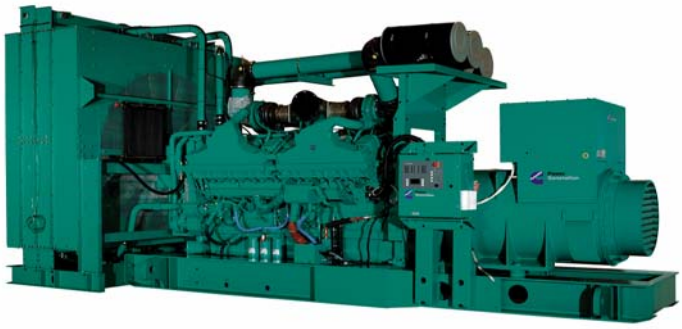
Diesel Powered Generating Sets
1280 kW - 1760 kW 50 Hz
QSK60 Series Engines
2g TA Luft Compliant



Typical model with fitted options

Standard Genset Features

Single Source Responsibility
- Design, manufacture and test of all components and accessories are 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 optional anti-vibration systems with provision for various accessories

Cummins Engine
- Heavy duty 4 cycle water cooled engine with low emissions
- Full Authority Electronic Engine

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 40°C ambient temperature reference. No derating necessary up to 40°C

Chassis
Optional anti-vibration system using spring mounts

Cooling System
- Min. 27°C set mounted package for TAL
- 40°C plus cooling package without TAL compliance

Ready Filled
- Every set comes filled with lube oil

PCC PowerCommand® Control System
- PCC3201 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

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

One Source — Engine — Alternator — Controls — Generating Set — One Name

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

50 Hz Ratings				
Model Prime	**Prime kW (kVA)**	**Standby kW (kVA)**	**Engine Model**	**TA-Luft Compliance**
C1760 D5E	1280 (1600)	1408 (1760)	QSK60GS3	2.0 g/nm³
C2000 D5E	1460 (1825)	1600 (2000)	QSK60GS3	2.0 g/nm³
C2200 D5E	1600 (2000)	1760 (2200)	QSK60GS3	2.0 g/nm³

A Single Source for *all* Power System Solutions

Specifications May Change Without Notice

Specifications

Generator Set Performance

Voltage Regulation
Maintains voltage output to within ±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 ±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 IEC 801.2/3/4/5 and MIL STD 461C Part 9.

Engine

Cummins QSK60GS3
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 40amp alternator. Cranking current 1800 amps Amps at 0°C.

Fuel System
24 volt fail safe actuator, dual spin-on paper element fuel filters, Cummins direct fuel injection system
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
Ambient 27°C radiator as standard for TA Luft.
40°C ambient without TA Luft. Fuel 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

Chassis

Fabricated and welded steel chassis
Optional anti-vibration mountings

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-
- ☐ Tool kit
- ☐ Compliance to TALuft

Cooling
- ☐ Remote radiator cooling

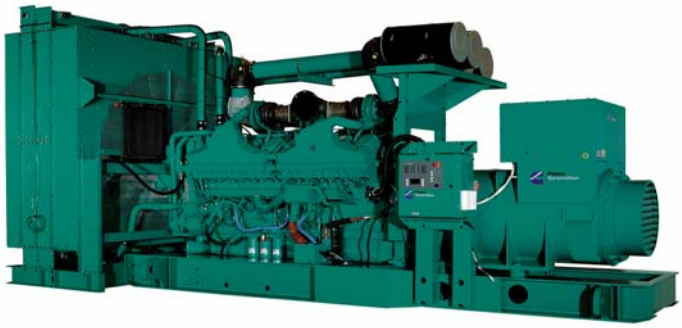
Alternator
- ☐ Anti-Condensation heater
- ☐ Stator RTD's
- ☐ Bearing RTD's
- ☐ 125/105/80°C rise alternator

Exhaust System
- ☐ Industrial type silencer
- ☐ Residential type silencer
- ☐ Length of flexible exhaust and bellows

Fuel System
- ☐ 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

Control Panel
- ☐ See separate list on Control Panel pages
- ☐ 3 or 4 pole circuit breaker up to 3200A
- ☐ Battery charger 5 amp or 10 amp
- ☐ CE Compliance and PCC systems
- ☐ Cable entrance box
- ☐ Power Transfer control
- ☐ Paralleling Options

Technical Data



Set output	380-440V 50 Hz	380-440V 50 Hz	380-440V 50 Hz
Prime rating	1280 kWe 1600 kVA	1460 kWe 1825 kVA	1600 kWe 2000 kVA
Model name	C1760 D5E	C2000 D5E	C2200 D5E
Standby rating	1408 kWe 1760 kVA	1600 kWe 2000 kVA	1760 kWe 2200 kVA
Engine Make	Cummins	Cummins	Cummins
Model	QSK60GS3	QSK60GS3	QSK60GS3
Cylinders	16	16	16
Engine build	60°Vee	60ºVee	60°Vee
Governor / Class	Electronic / A1	Electronic/A1	Electronic / A1
Aspiration and cooling	Turbo Aftercooled	Turbo Aftercooled	Turbo Aftercooled
Bore and stroke	159 mm x 190 mm	159 mm x 190 mm	159 mm x 190 mm
Compression ratio	16.2:1	16.2:1	16.2:1
Cubic capacity	60.2 Litres	60.2 Litres	60.2 Litres
Starting / Min °C	Unaided / -12°C	Unaided / -12°C	Unaided / -12°C
Battery capacity	330 A/hr	330 A/hr	330 A/hr
Gross Engine output – Prime	1650 kWm	1650 kWm	1650 kWm
Gross Engine output – Standby	1835 kWm	1835 kWm	1835 kWm
Maximum a/c coolant inlet temp. for TA Luft	40°C	40°C	40°C
Maximum a/c coolant inlet temp. for non-TA Luft	55°C	55°C	55°C
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	354 l/hr	429 l/hr	432 l/hr
Fuel consumption (Standby) 100% load	393 l/hr	442 l/hr	467 l/hr
Lubrication oil capacity	280 Litres	280 Litres	280 Litres
Coolant capacity – radiator and engine	400 Litres	400 Litres	400 Litres
Exhaust temp – full load prime	420°C	450°C	445°C
Exhaust gas flow – full load prime	5040 L/s	5565 L/s	5795 L/s
Exhaust gas back pressure max (standby)	51 mm Hg	51 mm Hg	51 mm Hg
Air flow – radiator (40°C ambient)	40 m3/s	40 m3/s	40 m3/s
Pusher fan head (duct allowance) 40°C	13 mm Wg	13 mm Wg	13 mm Wg
Air intake – engine (prime)	2130 L/s	2360 L/s	2435 L/s
Engine heat radiated to ambient	140 kW	160 kW	170 kW
Engine deration	No deration up to 375m/40 C at Max. Output. For sustained operation above these conditions, derate by an additional 6.6% per 300m and 15% per 10°C.	No deration up to 375m/40 C at Max. Output. For sustained operation above these conditions, derate by an additional 6.6% per 300m and 15% per 10°C.	No deration up to 375m/40 C at Max. Output. For sustained operation above these conditions, derate by an additional 6.6% per 300m and 15% per 10°C.

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)

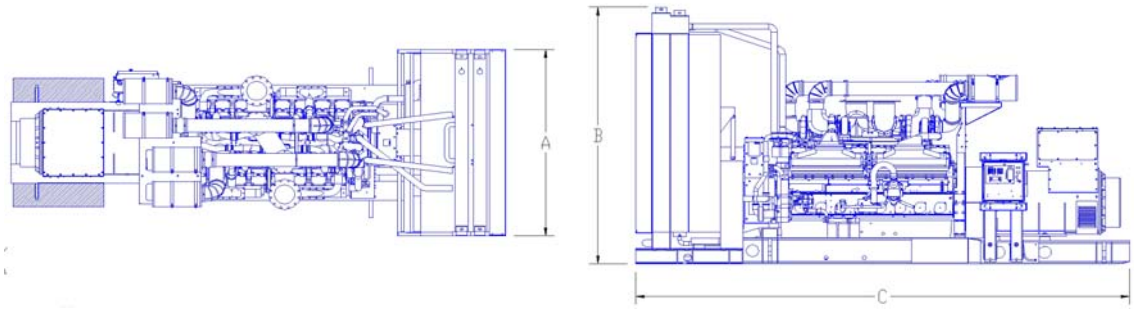
The Standby Power Rating is applicable for supplying emergency power for the duration of a utility power interruption. No overload, utility parallel or negotiated outage operation capability is available at this rating. In installations served by unreliable utility sources (where outages last longer 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 – 27^0C
- Altitude above sea level – 150 metres
- Relative humidity – 60%

Note: C2200 D5E power outputs are without cooling fan parasitics.

Dimensions and Weights - 50 Hz



Typical model with fitted options

Model	Engine	Dimensions and Weights (mm/kg)			Set Weight	Set Weight
		A	B	C	kg Dry	kg Wet
C1760 D5E	QSK60 GS3	2494	3422	6175	15072	15736
C2000 D5E	QSK60 GS3	2494	3422	6175	15594	16258
C2200 D5E	QSK60 GS3	2494	3422	6175	15808	16472

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.

See your distributor for more information

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