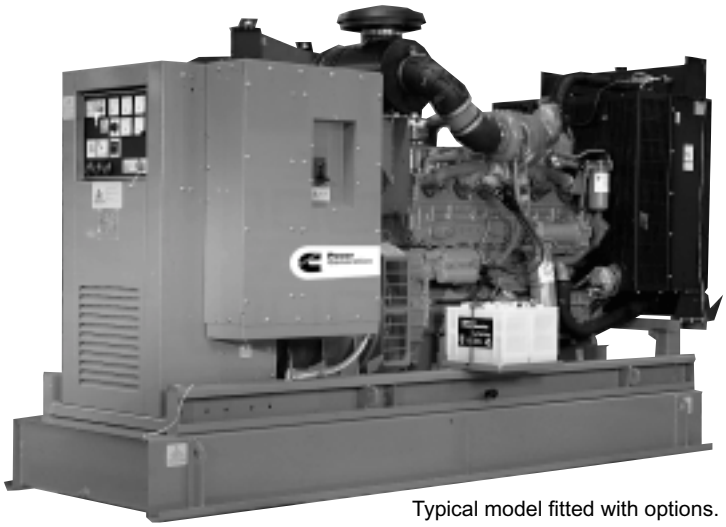
Power Generation

Diesel Powered Generating Sets 250 kW - 340 kW 50 Hz NT855 Series Engines



Typical model fitted with options.

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 with provision for base fuel tank and other accessories

Cummins Engine
- Heavy duty 4 cycle water cooled engine
- Electronic governor control

Cooling System
- 40°C cooling package (50°C option)

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. No derating necessary up to 40°C

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

PCC PowerCommand Control System
- Microprocessor control
- Integrates governor and voltage regulation systems
- Superior alternator and genset protection system
- Accurate battery monitoring system
- Totally reliable and proven system

Alternative 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

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)	**Model Standby**	**Standby kW** (kVA)	**Engine Model**
–	–	**250 DFBF**	**250** (313)	**NT855G6**
252 DFBH	**252** (315)	**280 DFBH**	**280** (350)	**NT855G6**
280 DFCC	**280** (350)	**312 DFCC**	**312** (390)	**NTA855G4**
–	–	**340 DFCE**	**340** (425)	**NTA855G6**

A Single Source for *all* Power System Solutions

Specifications

Generator Set Performance

Voltage Regulation
Maintains voltage output to within ±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 ±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)
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.

Radio Interference
In compliance with BS800 and VDE levels G and N.

Engine

Cummins NT855 and NTA855 in-line direct injection 6-cylinder diesel engines.

Type
Water cooled, four cycle, turbo charged after cooled.

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

Starting
24 volt negative earth. Battery charging alternator 45 amp. Cranking current 640 amps at 0°C.

Fuel System
24 volt fail safe actuator. Dual spin-on paper element fuel filters with Cummins PT fuel injection system with integral electronic 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 corrosion resistor filter.

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

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 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 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.

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
- 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 and PCC systems
- Cable entrance box

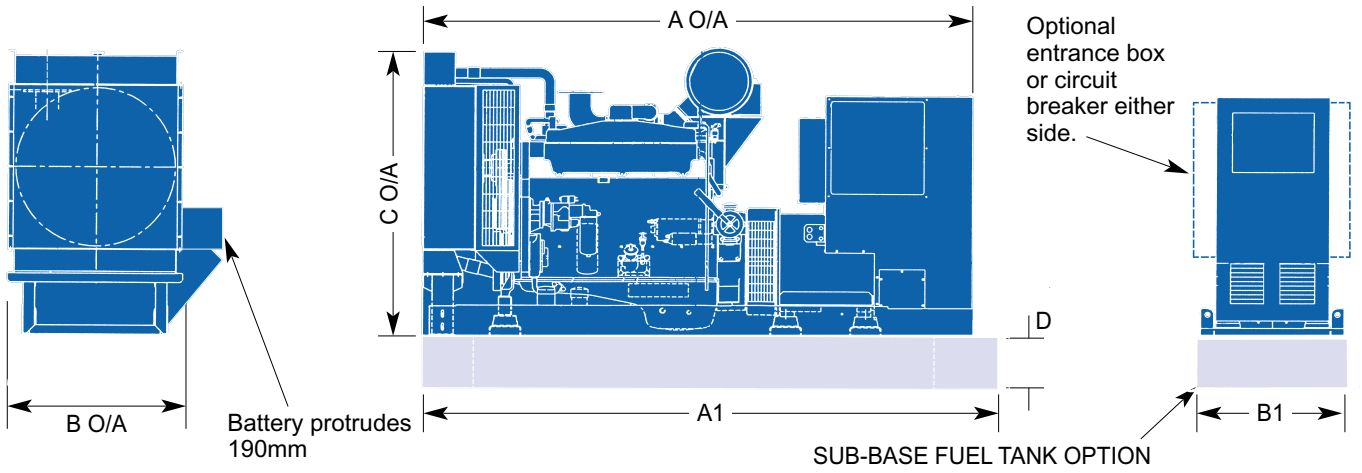
Technical Data

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	–	252 kWe 315 kVA	280 kWe 350 kVA	–
Model (Prime)	–	252 DFBH	280 DFCC	–
Standby at 40°C ambient	250 kWe 313 kVA	280 kWe 350 kVA	312 kWe 390 kVA	340 kWe 425 kVA
Model (Standby)	250 DFBF	280 DFBH	312 DFCC	340 DFCE
Engine Make	Cummins	Cummins	Cummins	Cummins
Model	NT855G6	NT855G6	NTA855G4	NTA855G6
Cylinders	Six	Six	Six	Six
Engine build	In-line	In-line	In-line	In-line
Governor/Class	Electronic/A1	Electronic/A1	Electronic/A1	Electronic/A1
Aspiration and cooling	Turbocharged	Turbocharged	Turbo Aftercooled	Turbo Aftercooled
Bore and stroke	140 mm x 152 mm	140 mm x 152 mm	140 mm x 152 mm	140 mm x 152 mm
Compression ratio	14.0:1	14.0:1	14.0:1	14.0:1
Cubic capacity	14 Litres	14 Litres	14 Litres	14 Litres
Starting/Min °C	Unaided/4°C	Unaided/4°C	Unaided/–7°C	Unaided/–7°C
Battery capacity	127 A/hr	127 A/hr	127 A/hr	127 A/hr
Nett Engine output – Prime	–	272 kWm	309 kWm	–
Nett at flywheel – Standby	302 kWm	302 kWm	342 kWm	361 kWm
Maximum load acceptance single step	172 kWe	172 kWe	175 kWe	175 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 NFPAII0	100%	100%	100%	100%
Fuel consumption (Prime) 100% load	–	69 l/hr	76 l/hr	–
Fuel consumption (Standby) 100% load	67 l/hr	76 l/hr	84 l/hr	91 l/hr
Lubrication oil capacity	38.6 Litres	38.6 Litres	38.6 Litres	38.6 Litres
Base fuel tank capacity – open set	800 Litres	800 Litres	800 Litres	800 Litres
Coolant capacity – radiator and engine	63.9 Litres	63.9 Litres	69.8 Litres	69.8 Litres
Exhaust temp – full load prime	574°C	574°C	524°C	487°C
Exhaust gas flow – full load prime	3855.6 m^3/hr	3855.6 m^3/hr	4060.8 m^3/hr	4723 m^3/hr
Exhaust gas back pressure max	76 mm Hg	76 mm Hg	76 mm Hg	76 mm Hg
Air flow – radiator (40°C)	7.6 m^3/s	7.6 m^3/s	6.4 m^3/s	7.6 m^3/s
Pusher fan head (duct allowance) 40°C	13 mm Wg	13 mm Wg	13 mm Wg	13 mm Wg
Air intake – engine	1299.6 m^3/hr	1299 m^3/hr	1468.8 m^3/hr	1854 m^3/hr
Air flow – radiator (50°C)	7.6 m^3/s	7.6 m^3/s	8.3 m^3/s	8.3 m^3/s
Pusher fan head (duct allowance) 50°C	13 mm Wg	13 mm Wg	13 mm Wg	13 mm Wg
Total heat radiated to ambient	57 kW	57 kW	65 kW	81 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.
RTF = Refer to factory.

Dimensions and Weights – 50 Hz



Model	Engine	A	Dimensions and Weights (mm/kg)					Set Weight kg Dry	Set Weight kg Wet	Tank Weight kg (dry)	Tank Weight kg (wet)
			A1	B	B1	C	D				
DFBF	NT855G6	3196	3338	990	1048	1777	300	2983	3100	445	1085
DFBH	NT855G6	3286	3338	990	1048	1777	300	3133	3230	445	1085
DFCC	NTA855G4	3286	3338	990	1048	1777	300	3178	3275	445	1085
DFCE	NTA855G6	3304	3338	990	1048	1777	300	3291	3388	445	1085

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.

Power Generation

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
www.cummins.com