

# CM-CU100

DIESEL GENERATOR SET / OPEN + SILENT



OPEN SET



SILENT SET

**100** kVA

STANDBY POWER

**90** kVA

PRIME POWER

**60** Hz

FREQUENCY

**480/277** V

VOLTAGE

**Cummins 4BTA3.9-G11**

3 phase · 0.8 PF · 1800 rpm

## CONFIGURATION COMPARISON

| Configuration | Dimensions (L × W × H) | Dry weight | Fuel tank |
|---------------|------------------------|------------|-----------|
| Open set      | 1900 × 980 × 1640 mm   | 1080 kg    | 180 L     |
| Silent set    | 2550 × 1000 × 1249 mm  | 1252 kg    | 180 L     |

Performance, engine, alternator and controller data are common to both configurations.

# GENERAL CHARACTERISTICS

CM-CU100 · 60 Hz · 3 Phase

## RATED PERFORMANCE

|                        |                    |
|------------------------|--------------------|
| Standby Power (kVA)    | <b>100</b>         |
| Standby Power (kW)     | <b>80</b>          |
| Prime Power (kVA)      | <b>90</b>          |
| Prime Power (kW)       | <b>72</b>          |
| Power Factor (Cos Phi) | <b>0.8</b>         |
| Diesel Engine          | <b>4BTA3.9-G11</b> |
| Frequency (Hz)         | <b>60</b>          |
| Rated Speed (rpm)      | <b>1800</b>        |
| Phase                  | <b>3</b>           |
| Standard Voltage (V)   | <b>480/277</b>     |

## POWER DEFINITIONS

### STANDBY POWER (ESP)

Available for supplying emergency power during a utility interruption. The stated rating follows ISO 8528-1; overload is not permitted.

### PRIME POWER (PRP)

Available for an unlimited number of annual operating hours in variable-load applications, in accordance with ISO 8528-1.

### TERMS OF USE

Nominal power is stated at 25 °C inlet-air temperature, 100 kPa barometric pressure (100 m A.S.L.) and 30% relative humidity.

## RATED OUTPUT CURRENT BY VOLTAGE

| Rated voltage | Standby current (100 kVA) | Prime current (90 kVA) |
|---------------|---------------------------|------------------------|
| 480/277 V     | <b>120.3 A</b>            | <b>108.3 A</b>         |
| 220/127 V     | <b>262.4 A</b>            | <b>236.2 A</b>         |
| 440/254 V     | <b>131.2 A</b>            | <b>118.1 A</b>         |

# ENGINE DATA

## Cummins 4BTA3.9-G11

### GENERAL ENGINE DATA

|                           |                                      |
|---------------------------|--------------------------------------|
| Engine brand              | <b>Cummins</b>                       |
| Engine model              | <b>4BTA3.9-G11</b>                   |
| Engine type               | <b>4-stroke diesel</b>               |
| Governor type             | <b>Electronic</b>                    |
| Injection type            | <b>Direct</b>                        |
| Aspiration type           | <b>Turbocharger&amp; Aftercooler</b> |
| Cylinders and arrangement | <b>4-L</b>                           |

### FUEL CONSUMPTION

|               |                 |
|---------------|-----------------|
| 100% load ESP | <b>22.5 L/h</b> |
| 100% load PRP | <b>20.1 L/h</b> |
| 75% load PRP  | <b>15.3 L/h</b> |
| 50% load PRP  | <b>10.8 L/h</b> |

### AIR SYSTEM

|                  |               |
|------------------|---------------|
| Intake air flow  | <b>93 L/s</b> |
| Cooling air flow | <b>/</b>      |

### GENERAL ENGINE DATA

|                                   |                                    |
|-----------------------------------|------------------------------------|
| Bore × stroke                     | <b>102 × 120 mm</b>                |
| Displacement                      | <b>3.9 L</b>                       |
| Cooling system                    | <b>Water-cooled</b>                |
| Lube oil consumption at full load | <b>0.5%-1% of fuel consumption</b> |
| Compression ratio                 | <b>17.3:1</b>                      |
| Air filter                        | <b>Dry</b>                         |

### EXHAUST SYSTEM

|                               |                |
|-------------------------------|----------------|
| Maximum exhaust temperature   | <b>405 °C</b>  |
| Exhaust gas flow              | <b>188 L/s</b> |
| Maximum allowed back pressure | <b>10 kPa</b>  |

### STARTING SYSTEM

|                     |               |
|---------------------|---------------|
| Starting power      | <b>4.5 kW</b> |
| Recommended battery | <b>60 Ah</b>  |
| Number of batteries | <b>2</b>      |
| Auxiliary voltage   | <b>24 VDC</b> |

### OIL AND COOLING CAPACITIES

|                        |                            |
|------------------------|----------------------------|
| Engine oil capacity    | <b>10.9 L</b>              |
| Total coolant capacity | <b>8.3 (engine only) L</b> |

# ALTERNATOR DATA

**3-phase · Brushless · Electronic AVR**

## GENERAL ALTERNATOR DATA

|                                |                    |                               |
|--------------------------------|--------------------|-------------------------------|
| Number of phases               | <b>3</b>           | <b>Power factor (Cos Phi)</b> |
| Power factor (Cos Phi)         | <b>0.8</b>         |                               |
| Poles                          | <b>4</b>           |                               |
| Winding connections (standard) | <b>Star-series</b> |                               |
| Insulation                     | <b>H class</b>     |                               |
| Enclosure (IEC 34-5)           | <b>I</b>           |                               |

## GENERAL ALTERNATOR DATA

|                    |                                       |
|--------------------|---------------------------------------|
| Excitation system  | <b>Self-excited, brushless</b>        |
| Voltage regulator  | <b>AVR (Electronic)</b>               |
| Number of bearings | <b>Single bearing</b>                 |
| Coupling system    | <b>Flexible disc</b>                  |
| Coating type       | <b>Standard (vacuum impregnation)</b> |

The alternator is coupled to the engine through a flexible disc on a single-bearing spigot fit. Alternator make and frame size are selected to match the set rating and the site specification, and are confirmed on the quotation.

# CONTROL MODULE

## Automatic Mains Failure (AMF) controller

### AMF CONTROL

Provides automatic mains failure control plus manual or remote start/stop, with generator and mains measurement, protection, event logging and timer functions.

### MOUNTING AND DISPLAY

Panel-mounted controller with back-lit LCD display, push-button interface and LED status indication; sealed front to IP54 for dusty or damp plant rooms.

### CORE FUNCTIONS

- |           |                                                                                    |           |                                                                           |
|-----------|------------------------------------------------------------------------------------|-----------|---------------------------------------------------------------------------|
| <b>01</b> | Automatic mains failure control plus manual or remote start/stop                   | <b>02</b> | 3-phase generator and mains voltage measurement, plus current measurement |
| <b>03</b> | Fully configurable timers, setpoints and alarm protections                         | <b>04</b> | Detailed event log for fault analysis                                     |
| <b>05</b> | Engine protection: low oil pressure, high coolant temperature, overspeed, overload | <b>06</b> | AMF start, cooldown stop and mains return transfer sequences              |
| <b>07</b> | Front-panel configuration or configuration via PC software                         | <b>08</b> | Emergency-stop functionality                                              |

The exact controller variant is selected to match the engine communication protocol (J1939 CAN or analogue) and the site specification, and is confirmed on the quotation.

# CONNECTIVITY

## Communication and monitoring options

|     |             |                    |                        |
|-----|-------------|--------------------|------------------------|
| USB | CAN / J1939 | RS485 / MODBUS RTU | ETHERNET / 4G (option) |
|-----|-------------|--------------------|------------------------|

## COMMUNICATION AND MONITORING FEATURES

- 01 USB** Local configuration and firmware updates from a laptop
- 02 CAN / J1939** Direct communication with compatible engine ECUs
- 03 RS485 / MODBUS RTU** SCADA and BMS integration on request
- 04 ETHERNET / 4G (option)** Remote monitoring via web portal or mobile app

## REMOTE MONITORING

Gensets can be monitored on site through the controller display, or remotely through an optional communication module and web-based monitoring portal. Remote start/stop, alarms and running reports are available where the site network allows.

### PLUG-IN MODULES

Ethernet, 4G-GPS or RS232/RS485 modules are ordered with the set; only one module is fitted.