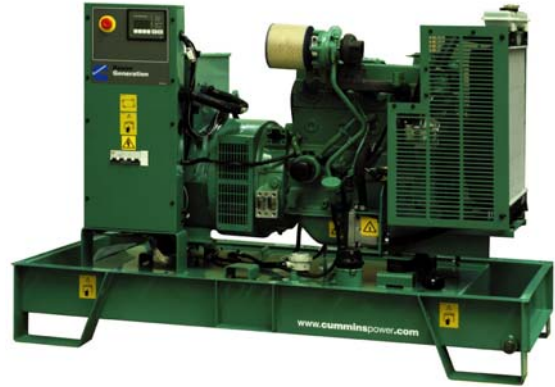


# Diesel Powered Generating Sets C38 D5



## 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 , 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 12 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 In fluence 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  
Flexible and fixing kit for Industrial silencer  
Flexible 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 -240/120V  
Battery Charger 110-277V, 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 4B3.3G1

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  
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	
	Standby	Prime	Standby	Prime
C38 D5	38	35	30.4	28

## Technical Data

<b>Model</b>	C38 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>	28 kW <sub>e</sub> 35 kVA	<b>Alternator insulation class</b>	H
<b>Standby Rating</b>	30.4 kW <sub>e</sub> 38 kVA	<b>Fuel consumption (Prime)</b>	8.4 l/hr
<b>Engine Make</b>	Cummins	<b>Fuel consumption (Standby)</b>	9.4 l/hr
<b>Engine Model</b>	4B3.3G1	<b>Lubrication system oil capacity</b>	7.5 Litres
<b>Cylinders</b>	Four	<b>Base fuel tank capacity – open set</b>	144 Litres
<b>Engine build</b>	In-line	<b>Coolant capacity</b>	7.9 Litres
<b>Standard Governor/Class</b>	Mechanical	<b>Exhaust temp – prime</b>	448°C
<b>Aspiration and cooling</b>	Naturally Aspirated	<b>Exhaust gas flow – prime</b>	89 l/s
<b>Bore and stroke</b>	95mmx115mm	<b>Exhaust gas back pressure max</b>	75 mm Hg
<b>Compression Ratio</b>	18.2:1	<b>Air flow – radiator*</b>	1.45 m <sup>3</sup> /s
<b>Cubic capacity</b>	3.3 Litres	<b>Air intake – engine (Prime)</b>	35 Litre/s
<b>Starting/Min °C</b>	Unaided/-4°C	<b>Minimum air opening to room</b>	0.50 sq m
<b>Battery capacity</b>	70 A/hr	<b>Minimum discharge opening</b>	0.30 sq m
<b>Gross Engine output – Prime</b>	32kW <sub>m</sub>	<b>Pusher fan head (duct allowance)*</b>	10 mm Wg*
<b>Gross Engine output – Standby</b>	36kW <sub>m</sub>	<b>Heat radiated by eng (Prime)</b>	6.3 kW <sub>m</sub>

### 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)

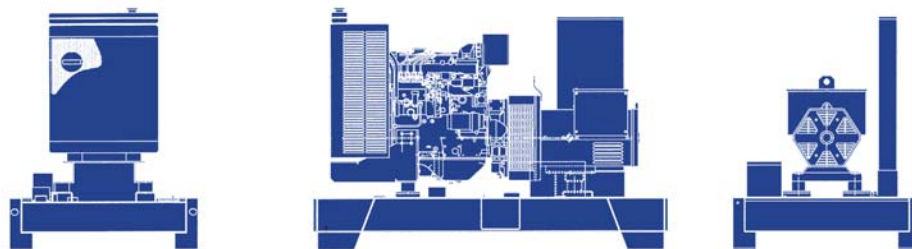
The Standby Power Rating is applicable for supplying emergency power for the duration of a utility power interruption. No overload, utility parallel or negotiated outage operation capability is available at this rating.

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)
C38 D5	4B3.3G1	1753	930	1256	705	640	983

Specifications may change without notice

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