



## Genset

Model	JHPE-20GF
Voltage	277/480V
Frequency&Speed	60HZ;1800RPM
Prime Power	19kW/24kVA
Standby Power	21kW/26kVA

### Basic technical data

Number of cylinders	4
Cylinder arrangement	Vertical inline
Cycle	4 stroke
Induction system	Naturally aspirated
Compression ratio	23.3:1
Bore	84 mm
Stroke	100 mm
Cubic capacity	2.216 litres
Direction of rotation when viewed from flywheel	Anticlockwise
Firing order	1, 3, 4, 2

### Weight of ElectropaK

Dry	242 kg
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### Overall dimensions of ElectropaK

Height	841 mm
Length (from rear of air cleaner to front face of radiator)	948 mm
Width (including mounting brackets)	498 mm

### Moments of inertia (mk<sup>2</sup>)

Engine rotational component	TBA kgm <sup>2</sup>
Flywheel	2.55 kgm <sup>2</sup>

### Centre of gravity (engine only)

Forward from rear of block	147 mm
Above centre line of block	79 mm
Offset to RHS of centre line	3 mm

➤Engine: Perkins 404D-22G

➤Alternator:Stamford/Leroy Somer  
/Hengsheng

➤Controller:DeepSea/SmartGen  
/DEIF/ComAp

### Performance

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

Speed variation at constant load ..... ±0.5%

### Cyclic irregularity

At 110% standby power ..... TBA

### Test conditions

Air temperature	25°C
Barometric pressure	100 kPa
Relative humidity	31.5%
Air inlet restriction at maximum power (nominal)	3.0 kPa
Exhaust back pressure at maximum power (nominal)	10.2 kPa
Fuel temperature (inlet pump)	40°C
All ratings certified to within	±5% CRH

### Sound level

Average sound pressure level for bare engine  
(without inlet and exhaust) at 1 metre ..... 79.0 dB(A)

### Notes:

- 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.
- Emissions Statement: Certified against the requirements of EU2007 (EU97/68/EC Stage II) and EPA Interim Tier 4 (EPA 40 CFR Part 1039 Interim Tier 4) legislation for nonroad mobile machinery, powered by constant speed engines.

### General installation, 404D-22G ElectropaK @ 1800 rpm

Designation	Units	Type of operation and application	
		60 Hz	
		Prime	Standby
Gross engine power	kWb	22.0	24.3
ElectropaK nett engine power	kWm	21.6	23.9
Brake mean effective pressure	kPa	657.9	731.0
Engine coolant flow (coolant pump ratio 1.33:1)	l/min	58.7	
Combustion air flow	m <sup>3</sup> /min	1.74	
Exhaust gas flow (maximum)	m <sup>3</sup> /min	4.34	4.76
Exhaust gas temperature outlet (maximum)	°C	440	510
Overall thermal efficiency (nett)	%	35	
Typical genset electrical output (0.8 pf 25°C)	kVWe	19.2	21.3
	kVA	24.0	26.6
Assumed alternator efficiency	%	89	

## Cooling system

### Radiator

Radiator face area	0.167 m <sup>2</sup>
Number of rows and materials	2 rows, Aluminium
Matrix density and material	14.5 fins/inch, Aluminium
Width of matrix	334.2 mm
Height of matrix	500.0 mm
Pressure cap setting	90 kPa
Estimated cooling air flow reserve	0.125 kPa

### Fan

Diameter	320 mm
Drive ratio	1.33:1
Number of blades	6
Material	Plastic
Type	Puller

### Coolant (total system capacity)

With radiator	7.0 litres
Without radiator	3.6 litres
Maximum top tank temperature	112°C
Temperature rise across engine	7.5°C
Maximum permissible external system resistance	15 kPa
Thermostat operation range	82 - 95°C

**Note:** Recommended coolant: 50% anti freeze/50% water.  
For complete details of recommended coolant specifications, refer to the Operation and Maintenance Manual for this engine model.

## Maximum static bending moment

At rear face of bloc ..... 1400 Nm

## Duct allowance

Maximum additional restriction (duct allowance) to cooling airflow and resultant minimum airflow		
Ambient clearance 50% Glycol	Duct allowance Pa	m <sup>3</sup> /sec
53°C	0	0.78
46°C	80	0.73

### Notes:

- thermal capability needs to be considered as a function of canopy design
- all data assumes 3°C air temperature rise over ambient into radiator

## Electrical system

Alternator	65 amps, 12 volts
Starter motor	2 kW, 12 volts

## Exhaust system

Maximum back pressure for total system	10.2 kPa
Inside diameter of outlet flange	42 mm

## Induction system

### Maximum air intake restriction

Clean filter	3.0 kPa
Dirty filter	6.4 kPa
Air filter type	Dry element type

## Cold start recommendations

Minimum cranking speed ..... TBA rev/min

Minimum starting temperature	Grade of engine lubricating oil	Battery specifications			
		BS 3911 Cold start amps	SAE J537 Cold cranking amps	Number of batteries required	Commercial reference number
0°C	20 W	540	740	1	647
-15°C	10 W	540	740	1	647
-20°C	5 W	600	780	1	655

## 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

- ✧ 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 drip-proof 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:**

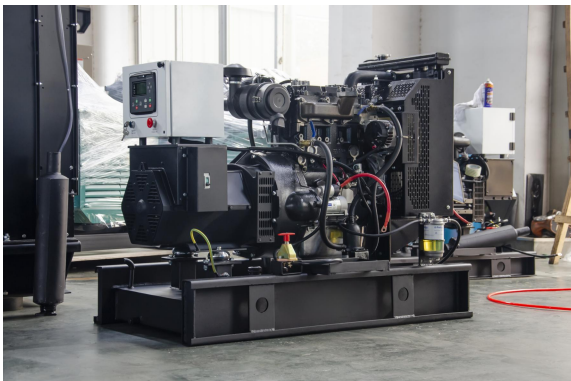
Generator voltage;  
Output frequency;  
Engine speed;  
Battery voltage;  
Engine hours run.

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:1350\*710\*1100mm  
Weight:500kg



Dimension:2400\*1000\*1550mm  
Weight:1100kg  
Fuel Tank Capacity:240L

**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

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