Diesel Powered Generating Sets
1120 kW - 1545 kW 60 Hz
KTA50 Series Engines

Standard Genset Features

**Single Source Responsibility**
- Design, manufacture 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**
- 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
- Exceptional short circuit capability
- Low waveform distortion with non linear loads
- Permanent magnet exciter with MX321 AVR fitted as standard

**Optional 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

**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

**Integrated Control System**
- Totally integrated design
- Full AC instrumentation
- Safety shutdowns
- Local or Remote starting
- Emergency stop button (optional)
- CE and non CE options

Optional 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

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### 60 Hz Ratings

<table>
<thead>
<tr>
<th>Model</th>
<th>Prime kW (kVA)</th>
<th>Model</th>
<th>Standby kW (kVA)</th>
<th>Engine Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>1120 DFLC</td>
<td>1120 (1400)</td>
<td>1270 DFLC</td>
<td>1270 (1587)</td>
<td>KTA50G3</td>
</tr>
<tr>
<td>1286 DFLE</td>
<td>1286 (1608)</td>
<td>1545 DFLE</td>
<td>1545 (1931)</td>
<td>KTA50G9</td>
</tr>
</tbody>
</table>

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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%.

Telephonic Influence Factor
TIF better than 50.

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 KTA50G3 and KTA50G9, 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 35 amp alternator. Fitted battery tray, battery leads and connecting lugs. Cranking current 1800 amps Amps at 0°C.

Alternator

Type
Brushless, single bearing, revolving field, 4-pole, drip proof, screen protected.

Exciter
Triple dipped in moisture, oil and acid resisting polyester resin. Dynamically balanced rotor to BS5625 grade 2.5. Sealed for life bearings. Layer wound mechanically wedged rotor.

Exciter
Sealed inside 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.

Permanent magnet exciter with MX321 AVR fitted as standard.

Fuel System
24 volt fail safe actuator, dual spin-on paper element fuel filters, Cummins PT fuel injection systems with integral electronic governor. Dual flexible fuel lines with connectors.

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 50°C radiator as standard.

Alternator

Exciter
Triple dipped in moisture, oil and acid resisting polyester varnish and coated with anti-tracking varnish.

Sealed inside 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.

Permanent magnet exciter with MX321 AVR fitted as standard.

Fuel System
24 volt fail safe actuator, dual spin-on paper element fuel filters, Cummins PT fuel injection systems with integral electronic governor. Dual flexible fuel lines with connectors.

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 50°C radiator as standard.

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 points

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
- Fuel water separator
- 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
- Remote radiator cooling (built to order)
- Oil temperature indication

Alternator
- Anti-Condensation heater
- Thermistors
- 105°C rise alternators

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
- Refer to Control Panel literature for details of options
- 3 or 4 pole circuit breaker
- Battery charger 5 amp or 10 amp
- CE Compliance
- Cable entrance box
- Switch disconnector 3P or 4P

Compliance Standards
To BS4999/5000 pt 99, VDE 0530, UTE5100, NEMA MG1-22, CEMA, IEC 34, CSA A22.2, AS1359, BS 5514, ISO 3046 and ISO 8528
## Technical Data

### Generating Sets - 60 Hz

<table>
<thead>
<tr>
<th>Specification</th>
<th>Prime at 40°C ambient</th>
<th>Standby at 40°C ambient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set output</td>
<td>220-480 V 60 Hz</td>
<td>220-480 V 60 Hz</td>
</tr>
<tr>
<td>Prime at 40°C ambient</td>
<td>1120 kW 1400 kVA</td>
<td>1270 kW 1587 kVA</td>
</tr>
<tr>
<td>Model (Prime)</td>
<td>1120 DFLE</td>
<td>1270 DFLE</td>
</tr>
<tr>
<td>Standby at 40°C ambient</td>
<td>1286 kW 1608 kVA</td>
<td>1545 kW 1931 kVA</td>
</tr>
<tr>
<td>Model (Standby)</td>
<td>1286 DFLE</td>
<td>1545 DFLE</td>
</tr>
<tr>
<td>Engine Make</td>
<td>Cummins</td>
<td>Cummins</td>
</tr>
<tr>
<td>Model</td>
<td>KTA50G3</td>
<td>KTA50G9</td>
</tr>
<tr>
<td>Cylinders</td>
<td>Sixteen</td>
<td>Sixteen</td>
</tr>
<tr>
<td>Engine build</td>
<td>60° Vee</td>
<td>60° Vee</td>
</tr>
<tr>
<td>Governor / Class</td>
<td>Electronic / A1</td>
<td>Electronic / A1</td>
</tr>
<tr>
<td>Aspiration and cooling</td>
<td>Turbo Aftercooled</td>
<td>Turbo Aftercooled</td>
</tr>
<tr>
<td>Bore and stroke</td>
<td>159 mm x 159 mm</td>
<td>159 mm x 159 mm</td>
</tr>
<tr>
<td>Compression ratio</td>
<td>13.9:1</td>
<td>13.9:1</td>
</tr>
<tr>
<td>Cubic capacity</td>
<td>50.3 Litres</td>
<td>50.3 Litres</td>
</tr>
<tr>
<td>Starting / Min °C</td>
<td>Unaided / 7°C</td>
<td>Unaided / 7°C</td>
</tr>
<tr>
<td>Battery capacity</td>
<td>254 Ah</td>
<td>254 Ah</td>
</tr>
<tr>
<td>Nett Engine output – Prime</td>
<td>1172 kWm</td>
<td>1370 kWm</td>
</tr>
<tr>
<td>Nett at flywheel – Standby</td>
<td>1332 kWm</td>
<td>1609 kWm</td>
</tr>
<tr>
<td>Speed</td>
<td>1800 rpm</td>
<td>1800 rpm</td>
</tr>
<tr>
<td>Alternator voltage regulation</td>
<td>±0.5%</td>
<td>±0.5%</td>
</tr>
<tr>
<td>Alternator insulation class</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>Single load step to NFPAIIO para 5.13.2.6</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Fuel consumption (Prime) 100% load</td>
<td>291 l/hr</td>
<td>330 l/hr</td>
</tr>
<tr>
<td>Fuel consumption (Standby) 100% load</td>
<td>330 l/hr</td>
<td>392 l/hr</td>
</tr>
<tr>
<td>Lubrication oil capacity</td>
<td>177 Litres</td>
<td>204 Litres</td>
</tr>
<tr>
<td>Base fuel tank capacity – open set</td>
<td>2000 Litres</td>
<td>2000 Litres</td>
</tr>
<tr>
<td>Coolant capacity – radiator and engine</td>
<td>351 Litres</td>
<td>521 Litres*</td>
</tr>
<tr>
<td>Exhaust temp – full load prime</td>
<td>460°C</td>
<td>471°C</td>
</tr>
<tr>
<td>Exhaust gas flow – full load prime</td>
<td>14270 m³/hr</td>
<td>16308 m³/hr</td>
</tr>
<tr>
<td>Exhaust gas back pressure max</td>
<td>51 mm Hg</td>
<td>51 mm Hg</td>
</tr>
<tr>
<td>Air flow – radiator (50°C ambient)*</td>
<td>33.7 m/s</td>
<td>28.2 m/s</td>
</tr>
<tr>
<td>Pusher fan head (duct allowance) 50°C*</td>
<td>13 mm Wg</td>
<td>13 mm Wg*</td>
</tr>
<tr>
<td>Air intake – engine</td>
<td>6285 m³/hr</td>
<td>6948 m³/hr</td>
</tr>
<tr>
<td>Total heat radiated to ambient</td>
<td>229 kW</td>
<td>186 kW</td>
</tr>
<tr>
<td>Engine derating – altitude</td>
<td>up to 1550 m (5500 ft)</td>
<td>up to 1000 m (3300 ft)</td>
</tr>
<tr>
<td></td>
<td>prime and 1760 m</td>
<td>prime or standby</td>
</tr>
<tr>
<td></td>
<td>(5800 ft) standby @</td>
<td>@ 40°C without</td>
</tr>
<tr>
<td></td>
<td>40°C without derating.</td>
<td>derating. Above these</td>
</tr>
<tr>
<td></td>
<td></td>
<td>limits refer to graphs</td>
</tr>
</tbody>
</table>

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.
*Subject to factory verification.
### Dimensions and Weights - 60 Hz

**Floor mounted circuit breaker and load terminal cubicle**
(for use above 2000 amps)

<table>
<thead>
<tr>
<th>Capacity (amps)</th>
<th>Width (mm)</th>
<th>Depth (mm)</th>
<th>Height (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1600</td>
<td>1000</td>
<td>1050</td>
<td>1500</td>
</tr>
<tr>
<td>2000</td>
<td>1000</td>
<td>1050</td>
<td>1500</td>
</tr>
<tr>
<td>2500</td>
<td>1000</td>
<td>1050</td>
<td>1500</td>
</tr>
</tbody>
</table>

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.

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