

# WPG110\*1

## DIESEL GENERATING SET

### GENERATING SET RATINGS 50Hz – 1500rpm @ 0.8p.f.

Voltage	PRP		ESP	
	kVA	kWe	kVA	kWe
V				
415/240	100	80	110	88
400/230	100	80	110	88
380/220	100	80	110	88

### Engine

- Cast iron gantry type structure block
- One-piece forged crankshaft
- Separate cast iron cylinder heads and wet liners
- Aluminum alloy pistons with oil cooling gallery

### Cooling system

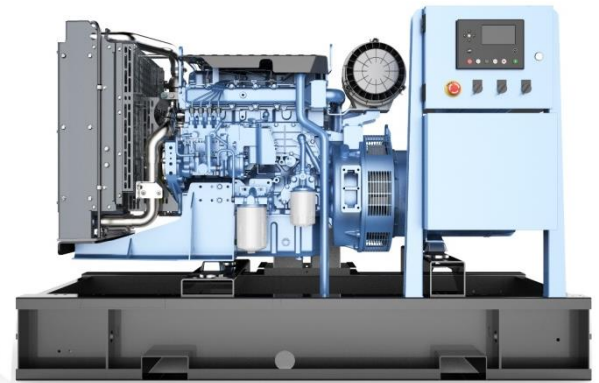
- Radiator and hoses supplied directly mounted on the engine
- Thermostatically-controlled system with belt driven coolant pump and pusher fan

### Air intake and exhaust system

- Top-mounted turbocharger optimized for gen-set application
- Special rear-mounted air filter with restriction indicator
- Exhaust manifold shield for heat isolation

### Fuel system

- P-type fuel injection pump and injector for higher injection pressure
- Duplex fine filter for better efficiency



### Electrical system

- 12 Vdc electric starter motor and battery charging alternator
- Low oil pressure & high water temperature sensors

### Lubrication system

- Flat bottom large capacity oil pan
- Spin-on full-flow lube oil filter

### Alternator

- Brushless, 4 Pole, IP23 drip-proof revolving field design
- Class H insulation and Class H temperature rise
- Low reactance with 2/3 pitch windings on the stator
- Direct-coupled by flexible disc
- Sustained overcurrent >300% in 10 sec
- Direct drive centrifugal blower fan cooling

### Control module


- DSE control module is ideal for a wide control range to manage, monitor, and diagnose quickly and easily.
- Display status message Provide protection Auto shutdown at fault detection

<b>GENERATING SET SPECIFICATIONS</b>		
Governor and regulation class		In accordance to ISO 8528-5 Class G2 performance
Phase number and connection		3 phase, 4 wires, Y-type
Cooling method		Closed looped water-cooled
Starting method		DC 12V Electric starter
Steady-state voltage deviation		$\leq \pm 2.5\%$
Steady-state frequency band		$\leq 1.5\%$
<b>ENGINE</b>		
Brand / Model		Weichai / WP4.1D100E200
Gross Power	kWm	ESP - 100 / PRP - 90
Cylinder / Type / Aspiration		4 / In-line / Turbocharged and intercooled
Bore x Stroke	mm	105 x 118
Displacement	L	4.087
Compression ratio		17.5:1
Brake Mean Effective Pressure	kPa	ESP – 1960

<b>COOLING SYSTEM</b>		
Type of Coolant		Liquid (water + 50% antifreeze)
Total Cooling System Capacity (with Radiator)	L	14.2
Max coolant temperature – shutdown	°C	105
Cooling Fan Airflow	m <sup>3</sup> /min	175
<b>LUBRICATION SYSTEM</b>		
Operating Temperature range before Engine	°C	78 -105
Oil fuel consumption ratio based on engine fuel consumption data	g/kW.hr	$\leq 0.1\%$
Total system capacity (including filters)	L	13
Type of oil filter		Spin-on full flow filter

FUEL SYSTEM			
Type of fuel filter			Spin-on fuel filter
Min. internal diameter of the supply pipe	mm		12
Min. internal diameter of the return pipe	mm		12
Max. fuel return restriction	Bar		0.12
Max. fuel inlet temperature	°C		50
Fuel supply flow	L/hr		84
Fuel Consumption (Tolerance +3%)			
	Rating	gr/kWh	L/hr
	100%ESP	204.7	24.43
	100%PRP	202.4	21.25
	75% PRP	200	16.01
	50% PRP	208.1	10.58
	25% PRP	229.6	6.02
EXHAUST SYSTEM			
Exhaust Gas temperature after the turbocharger	°C		700
Exhaust Gas flow	m <sup>3</sup> /min		ESP – 21.63 / PRP – 19.01
Max. Exhaust back pressure	mBar		50

ALTERNATOR		
Brand / Model	WEICHA / WHA-100-4/0.4	LEROY-SOMER / TAL-A44-D
Rated Current	144A	144A
Coupling / No. of Bearing	Direct / Single	Direct / Single
Winding Pitch	2/3	2/3
Type of Excitation	Self-excitation	Self-excitation
Cooling type	Air	Air
Voltage regulation method	AVR	AVR
Insurance	Class H	Class H
Temperature rise	Class H	Class H
Protection Grade	IP23	IP23
Efficiency at 0.8p.f. @100% load	90.4%	88.6%

CONTROL MODULE	
Back-lit LCD display	
3 Phase generator and 3 Phase Mains monitoring	
Monitoring speed, frequency, voltage, current, oil pressure, coolant temperature and fuel level	
Display warning, shutdown and engine status information	
Hours counter provides accurate information for monitoring and maintenance.	

## Ratings definitions

### Emergency Standby Power (ESP):

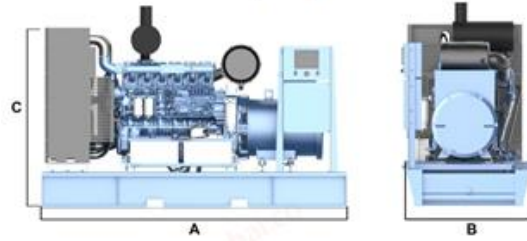
Emergency Standby Power is the maximum power available for a varying load for the duration of a main power network failure. The average load factor over 24 hours of operation should not exceed 70% of the engine's ESP power rating.

Typical operational hours of the engine are 200 hours per year, with a maximum usage of 500 hours per year. This includes an annual maximum of 25 hours per year at the ESP power rating. No overload capability is allowed. The engine is not to be used for sustained utility paralleling applications.

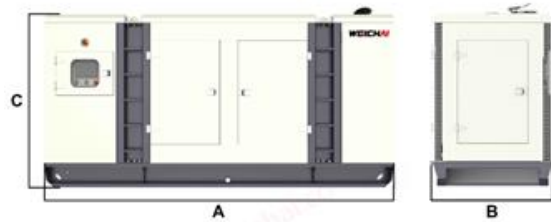
### Prime power (PRP):

Prime Power is the maximum power available for unlimited hours of usage in a variable load application. The average load factor should not exceed 70% of the engine's PRP power rating during any 24 hour period. An overload capability of 10% is available; however, this is limited to 1 hour within every 12 hour period.

### Open genset



### Silence genset



This outline drawing is to provide representative configuration details for Model series only. See respective model data sheet for specific model outline drawing number.

Do not use for installation design

## Dimension and Weight

Structure	Model	Dim "A" mm	Dim "B" mm	Dim "C" mm	Dry wt.* kg
Open	WPG110F1	1930	860	1218	1115
Silence	WPG110L1	2880	1050	1600	1675

\* Note: Weights represent a set with standard features. See outline drawings for weights of other configurations.

## Codes and standards

ISO 9001	This generating set is designed and manufactured in facilities certified to ISO 9001.	ISO 8528	This generating set has been designed to comply with ISO 8528 regulation.
CE	The CE marking is only valid when equipment is used in a fixed installation application. Material compliance declaration is available upon request.		

For more information contact your local Weichai distributor or visit [www.weichai.com](http://www.weichai.com)