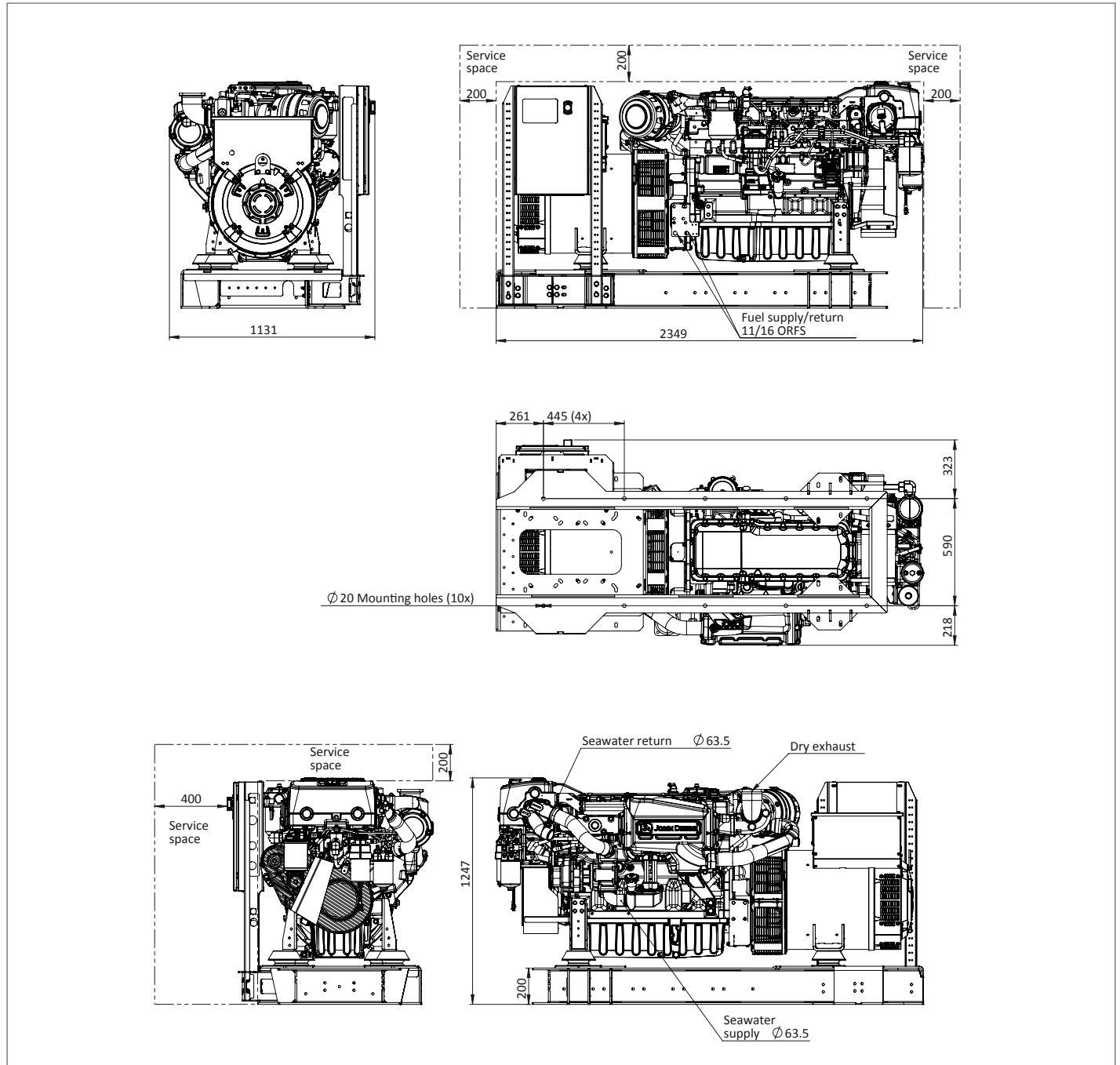
RATINGS

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.

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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