

Diesel Generating Sets

**60
Hz**

Model: ETCG1500

INDUSTRIAL RANGE

Powered by Cummins



Generating Rates

POWER RATING		PRIME	STANDBY
POWER	kVA	1370	1500
	kW	1100	1200
Rated Speed	r.p.m	1500	
Standard Voltage	V	400	
Available Voltages	V	400/230 - 230/132 - 230 V	
Rated at power factor	Cos Phi		

Ambient conditions of reference: 1000 mbar, 25°C, 30% relative humidity. Power according to ISO 3046 normative.

P.R.P. Prime Power - ISO 8528 : prime power is the maximum power available during a variable power sequence, which may be run for an unlimited number of hours per year, between stated maintenance intervals. The permissible average power output during a 24 hours period shall not exceed 80% of the prime power. 10% overload available for governing purposes only.

Standby Power (ISO 3046 Fuel Stop power): power available for use at variable loads for limited annual time (500h), within the following limits of maximum operating time: 100% load 25h per year – 90% load 200h per year. No overload available. Applicable in case of failure of the main in areas of reliable electrical network.

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Engine Specifications 1800 r.p.m.

ENGINE	PRP		STANDBY			
Rated Output	1300	1380	kW			
Manufacturer	Cummins					
Model	KTA50-G3					
No. of Cylinders and Build	4 Cycle;60°Vee, 16 Cylinder Diesel					
Aspiration and Cooling	Turbocharged and Aftercooled					
Bore/Stroke	mm		159X159			
Compress the ratio	13.9:1					
Cooling system	Water-cooled					
Engine Speed/Frequency	rpm/Hz		1500/50HZ			
Coolant Capacity	L		300			
Starting System	Electric 24 volt DC					
Displacement	L		50.3			
Lubricant system Capacity	L		177			
Battery Volatge / Capacity	24VDC					
Governing Type	Type		Electrical			
Air Filter	Type		Dry			
Fuel Consumption	Load		100%	75%	50%	25%
	L/H		291	222	157	89

ENGINE--Industrial 4 stroke cooled diesel engine complete with air,fuel and oil filters,electric starting and charging equipment,engine protection against low water level.

COOLING--Radiator and colling fan complete with protection guards,designed to cool engine at specified output in air temperatures upto 45 °C,radiators suitable for higher temperatures are available.Low water level protection fitted as standard.

ELECTRICAL SYSTEM--24V upto.Axial type starter motor,battery charging alternator,high capacity lead acid battery,and battery tray mounted on the generator base frame,and heavy duty interconnecting cable with terminations.

EXHAUST SYSTEM--Heavy duty industrial exhaust silencer with flexible piping.

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Alternator Technical Specifications

ALTERNATOR BRAND		LEROY SOMER	STAMFORD
Model		LSA50.2M6	ETC-1100
Exciter System		Self-excited, brushless	
Poles	Num	4	
Cooling Fan		Cast alloy aluminum	
Bearing		Single,double shielded	
Windings		100% copper	
Connection Type		Reconnectable	
Insulation Type	Class	Class H	
Pitch		2/3	
Amortisseur Winding		Full	
Voltage Regulator		A.V.R. (Electronic)	
Steady Voltage Precision		± 1%	
Underspeed Protection		Standard	
Overexcitation Protection		IP23	
TIF (1960 Weightings)		<50	

ALTERNATOR--Brushless,self exciting,self regulation,sreen protected,drip proof rated in accordance with IEC60034.Voltage regulation maintainted within ±0.5% from no load to full load.between 0.8 lagging and unity.All standard voltages available.

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Control Panel Technical Specifications

Control Panel- SMARTGEN 6110/6120

The base mounted control panel in a vibration isolated sheet steel enclosure. The control panel is equipped as follows:

- a) Instruments: Analogue Voltmeter, Hours Run Meter, Water pressure Meter.
- b) Controls: Emergency Stop Pushbutton, Voltmeter Phase Selector Switch.
- c) Control module: Standard collocation is smartgen Auto start with AMF.

Smartgen®

Main Features:

- Δ Automatic mains failure
- Δ Engine control, Generator protection
- Δ Built in alarms and warnings
- Δ Remote Start operation available
- Δ Fuel pump control
- Δ Mains simulation
- Δ Block heater control
- Δ Field adjustable parameters
- Δ Free MS-Windows Remote monitoring
- Δ LED displays
- Δ Configurable analogue inputs
- Δ I/O expansion capability



Protection Circuits

- WARNING
- Battery charge failure
 - Low battery voltage
- SHUT DOWNS
- Fail to start
 - Emergency stop
 - Low oil pressure
 - High engine temperature
 - Over /Under speed
 - Under/over generator frequency
 - Failed to reach loading voltage
 - Electrical trip
 - Generator over current

Instruments

- ENGINE
- Engine speed
 - Oil pressure
 - Coolant temperature
 - Run time
 - Battery volts
- TOR
- Voltage (L-N)
 - Current (L1-L2-L3)
 - Frequency
- Mains
- Voltage (L-L, L-N)

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Generating Sets Standard Features

Three phase four wire, output voltage 400V/230V, 50HZ, between 0.8 lagging, protection capability according with the standard of NAME1 and IP23.

General Features:

- Δ Composed of Cummins diesel engine and Stamford or Leroy somer alternator
- Δ Oil and fuel filter fitted, water separator
- Δ Lube-oil drain valve fitted
- Δ Electric Starter Charge motor 24 V.D.C
- Δ Water-cooled
- Δ 8-hours operation base tank
- Δ Auto start
- Δ Optional soundproof and weatherproof canopy
- Δ 3 pole MCCB Delixi breaker
- Δ Operation & Maintenance manual
- Δ Special Integrated Steel Base tank and sprayed overall in gloss enamel paint

Voltage Regulation:

- Voltage regulation maintained within $\pm 0.5\%$
- Between 0.8 and 1.0 lagging and unity
- From no load to full load
- At speed droop variation upto 4.5%

Frequency Adjustable Ratio:

- Change load from 0-100%, within 1.0% (electric speed regulator), within 4.5% (mechanical speed regulator)

Frequency Undulation:

- load from 0-100%, frequency undulation within 0.25%
- No load wire volts max undulation ration\ within 1.8%
- Three Phrase balanced load in the order of 5%
- Effect factor of Telecom
- TIF better than 50
- THF to IEC60034 Part 40 better than 2%

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Soundproofed Version Features

Robust Corrosion Resistant Construction

- Δ Black finish stainless steel lock and hinges
- Δ Body made from steel components treated with polyester powder coating

Excellent Access for Maintenance

- Δ Two large doors on each side
- Δ Radiator fill access plate
- Δ Lube oil and cooling water drains pipes to exterior of the enclosure

Security and Safety

- Δ Control panel viewing window in a lockable access door
- Δ Emergency stop push button (red) mounted on enclosure interior
- Δ Cooling fan and battery charging alternator fully guarded
- Δ Exhaust silencing system totally enclosed for operator safety



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Generating Sets other Features

Generating Sets Optional Features

- ΔLow fuel level alarm shutdown
- ΔAutomatic Fuel Filling System
- ΔEngine oil feeding and drain pump
- ΔAuto Transfer Switch(ATS)
- ΔParallel control panels
- ΔCircuit Breaker MCCB & ACB
- ΔRemote Control Panel
- Δweatherproof/soundproof Canopy
- ΔTrailer type Gensets

Quality Standards

ISO9001:2000,ISO14000,ISO3046
ISO8528 BS4999
BS5514,AS1359,ICE34
CE Compliance

Gensets Dimensions & Weight

Open type:LxWxH (mm) Net Weight Kgs

5620x2060x2330, 9800kgs

Silent type:LxWxH (mm) Net Weight Kgs

40ft container soundproof, 20800kgs