

| | | | |
|--------------------------|-------------------------|---------------------|--------------------|
| John Deere 4045 HF158 | CGT Stamford UCI 274 | Generator Model: | BCJD 110-50 |
|--------------------------|-------------------------|---------------------|--------------------|

50 Hz

3-Phase

 Power Factor
Cos Φ = 0.8

| RATINGS | PRIME POWER (PRP) | | STANDBY POWER (LTP) | | |
|---------|-------------------|-----|---------------------|-----|------|
| | kVA | kWe | kVA | kWe | Amps |
| Voltage | | | | | |
| 415/240 | 100 | 80 | 110 | 88 | 153 |
| 400/230 | 100 | 80 | 110 | 88 | 159 |
| 380/220 | 100 | 80 | 110 | 88 | 167 |

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. 10% overload is available for a maximum of 1 hour in 12 hours of operation.

Standby Power (LTP) is the maximum output available, for up to 500 hours per year, where the average load (variable) does not exceed 70% of the standby power rating. No overload is available.

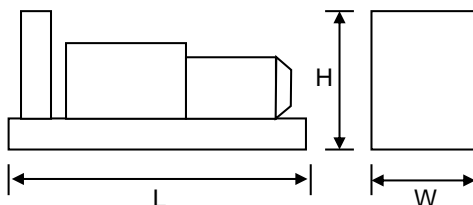
Standard Reference Conditions: air temperature 25°C (77°F), barometric pressure 99kPa, [110m (361ft) altitude], 30% relative humidity.

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 John Deere diesel engine.
- Single bearing CGT Stamford alternator
- Radiator with pressure cap and drain point
- Fully guarded engine-driven fan
- Fully welded steel skid base with fork lift pockets
- Integral fuel tank with filler cap and gauge
- Heavy duty rubber anti-vibration mountings
- 12V starter battery and connecting cables
- Separate engine-driven battery charging alternator
- Spin on oil and fuel filters and dry type air filter element
- Industrial silencer (15dBA reduction) supplied loose
- Key Start control system with analogue instruments
- Main line circuit breaker
- Factory Test Certificate
- Operation & Maintenance Manual
- Wide range of optional extra features available


Overall Dimensions & Weights - Open Set

Length (L) = 2310mm
Width (W) = 860mm
Height (H) = 1560mm

Dry Weight (inc oil) = 1730kg
Operating Weight = 2335kg

| 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 |
| 98 | 84 | 88 | 90 | 92 | 93 | 93 | 86 | 82 |

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ENGINE & COOLING SYSTEM
JOHN DEERE 4045 HF158

| | SI Units | PRIME | STANDBY | |
|-------------|--|---------------------------|-----------|-------|
| Performance | Engine Speed | r/min | 1500 | |
| | Gross Power | kWm | 91 | 102 |
| | Fan Power | kWm | 4.0 | 4.0 |
| | Net Power | kWm | 87 | 98 |
| | Emissions Certification | | x | |
| | Altitude Capability | m | 2300 | 1500 |
| General | Cylinders / Type | 4 cyl / inline / 4-stroke | | |
| | Aspiration / Charge Cooling | Turbocharged / Air to Air | | |
| | Governing / Engine Management | Mechanical Governor | | |
| | Bore / Stroke | mm | 106 / 127 | |
| | Cubic Capacity | litres | 4.5 | |
| | BMEP | kPa | 1624 | 1820 |
| Fuel | Fuel Consumption at 100% Power | litres/h | 27.5 | 29.9 |
| | Fuel Consumption at 75% Power | litres/h | 19.3 | 22.3 |
| | Fuel Consumption at 50% Power | litres/h | 13.5 | 14.7 |
| | Total fuel flow | litres/h | 113 | |
| | Standard Fuel Tank Capacity | litres | 225 | |
| Air | Engine Air Flow | m ³ /s | 0.107 | 0.117 |
| | Maximum Air Intake Restriction (used filter) | kPa | 6.25 | |
| Exhaust | Exhaust Gas Flow | m ³ /s | 0.283 | 0.312 |
| | Exhaust Gas Temperature | °C | 545 | 565 |
| | Maximum Exhaust Back Pressure | kPa | 7.5 | |
| | Typical Exhaust Pipe Diameter | mm | 100 | |
| Cooling | Radiator Cooling Air Flow | m ³ /s | 1.5 | |
| | Max Restriction to Cooling Air Flow | Pa | 210 | |
| | Max Radiator Air-On Temperature | °C | 50 | |
| | Maximum Coolant Temperature | °C | 105 | |
| | Coolant Capacity - Engine Only | litres | 8.5 | |
| | Total Coolant Capacity | litres | 25 | |
| Oil | Total Oil Capacity incl Filters | litres | 12 | |
| | Typical Oil Pressure at Rated Speed | kPa | 345 | |
| | Typical Oil Consumption (>250hrs Operation) | litres/h | 0.07 | |
| Thermal | Heat Rejection to Engine Cooling Water | kW | 38 | 42 |
| | Heat Rejection to Charge Cooler | kW | 9 | 12 |
| | Heat Radiated From Engine (Typical) | kW | 11.4 | 12.8 |
| Elec | Electrical System Voltage | V | 12 | |
| | Battery Type | | 1 X 643 | |
| | Battery Capacity SAE CCA | A | 660 | |

ALTERNATOR
CGT STAMFORD UCI 274

| | SI Units | PRIME | STANDBY | |
|--------------|-------------------------------|---|--------------------------------|----|
| General Data | Manufacturer | Cummins Generator Technologies - STAMFORD | | |
| | Model (may vary with voltage) | UCI 274 C | UCI 274 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 | | Self Excited | |
| | Insulation System | | Class H | |
| | AVR Type | | SX 460 | |
| | 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 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.



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 2

The optional acoustic enclosure for this model is **Canopy 2**, suitable for operation in harsh outdoor environments whilst providing excellent security and acoustic performance. All steel canopy components are pre-treated and polyester powder coated (to a typical thickness of 70-80µm) in RAL9001 white and the baseframe is finished in RAL9005 black.

Acoustically, the canopy is designed to meet the requirements of EU Legislation 2000/14/EC, achieved by extensive use of fire-retardant polyurethane foam together with efficient management of cooling air. Exhaust noise is minimised by internally mounted high performance exhaust silencers.

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 :

- Gull-wing doors with gas struts for good service access
- Panel/breaker access door with viewing window
- 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
- Fork Lift pockets
- Optional single roof lifting point.



| Dimensions (mm) | | | Additional Weight (kg) * | Typical Sound Pressure Level at 75% of Prime Power | | Fuel Tank Capacity (Litres) | | Single Point Lift |
|-----------------|---|-------------|--------------------------|--|-------------|-----------------------------|--------|-------------------|
| L | x | W x H | | dB(A) at 1m | dB(A) at 7m | Integral | Bunded | |
| 2810 | x | 1080 x 1780 | 450 | 78 | 68 | 230 | 205 | Optional |

* 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 MECHANICAL OPTIONS (Open Set)
Engine & Cooling :

- Electronic governor
- 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
- Fuel filter/separator
- 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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