

Technical specifications

Diesel Prime Gensets

QES 105 ST3

Voltage: 400/230 V

Frequency: 50HZ



Genset Image for illustration purposes only

TECHNICAL INFORMATION

Standby Power (ESP)	kVA	114
	kW	91
Prime Power (PRP)	kVA	104
	kW	83
Mechanical structure	Soundproofed	
Engine	JOHN DEERE 4045HFG82_B	
Alternator	MECC ALTE ECP34-2S/4A	
Control card	QC1111	
Measures (L x W x H)	mm	2.900 x 1.150 x 1.716
Empty weight	kg	1.855
Fuel tank	L	230
Acoustic pressure, LpA	dB(A) a 7	66
Acoustic power LwA	dB(A)	92

Voltages	Prime Power (PRP)		Standby Power (ESP)	
	(kVA)	(kW)	(kVA)	(kW)
380/220	104	83	114	91
400/230	104	83	114	91
415/240	104	83	114	91

Notes:

PRIME POWER: Electrical power data available at a variable load without limits of hours per year. An overload of 10 % is allowed for 1 hour of every 12. In accordance with ISO 8528/1 (2005) – PRP

STANDBY POWER: Electrical power data at variable load in an emergency in accordance with standard ISO 8528/1 (2005) – ESP. Overloads of emergency power are not allowed.

The standard reference conditions are: 25 °C, 100 kPa and 30% relative humidity. Gasoil density: 0.85 g/cm3. Gasoline density: 0.68 g/cm3.

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Grupos Electrógenos Europa, S.A. is a certified company with ISO 9001, ISO 14001, OHSAS 18001 and PECAL

We reserves the right to modify any characteristic of their equipment without prior warning.

Photographs representing the product range, while able to include options.

Weight and dimensions of a standard generator set.

Non-contractual document

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GENERAL DESCRIPTION

Specifically developed for the construction and general rental industries, this mobile soundproof generator set is easy to use and straightforward to maintain. The available features & options are designed to fully meet the requirements of generalist construction & rental applications. The controller provides advanced engine monitoring and protection features. Performance and maintenance requirements can also be observed. It's the practical Predictable Power choice.

ENGINE

4045 series JOHN DEERE diesel 4 stroke engine, with turbo, with direct injection and mechanical regulation of the engine speed.

Engine brand	JOHN DEERE	Bore (mm)	106
Model	4045HFG82_B	Stroke (mm)	127
R.P.M.	1.500	Compression ratio	19:1
Net power (kWm)	90	Europe exhaust emission	Stage III A
Fuel	Diesel	EPA exhaust emission	EPA3
No. of cylinders	4 L	TA-Luft exhaust emission	----
Engine Capacity (c.c.)	4.500		

Cooling System

Cooling of the sleeves using cooling fluid comprised of water and glycol at 50% in a closed circuit driven by the engine pump.

The circuit is completed with a blower fan driven by the engine, radiator, expansion tank, cooling fluid purge system towards the outside of the bedplate and protections of all the running surfaces.

Cooling type	Water	Limit ambient temperature (°c)	47
Coolant capacity (l)	8,5		

A boiler system with heating element is available as an option. An adjustable thermostat is included to maintain the temperature at optimum range and facilitate the starting of the engine.

Coolant heater power (W)	1 x 1000W		
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Lubrication System

The lubrication system of this diesel engine comprises the oil pan, oil filter, oil switch and gear oil pump driven by the engine. All the components are original from the engine manufacturer.

It can be completed by an optional manual oil sump drain pump.

Maximum oil consumption (% fuel consumption)	1		
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Air intake system

Air intake system for combustion with filtering device and filter change indicator; originals from the engine manufacturer. Intake air cooling after the turbo by means of an air/air exchanger.

Intake air flow (m³/min)	7,6		
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Exhaust System

The exhaust system consists of aluminized pipes, stainless steel flexible pipes, interior and exterior aluminized steel exhaust silencer that is highly resistant to corrosion and rain cap. Hot part protections are also included.

T^a gas emission (°C)	502	Outlet diameter (")	3,5
Gas flow (m3/min)	19,1	Inlet diameter (")	3,3
Number of exhaust	1		

Start system

Start system that uses an electrical motor, battery and battery charge alternator that is driven by the engine itself. The start motor and the battery charge alternator are originals from the engine manufacturer.

Starter voltage system (V)	12	Battery type	1 x 12V 110Ah 450A
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Fuel supply system

The fuel system consists of a fuel tank, feed pump, water separator fuel filter including 30 microns filtering element, injection pump and injection nozzles.

The fuel tank is made from plastic to prevent rust and includes a filling connection to the canopy outdoor filling connection, a cleaning hatch and draining plug for easier maintenance. The fuel level is controlled thanks to a fuel level sensor with an analogue gauge mounted in the control cubicle.

Fuel tank capacity (L)	230		
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Fuel consumption panel (range according to the standard configuration)

Load	Prime Power (PRP)		Standby Power (ESP)	
	(l/h)	Range (h)	(l/h)	Range (h)
25%	7,8	30	8,5	27
50%	14,4	16	15,8	14,6
75%	20	11,4	22	10,6
100%	25	9,2	28	8,4

ALTERNATOR

Mecc Alte alternator with 4 poles, with a lifetime lasting greased bearing, H class insulation, without brushes, 2/3 coil and AVR (Automatic Voltage Regulator)

Protection of all the windings by means of 2-part high quality polyester resin impregnation. The stator windings receive a double impregnation. Final finish with a coat of EG43 varnish.

Excitation system with MAUX auxiliary winding with overload capacity 3 times the nominal current for 20 s.

Joining of engine and alternator through flexible disc coupling.

Regulations:

- CEI 2-3
- IEC 34-1
- EN 60034-1
- VDE 0530
- BS 4999-5000
- CAN/CSA-C22.2 No14-68-No100-95
- ISO 8528:3

Low wave distribution:

- THC < 4%
- THD < 4%
- THF (IEC) < 2%
- TIF (NEMA) < 40

Incorporates electromagnetic emissions suppressor in accordance with standard VDE 0875, class K.

Brand	MECC ALTE	Voltage Stability	±1%
Model	ECP34-2S/4A	Performance at 75% p.f. 0.8 (%)	93
Alternator Power (kVA)	105 / Continuous (H)	Performance at 100% p.f. 0.8 (%)	92
Number of wires	12	Direct subtransient reactance X''d (%)	5,7
IP Alternator	IP 23	Subtransient time constant, T''d (ms)	5,5
Excitation system	MAUX	Zero sequence reactance, Xo (%)	3,5
AVR model	DSR	Short-circuit ratio, Kcc	0,5

▪ BEDPLATE

The base frame is made of a phosphate, passivated steel profile with polyester dust paint that guarantees a resistance of at least 500 hours in a saline fog chamber in accordance with standard ASM B-117-09.

▪ SOUNDPROOFED CANOPY

Soundproof generator set by means of galvanized, phosphate steel, passivated and finish using polyester dust paint that guarantees a resistance of at least 720 hours in a saline fog chamber in accordance with standard ASM B-117-09.

The canopy includes external central lifting eyebolt and push to close latches with key.

It is lined inside with a noise-absorbing material of polyurethane foam with a 30 mm thick waterproof protector veil with a density of 25 kg/m3.

It also has an emergency shutdown pushbutton that is accessible from the outside and an external fuel filler connection with cap and key.

▪ ELECTRIC PANEL

Easily accessed control cubicle integrated in the generator set with digital controller providing advanced engine monitoring and protection features. Performance and maintenance requirements can also be observed. The cubicle includes multi-poles thermal-magnetic protection circuit breaker against overloads and short-circuits.

Has a SCHNEIDER brand circuit breaker, manually actuated, with thermal-magnetic protection against overloads and short-circuits.

Circuit Breaker rated current (A)	160A 4P R	Fuel level Gauge	1
Earth Leakage Protection	1	Battery charger	DSE 9150 - 12V 2A

An electronic battery charger is available as an option.

It is designed to be permanently connected to the battery and maintains it charged to its maximum capacity. The charger includes reverse polarity protection, short circuit protection and current limiting, and it automatically returns to float mode when charging is complete.

A sockets panel integrated in the generator set is available as an option. The low power sockets have an independent thermal-magnetic protection.

1 x 16A SCHUKO IP44	1 x 32A CEE 3P+N+G IP67
1 x 16A CEE 3P+N+G IP44	1 x 16A CEE 3P+N+G IP67
1 x 63A CEE 3P+N+G IP67	

■ DIMENSIONS AND WEIGHT

Lenght, L (mm)	2.900
Width, A (mm)	1.150
Height, H (mm)	1.716
Weight (kg)	1.855

■ PERFORMANCE CLASS

Execution class in accordance with ISO 8528/5 (2005) taking into account the behaviour of the generator set in a permanent mode of operation with different load levels, as well as in a temporary mode of operation due to shocks in the load.

Performance class	G3
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■ REGULATION

The generator set has a CE Marking that includes the following directives:

- 2006/42/EC Machine Safety.
- 2014/35/EU Low Voltage.
- 2014/30/EU Electromagnetic compatibility.
- 2005/88/EC Noise emissions of machines outdoors in soundproof generator sets.

Regulation (EU) 2016/1628 Gases and contaminating particles emissions only for groups within its scope of application.

Applicable international regulations:

- ISO 8528
- ISO 3046
- BS 5000
- IEC 60034