

Diesel Powered Generating Sets C110 D5S



Standard Genset Features

Cummins water cooled Diesel engine,
Oil and fuel filter fitted, water separator
Lube-oil drain valve fitted
Electric starter & Charge alternator 12 v D.C.
Mechanical 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
PCC1301 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

Generator Set Performance

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.

Generator Set Options

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
254/440V, 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
AUTO START - AMF Module (Loose)
Packing - Export Box

Engine Specification

6BTA5.9G1-I
In-line direct injection
6-cylinder diesel engine.
Type
Water cooled, four cycle, turbocharged
Construction
Two valves per cylinder, forged steel
crankshaft and connecting rods, cast iron
block.
Starting
12 volt negative earth. Battery charging
alternator 37 amp on engine. Cranking
current 625 amps at 0°C.
Fuel System
12 volt fail safe actuator. Spin-on paper
element fuel filters with fuel pump
injection system with integral mechanical
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
50°C ambient temperature standard
Stone guard. Oil cooler. Drain Tap

Alternator Specification

Type
Brushless single bearing, revolving field,
pole, drip proof, screen protected.
Class H Insulation.
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.

Compliance Standards

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
C110 D5S	110	100	88	80

Technical Data

Model	C110 D5S	Speed	1500rpm
Set output	380-440 V 50 Hz	Alternator voltage regulation	±1.0%
Prime Rating	80 kWe 100 kVA	Alternator insulation class	H
Standby Rating	88 kWe 110 kVA	Fuel consumption (Prime)	20 l/hr
Engine Make	Cummins	Fuel consumption (Standby)	22 l/hr
Engine Model	6BTA5.9G1-I	Lubrication system oil capacity	16.4 Litres
Cylinders	Six	Base fuel tank capacity – open set	340 Litres
Engine build	In-line	Coolant capacity	21.1 Litres
Standard Governor/Class	Mechanical	Exhaust temp – prime	553°C
Aspiration and cooling	Turbocharged and Aftercooled	Exhaust gas flow – prime	266 l/s
Bore and stroke	102 mm x 120 mm	Exhaust gas back pressure max	76 mm Hg
Compression Ratio	17.3:1	Air flow – radiator	2.3 m³/s
Cubic capacity	5.9 Litres	Air intake – engine (Prime)	TBA
Starting/Min °C	10°C	Minimum air opening to room	1.0 m²
Battery capacity	100 A/hr	Minimum discharge opening	0.77 m²
Gross Engine output – Prime	92kWm	Pusher fan head (duct allowance)	12 mmWg
Gross Engine output – Standby	101kWm	Heat radiated by eng (Prime)	9.5Kw

PRIME POWER

Prime power is available for an unlimited number of annual operating hours in variable load applications, in accordance with ISO8528-1.

A 10% overload capability is available for a period of 1 hour within a 12-hour period of operation, in accordance with ISO 3046-1.

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.

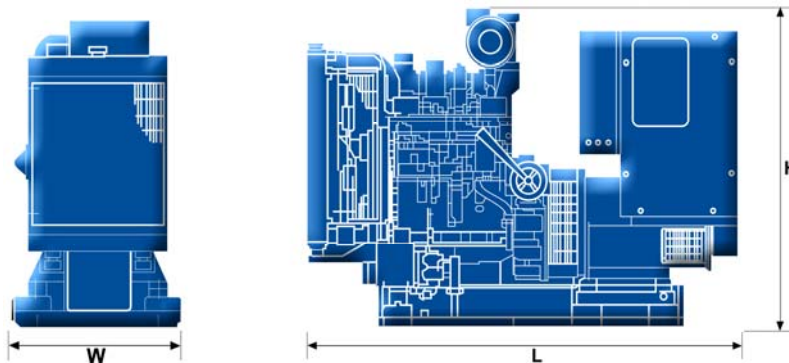
The Standby Power rating is only applicable for emergency and standby applications where the generator set serves as the back up to the normal utility source.

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

Model	Engine	Length (mm)	Width (mm)	Height (mm)	Dry weight without tank (Kg)	Wet weight without tank (Kg)
C110 D5S	6BTA5.9G1-I	2204	1000	1667	1316	1360

Enclosed Version

Model	Engine	Length (mm)	Width (mm)	Height (mm)	Dry weight with tank (Kg)	Wet weight with tank (Kg)
C110 D5S	6BTA5.9G1-I	3100	1140	1920	2160	2490

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See your distributor for more information.

