MPMC BEYOND ENERGY

# Model: MPL140(S)-1

Powered by Perkins

## 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 Rated | 415V/240V | 140 | 112 | 155 | 124 |
| | Rated 400V/230V | 140 | 112 | 155 | 124 |
| | 380V/220V | 140 | 112 | 155 | 124 |
| | 220V/110V | TBA | TBA | TBA | TBA |
| 60Hz | 480V/277V | 140 | 112 | 155 | 124 |
| | 440V/254V | 140 | 112 | 155 | 124 |
| | 400V/230V | N/A | N/A | N/A | N/A |
| | 380V/220V | N/A | N/A | N/A | N/A |
| | 220V/127V | 140 | 112 | 155 | 124 |
| | 220V/110V | 105.6 | 84.5 | 116.1 | 92.9 |
| Power Factor | | 0.8 Lagging | | | |
| Engine | | 1106D-E70TAG2 | | | |
| Rated Speed | | 1500 RPM (Changeable) | | | |
| Fuel Type | | Grade No. 2D per ASTM D975 | | | |
| Lube-oil Type | | API Service CF Class SAE 15W-40 | | | |
| Alternator | | LYG 274D | | | |

| Noise Level | | 50Hz | 60Hz |
|---|---|---|---|
| Average Value @1m,75%load | OE Series dB(A) | 108.27 | 110.81 |
| | SR Series dB(A) | 91.7 | TBA |

| Fuel Consumption | | 50Hz | 60Hz |
|---|---|---|---|
| Load Ration | L/h@110% | 38 | 43.1 |
| | L/h@100% | 35.1 | 39.7 |
| | L/h@75% | 27.9 | 32.1 |
| | L/h@50% | 19 | 22.2 |

| Dimension and Weight | OE Series Open-type | SR Series Silent-type |
|---|---|---|
| Length (L) mm | 2670 | 3600 |
| Width (W) mm | 855 | 1130 |
| Height (H) mm | 1530 | 2080 |
| Net. Weight (kg) | 1580 | 2600 |

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 | 1106D-E70TAG2 | |
|---|---|---|
| Emission | Stage IIIA / Tier 3 | |
| Number of cylinders & Arrangement | 6 & Vertical inline | |
| Cycle | Four stroke | |
| Aspiration | Turbocharged & Air charge cooled | |
| Bore x Stroke | 105 x 135 mm | |
| Displacement | 7.01 L | |
| Compression ratio | 16.8 ： 1 | |
| Gross prime power /speed | 135.9 kWm/1500 rpm | 155.6 kWm/1800 rpm |
| Gross standby power /speed | 149.4 kWm/1500 rpm | 171.2 kWm/1800 rpm |
| Speed governor | ECU | |
| Cooling system | Forced water cooling cycle with belt fan | |
| Steady State Stability Band at any Constant Load | ≤±0.18% | |
| Total lubrication system capacity | 17.5 L | |
| Coolant capacity (engine only) | 9.5 L | |
| Starter motor & Charge alternator | DC 12V | DC 12V 65Amps |
| Fuel available | Grade No. 2D per ASTM D975 | |
| | HVO(EN 15940) | |

☑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

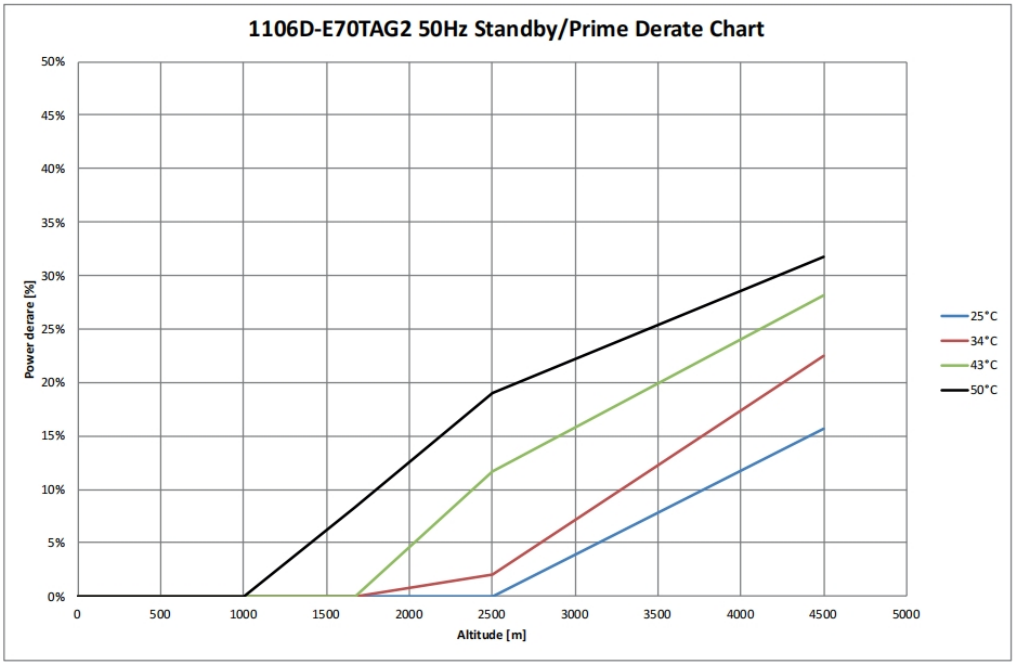
☐Breath box

# Engine Derating Curves

## 50Hz/1500RPM

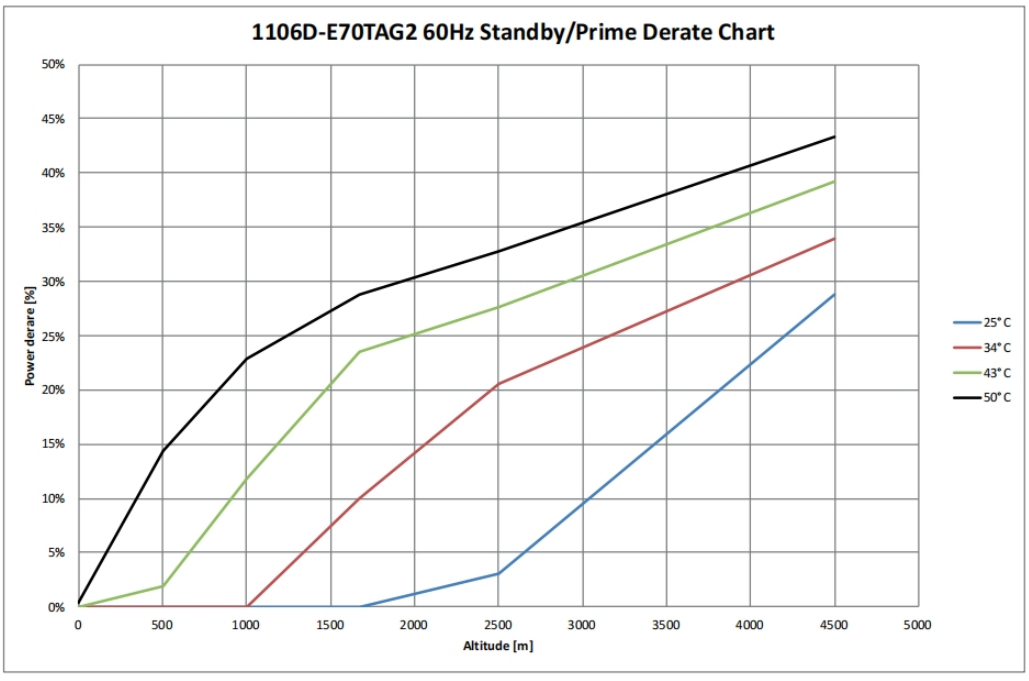
### 1106D-E70TAG2 @ 1500 rpm

Derate for high intake temperature and / or elevated altitude from ISO 3046 standard conditions.




## 60Hz/1800RPM

### 1106D-E70TAG2 @ 1800 rpm



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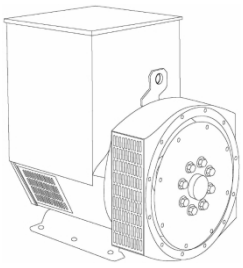
# Alternator Specifications



| Alternator model | LYG274D-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) | 140 | 140 | 140 | N/A | 150 | 150 | 150 | N/A |
| | Efficiency(%) | 91.3 | 91.7 | 92 | N/A | 91.3 | 91.7 | 92 | N/A |
| 60Hz | Series Star(V) | 416 | 440 | 460 | 480 | 416 | 440 | 460 | 480 |
| | Output(kVA) | 160.0 | 167.5 | N/A | 178.8 | 175.0 | 181.3 | N/A | 193.8 |
| | Efficiency(%) | 91.4 | 91.7 | N/A | 92.1 | 91.4 | 91.7 | N/A | 92.1 |

**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.

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# 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

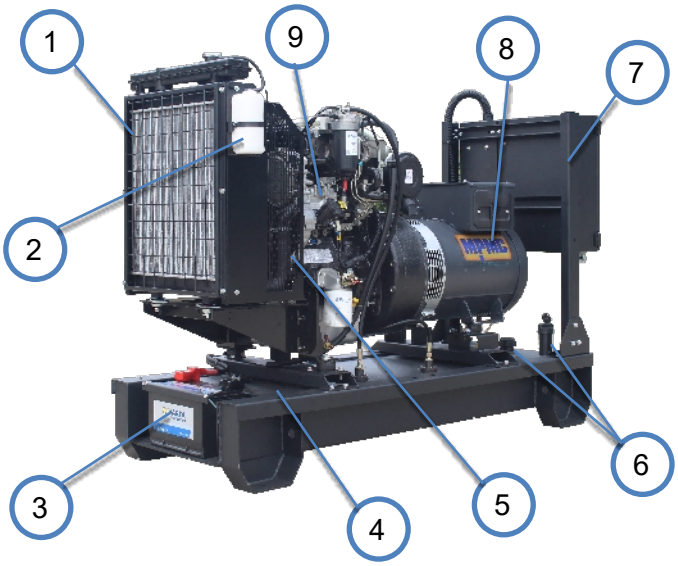
1 Radiator

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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*All information in this document is substantially correct at time of printing and may be altered subsequently. Final weight and dimensions will depend on completed specification.