



GENERATOR SET MODEL (EM-20)

OUTPUT RATINGS	PRIME	STANDBY
240-415 V, 3 ph, 50 Hz, 1500 rpm	20 KVA (16 KW)	22 KVA (17.5 KW)
ENGINE / TECHNICAL DATA		
Engine Make	Perkins	
Engine Model	404A-22G1	
Governing Type	Mechanical	
Number of Cylinders	4	
Cylinder Arrangement	Vertical in line	
Bore and Stroke	84 mm x 100 mm	
Displacement / Cubic Capacity	2.216 L	
Induction System	Turbocharged, air to air aftercooled	
Cycle	4 stroke	
Combustion System	Indirect Injection	
Compression Ratio	23.3 : 1 L	
Rotation	Anti-clockwise, viewed on flywheel	
Cooling System	Water - cooled	
Frequency and Engine Speed	50 Hz & 1500 rpm	
	PRIME	STANDBY
Gross Engine Power	18.7 kW (25.1 hp)	20.6 kW (27.6 hp)
Fuel Consumption @ 50% load	2.0 L/hr	-
@ 75% load	2.7 L/hr	-
@ 100% load	3.7 L/hr	4.1 L/hr.
Total Lubrication System Capacity	10.6 L	10.6 L
Total Coolant Capacity (Inc. radiator)	7.0 L	7.0 L
Exhaust Temperature	445°C	505°C
Radiator Cooling Air Flow (Min)	0.49 m ³ /s	0.49 m ³ /s
Combustion Air Flow	1.45 m ³ /min	1.45 m ³ /min
Exhaust Gas Flow	3.64 m ³ /min	3.694 m ³ /min
Fuel Tank Capacity	46 L	46 L

ALTERNATOR DATA

Make	Leroy Somer
Model	TAL 040F
No. of bearings	1
Insulation class	H
Total Harmonic Content	Not on load <3% On load <3%
Wires	12
Ingress Protection	IP23
Excitation System	SHUNT
Winding Pitch	2/3 (n°3)
AVR Model	R120
Overspeed	2250 mn-1
Voltage Regulation (steady)	±0.5%
Short Circuit Capacity	-

GENERAL SPECIFICATIONS

1. ENGINE

Perkins four stroke heavy duty high performance industrial type diesel engine.#

2. COOLING RADIATOR

Radiator and cooling fan, complete with safety guards, designed to cool the engine at high ambient temperatures. (Consult your dealer for deration factors)

3. EXHAUST SYSTEM

Heavy duty Industrial Exhaust Silence.

Silencer noise reduction level	20 (dB)
Maximum allowable back pressure	10.2 (kPa)

4. CIRCUIT BREAKER TYPE

3 pole ACB/MCCB. (Supplied disconnected and without cables)

5. FUEL SYSTEM

The base frame design can be incorporated with an integral fuel tank with a capacity of approx. 8 hours running at Full Load. The tank is supplied complete with fill cap breather, fuel feed and return lines to the Engine and drain plug.

6. ALTERNATOR

• INSULATION SYSTEM

- The insulation system is Class H.
- All windings are impregnated in either a triple dip thermosetting liquid, oil and acid resisting polyester varnish or vacuum pressure impregnated with a special polyester resin.
- Heavy coat of antitracking varnish additional protection against moisture or condensation.

• AUTOMATIC VOLTAGE REGULATOR

The fully sealed Automatic Voltage Regulator maintains the Voltage Regulation at ±1%. Nominal adjustment by means of a trim pot incorporated on the AVR.

(cont.)





CONTROL PANEL

Make **DEEP SEA**

Model **DSE4530**

The **DSE4530** is an Auto Start Control Module for single genset applications. It includes a backlit LCD display which clearly shows the status of the engine all the times. This module can either be programmed using the front panel or by using the DSE configuration suite PC software.

METERING AND ALARM INDICATIONS:

- Generator frequency
- Underspeed, Overspeed
- Generator volts (L-L, L-N)
- Generator current
- Loss of magnetic pick-up signal - Optional
- Fuel level (Warning or shutdown) - Optional
- Failed to reach loading voltage/frequency
- CAN diagnostics and CAN fail/error
- Engine oil pressure
- Engine coolant temperature
- Battery volts
- Fail to start/stop
- Emergency stop
- Charge fail
- Low DC voltage
- Hours run counter

DIMENSIONS AND WEIGHT

	Length	Width	Height	Weight
Closed Type	2172 mm	922 mm	1240 mm	790 kg
Open Type	1556 mm	700 mm	1220 mm	509 kg

RATINGS DEFINITION

Prime Power

These ratings are applicable for supplying continuous electrical power (at variable load) in lieu of commercially purchased power.

10% overload power is available for 1 hour in 12 hours continuous operation.

Standby Power

These ratings are applicable for supplying continuous electrical power (at variable load) in the event of a utility power failure. No overload is permitted on these ratings.

STANDARD REFERENCE CONDITIONS

Output ratings are presented at 25°C air inlet temperature, barometric pressure 100 kPa, relative humidity 30%. This generating set is designed to operate at high ambient temperatures (up to 55°C), humidity (up to 99%) and higher altitudes. Deration may apply, please consult your dealer for specific site ratings.

AVAILABLE OPTIONS & ACCESSORIES

We offer a range of optional features and accessories to tailor our generating sets to meet your power needs.

OPTIONS

- A variety of generating set control and synchronizing panels
- Additional protection alarms and shutdowns
- Water fuel separator
- Water jacket heater
- Battery charger

ACCESSORIES

- Genuine spare parts
- Load banks
- Auxiliary fuel tanks
- Manual & automatic transfer switches

GENERAL SPECIFICATIONS

• MOTOR STARTING

An overload capacity equivalent to 300% of the Full Load impedance at zero Power Factor can be sustained for 10 seconds, when PMG option is fitted.

7. MOUNTING ARRANGEMENT

• BASE FRAME

The complete Generating Set is mounted as a whole on a heavy duty fabricated steel Base frame.

• COUPLING

The Engine and Alternator are directly coupled by means of an SAE flange. The Engine flywheel is flexibly coupled to the Alternator rotor.

• ANTI-VIBRATION MOUNTING PADS

Anti-Vibration pads are affixed between the Engine/Alternator feet and the Base frame thus ensuring complete vibration isolation of the rotating assembly.

• SAFETY GUARDS

The Fan & Fan Drive along with the Battery Charging Alternator are Safety Guard protected for personnel protection.

8. FACTORY TESTS

- The Generating set is load tested before dispatch
- All protective devices control functions and site load conditions are simulated. The generator and it's systems are checked before dispatch.

9. EQUIPMENT FINISHING

All mild steel components are fully degreased and painted with powder coated paint to ensure maximum scuff resistance and durability.

10. DOCUMENTATIONS

The base frame design can be incorporated with an integral fuel tank with a capacity of approx. 8 hours running at Full Load. The tank is supplied complete with fill cap breather, fuel feed and return lines to the Engine and drain plug.

11. QUALITY STANDARDS

The equipment meets the following standards: BS4999, BS5000, BS5514 IEC 60034, VDE0530, NEMA MG 1.22 and ISO 8528.

12. WARRANTY

All of the Generating Sets provided by Hulool Motors are covered under a warranty policy for a period of 12 months.

