

DIESEL GENERATOR SET 190V-440V 3P4W



Standard Features and Characteristics

Rating Range

RPM1500 50Hz

| | | |
|-----------------|-----|------|
| Standby: | kW | 808 |
| | kVA | 1010 |
| Prime: | kW | 734 |
| | kVA | 918 |



● QUALITY STANDARDS

- The OTC Generator set compliance with all main standards, such as ISO8528 (GB/T2820-97), GB755 , BS5000, VDE0530, ISO3046, IEC34-1, CSA22-2, AS1359, ISO14001.
- Diesel engine and alternator OEM authorization certificate and their quality assurance.
- Other standards and certifications can be considered on request.

● ASSEMBLY

- The engine and alternator are close coupled by means of an SAE flange . A full torsional analysis has been carried out to guarantee no harmful vibration will occur.
- Anti-vibration pads are affixed between engine alternator feet and the base frame. Thus ensuring complete vibration isolation of the rotating assemblies and enabling the machine to be placed on an uneven surface without any detrimental effects.
- For durability and corrosion resistance, all iron and steel surfaces of canopy fabrications have been treated for coating by grit blast cleaning. Then covered by special three layers painting which provides an excellent corrosion resistant surface.

● CONTROL SYSTEM AND PROTECTION

- Controllers are available for all applications. The controller system is used to start and stop the engine , indicate electric date and protect the generator set. See controller features inside.
- The revolving parts are covered by safety net , and the place which easy to scald and got an electric shock all to have been put on obvious warning slogan

● WARRANTY

- OTC company provides one-source responsibility for the generator set and accessories.
- Each OTC Generating set has been got through 2 hours load test for running 0%,25%,50%,75%,100% and 110% load, all protective devices and control function are simulated and checked before despatch.
- Engine and Alternator are guaranteed for a period of 12months from the date of commissioning or 18 months from shipping, whichever occurs first.
- Convenience for operation and maintenance, backed by CUMMINS and LEROY SOMER global service network.

GENERATOR SET RATINGS

| | | |
|---------------------|-------------------|--------------------------|
| Alternator Model | HCI634H(STAMFORD) | LSA49.1 L10(LEROY SOMER) |
| Frequency and Speed | 50Hz 1500rpm | 50Hz 1500rpm |

Prime Power Data

| Class-TEMP Rise() | Cont.H -125K/40 | | | | Cont.H -125K/40 | | |
|-----------------------|---------------------|------|------|------|-----------------|------|------|
| | Voltage series star | 380 | 400 | 415 | 440 | 380 | 400 |
| Voltage parallel star | 190 | 200 | 208 | 220 | 190 | 200 | 208 |
| Voltage series delta | 220 | 230 | 240 | 254 | 220 | 230 | 240 |
| Rating capacity(kVA) | 910 | 940 | 910 | 875 | 890 | 910 | 890 |
| Rating power(kW) | 728 | 752 | 728 | 700 | 712 | 728 | 712 |
| Power efficiency(%) | 94.9 | 95.0 | 95.2 | 95.4 | 95.1 | 95.1 | 95.1 |
| Input power(kW) | 767 | 792 | 765 | 734 | 749 | 766 | 749 |

Standby Power Data

| Class-TEMP Rise() | Standby.H -125K/40 | | | | Standby.H -150K/40 | | |
|-----------------------|---------------------|------|------|------|--------------------|------|------|
| | Voltage series star | 380 | 400 | 415 | 440 | 380 | 400 |
| Voltage parallel star | 190 | 200 | 208 | 220 | 190 | 200 | 208 |
| Voltage series delta | 220 | 230 | 240 | 254 | 220 | 230 | 240 |
| Rating capacity(kVA) | 960 | 980 | 960 | 920 | 943 | 955 | 943 |
| Rating power(kW) | 768 | 784 | 768 | 736 | 747 | 764 | 747 |
| Power efficiency(%) | 94.7 | 94.8 | 95.1 | 95.3 | 94.9 | 94.9 | 94.9 |
| Input power(kW) | 811 | 827 | 808 | 772 | 787 | 805 | 787 |

RATINGS: All three-phase units are rated at 0.8 power factor. **Standby ratings :** Standby ratings apply to installations served by a reliable utility source. The standby rating is for this rating. Ratings are in according with ISO-3046/1,BS 5514 ,AS 2789 , and DIN 6271.

Prime Power Ratings: Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO-8528/1, overload capacity in accordance with ISO-3046/1,BS 5514, AS 2789, and DIN 6271. For limited running time and base load ratings, consult the factory. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever.
GENERAL GUIDELINES FOR DERATING: Altitude: Derate 4.0% per 300m(1000 ft.) elevation above 760m(2500ft.) up to a maximum elevation of 2450m(8000 ft.).More than 2450m(8000ft), please contacts with us or our dealer seek the help.
Temperature: Derate 6.0% per 11 (20) temperature above 40 (104).

ALTERNATOR

| Specification | 1500RPM 50HZ |
|-------------------------|--------------------------------------------------------------|
| Type | 4-Pole, Rotating Field |
| Exciter type | Brushless, Self excited |
| Voltage regulator | Solid State, Volts/Hz |
| Voltage regulation | 1.0% |
| Insulation | Class H |
| Protection | IP23 |
| Rated power factor | 0.8 |
| Stator winding | Double layer concentric |
| Winding pitch | Two thirds |
| Winding leads | 12 |
| Maximum overspeed | 2250 Rev/min |
| Sustained short circuit | Self excited machines do not sustain a short circuit current |
| Waveform distortion | No load < 1.5% Non-distorting balanced linear load < 5.0% |
| Altitude | 1000 m |

- Alternators meet the requirement of BS EN 60034 and the relevant section of other international standards such as BS5000, VDE 0530, NEMA MG1-32, IEC34, CSAC22.2-100, As1359, and other standards and certifications can be considered on request.
- The 2/3 pitch design avoids excessive neutral currents. With the 2/3 pitch and carefully selected pole and tooth designs, ensures very low waveform distortion.
- Brushless alternator with brushless pilot exciter for excellent load response.
- The insulation system is class H, easy parallelling with mains or other generators, standard 2/3 pitch stator windings avoid excessive neutral currents.
- Backed by worldwide service network

DIESEL ENGINE

- KTA38-G2A diesel engines are manufactured by CHONGQING CUMMINS Engines Company Limited.

Application Data

| Engine Specifications | 1500RPM 50HZ |
|-----------------------------------|-----------------------------|
| Manufacturer | CUMMINS |
| Number of cylinders | 12 |
| Cylinder arrangement | 60 ° V |
| Cycle | Four stroke |
| Aspiration | Turbocharged Aftercooler |
| Compression ratio | 14.5:1 |
| Bore x Stroke | 159 mm x 159mm |
| Displacement | 37.8litres |
| Direction of rotation | Clockwise viewed from front |
| Max.Power at rated rpm | 895kW |
| Estimated total weight(dry) | 3923kg |
| Frequency regulation steady state | ± 0.25% |
| Mean piston speed | 7.9 m/s |

Exhaust

| Exhaust System | 1500RPM 50HZ |
|-------------------------------|---------------------|
| Maximum back pressure | 10.05 kPa (3 in Hg) |
| Exhaust gas flow (max) | 3325 litre/s |
| Exhaust gas temperature (max) | 536 (997) |

Lubrication

| Lubrication system | 1500RPM 50HZ |
|-------------------------------------------|-------------------------|
| Oil Pressure | |
| At idle speed | 138kPa |
| At governed speed | 310-448kPa |
| Maximum Oil Temperature | 121 (250) |
| Total System Capacity (with Combo Filter) | 135 litre(35.7 US gal) |

Engine Electrical

| Engine Electrical System | 1500RPM 50HZ |
|--------------------------------------------------|--------------|
| Battery charging alternator: | |
| Ground(negative/positive) | Negative |
| Volts(DC) | 24V |
| Starter motor rated voltage(DC) | 24V |
| Battery voltage | 12V |
| Battery charging ampere | 35A |
| Maximum allowable resistance of cranking circuit | 0.002 ohm |
| Minimum Recommended Battery Capacity: | |
| Cold Soak @ 10 and Above | 1200 CCA |
| Cold Soak @ 0 to 10 | 1280 CCA |
| Cold Soak @ -18 to 0 | 1800 CCA |

Fuel

| Fuel System | 1500RPM 50HZ |
|------------------------------------------------|-----------------------------|
| Type of injection | Direct Injection Cummins PT |
| Maximum restriction at PT fuel injection pump | |
| with clean fuel filter | 13.4kPa |
| with dirty fuel filter | 26.8kPa |
| Maximum allowable head on injector return line | 6.5 in Hg |
| Maximum fuel flow to injection pump | 428 litre/hour |

Fuel consumption

| Fuel consumption | 1500RPM 50HZ |
|------------------|--------------|
| Standby power | 215 litre/hr |
| 100% prime power | 191 litre/hr |
| 75% prime power | 147 litre/hr |
| 50% prime power | 98 litre/hr |
| 25% prime power | 49 litre/hr |
| Continuous power | N.A litre/hr |

Application Data

Cooling System

| Cooling System | 1500RPM | 50HZ |
|----------------------------------|--------------------------|--------|
| Total system capacity | | |
| Engine only | 118 litres | |
| With radiator | 194 litres | |
| Fan gas flow | 95280 m ³ /hr | |
| Thermostat operation range | 82 - 93 | |
| Minimum pressure of radiator cap | 69kPa | |
| Max. coolant temp. permitted | | |
| For standby power | 104 | (220) |
| For prime power | 100 | (212) |

NOTE:

All data is based on:

- Engine operating with fuel system, water pump, lubricating oil pump, air cleaner and exhaust silencer; not included are battery charging alternator, fan, and optional driven components.
- Engine operating with fuel corresponding to grade No. 2-D per ASTM D975.
- ISO 3046, Part 1, Standard Reference Conditions of:
 Barometric Pressure : 100 kPa (29.53 in Hg)
 Air Temperature : 25 (77)
 Altitude : 110 m (361 ft)
 Relative Humidity : 30%
 Air Intake Restriction : 254 mm H₂O (10 in H₂O)
 Exhaust Restriction : 51 mm Hg (2 in Hg)

TBA: To Be Determined

CONTROLLERS

DSE 704 AMF CONTROLLER



The DSE704 is an Automatic Mains Failure module with generator monitoring, protection and start facilities. It utilises advanced surface mount construction techniques to provide a compact yet highly specified module. This model can start the unit automatically when the MAINS failure and then control the ATS turn to the genset side. Operation of the module is via three pushbuttons mounted on the front panel with STOP, MANUAL and AUTO positions.

Panel introduction:

- Indicator type frequency, voltmeter and ampere meter demonstration unit's electrical parameter.
- The voltage change-over switch and the rheotrope uses for to choose the different phase voltage and current to display.
- The oil pressure gauge, coolant temperature gauge and the battery voltage gauge.
- The controller.
- Preheating button.

Protection:

Over Speed Shutdown.
 Low Oil Pressure Shutdown.
 High Engine Temp Shutdown.
 Charger failure alarm.
 Mains failure alarm.
 Optional Under speed Protection.

DC Supply: 8 to 35 V Continuous.

PCRC210/220 INTELLIGENT CONTROL SYSTEM



The AMF25 is an Automatic Mains Failure module with generator monitoring, protection and start facilities. The controller has a large LCD screen, display the generator's each parameter, running and alarm information. The off/replacement button, mode switch button, start/stop button and the LED indicator light, makes the user easy to operate and maintain the generator.

Panel introduction:

- Indicator or digital type frequency, voltmeter and ampere meter demonstration unit's electrical parameter.
- The big red button uses for the operator to stop the genset peremptorily
- The controller.

Function:

- Communication: RS232 connection, uses the industry rank MODBUS protocol can easily communicate with others intelligence control system.
- Display function: LCD screen can display the generator's parameter and the control system's running information.
- Set up parameter: Engineer can set up the controller parameter from the control panel or through the PC, 6 programmable fan-out may satisfy the user each kind of demand.
- Protection: The control system can protect the generator set, manage each kind of electrical failure.
- Control Function of ATS: When the mains failure, AMF25 will starts the generator automatically. And then, the controller control the ATS turn to the generator side.

Protection:

Over-/under voltage shutdown
 Over-/under frequency shutdown
 Current/voltage asymmetry shutdown
 Over current/overload shutdown
 Low/ oil pressure shutdown
 High water temperature shutdown
 Over -/under engine speed shutdown
 Low battery voltage alarm
 Various programmable inputs and outputs

DC Supply: 8 to 35 V Continuous.

Note: We can design the control functions as you demand.

Standard Features and Accessories

Standard Features

- Battery, Battery Rack and Battery Cables
- Integral Vibration Isolation
- Oil Drain Extension
- Air cleaner ,Heavy Duty
- 3 Pole Circuit Breaker
- Heavy duty industrial type exhaust silencer with flexible pipe(supplied loose).

Maintenance and Literature

- General Maintenance Literature Kit
- Test Certificate and design paper
- Quality certificate and Maintenance card

Accessories

Enclosed Unit

- Sound Enclosure
- Weather Enclosure (with enclosed critical silencer)
- Weather Housing (with roof-mounted critical silencer)
- Trailer(Causes the genset easily to move)

Open Unit

- Exhaust Silencer, Critical kit
- Flexible Exhaust Connector, Stainless Steel

Cooling System

- Block Heater (recommended for ambient temperatures below 0)
- Radiator Duct Flange
- Remote Radiator Cooling

Fuel System

- Auxiliary Fuel Pump
- Flexible Fuel Lines
- Mechanical dipstick or fuel level sensor
- Subbase Fuel Tank with Day Tank
- Fuel fill cap with breather
- 10 hours running tank
- Automatic fuel--providing device
- Hand primer pump

Electrical System

- Battery Charger, Equalize/Float Type

Engine and Alternator

- 3 or 4 Pole Circuit Breaker with Shunt Trip
- Fuel/Water Separator
- Oil Preheater
- Air Preheater
- Alternator Strip Heater

Maintenance and Literature

- Maintenance Kit (includes air, oil, and fuel filters)
- Overhaul Literature Kit

Paralleling System

- Reactive Droop Compensator
- Voltage Adjust Control
- Voltage Regulator Relocation Kit

Controller System

- Common Failure Relay Kit
- Customer Connection Kit(Except Open Style)
- Communications Products and PC Software
- Engine Pre-alarm Sender Kit
- Remote Annunciator Panel
- Remote Audiovisual Alarm Panel
- Remote Emergency Stop Kit
- PCRC series control system, with RS232 or RS485 communication connection and communication agreement.

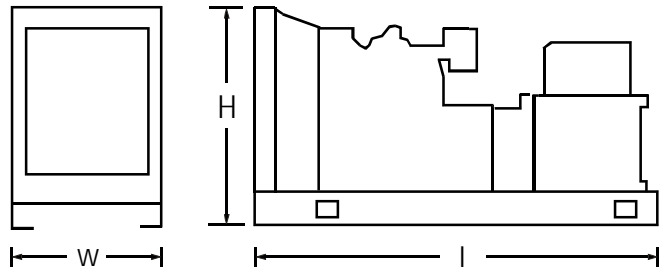
Miscellaneous Accessories

- _____
- _____
- _____
- _____
- _____

Dimensions and Weights

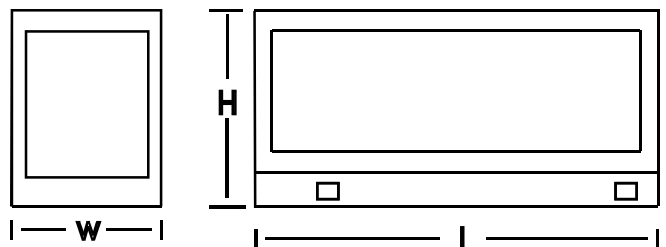
Open Style

Overall Size, L x W x H , mm 4490 x 2290 x 2165
 Weight(radiator model),net,Kg 8000Kg



Soundproof Style

Overall Size, L x W x H mm 6058 x 2438 x 2591
 Weight(radiator model),net,Kg 10500Kg



NOTE:

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