

| | | | |
|-------------------------|------------------------|---------------------|---------------------|
| Mitsubishi S12R-PTA2 | CGT Stamford PI 734 | Generator Model: | BCM 1400P-50 |
| | | Generator Model: | BCM 1530S-50 |

50 Hz

3-Phase

 Power Factor
 $\text{Cos } \Phi = 0.8$

| RATINGS | PRIME POWER (PRP) | | STANDBY POWER (LTP) | | |
|---------|-------------------|------|---------------------|------|------|
| | BCM 1400P-50 | | BCM 1530S-50 | | |
| Voltage | kVA | kWe | kVA | kWe | Amps |
| 415/240 | 1400 | 1120 | 1530 | 1224 | 2129 |
| 400/230 | 1400 | 1120 | 1530 | 1224 | 2208 |
| 380/220 | 1380 | 1104 | 1530 | 1224 | 2325 |

Definition of Ratings & Reference Conditions

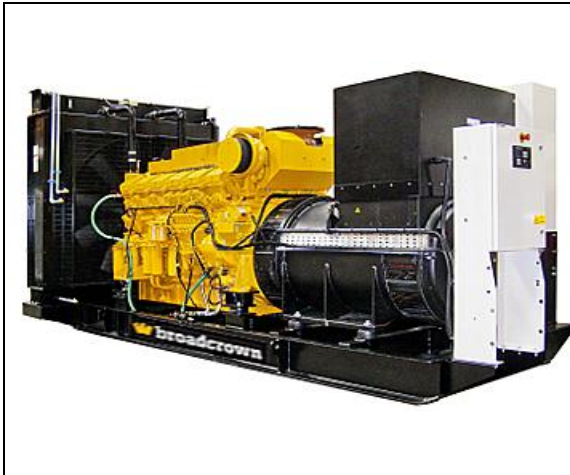
Prime Power (PRP) is the nominal output continuously available, where the average load (variable) does not exceed 60% of the prime power rating. 10% overload is available for a maximum of 1 hour in 12 hours of operation.

Standby Power (LTP) the maximum output available (at variable load), for up to 500 hours per year. The average load (variable) must not exceed 60% of the standby rating. No overload is available.

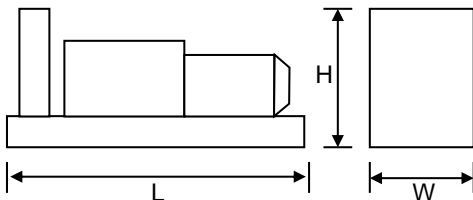
Standard Reference Conditions: air inlet temperature 25°C (77°F), barometric pressure 100kPa [110m (361ft) altitude] and 30% relative humidity.

Note: The above ratings may be subject to derate at different operating conditions. Please see the Derate Guidelines on the Broadcrown website.

All power ratings and reference conditions in accordance with ISO 8528-1 and ISO 3046-1.


Key Features:

- Efficient water cooled diesel engine.
- Single bearing CGT Stamford alternator
- Radiator with pressure cap and drain point
- Fully guarded engine-driven fan
- Fully welded steel baseframe with lifting / jacking points
- Various fuel system options
- Heavy duty rubber anti-vibration mountings
- 24V starter batteries and connecting cables
- Separate engine-driven battery charging alternator
- Spin on oil and fuel filters and dry type air filter element
- Industrial silencer(s) supplied loose
- Auto Start control system with digital instrumentation
- Main line circuit breaker
- Factory Test Certificate
- Operation & Maintenance Manual
- Wide range of optional extra features available


Overall Dimensions & Weights - Open Set

Length (L) = 4520mm
 Width (W) = 2090mm
 Height (H) = 2490mm

Dry Weight (inc oil) = 10040kg
 Operating Weight = 10450kg

| Overall dBA | Typical Open Generator Sound Pressure Level at 1m, Free Field (dB) | | | | | | | |
|-------------|--|--------|--------|--------|---------|---------|---------|---------|
| | 63 Hz | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz |
| 111 | 99 | 102 | 104 | 105 | 105 | 104 | 101 | 101 |

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ENGINE & COOLING SYSTEM
MITSUBISHI S12R-PTA2

| | SI Units | PRIME | STANDBY | |
|-------------|--|-----------------------------|-------------------------|------|
| Performance | Engine Speed | r/min | 1500 | |
| | Gross Power | kWm | 1195 | 1315 |
| | Fan Power | kWm | 22.0 | 22.0 |
| | Net Power | kWm | 1173 | 1293 |
| | Emissions Certification | | — | |
| | Altitude Capability | m | 1500 | 1500 |
| General | Cylinders / Type | 12 cyl / 60° Vee / 4-stroke | | |
| | Aspiration / Charge Cooling | Turbocharged / JWAC | | |
| | Governing / Engine Management | TBA | | |
| | Bore / Stroke | mm | 170 / 180 | |
| | Cubic Capacity | litres | 49.03 | |
| | BMEP | kPa | 1950 | 2146 |
| Fuel | Fuel Consumption at 100% Power | litres/h | 281 | 312 |
| | Fuel Consumption at 75% Power | litres/h | 211 | 231 |
| | Fuel Consumption at 50% Power | litres/h | 147 | 160 |
| | Total fuel flow | litres/h | TBA | |
| | Standard Fuel Tank Capacity | litres | TBA | |
| Air | Engine Air Flow | m ³ /s | 1.6 | 1.75 |
| | Maximum Air Intake Restriction (used filter) | kPa | 6.23 | |
| Exhaust | Exhaust Gas Flow | m ³ /s | 4.217 | 4.65 |
| | Exhaust Gas Temperature | °C | TBA | |
| | Maximum Exhaust Back Pressure | kPa | 5.9 | |
| | Typical Exhaust Pipe Diameter | mm | 300 | |
| Cooling | Radiator Cooling Air Flow | m ³ /s | 20.2 | |
| | Max Restriction to Cooling Air Flow | Pa | 250 | |
| | Max Radiator Air-On Temperature | °C | 47.5 | |
| | Maximum Coolant Temperature | °C | 98 | |
| | Coolant Capacity - Engine Only | litres | 170 | |
| | Total Coolant Capacity | litres | TBA | |
| Oil | Total Oil Capacity incl Filters | litres | 180 | |
| | Typical Oil Pressure at Rated Speed | kPa | TBA | |
| | Typical Oil Consumption (>250hrs Operation) | litres/h | 0.74 | |
| Thermal | Heat Rejection to Engine Cooling Water | kW | 698 | 769 |
| | Heat Rejection to Charge Cooler | kW | n/a | |
| | Heat Radiated From Engine (Typical) | kW | 84 | 92 |
| Elec | Electrical System Voltage | V | 24 | |
| | Battery Type | | 4 (Series-Parallel) 623 | |
| | Battery Capacity SAE CCA | A | 1730 | |

ALTERNATOR
CGT STAMFORD PI 734

| | SI Units | PRIME | STANDBY | |
|--------------|-------------------------------|---|----------|----|
| General Data | Manufacturer | Cummins Generator Technologies - STAMFORD | | |
| | Model (may vary with voltage) | PI 734 B | PI 734 C | |
| | Operating Temperature | °C | 40 | 27 |
| | Coupling / No. of Bearings | Direct / Single Bearing | | |
| | Phase / Poles / Winding Type | 3-Phase / 4-Pole / Winding 311 | | |
| | Power Factor | Cos Φ = 0.8 | | |
| | Excitation | Separately excited by PMG | | |
| | Insulation System | Class H | | |
| | AVR Type | MX 321 | | |
| | Voltage Regulation | ± 0.5% | | |

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STANDARD CONTROL SYSTEM
BC 7210 Digital Auto Start

The standard control system for Export products is **BC 7210** (photo), based on the Deep Sea Electronics DSE7210 Digital Auto Start controller.

This provides for the manual and automatic remote start of the generator with a LCD digital display of :

- Coolant Temperature, with integral high temperature protection
- Oil Pressure, with integral low pressure protection
- Volts, Amps and Frequency
- Engine operating hours
- Battery volts

Also featuring :

- Automatic cool-down timer function
- Emergency Stop button
- Ample auxiliary inputs/outputs for optional features
- Optional - battery charger and door mounted illuminated switch.


CONTROL SYSTEM OPTIONS

BC 7310 & BC 7320 control systems (just the DSE modules shown here) provide complete power monitoring and protection facilities. Compared to BC 7210, addition features include :

- Pre-alarms for Low Oil Pressure and High Coolant Temperature
- Digital display of kW, kVA and Power Factor
- Under/Over Volts protection
- Over Current Protection
- Full RS485 Telemetry implementation as well as full SAE J1939 CANBus implementation. In fact, all generating sets driven by engines with onboard ECU/CANBus come with this system as standard.

The BC 7320 provides full AMF functionality with integrated mains monitoring and generator/mains contactor control.



Finally, **BC 7510 & BC 7520** control systems provide the same features as BC 7310 & BC 7320 respectively, plus :

- BC 7510 - Set-to-Set Synchronisation
- BC 7520 - Single Set-to-Mains Synchronisation with integrated mains monitoring

For Multi Set-to-Mains synchronisation, each set requires BC 7510 with the addition of one mains monitoring panel **BC 7560** (not illustrated). See the Synchronisation Guidelines for further details.

CONTROL SYSTEM OPTIONS - X-RANGE

The X-Range of control systems has been developed to suit larger generating sets (>500kVA) for the UK and Projects market.

The entry level is **Remote Start** and provides for the manual and automatic remote start of the generator with LCD digital display all operating parameters including :

- Coolant temperature with high temperature alarm and shutdown
- Oil pressure with low pressure alarm and shutdown
- Engine operating hours, battery charge volts and amps
- Volts, with Under/Over Volts protection
- Amps, with Over Current protection
- Frequency, kW, kVA, Power Factor

The **Automatic Mains Fail** variant adds full AMF functionality with integrated mains monitoring and generator/mains breaker control.

The **Generator Parallel** system makes provision for set-to-set synchronisation, whilst the Mains Parallel version allows single set-to-mains synchronisation with integrated AMF functionality.

By means of the **Multi-Set Mains Parallel** system (not illustrated) a number of sets can be synchronised with each other and the mains supply.



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