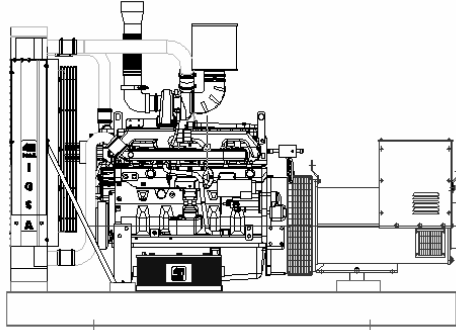




MAQUINARIA IGSA POWER GENERATION SYSTEMS



MODEL: GSJD10250M
DIESEL ENGINE: JOHN DEERE
MODEL: 6081HF001
CAPACITY: 250kW; 1800 RPM TIER I

RATINGS RANGE	
PRIME hp (kW)	STANDBY hp (kW)
299-312 (223-233)	352- 368(263-275)

Note: Gross power guaranteed within + or – 5%
 ISO 3046 conditions:
 77°F (25°C) Air inlet temperature
 29.31 in.Hg(99KPa) Barometer
 104 °F (40°C) fuel inlet temperature
 0.853 fuel specific gravity @ 60°F (15.5 °C)

STANDARD FEATURES

Complete system designed and built at ISO9001 certified facility

- Factory tested to design specifications at full load conditions.
- Fully engineered with a range of options and accessories.

1 IGSA Genset's are composed of 6 cylinders in line and four strokes diesel engine for industrial stationary applications. Those equipments are fully factory tested using a resistive load. (1) Hour ramp 100% load test.

2 The controls and accessories are selected to work together to achieve the maximum operational performance and security.

3 Exhaust gases silencer, and a section of flexible tube for connection purposes.

4 Engine **JOHN DEERE 6081HF001 TIER I**

5 Alternator Marathon or Stamford

6 Radiator

7 Control MEC 310 (panel USC300)

8 Base of structural steel

GENERAL FEATURES

- IGSA GENSET of, **250 kW to 480V, 440V, 380V, 220V, 208V, 190VAC**, 3 Phase, 4 Wire, 60 Hertz, is composed by an internal engine four strokes coupling with the alternator, controls and accessories totally assembled and tested in factory.
- The controls and accessories of the Genset are selected to provide the maximum in efficiency and Security
- The generator set its components are tested factory-built, and production-tested.
- The genset engine is certified by the Environmental Protection Agency (EPA) Tier 1



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ENGINE SPECIFICATION DATA MODEL 6081HF001 weight 776 kg (1710Lb)

General Data		
Model	6081HF001	
Number of Cylinders	6	
Bore and Stroke--in.(mm)	4.56 x 5.06 (116 x 129)	
Displacement--in.3 (L)	496 (8.1)	
Compression Ratio	15.7 : 1	
Valves per Cylinder--Intake/Exhaust	1 / 1	
Firing Order	1 - 5 - 3 - 6 - 2 - 4	
Combustion System	Direct Injection	
Engine Type	In-line, 4-Cycle	
Aspiration	Turbocharged	
Engine Crankcase Vent System	Open	
Maximum Crankcase Pressure--in.H2O (kPa)	2 (0.5)	
Physical Data		
Length--in.(mm)	47.6 (1210)	
Width--in.(mm)	23.5 (597)	
Height--in.(mm)	45.3 (1152)	
Weight, dry--lb (kg)	1710 (776)	
(Includes flywheel housing, RE28119 flywheel, starter and electrics.)		
Center of Gravity Location		
From Rear Face of Block (X-axis)--in.(mm)	19.2 (482)	
Right of Crankshaft (Y-axis)--in.(mm)	-0.3 (-8)	
Above Crankshaft (Z-axis)--in.(mm)	5.7 (145)	
Max. Allow. Static Bending Moment at Rear Face of Flywhl Hsg w/ 5-G Load--lb-ft (N•m)	600 (814)	
Thrust Bearing Load Limit (Forward)		
Continuous--lb (N)	1950 (8673)	
Intermittent--lb (N)	2925 (13010)	
Performance Data	Prime	Standby
Rated Power--hp (kW)	299-312 (223-233)	352-368 (263-275)
Rated Speed--rpm	1800	1800
Low Idle Speed--rpm	850	850
BMEP--psi (kPa)	314 (2167)	368 (2538)
Friction Power		
At Rated Speed--hp (kW)	28 (21)	28 (21)
Altitude Capability--ft (m)	7500 (2300)	5000 (1500)
Ratio--Air : Fuel.	26.1:1	24.5:1
Noise--dB(A) @ 1 m	N/A	N/A
Air System	Prime	Standby
Maximum Allowable Temp Rise--Ambient Air to Engine Inlet--°F (°C)	15 (8)	15 (8)
Maximum Air Intake Restriction		
Dirty Air Cleaner--in.H2O (kPa)	25 (6.25)	25 (6.25)
Clean Air Cleaner--in.H2O (kPa)	12 (3)	12 (3)
Engine Air Flow--ft3/min (m3/min)	696 (19.7)	749 (21.2)
Intake Manifold Pressure--psi (kPa)	35.2 (243)	39.9 (275)
Rec'd. Intake Pipe Dia--in.(mm)	4 (102)	4 (102)

Electrical System		
Recommended Battery Capacity (CCA)		
12 Volt System--amp		800
24 Volt System--amp		570
Maximum Allowable Starting Circuit Resistance		
12 Volt System--Ohm		0.0012
24 Volt System--Ohm		0.002
Starter Rolling Current -- 12 Volt System		
At 32 F (0 C) -- amp		950
At -22 F (-30 C) -- amp		1300
Starter Rolling Current -- 12 Volt System		
At 32 F (0 C) -- amp		600
At -22 F (-30 C) -- amp		700
Lubrication System	Prime	Standby
Oil Pressure at Rated Speed--psi (kPa)	40 (275)	40 (275)
Oil Pressure at Low Idle--psi (kPa)	30 (210)	30 (210)
In Pan Oil Temperature--°F (°C)	240 (115)	240 (115)
Oil Pan Capacity, High--qt (L)	32.75 (31)	32.75 (31)
Oil Pan Capacity, Low--qt (L)	31.75 (30)	31.75 (30)
Total Engine Oil Capacity	----	----
Eng. Oil Capacity with Filters--qt(L)	33.75 (32)	33.75 (32)
Engie Angularity Limits		
(Continuous) Any Direction--degrees	20	20
Exhaust System	Prime	Standby
Exhaust Flow--ft3/min (m3/min)	1808(51.2)	2052(58.1)
Exhaust Temperature--°F (°C)	874 (468)	957 (514)
Max. Allow. Back Press.--in.H2O (kPa)	30 (7.5)	30 (7.5)
Recm'd Exhaust Pipe Dia--in.(mm)	4 (101.6)	4 (101.6)
Cooling System	Prime	Standby
Engine Heat Reject.--BTU/min (kW)	4791 (84)	5485 (96)
Coolant Flow--gal/min (L/min)	71 (270)	71 (270)
Thermostat Start to Open--°F (°C)	180 (82)	180 (82)
Thermostat Fully Open--°F (°C)	202 (94)	202 (94)
Maximum Water Pump		
Inlet Restriction--in.H2O (kPa)	27 (7)	27 (7)
Engine Coolant Capacity--qt (L)	15 (14)	15 (14)
Recm'd Pressure Cap--psi (kPa)	10 (69)	10 (69)
Maximum Top Tank Temp--°F (°C)	221 (105)	221 (1105)
Min. Coolant Fill Rate--gal/min (L/min)	3 (11)	3 (11)
Min. Air-to-Boil Temperature--°F (°C)	117 (47)	117 (47)
Fuel System	Prime	Standby
Fuel Injection Pump	RBP7100	RBP7100
Governor Regulation	5%	5%
Governor Type	Mechanical	Mechanical
Total Fuel Flow--lb/hr (kg/hr)	460 (209)	460 (209)
Fuel Consumption--lb/hr (kg/hr)	1211(55.1)	138.8(63.1)
Maximum Fuel Transfer Pump Suction ft (m) fuel	10 (3.0)	10 (3.0)
Fuel Filter Micron Size @ 98 % Efficiency	8	8
Fuel Consumption -- lb/hr (kg/hr)	Prime	Standby
25 % Power	33.2 (15.1)	36.1 (16.4)
50 % Power	59.8 (27.2)	66.9 (30.4)
75 % Power	89.5 (40.7)	99.4 (45.2)
100 % Power	121.2(55.1)	138.8(63.1)



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MARATHON ELECTRIC ALTERNATOR MODEL 432PSL6210
weight 764 kg (1685Lb)

Kilowatt ratings at kW (kVA)	1800 RPM			60 Hertz			12 Leads standard 3 phase		
	3 Phase			0.8 Power Factor			Dripproof or Open Enclosure		
Voltage	Class B	Class F					Class H		
	80°C -176°F (1) Continuous	90°C-194°F (1) Lloyds	95°C-203°F (1) ABS	105°C-221°F † British Standard	105°C-221°F (1) Continuous	130°C-282°F(1) Standby	125°C-257°F † British Standard	125°C-257°F (1) Continuous	150°C-302°F (1) Standby
240/480	220 (275)	237 (296)	245 (306)	260 (225)	260 (225)	280 (350)	265 (331)	275 (344)	291 (364)
230/460	220 (275)	237 (296)	245 (306)	260 (225)	260 (225)	282 (353)	265 (331)	277 (346)	292 (365)
220/440	221 (276)	240 (300)	247 (309)	261 (326)	261 (326)	283 (354)	265 (331)	278 (348)	292 (365)
208/416	220 (275)	236 (295)	245 (306)	260 (325)	260 (325)	280 (350)	261 (326)	275 (344)	287 (359)
190/380	213 (266)	230 (288)	233 (291)	245 (306)	245 (306)	265 (331)	250 (313)	260 (325)	275 (344)

(1) Rise by resistance method, Mil-Std-705, Method 680.1b.

† Rating per BS 5000.

Submittal Data: 240/480 Volts, 312 kVA, 1800 RPM, 60 Hz, 3 Phase					
Mil-Std-705C			Mil-Std-705C		
Method	Description	Value	Method	Description	Value
301.1b	Insulation Resistance	> 1.5 Meg	505.3b	Overspeed	2250 RPM
302.1a	High Potential Test		507.1c	Phase Sequence CCW-ODE	ABC
	Main Stator	2000 Volts	508.1c	Voltage Balance L-L OR L-N	0.2%
	Main Rotor	1500 Volts	601.4a	L-L Harmonic Maximum - Total (Distortion Factor)	5.0%
	Exciter Stator	1500 Volts	601.4a	L-L Harmonic Maximum - Single	3.0%
	Exciter Rotor	1500 Volts	601.1c	Deviation Factor	5.0%
401.1a	Stator Resistance, Line to Line		--	TIF (1960 Weightings)	<50
	High Wye Connection	0.0214 Ohms	625.1c	Mechanical Strength (High wye Connection, sustained 3 Phase Short Circuit Current)	<300%
	Rotor Resistance	0.841 Ohms			
	Exciter Stator	18.5 Ohms	652.1a	Shaft Current	<0.1 ma
	Exciter Rotor	0.116 Ohms	652.2a	Main Stator Capacitance to ground	@0.019 mfd
410.1a	No Load Exciter Field Amps at 480 Volts Line to Line	0.72 A DC			
420.1a	Short Circuit Ratio	0.57			
421.1a	Xd Synchronous Reactance	2.333 pu			
422.1a	X2 Negative Sequence Reactance	0.167 pu			
423.1a	X0 Zero Sequence Reactance	0.081 pu			
425.1a	X'd Transient Reactance	0.114 pu			
426.1a	X''d Subtransient Reactance	0.093 pu			
427.1a	T'd Transient Short Circuit Time Constant	0.065 sec.			
428.1a	T''d Subtransient Short Circuit Time Constant	0.013 sec.			
430.1a	T'do Transient Open Circuit Time Constant	1.79sec.			
432.1a	Ta Short Circuit Time Constant of Armature Winding	0.0117sec.			

* (3) Excitation support system or PMG required to sustain short circuit currents.
 * Voltage refers to wye (star) connection, unless otherwise specified.
 ** Not supplied as standard equipment.
 *** DVR@2000 voltage regulator supplied with PMG option. DVR@2000 voltage regulation ¼% I or 3 Phase sensing



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STAMFORD ELECTRIC ALTERNATOR MODEL UCDI274K weight 755 kg (1665Lb)

CONTROL SYSTEM	SEPARATELY EXCITED BY P.M.G.		
A.V.R.	MX321	MX341	
VOLTAGE REGULATION	(+/- 0.5%)	(+/- 1.0%)	WITH 4% ENGINE GOVERNING
SUSTAINED SHORT CIRCUIT	REFERENT TO SHOT CIRCUIT DECREMENT CURRENT		

INSULATION SYSTEM	CLASS H							
PROTECTION	IP23							
RATED POWER FACTOR	0.8							
STATOR WINDING	DOUBLE LAYER CONCENTRIC							
WINDING PITCH	TWO THIRDS							
WINDING LEADS	12							
STATOR WDG. RESISTANCE	0.0126 Ohms PER PHASE AT 22°C SERIES STAR CONNECTED							
ROTOR WDG. RESISTANCE	2.08 Ohms at 22°C							
R.F.I. SUPPRESSION	BS EN 61000-6-2 & BS EN 61000-6-4, VDE 0875G, VDE 0875N. refer to factory for others							
WAVEFORM DISTORTION	NO LOAD < 1.5% NON-DISTORTING BALANCED LINEAR LOAD < 5.0%							
MAXIMUM OVERSPEED	2250 Rev/Min							
BEARING NON-DRIVE END	BALL. 6310 - 2RS. (ISO)							
WEIGHT COMP. GENERATOR	727 kg							
WEIGHT WOUND STATOR	304 kg							
WEIGHT WOUND ROTOR	272.6 Kg							
WR ² INERTIA	2.3934 kgm ²							
SHIPPING WEIGHTS in a crate	740 kg							
PACKING CRATE SIZE	123 x 67 x 103 (cm)							
TELEPHONE INTERFERENCE	50 Hz				60 Hz			
	THF<2%				TIF<50			
COOLING AIR	0.58 m ³ /sec 1230 cfm				0.69 m ³ /sec 1463 cfm			
VOLTAGE SERIES STAR	380/220	400/231	415/240	440/254	416/240	440/254	460/266	480/277
VOLTAGE PARALLEL STAR	190/110	200/115	208/120	220/127	208/120	220/127	230/133	240/138
VOLTAGE SERIES DELTA	220/110	230/115	240/120	254/127	240/120	254/127	266/133	277/138
kVA BASE RATING FOR RECTANCE VALUES	250	250	250	N/A	291	299	312.5	312.5
X _d DIR. AXIS SYNCHRONOUS	2.825	2.50	2.369	N/A	3.161	2.903	2.776	2.550
X' _d DIR. AXIS TRANSIENT	0.132	0.119	0.111	-	0.148	0.136	0.130	0.119
X'' _d DIR. AXIS SUBTRANSIENT	0.086	0.078	0.072	-	0.097	0.089	0.85	0.078
X _q QUAD. AXIS REACTANCE	1.263	1.140	1.056	-	1.413	1.298	1.241	1.140
X'' _q QUAD. AXIS SUBTRANSIENT	0.152	0.137	0.127	-	0.170	0.156	0.149	0.137
XL LEAKAGE REACTANCE	0.066	0.060	0.056	-	0.074	0.068	0.065	0.060
X2 NEGATIVE SEQUENCE	0.120	0.108	0.100	-	0.134	0.123	0.118	0.108
X0 ZERO SEQUENCE	0.022	0.020	0.019	-	0.025	0.023	0.022	0.020
REACTANCES ARE SATURATED VALUES ARE PER UNIT AT RATING AND VOLTAGE INDICATED								
T' _d TRANSIENT TIME CONST.	0.049 s							
T'' _d SUB-TRANSTIME CONST.	0.02 s							
T' _{do} O.C. FIELD TIME CONST.	1.27 s							
T _a ARMATURE TIME CONST.	0.018 s							
SHORT CIRCUIT RATIO	1/X _d							

RATINGS: All three-phase units are rated at 0.8 power factor. All single-phase units are rated at 1.0 power factor. Standby Ratings: Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Ratings are in accordance with ISO-3046/1, BS5514, AS2789, and DIN 6271. Prime Power Ratings: Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for a 12 hour period. Ratings are in accordance with ISO-8528/1, overload power in accordance with ISO-3046/1, BS 5514, AS 2789, and DIN 6271. For limited running time and base load ratings, consult the factory. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever. **GENERAL GUIDELINES FOR DERATION:** Altitude: Derate 0.5% per 100 m (328 ft.) elevation above 1000 m (3300 ft.). Temperature: Derate 1.0% per 10°C (18°F) temperature above 25°C (77°F).



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CONTROLLER FOR GENSET: CONTROL MEC 310 PANEL USC300

The Generator Controller MEC 310 is a microprocessor-based control unit containing all necessary functions for protection and control of a power generator. Besides the control and protection of the diesel engine it contains a full 3-phase AC voltage and current measuring circuit. The unit is equipped with an LCD display presenting all values and alarms.



- USC 300C Unit Mount Control Panel, Black Nema 1 enclosure c/w rubber mounts
- MEC 310 Microprocessor Based Engine Generator Controller
- Graphic Display 128 X 64 pixels (STN) Super Twisted Nematic
- Digital AC Metering:
 - 3-Phase Volts (Phase to Phase and Phase to Neutral),
 - 3-Phase Amps
 - Frequency
 - kW, kVAR, KVA, pF, kWhr
- AC Protective Relaying:
 - 27/59 Under/Over Voltage
 - 32 Reverse Power
 - 51 Time Overcurrent
 - 81 O/U Under/Over Frequency
- Digital gauge display:
 - Oil Pressure (sender required by others)
 - Coolant Temperature (sender required by others)
 - Fuel Level (sender required by others)
 - Hourmeter
 - Tachometer
- 5 digital inputs for alarms / shutdowns
- Dedicated Output Contacts - Engine Crank; Run (30 VDC / 6 Amps)
- Three Programmable Output Contacts (30 VDC / 1 Amps)
- Event Logging (30 events)
- Pushbuttons:
 - Emergency Stop
 - Manual Start and Stop
 - Manual/Auto/Test
 - Lamp Test
 - Horn Silence
- Indicating Lights:
 - Common Alarm
 - Generator Ready (Voltage and Frequency Normal)

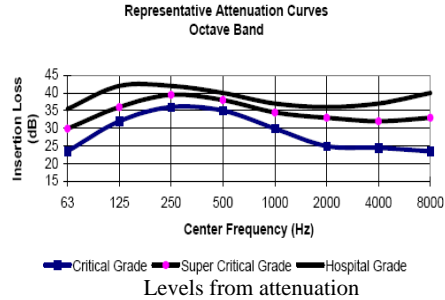
FEATURES

- Electrical Rating:**
- Single or three phase, 600VAC maximum, 50/60HZ, 4 wire
 - 12 or 24Vdc (nominal) supply, negative ground.
 - Dedicated Output Contacts - Engine Crank; Run (30 VDC / 6 Amps)
 - Three Programmable Output Contacts (30 VDC / 1 Amps)
- Enclosure:**
- Black Nema 1 enclosure c/w rubber mounts
- Engine Senders:**
- Oil pressure (1/8" NPT), Temperature (1/4"NPT) (Supplied loose for engine mounting).
- Requirements:**
- Exceeds requirements of CSA 282 and NFPA 110 Level

OPTIONAL SILENCER ACCORDING TO THE APPLICATION

Silencer with different levels from attenuation

- Critical Grade
- Super Critical Grade
- Hospital Grade



DOCUMENTATION AND OTHERS

- Manual of operation and maintenance
- Spare parts
- Maintenance
- Consulting

MISCELLANEOUS EQUIPMENT

- Batteries of 12 VDC with cables for battery connection with the Engine.

GENSET OPTIONS

Control Panel

USC 300C Control Panel is standard on all units see page 4 of spec sheet for standard features.

Another Type _____

Fuel system

- Fuel Water Separator
- Day tank
- Auxiliary fuel pump
- Sub Base mounted Fuel Tank
 - Single Wall
 - Double Wall
 - UL listed
 - 150 L (39.6 gal)
 - 250 L (66 gal)

Diesel Fuel Tank

- 500 L (132 gal)
- 1000 L (264.1 gal)
- 5000 L (1320.8 gal)

Exhaust System

- Critical Grade
- Super Critical Grade
- Hospital Grade

Engine Electrical system

- Battery
 - Lead-Acid
 - NiCad
- Battery Rack
- Battery Charger Automatic

Generator

- Breaker in the alternator

OPTIONAL ACCESSORIES AVAILABLE FOR THE EQUIPMENT

Vibration isolation

- Rigid Spring Mounting
- Resilient Mounting

Filters

- Air Filter for Medium Dust Environments
- Air Filter of Heavy Dust Environments

Drain

- Oil drain Extension

Enclosures

- Sound Attenuated
- Weather Proof
- Stainless steel cover
- Trailer Mounting
- Interior lights Ac or DC

Heaters

- Jacket Water Heater
- Crankcase Oil Heater

Insulation Blankets

- Features:
(Temperature to 1260°C (2300°F), Non-Combustible, Highly Resistant to Vibration, Oil, Fuel, Grease, and Moisture Resistant Exterior, Personal Protection

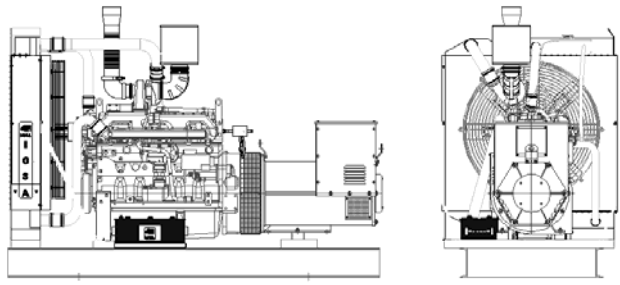
Notes



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DIMENSIONS



LENGTH	WIDTH	HEIGHT
mm (in)	mm (in)	mm (in)
2600(102.36)	1000(39.36)	1687(66.43)

NOTE: General configuration not to be used for installation. See general dimension drawing for detail.

SERVICES

- Development of the project.
- Development of engineering.
- Equipment's Installation
- Engineering for special applications.
- Synchronies with utility network or more Gensets.
- Attention and technical support

INSTALLATION OPTIONS OF THE GENSET

- On-Site
- Acoustic Enclosure
- ISO Container
- Trailer

