



2750kVA

Diesel Generator sets

Genset Model	2750kVA	
Prime Power	2200kW	2750kVA
Standby Power	1320kW	1650kVA

Generator set

- Fully integrated power generator system.
- Design for low emissions complying to NEA Tier II.
- Optimum performance & reliable for Standby and Prime Power.

Main Technical Parameters

Number of cylinders 16
 Configuration V,90°
 Aspiration Turbocharged, air-air intercooled
 Combustion system Direct injection
 Compression ratio 13.5:1
 Bore 200 mm
 Stroke 210 mm
 Displacement 105.56 L
 Rotation . Counterclockwise (Viewed from flywheel end)
Dry weight 11400 kg

Shafting Rotation Inertia

Engine 44.42 kg.m²
 Flywheel 29.36 kg.m²



Overall Dimension

Length 3635 mm
Width 1915 mm
Height 2370 mm

Performance Rating

Speed drop ≤1 %
Speed fluctuation rate 0.5%
Speed governing type Electronic control

Test Condition

Ambient temperature 25°C
 Atmospheric pressure 100 kPa
 Relative humidity 30%
 Max. operating intake resistance ≤5 kPa
 Exhaust backpressure limit..... ≤10 kPa
 Fuel temperature (fuel inlet pump) 38±2°C

Matching parameters

Designation	Unit	Matching parameters	
		Standby	Prime
		50 Hz @ 1500 r/min	
Gross engine power	kW	2646	2405
Net engine power	kW	2524	2283
Fan power consumption (belt pulley driven)	kW	120	120
Other power loss	kW	2	2
Mean effective pressure	MPa	2.0	1.82
Intake air flow	m ³ /min	231	220
Exhaust temperature limit (after turbocharger)	°C	570	550
Exhaust flow	m ³ /min	553	506
Boost pressure ratio		3.59	3.35
Thermal efficiency	%	39.0	39.2
Mean piston speed	m/s	10.5	10.5
Coolant flow (high temperature)	L/min	≥1500	≥1500
Coolant flow (low temperature)	L/min	≥1300	≥1300
Cooling fan air flow	m ³ /min	3600	3600
Typical gen-set electrical output (power factor:0.8)	kW	2400	2200
	kVA	3000	2750
Assumed generator efficiency	%	95.1	96.3

Energy balance parameters

Note : The calorific value of diesel is 42,770 kJ/kg

Designation	Unit	Matching parameters	
		Standby	Prime
		50 Hz @ 1500 r/min	
Total fuel chemical energy	kW	6776	6135
Output power (gross)	kW	2646	2405
Output power (net)	kW	2524	2283
Fan power consumption	kW	120	120
Other power loss	kW	2	2
Heat dissipation capacity (coolant circulation)	kW	680	615
Heat dissipation capacity (intake intercooled system)	kW	1190	1070
Heat dissipation of exhaust	kW	2050	1850
Heat dissipation of thermal radiation	kW	210	195

When a TDV300-1301100-A81 radiator is used as a matching unit, the heat dissipations of Yuchai engine at an ambient temperature of 40°C are shown below: (softened water bench test data)

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Cooling System

Total coolant capacity 623.5L

Engine coolant capacity High temperature: 140L
low temperature: 90 L

**Radiator coolant capacity ... High temperature: 379L
low temperature: 90 L**

Pipeline coolant capacity 50L

Max. water outlet temperature of engine (high temperature water passage) 95°C

Max. outlet temperature of engine (low temperature water passage) 65°C

Pressure difference between inlet and outlet of water pump (max. hydrostatic head) 370 kPa

Thermostat operation temperature

Initial opening temperature (75±2)°C, full opening temperature (< 85)°C

Max. water temperature rise:

- Standby power 7.8°C

- Prime power 7.0°C

Fan

Diameter 1,700 mm

Gear ratio 1:0.73

Material Nylon

Number of blades 10

Blowing/suction Blowing type

Intake system

Air cleaner

Max. intake resistance:

- Clean air cleaner 2.45 kPa

- Dirty air cleaner 6 kPa

- Air cleaner type dry-type, filter cartridge of hardware cloth

Inclination

Transverse inclination/longitudinal inclination (oil sump capacity: 310 L 20°/15°

Fuel system

Injection system electronic unit pump

High temperature radiator

Cooling area 720m²

Dry weight 1730 kg

Material Cuprum

Number of lines /line

Density of core cooling fins/inch

Width of core 2450 mm

Height of core 2250 mm

Min. pressure of pressure cover 70 kPa

Resistance limit 70 kPa

Low temperature radiator

Cooling area 1340m²

Material Cuprum

Number of lines Line

Density of core cooling fins/inch

Width of core 2450mm

Height of core 2250mm

Resistance limit 70 kPa

Water pump

Rotation speed 22700 r/min

Drive mode Gear driven

Fuel injector

Type S type, with multiple jets

Fuel injector opening pressure (26~27) MPa

Fuel pump

Drive mode Gear driven

Fuel delivery pump flow @ 1,500 rpm 60 L/min

Max. fuel inlet temperature limit 70°C

Allowed fuel inlet pressure (absolute pressure) at the front end of fuel delivery pump (35~100)kPa

Max. fuel return pressure of fuel pump 20 kPa

Starter (24 V/12 V)

Type Electric start, 2
 Voltage 24 V
 Power 11 kW
 Number of flywheel teeth 199
 Number of starter teeth 10

Exhaust system

Max. exhaust backpressure 10 kPa
 Inner diameter of exhaust port 380 mm

Fuel filter

Primary filter

Rated flow 30 L/min
 Max. original resistance 10 kPa
 Water separation efficiency under rated flow . ≥95%
 Filtration efficiency:
 For particles of 25 μm 99%
 For particles of 10 μm 85%

Secondary filter

Rated flow 60 L/min
 Max. original resistance 10 kPa
 Filtration efficiency:
 For particles of 10 μm 99.6%
 For particles of 3 μm 98.5%

Fuel consumption

Note: The diesel density is 0.835 kg/L.

Conditions	1500 r/min	
	g/(kWh)	L/h
Standby power	215.5	681.6
Prime power	206.7	594.4
75% Prime power	198.8	416.4
50% Prime power	208.1	294.7

Lubricating system

Total oil capacity (dry engine) 430 L
 Total oil capacity (oil change) 370 L
Oil sump capacity - low level/high level 370 L
 Max. oil temperature (oil sump) 110°C
 Operating oil temperature (oil sump) (70~110)°C
 Oil pressure at idle speed (250-500) kPa
 Oil pressure at rated speed (400~600) kPa
 Engine oil-fuel consumption ratio <0.25 %

Oil filter

The filtering efficiency at the rated flow of 44 L/min and the assembly initial resistance ≤25 kPa:

15 μm ≤ Particle size < 20 μm > 75%
 20 μm ≤ Particle size < 30 μm > 95 %
 30 μm ≤ Particle size < 40 μm > 99 %
 Particle size ≥ 40 μm > 99.9999%

Electric system

Type Negative grounding

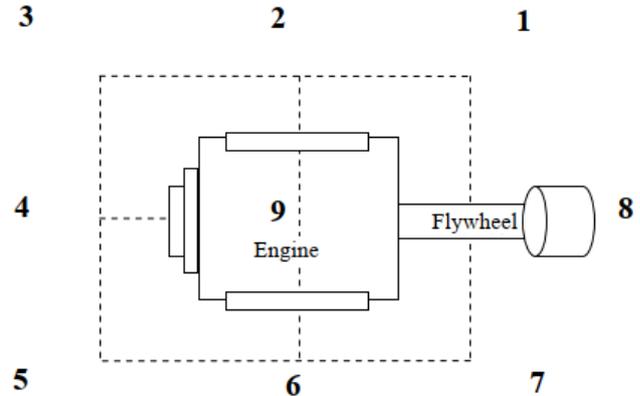
Charging alternator 24 V

Voltage 415 V
Output current 55 A

Noise

Noise data (1,345 kW @ 1,500 r/min)

Position	Sound pressure level Lp, dB(A)
1	111.3
2	111.4
3	112.3
4	109.1
5	108.0
6	108.5
7	110.8
8	111.3
9	107.0



Rating Definitions

Standby Power

During interruption of normal power, the power output is available with varying load. The median power output is 70% of the standby power rating. Typical operation hours is 200 hours per year, with maximum expected usage of 500 hours per year.

Prime Power

During interruption of normal power, the power output is available with varying load for an unlimited time. The median power output is 70% of the prime rating. Prime rated genset is capable of 10% overload for emergency use for a maximum of 1 hour in 12. Overload operation cannot exceed 25 hours per year.

Continuous

The power output available with non-varying load for an unlimited time. Average power output is 70-100% of continuous power rating. The mean power demand is 100% of engine rated kW for the operating hours.

Warranty

Twelve months warranty for prime and continuous ratings, 24 months warranty for standby ratings. Extended service protection is available to provided extended coverage options.

Generator set option

Engine

- Heavy duty air cleaner
- Water jacket heater
240V

Enclosure

- Sound attenuated canopy
- Fire rated canopy

Alternator

- Alternator heater
- Exciter voltage regulator (PMG)

Fuel tank

- Skid base tank
- Double skin day tank
- High/Low fuel level warning

Control system

- Mains failure detection
- Sensor failure indication
- Data logging
- Parallel controls
- Isochronous kW and kVAr load sharing
- Phase lock loop synchronizer

Silencer

- Critical silencer
- Residential silencer

Battery charger

- Set mounted
- Standalone
- 5 A or 10 A

* note: some options may not be available on all models – consult for availability