

GCC

SERIES

GENPOWER[®]

GENERATOR

When you need

GCC 450



STANDARD SPECIFICATIONS

General Specifications

Genset Model		GCC 450	Fuel		Diesel
Stand By Power	kVA / kW	450 / 360	Stand By Ampers	Amp.	650
Prime Power	kVA / kW	409 / 327	Prime Ampers	Amp.	591
Continuous Power	kVA / kW	286 / 229	Continuous Ampers	Amp.	414
Engine Brand		CUMMINS	Engine Model		QSX15G4
Alternator Brand		GENPOWER	Alternator Model		GNP 315 M
Speed	rpm	1500	Frequency	Hz	50
Voltage	V	231 / 400	Power Factor	Cos φ	0,8
Cooling System		Water Cooled	Usage Type		Automatic / Manual

Genset Rating Classifications

The below ratings represent the engine performance capabilities to conditions specified in ISO 8528/1, ISO 3046/1:1986, BS 5514/1.

CONTINUOUS POWER RATING - COP

COP is the power that the engine can continue to use under the prescribed speed and the specified environment condition in the normal maintenance period stipulated in the manufacturing plant. And continuous power is applicable for supplying utility power at a constant 100% load for an unlimited number of hours per year. No overload capability is available for this rating.

LIMITED TIME RUNNING POWER - LTP

Gensets with a limited-time power rating are designed to operate at a maximum of 500 hours per year, although they can effectively manage an average load factor of up to 100 percent.

PRIME POWER RATING - PRP

PRP is available for unlimited hours per year in variable load application. Variable load should not exceed an average of 70% of the Prime Power rating during any operating period of 24 hours. The Total operating time at 100% Prime Power shall not exceed 500 hours per year. A 10% overload capability is available for a period of 1 hour within a 12 hours period of operation. Total operating time at the 10% overload power shall not exceed 25 hours per year.

STAND BY POWER (EMERGENCY) RATING - ESP

ESP is applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this rating. A standby rated engine should be sized for a maximum of a 70% average load factor and 200 hours of operation per year. This includes less than 25 hours per year at the Standby Power rating.

PAY ATTENTION to the points below in picking and using the generator

* Generators can work on Continuous power at 70% of Prime power value if only all maintenances are done on time with original spare parts and high quality oils that manufacturer advice.

* Generators should not operate below 50% of prime power value. In such a case, the engine will burn excessive oil and eventually have irreparable damage.

* If your need is 1000 kVA or above, you should prefer synchronic systems with 2-3 generators with failure back up and simultaneous aging.

* These points will provide advantage for you with purchasing and operating the generator.

TECHNICAL SPECIFICATIONS



environment friendly

DIESEL ENGINE

Engine Technical Specifications

Technical Parameters

Number Of Cylinders	6	Gross Engine Power	kW	407
Configuration	Vertical, in line	Net Engine Power	kW	385
Aspiration	Turbo Charged&Aftercooled	Fan and belt Power Consumption	kW	16
Combustion System	Direct injection	Other Power Loss	kW	6
Compression Ratio	17:1	Mean Effective Pressure	kPa	2170
Bore	mm 137	Intake Air Flow	m ³ /min.	27,2
Stroke	mm 169	Exhaust Temperature Limit	°C	528
Displacement	L 15	Exhaust Flow	m ³ /min.	68,2
Governing Type	Electronic	Heat Rejection To Ambient (Radiated)	kW	38
Governing Class	G3	Mean Piston Speed	m/s	8,45
Rotation	Counterclockwise	Cooling Fan Air Flow	m ³ /min.	637
Firing order	1-5-3-6-2-4	Typical Generator Output Power	kVA	452
Emission	Tier 2	Generator Efficiency	%	94

Electrical System

Voltage	V	24
Starter	kW	7,5
Alternator Output Amperes	A	35
Alternator Output Voltage	V	28
Batteries Capacity	Ah	2X135

Heat Rejection

Energy In Fuel (Heat Of Combustion)	kW	888
Gross Heat To Power	kW	407
Energy To Coolant And Lubricating Oil	kW	141
Energy To Exhaust	kW	302
Heat To Radiation	kW	38

Fuel Consumption

Standby - Load 100%	(L/h)	94
Prime - Load 100%	(L/h)	85
Prime - Load 75%	(L/h)	67
Prime - Load %50	(L/h)	45

Note: The density of diesel is 0.835 kg/L

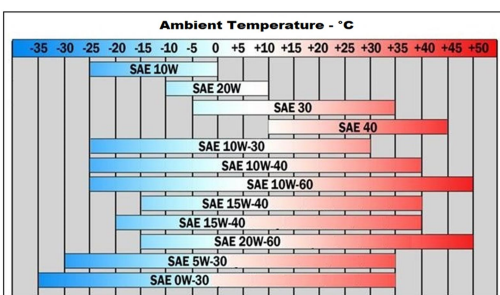
Fuel specification: BS 2869: Part 2 1998 Class A2 or ASTM D975 D2 Diesel.

The fuel must be clean and without water

Lubrication System

Total System	L	91
Minimum Oil Level	L	85
Nominal Motor Operating Temperature	°C	50
Lubricating Oil Pressure	bar	4,8
Relief Valve Opens	kPa	200-300
Oil, Fuel Consumption Ratio	%	<0,1
Normal Oil Temperature	°C	120

Recommendation: SAE 15W40 to API CI4 Viscosity Lubricating oil, mono-grade or multi-grade oil



Cooling System

Radiator Type	50°C	Tropical
Total Coolant Capacity	L	66
Max. Perm. Coolant Outlet Temperature	°C	110
Max. Perm. Flow Resis. (Cool. System And Piping)	bar	0,5
Max. Temperature Of Coolant Warning	°C	95
Max. Temperature Of Coolant Shutdown	°C	98
Thermostat operation temperature- Initial Open	°C	84
Thermostat operation temperature- Full Open	°C	95
Delivery Of Coolant Pump	Lt /sec.	3
Min. Pressure Before Coolant Pump	bar	0,25
Radiator Face area	m ²	0,66
Rows	Row	3
Matrix Density	Per/Inch	12
Material		Aluminum
Width Of Matrix	mm	600
Height Of Matrix	mm	1100
Pressure Cap Setting	kPa	90
Estimated Cooling Air Flow Reserve	kPa	0,125
Engine Pre Heater Tube (with Circulation Pump)	W	3000

Fan

Diameter	mm	890
Drive Ratio		1.2:1
Number Of Blades		9
Material		Metal
Type		Blowing

Filters

Air Filter	Dry Type, replaceable
Fuel Filter	With water separator
Oil Filter	Element type, particulate trap



Legend of *power*

**ALTERNATOR
CANOPY & BASE FRAME**

Alternator Technical Specifications

Technical Parameters

Insulation Class		H	Field Control system		Self excited
Winding Pitch		2/3 - (N° 6)	A.V.R. Model	Standard	SX440
Wires		12	Voltage Regulation	%	± 1
Protection		IP 23	Sustained Short-Circuit Current	10 sec	300% (3 IN)
Altitude	m	1000	Total Harmonic (*) TGH / THC	%	< 4
Overspeed	rpm	2250	Wave Form : NEMA = TIF - (*)		< 50
Air Flow	m³/sec	0.8	Wave Form : I.E.C. = THF - (*)	%	< 2
Bearing Drive	N/A	-	Bearing Non - Drive	Bearing	6314-2RZ
Rotor Winding	100%	Copper	Stator Winding	100%	Copper

(*) Total harmonic content line to line, at no load or full rated linear and balanced load

Specifications

Standard: Genpower / GNP315M - Optionally: Leroy Somer / TAL047A & Stamford / HC4F - S4L1D F								Frequency- Hz	50
								Power Factor- CosQ	0,8
Duty		Continuous				Stand By			
Ambient	C°	40°C				27°C			
Class/Temp. Rise	C°	H / 125° K				H / 163° K			
Series Star (V)	V	380/220	400/231	415/240	1 Phase	380/220	400/231	415/240	1 Phase
Parallel Star (V)	V	190/110	200/115	208/120	220	190/110	200/115	208/120	220
Series Delta (V)	V	220	230	240	230	220	230	240	230
Output Power	kVA	409	409	424	-	450	450	467	-
	kW	327	327	339	-	360	360	374	-

Genpower synchron alternators are produced according to TSE 60034-1; IEC 60034-22; GB755; BS4999-5000; NEMA MG 1.22 standards

Sound Proof Canopy Specifications

General Specifications

Special and registered Genpower Design
 A1 quality DKP / HRU / Galvanized Steel
 Sensitive twist on automatic Press Brake
 Spray system chemical cleaning in 11 pools with nano technology before painting
 Provide homogeneity on 280 meters of conveyor line
 Glasswool isolation with A1 quality material with -50/+500C temperature durability
 Hinges, locks, bolts, nuts made from rustproof material
 Temperature tests for different environments
 Cable exit connectors and conduits
 Emergency stop button
 Radiator water filling cap

Special and registered Genpower Color
 Delicate Cut on Automatic Punch and Laser bench
 Sensitive welding on robotic welding bench
 Robotic painting with electrostatic powder paint
 Drying and stabilizing on 200°C ovens
 Special covering over glass wool
 1500 hour salt test (accredited laboratory certified)
 Best sound level (in dBA)
 Lifting and carrying equipments
 High quality weatherstrips and shock absorbers
 Internal and/or external exhaust mufflers (silencers)

Base Frame (Chasis) Specifications

General Specifications

Special and registered Genpower Design
 A1 quality DKP / HRU / Galvanized Steel
 Sensitive twist on automatic Press Brake
 Spray system chemical cleaning in 11 pools with nano technology before painting
 Provide homogeneity on 280 meters of conveyor line
 Standart fuel tank is in the chasis (external tank is used for some models)
 Fuel level gauge
 Fuel drain cap
 Lifting and carrying equipments

Special and registered Genpower Color
 Delicate Cut on Automatic Punch and Laser bench
 Sensitive welding on robotic welding bench
 Robotic painting with electrostatic powder paint
 Drying and stabilizing on 200°C ovens
 Impermeability test for fuel tank with special equipments
 Fuel filling cap
 Fuel inlet and return records
 Vibration absorbing and vacuumed feet under chasis

STANDARD SPECIFICATIONS

TECHNICAL SPECIFICATIONS



ISO 9001:2008
 OHSAS 18001:2007
 ISO 14001:2004





time to restart

CONTROL PANEL & MODULE

Control Panel Specifications

General Specifications

Powder painted steel panel with lockable door
Emergency stop button
ATS (automatic transfer panel) - optional (internal and/or external)
Load output terminal
Control relays

Control module - backlit LCD screen 128x64 pixels
Battery charger
Circuit breaker - optional (internal and/or external)
System protection MCB's
Terminal Blocks

Control Module Technical Parameters

Brand	GENPOWER	Model	Trans-MIDIAMF.232.GP
Dimensions	120mm x 94mm	Protection Class	IP65 from the front
Weight	260 gr.	Environmental conditions	2000 meters above sea level
Ambient Humidity	90% max.	Ambient temperature	-20 ° C to + 70 ° C
DC Battery Supply Voltage	8 - 32 V	Battery Voltage Measurement	8 - 32 V
Network Frequency	5 - 99,9 Hz	Mains Voltage Measurement	3 - 300 V Phase-Neutral, 5 - 99.9 Hz
Generator Voltage Measurement	3 - 300 V	Generator Frequency	5 - 99.9 Hz
Current Transformer Secondary	5A	Working Period	Continuous
Charge Alternator Voltage Measurement	8 - 32 V	Charge Alternator Excitation	210mA & 12V, 105mA & 24V Nominal 2.5W
Communication Interface	RS-232	Analog Sender Measurement	0 - 1300ohm
Generator contactor Relay Output	5A & 250V	Mains contactor Relay Output	5A & 250V
Solenoid Transistor Outputs	1A with DC supply	Start Transistor Outputs	1A with DC supply
Configurable-3 Transistor Outputs	1A with DC supply	Configurable-4 Transistor Outputs	1A with DC supply

Control Module Functions

Mains Voltage Level Control	Generator Voltage Level Control
Network Frequency Level Control	Generator Frequency Level Control
Engine Operating Option Control	Generator Current Level Control
Engine Stop Option Control	Generator Power Level Control
Engine Speed (RPM) level Control	Generator Work Schedule and Timing Control
Battery Voltage Options Control	Oil Pressure Controllers Control
Check Engine Maintenance Times	Overheat Control
Keeping error records of past events	Mains, Generator ATS control
Communication interfaces GPRS, GSM	Ethernet, USB, RS232, RS485
Analog Modem	Modbus and SNMP
Selectable protection alarm / shutdown	Easy Parameter Setting via control module or computer
Configurable analog inputs and outputs	Configurable programmable digital inputs and outputs
3 phase Generator protections	3 phase AMF function
- High / low voltage	- High / low frequency
- High / low frequency	- High / low voltage
- Current / voltage asymmetry	- High / low water temperature
- Overcurrent / overload	- High / low load
Working Hour	Alarm Horn
Ground Leakage	Heater Tube Thermostat control
Engine Speed, Oil Pressure, Water Temperature, Hours of Operation, Battery Voltage Display	Single-Phase or Three-Phase, Phase Selection
Generator, Voltage, Current, Frequency, Phase Sequence, Earthing Display	Network, Voltage, Frequency Display

Control Module Alerts

Emergency Stop Malfunction	Low Generator Voltage	Low Water Temperature	Charge Alternator Error
High Generator Voltage	High Generator Frequency	Heat Sensor Broken	Unbalanced Load
Low Generator Frequency	Phase Sequence Error	Reverse Power	Maintenance Time Alarm
Low Load	Overload	Start Error	Low Speed
Over Current	Low Water Level (Optional)	Stop Error	High speed
Unbalanced Current	Low Oil Pressure	High Battery Voltage	High Oil Temperature (Optional)
Oil Sensor Broken	High Water Temperature	Low Battery Voltage	
Magnetic Pickup Error	Low Fuel Level (Optional)	Electronic Canbus Errors (ECU Engines)	

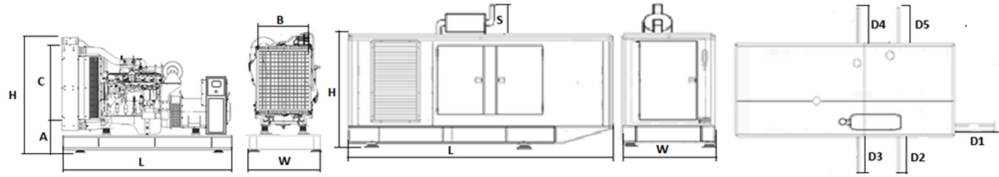


beyond the lines

GENERAL DIMENSIONS
SPECIAL PRODUCTS & CERTIFICATES

General Dimensions

SYMBOL	OPEN TYPE	CANOPY TYPE
L	3370	4600
W	1350	1600
H	1669	2280
S	-	500
A	615	
B	810	
C	1100	
D1	0	1002
D2	0	800
D3	0	800
D4	0	800
D5	0	800



STANDARD SPECIFICATIONS

Open Type Generator Dimensions

Width	mm	1350
Length	mm	3370
Height	mm	1669
Weight (Net)	Kg	3133
Fuel Tank Capacity	L	680

Canopy Type Generator Dimensions

Width	mm	1600
Length	mm	4600
Height	mm	2280
Weight (Net)	Kg	4017
Fuel Tank Capacity	L	400

Special Products / Non - Standardized

Synchronised Systems
Scada Systems
Mobile Systems - On Trucks and Bus
Light Towers
Welding Machines - Generators
High Frequency Generators - 100-200-400-800-1000 Hz
Variable speed Generators
Super Silent Canopy
Ground Power Unit Generators - Mobile or Stationary

Generators - with Trailer
Medium Voltage - MV Generators
High Voltage - HV Generators
IP44-IP54 Class Generators
Marine Generators
Dual Generators
Direct Current - DC Generators
Power Plants
Cogeneration Systems
Trigeneration Systems

Generators - with Heavy Oil Engines
Generators - with Natural Gas Engines
Generators - with Biogas Engines
Generators - with Dual Fuel Engines
Generators - with LPG Engines
UPS Systems
Electrical Forklift / 0,5 - 3,5 Tons
Diesel Forklift / 1 -7,5 Tons
Automatic Voltage Stabilizers / 1-5000 kVA

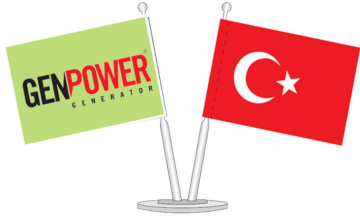
Quality Documents & Certificates

ISO 9001 - 2015 Certificate
OHSAS 18001 - 2007 Certificate
TSE 8528 - 8 Certificate
Trademark Registration Certificate
Capacity Report (32400 Units / Year)
Made in Turkey Certificate- For Generator/ 1 - 5000 kVA
Made in Turkey Certificate-For Alternator/ 1-5000kVA
Made in Turkey Certificate- For Engine/1-5000 kW
2006/42/EC Machinery Directive
EN ISO 12100:2010 Certificate
EN 349:1993+A1:2008 Certificate
EN 61000-6-2:2019 Certificate
TS EN ISO 9227 Certificate
TS EN ISO 4628-5 Certificate
EAC - GOST Certificate/ For Diesel Generators and parts
EAC - GOST Certificate/ For Gasoline Generators and parts
EN ISO 8528-13:2016 Certificate
EN ISO 13857:2008 Certificate
Coatchem- Türkak 1500 hours Corrosion Durability Test Certificate

ISO 14001 - 2015 Certificate
TSE 8528 - 4 Certificate
TSE 8528 - 5 Certificate
Industrial Registry Certificate
Certificate of Competency for After Sales Services
Certificate of Manufacturing Competence
TSE - Service Adequacy Certificate
2014/30/EU Electromagnetic Compatibility Directive
EN 60204-1:2018 Certificate
EN ISO 14120:2015 Certificate
CE Certificate - EN ISO 17050-1:2004
TS EN ISO 4628-3 Certificate
TS EN ISO 4628-8 Certificate
TS EN 60034 - 1 Certificate
TS EN ISO 4628-4 Certificate
TS EN ISO 2409 Certificate
AB-0547-T Certificate
EN 61000-6-4:2007/A1:2011 Certificate
TS 9620 EN ISO 4628-2 Certificate

CE Certificate- 2000/14/AT - 2000/14 EC (CE 2195- Noise Emission in the Environment by Equipment for use Outdoors)

TECHNICAL SPECIFICATIONS



GENPOWER[®]
GENERATOR

all around the world

GLOBAL BRAND



world's biggest generator factory



GENPOWER[®]
GENERATOR

Your life power

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ISO 9001:2008
OHSAS 18001:2007
ISO 14001:2004



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STANDARD SPECIFICATIONS

TECHNICAL SPECIFICATIONS