

# Diesel Powered Generating Sets C110-D5

## 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.  
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 std  
PCC2100 without Bargraph as standard  
3 pole C/B  
Bolted steel base frame with A/V mounting,  
Fork lift pockets in baseframe  
Single skin plastic fuel tank  
Tank capacity of min 8 hours operation at  
70% standby load  
Loose 9 dB(A) silencer  
Set mounted starting batteries  
Engine & Alternator Munsell Jade Green  
Chassis, Controller box and radiator black  
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 Interference 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

**Mechanical Options**  
Compliance - CE Certification (Guarding)  
**Fuel options**  
Fuel Tank deletion  
Steel Fuel Tank replacing Plastic Fuel Tank  
**Exhaust Options**  
Exhaust Silencer - Industrial (9 dB), In-Line  
Exhaust Bellows  
Exhaust Silencer - Residential (35 dB), In-Line  
Installation Kit - Industrial Silencer  
Installation Kit - Residential Silencer  
**Warranty**  
Warranty - 5 Year Extended Standby Appln  
Warranty - 2 Year Extended Prime Appln  
**Voltage Connections**  
254/440V  
240/416V  
230/400V  
220/380V  
127/220V  
115/200V  
110/190V

## Engine Specification

4ISBeG1  
In-line direct injection  
4-cylinder diesel engine.  
Type  
Water cooled, four cycle, turbocharged  
and after cooled.  
Construction  
Four 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 filter with Stanadyne fuel  
pump injection system with integral  
mechanical governor. Dual flexible fuel lines  
and connectors. Standard fuel water  
separator.  
Filters  
Air cleaner with dry element and restriction  
indicator. Spin-on full flow lube oil filter.  
Cooling  
50°C radiator as std  
Stone guard. Oil cooler. Drain Tap

## Alternator Specification

Type  
Brushless single bearing, revolving field,  
pole, drip proof, screen protected.  
Class H Insulation.  
IC 01 cooling system.  
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.

## Miscellaneous Options

Coolant heater -240V  
Battery Charger 240V,5A  
AUTO START - AMF Module (Loose)  
Packing - Export Box  
4 POLE MCCB

## 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	
	ESP	PRP	ESP	PRP
C110 D5	110	100	88	80

## Technical Data

<b>Model</b>	C110-D5	<b>Speed</b>	1500 rpm
<b>Set output</b>	380-440 V 50 Hz	<b>Alternator voltage regulation</b>	±1.0%
<b>Prime Rating</b>	80 kWe 100 kVA	<b>Alternator insulation class</b>	H
<b>Standby Rating</b>	88 kWe 110 kVA	<b>Fuel consumption (Prime)</b>	22 l/hr
<b>Engine Make</b>	Cummins	<b>Fuel consumption (Standby)</b>	25 l/hr
<b>Engine Model</b>	4ISBeG1	<b>Lubrication system oil capacity</b>	13.0 Litres
<b>Cylinders</b>	Four	<b>Base fuel tank capacity – open set</b>	112 Litres
<b>Engine build</b>	In-line	<b>Coolant capacity</b>	19.5 Litres
<b>Standard Governor/Class</b>	Electronic	<b>Exhaust temp – prime</b>	553°C
<b>Aspiration and cooling</b>	Turbocharged And Charged Air cooled	<b>Exhaust gas flow – prime</b>	273.3 l/s
<b>Bore and stroke</b>	102 mm x 120 mm	<b>Exhaust gas back pressure max</b>	76 mm Hg
<b>Compression Ratio</b>	17.3:1	<b>Air flow – radiator*</b>	3.38 m <sup>3</sup> /s
<b>Cubic capacity</b>	3.9 Litres	<b>Air intake – engine (Prime)</b>	84.3 Litre/s
<b>Starting/Min °C</b>	Unaided/-12°C	<b>Minimum air opening to room</b>	0.7 sq m
<b>Battery capacity</b>	100 A/hr	<b>Minimum discharge opening</b>	0.5 sq m
<b>Gross Engine output – Prime</b>	93kWm	<b>Pusher fan head (duct allowance)*</b>	10 mm Wg*
<b>Gross Engine output – Standby</b>	102kWm	<b>Heat radiated by eng (Prime)</b>	N/A

### PRIME POWER (PRP)

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 RATING (ESP)

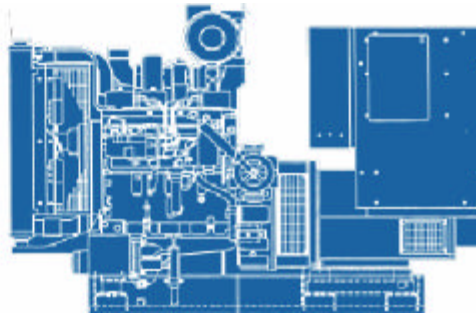
The Standby Power Rating is applicable for supplying emergency power for the duration of a utility power interruption. No overload, utility parallel or negotiated outage operation capability is available at this rating.

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 – 27oC      - Altitude above sea level – 150 metres      - Relative humidity – 60%



## Dimensions and Weights

Model	Engine	Length (mm)	Width (mm)	Height (mm)	Set weight wet (Kg)	Set weight dry (Kg)	Enclosed Set (Kg)
C110-D5	4ISBeG1	1950	1046	1293	1326	1211	1811

Specifications may change without notice

### Cummins Power Generation Limited

Manston Park, Columbus Avenue  
 Manston, Ramsgate  
 Kent CT12 5BF, UK  
 Telephone: +44 (0)1843 255000  
 Fax: +44 (0)1843 255902  
 Email: cpg.uk@cummins.com  
 www.cumminspower.com  
 www.cummins.com

See your distributor for more information.

