MPMC BEYOND ENERGY

Model: MCL1500(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	N/A	N/A	N/A	N/A
	400V/230V	N/A	N/A	N/A	N/A
	380V/220V	N/A	N/A	N/A	N/A
	220V/110V	N/A	N/A	N/A	N/A
60Hz Rated	480V/277V	1575	1260	1875	1500
	Rated 440V/254V	1575	1260	1875	1500
	400V/230V	N/A	N/A	N/A	N/A
	380V/220V	N/A	N/A	N/A	N/A
	220V/127V	N/A	N/A	N/A	N/A
	220V/110V	N/A	N/A	N/A	N/A
Power Factor		0.8 Lagging			
Engine		KTA50-G9			
Rated Speed		1800 RPM (Unchangeable)			
Fuel Type		Grade No. 2D per ASTM D975			
Lube-oil Type		API Service CF Class SAE 15W-40			
Alternator		LYG 454C			

Noise Level		50Hz	60Hz
Average Value @1m,75%load	OS Series dB(A)	N/A	TBA
	SC Series dB(A)	N/A	TBA

Fuel Consumption		50Hz	60Hz
Load Ration	L/h@110%	N/A	392
	L/h@100%	N/A	330
	L/h@75%	N/A	257
	L/h@50%	N/A	180

Dimension and Weight	OS Series Open-type	SC Series Silent-type
Length (L) mm	5050	6058
Width (W) mm	2260	2438
Height (H) mm	2455	2896
Net. Weight (kg)	9400	13400

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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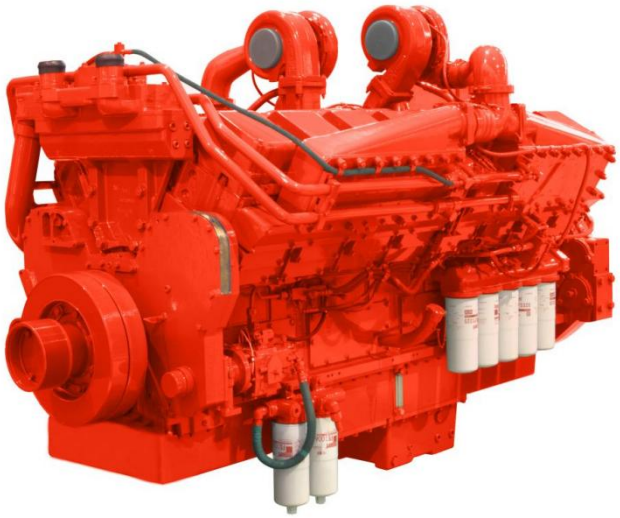
Engine Specifications



Engine model	KTA50-G9	
Emission	N/A	
Number of cylinders & Arrangement	16 & Vee	
Cycle	Four stroke	
Aspiration	Turbocharged & Low Temperature Aftercooled	
Bore x Stroke	159 x 159 mm	
Displacement	50.3 L	
Compression ratio	13.9 ： 1	
Gross prime power /speed	N/A kWm/1500 rpm	1383 kWm/1800 rpm
Gross standby power /speed	N/A kWm/1500 rpm	1655 kWm/1800 rpm
Speed governor	Electronic	
Cooling system	Water Cooled	
Steady State Stability Band at any Constant Load	≤±0.25%	
Total lubrication system capacity	204 L	
Coolant capacity (engine only)	140 L	
Starter motor & Charge alternator	DC 24V	DC 24V 35Amps
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

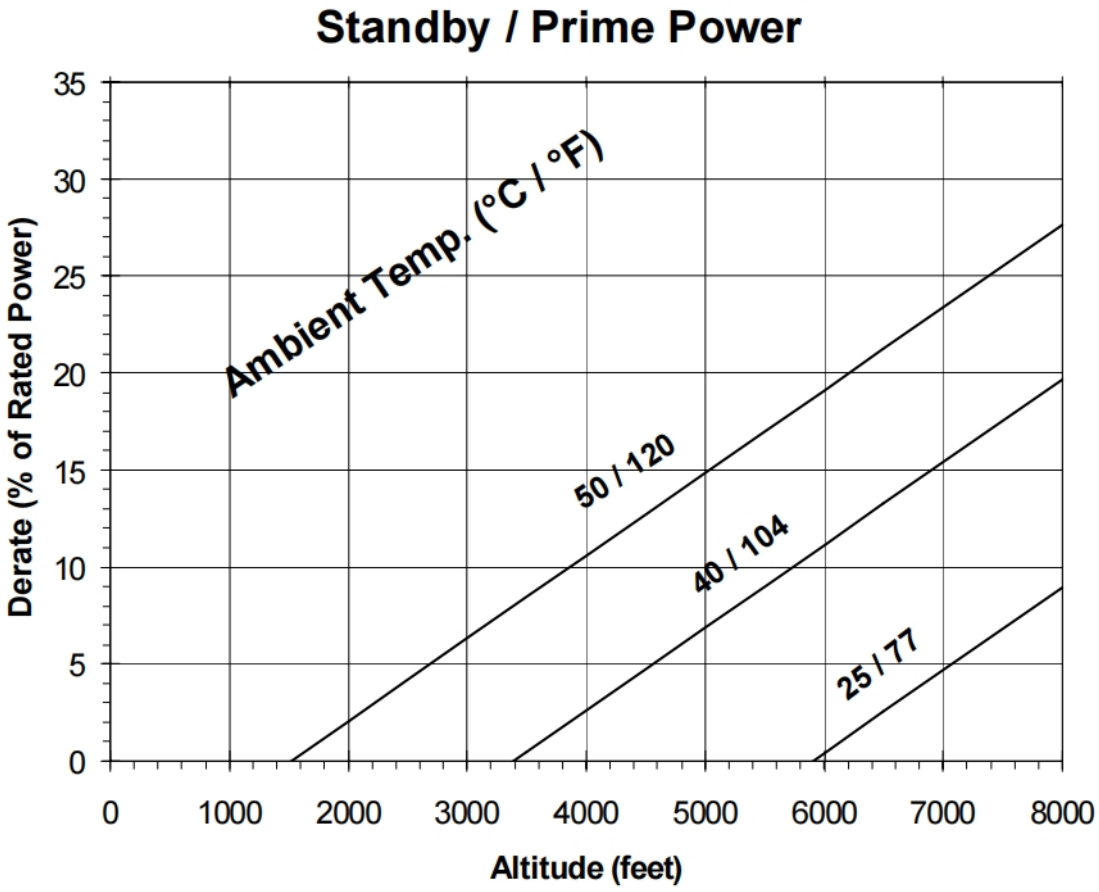
☐Breath box

Engine Derating Curves

50Hz/1500RPM

N/A

60Hz/1800RPM



Operation At Elevated Temperature And Altitude:

For sustained operation above these conditions, derate by an additional 4.5% per 300m and 10% per 10℃.

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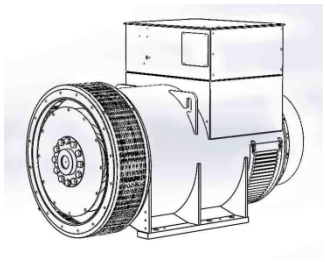
Alternator Specifications



Alternator model	LYG454C-V01
Number of phase	3
Power factor (Cos Phi)	0.8
Poles	4
Winding leads	6
Insulation level	H class
Temperature rise	H class
Excitation	Brushless
AVR model	MX341B
Winding Pitch	5/6
IP rating	IP22
Bearing	Single bearing
Voltage regulator	±0.5%

☐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)	1505	1550	1550	N/A	1615	1660	1660	N/A
	Efficiency(%)	95.2	95.4	95.5	N/A	95.2	95.4	95.5	N/A
60Hz	Series Star(V)	416	440	460	480	416	440	460	480
	Output(kVA)	1705	1815	N/A	1890	1820	1945	N/A	2025
	Efficiency(%)	95.2	95.2	N/A	95.4	95.2	95.2	N/A	95.4

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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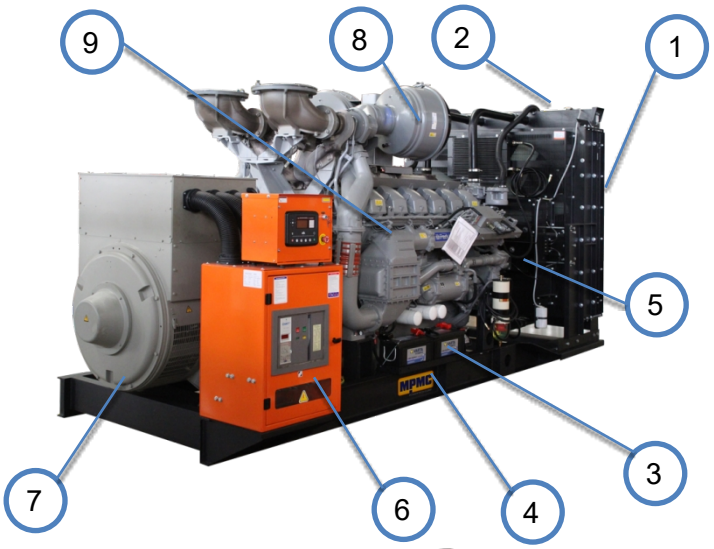
Typical General Arrangement

Main Components on MPMC Standard Product

1. Radiator
2. Expansion coolant tank
3. Start up battery
4. Base frame with AVM
5. Protective mesh plate for rotating mechanism
6. Control panel Breaker panel
7. Alternator
8. Air filter
9. Engine



10. ISO container
11. Control panel Breaker panel
12. Cable enter
13. Access door
14. Drain port
15. Maintenance ladder
16. Access door for radiator
17. Emergency stop

18. Corner fittings
19. Galvanized container rod lock
20. Fuel connector Drain port
21. Air inlet louver (cover plate for transport)

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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

MPMC BEYOND ENERGY

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