

|                     |                         |                     |                        |
|---------------------|-------------------------|---------------------|------------------------|
| Cummins<br>QSX15-G9 | CGT Stamford<br>HCI 544 | Generator<br>Model: | <b>BCC 500-60 T2/F</b> |
|---------------------|-------------------------|---------------------|------------------------|

|       |         |                                  |  |
|-------|---------|----------------------------------|--|
| 60 Hz | 3-Phase | Power Factor<br>Cos $\Phi$ = 0.8 | Emissions<br>EPA Tier 2 Flex Compliant |
|-------|---------|----------------------------------|--|

| RATINGS | PRIME POWER (PRP) |     | STANDBY POWER (LTP) |            |      |
|---------|-------------------|-----|---------------------|------------|------|
|         | kVA               | kWe | kVA                 | kWe        | Amps |
| Voltage |                   |     |                     |            |      |
| 440/254 | 563               | 450 | 625                 | <b>500</b> | 820  |
| 416/240 | 557               | 446 | 613                 | <b>490</b> | 851  |
| 240/120 | 557               | 446 | 613                 | <b>490</b> | 1475 |
| 220/127 | 563               | 450 | 625                 | <b>500</b> | 1640 |

### 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.

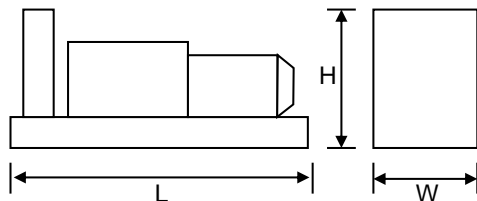
**Note:** The above ratings may be subject to derate at different operating conditions. Please see the Derate Guidelines on the Broadcrown website.

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 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) = 3393mm [134in]  
 Width (W) = 1500mm [59in]  
 Height (H) = 2201mm [87in]

Dry Weight (inc oil) = 4006kg [8831lb]  
 Operating Weight = 4782kg [10542lb]

|             | 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 |
| TBA         | TBA  | TBA    | TBA    | TBA    | TBA     | TBA     | TBA     | TBA     |

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**ENGINE & COOLING SYSTEM**
**CUMMINS QSX15-G9**

|  | SI Units                                    | [US Units]        | PRIME                            | STANDBY               |              |
|--|---|-------------------|----------------------------------|-----------------------|--------------|
| Performance                                  | Engine Speed                                | r/min             | [rpm]                            | 1800                  |              |
|  | Gross Power                                 | kWm               | [bhp]                            | 507 [680]             | 563 [755]    |
|  | Fan Power                                   | kWm               | [bhp]                            | 17 [22.8]             | 17 [22.8]    |
|  | Net Power                                   | kWm               | [bhp]                            | 490 [657]             | 546 [732]    |
|  | Emissions Certification                     |                   |                                  | T2/F                  |              |
|  | Altitude Capability                         | m                 | [ft.]                            | TBA [2800]            | TBA [2800]   |
| General                                      | Cylinders / Type                            |                   | 6 cyl / Inline / 4-stroke        |                       |              |
|  | Aspiration / Charge Cooling                 |                   | Turbocharged / Charge Air Cooled |                       |              |
|  | Governing / Engine Management               |                   | Electronic Governor              |                       |              |
|  | Bore / Stroke                               | mm                | [in.]                            | 137 / 169 [6.26/6.26] |              |
|  | Cubic Capacity                              | litres            | [cu.in.]                         | 15 [1160]             |              |
|  | BMEP  | kPa               | [psi]                            | 2261 [328]            | 2511 [364]   |
| Fuel   | Fuel Consumption at 100% Power              | litres/h          | [gal/h]                          | 117.8 [31.1]          | 135.9 [35.9] |
|  | Fuel Consumption at 75% Power               | litres/h          | [gal/h]                          | 90.5 [23.9]           | TBA [TBA]    |
|  | Fuel Consumption at 50% Power               | litres/h          | [gal/h]                          | 65.3 [17.3]           | TBA [TBA]    |
|  | Total fuel flow                             | litres/h          | [gal/h]                          | 424 [112]             |              |
|  | Standard Fuel Tank Capacity                 | litres            | [gal]                            | 762 [201]             |              |
|  | Air   | Engine Air Flow   | m <sup>3</sup> /s                | [cfm]                 | 0.65 [1380]  |
| Maximum Air Intake Restriction (used filter) |   | kPa               | [inWG]                           | 6.2 [25]              |              |
| Exhaust                                      | Exhaust Gas Flow                            | m <sup>3</sup> /s | [cfm]                            | 1.510 [3200]          | 1.815 [3845] |
|  | Exhaust Gas Temperature                     | °C                | [°F]                             | 468 [874]             | 488 [910]    |
|  | Maximum Exhaust Back Pressure               | kPa               | [inWG]                           | 10.1 [41]             |              |
|  | Typical Exhaust Pipe Diameter               | mm                | [in.]                            | 200 [8]               |              |
| Cooling                                      | Radiator Cooling Air Flow                   | m <sup>3</sup> /s | [cfm]                            | TBA [TBA]             |              |
|  | Max Restriction to Cooling Air Flow         | Pa                | [inWG]                           | TBA [TBA]             |              |
|  | Max Radiator Air-On Temperature             | °C                | [°F]                             | 0 [TBA]               |              |
|  | Maximum Coolant Temperature                 | °C                | [°F]                             | 104 [219]             |              |
|  | Coolant Capacity - Engine Only              | litres            | [gal]                            | 24.0 [6.3]            |              |
|  | Total Coolant Capacity                      | litres            | [gal]                            | 42.0 [11.0]           |              |
| Oil  | Total Oil Capacity incl Filters             | litres            | [gal]                            | 91.0 [24.0]           |              |
|  | Typical Oil Pressure at Rated Speed         | kPa               | [psi]                            | 242 [35]              |              |
|  | Typical Oil Consumption (>250hrs Operation) | litres/h          | [pt/h]                           | 0.32 [0.67]           |              |
| Thermal                                      | Heat Rejection to Engine Cooling Water      | kW                | [btu/min]                        | 138 [7855]            | 162 [9221]   |
|  | Heat Rejection to Charge Cooler             | kW                | [btu/min]                        | 128                   | 159          |
|  | Heat Radiated From Engine (Typical)         | kW                | [btu/min]                        | 36 [2049]             | 42 [2391]    |
| Elec   | Electrical System Voltage                   |                   | V                                | 24                    |              |
|  | Battery Type                                |                   |                                  | 2 (Series) 656        |              |
|  | Battery Capacity SAE CCA                    |                   | A                                | 810                   |              |

**ALTERNATOR**
**CGT STAMFORD HCI 544**

|              | SI Units                      | [US Units] | PRIME                                     | STANDBY   |         |
|--------------|-------------------------------|------------|---|-----------|---------|
| General Data | Manufacturer                  |            | Cummins Generator Technologies - STAMFORD |           |         |
|              | Model (may vary with voltage) |            | HCI 544 D                                 | HCI 544 D |         |
|              | 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                    |            | Self Excited                              |           |         |
|              | Insulation System             |            | Class H                                   |           |         |
|              | AVR Type                      |            | AS 440                                    |           |         |
|              | Voltage Regulation            |            |   | ± 1.0%    |         |

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**STANDARD CONTROL SYSTEM**
**BC 7210 Digital Auto Start**

The standard control system for this model is the **BC 7210** Auto Start system, based on the DSE 7210 control module, which provides :

- Automatic remote start
- Overspeed protection
- Underspeed protection
- Low oil Pressure protection
- High coolant temperature protection
- Fail to Start indication
- Automatic cool-down timer function
- Optional - Common Alarm & System In Auto volt-free contacts

Together with digital displays for :

- Volts, Amps and Frequency
- Engine operating hours

This system also has an increased digital input/output count for external options and, being cost effective in comparison with the optional (BC 701) analogue system, is the preferred choice for most customers.


**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.



**BC 8610 & BC 8620** control systems provide the same features as BC 7310 & BC 7320 respectively, plus :

- BC 8610 - Set-to-Set Synchronisation
- BC 8620 - Single Set-to-Mains Synchronisation with integrated mains monitoring

For Multi Set-to-Mains synchronisation, each set requires BC 8610 with the addition of one mains monitoring panel **BC 8660** (not illustrated). See the Synchronisation Guidelines for further details.



The optional control system for this model is **BC 701** (photo), based on the Deep Sea Electronics DSE701 Key Start controller.

This provides for the manual control of the generator via a two-position key switch and membrane push button for Start, together with Overspeed, Low Oil Pressure and High Coolant Temperature protection.

- LED indications for protection operation & charge alternator fail
- Analogue voltmeter with 7-position selector switch
- Analogue ammeter with 4-position selector switch
- Analogue frequency meter
- Analogue gauges for Oil Pressure, Coolant Temp & Charge Amps
- Engine hours counter
- Emergency Stop button
- One auxiliary input for optional features
- Optional - analogue kW meter, Generator Running volt-free output

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

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**OPTIONAL ACOUSTIC ENCLOSURE**
**Canopy 7**

The optional acoustic enclosure for this model is **Canopy 7** (canopy 7 illustrated), suitable for operation in harsh outdoor environments whilst providing excellent security and acoustic performance. The steel canopy is of fully welded construction with a two-pack polyurethane egg-shell finish in RAL9001 white. The baseframe is finished in RAL9005 satin finish black.

Acoustically, the canopy is designed to meet the requirements of EU Legislation 2000/14/EC, achieved by extensive use of rock wool and perforated zinc steel lining, together with efficient management of cooling air. Exhaust noise is minimised by a unique high performance exhaust silencer, mounted within the baseframe.

A steel fuel tank with filler, gauge and accessory points, is integrated within the baseframe. Alternatively, a bund with separate fuel tank can be provided where this is required.

Other key features include :

- Side-opening doors with retainers for good service access
- Control access door with viewing window
- Separate breaker access door and cable way
- External service access panels
- Heavy duty locks on all doors for total security
- Weather cap on exhaust discharge
- Emergency Stop button relocated to canopy exterior
- Lifting and holding down points on baseframe
- Single roof lifting point.



| Dimensions mm [in] |   |                            | Additional Weight<br>kg [lbs]* | Typical Sound Pressure Level<br>at Standby Power |                    | Fuel Tank Capacity<br>Litres [US gal] |               | Single Point Lift |
|--------------------|---|----------------------------|--------------------------------|--|--------------------|---------------------------------------|---------------|-------------------|
| L                  | x | W x H                      |                                | dB(A) at 1m [3ft]                                | dB(A) at 7m [23ft] | Integral                              | Bunded        |                   |
| 5900<br>[232]      | x | 2040 x 2480<br>[80] x [97] | 3520<br>[7760]                 | 78   | 68                 | 1430<br>[377]                         | 1305<br>[344] | N/A               |

\* Indicative weight of canopy *additional* to open set

Typical SPL is a mean level, measured in free field conditions, with no contributory background noise.

**KEY OPTIONS (Open Set)**
**Engine & Cooling :**

- Oil and coolants drains extended to edge of baseframe
- Manual lub oil drain pump
- Coolant heater
- Medium duty air cleaner
- Exhaust manifold guards

**Alternator :**

- Anti-condensation heater
- Quadrature droop kit
- Alternative AVR
- Thermistor probes and controls

**Fuel System :**

- Baseframe with integral bund and drop-in fuel tank
- Low fuel level switch (single point)
- Fuel level switch (four point)
- Manual fuel transfer pump
- Pumped/gravity fuel transfer system

**Exhaust System :**

- Residential silencer
- Critical silencer
- Flange/connection kit

Please refer to Broadcrown Sales Department for full details of these and other options

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