BROADCROWN

# Technical Data

July 2008

| | | | |
|---|---|---|---|
| Cummins<br>QSK 60 G7 | Newage Stamford<br>PI 734 | Generator Model: | BCC 1850P-60 |
| | | Generator Model: | BCC 2000S-60 |

| | | |
|---|---|---|
| 60 Hz | 3-Phase | Power Factor<br>Cos Φ = 0.8 |

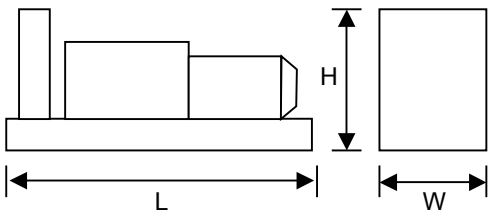
| ***RATINGS*** | PRIME POWER (PRP) | | STANDBY POWER (LTP) | | |
|---|---|---|---|---|---|
| | **BCC 1850P-60** | | **BCC 2000S-60** | | |
| Voltage | kVA | kWe | kVA | **kWe** | Amps |
| 480/277 | 2313 | 1850 | 2500 | **2000** | 3007 |
| 440/254 | 2313 | 1850 | 2500 | **2000** | 3280 |
| 416/240 | 2313 | 1850 | 2500 | **2000** | 3470 |
| 240/138 | 2313 | 1850 | 2500 | **2000** | 6014 |
| 220/127 | 2313 | 1850 | 2500 | **2000** | 6561 |

## Definition of Ratings & Reference Conditions

**Prime Power (PRP)** is the nominal output continuously available, where the average load (variable) does not exceed 70% of the prime power rating during an operating period of 250 hours. The total operating time at 100% prime power must not exceed 500 hours per year. A 10% overload is available for a maximum of 1 hour in 12 hours of operation and must not exceed a total of 25 hours per year.
**Standby Power (LTP)** is the maximum output available (at variable load), for up to 200 hours per year. The average load (variable) must not exceed 80% of the standby power rating, with less than 25 hours per year at the full standby rating. No overload is available. The genset must not operate, at standby rating, in parallel with the public utility under any circumstances.
**Standard Reference Conditions:** air temperature 25°C (77°F), barometric pressure 100kPa [110m(361ft) altitude], 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 Newage 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 (optional)
- Auto Start control system with digital instrumentation
- Main line circuit breaker (optional)
- Factory Test Certificate
- Operation & Maintenance Manual
- Wide range of optional extra features available




## Overall Dimensions & Weights - Open Set

Length (L) = 5995mm *[237in]*
Width (W) = 2316mm *[92in]*
Height (H) = 2875mm *[114in]*

Dry Weight (inc oil) = 13560kg *[29900lb]*
Operating Weight = 14215kg *[31340lb]*

| | Typical Open Generator Sound Pressure Level at 1m, Free Field (dB) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Overall dBA | 63 Hz | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz |
| 119 | 102 | 107 | 110 | 111 | 112 | 111 | 111 | 115 |

All specifications and design are subject to change without notice

BROADCROWN

# BCC 1850P-60
# BCC 2000S-60

## ENGINE & COOLING SYSTEM — *CUMMINS QSK 60 G7*

| | | SI Units | *[US Units]* | PRIME | STANDBY |
|---|---|---|---|---|---|
| Performance | Engine Speed | r/min | *[rpm]* | 1800 | |
| | Gross Power | kWm | *[bhp]* | 1975 *[2648]* | 2180 *[2923]* |
| | Fan Power | kWm | *[bhp]* | 50.0 *[67.1]* | 50.0 *[67.1]* |
| | Net Power | kWm | *[bhp]* | 1925 *[2581]* | 2130 *[2856]* |
| | Emissions Certification | | | | |
| | Altitude Capability | m | *[ft.]* | 1280 *[4000]* | 1280 *[4000]* |
| General | Cylinders / Type | | | 16 cyl / 60° Vee / 4-stroke | |
| | Aspiration / Charge Cooling | | | Turbocharged / Two Pump Two Loop | |
| | Governing / Engine Management | | | TBA | |
| | Bore / Stroke | mm | *[in.]* | 159 / 190 *[4.19 / 4.33 ]* | |
| | Cubic Capacity | litres | *[cu.in.]* | 60.2 *[179]* | |
| | BMEP | kPa | *[psi]* | 2181 *[316]* | 2408 *[349]* |
| Fuel | Fuel Consumption at 100% Power | litres/h | *[gal/h]* | 471 *[124.4]* | 520 *[137.4]* |
| | Fuel Consumption at 75% Power | litres/h | *[gal/h]* | 360 *[95.1]* | 397 *[105.0]* |
| | Fuel Consumption at 50% Power | litres/h | *[gal/h]* | 254 *[67.1]* | 280 *[74.0]* |
| | Total fuel flow | litres/h | *[gal/h]* | 1685 *[445]* | |
| | Standard Fuel Tank Capacity | litres | *[gal]* | TBA *[TBA ]* | |
| Air | Engine Air Flow | m³/s | *[cfm]* | 2.73 *[5785]* | 2.86 *[6060]* |
| | Maximum Air Intake Restriction (used filter) | kPa | *[inWG]* | 6.23 *[25]* | |
| Exhaust | Exhaust Gas Flow | m³/s | *[cfm]* | 6.13 *[12989]* | 6.65 *[14091]* |
| | Exhaust Gas Temperature | °C | *[°F]* | 430 *[806]* | 455 *[851]* |
| | Maximum Exhaust Back Pressure | kPa | *[inWG]* | 6.8 *[27]* | |
| | Typical Exhaust Pipe Diameter | mm | *[in.]* | 400 *[16]* | |
| Cooling | Radiator Cooling Air Flow | m³/s | *[cfm]* | 33.3 *[70559]* | |
| | Max Restriction to Cooling Air Flow | Pa | *[inWG]* | 128 *[0.5]* | |
| | Max Radiator Air-On Temperature | °C | *[°F]* | 50 *[122]* | |
| | Maximum Coolant Temperature | °C | *[°F]* | 105 *[221]* | |
| | Coolant Capacity - Engine Only | litres | *[gal]* | 193 *[51.0 ]* | |
| | Total Coolant Capacity | litres | *[gal]* | 493 *[130]* | |
| Oil | Total Oil Capacity incl Filters | litres | *[gal]* | 280 *[74.0]* | |
| | Typical Oil Pressure at Rated Speed | kPa | *[psi]* | 414 *[60]* | |
| | Typical Oil Consumption (>250hrs Operation) | litres/h | *[pt/h]* | 1.24 *[2.62]* | |
| Thermal | Heat Rejection to Engine Cooling Water | kW | *[btu/min]* | 550 *[31306]* | 615 *[35006]* |
| | Heat Rejection to Charge Cooler | kW | *[btu/min]* | 520 *[29598]* | 590 *[33583]* |
| | Heat Radiated From Engine (Typical) | kW | *[btu/min]* | 190 *[10815]* | 210 *[11953]* |
| Elec | Electrical System Voltage | | V | 24 | |
| | Battery Type | | | 4 (Series-Parallel) 624 | |
| | Battery Capacity SAE CCA | | A | 2020 | |

## ALTERNATOR — *NEWAGE STAMFORD PI 734*

| | | SI Units | *[US Units]* | PRIME | STANDBY |
|---|---|---|---|---|---|
| General Data | Manufacturer | | | NEWAGE STAMFORD | |
| | Model (may vary with voltage) | | | PI 734 F | PI 734 F |
| | Operating Temperature | °C | *[°F]* | 40 *[104]* | 27 *[81]* |
| | 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 exited by PMG | |
| | Insulation System | | | Class H | |
| | AVR Type | | | MX 321 | |
| | Voltage Regulation | | | ± 0.5% | |

BROADCROWN

# BCC 1850P-60
# BCC 2000S-60

## STANDARD CONTROL SYSTEM — *BC 5110 Digital Auto Start*

The standard control system for this model is **BC 5110** (photo), based on the Deep Sea Electronics DSE5110 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 and Amps
- Frequency
- Engine operating hours
- Battery volts

Also featuring :

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


The panel is constructed in 1.5mm steel, powder coated to RAL9001 for a high quality, durable finish.

## CONTROL SYSTEM OPTIONS

**BC 5310** & **BC 5320** control systems (just the DSE modules shown here) provide complete power monitoring and protection facilities.
Compared to BC 5110, 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

The BC 5320 provides full AMF functionality with integrated mains monitoring and generator/mains contactor control.

The **BC 5510** & **BC 5520** control systems provide the same features as BC 5310 & BC 5320 respectively, plus :

- BC 5510 - Set-to-Set Synchronisation
- BC 5520 - Single Set-to-Mains Supply Synchronisation with integrated mains monitoring

For Multi Set-to-Mains synchronisation, each set requires BC 5510 with the addition of one mains monitoring panel **BC 5560** (not illustrated).
See the Synchronisation Guidelines for further details.

All specifications and design are subject to change without notice