



# Technical Data

Jan 2017

Perkins 4012-46TWG4A	CGT Stamford PI 734	Generator Model:	<b>G1600SPE5</b>
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50 Hz	3-Phase	Power Factor Cos $\Phi$ = 0.8
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RATINGS	PRIME POWER (PRP)		STANDBY POWER (ESP)		
	<b>G1600SPE5</b>				
Voltage	kVA	kWe	kVA	kWe	Amps
415/240	<b>1500</b>	1200	1600	1280	2226
400/230	<b>1500</b>	1200	1600	1280	2309
380/220	<b>1500</b>	1200	1600	1280	2431

**Definition of Ratings & Reference Conditions**

**Prime Power (PRP)** is the nominal output continuously available, where the average load (variable) does not exceed 80% of the prime power rating. 10% overload is available for a maximum of 1 hour in 12 hours of operation.

**Standby Power (ESP)** the maximum output available (at variable load), for up to 500 hours per year. The average load (variable) must not exceed 80% of the standby power rating. No overload is available. The genset must not operate, at standby rating, in parallel with the public utility under any circumstances.

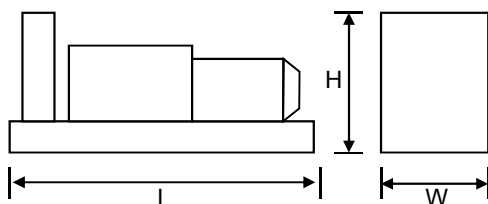
**Standard Reference Conditions:** air inlet temperature 25°C (77°F), barometric pressure 100kPa [110m (361ft) altitude] and 30% relative humidity.

**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) = TBAm
Width (W) = TBAm
Height (H) = TBAm
Dry Weight (inc oil) = TBAkg
Operating Weight = TBAkg

	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

All specifications and design are subject to change without notice



G1600SPE5

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ENGINE & COOLING SYSTEM PERKINS 4012-46TWG4A

	SI Units	PRIME	STANDBY	
Performance	Engine Speed	r/min	1500	
	Gross Power	kWm	1308	1396
	Fan Power	kWm	54	
	Net Power	kWm	1254	1342
	Emissions Certification		—	
	Altitude Capability	m	1220	1220
General	Cylinders / Type		12 cyl / 60° Vee / 4-stroke	
	Aspiration / Charge Cooling		Turbocharged / JWAC	
	Governing / Engine Management		Electronic Governor	
	Bore / Stroke	mm	160 / 190	
	Cubic Capacity	litres	45.842	
	BMEP	kPa	2283	2436
Fuel	Fuel Consumption at 100% Power	litres/h	316	350
	Fuel Consumption at 75% Power	litres/h	233	258
	Fuel Consumption at 50% Power	litres/h	160	177
	Total fuel flow	litres/h	1020	
	Standard Fuel Tank Capacity	litres	TBA	
Air	Engine Air Flow	m³/s	1.9	2.0
	Maximum Air Intake Restriction (used filter)	kPa	4.0	
Exhaust	Exhaust Gas Flow	m³/s	4.8	4.8
	Exhaust Gas Temperature	°C	470	470
	Maximum Exhaust Back Pressure	kPa	5	
	Typical Exhaust Pipe Diameter	mm	2 X 250	
Cooling	Radiator Cooling Air Flow	m³/s	32	
	Max Restriction to Cooling Air Flow	Pa	0	
	Max Radiator Air-On Temperature	°C	44	
	Maximum Coolant Temperature	°C	98	
	Coolant Capacity - Engine Only	litres	73	
	Total Coolant Capacity	litres	201	
Oil	Total Oil Capacity incl Filters	litres	177	
	Typical Oil Pressure at Rated Speed	kPa	450	
	Typical Oil Consumption (>250hrs Operation)	litres/h	0.8	
Thermal	Heat Rejection to Engine Cooling Water	kW	472	537
	Heat Rejection to Charge Cooler	kW	275	294
	Heat Radiated From Engine (Typical)	kW	65	69
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 C	PI 734 C
	Operating Temperature	40	27
	Coupling / No. of Bearings	Direct / Single Bearing	
	Phase / Poles / Winding Type	3-Phase / 4-Pole / Winding 311	
	Power Factor	Cos $\Phi$ = 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 7310 Digital Auto Start

The standard control system for this model is **BC 7310** (photo), based on the Deep Sea Electronics DSE7310 Digital Auto Start controller.

This provides for the manual and automatic remote start of the generator, together with full control and protection of the engine via the ECU. LCD digital display of :

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

Also featuring :

- Full RS485 Telemetry implementation
- Automatic cool-down timer function
- Emergency Stop button
- Ample auxiliary inputs/outputs for optional features
- Optional (shown) - battery charger and door mounted illuminated switch.



CONTROL SYSTEM OPTIONS

The **BC 7320** control system (just the DSE7320 module is shown here) has an identical feature set to the BC 7310 but with the addition of full AMF functionality with integrated mains monitoring.



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 Supply 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.