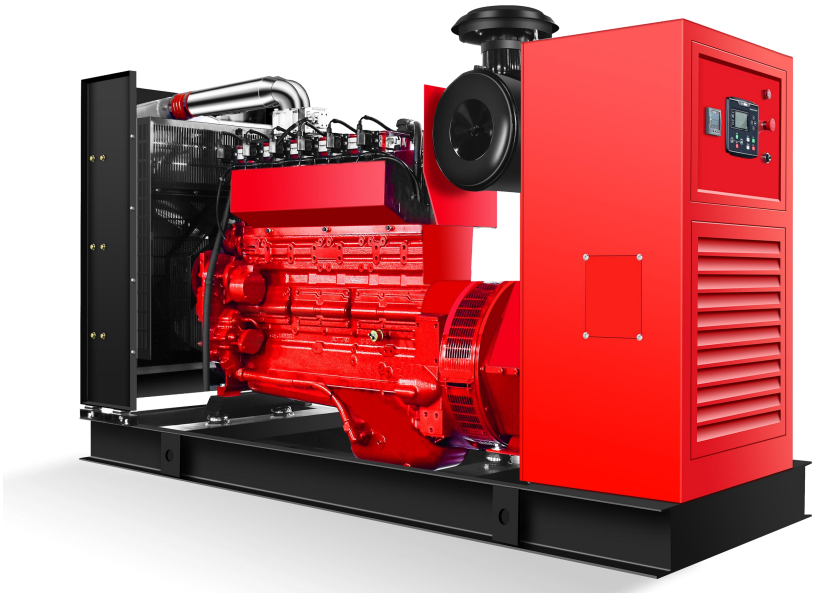
YSD

WL250-CNG

Natural gas/biogas generator set
Rated power：250KW
Voltage frequency：400V/50Hz



Product introduction

The WL250-CNG series gas generator set is an automated generator set specially developed for natural gas and biogas by our company using advanced domestic and foreign technologies and integrating many years of market experience. This unit can meet the full-load power generation requirements of low-concentration biogas (CH4≥30%). After our rigorous engine structure upgrades and combustion technology development, this series of natural gas and biogas generator sets have the characteristics of high efficiency, low energy consumption, easy maintenance, and high reliability to meet customer needs.

Energy efficient

The unit adopts our company independently developed large excess air coefficient combustion organization technology and digital boost matching technology to ensure that the unit achieves lean combustion in the full power range and accurately controls the excess air coefficient ≥ 1.5. The engine adopts our gas composition adaptive technology, which can automatically adapt to natural gas and biogas of various concentrations and calorific values, enabling the engine to achieve rapid combustion, even operation of each cylinder, and improve power generation efficiency when using natural gas and biogas.

High reliability

The unit uses a stable and mature engine, which has been upgraded with our technology and replaced with specially developed engine cylinder liners, pistons, valves, camshafts and other easy-to-wear parts. This has overall improved the engine's high temperature resistance and corrosion resistance, significantly improving its performance of reliability.

Low operation and maintenance costs

All components of the unit have been verified through rigorous simulation tests and 8,000 hours of full-load field use. The oil consumption rate of the gas engine upgraded by our company has been greatly reduced, and the oil replacement interval is ≥1000h. The spare parts developed for the unit are all at market prices, and combined with the long maintenance cycle of the unit, maintenance costs are significantly reduced.

Security

The unit is equipped with a high-end monitoring and control system, equipped with single-cylinder temperature monitoring, single-cylinder exhaust temperature monitoring, and single-cylinder ignition angle adjustment to ensure stable operation of the unit in real time. The unit is equipped with explosion-proof valves, real-time water temperature and oil pressure monitoring, and gas leakage alarms to ensure the safety of the unit.

Alternator

Mature high-end generators in the unit supporting industry have the advantages of high power generation efficiency, low temperature rise, low waveform distortion rate, good dynamic performance, and stable AVR parallel operation. They have first-class reliability and durability and can meet the needs of various harsh environments. Requirements.

Service concept and purpose

Our company is customer-centered and quality-based to provide efficient, high-quality and fast technical support and after-sales service for every gas generator set purchased by customers.

YSD

Generator set parameters

Model.....WL250-CNG
Rated power.....250KW/312KVA
Rated speed.....1500r/min
Rated voltage.....400V
Rated current.....450A
frequency.....50Hz
Power factor.....0.8(LAG)
Electrical efficiency.....≥39%
Noise.....≤90dB(1m)
Start mode.....electronic
Weight.....2800kg

Engine parameters

Model.....N15-CNG
Rated power.....300KW/1500r
Rated speed.....1500r/min
Cylinders.....6
Model.....L type, four-stroke, water-cooled
Intake form.....Exhaust gas turbo
Bore size*stroke.....135*169mm
Displacement.....14.5L
Compression ratio.....12:1
Exhaust temperature (before turbo).....580±10℃
Gas valve group interface.....DN40
Control System.....ECS control
Oil consumption rate.....≤0.3g/kw.h
Coolant capacity (including radiator）.....85L
Oil capacity.....36L

Alternator parameters

Model.....FLDK444D
Excitation mode.....Brushless
Insulation level.....H
Protection level.....IP23
Efficiency.....93%

Genset control system

Control module.....DSE/ComAp/SmartGen
Speed controller.....OT3120A
Ignition controller.....DG6A
AFR controller.....LC601
Speed throttle.....OT961
Gas throttle.....KZ45

Cooling parameters

High temperature water volume.....18m³/h
High temperature water inlet(±2%).....65℃
High temperature water outlet(±2%).....78℃
Intercooler volume (full load).....685m³/h
Intercooler intake temperature.....＜120℃
Intercooler outlet temperature.....＜45℃

Gas consumption(CNG)

Load100%.....0.286m³/kw.h
Load75%.....0.309m³/kw.h
Load50%.....0.328m³/kw.h
Load25%.....0.398m³/kw.h

Test Conditions

Gas calorific value.....8400 calories/m³
Gas composition.....CH_4≥92%
Gas temperature.....10~30℃
Gas humidity.....＜60%
Gas tank outlet pressure.....1.5bar
Gas inlet pressure.....3~10kpa
Exhaust back pressure.....＜5kpa
Altitude.....900m
Absolute atmospheric pressure.....98.4kpa
Temperature.....20℃
Relative humidity.....≤30%
Note: All data of the unit are measured under the above test environment.

Standard scope of supply:

NO	Part name	unit	Quantity	Remark
1	Gas engine	unit	1	Including silencer and bellows
2	Alternator	unit	1	
3	Radiator	unit	1	
4	Public base	unit	1	
5	Genset control cabinet	unit	1	Contains control module, control system, link harness
6	Intake valve group	unit	1	Contains pressure reducing valve, solenoid valve, flame arrester, filter
7	Battery	unit	1	
8	Tool	unit	1	Spark plug removal tool, filter element removal tool
9	Data	unit	1	Instructions for use and maintenance manuals

Optional scope of supply:

NO	Part name	unit	Quantity	Remark
1	Container	unit	1	
2	Acoustic panels	unit	1	
3	gas leak alarm	unit	1	Contains leakage alarm shutdown, leakage gas shut-off, leakage concentration
4	Engineering customization	unit	1	Containers can be customized according to customer requirements

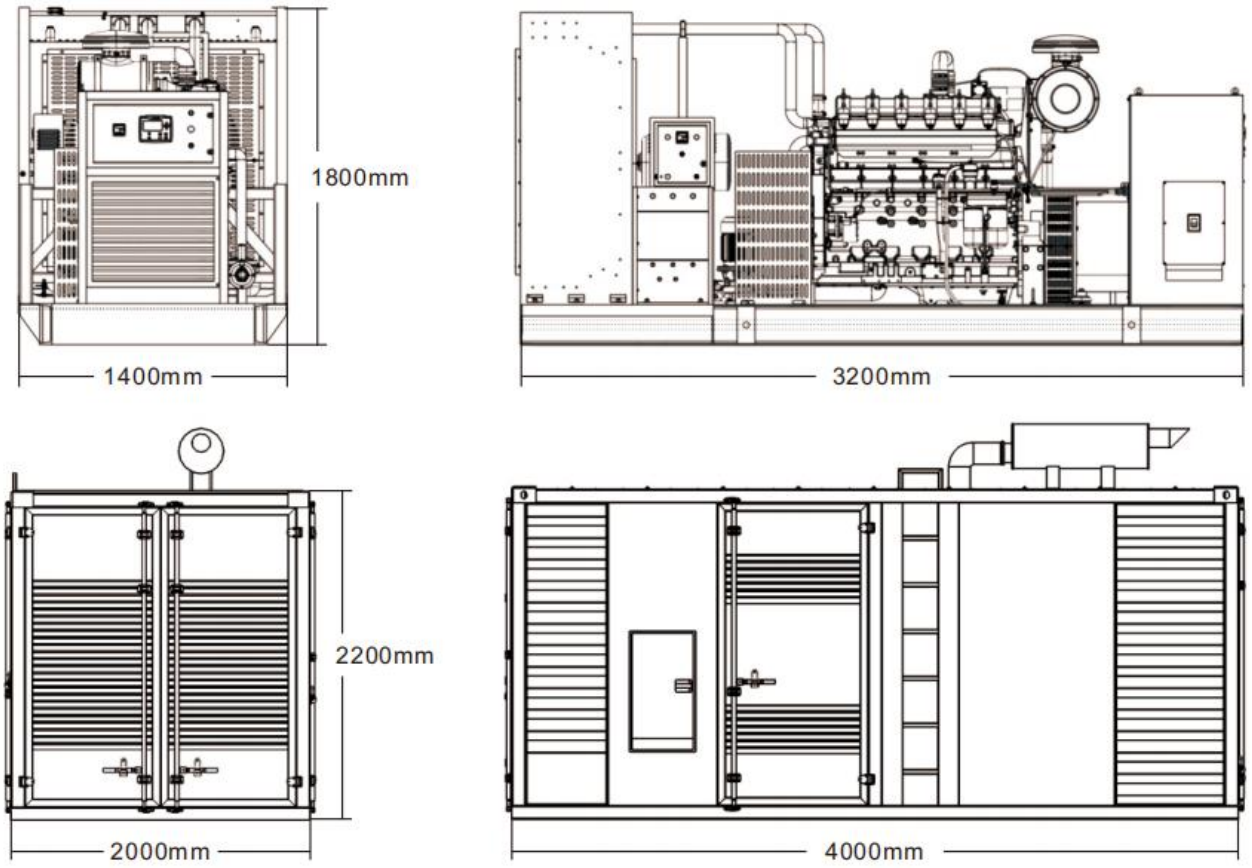
Standard control functions:

Basic functions:	Power switch, manual/automatic start, manual/automatic stop, manual/automatic closing and opening control, etc.
Display function:	Engine speed, oil pressure, coolant temperature, coolant level, exhaust temperature, cylinder temperature, unit operating time, cumulative number of starts, battery voltage, phase voltage, line voltage, current, frequency, phase sequence, active power, Reactive power, apparent power, power factor, accumulated power generation, shutdown fault storage, etc.
Protective function:	Overspeed, underspeed, overvoltage, undervoltage, overfrequency, underfrequency, overcurrent, overpower, low oil pressure, high water temperature, high exhaust temperature alarm, high cylinder temperature alarm, low battery voltage, charging failure, etc.

Gas filtration standards:

Filter criteria:	1、hydrogen sulfide H_2S＜200mg/Nm³。
	2、Impurity particle content＜30mg/Nm³。
	3、Impurity particle diameter＜5μm。
	4、Water content in gas＜20g/Nm³。
	5、Gas temperature＜40℃。
Note: Gas filtration that meets the above conditions can effectively extend the service life of the generator set.	

Genset size parameters:



Precautions for use:

1、The generator is not grounded when leaving the factory and must be properly grounded according to site regulations.
2、The unit must be placed in a location that ensures thorough ventilation. Closed workshops must be equipped with a forced ventilation system.
3、It is recommended to use flanges for gas pipeline connections, and strictly inspect them after completion to ensure there are no leaks.
4、Special engine oil for gas generator sets must be used, and the coolant must use antifreeze with a freezing point lower than the lowest local ambient temperature.
5、Please do not modify the unit without permission. If necessary, please contact the manufacturer in time.