

*DIESEL ENGINE-GENERATOR SET*




*MODEL RATINGS*

Stand-by	230D-JWVG-NAD	230D-JWMP-NAD	230D-JWMJ-NAD	230D-JWVR-NAD
<b>Voltage</b>	120/240	120/208	240	277/480
<b>Phase</b>	1	3	3	3
<b>PF</b>	1	0.8	0.8	0.8
<b>Hz</b>	60	60	60	60
<b>kW</b>	230	230	230	230
<b>Kva</b>	230	287.5	287.5	287.5
<b>AMPS</b>	958	799	692	346
<b>*skVA@30% Voltage Dip</b>	430	610	610	600
<b>Alternator Model</b>	433CSL6216	432CSL6210	432CSL6210	431CSL6208
<b>Temperature Rise</b>	130°C	130°C	130°C	130°C
<b>Connection</b>	12 WIRE	12 WIRE	12 WIRE	12 WIRE

\* skVA refers to starting kiloVolt-Amperes

## STANDARD FEATURES

- Engine**
- Governor, electronic
  - Electrical system, 12 DVC
  - Cartridge type filters
  - Battery rack and cables
  - Lube drains piped to edge of base
- Generator**
- Insulation system, Class H
  - Drip proof generator air intake (NEMA 2, IP23)
  - Electrical design in accordance with BS5000 Part 99, IEC60034-1, NEMA MG-1.33
- Control System**
- Clarke GSC1 digital control panel
  - Output method to PC, RS232
  - DC and AC wiring harnesses
- Mounting Arrangement**
- Heavy-duty fabricated steel base with lifting points
  - Anti-vibration pads to ensure vibration isolation
  - Complete OSHA guarding
  - Exhaust outlet ready for connection to silencer pipe work
  - Flexible fuel lines with NPT connections
- Warranty**
- All equipment carries full manufacturer's two(2) year warranty
- Cooling System**
- Radiator and cooling fan complete with protective guards
  - Standard ambient temperature up to 50°C (122°F)
- Circuit Breaker**
- UL/ CSA listed
  - 3-pole with solid neutral, 3 Ø
  - NEMA 1 steel enclosure
  - Electrical stub-up area below circuit breaker
- Automatic Voltage Regulator**
- Voltage within  $\pm 1.0\%$  3 Ø and  $\pm 1.0\%$  1 Ø at steady state from no load to full load.
  - Provides fast recovery from transient load changes
  - SE350 Standard (on most models)
- Equipment Finish**
- All electroplated hardware
  - Anticorrosive paint protection
  - Alkyd Enamel paint for durability and scuff resistance
- Quality Standards**
- BS5000, BS5514, IEC60034, NEMA MG-1.33, NFPA 110 (with optional equipment)
  - UL2200 Certification (available on most models) 
- Documentation**
- Operation and maintenance manuals provided
  - Wiring diagrams included

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## OPTIONAL FEATURES

- Enclosure**
- Weatherproof
  - Level 1 (15 dBa reduction)
  - Level 2 (25 dBa reduction)
  - Powder coated
- Silencer System-Open Unit**
- Industrial
  - Residential
  - Critical
  - Hospital
  - Mounting kit
  - Through-wall installation kits
- Engine**
- Battery heater
  - Lube oil drain pump
  - High lube oil temperature shutdown
  - Lube oil sump heater
  - Coolant and fuel drains to base
- Circuit Breaker**
- Auxiliary volt free contacts
  - Shunt trip (100+ amp breakers)
  - NEMA 3R/12 Enclosures
  - 2 Pole Single Phase
- Generator**
- 80°C, 105°C, 150°C Temperature Rise Available
  - Anti-condensation heater
  - Permanent magnet generator (PMG)
  - Generator upgrade 1 size (3-Phase only)
  - Sustained Short Circuit current of up to 300% of the Rated Current for up to 10 Seconds (on PMG equipped units)
- Control System**
- No control system
  - Clarke digital enhanced control panel
- Mounting Accessories**
- Seismic vibration isolators
  - Spring type vibration isolators
- Fuel System**
- UL142 Listed true secondary containment, skid-mounted fuel tank base (12/24 hour capacity) with fuel alarm (low level/ leak detected)
  - Critical high fuel alarm
  - Critical low fuel level shutdown
- Cooling System**
- Coolant heater
  - Low coolant temperature alarm
  - Low coolant level shutdown
  - Radiator transition flange
- Remote Annunciators**
- 15-channel remote annunciator panel & horn (supplied loose)
- Miscellaneous Accessories**
- Toolkit
  - Additional operator's manual pack
  - Special enclosure color
- Extended Service Contracts**
- Extended Warranty & Service Coverage available
- Testing**
- Factory test and report at both 1.0 pf and 0.8 pf
  - Meets Prototype Testing Requirements per NFPA110

**STANDARD EQUIPMENT**

**Engine**

- Air Cleaner
- Oil Pump
- Full Flow Oil Filter
- Jacket Water Pump
- Thermostats
- Exhaust Manifold
- Blower Fan and Fan Drive
- Radiator- Unit Mounted
- Electric Starting Motor - 12V
- Governor- Electronic Isochronous
- Base-Formed Steel
- Charging Alternator - 12V
- Battery Rack and Cables
- Flexible Fuel Connectors
- EPA Certified Engine

**Generator**

- NEMA MG1, IEEE and ANSI Standards Compliance for Temperature Rise and Motor Starting
- Self-ventilated and Drip-proof
- Superior Voltage Waveform
- Solid State, Volts-per-Hertz Regulator
- No Load to Full Load Regulation
- Brushless, Alternator with Brushless Pilot Exciter
- 4 Pole, Rotating Field
- 130°C Stand-by Temperature Rise
- 1 Bearing, Sealed
- Flexible Coupling
- Full Amortisseur Windings
- 125% Rotor Balancing
- 3-Phase Voltage Sensing
- ± 1% Voltage Regulation
- 100% of Rated Load- One Step
- 3% Maximum Harmonic Content

**Digital Control Panel(s)**

- Digital Metering, Microprocessor Based
- Engine Parameters, Displayable
- Generator Protection Functions
- Engine Protection
- SAE J 1939 Engine ECU Communications
- Windows-Based Software
- Multi-lingual Capability
- Remote Communications to Clarke Remote Annunciator
- 7 Programmable Contact Inputs
- 7 Contact Outputs
- UL Recognized, CE Approved
- 116 Events Recording
- IP 65 Front Panel Rating with Integrated Gasket
- NFPA 110 Level 1 Compatible

**APPLICATION DATA**

**Engine**

Manufacturer	John Deere
Model	6090HF484
Type	4-Cycle
Arrangement	6-Inline
Displacement: L (in <sup>3</sup> )	9 (548)
Bore: cm (in)	11.8 (4.66)
Stroke: cm (in)	13.6 (5.35)
Compression ratio	16:1
Rated RPM	1,800
Engine Governor	JDEC
Maximum Power: Stand-by: kWm (bhp)	315 (422)
Speed Regulation	± 0.25%
Air Cleaner	Dry

**Liquid Capacity (Lubrication)**

Total Oil System: L (gal)	40 (10.6)
Engine Jacket Water Capacity: L (gal)	16.2 (4.3)
System Coolant Capacity: L (gal)	48.3 (12.75)

**Electrical**

Electric Volts DC	12
Cold Cranking Amps Under -17.8°C (0°F)	1,100

**Fuel System**

Fuel Supply Connection Size	1/2" NPT
Fuel Return Connection Size	1/2" NPT
Maximum Fuel Lift: M (Ft.)	2 (6)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/Hr (Gal/Hr)	240 (63.4)

**Fuel Consumption**

**STAND-BY**

At 100% of Power Rating: L/ Hr (Gal/ Hr)	61.7 (16.3)
At 75% of Power Rating: L/ Hr (Gal/ Hr)	47 (12.4)
At 50% of Power Rating: L/ Hr (Gal/ Hr)	32.6 (8.6)

**Cooling-Radiator System**

**STAND-BY**

Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Radiator: kPa (in. H <sub>2</sub> O)	0.12 (0.5)
Water Pump Capacity: L/ Min (GPM)	280 (74)
Heat Rejection to Coolant: kW (BTUM)	104 (5,920)
Heat Rejection to Air: kW (BTUM)	88 (5,009)
Heat Radiated to Ambient: kW (BTUM)	33.3 (1895)

**Air Requirements**

**STAND-BY**

Aspirating*: m <sup>3</sup> / min (SCFM)	25.5 (901)
Air Flow Required for Rad. Cooled Unit: *m <sup>3</sup> / min (SCFM)	658 (23,247)

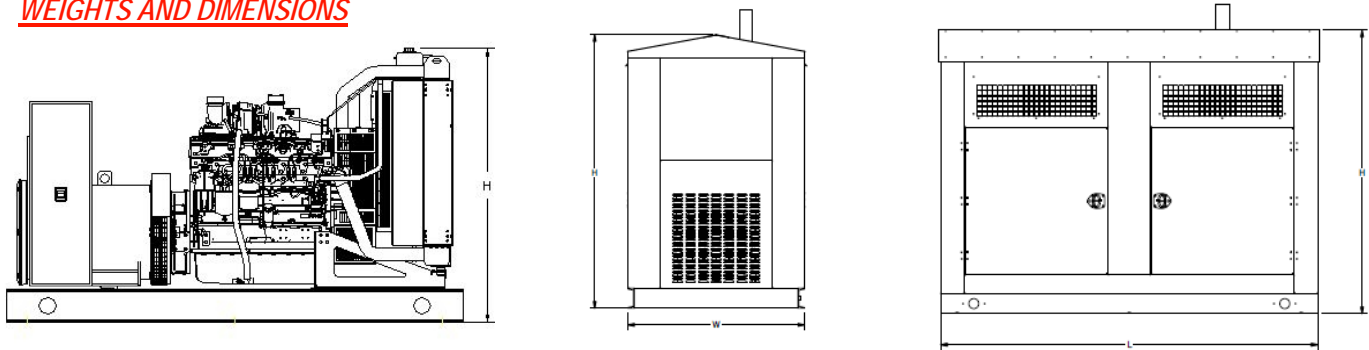
\* Air Density= 1.184 Kg/ M<sup>3</sup> (0.0739 lbm/ ft<sup>3</sup>)

**Exhaust System**

**STAND-BY**

Gas Temperature (Stack): °C (°F)	638 (1,180)
Gas Volume at Stack Temperature: m <sup>3</sup> / min (CFM)	59 (2,084)
Maximum Allowable Back Pressure: kPa (in H <sub>2</sub> O)	7.5 (30)

**WEIGHTS AND DIMENSIONS**



System	Dimensions (L x W x H)	Weight (Less Tank)
Open Unit	104 X 48 X 68	4662
Enclosed unit without sub-base tank	134 X 63 X 90	5982

Consult the factory for accurate weights and dimensions for your specific engine-generator set.

**SOUND DATA**

Unit Type	Stand-by Full Load
Open Unit With Critical Grade Muffle (dBA)	83.6

Sound data is provided at 7 meters (23 feet).

**EMISSIONS DATA**

This GenSet John Deere Engine is USA EPA NSPS Stationary Emissions Compliant and is in compliance with CARB requirements for Tier 3 engines.

The emission data listed is measured from a laboratory test engine according to the test procedures of 40 CFR 89 or 40 CFR 1039, as applicable. The test engine is intended to represent nominal production hardware, and we do not guarantee that every production engine will have identical test results. The family parent data represents multiple ratings and this data may have been collected at a different engine speed and load. Emission results may vary due to engine manufacturing tolerances, engine operating conditions, fuels used, or other conditions beyond our control.

**RATING DEFINITIONS AND CONDITIONS**

Stand-by rating apply to installations served by a reliable utility source. The Stand-by rating is applicable to varying loads for the durations of a power outage. No overload capacity for this rating. Ratings are in accordance with ISO-3046/1, AS 2789, and DIN 6271.

**Power Deration Factor:**

Altitude: 0.5% per 305 m (1,000 Ft.) above 1,524 m (5,000 Ft.) and 4% per 305 m (1,000 Ft.) above 2,286 m (7,500 Ft.).

Temperature: 0.5% per 5.5°C (10°F) above 25°C (77°F)

**MODEL NOMENCLATURE**

