



2500kVA

Diesel Generator sets

Genset Model	2500kVA	
Prime Power	2205kW	1500kVA
Standby Power	2426kW	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, water-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.m ²
Flywheel	29.36 kg.m ²



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	2426	2205
Net engine power	kW	2304	2083
Fan power consumption (belt pulley driven)	kW	120	120
Other power loss	kW	2	2
Mean effective pressure	MPa	1.84	1.67
Intake air flow	m ³ /min	218	206
Exhaust temperature limit (after turbocharger)	°C	570	550
Exhaust flow	m ³ /min	502	463
Boost pressure ratio		3.35	3.17
Thermal efficiency	%	38.9	39.0
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	2200	2000
	kVA	2750	2500
Assumed generator efficiency	%	95.4	95.9

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	6232	5648
Output power (gross)	kW	2426	2205
Output power (net)	kW	2304	2083
Fan power consumption	kW	120	120
Other power loss	kW	2	2
Heat dissipation capacity (coolant circulation)	kW	613	555
Heat dissipation capacity (intake intercooled system)	kW	1065	960
Heat dissipation of exhaust	kW	1927	1745
Heat dissipation of thermal radiation	kW	201	183

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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		Standby	Prime
		50 Hz @ 1500 r/min	
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Cooling System

Total coolant capacity	623.5 L
Engine coolant capacity High temperature: 140L low temperature: 90 L	
Radiator coolant capacity. High temperature: 364.3 L low temperature: 152 L	
Pipeline coolant capacity.....	50 L
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) ..	135.5/332 kPa
Thermostat operation temperature	
Initial opening temperature (75±2)°C, full opening temperature (< 85)°C	
Max. water temperature rise:	
- Standby power	14°C
- Prime power.....	12.7°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°
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Fuel system

Injection system	electronic unit pump
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High temperature radiator

Cooling area.....	660 m ²
Dry weight	1670 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	50 kPa
Resistance limit	30 kPa

Low temperature radiator

Cooling area	1220 m ²
Material.....	Cuprum
Number of lines	Line
Density of core	cooling fins/inch
Width of core	2450 mm
Height of core	2250 mm
Resistance limit	30 kPa

Water pump

Rotation speed.....	2700 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	213.5	620.3
Prime power	205.7	543.2
75% Prime power	202.5	401.1
50% Prime power	209.8	277.0

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 (200-500) 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

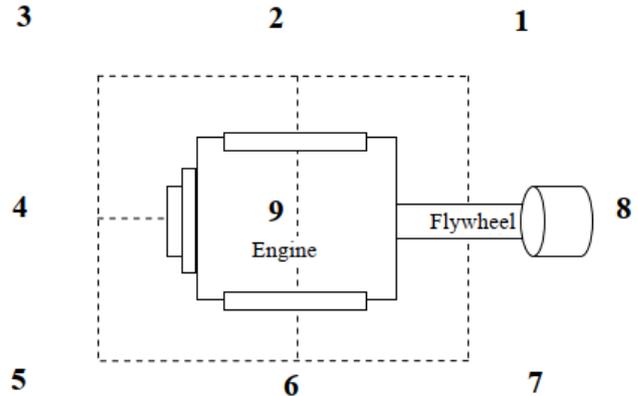
Charging alternator 24 V

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	109.3
2	110.1
3	110.5
4	108.7
5	106.5
6	107.1
7	110.3
8	110.1
9	106.5



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