



## Genset

Model	JHP-120GF
Voltage	277/480V
Frequency&Speed	60HZ;1800RPM
Prime Power	122kW/152kVA
Standby Power	135kW/169kVA

### Basic technical data

Number of cylinders	6
Cylinder arrangement	In-line
Cycle	4 stroke
Induction system	Turbocharged
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)	738.7 kg
Estimated total weight (wet)	761.7 kg

### Overall dimensions, ElectropaK

Height	1092 mm
Length (air cleaner fitted)	1648 mm
Width	760 mm

### Moments of inertia

Engine rotational components	0.27 kgm <sup>2</sup>
Flywheel	1.2 kgm <sup>2</sup>

### Centre of gravity, ElectropaK

Forward from rear of block (wet)	426 mm
Above crankshaft centre line (wet)	159 mm
Offset to RHS of crankshaft centre line (wet)	-14 mm

## General installation

General Installation	Units	Prime	Standby
Gross engine power	kW	145.5	160.1
Gross BMEP	kPa	1336.2	1477.9
Mean piston speed	metre/s	8.1	
ElectropaK nett engine power	kW	133.5	148.4
Engine coolant flow (against 35 kPa restriction)	litres/min	170	
Combustion air flow (at STP)	m <sup>3</sup> /min	11.28	11.86
Exhaust gas flow (maximum)	m <sup>3</sup> /min	27.83	29.72
Exhaust gas temperature (maximum) in manifold (after turbocharger)	°C	526	
Nett engine thermal efficiency	%	37.9	38.4
Typical generator set electrical output (0.8pf 25°C)	kWe	121.5	135
	kVA	151.9	168.8
Regenerative power (estimated)	kW	7.0	
Assumed alternator efficiency	%	91	
Expansion tank volume	Litre	Not required	
Charge air at turbo exit temperature (before charge cooler)	°C	135.9	147.5
Manifold charge air temperature (after charge cooler)	°C	55	
Engine air flow	kg/min	13	13.64
Induction manifold pressure	kPa	73.85	73.49
Maximum total pressure drop including pipes	kPa	3	

## Rating definitions

### Prime power

Unlimited hours usage, with an average load factor of 80 percent over each 24 hour period. A 10 percent 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 percent 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.

➤Engine: Perkins 1106A-70TG1

➤Alternator: Stamford/Leroy Somer  
/Hengsheng

➤Controller: DeepSea/SmartGen  
/DEIF/ComAp

### 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

Estimated sound power level for standby power @ 1800 rpm	113.04 dB(A)
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### Test conditions

Air temperature	25°C
Barometric pressure	100 kPa
Relative humidity	31.5%
Air inlet restriction at maximum power	5 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.

## Cooling system

### Radiator

Overall weight (wet) .....	35 kg
Face area .....	464025 mm <sup>2</sup>
Number of rows and materials .....	2 rows, aluminium
Matrix density and material .....	12.7 fins per inch, aluminium
Width of matrix .....	672.5 mm
Height of matrix .....	690 mm
Pressure cap setting (minimum) .....	110 kPa

### Fan

Diameter .....	558.8 mm
Drive ratio .....	1.25:1
Number of blades .....	7
Material .....	Nylon
Type .....	Pusher
Air flow, 1800 rpm @ 200 Pa air side restriction .....	182 m <sup>3</sup> /min
Power, 1800 rpm @ 200 Pa air side restriction .....	4.6 kW

### Coolant

Total system capacity .....	21 litres
System 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 .....	112°C
Coolant pump method of drive .....	Gear
Recommended coolant immersion heater rating (minimum) .....	0.75 kW
Recommended coolant .....	Perkins ELC, or an antifreeze that meets "ASTM D6210" specification

### Duct allowance

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

Description	rpm	kPa	m <sup>3</sup> /min
Duct allowance with inhibited coolant at 50°C			
Minimum air flow	1800	0.120	252
Duct allowance with inhibited coolant at 46°C			
Minimum air flow	1800	0.200	234

## Fuel consumption

Load	Type of operation and application	
	g/kWh	litres/hr
110% Prime power	209.7	38.8
Prime power	210.9	35.2
75% Prime power	210.8	26.5
50% Prime power	209.3	18.0
25% Prime power	243.1	10.5

## 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 <sup>(1)</sup> .....	68 amps at 12 volts
hold-in current of starter motor solenoid @ 25°C maximum <sup>(1)</sup> .....	20 amps at 12 volts
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	2x 1200 CCA		
Cranking current	960		
Aids	None	Glow plugs	
Minimum mean cranking speed	130 rpm	100 rpm	100 rpm

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

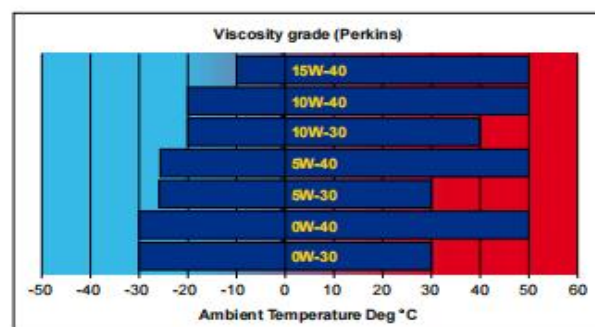
**Note:** If a change to a low viscosity oil is made, the cranking torque necessary at low ambient temperatures is much reduced. The starting equipment has been selected to take advantage of this. It is important to change to the appropriate multigrade oil in anticipation of operating in low ambient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

## Exhaust system

Maximum back pressure - 1800 rpm .....	6.0 kPa
Exhaust outlet, internal diameter .....	72 mm

## Recommended SAE viscosity

A multigrade oil must be used which conforms to API CH4 or CI4 ACEA E5 must be used, see illustration below.



- ✧ 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:2500\*950\*1450mm  
Weight:1250kg

**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:2300kg  
Fuel Tank Capacity:360L

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