

Diesel Powered Generating Sets C22 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.
Mechanical governor
Normal duty air filter
Single bearing alternator, class H/H , IP23
Standard voltage 400/230 volts 50 Hz
Exciter/Voltage reg - Torque Match as std
PCC1300 with display unit
4 pole MCB
Welded steel base frame with A/V mounting,
Fork lift pockets in baseframe
Single skin metal fuel tank
Tank capacity of min 8 hours operation at
70% standby load
Loose 9 dB(A) silencer
Set mounted starting battery
Engine & Alternator Munsell Jade Green
Radiator and Guarding 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 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

Mechanical Options
Compliance - CE Certification (Guarding)

Fuel sytem options
Low Fuel Level Shutdown

Exhaust Options
Exhaust Silencer - Industrial (9 dB), In-Line
Exhaust Silencer - Residential (25 dB), In-Line
Bellows and fixing kit for Industrial silencer
Bellows and fixing kit for Residential silencer

Warranty
Warranty - 5 Year Extended Standby Appln
Warranty - 2 Year Extended Prime Appln

Voltage Connections

277/480V, 3 Phase
254/440V, 3 Phase
240/416V, 3 Phase
230/400V, 3 Phase
220/380V, 3 Phase
115/200V, 3 Phase
110/190V, 3 Phase
220-240V, 1 Phase

Miscellaneous Options

Coolant heater -240V
Battery Charger 240V,3A
Electronic Governing
Automatic Transfer Switches
Packing - Export Box

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

Engine Specification

Cummins B3.3G1
In-line direct injection
4-cylinder diesel engine.
Type
Water cooled, four cycle, naturally aspirated

Construction
Two valves per cylinder, forged steel
crankshaft and connecting rods, cast iron
block.

Starting
12 volt negative earth. Battery charging
alternator 45 amp on engine. Cranking
current 550 amps at 0°C.

Fuel System
12 volt fail safe actuator. Spin-on paper
element fuel filters 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, IP23 Protection
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.

Model name	kVA		kWe	
	ESP	PRP	ESP	PRP
C22 D5	22	20	17.6	16

Technical Data

Model	C22 D5	Speed	1500 rpm
Set output	380-440 V 50 Hz	Alternator voltage regulation	±1.0%
Prime Rating	16.0 kWe 20 KVA	Alternator insulation class	H
Standby Rating	17.6 kWe 22 KVA	Fuel consumption (Prime)	4.7 l/hr
Engine Make	Cummins	Fuel consumption (Standby)	5.1 l/hr
Engine Model	4B3.3G1	Lubrication system oil capacity	7.5 Litres
Cylinders	Four	Base fuel tank capacity – open set	144 Litres
Engine build	In-line	Coolant capacity	7.9 Litres
Standard Governor/Class	Mechanical	Exhaust temp – prime	448°C
Aspiration and cooling	Naturally Aspirated	Exhaust gas flow – prime	89 l/s
Bore and stroke	95mmx115mm	Exhaust gas back pressure max	75 mm Hg
Compression Ratio	18.2:1	Air flow – radiator*	1.0 m ³ /s
Cubic capacity	3.3 Litres	Air intake – engine (Prime)	35 Litre/s
Starting/Min °C	Unaided/-4°C	Minimum air opening to room	0.7 sq m
Battery capacity	70 A/hr	Minimum discharge opening	0.5 sq m
Gross Engine output – Prime	32kWm	Pusher fan head (duct allowance)*	XXXX
Gross Engine output – Standby	36kWm	Heat radiated by eng (Prime)	6.3 kWm

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.

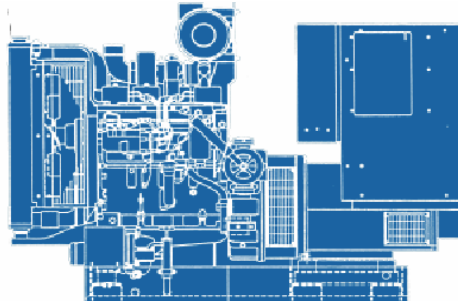
STANDBY POWER RATING (ESP)

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 – 27°C - 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 Weight Wet (Kg)
C22 D5	4B3.3G1	1753	930	1250	609	544	887

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.

