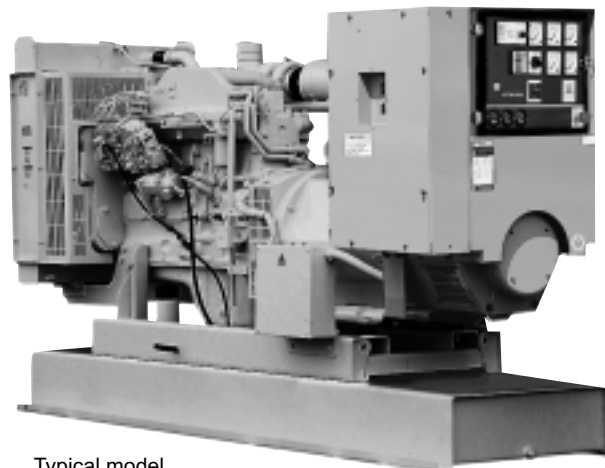


## Diesel Powered Generating Sets 103 kW - 163 kW 50 Hz 6C Series Engines



Typical model  
with options fitted

### Standard Genset Features

#### Single Source Responsibility

- Design, manufacturer and test of all components and accessories are made by Cummins Power Generation and Cummins companies

#### International Integrity

- Assurance and strength of a worldwide, world class corporation

#### Global Backing

- 24-hour spares and service support – in 72 countries

#### Single Source Warranty

- Complete genset covered by Cummins Power Generation comprehensive warranty

#### Packaged Self-Contained Units

- Units with built in antivibration systems, control panels, starting systems with provision for base fuel tank and other accessories

#### Cummins Engine

- Heavy duty 4 cycle water cooled engine
- Designed for power generation

#### Cooling System

- 40°C cooling package (50°C option)

#### Ready Filled

- Every set comes filled with lube oil and anti-freeze

#### Alternator

- Brushless machine
- Cummins Group made alternator
- Close voltage regulation
- Rotor and exciter impregnated with oil and acid resisting resin
- 12 lead reconnectable
- Exceptional short circuit capability
- Low waveform distortion with non linear loads

#### Ratings

All kW Power ratings based on a 40°C ambient temperature reference

#### Chassis


Built-in anti-vibration system  
Bonded rubber units fitted as standard  
Eliminates need for rubber mats or spring mountings

#### PCL 'Power Control' System

- CE compliant
- Full AC instrumentation
- Emergency stop button
- Safety shutdowns
- Key or Remote starting




**Quality Assurance**  
Registered Firm Certificate Number FM509 in accordance with:  
BS EN ISO 9001  
Quality Assurance Schedule 3420/1



Cummins Power Generation, Cummins Engines and Newage Alternators are all part of the same group

50 Hz Ratings				
Model Prime	Prime kW (kVA)	Model Standby	Standby kW (kVA)	Engine Model
103 DGEA	103 (129)	116 DGEA	116 (145)	6CT8.3G2
122 DGFA	122 (153)	136 DGFA	136 (170)	6CTA8.3G2
148 DGFB	148 (185)	163 DGFB	163 (204)	6CTA8.3G2
163 DGFC	163 (204)	–	–	6CTAA8.3G1

# Specifications

## Generator Set Performance

### Voltage Regulation

Maintains voltage output to within  $\pm 1.0\%$ .  
At any power factor between 0.8 lagging and unity.  
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. Temperature rise up to 125°C permitted.

### Radio Interference

In compliance with BS 800 and VDE levels G and N.

## Engine

Cummins 6CT8.3G2, 6CTA8.3G and 6CTAA8.3G1 in-line direct injection 6-cylinder diesel engines.

### Type

Water cooled, four cycle, turbo charged on 6CT, turbo charged and aftercooled on 6CTA and 6CTAA turbocharged with air to air aftercooler.

### Construction

Two valves per cylinder, forged steel crankshaft and connecting rods, cast iron block, replaceable wet liners.

### Starting

12 volt negative earth. Battery charging alternator 35 amp on 6C series engines. Cranking current 975 amps at 0°C.

### Fuel System

12 volt fail safe actuator. Dual spin-on paper element fuel filters with Bosch 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 filters and by-pass paper element type.

### Cooling

40°C radiator as standard with 50°C ambient as option. Stone guard.

## Alternator

### Type

Brushless single bearing, revolving field, pole, drip proof, screen protected.  
Class H Insulation.  
Enclosed to IP22 (NEMA 1) standard.  
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 to 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.  
Sealed solid state automatic voltage regulator type SX440 self-exciting, self-regulating.  
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, BSS5514,  
ISO 3046 and ISO 8528

## Chassis

Fabricated and welded steel chassis  
Built-in anti-vibration mountings  
Optional sub-base fuel tank with eight hour capacity, dual flexible fuel lines, dial type fuel gauge and drain bung  
Earthing cables. Lifting lugs

### Finish

Etch undercoated and finished in high gloss durable green

### General

Complete set of operating and instruction manuals

## Generator Set Options

### Engine

- Electronic governing
- Heavy duty air cleaner
- Coolant heater and thermostat
- Lead acid batteries, cable and fitted tray
- NiCad batteries
- Sump drain pump
- Oil and water drain taps
- CE Compliance (guarding)
- Exhaust temperature monitoring (PCC only)
- Tool kit
- Compliance to TA Luft

### Cooling

- 50°C ambient radiator
- Remote radiator cooling (built to order)
- Oil temperature indication

### Alternator

- Anti-Condensation heater
- Thermistors
- PMG Exciter and MX321 AVR
- 105°C rise alternator

### Exhaust System

- Industrial type silencer
- Residential type silencer
- Length of flexible exhaust and bellows

### Fuel System

- Sub-base tanks
- Hand fuel transfer pump
- Automatic fuel transfer pump
- Free-standing 450, 900 and 1350 litre fuel tanks with stand
- Fuel tank level switch
- High fuel level warning
- Low fuel level warning
- Low fuel level shutdown

### Generator Set

- Weather protective enclosures
- Silenced enclosures

### Control Panel

- See separate list on Control Panel pages
- 3 or 4 pole circuit breaker
- Battery charger 5 amp or 10 amp
- CE Compliance PCL
- Cable entrance box

# Technical Data

## Generating Sets – 50 Hz

Set output	380-440 V 50 Hz	380-440 V 50 Hz	380-440 V 50 Hz	380-440 V 50 Hz
Prime at 40°C ambient	103 kWe 129 kVA	122 kWe 153 kVA	148 kWe 185 kVA	163 kWe 204 kVA
Model (Prime)	103 DGEA	122 DGFA	148 DGFB	163 DGFC
Standby at 40°C ambient	116 kWe 145 kVA	136 kWe 170 kVA	163 kWe 204 kVA	N/A
Model (Standby)	116 DGEA	136 DGFA	163 DGFB	N/A
Engine Make	Cummins	Cummins	Cummins	Cummins
Model	6CT8.3G2	6CTA8.3G2	6CTA8.3G2	6CTAA8.3G1
Cylinders	Six	Six	Six	Six
Engine build	In-line	In-line	In-line	In-line
Governor/Class	Mechanical	Mechanical	Mechanical	Mechanical
Aspiration and cooling	Turbocharged	Turbocharged Aftercooled	Turbocharged Aftercooled	Turbocharged Air to Air Aftercooled
Bore and stroke	114 mm x 135 mm	114 mm x 135 mm	114 mm x 135 mm	114 mm x 135 mm
Compression ratio	16.8	16.5:1	16.5:1	16.8:1
Cubic capacity	8.3 Litres	8.3 Litres	8.3 Litres	8.3 Litres
Starting/Min °C	Unaided/-12°C	Unaided/-12°C	Unaided/-12°C	Unaided/-12°C
Battery capacity	165 A/hr	165 A/hr	165 A/hr	165 A/hr
Nett Engine output – Prime	122 kWm	159 kWm	159 kWm	183 kWm
Nett at flywheel – Standby	135 kWm	176 kWm	176 kWm	203 kWm
Maximum load acceptance – single step	87 kWe	100 kWe	100 kWe	131 kWe
Speed	1500 rpm	1500 rpm	1500 rpm	1500 rpm
Alternator voltage regulation	±1.0%	±1.0%	±1.0%	±1.0%
Alternator insulation class	H	H	H	H
Single load step to NFPAll0	100%	100%	100%	100%
Fuel consumption (Prime) 100% load	30 l/hr	33 l/hr	40 l/hr	44.5 l/hr
Fuel consumption (Standby) 100% load	34 l/hr	36.6 l/hr	44 l/hr	49.9 l/hr
Lubrication oil capacity	23.8 Litres	23.8 Litres	23.8 Litres	23.8 Litres
Base fuel tank capacity – open set	330 Litres	330 Litres	330 Litres	330 Litres
Coolant capacity – radiator and engine	26 Litres	28 Litres	28 Litres	26 Litres
Exhaust temp – full load prime	521°C	627°C	638°C	583°C
Exhaust gas flow – full load prime	1522 m <sup>3</sup> /hr	1716 m <sup>3</sup> /hr	1850.4 m <sup>3</sup> /hr	1955 m <sup>3</sup> /hr
Exhaust gas back pressure max	76 mm Hg	76 mm Hg	76 mm Hg	75mm Hg
Air flow – radiator	3.5 m <sup>3</sup> /s	3.1 m <sup>3</sup> /s	3.1 m <sup>3</sup> /s	3.6 m <sup>3</sup> /s
Air intake – engine	568 m <sup>3</sup> /hr	546 m <sup>3</sup> /hr	586.8 m <sup>3</sup> /hr	676 m <sup>3</sup> /hr
Minimum air opening to room	0.9 sq m	0.9 sq m	0.9 sq m	0.9 sq m
Minimum discharge opening	0.6 sq m	0.6 sq m	0.6 sq m	0.6 sq m
Pusher fan head (duct allowance)	10 mm Wg	10 mm Wg	10 mm Wg	13 mm Wg
Total heat radiated to ambient (Engine)	27 kW	34 kW	35 kW	36 kW
Derate factors	RTF	RTF	RTF	RTF

In accordance with ISO 8528, BS5514.

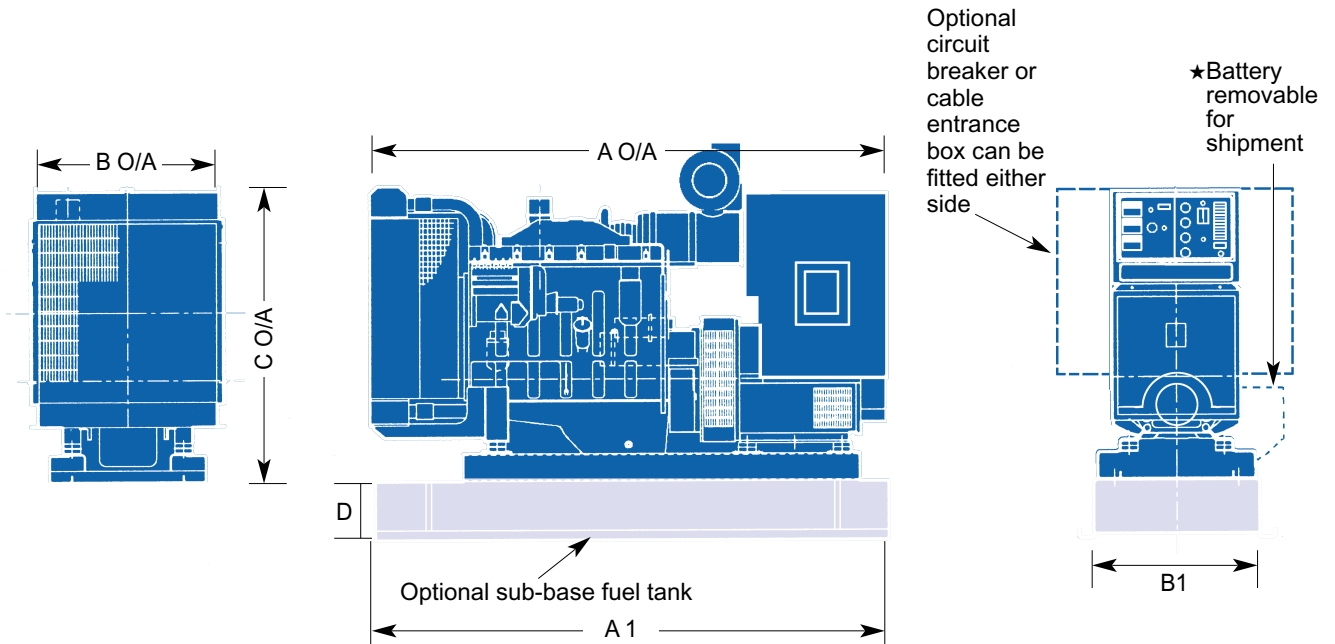
Prime: Continuous running at variable load for unlimited periods with 10% overload available for 1 hour in any 12 hour period.

Standby: Continuous running at variable load for duration of an emergency.

Prime and standby ratings are outputs at 40°C (104°F) ambient temperature reference (with exception of Model CP200-5 which is 30°C).

RTF = Refer to factory.

# Dimensions and Weights – 50 Hz



Model	Engine	Length A mm	A1 mm	Width B1 mm	B mm	Height C mm	D mm	Set weight kg wet	Set weight kg dry	Sub base Tank. Dry Weight kg	Sub base Tank. Wet Weight kg
DGEA	6CT8.3G2	2332	2200	840	831	1412	250	1500	1448	210	490
DGFA	6CTA8.3G2	2339	2200	840	831	1412	250	1650	1594	210	490
DGFB	6CTA8.3G2	2429	2200	840	831	1412	250	1760	1704	210	490
DGFC	6CTAA8.3G1	2555	2200	840	1070	1426	250	1800	1744	210	490

**NOTE 1:**

- ★ Battery tray extends out 260 mm from side – when fitted.
- ★ Dry and Wet weights of sets do NOT include fuel tank or contents.

Weights are **without** sub-base tank. Dimensions and weights are for **guidance** only. Do not use for installation design. Ask for certified drawings on your specific application. Specifications may change without notice.



Your local distributor: