MPMC BEYOND ENERGY

Model: MCL56(S)-2

Powered by Cummins

Applicable Standards

- ISO 8528-5:2018
- GB/T2820.5-2009
- CE
- ISO 3046
- ISO 12944 (*SC only)

General Information		Rated Power			
Frequency	Voltage	Prime Power		Standby Power	
Hz	V	kVA	kW	kVA	kW
50Hz	415V/240V	55	44	60	48
	400V/230V	55	44	60	48
	380V/220V	55	44	60	48
	220V/110V	TBA	TBA	TBA	TBA
60Hz Rated	480V/277V	63.8	51	70	56
	Rated 440V/254V	63.8	51	70	56
	400V/230V	N/A	N/A	N/A	N/A
	380V/220V	N/A	N/A	N/A	N/A
	220V/127V	63.8	51	70	56
	220V/110V	43.3	34.6	47.7	38.2
Power Factor		0.8 Lagging			
Engine		4BTA3.9-G2			
Rated Speed		1800 RPM (Changeable)			
Fuel Type		Grade No. 2D per ASTM D975			
Lube-oil Type		API Service CF Class SAE 15W-40			
Alternator		LYG 224DC			

Noise Level		50Hz	60Hz
Average Value @1m,75%load	OE Series dB(A)	TBA	TBA
	SR Series dB(A)	TBA	TBA

Fuel Consumption		50Hz	60Hz
Load Ration	L/h@110%	16.4	19.1
	L/h@100%	14.9	17.4
	L/h@75%	11.2	13.1
	L/h@50%	7.45	8.7

Dimension and Weight	OE Series Open-type	SR Series Silent-type
Length (L) mm	2200	2800
Width (W) mm	805	1130
Height (H) mm	1450	1580
Net. Weight (kg)	920	1630

Note: Specifications and illustrations are subject to revision without notice.

Environmental Conditions

- Ambient temperature: +5°C~+40°C (Rated Power)
- Maximal ambient temperature：50°C
- Altitude: ≤1000m
- Anti-dust, anti-corrosion and ultra-silent

*Remark: If your conditions are different from the above, please contact our sales.

Factory Inspection

- Complete design and quality inspection
- 0%, 25%, 50%, 75%, 100%, 110% load test
- IP test
- Noise test
- Function test
- Protection test

ISO9001:2015 Quality system certified · ISO14001 System certification · OHSAS18001 System certification · CE certificate

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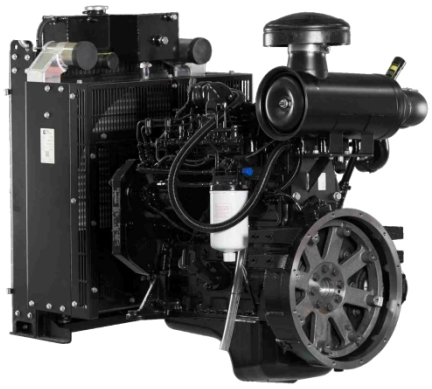
Engine Specifications



Engine model	4BTA3.9-G2（4BTA-G45E1）	
Emission	N/A	
Number of cylinders & Arrangement	4 & Inline	
Cycle	Four stroke	
Aspiration	Turbocharged & Aftercooled	
Bore x Stroke	102 x 120 mm	
Displacement	3.9 L	
Compression ratio	17.3 ： 1	
Gross prime power /speed	50 kWm/1500 rpm	60 kWm/1800 rpm
Gross standby power /speed	55 kWm/1500 rpm	66 kWm/1800 rpm
Speed governor	Electronic	
Cooling system	Water cooled	
Steady State Stability Band at any Constant Load	≤ 5%	
Total lubrication system capacity	10.9 L	
Coolant capacity (engine only)	8.3 L	
Starter motor & Charge alternator	DC 24V	DC 24V 40Amps
Fuel available	Grade No. 2D per ASTM D975	
	HVO(EN 15940) & B20	

☑Industrial silencer / ☐Residential silencer / ☐Critical silencer

☐Spark arrestor

☐Heavy duty air filter / ☑Single-core air filter

☑-18℃ start up battery / ☐-45℃ start up battery

☑Anti-vibration mount

☑Flexible fuel connection hoses

☑Water-fuel separator / ☐ Multi-water-fuel separators

☐Jacket water heater / ☐ Fuel jacket water heater

☐Coolant level sensor

☑Coolant temperature sensor

☑Lube-oil pressure sensor

☐Lube-oil temperature sensor

☐Lube-oil auto refilling meter

☐Lube-oil auto refilling tank

☐Smoke temperature sensor

☐Lube-oil manual pump

☑Replaceable fuel filter, oil filter

☐Breath box

Engine Derating Curves

50Hz/1500RPM

1. No correction is required below 2000m; Over 2000m, the power drops by 4% for each 300m of increase.

2. No correction is required below 40℃; Over 40 ℃, the power drops by 3% for each 10℃ of increase.

60Hz/1800RPM

1. No correction is required below 2000m; Over 2000m, the power drops by 4% for each 300m of increase.

2. No correction is required below 40℃; Over 40℃, the power drops by 3% for each 10℃ of increase.

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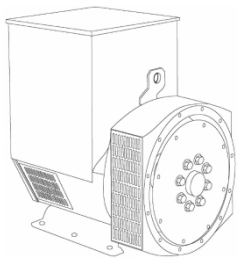
Alternator Specifications



Alternator model	LYG224DC-V02
Number of phase	3
Power factor (Cos Phi)	0.8
Poles	4
Winding leads	12
Insulation level	H class
Temperature rise	H class
Excitation	Brushless
AVR model	SX460
Winding Pitch	5/6
IP rating	IP22
Bearing	Single bearing
Voltage regulator	±1.0%

☐Space heater ☐Air filter (5% derating)

☐Anti-harsh environment ☐RTD ☐STD

Alternator Ratings Table

Class-Temp Rise		Cont.H-125/40℃				Standby-163/27℃			
50Hz	Series Star(V)	380	400	415	440	380	400	415	440
	Output(kVA)	56.3	56.3	56.3	N/A	62	62	62	N/A
	Efficiency(%)	88.3	88.8	89.5	N/A	88.3	88.8	89.5	N/A
60Hz	Series Star(V)	416	440	460	480	416	440	460	480
	Output(kVA)	63	65	N/A	70	68	71	N/A	76
	Efficiency(%)	88.8	89.1	N/A	89.6	88.8	89.1	N/A	89.6

De-Rates

All values tabulated above are subject to the following reductions:

- 3% for every 500 meters by which the operating altitude exceeds 1000 meters above mean sea level
- 3% for every 5°C by which the operational ambient temperature exceeds 40°C
- For any other operating conditions impacting the cooling circuit please refer to applications

Note: Requirement for operating in an ambient exceeding 60°C and altitude exceeding 4000 meters must be referred to applications.

Alternator Operating Charts

400V@50Hz

TBA

480V@60Hz

TBA

One-step Load Acceptance

ISO 8528-5	50Hz		60Hz	
	50% sudden power increase	100% sudden power decrease	50% sudden power increase	100% sudden power decrease
Transient frequency difference (%)	TBA	TBA	TBA	TBA
Frequency recovery time (s)	TBA	TBA	TBA	TBA
Transient voltage deviation (%)	TBA	TBA	TBA	TBA
Voltage recovery time (s)	TBA	TBA	TBA	TBA

*All data comes from actual testing and is for reference only.

MPMC BEYOND ENERGY

Control Panel

DSE 4520 MKII

Auto start and auto mains failure control module
(Alternator frequency & can speed sensing)

Key benefits

- Ultimate size to feature ratio.
- Automatically transfers between mains (utility) and generator.
- Hours counter provides accurate information for monitoring and maintenance periods.
- User-friendly set-up and button layout for ease of use.
- Multiple parameters are monitored simultaneously which are clearly displayed on the largest back-lit icon display in its class.
- The module can be configured to suit a wide range of applications.
- Compatible with a wide range of CAN engines including Tier 4.
- IP65 rating (with optional gasket) offers increased resistance to water ingress.

Key features

- Auto Start and AMF mode in one module.
- J1939-75 support and CAN alarm ignore function.
- Alternator frequency & CAN speed sensing in one variant.
- Largest back-lit icon display in its class.
- Heated display option.
- Real time clock provides accurate event logging.
- Fully configurable via the fascia or PC using USB communication.
- Extremely efficient power save mode.
- 3 phase generator sensing.
- 3 phase mains (utility) sensing
- Compatible with 600 V ph to ph nominal systems.
- Generator/load power monitoring (kW, kVA, kVar, PF).
- Accumulated power monitoring (kWh, kVAh, kVarh).
- Generator overload protection.
- Generator/load current monitoring and protection.
- Fuel and start outputs (configurable when using CAN).
- 4 configurable DC outputs.
- 3 configurable analogue/digital inputs
- 4 configurable digital inputs.
- Configurable staged loading outputs.
- 3 engine maintenance alarms.
- Engine speed protection.
- Engine hours counter.
- Engine pre-heat.
- Engine run-time scheduler.
- Engine idle control for starting & stopping.
- Tier 4 engine instrumentation screens.
- Battery voltage monitoring.
- Start on low battery voltage.
- Configurable remote start input.
- 1 alternative configuration.
- Comprehensive warning, electrical trip or shutdown protection upon fault condition.
- LCD alarm indication.
- Event log (50)

Expansion devices

☐N/A

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General Arrangement

Main Components

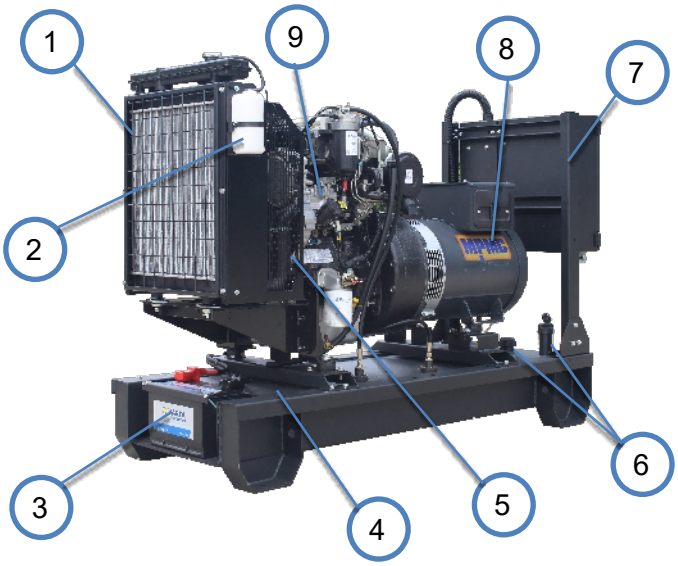
1 Radiator

2 Expansion coolant tank

3 Start up battery

4 Base frame with AVM

5 Protective mesh plate for rotating mechanism



6 Lockable refueling cap Mechanical fuel level gauge

7 Control panel Breaker panel

8 Alternator

9 Engine

10 SR Canopy

11 Hinge

12 Drain port

13 Door lock

14 Outside refueling port

15 Anti-collision feet

16 Air inlet louver

17 Lifting lug

18 Control panel & breaker panel

19 Cable tie-point

20 Forklift hole

21 Smoke cap

22 Radiator access plate

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Generator Options

Basement :

☐6 hours fuel tank
☑8 hours fuel tank
☐12 hours fuel tank
☐24 hours fuel tank
☐Bonded fuel tank
☐Fuel leakage sensor
☑Lifting points
☑Forklift holes
☐Drag holes
☑Expansion joint
☐Quick connector of external fuel pipe & tank
☐Three-way valve
☑Mechanical fuel level gauge
☐Electronic fuel level sensor
☑C-3 painting /☐C-4 painting /☐C-5 painting
☐Others:

Electrical system :

☑CHINT Breaker /☐ ABB Breaker /☐Schneider Breaker /☐Others:
☑Manual breaker /☐Motorized breaker
☑3P Breaker /☐4P Breaker
☐RCD
☐MEN
☑External AC charger
☐Socket:
☐Plug:

Silent Generator Only :

☑Galvanized canopy
☐Stainless steel canopy & hardware
☑Sponge materials /☐Rock wool with mesh plate
☑IP 21 /☐IP 22 /☐IP23
☑Zinc alloy door lock
☑Zinc alloy hinge
☐Access door for radiator
☐Aluminum canopy

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