



Genset

Model	JHP5-120GF
Voltage	230/400V
Frequency&Speed	50HZ;1500RPM
Prime Power	120kW/150kVA
Standby Power	132kW/165kVA

Basic technical data

Number of cylinders	6
Cylinder arrangement	Inline
Cycle	4 stroke
Induction system	Turbocharged and air charge cooled
Combustion system	Direct injection diesel
Compression ratio	18.2 : 1
Bore	105 mm
Stroke	135 mm
Cubic capacity	7.01 litres
Direction of rotation	Anticlockwise when viewed from flywheel
Firing order	1, 5, 3, 6, 2, 4
Estimated total weight (dry)	743 kg
Estimated total weight (wet)	777 kg

Overall dimensions (ElectroPaK)

Height	1092 mm
Length (air cleaner fitted)	1706 mm
Width	756 mm

Moments of inertia

Engine rotational components	0.27 kgm ²
Flywheel	1.2 kgm ² (SAE3)

➤ **Engine: Perkins 1106A-70TAG2**

➤ **Alternator: Stamford/Leroy Somer**
/Hengsheng

➤ **Controller: DeepSea/SmartGen**
/DEIF/ComAp

Centre of gravity, ElectroPaK

Forward from rear of block (wet)	476 mm
Above crankshaft centre line (wet)	176 mm
Offset to RHS of crankshaft centre line (wet)	16 mm

Performance

Speed variation at constant load	± 0.75%
Cyclic irregularity at standby power	0.028
All ratings within	± 5%

Note: All data based on operation to ISO 3046-1:2002 standard reference conditions.

Sound level

Average sound pressure level for prime power @ 1 m ... TBA dB(A)

Test conditions

Air temperature	25°C
Barometric pressure	100 kPa
Relative humidity	31.5%
Air inlet restriction at maximum power	3 kPa (maximum)
Exhaust back pressure at maximum power	6 kPa (maximum)
Fuel temperature	40°C

Note: If the engine is to operate in ambient conditions other than those of the test conditions, suitable adjustments must be made for these changes. For full details, contact Perkins Technical Service Department.

General installation

General Installation	Units	Prime	Standby
Gross engine power	kW	136.0	149.1
Gross BMEP	kPa	1552.1	1701.6
Mean piston speed	metres/s	6.8	
ElectroPaK nett engine power	kW	131.0	144.1
Engine coolant flow (against 35 kPa restriction)	litres/min	142	
Combustion air flow (at STP)	m ³ /min	10.2	10.67
Exhaust gas flow (maximum)	m ³ /min	23.78	25.53
Exhaust gas temperature (maximum) in manifold (after turbocharger)	°C	484	
Nett engine thermal efficiency	%	39.7	39.7
Typical genset electrical output (0.8pf 25°C)	kW _e	120	132
	kVA	150	165
Regenerative power (estimated)	kW	6.7	
Assumed alternator efficiency	%	91.6	

Rating definitions

Prime power

Unlimited hours usage, with an average load factor of 80% over each 24 hour period. A 10% overload is available for 1 hour in every 12 hours operation.

Standby power

Limited to 500 hours annual usage, with an average load factor of 80% of the published standby power rating over each 24 hour period. Up to 300 hours of annual usage may be run continuously. No overload is permitted on standby power.

Energy balance

Designation	Units	Prime	Standby
Heat in fuel	kW	330.2	363.1
Power to cooling fan	kW	5.0	
Power to coolant and lubricating oil	kW	69.1	75.7
Power to exhaust	kW	96.6	105.6
Energy to charge coolers	kW	17.5	20.5
Power to radiation	kW	11	12.2

Cooling system

Cooling pack

Overall weight (wet)	45 kg
Overall face area	469,200 mm ²
Width	684 mm
Height	690 mm

Radiator

Face area	303,600 mm ²
Number of rows and materials	4 rows, Aluminium
Matrix density and material	11.3 fins per inch, Aluminium
Width of matrix	440 mm
Height of matrix	690 mm
Pressure cap setting (minimum)	110 kPa

Charge cooler

Face area	151,800 mm ²
Number of rows and materials	2 rows, Aluminium
Matrix density and material	10 fins per inch, Aluminium
Width of matrix	220 mm
Height of matrix	690 mm

Fan

Diameter	635 mm
Drive ratio	1.25:1
Number of blades	7
Material	Nylon
Type	Pusher
Air flow @ 1500 rpm	222 m ³ /min
Power @ 1500 rpm	4.5 kW

Coolant

Total system capacity	20.5 litres
System drawdown capacity	10%
Engine capacity	9.5 litres
Maximum top tank temperature	110°C
Temperature rise across engine (maximum rating dependent)	6°C - 12°C
Maximum permissible external system resistance	35 kPa
Thermostat operation range	82°C to 93°C
Shutdown switch setting	118°C
Coolant pump method of drive	Gear
Recommended coolant immersion heater rating (minimum)	0.75 kW
Recommended coolant	BS6580 - 1992, ASTM D3306 and ELC coolants to 1E1966

Duct allowance

Maximum additional restriction (duct allowance to cooling airflow and resultant minimum air flow) - Standby power

Description	rpm	kPa	m ³ /min
Duct allowance with inhibited coolant at 53°C			
Minimum air flow	1500	0.125	204
Duct allowance with inhibited coolant at 46°C			
Minimum air flow	1500	0.200	184

Alternator

Pole No.	4-Pole
Exciter Type	Single bearing, Brushless, Self-excited
Power factor	0.8
Voltage adjust range	±5%
Insulation Grade	H
Protection Grade	IP23/22
Phase / wire	3 phase 4 wires

Electrical system

Alternator	8SI
Alternator voltage	12 volts
Alternator output	65 amps
Starter	AZF
Starter motor voltage	12 volts
Starter motor power	4.2 kW
Number of teeth on the flywheel	126
Pull-in and hold-in current of starter motor solenoid @ 25°C maximum ⁽¹⁾	12 volts 68 amps
Hold-in current of starter motor solenoid @ 25°C maximum ⁽¹⁾	12 volts 20 amps
Engine stop method	Solenoid

¹ All leads to rated at 10 amps minimum

Cold start recommendations

Minimum required cranking speed over TDC

	5 to -10°C	-10 to -20°C	-20 to -25°C
Oil	15W40	10W40	5W40
Starter	AZF		
Battery	2 x 1200 CCA		
Cranking current	960		
Aids	None	Glowplugs	
Minimum mean cranking speed	130 rpm	100 rpm	100 rpm

Note: Battery capacity is defined by the 20 hour rate.

Note: If a change to a low viscosity oil is made, the cranking torque necessary at low ambient temperatures is much reduced. The starting equipment has been selected to take advantage of this. It is important to change to the appropriate multigrade oil in anticipation of operating in low ambient temperatures.

Exhaust system

Maximum back pressure - 1500 rpm	6.0 kPa
Exhaust outlet, internal diameter	72 mm

Fuel consumption

Load	Type of operation and application	
	g/kWh	litres/hr
110% Prime power	201.1	36.1
Prime power	203.3	33.4
75% Prime power	199.7	24.7
50% Prime power	197.9	16.4
25% Prime power	221.1	9.1

- ✧ NEMAMG1.JIANGHAO, and ANSI standards compliance for temperature rise and motor starting.
- ✧ Sustained short-circuit current of up to 300% of the rated current for up to 10 seconds.
- ✧ Sustained short-circuit current enabling down stream circuit breakers to trip without collapsing the generator field.
- ✧ Self-ventilated and dripproof construction.
- ✧ Superior voltage waveform from two-thirds pitch windings and skewed stator.
- ✧ Digital solid-state volts-per-hertz voltage regulator with +1% no-load to full-load regulation.

Control Panel



The control module gives digital readouts of:

Generator voltage;
Output frequency;
Engine speed;
Battery voltage;
Engine hours run.

The **control panel** is an Digital Control Module suitable for a wide variety of single, diesel or gas, gen-set applications.

Monitoring an extensive number of engine parameters, the module will display warnings, shutdown and engine status information on the back-lit LCD screen and illuminated LEDs.

The control module has indicators for failure information:

Over speed/Low speed,
Emergency stop
Low oil pressure;
High water temperature
Failure to start
Battery charger failure



Dimension:2300*950*1300mm
Weight:1450kg

Automatic shutdown occurs under:

Low engine oil pressure;
High engine water temperature;
Over speed/Low speed;
Failure to start after three attempts.

Electrical system

- Maintenance-free and anti-explosion battery
- Standard breaker
- ABB breaker (optional)
- ATS (optional)
- Battery charger (optional)
- GMS monitoring (optional)

Packing

- Wrapping film packaging
- Tray packaging
- plywood box packaging



Dimension:3300*1300*1800mm
Weight:2500kg
Fuel Tank Capacity:360L

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