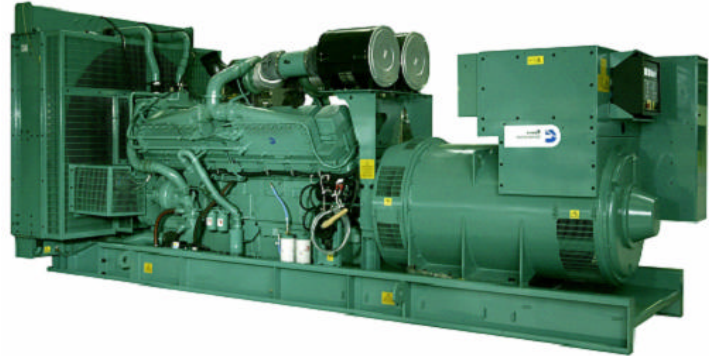


**Power
Generation**

Diesel Powered Generating Sets 1000 kW - 1340 kW 50 Hz KTA50 Series Engines



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 services 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 with provision for base fuel tank and other accessories

Cummins Engine

- Heavy duty 4 cycle water cooled engine
Electronic governor control

Alternator

- Brushless Group made machine
- Close voltage regulation
- Rotor and exciter impregnated with oil and acid resisting resin
- 6 lead reconnectable
- Exceptional short circuit capability
- Low waveform distortion with non linear loads
- Permanent magnet exciter fitted as standard

Ratings

All kW Power ratings based on a 27°C ambient temperature reference. No derating necessary up to 27°C

Chasis

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

Cooling System

- 40°C cooling package (50°C option)

Ready Filled

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

PCC PowerCommand®

Control System

- PCC2100 Controller with bar graph as standard
- Microprocessor control
- Integrates governor and voltage regulation systems
- Superior alternator and genset protection system
- Accurate battery monitoring system
- Totally reliable and proven system



50 Hz Ratings					
Model Prime	Prime kW (kVA)	Standby kW (kVA)	Engine Model	TA-Luft Compliance	
C1400 D5	1000 (1250)	1120 (1400)	KTA50G3	—	
C1400 D5E	1000 (1250)	1120 (1400)	KTA50G7	2.0 g/nm ³	
C1675 D5	1120 (1400)	1340 (1675)	KTA50G8	—	

A Single Source for all Power System Solutions

Specifications

Generator Set Performance

Voltage Regulation

Maintains voltage output to within $\pm 0.5\%$.
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.

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 1.5%. Three-phase balanced load in the order of 5.0%.

Telephone Influence Factor

TIF better than 50.
THF to BS4999 Part 40 better than 2%.

Alternator Temperature Rise

Class H insulation. Temperature rise up to 125°C permitted for prime ratings.

Radio Interference

In compliance with BS800 and VDE levels G and N.

Engine

Cummins KTA50G3, G7 and G8, sixteen-cylinder vee formation, direct injection, four-cycle diesel engines.

Type

Water cooled, turbocharged and aftercooled.

Construction

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

Starting

24 volt negative earth, battery charging 35amp alternator. Cranking current 1800 amps Amps at 0°C.

Fuel System

24 volt fail safe actuator, dual spin-on paper element fuel filters, Cummins PTfuel injection systems with integral electronic governor. Dual flexible fuel lines with connectors. Standard fuel water separator.

Filters

Dry element air filters with restriction indicator and spin-on paper element full flow and by pass lube oil filters. Spin on corrosion resistor filter.

Cooling

High ambient 40°C radiator as standard with 50°C ambient as option. Oil cooler.

Alternator

Type

Brushless, single bearing, revolving field, 4-pole, drip proof, screen protected. Class H insulation.

Enclosed to IP23 (NEMA1) 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 BS5625 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 – self-exciting, self-regulating. Output windings with 2/3 pitch for improved harmonics and parallelling ability.

Close coupled engine/alternator for perfect alignment.

Permanent magnet exciter fitted as standard.

Compliance Standard

To BS4999/5000 pt 99,
VDE 0530, UTE5100,
NEMAMG1-22, CEMA,
IEC 34, CSAA22.2,
AS1359, BSS5514,
ISO 3046 and ISO 8528

Chasis

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

Finish

Etch undercoated and finished in high gloss durable green

General

Complete set of operating and instruction manuals

Generator Set Options

Engine

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

Cooling

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

Alternator

- Anti-Condensation heater
- Thermistors
- 125/105/80°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

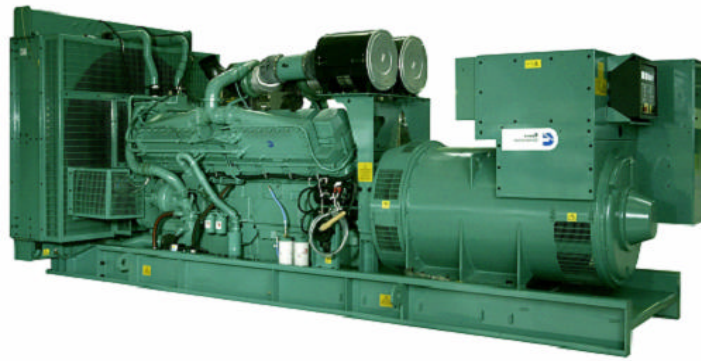
Generator Set

- Weather protective enclosures
- Silenced enclosures

Control Panel

- See separate list on Control Panel pages
- 3 or 4 pole circuit breaker up to 2500A
- Battery charger 5 amp or 10 amp
- CE Compliance PCL and PCC systems
- Cable entrance box
- PCCP3100 controller

Technical Data



Set output	380-440 V 50 Hz	380 - 440V	380-440 V 50 Hz
Prime at 27°C ambient	1000 kWe 1256 kVA	1000kW _e 1250 kVA	1120 kW _e 1400 kVA
New Model (Prime)	C1400 D5	C1400 D5	C1675 D5
Standby at 27°C ambient	1120 kW _e 1400 kVA	1120kW _e 1400 kVA	1340 kW _e 1675 kVA
Engine Make	Cummins	Cummins	Cummins
Model	KTA50G3	KTA50G7	KTA50G8
Cylinders	Sixteen	16	16
Engine build	60°Vee	60°Vee	Vee
Governor / Class	Electronic / A1	Electronic/A1	Electronic / A1
Aspiration and cooling	Turbo Aftercooled	Turbo Aftercooled	Turbo Aftercooled
Bore and stroke	159 mm x 159 mm	159 mm x 159 mm	159 mm x 159 mm
Compression ratio	13.9:1	16.7:1	14.9:1
Cubic capacity	50.3 Litres	50.3 Litres	50.3 Litres
Starting / Min °C	Unaided / 7°C	Unaided / 7°C	Unaided / 7°C
Battery capacity	254 A/hr	254 A/hr	254 A/hr
Gross Engine output – Prime	1097 kW _m	1097 kW _m	1200 kW _m
Gross Engine output – Standby	1228 kW _m	1228 kW _m	1429 kW _m
Maximum load acceptance – single step (cold)	640 kW _e	640 kW _e	900 kW _e
Speed	1500 rpm	1500 rpm	1500 rpm
Alternator voltage regulation	±0.5%	±0.5%	±0.5%
Alternator insulation class	H	H	H
Single load step to NFPA110	100%	100%	100%
Fuel consumption (Prime) 100% load	261 l/hr	274 l/hr	289 l/hr
Fuel consumption (Standby) 100% load	293 l/hr	303 l/hr	345 l/hr
Lubrication oil capacity	177 Litres	197 Litres	204 Litres
Base fuel tank capacity – open set (Option)	2000 Litres	2000 Litres	2000 Litres
Coolant capacity – radiator and engine	351 Litres	351 Litres	400 Litres
Exhaust temp – full load prime	520°C	472°C	485°C
Exhaust gas flow – full load prime	13421 m ³ /hr	12910 m ³ /hr	13842 m ³ /hr
Exhaust gas back pressure max (standby)	51 mm Hg	51 mm Hg	51 mm Hg
Air flow – radiator (40°C ambient)	21.6 m ³ /s	21.6 m ³ /s	21.7 m ³ /s
Pusher fan head (duct allowance) 40°C	13 mm Wg	13 mm Wg	13 mm Wg
Air intake – engine (prime)	5778 m ³ /hr	5508 m ³ /hr	5400 m ³ /hr
Air flow – radiator (50°C ambient)	27.1 m ³ /s	N/A	28.4 m ³ /s
Pusher fan head (duct allowance) 50°C	13 mm Wg	N/A	15 mm Wg
Engine heat radiated to ambient	130 kW	154 kW	175 kW
Engine derating – altitude	No derate for standby up to 1400m/40 C and 850m/40°C prime. For sustained operation above these conditions, derate by an additional 5% per 300m and 9% per 10°C.	No derate at prime power up to 1000m/40°C and 850m/40°C. For sustained operation above these conditions, derate by an additional 4% per 300m and 4% per °C	No derate up to 900m/40 C and 850m/40°C. For sustained operation above these conditions, derate by an additional 4.6% per 300m and 12% per 10°C
Engine derating – temperature			

PRIME POWER RATING

The Prime Power Rating is the maximum power available during a variable load sequence which may be run for an unlimited number of hours per year. 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)

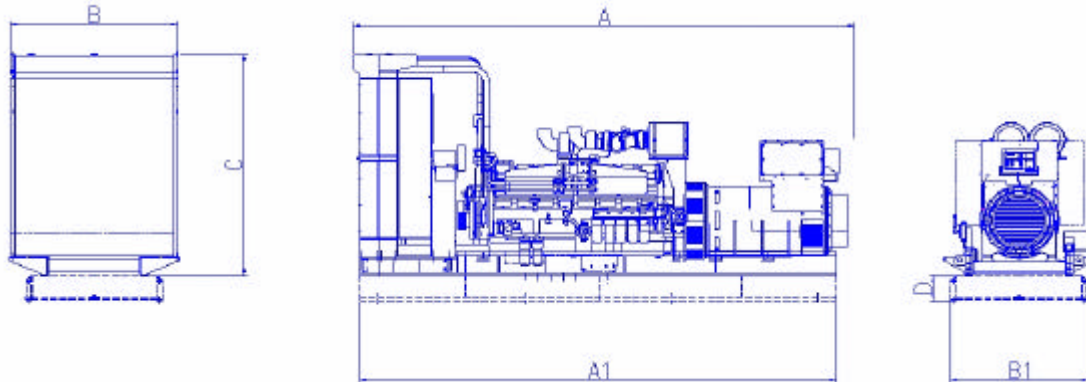
The Standby Power Rating is applicable for supplying emergency power for the duration of a utility power interruption. No overload, utility parallel or negotiated outage operation capability is available at this rating. In installations served by unreliable utility sources (where outages last longer 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.

Unless otherwise stated all ratings are based on the following reference conditions:

- Ambient temperature – 27°C
- Altitude above sea level – 150 metres
- Relative humidity – 60%

Note: In order for KTA50G7 (C1400 D5E) to meet 2g TA Luft emission norms please refer to factory for cooling system guidelines.

Dimensions and Weights - 50 Hz



Model	Engine	Dimensions and Weights (mm/kg)						Set Weight kg Dry	Set Weight kg Wet
		A	A1	B1	B	C	D		
C1400 D5	KTA50G3	5105	5150	1640	2000	2238	300	9099	10075
C1400 D5E	KTA50G7	5455	5690	1640	2033	2241	300	9242	10421
C1675 D5	KTA50G8	5811	5690	1640	2033	2333	300	10324	10626

*With ambient radiator

Set 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.

1000 (1250)



See your distributor for more information

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

Cummins is a registered trademark of Cummins Inc.

Specifications May Change Without Notice