

# Diesel Powered Generating Sets C840 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 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

## 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**  
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

**QSK23G3**  
In-line direct injection  
6-cylinder diesel engine.

**Type**  
Water cooled, four cycle, turbocharged  
and air to air aftercooled

**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 1280 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

## Alternator Specification

**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.

## 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 |
| C840 D5    | 840     | 760   | 672     | 608   |

## Technical Data

|                                      |   |   |              |
|--------------------------------------|---|---|--------------|
| <b>Model</b>                         | C840 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>                  | 608 kW/ 760 kVA                         | <b>Alternator insulation class</b>        | H            |
| <b>Standby Rating</b>                | 672 kW/ 840 kVA                         | <b>Fuel consumption (Prime)</b>           | 151 l/hr     |
| <b>Engine Make</b>                   | Cummins                                 | <b>Fuel consumption (Standby)</b>         | 168 l/hr     |
| <b>Engine Model</b>                  | QSK23G3                                 | <b>Lubrication system oil capacity</b>    | 103 Litres   |
| <b>Cylinders</b>                     | Six                                     | <b>Base fuel tank capacity – open set</b> | 1400 Litres  |
| <b>Engine build</b>                  | In-line                                 | <b>Coolant capacity</b>                   | 95.5 Litres  |
| <b>Standard Governor/Class</b>       | Electronic                              | <b>Exhaust temp – prime</b>               | 541°C        |
| <b>Aspiration and cooling</b>        | Turbocharged and Air to Air Aftercooled | <b>Exhaust gas flow – prime</b>           | 2183 l/s     |
| <b>Bore and stroke</b>               | 170 mm x 170 mm                         | <b>Exhaust gas back pressure max</b>      | 76.2 mm Hg   |
| <b>Compression Ratio</b>             | 16.0:1                                  | <b>Air flow – radiator*</b>               | 14.7 m³/s    |
| <b>Cubic capacity</b>                | 23.15 Litres                            | <b>Air intake – engine (Prime)</b>        | 815 Litres/s |
| <b>Starting/Min °C</b>               | 10°C                                    | <b>Minimum air opening to room</b>        | 4.0 m²       |
| <b>Battery capacity</b>              | 254 A/hr                                | <b>Minimum discharge opening</b>          | 2.7 m²       |
| <b>Gross Engine output – Prime</b>   | 701 kW/m                                | <b>Pusher fan head (duct allowance)*</b>  | 13 mm Wg     |
| <b>Gross Engine output – Standby</b> | 768 kW/m                                | <b>Heat radiated by eng (Prime)</b>       | 61 kW/m      |

### 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.

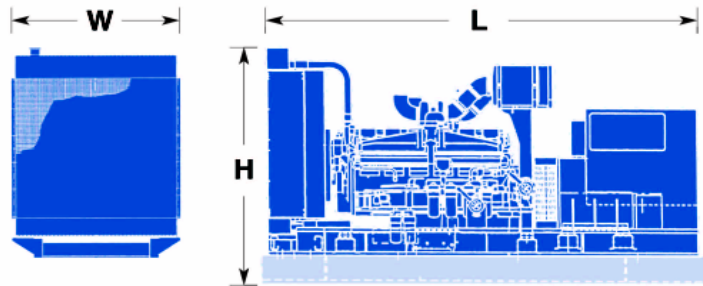
The Standby Power rating is only applicable for emergency and standby applications where the generator set serves as the back up to the normal utility source.

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

| Model   | Engine  | Length (mm) | Width (mm) | Height (mm) | Dry weight without tank (Kg) | Wet weight without tank (Kg) |
|---------|---------|-------------|------------|-------------|------------------------------|------------------------------|
| C840 D5 | QSK23G3 | 4593        | 1502       | 2086        | 6550                         | 6873                         |

Specifications may change without notice

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See your distributor for more information.

