

Diesel Powered Generating Sets C650 D5A



Standard Genset Features	Generator Set Performance	Generator Set Options
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Cummins water cooled Diesel engine,
Oil and fuel filter fitted, water separator,
Lube-oil drain valve fitted
Electric starter & Charge alternator 24 v D.C.
Electronic governor
Normal duty air filter
Single bearing alternator, class H/H
Standard voltage 400/230 volts 50 Hz
Exciter/Voltage reg - Torque Match as standard
PCC2100 with Bargraph as standard
Steel base frame with A/V mounting,
Engine, Alternator, Chassis & Control Box
Munsell Jade Green
Radiator
Packing under shrunk plastic film
Operation & Maintenance manual
Standard set of labels

Voltage Regulation
Maintains voltage output to within $\pm 1.0\%$.
At any power factor between 0.8 and 1.0
At any variations from No load to Full load.
At any variations from Cold to Hot.
At speed droop variations up to 4.5%.
Frequency Regulation
Isochronous under varying loads from no
load to 100% full load when electronic
governor is fitted
Random Frequency Variation
Will not exceed $\pm 0.25\%$ of its mean value for
constant loads – no load to full load.
Waveform
Total harmonic distortion open circuit voltage
waveform in the order of 1.8%. Three-phase
balanced load in the order of 5.0%.
Telephone Influence Factor (TIF)
TIF better than 50.
THF to BS 4999 Part 40 better than 2%.
Alternator Temperature Rise
Class H insulation.
Radio Interference
In compliance with BS 800 and VDE levels
G and N.

Fuel options
Fuel Tank

Exhaust Options
Exhaust Silencer - Industrial In-Line
Exhaust Bellows
Exhaust Silencer - Residential , In-Line
Installation Kit - Industrial Silencer
Installation Kit - Residential Silencer

Voltage Connections
240/416V, 230/400V, 220/380V,
127/220V, 115/200V, 110/190V

Miscellaneous Options
3 pole or 4 pole Circuit Breaker
Optional Set mounted starting batteries
Coolant Heater 240V
Battery Charger 240V, 5A or 10A
Automatic Transfer Switches
Packing - Export Box

Engine Specification	Alternator Specification	Compliance Standards
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KTA19G8
In-line direct injection
6-cylinder diesel engine.
Type
Water cooled, four cycle, turbocharged
and after cooled.
Construction
Two valves per cylinder, forged steel
crankshaft and connecting rods, cast iron
block.
Starting
24 volt negative earth. Battery charging
alternator 35 amp on engine. Cranking
current 640 amps at 0°C.
Fuel System
24 volt fail safe actuator. Spin-on paper
element fuel filters with fuel pump
injection system with integral electronic
governor. Dual flexible fuel lines and
connectors. Standard fuel water separator.
Filters
Air cleaner with dry element.
Spin-on full flow lube oil filter.
Cooling
40°C ambient temperature standard
Stone guard. Drain Tap

Type
Brushless single bearing, revolving field,
pole, drip proof, screen protected.
Class H Insulation, IP23 Protection
Fully interconnected damper winding.
AC exciter and rotating rectifier unit.
Epoxy coated stator winding.
Rotor and exciter impregnated with tropical
grade insulating oil and acid resisting
polyester resin. Dynamically balanced rotor
BS 5625 grade 2.5.
Sealed for life bearings.
Layer wound mechanically wedged rotor.

Exciter
Triple dipped in moisture, oil and acid
resisting polyester varnish and coated with
anti-tracking varnish.

Output windings with 2/3 pitch for improved
harmonics and paralleling ability.
Close coupled engine/alternator for perfect
alignment.

To BS4999/5000 pt 99,
VDE 0530, UTE5100,
NEMA MG1-22, CEMA,
IEC 34, CSA A22.2,
AS1359, BSS 5514,
ISO 3046 and ISO 8528

Model name	kVA		kWe	
	Standby	Prime	Standby	Prime
C650 D5A	650	590	520	472

Technical Data

Model	C650 D5A	Speed	1500 rpm
Set output	380-440 V 50 Hz	Alternator voltage regulation	±1.0%
Prime Rating	472 kWe 590 kVA	Alternator insulation class	H
Standby Rating	520 kWe 650 kVA	Fuel consumption (Prime)	NA
Engine Make	Cummins	Fuel consumption (Standby)	139 l/hr
Engine Model	KTA19G8	Lubrication system oil capacity	50 Litres
Cylinders	Six	Base fuel tank capacity – open set	1700 Litres
Engine build	In-line	Coolant capacity	132 Litres
Standard Governor/Class	Electronic	Exhaust temp – prime	579°C
Aspiration and cooling	Turbocharged and Aftercooled	Exhaust gas flow – prime	1463 l/s
Bore and stroke	159 mm x 159 mm	Exhaust gas back pressure max	76 mm Hg
Compression Ratio	13.9:1	Air flow – radiator*	11.1 m ³ /s
Cubic capacity	18.9 Litres	Air intake – engine (Prime)	579 Litres/s
Starting/Min °C	10°C	Minimum air opening to room	3.0 m ²
Battery capacity	254 A/hr	Minimum discharge opening	2.0 m ²
Gross Engine output – Prime	NA	Pusher fan head (duct allowance)*	13 mm Wg
Gross Engine output – Standby	575 kWm	Heat radiated by eng (Prime)	83 kWm

PRIME POWER

Prime Power is available continuously during the period of power outage in a variable load application. Variable load should not exceed a 70% average of the prime power rating during any 24 hour period. A 10% overload capability is available for a period of 1 hour within a 12 hour period of operation.

STANDBY POWER

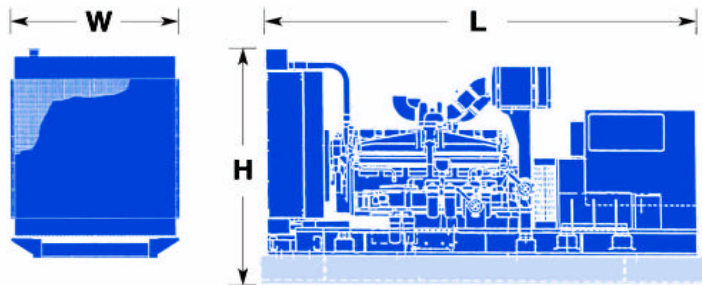
The Standby Power is applicable for supplying emergency power for the duration of a utility power interruption. No overload, utility parallel or negotiated outage operation capability is available at this rating.

In installations served by unreliable utility sources (where outages last longer or occur more frequently), where operation is likely to exceed 200 hours per year, the prime power rating should be applied.

The Standby Power rating is only applicable for emergency and standby applications where the generator set serves as the back up to the normal utility source.

All ratings are based on the following reference conditions:

- Ambient temperature : 27°C - Altitude above sea level : 150 metres - Relative humidity : 60%



Dimensions and Weights

Open Version (PowerSet)

Model	Engine	Length (mm)	Width (mm)	Height (mm)	Dry weight without tank (Kg)	Wet weight without tank (Kg)
C650 D5A	KTA19G8	3419	1285	1906	4225	4350

Specifications may change without notice

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