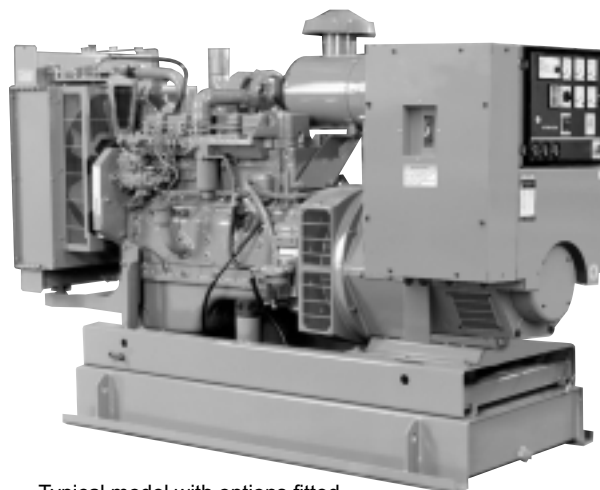


Diesel Powered Generating Sets 77 kW - 95 kW 50 Hz 6B Series Engines



Typical model with options fitted

Standard Genset Features

Single Source Responsibility

Design, manufacture and testing of engine, alternator, control system and complete generating set are all produced by companies within the Cummins Group

International Integrity

Assurance and strength of a worldwide major corporation backing the product

Global Backing

24 hour spares and service availability in 72 countries

Single Source Warranty

Total product guaranteed by Cummins Power Generation

Packaged Self-Contained Units

Integrated unit with built-in anti-vibration system, control panel, starting system with provision for base fuel tank and other accessories

Cummins Engine

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

Cooling System

- 50°C cooling package

Ready Filled

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

Alternator

- Brushless Group made machine
- 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)	Standby Model	Standby kW (kVA)	Engine Model
77 DGDH	77 (96)	85 DGDH	85 (106)	6BT5.9G6
85 DGDJ	85 (106)	95 DGDJ	95 (119)	6BT5.9G6

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 6BT5.9G6 in-line direct injection 6-cylinder diesel engine.

Type

Water cooled, four cycle, turbo charged.

Construction

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

Starting

12 volt negative earth. Battery charging alternator 35 amp on 6B series engines. Cranking current 625 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

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 – 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, BSS 5514,
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 and cables
- Sump drain pump
- Oil and water drain taps
- CE Compliance (guarding)
- Exhaust temperature monitoring (PCC only)
- Low coolant level switch
- 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 tank
- Hand fuel transfer pump
- Automatic fuel transfer pump and switch
- Free-standing 450, 900 and 1350 litre fuel tanks with stand
- Options apply to base tanks or free-standing fuel tanks
- High fuel level warning
- Low fuel level warning
- Low fuel level shutdown

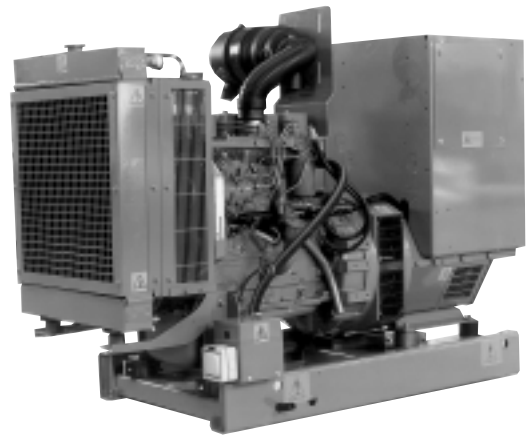
Generator Set

- Weather protective enclosures
- Silenced enclosures

Control Panel

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

Technical Data



Generating Sets - 50 Hz

Set output	380-415 V 50 Hz	380-415 V 50 Hz
Prime at 40°C ambient	77 kWe 96 kVA	85 kWe 106 kVA
Model (Prime)	77 DGDH	85 DGDJ
Standby at 40°C ambient	85 kWe 106 kVA	95 kWe 119 kVA
Model (Standby)	85 DGDH	95 DGDJ
Engine Make	Cummins	Cummins
Model	6BT5.9G6	6BT5.9G6
Cylinders	Six	Six
Engine build	In-line	In-line
Governor/Class	Mechanical	Mechanical
Aspiration and cooling	Turbocharged	Turbocharged
Bore and stroke	102 mm x 120 mm	102 mm x 120 mm
Compression ratio	16.5:1	16.5:1
Cubic capacity	5.88 Litres	5.88 Litres
Starting/Min °C	Unaided/-12°C	Unaided/-12°C
Battery capacity	165 Ah	165 Ah
Nett Engine output – Prime	86 kWm	94 kWm
Nett at flywheel – Standby	94 kWm	106 kWm
Speed	1500 rpm	1500 rpm
Alternator voltage regulation	±1.0%	±1.0%
Alternator insulation class	H	H
Single load step to NFPA110	100%	100%
Fuel consumption (Prime) 100% load	21.8 l/hr	23.8 l/hr
Fuel consumption (Standby) 100% load	23.8 l/hr	27 l/hr
Lubrication oil capacity	14.2 Litres	14.2 Litres
Base fuel tank capacity – open set	200 Litres	200 Litres
Coolant capacity – radiator and engine	25.1 Litres	25.1 Litres
Exhaust temp – full load prime	552°C	552°C
Exhaust gas flow – full load prime	1026 m³/hr	1026 m³/hr
Exhaust gas back pressure max	76 mm Hg	76 mm Hg
Air flow – radiator*	1.5 m³/s	1.5 m³/s
Air intake – engine	407 m³/hr	407 m³/hr
Minimum air opening to room	0.7 sq m	0.7 sq m
Minimum discharge opening	0.5 sq m	0.5 sq m
Pusher fan head (duct allowance)	13 mm Wg*	13 mm Wg*
Total heat radiated to ambient (Engine)	18.4 kW	20.8 kW
Derate factors	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.

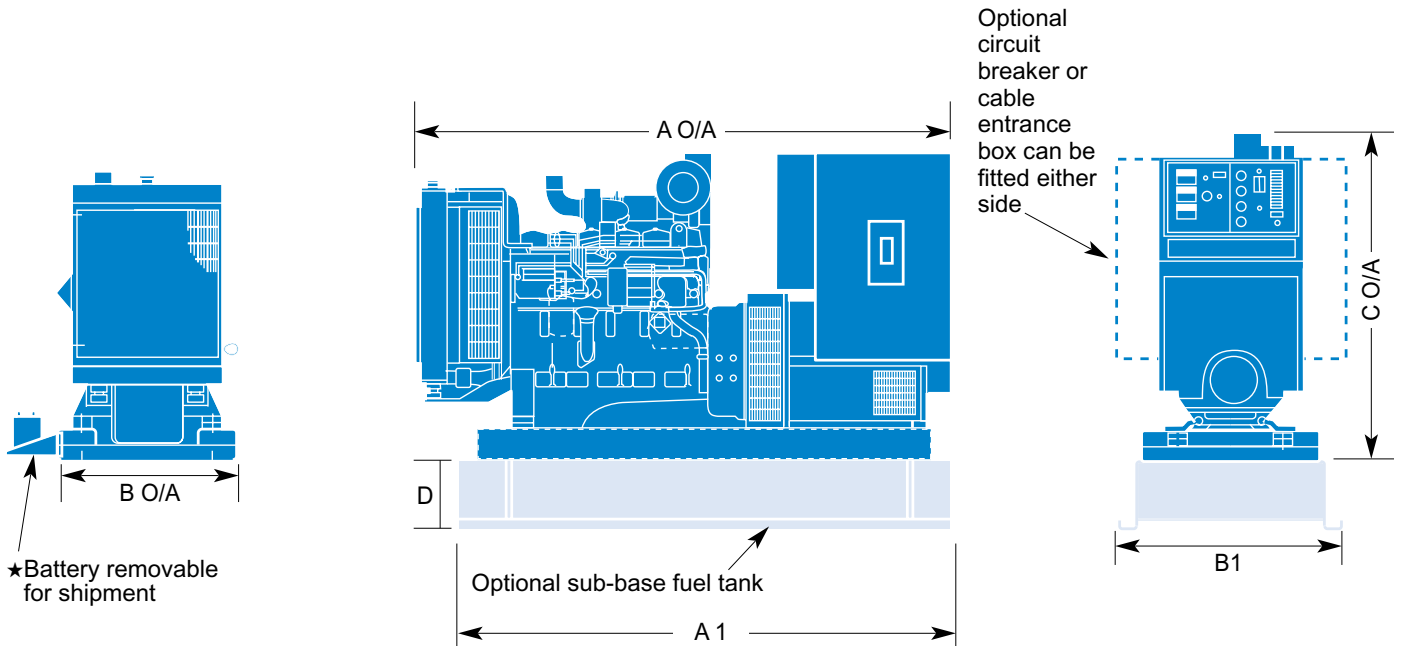
Standby: Continuous running at variable load for duration of an emergency.

Prime and standby ratings are outputs at 40°C (104°F) ambient temperature reference.

*Subject to factory verification.

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
DGDH	6BT5.9G6	2047	1675	840	675	1337	200	1112	1075	150	320
DGDJ	6BT5.9G6	2162	1675	840	675	1337	200	1175	1138	150	320

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: