

## Model: C165D5

Powered by CUMMINS



### Generator Specification

Power (kVA)	150	165
Power (kW)	120	132
Rated speed (r.p.m)	1500	
Standard voltage (V)	400/230V	
Rated at power factor (cos phi)	0.8	



AGG Power gensets are compliant with ISO 9001 and CE standard, which include the following directives:

- 2006/42/EC Machinery safety.
- 2006/95/EC Low voltage
- EN 60204-1: 2006+A1: 2009, EN ISO 12100: 2010, EN ISO 13849-1: 2008, EN 12601: 2010

#### (1) PRP (Prime Power):

According to ISO 8528-1, prime power is the maximum power available during a variable power sequence, which may be run for an unlimited number of hours per year, between stated maintenance intervals. The permissible average power output during at 24 hours period shall not exceed 80% of the prime power. 10% overload available for governing purposes only.

#### (2) ESP (Standby Power):

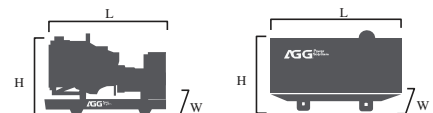
According to ISO 8528-1, it is defined as the maximum power available, under the agreed operating conditions, for which the generating set is capable of delivering for up to 500 hours of operation per year (of which no more than 300 hours for continuous use) with the maintenance intervals and procedures being carried out as prescribed by the manufacturers. No overload capability is available.

Powers Voltage (V)	ESP		PRP		Standby Amps
	KVA	KW	KVA	KW	
415/240	165	132	150	120	229.6
400/230	165	132	150	120	238.2
380/220	165	132	150	120	250.7

Model	C165D5	
Engine brand	Cummins	
Engine model	6BTAA5.9G12	
Speed control type	Electronic	
Phase	3	
Control system	Digital	
Starter motor voltage	24V	
Frequency	50HZ	
Engine speed (RPM)	1500	
Fuel Consumption (L/H)	100% standby power	38
	100% prime power	34
	75% prime power	26
	50% prime power	17

#### Standard reference Conditions

Note: Standard reference condition 25°C [77°F] air inlet temp, 1000m (328ft) A.S.L 30% relative humidity. Fuel consumption data with diesel fuel with specific gravity of 0.85 and conforming to BS 2869: 1998, Class A2



Dimension and Weight	Open	Silent
Dimension		
Length (L)	2370 mm	3600 mm
Width (W)	1025 mm	1130 mm
Height (H)	1635 mm	1950 mm
Net Weight	1306 KG	1882 KG
Fuel Tank (L)	280	350

## ■ Engine Specification: 6BTAA5.9G12

### Basic technical data

No. of cylinders	6
Cylinder arrangement	In-line
Cycle	4 stroke
Induction system	Turbocharger
Compression ratio	17.3:1
Bore	102 mm
Stroke	120 mm
Displacement	5.9L
Engine idles speed	750 - 850 RPM
Approximate engine weight	413kg

### Cooling system

Coolant capacity-engine	10L
Maximum coolant friction head external to engine:	
- 1800 rpm	35kPa
- 1500 rpm	28kPa
Maximum static head of coolant above engine crank centerline	14 m
Standard Thermostat (Modulating) Range	82 - 95°C
Minimum Pressure Cap	69 kPa
Maximum Top Tank Temperature for Standby / Prime Power	104 / 100 °C

### Fuel system

Injection system	BYC P7100
Governor type	Electronic
Maximum restriction at lift pump	13.6kPa
Maximum fuel inlet temperature	/
Total drain flow (constant for all loads)	30 litre/ hour

### Air intake system

Maximum intake air restriction with heavy duty air cleaner:	
- Dirty element	6.2kPa
- Clean element	3.7kPa

### Lubrication system

Engine oil pressure for engine protection devices:	
— Idle speed (Minimum)	207 kPa
— Governed speed (Maximum)	345 kPa
Maximum oil temperature	121 °C
Minimum required lube system capacity-sump plus filters	16.4L

### Electrical system

Cranking motor (Heavy duty, positive engagement)	24V
Battery charging system, negative ground	40 ampere
Maximum allowable resistance of cranking circuit	0.002 ohm
Minimum recommended battery capacity- cold soak	400 CCA

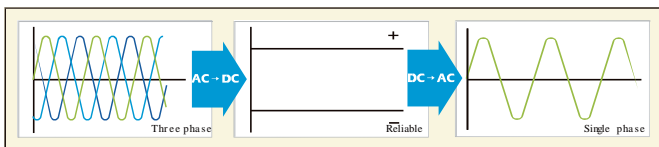
### General installation

### Prime power

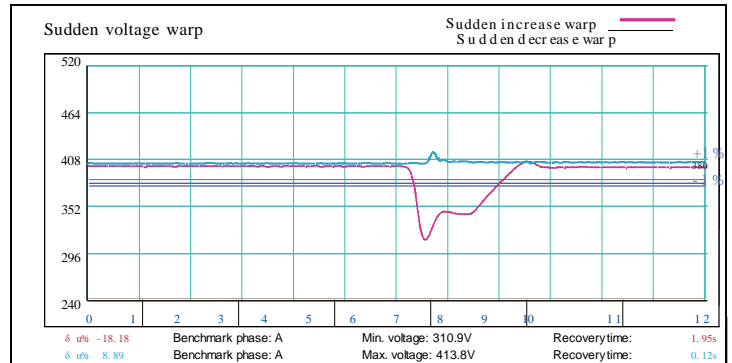
Gross engine power output	140kw
Piston speed	6.0 m/s
Friction horsepower	12.7 kW
Engine water flow to engine	2.0 l/sec
Intake air flow	137 l/sec
Exhaust gas flow	321 l/sec
Exhaust gas temperature	495 °C
Radiated heat to ambient	17 kW
Heat rejection to coolant	57 kW
Heat rejection to fuel	113 kW

## ■ Alternator Specification

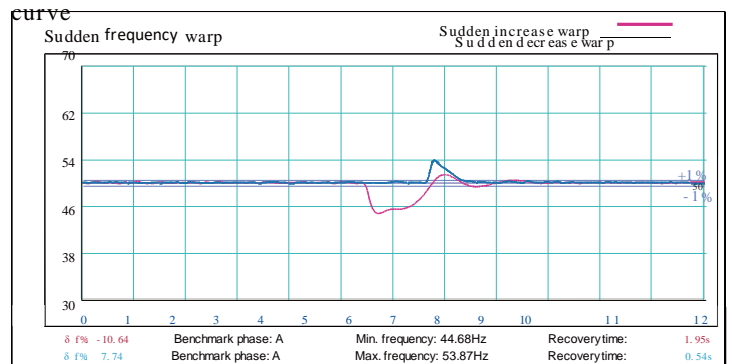
Alternator	
Number of phase	3
Power factor (Cos Phi)	0.8
Poles	4
Winding Connections (standard)	Star-serie
Terminals	12
Insulation type	H class
Winding Pitch	2 / 3
IP rating	IP23
Excitation system	Sel f-exci ted
Bearing	Single bearing
Coating	Vacuim impregnation
Voltage regulator	A.V.R
Couping	Flexible disc



Emergency voltage curve



Emergency frequency curve



## ■ Options

Engine	Alternator	Generator Sets	Fuel System
<ul style="list-style-type: none"> <li>Water Jacket Pre-heater</li> <li>Fuel heater</li> </ul>	<ul style="list-style-type: none"> <li>Winding Temp measuring Instrument</li> <li>Alternator Pre-heater</li> <li>PMG</li> <li>Anti-damp and anti-corrosion treatment</li> <li>Anti-condensation heater</li> <li>Winding and bearing RTD</li> </ul>	<ul style="list-style-type: none"> <li>Tools with the machine</li> <li>Extended range fuel tank</li> <li>Bunded fuel tank</li> </ul>	<ul style="list-style-type: none"> <li>Low fuel level alarm</li> <li>Automatic fuel feeding system</li> <li>Fuel T-valves</li> </ul>
Canopy	Lub oil system	Cooling System	Control Panel
<ul style="list-style-type: none"> <li>Rental type Canopy</li> <li>Trailer</li> </ul>	<ul style="list-style-type: none"> <li>Oil Pre-heater</li> <li>Oil temp sensor</li> </ul>	<ul style="list-style-type: none"> <li>Front heat protection</li> </ul>	<ul style="list-style-type: none"> <li>Remote control panel</li> <li>ATS</li> <li>Synchronizing controller</li> <li>Adjustable earth leakage relay</li> </ul>

## Control Panel

### Configuration

- Emergency stop button
- Protection MCB
- Battery charger
- Integrated aviation plug
- ATS connection
- Digital control module

### Features

- 3 phase generator set monitoring
- Support of engines equipped with electronic control unit
- Comprehensive diagnostic message
- Automatic or manual start/stop of the gensets
- Push buttons for simple control, lamp test
- Graphic back-lit LCD display
- Parameters adjustable via keyboard or PC
- Mains measurements ( 50HZ/60HZ)
- Generator measurements ( 50HZ/60HZ)
- Comprehensive shutdown or warning on fault condition
- 3 phase Generator protections
  - Over-/under voltage
  - Over-/under frequency
  - Current/voltage asymmetry
  - Over current/overload
- 3 phase AMF function
  - Over-/under frequency
  - Over-/under voltage
  - Voltage asymmetry
- Configurable analog inputs
- Battery voltage, engine speed (pick-up) measurement
- Configurable programmable binary inputs and outputs
- Warm-up and cooling functions
- Generator C.B. and Mains C.B. control with feedback and return timer
- RS232 interface
- Modem communication support
- Hours counter
- Sealed to Ip65
- Event log

### Benefits

- Less wiring and components
- Integrated solution
- Less engineering and programming
- User friendly set-up and button layout
- Module can be configured to suit individual applications
- PC software for simplified configuration
- Wide range of communication capabilities

- Operation temp: -20 °C to + 70 °C
- Storage temp: -30 °C to +80 °C
- Operating humidity: 95% w/o condensation
- Vibration: 5-25Hz, ±1.6 mm  
5-100Hz, a=4g
- Shocks: a= 500 m/s<sup>2</sup>

### Options

- Ethernet interface (Remote monitoring and control)
- GSM modem/wireless internet (Remote monitoring and control)
- RS232-RS485 Dual port interface
- Synchronizing control panel
- Distribution board with sockets kit and power busbar
- Battery trickle charge ammeter
- Earth leakage protection
- Earth fault protection
- Low fuel level alarm
- Low fuel level shutdown
- High fuel level alarm
- Fuel transfer system control
- Low coolant level shutdown
- High lube oil temp shutdown
- Overload via alarm switch on breaker
- Engine coolant heater controls
- Control panel heater
- Speed adjust switch
- Oil temp displayed on LCD screen
- Additional 8 inputs and outputs