

Technical specifications

Diesel Prime Gensets

QES 40 ST3

Voltage: 400/230 V

Frequency: 50HZ



Genset Image for illustration purposes only

TECHNICAL INFORMATION

Standby Power (ESP)	kVA	47
	kW	37
Prime Power (PRP)	kVA	42
	kW	34
Mechanical structure	Soundproofed	
Engine	KUBOTA V3800DI-T-BG E3	
Alternator	MECC ALTE ECP32-3S/4B	
Control card	QC1011	
Measures (L x W x H)	mm	2.200 x 940 x 1.270
Empty weight	kg	1.020
Fuel tank	L	105
Acoustic pressure, LpA	dB(A) a 7	64
Acoustic power LwA	dB(A)	90

Voltages	Prime Power (PRP)		Standby Power (ESP)	
	(kVA)	(kW)	(kVA)	(kW)
380/220	42	34	47	37
400/230	42	34	47	37
415/240	40	32	45	36

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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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

Engine brand	KUBOTA	Engine Capacity (c.c.)	3.800
Model	V3800DI-T-BG E3	Bore (mm)	100
R.P.M.	1.500	Stroke (mm)	120
Net power (kWm)	38	Compression ratio	19:1
Fuel	Diesel	Type of regulation	Electronic
No. of cylinders	4 L	Europe exhaust emission	EU3A

Cooling System

The cooling system consists of a radiator, expansion tank, water pump, engine-driven cooling fan and thermostat, all of them original from the engine manufacturer.

It is cooling the engine block thanks to a pressurized forced-circulation of 50/50 mixture of Ethylene Glycol anti-freeze.

All the rotating parts are protected.

Flow of air from fan (m³/min)	50	Coolant capacity (l)	13,2
Cooling type	Water	Limit ambient temperature (°c)	50

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 750W
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Lubrication System

Oil capacity (l)	13	Maximum oil consumption (% fuel consumption)	0,0
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Air intake system

V3800DI-T

The air intake system for combustion consists of turbo, heavy duty air filter (dual stage filter and safety cartridge) and air restriction indicator, original from the engine manufacturer.

Intake air flow (m³/min)	3,2
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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)	459	Inlet diameter (")	2,4
Gas flow (m3/min)	9,2	Body diameter (mm)	280
Maximum exhaust back pressure (kPa)	2	Exhaust length (mm)	776
Number of exhaust	1	Atenuattion (dB(A))	26
Outlet diameter (")	2,4		

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.

Battery type	1 x 12V 100Ah - 360A
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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)	105
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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%	3,8	28		
50%	5,5	19,1		
75%	7,7	13,6		
100%	10,1	10,4	10,6	9,9

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 and the rotor exciter receives an additional 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) < 45

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

Brand	MECC ALTE	Voltage Stability	±1%
Model	ECP32-3S/4B	Performance at 75% p.f. 0.8 (%)	89
Alternator Power (kVA)	43 / Continuous (H)	Performance at 100% p.f. 0.8 (%)	89
Number of wires	12	Direct subtransient reactance X''d (%)	10
IP Alternator	IP 23	Subtransient time constant, T''d (ms)	15
Excitation system	MAUX	Zero sequence reactance, Xo (%)	2,7
AVR model	DSR	Short-circuit ratio, Kcc	0,8

▪ 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 backlit fuel gauge, voltmeter, ammeter and Qc1011 controller providing advanced engine monitoring and protection features. Performance and maintenance requirements can also be observed. Mains elements are protected thanks to modular circuit breakers.

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.

Circuit Breaker rated current (A)	63A 4P MOD	Voltímetros conmutables	1
Earth Leakage Protection	1	Fuel level Gauge	1
Ammeter	1		

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

Control Card

The Qc1011 controller monitors the generator set start-up and shutdown process as well as the proper operation of all the components. The generator set can also be start-up by means of an external signal.

Qc1011 controller also checks a large number of parameters of the generator set which allows it to display information, status and alarms. If required, it will shutdown the generator set.

It includes a back-lit LCD display, menu navigation buttons, independent operational mode buttons, alarms and status indicating LEDs.

The module can either be programmed using the front panel or by using the licence-free PC software connecting through USB port.

It includes reading and displaying of parameters with RMS values and programming of alarms, events, start-ups and shutdowns.

Modes of operation: START-UP, SHUTDOWN AND AUTO

Generator

- Generator voltage (L-N)
- Generator frequency

Engine

- Turn speed
- Oil pressure
- Hour meter
- Battery voltage
- No. of start-ups
- Fuel level

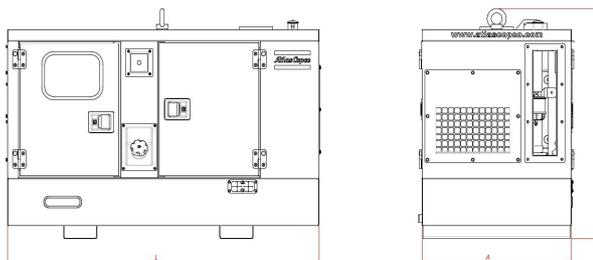
Protections

- Start-up fault (generator set shutdown)
- High coolant temperature (alarm and generator set shutdown)
- Low oil pressure (alarm and generator set shutdown)
- Low fuel level (alarm)
- Low cooling fluid level (generator set shutdown)
- Battery voltage high (alarm)
- Battery voltage low (alarm)
- Battery charge alternator failure (alarm)
- Generator low frequency (alarm and shutdown)
- Generator high frequency (alarm and shutdown)
- Generator low voltage (alarm and shutdown)
- Generator high voltage (alarm and shutdown)
- External emergency shutdown (shutdown)
- Engine overspeed (shutdown)



■ DIMENSIONS AND WEIGHT

Length, L (mm)	2.200
Width, A (mm)	940
Height, H (mm)	1.270
Weight (kg)	1.020



■ 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	G2
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■ REGULATION

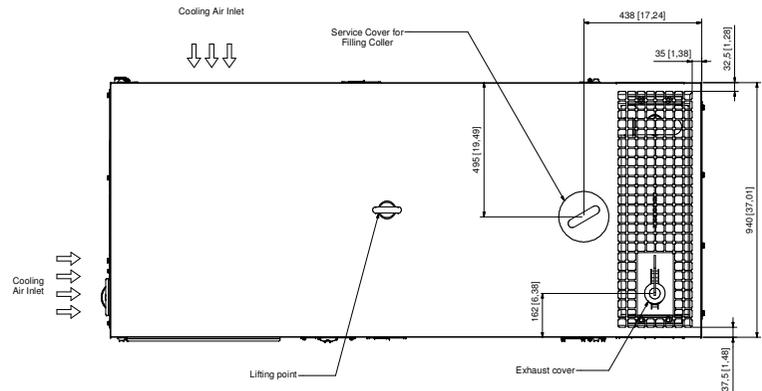
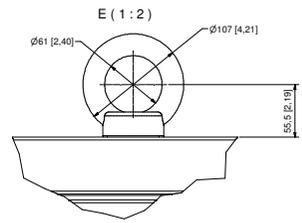
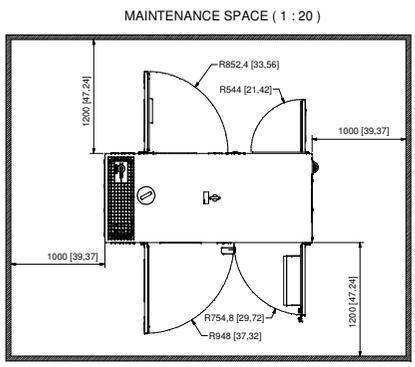
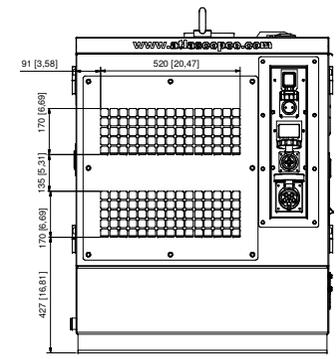
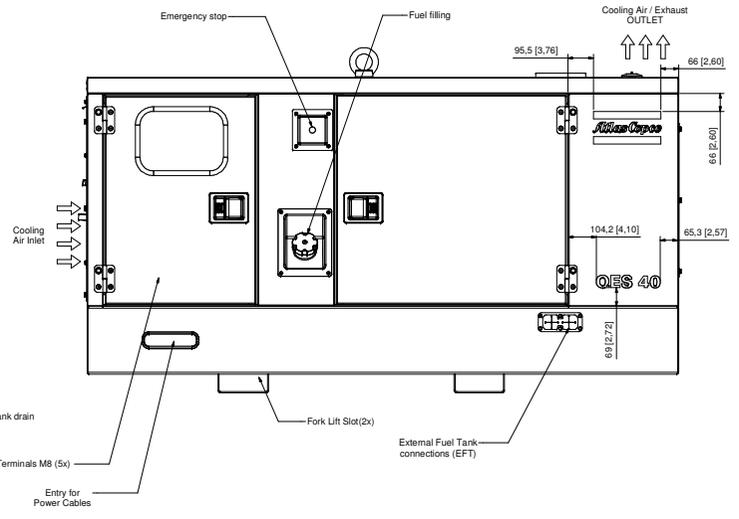
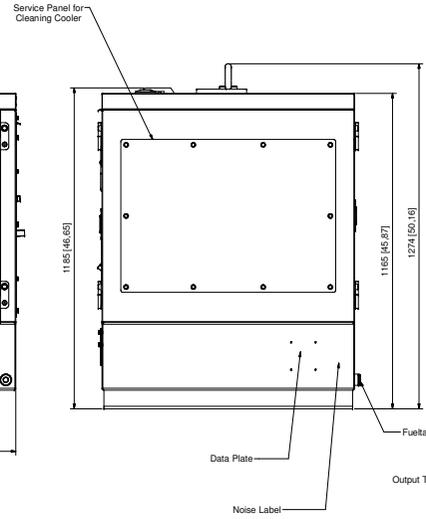
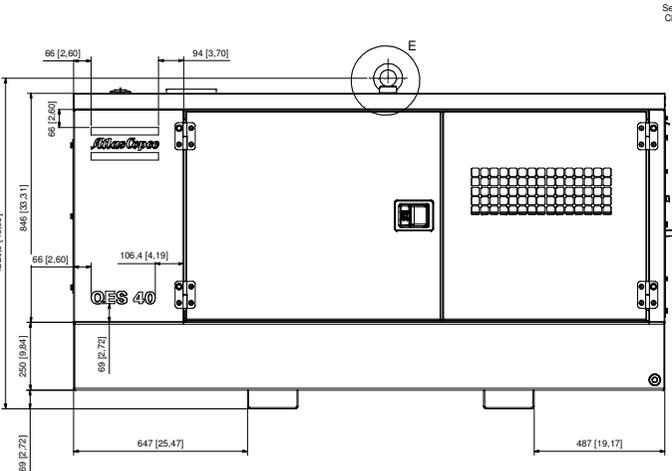
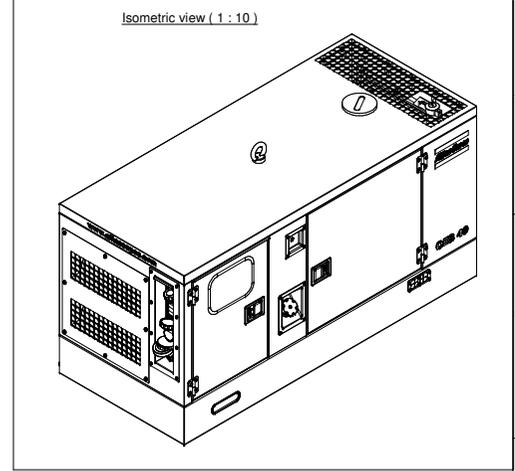
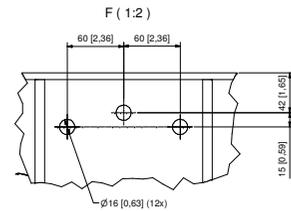
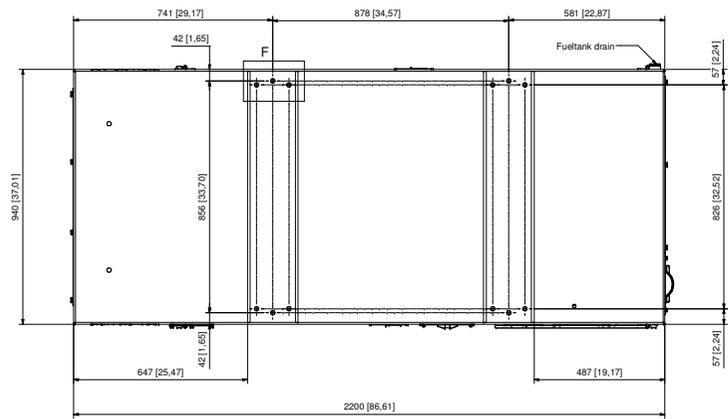
The generator set has a CE Marking that includes the following directives:

- 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



Note: [] = Dimensions are in inches.

Title		DIMENSION DRWG		QES 30-40	
Scale	1:10	Part No.	QES 30-40	Rev.	01
Author	...	Checked	...	Approved	...
Drawn	...	Reviewed	...	Released	...

CONFIDENTIAL

Rev	01	Created	...
Rev	02	Modified	...

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