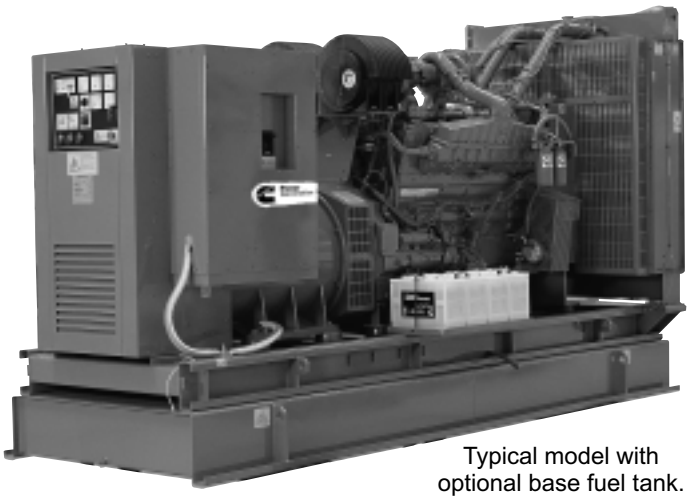
Power Generation

Diesel Powered Generating Sets 600 kW - 660 kW 50 Hz VTA28G6 Series Engine



Typical model with optional base fuel tank.

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

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

PCC PowerCommand® Control System
- Microprocessor control
- Integrates governor and voltage regulation systems
- Superior alternator and genset protection systems
- 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**
600 DFGD	**600** (750)	**660 DFGD**	**660** (825)	**VTA28G6**

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 VTA28G6 direct injection engines. 12-cylinder VT range.

Type
Water cooled, four cycle, turbo charged and aftercooled.

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

Starting
24 volt negative earth. Battery charging 35 amp alternator. Cranking current 1280 amps at 0°C on the VTA engine.

Fuel System
24 volt fail safe fuel actuator. Dual spin-on paper element fuel filters. Cummins PT fuel injection system with integral electronic governor. Dual flexible fuel lines and connectors. Fuel/water separator.

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

Cooling
40°C radiator as standard. 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, BS5514,
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
- ☐ Tool kit
- ☐ 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

Cooling
- ☐ Remote radiator cooling (built to order)
- ☐ Oil temperature indication

Alternator
- ☐ Anti-Condensation heater
- ☐ Thermistors
- ☐ PMG Exciter and MX321 AVR

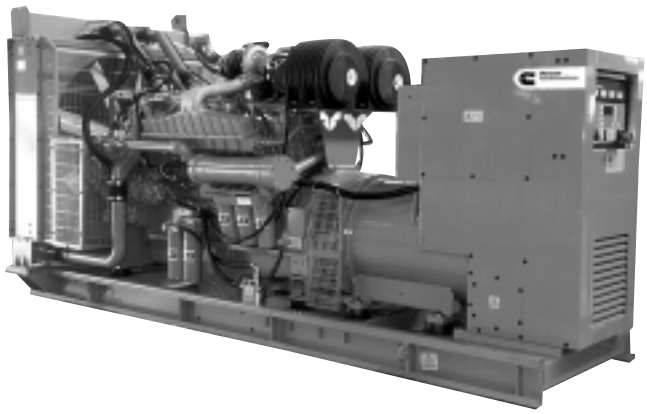
Exhaust System
- ☐ Industrial type silencer
- ☐ Residential type silencer
- ☐ Length of flexible exhaust and bellows

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 in Control Panel data sheet
- ☐ 3 or 4 pole circuit breaker
- ☐ Battery charger 5 amp or 10 amp
- ☐ CE Compliance PCL and PCC systems
- ☐ Cable entrance box

Technical Data



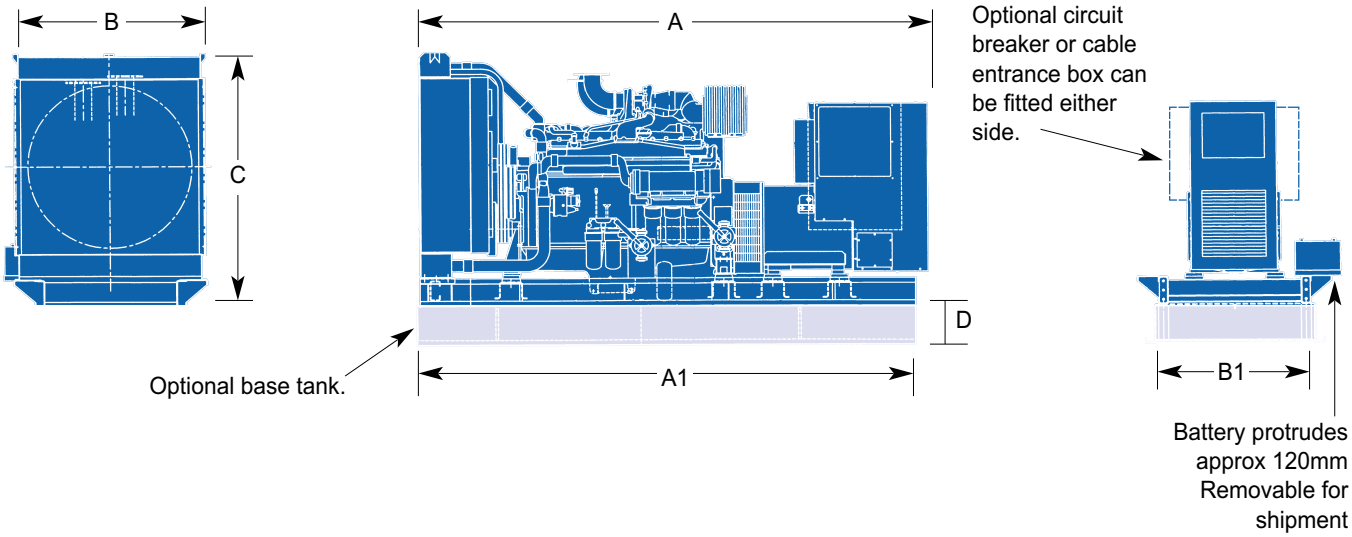
Generating Sets – 50 Hz

VTA28G6 – *Set output 400 V 50Hz	Standby	Prime
Ratings	660kWe (825 kVA)	600kWe (750 kVA)
Model	660 DFGD	600 DFGD
Engine Model	VTA28G6	VTA28G6
No of Cylinders	12	12
Aspiration	Turbocharged & Aftercooled	Turbocharged & Aftercooled
Gross Engine Power Output	722 kWm	656 kWm
BMEP	2062 kPa	1874 kPa
Bore	140 mm	140 mm
Stroke	152 mm	152 mm
Piston Speed m/sec	7.6 m/s	7.6 m/s
Compression Ratio	13.0:1	13.0:1
Lube Oil Capacity	68 l	68 l
RPM	1500 RPM	1500 RPM
Overspeed Limit	2070 +/-50 RPM	2070 +/-50 RPM
Fuel Consumption Load	1/4 1/2 3/4 Full	1/4 1/2 3/4 Full
Fuel Consumption – L/hr	40 81 121 162	36 73 110 147
Optional Base Tank Capacity l	1200 l	1200 l
Maximum Fuel Flow	448 l/hr	448 l/hr
Maximum Inlet Restriction	27 kPa	27 kPa
Maximum Return Restriction	22 kPa	22 kPa
Fan Load	19 kW	19 kW
Coolant Capacity (with radiator)	162 l	162 l
Coolant Flow Rate (engine jacket)	732 l/min	732 l/min
Heat Rejection to Eng Jacket Coolant	575 kW	575 kW
Heat Radiated to Ambient	90 kW	90 kW
Max Coolant Friction Head	55 kPa	55 kPa
Maximum Coolant Static Head	18.3 kPa	18.3 kPa
Max Top Tank Temp (engine jacket)	104°C	100°C
Combustion Air	55 m^3/min	49 m^3/min
Maximum Air Cleaner Restriction	85 kPa	85 kPa
Alternator Cooling Air	97 m^3/min	97 m^3/min
Radiator Cooling Air	750 m^3/min	750 m^3/min
Minimum Air Opening to Room (no attenuation)	4.1 m^2	4.1 m^2
Minimum Discharge Opening (no attenuation)	3.2 m^2	3.2 m^2
Max Static Restriction	13 mm Hg	13 mm Hg
Exhaust Gas Flow (Full Load)	132 m^3/min	120 m^3/min
Exhaust Gas Temperature	489°C	464°C
Maximum Back Pressure	10.1 kPa	10.2 kPa
Engine Derating – Altitute	RTF	RTF
Engine Derating – Temperature	RTF	RTF

*Refer to factory for other voltage output
RTF = Refer to factory.

Rating Definitions
Standby Rating based on: Applicable for supplying power for the duration of the utility power outage. No overload capability is available for this rating. Under no condition is an engine allowed to operate in parallel with the public utility at the standby power rating. This rating should be applied only where reliable utility power is available.
A standby rated engine should be sized for a maximum of 70% average load factor and 200 hrs of operation per year. This includes a maximum of 1 hour in a 12 hour period at the standby power rating. Standby rating should never be applied except in true power outages.
Prime Rating based on: Prime Power is available continuously during the period of power outage in a variable load application. Variable load should not exceed a 70% average of the Prime Power rating during any 24 hour period. A 10% overload capability is available for a period of 1 hour within a 12 hour period of operation.

Dimensions and Weights – 50 Hz



Model	Engine	New Dimensions and Weights (mm/kg)						Set Weight kg Dry	Set Weight kg Wet	Tank Weight kg (dry)	Tank Weight kg (wet)
		A	A1	B1	B	C	D				
DFGD	VTA28G6	4047	4092	1350	1457	2187	300	5921	6190	585	1563

*Subject to factory confirmation.

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.

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