



4Z2.3-G21

◎ Power

Engine Speed rpm	Type of Operation	Engine Power	Generator Power	
		kW	kW	kVA
1500	Prime Power	16	12	15
	Standby Power	18	13.2	16.5
1800	Prime Power	21	16	20
	Standby Power	23	18	22.5

- The engine performance is as per GB/T2820

- Ratings are based on GB/T1147.1.

→ **Prime Power:** Power output available with varying load for unlimited time. The permissible average power output over 24 hours of operation shall not exceed 80% of the prime power rating.

→ **Standby Power:** Power output available in the duration of an emergency outage or under test conditions, Maximum operation time is 200 hours per year. The permissible average power output over 24 hours of operation shall not exceed 80% of the standby power rating.

Overload operation is not allowed

◎ SPECIFICATIONS

○ Engine Model	4Z2.3-G21
○ Engine Type	In-line,4strokes, water-cooled
○ Combustion type	Direct injection
○ Cylinder Type	Wet liner
○ Number of cylinders	4
○ Bore × stroke	85× 100 mm
○ Displacement	2.3L
○ Compression ratio	18 : 1
○ Firing order	1-3-4-2
○ Injection timing	14-17°
○ Dry weight	260 kg
○ Dry weight (L×W×H)	919×565×760mm

◎ FUEL CONSUMPTION

○ Power	L/h (1500r/min)	L/h (1800r/min)
25%	1.64	1.72
50%	2.6	2.69
75%	3.6	3.79
100%	4.68	4.92
110%	5.13	5.53

◎ FUEL SYSTEM

○ Injection pump	KangDa
○ Governor	Electric type
○ Feed pump	Mechanical type
○ Injection nozzle	Multi hole type

- Rotation Counter clockwise viewed from Flywheel
- Fly wheel housing SAE 4#
- Fly wheel SAE 7.5# (tooth number 109)

◎ MECHANISM

- Type Overhead valve
- Number of valve Intake 1, exhaust 1 per cylinder
- Valve lashes at cold Intake 0.35mm
Exhaust 0.45mm

◎ VALVE TIMING

- | | Opening | Close |
|-----------------|----------|----------|
| ○ Intake valve | 12° BTDC | 38° ABDC |
| ○ Exhaust valve | 50° BBDC | 14° ATDC |

◎ COOLING SYSTEM

- Water capacity 2.3L
(engine only)
- Lid Min. pressure 70kPa
- Water pump Centrifugal type driven by belt
- Water pump Capacity 25L/min (1500r/min)
28L/min (1800r/min)
- Thermostat Wax-pellet type
Opening temp. 72°C
Full open temp. 82°C
- Cooling fan Blower type, plastic
400 mm diameter, 7 blades
Power consumption 3.5 kW

- Opening pressure 24MPa
- Fuel filter Full flow, cartridge type
- Used fuel Diesel fuel oil

◎ LUBRICATION SYSTEM

- Lub. Method Fully forced pressure feed type
- Oil pump Gear type driven by camshaft
- Oil filter Full flow, cartridge type
- Oil pan capacity High level 10 L
Low level 8 L
- Angularity limit Front down 25°
Front up 35°
Side to side 35°
- Lub. Oil Refer to Operation Manual

◎ ENGINEERING DATA

- Heat rejection to coolant 8 kcal/sec (1500r/min)
10.2 kcal/sec (1800r/min)
- Heat rejection to intercooler
- Air flow 1.7m³/min (1500r/min)
2.2m³/min (1800r/min)
- Exhaust gas flow 7.2m³/min (1500r/min)
7.3m³/min (1800r/min)
- Exhaust gas temp. 480 °C
- Max. permissible restrictions 3 kPa initial
Intake system 4 kPa final
Exhaust system 10 kPa max

○ The maximum temp.
of coolant in prime/
Standby power

104/100°C

○ intercooler permissible
restrictions

◎ ELECTRICAL SYSTEM

- Charging generator 12V×70A
- Voltage regulator Built-in type IC regulator
- Starting motor 12V×3.8kW
- Battery Voltage 12V
- Battery Capacity 110~120 AH

