



**MULTIPHASE  
POWER**

Diesel Generator Set

# MPL2000C

Powered By Cummins

50 Hz / 1500 RPM



**MULTIPHASE CORPORATION CO., LTD.**

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# MPL2000C



| MODEL                          | FREQUENCY / RPM | STANDBY POWER | PRIME POWER |
|--------------------------------|-----------------|---------------|-------------|
| MPL2000C<br>Powered by Cummins | 50 Hz/1500 RPM  | 2000 kVA      | 1830 kVA    |
|                                |                 | 1600 kW       | 1500 kW     |

- Model : MPLxxCS – S Suffix for silent type

| General Technical Data                |                    |
|---------------------------------------|--------------------|
| Model                                 | MPL2000C           |
| Engine                                | Cummins KTA50-G16A |
| Standard Voltage                      | 400/230V           |
| Phase                                 | 3 Phase            |
| Stamford Alternator                   | S7L1D-F41          |
| Leroy Somer Alternator                | LSA52.3S5          |
| Other Alternator                      | LA454G1520         |
| Speed Control Type                    | ECM                |
| Controller Model                      | DSE7320            |
| Generator Set Fuel Consumption (L/hr) |                    |
| Load-Standby Power (110%)             | 429.5              |
| Load-Prime Power (100%)               | 400.7              |
| Load-Prime Power (75%)                | 300.5              |
| Load-Prime Power (50%)                | 209.2              |

Multiphase Power Generators are in conformity with certification ISO 9001/ ISO14001/ISO18001 and our gensets are compliant with CE Standard. Best quality of electricity, high starting and loading capacity according to ISO8528-5. Ambient conditions of reference according to ISO 8528-1:2018 normative: 1000 mbar, 25°C, 30% relative humidity.

#### Prime Power (PRP):

According to ISO 8528-1:2018, Prime power is the maximum power which a generating set is capable of delivering continuously whilst supplying a variable electrical load when operated for an unlimited number of hours per year under the agreed operating conditions with the maintenance intervals and procedures being carried out as prescribed by the manufacturer. The permissible average power output (Ppp) over 24 h of operation shall not exceed 70 % of the PRP.

#### Emergency Standby Power (ESP):

According to ISO 8528-1:2018, Emergency standby power is the maximum power available during a variable electrical power sequence, under the stated operating conditions, for which a generating set is capable of delivering in the event of a utility power outage or under test conditions for up to 200 h of operation per year with the maintenance intervals and procedures being carried out as prescribed by the manufacturers. The permissible average power output over 24 h of operation shall not exceed 70 % of the ESP

#### Continuous Power (COP):

According to Standard ISO 8528-1:2018, this is the maximum power available for continuous loads for unlimited running hours a year between the maintenance times recommended by the manufacturer under the environmental conditions established by the same.

| Generator Set Ratings |       |                |      |        |              |      |
|-----------------------|-------|----------------|------|--------|--------------|------|
| Voltage               | Phase | Standby Rating |      |        | Prime Rating |      |
|                       |       | KVA            | KW   | AMPS   | KVA          | KW   |
| 415/240v              | 3     | 2000           | 1600 | 2782.5 | 1830         | 1500 |
| 400/230v              | 3     | 2000           | 1600 | 2886.8 | 1830         | 1500 |
| 380/220v              | 3     | 2000           | 1600 | 3038.8 | 1830         | 1500 |

#### Operating Environmental Requirement

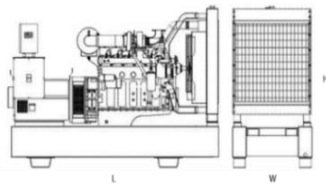
- Ambient Temperature: -25°C - 50°C (Heater must be included when in low temperature)
- Humidity: Less than 80%
- Altitude: Up to 1000meters (For higher altitude application, please consult with Our Team)

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## DIMENSIONS

| Weight And Dimensions     | Open Type | Silent Type |
|---------------------------|-----------|-------------|
| Length (mm)               | 5780      | 40 HQ       |
| Width (mm)                | 2200      |             |
| Height (mm)               | 2700      |             |
| Net Weight (kg)           | 11000     | 17000       |
| Fuel Tank Capacity (L)    | n/a       | n/a         |
| Running Hours - 100% Load | n/a       | n/a         |



## DIESEL ENGINE SPECIFICATION

|                                  |  |   |                      |                    |
|----------------------------------|--|---|----------------------|--------------------|
| <b>Manufacturer</b>              | Cummins                                    | <b>Engine Design</b>                        | <b>Standby Power</b> | <b>Prime Power</b> |
| <b>Engine Model</b>              | KTA50-G16A                                 | <b>Engine Idle Speed (rpm)</b>              | 700-900              | 700-900            |
| <b>Cylinders No./Arrangement</b> | 16 / V-Line                                | <b>Gross Engine Output (KW)</b>             | 1760                 | 1650               |
| <b>Compression Ratio</b>         | 14.7:1                                     | <b>Piston Speed (m/s)</b>                   | 7.95                 | 7.95               |
| <b>Injection Type</b>            | Direct                                     | <b>Engine Water Flow (L/s)</b>              | 28                   | 28                 |
| <b>Aspiration Type</b>           | Turbocharged & Low Temperature Aftercooled | <b>Intake Air Flow (m<sup>3</sup>/min)</b>  | 116                  | 113                |
| <b>Bore x Stroke</b>             | 159x159 mm                                 | <b>Exhaust Gas Flow (m<sup>3</sup>/min)</b> | 345                  | 317                |
| <b>Displacement</b>              | 50.3 L                                     | <b>Exhaust Gas Temp (°C)</b>                | 530                  | 500                |

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| Diesel Engine Specifications |   |           |
|------------------------------|---|-----------|
| Air Intake System            | Max. Intake Air Restriction with Heavy Duty Air Cleaner                 |           |
|                              | Dirty Element (in H2O)  | 25        |
|                              | Clean Element (in H2O)  | 15        |
| Lubrication System           | Engine Oil Pressure for Engine Protection Devices                       |           |
|                              | Idle Speed (Minimum) (kPa)  | 138       |
|                              | Governed Speed (kPa)  | 350-485   |
|                              | Max. Allowable Oil Temperature (°C)                                     | 121       |
|                              | Total system capacity - High - Low (L)                                  | 205/174   |
| Fuel System                  | Type Injection System   |           |
|                              | With Clean Fuel Filter (kPa)  | 13.5      |
|                              | With Dirty Fuel Filter (kPa)  | 27.1      |
|                              | Max. Fuel Supply at Rated Power and Speed (kg/h)                        | 531       |
| Cooling System               | Coolant Capacity (L)  | 140       |
|                              | Max. Coolant Friction Head External to Engine High flow- Low flow (kPa) | 55.2-34.5 |
|                              | Standard Thermostat (Modulating) Range (°C)                             | 82-93     |
|                              | Max. Allowable Top Tank Temperature (°C)                                | 109/100   |
|                              | Max. Allowable Coolant Temperature (°C)                                 | n/a       |
|                              | Min. Pressure Cap (kPa)   | 97        |
| Electrical System            | Minimum Recommended Battery Capacity (V)                                |           |
|                              | Cold Soak CCA (0~10°C or Above)   | 1800      |
|                              | Cold Soak CCA (-18~0°C or Above)  | 1800      |
| Exhaust System               | Maximum Back Pressure @Standby Power (kpa)                              | 6.8       |

## ALTERNATOR SPECIFICATION

|                        |                |
|------------------------|----------------|
| Poles                  | 4              |
| Insulation             | Class H        |
| Protection Rating      | IP23           |
| Exciter System         | P.M.G / AREP   |
| AVR Regulatorion Range | ±0.5%          |
| Number Of Bearing      | Single Bearing |
| Coupling System        | Flexible Disc  |
| Winding Pitch          | 2/3            |
| Overspeed Protection   | 2250 R.P.M.    |

### ALTERNATOR STANDARD FEATURES

- All models are brushless, rotating-field alternators
- Alternator meet the main international standard of IEC 60034, NEMA MG 1.32-33, BS 5000 Part 99, VDE 0530, ISO 8528/3
- The AVR voltage regulator provides superior short circuit capability
- Self-ventilated and dip proof construction
- Superior voltage waveform

Note: See Alternator Data Sheets for application data and ratings, efficiency curves, voltage dip with motor starting curves, and short circuit decrement curves

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## CONTROL SYSTEM DATA (DSE7320)



### Main Feature

The DSE7320 will also monitor the mains (utility) supply. The modules include USB, RS232 and RS485 ports as well as dedicated DSENet® terminals for system expansion.

### Key Function

- 4-Line back-lit LCD text display
- Five key menu navigation
- Front panel editing with PIN protection
- Customisable status screens
- Power save mode
- Support for up to three remote display units
- 9 configurable inputs
- 8 configurable outputs
- Flexible sender inputs
- Configurable timers and alarms
- 3 configurable maintenance alarms
- Multiple date and time scheduler
- Configurable event log (250)
- Integral PLC editor
- Easy access diagnostic page
- CAN and Magnetic Pick-up/Alt. sensing
- Fuel usage monitor and low fuel alarms
- Charge alternator failure alarm
- Manual speed control (on compatible CAN engines)
- Manual fuel pump control
- Power monitoring (kWh, kVAR, kVAh, kVArh)
- Load switching (load shedding and dummy load outputs)
- Automatic load transfer (DSE7320)
- Backed up real time clock
- Start & stop capability via SMS messaging
- USB connectivity
- Tier 4 CAN engine support
- DSENet ® expansion compatible etc.

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## OPTIONAL

| Genset Optional Specifications |  |
|--------------------------------|--|
| Engine                         | Water Jacket Pre-Heater                        |
|                                | Oil Pre-Heater                                 |
|                                | Fuel-Water Separator                           |
| Alternator                     | Winding and Bearing Temperature Detector (RTD) |
|                                | Anti-Condensation Heater (Space Heater)        |
|                                | PMG / AREP                                     |
|                                | Anti-Damp and Anti-Corrosion Treatment         |
| Electrical System              | ATS  |
|                                | Remote Control and Monitoring                  |
|                                | Synchronizing System                           |
|                                | 3/5 Pin sockets with RCBO protection           |
| Fuel System                    | Bunded Double Wall Base Fuel Tank              |
|                                | Extended To Larger Capacity Base Tank          |
|                                | Free-stand Daily Fuel Tank                     |
|                                | Automatic Fuel Feeding System                  |
|                                | Fuel T-valves                                  |
| Canopy                         | Trailer  |
|                                | Rental Type Design                             |

| Optional Controller Model                        |                           |
|--|---------------------------|
| ComAp Controller for Single Genset Application   | ComAp Nano MRS3           |
|  | ComAp AMF20               |
|  | ComAp AMF25               |
| ComAp Controller for Multi Genset Application    | ComAp IG200               |
|  | ComAp IG-NT               |
| Deepsea Controller for Single Genset Application | DSE4520 MKII              |
|  | DSE6020 MKII              |
|  | DSE7320 MKII /DSE7420MKII |
| Deepsea Controller for Multi Genset Application  | DSE8610 MKII              |
|  | DSE8810 MKII              |

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