



**JOHN DEERE**



## JD220M

John Deere Engine type	6068HFU20
Meccalte Alternator type	ECO38-2S4A
Performance class	G2

### DESCRIPTIVE

- Mechanical governor
- Mechanically welded chassis with antivibration suspension
- Main line circuit breaker
- Radiator for wiring temperature of 48/50°C max with mechanical fan
- Protective grille for fan and rotating parts
- 9 dB(A) silencer supplied separately
- Charger DC starting battery with electrolyte
- 12 V charge alternator and starter
- Delivered with oil and coolant -30°C
- Manual for use and installation

### GENERAL CHARACTERISTICS

Frequency (Hz)	50
Reference voltage (V)	400/230
Max power ESP (kVA)	220
Max power ESP (kWe)	176
Max power PRP (kVA)	200
Max power PRP (kWe)	160
Intensity (A)	318
Standard Control Panel	DSE 4510
Optional control panel	DSE 6610

### POWER DEFINITION

**PRP** : Prime Power is available for an unlimited number of annual operating hours in variable load applications, in accordance with ISO 8528-1.

**ESP** : The standby power rating is applicable for supplying emergency power in variable load applications in accordance with ISO 8528-1.

Overload is not allowed

### TERMS OF USE

According to the standard, the nominal power assigned by the genset is given for 25°C Air Inlet Temperature, of a barometric pressure of 100 kPA (100 m A.S.L), and 30 % relative humidity. For particular conditions in your installation, refer to the derating table.

### ASSOCIATED UNCERTAINTY

For the generating sets used indoor, where the acoustic pressure levels depends on the installation conditions, it is not possible to specify the ambient noise level in the exploitation and maintenance instructions . You will also find in our exploitation and maintenance instructions a warning concerning the air noise dangers and the need to implement appropriated preventive measures.

### DIMENSIONS COMPACT VERSION

Length (mm)	3000
Width (mm)	1220
Height (mm)	1557
Dry weight (kg)	1715
Tank capacity (L)	340

### GENERAL CHARACTERISTICS

Voltage	ESP		PRP		Standby Amps
	kWe	kVA	kWe	kVA	
415/240	176	220	160	200	306
400/230	176	220	160	200	318
380/220	176	220	160	200	334



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### ENGINE SPECIFICATIONS

#### GENERAL ENGINE DATAS

Engine model	JOHN DEERE 6068HFU20 , 4- temps, Turbo , Air/Air DC 6 X
Cylinder arrangement	L
Displacement (C.I.)	6.72
Bore (mm) x Stroke (mm)	106 x 127
Compression ratio	17 : 1
Speed (RPM)	1500
Pistons speed (m/s)	6.35
Maximum stand-by power at rated RPM (kW)	202
Frequency regulation (%)	+/- 0.5%
BMEP (bar)	21.60
Governor type	Mechanical

#### COOLING SYSTEM

Radiator & Engine capacity (L)	30
Max water temperature (°C)	105
Outlet water temperature (°C)	93
Fan power (kW)	7
Fan air flow w/o restriction (m3/s)	7.82
Available restriction on air flow (mm EC)	15
Type of coolant	Cool Gard
Thermostat (°C)	82-94

#### EMISSIONS

Emission PM (g/kW.h)	0
Emission CO (g/kW.h)	0
Emission HCNOx (g/kWh)	0
Emission HC (g/kW.h)	0

#### EXHAUST

Exhaust gas temperature (°C)	519
Exhaust gas flow (L/s)	587
Max. exhaust back pressure (mm EC)	750

#### FUEL

Consumption @ 110% load (L/h)	49.3
Consumption @ 100% load (L/h)	44.6
Consumption @ 75% load (L/h)	35.10
Consumption @ 50% load (L/h)	23.10
Maximum fuel pump flow (L/h)	140

#### OIL

Oil capacity (L)	33
Min. oil pressure (bar)	1
Max. oil pressure (bar)	4
Oil consumption 100% load (L/h)	.02
Carter oil capacity (L)	32

#### HEAT BALANCE

Heat rejection to exhaust (kW)	N/A
Radiated heat to ambient (kW)	20.2
Haet rejection to coolant (kW)	80+41

#### AIR INTAKE

Max. intake restriction (mm EC)	625
Intake air flow (L/s)	197



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### ALTERNATOR SPECIFICATIONS

#### GENERAL DATAS

Alternator brand	Mecc Alte
Alternator type	ECO38-2S4A
Number of phase	3
Power factor (Cos Phi)	0.8
Altitude (m)	0 to 1000
Overspeed (rpm)	2250
Number of pole	4
Excitation system	SHUNT
Insulation class / T° class, continuous 40°C	H / H / 125°K
Regulation	DSR
Wave Distors (THD Full Load) LL	<2.7
Wave Distors (THD NoI Load) LL	<2.5
Number of bearing	1
Coupling	Direct
Voltage regulation at established rating (%)	+/- 0.5%

#### OTHER DATAS

Continuous Nominal Rating 40°C (kVA)	200
Standby Rating 27°C (kVA)	220
Efficiencies 4/4 load (%)	92.7
Air flow (m3/s)	0.53
Short circuit ratio (Kcc)	0.46
Direct axis synchro reactance unsaturated (Xd) (%)	207
Quadra axis synchro reactance unsaturated (Xq) (%)	113.8
Open circuit time constant (T'do) (sec)	.90
Direct axis transient reactance saturated (X'd) (%)	9.45
Short circuit transient time constant (T'd) (sec)	0.078
Direct axis subtransient reactance saturated (X''d) (%)	6.11
Subtransient time constant (T''d) (sec)	0.012
Quadra axis subtransient reactance saturated (X''q) (%)	22.2
Zero sequence reactance unsaturated (Xo) (%)	2.59
Negative sequence reactance saturated (X2) (%)	14.8
Armature time constant (Ta) (sec)	0.016
No load excitation current (io) (A)	0.7
Full load excitation current (ic) (A)	3
Recovery time (Delta U = 20% transient) (ms)	500 ms
Heat rejection (W)	12600



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**CONTROL PANEL**

**DSE Deep Sea Electronics 4610 Standard**

**DSE Deep Sea Electronics 6010 optional**

The DSE 4610 MRS is a versatile unit which can be operated in manual or automatic mode. It offers the following features:

Measurements:

phase-to-neutral and phase-to-phase voltages,  
(In option: active power currents, effective power, power factor, oil pressure and coolant temperature levels)

Supervision:

Modbus RTU communication on RS485

Reports:

(In option: 2 configurable reports)

Safety features:

Over speed, oil pressure, coolant temperatures, minimum and maximum voltage, minimum and maximum frequency

(Maximum active power  $P < 66\text{kVA}$ )

Traceability:

Stack of 50 stored events

For further information, please refer to the data sheet for the DSE 4610.

The DSE 6010 MRS is a versatile control unit which allows operation in manual or automatic mode

Measurements:

voltage and current, kW/kWh/kVA power meters

Standard specifications: Voltmeter, Frequency meter.

Optional: Battery ammeter.

J1939 CAN ECU engine control

Alarms and faults: Oil pressure, Coolant temperature, Over speed, Start-up failure, alternator min/max, Emergency

Stop button.

Engine parameters: hour counter, battery

Voltage.

Optional (standard at 12V): Oil pressure, water temperature.

Event log/ Management of the last 50 gen set events.

Mains and gen set protection

Clock management

USB connections, USB Host and PC,

Communications: RS485 INTERFACE

Mod BUS protocol /SNMP

Optional: Ethernet, GPRS, remote control, 3G, 4G,

Web supervisor, SMS, E-mails