



## Specification Sheet

# Rental Power 70 kW

## U.S EPA Tier IV Emissions



### Description

This Cummins Power Generation rental package is a fully integrated mobile power generation system, providing optimum performance, reliability, and versatility for standby and prime power applications.

### Features

#### Cummins Diesel Engines

- U.S. Tier IV Final and EU SIIIa certified Cummins QSB5-G11 engines which meet emissions limits without the use of a diesel particulate filter (DPF)
- Dual speed engine for operation at 50 or 60 Hz
- Advanced electronic engine controls with integrated aftertreatment system provide superior fuel efficiency while reducing emissions
- High-pressure common rail fuel system reduces engine noise and smoke
- Cummins Direct Flow™ air filtration offering improved air management, longer service life, and easier serviceability
- 2-stage fuel filtration with optimum particle and water separation

#### Control Features

- The most advanced, reliable and capable generator set control system on the market today
- PowerCommand 3.3© with Masterless Load Demand (MLD) technology enables smartly adapting power to match varying load demand. MLD capable generators allow sharing of information among paralleled generator sets.
- Controls provide precise frequency and voltage regulation, alarm and status message display in one easy to operate customer interface

### Engine Controls

- Oil pressure and coolant temperature gauge
- Fuel level gauge, Diesel Exhaust Fluid (DEF) level gauge and battery voltage gauge
- Digital Hour meter (5-digit read out)
- Engine control module includes remote start capability

### Stamford Alternators

- 12-lead reconnectable alternators fitted with voltage selection switch
- Permanent magnet excitation for improved performance in non-linear load applications

### Rental Package Enclosure

- Camlock & busbar distribution panel
- Sound attenuated, white powder coated lockable enclosure
- 24 hour fuel tank (75% prime) with gauge
- Roof mounted, single point lift
- Cooling system rated for 122 °F (50 °C) at 100% standby ambient
- Complete engine fluid containment reservoir
- 4 position voltage selector switch (60Hz: 277/480 or 139/240 or 120/208 VAC 3 phase or 120/240 VAC 1 phase). Also first position 50Hz: 230/400 VAC 3 phase)
- Shore power (15A/120V) – for coolant heater, battery charger, engine oil heater and battery warmer
- Conveniently located analog gauges and heated Human Machine Interface (HMI) display

### Rental Package Options

- Optional Auxiliary Fuel and DEF connections
- DOT approved electric brake trailer with heavy duty center mounted jack, ball or pintle hitch
- DOT approved hydraulic brake trailer with heavy duty center mounted jack, ball or pintle hitch

Model	Voltages (V)	Standby Rating		Prime Rating		Sound level Full load @ 7m	Alternator model
		60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)		
C70D2RE	208/240/480	70 (87)	63 (78)	63 (78)	50 (63)	67 dB(A)	UCI224G

## Engine Specifications

Engine model	QSB5-G11
Alternator data sheet	UCI (208/240/480)
Tier rating	Tier IV
Design	4 cycle, In-Line, turbocharged and after-cooled
Bore	107 mm (4.21 in.)
Stroke	124.0 mm (4.88 in.)
Displacement	4.5 liters (274.6 in <sup>3</sup> )
Cylinder block	Cast iron, In-Line 4 cylinder
Battery capacity	2 x 760 cca
Battery charging alternator	70 amps
Starting voltage	24 volt, negative ground
Fuel system	Direct injection HPCR system
Fuel filter	Dual Spin on fuel filter with water separator
Air cleaner type	2-stage, dry replaceable element with dust ejector
Lube oil filter type(s)	Single spin-on, full flow
Standard cooling system	120 °F (49 °C) ambient radiator

## Alternator Specifications

Design	Brushless, 4 pole, drip proof revolving field
Stator	Double layer concentric, 2/3 winding pitch
Rotor	Single bearing, flexible disc
Insulation system	Class H per NEMA MG1-1.65 (208/240/480 VAC)
Standard temperature rise	125/40 °C prime (208/480 VAC)
Exciter type	PMG (permanent magnet generator)
Phase rotation	A (U), B (V), C (W)
Alternator cooling	Direct drive centrifugal blower fan
AC waveform total harmonic distortion	< 1.5% no load, < 5% non-distorting balance linear load
Telephone influence factor (TIF)	< 50 per NEMA MG1-22.43
Telephone harmonic factor (THF)	< 2%

## Power Capability Specifications (Assume power factor = 0.80 for 3 phase amps)

	Standby rating				
	240 V, 1 phase Amps 60Hz	208 V, 3 phase Amps 60Hz	480 V, 3 phase Amps 60Hz	240 V, 3 phase Amps 60Hz	400 V, 3 phase Amps 50Hz
<b>C70D2RE</b>	195	243	105	210	114

## Electrical Power Panel Specifications

Model voltage	120 V duplex receptacles	240 V twist	Load lug connection (stud diameter)	Load lug circuit breakers
120/480 Volt	2 - 20 Amp GFCI	3 - 50 Amp	1/2 inch	400 Amp

## PowerCommand 3.3 Control System



An integrated microprocessor based generator set control system providing voltage regulation, engine protection, alternator protection, operator interface and isochronous governing. Refer to document S-1570 for more detailed information on the control.

**Simplified display for rental operators** - simplified display tailored for rental equipment operations for ease of use.

**Masterless Load Demand (MLD)** - The controller is capable of smartly managing power from paralleled generators to match varying load patterns.

**Power management** – Control function provides battery monitoring and testing features and smart starting control system.

**Advanced control methodology** – Three phase sensing, full wave rectified voltage regulation, with a PWM output for stable operation with all load types.

**Regulation compliant** – Prototype tested: UL, CSA and CE compliant.

**Service** - InPower™ PC-based service tool available for detailed diagnostics, setup, data logging and fault simulation.

**Easily upgradeable** – PowerCommand controls are designed with common control interfaces.

**Reliable design** – The control system is designed for reliable operation in harsh environment.

### Operator Panel Features

#### Operator/display functions

- Displays paralleling breaker status
- Provides direct control of the paralleling breaker
- 320 x 240 pixels graphic LED backlight LCD
- Auto, manual, start, stop, fault reset and lamp test/panel lamp switches
- Alpha-numeric display with pushbuttons
- LED lamps indicating genset running, remote start, not in auto, common shutdown, common warning, manual run mode, auto mode and stop

#### Paralleling control functions

- First Start Sensor System selects first genset to close to bus
- Phase Lock Loop Synchronizer with voltage matching
- Sync check relay
- Isochronous kW and kVar load sharing
- Enhanced safety features for paralleling generators
- Masterless Load Demand (MLD)

#### Alternator data

- Line-to-neutral and line-to-line AC volts
- 3-phase AC current
- Frequency
- kW, kVar, power factor kVA (three phase and total)

#### Engine data

- DC voltage
- Lube oil pressure
- Coolant temperature
- Comprehensive FAE data (where applicable)

#### Other data

- Fault history
- Data logging and fault simulation (requires InPower)

### Standard Control Functions

#### Digital governing

- Integrated digital electronic isochronous governor
- Temperature dynamic governing

#### Digital voltage regulation

- Integrated digital electronic voltage regulator
- 3-phase, 4-wire line-to-line sensing
- Configurable torque matching

#### AmpSentry AC protection

- AmpSentry protective relay
- Over current and short circuit shutdown
- Over current warning
- Single and three phase fault regulation
- Over and under voltage shutdown
- Over and under frequency shutdown
- Overload warning with alarm contact
- Reverse power and reverse var shutdown
- Field overload shutdown

#### Engine protection

- Battery voltage monitoring, protection and testing
- Overspeed shutdown
- Low oil pressure warning and shutdown
- High coolant temperature warning and shutdown
- Low coolant level warning or shutdown
- Low coolant temperature warning
- Fail to start (overcrank) shutdown
- Fail to crank shutdown
- Cranking lockout
- Sensor failure indication
- Full authority electronic engine protection

#### Control functions

- Time delay start and cool down
- Real time clock for fault and event time stamping
- Cycle cranking
- Load shed
- Remote emergency stop

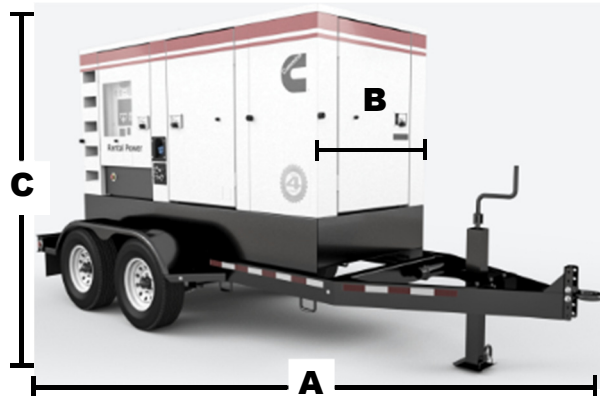
## Ratings Definitions

### Standby:

Applicable for supplying emergency power for the duration of normal power interruption. No sustained overload capability is available for this rating. (Equivalent to Fuel Stop Power in accordance with ISO3046, AS2789, DIN6271 and BS5514). Nominally rated.

### Prime (unlimited running time):

Applicable for supplying power in lieu of commercially purchased power. Prime power is the maximum power available at a variable load for an unlimited number of hours. A 10% overload capability is available for limited time. (Equivalent to Prime Power in accordance with ISO8528 and Overload Power in accordance with ISO3046, AS2789, DIN6271, and BS5514).



## Dimensions

Model	Dim "A" mm (in.)	Dim "B" mm (in.)	Dim "C" mm (in.)	Weight w/o fuel kg (lbs.) **	Weight with fuel kg (lbs.) **	Fuel capacity liters (gal)*
<b>C70D2RE</b>	3063 (121)	1262 (50)	1953 (77)	2300 (5070)	3080 (6790)	495 (131)
<b>With trailer</b>	4798 (189)	2106 (83)	2444 (96)	2980 (6570)	3761 (8292)	495 (131)

\* Onboard DEF capacity is sized for 24 hours of operation at 15 gallons

\*\* Weights are CAD determined & within +/- 2%

## Fuel Consumption

60 Hz Ratings, kW (kVA)	Standby				Prime				Hours of operation 75% PRP
	Load	1/4	1/2	3/4	Full	1/4	1/2	3/4	
US Gal/hr.	2.3	4.0	5.9	8.0	2.1	3.8	5.3	7.2	27
L/hr.	8.7	15.1	22.3	30.3	7.9	14.4	20.1	27.3	27

Note: DEF consumption less than 4% of fuel consumption

\*\* Fuel consumption number are conservative pending final test.

## Trailer Information

Model	Tire size	Tire type	Load range	Number of tires per trailer	Lug pattern
<b>C70D2RE</b>	225/75-R15	Radial	2535 lbs. - each	4	8 hole

## Certifications

These generator sets are certified to following standards:



CAN/CSA STD C22.2 NO. 100  
CAN/CSA STD C22.2 NO. 14

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