

## KEY FEATURES:

Generator made by OEM-Cummins

Every generating set carries a comprehensive test program & report thereon

### Certifications

ISO 8528/1, NEMA MG 1-22, NEMA MG 1.32-33, IEC 60034, BS 5000 PART 99, VDE 0530, ISO 8528/3, ISO TS16949, OHSAS 18001, UL 1446, UL 1004, ISO 9001, ISO 14001, AS 1359, IEC 34

Complete protection functions & safety labels

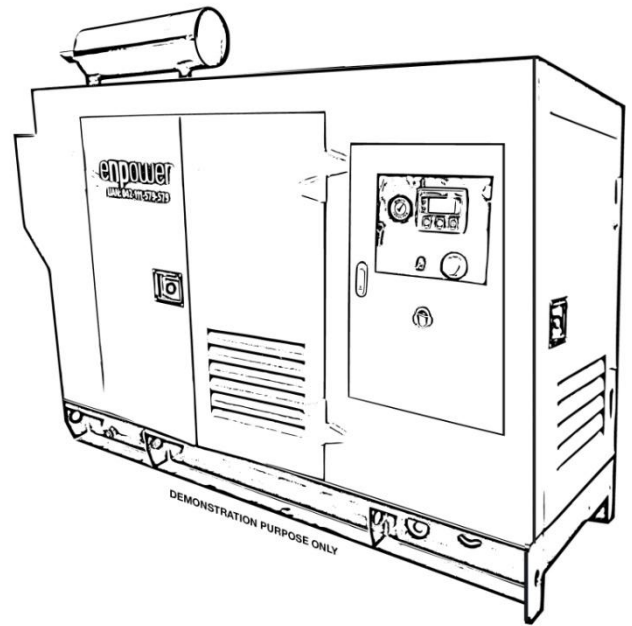
Easy & Economical availability of Spares

Advanced digital control system, long service life, easy to operate, low fuel consumption & anti-vibrating isolators

After Sales support all over Pakistan

High quality, reliable & complete generating set

Easy for operation & maintenance



## POWERED BY:



## GENERATOR SET:

Generator Model	ECG110	
Prime Power	100-KVA	80-KW
Standby Power	110-KVA	88-KW
Configuration	380-415 V, 3Ph, 50 Hz, 1500 RPM at 0.8 PF	

## FUEL CONSUMPTION

Consumption @ 100% load	22 Ltrs
Consumption @ 75% load	17 Ltrs
Consumption @ 50% load	11 Ltrs

## DIMENSIONS, WEIGHT & FUEL TANK (Approx.)

Particulars	Open	Canopy-R	Canopy-S
Length (Inches)	85	87	98
Width (Inches)	32	45	47
Height (Inches)	54	55	54
Net Weight (Kg)	-	-	-
Fuel Tank (L)	-	140	148

## ALTERNATOR DATA:

Brand	Enpower	Leroy Somer	Equivalent
Model /Series	Current	TAL Series	TBA
Frequency /Speed	50 Hz / 1500 RPM		
Coupling	Direct		
No. of Bearings	Single Bearing		
Phase / Poles	3-Phase/4-Pole		
Over speed	2250 mn-1		
AVR Model	SX 460		
Voltage Regulation	± 1%		
Insulation Class	H		
Ingress Protection	IP 23		
Excitation	Self Excited		
Winding Pitch	2/3 (wdg 3)		

## CONTROLLER DATA:

Make	Deep Sea-UK
Model	DSE 4520

## ENGINE DATA:

Manufacturer	Cummins
Model	6BT5.9-G2
Cylinders	6
Cylinders Arrangement	Vertical In-Line
Displacement	5.9 L
Aspiration System	Turbo Charged
Combustion System	Direct Injection
Governor	GAC GOVERNER
Bore	102 mm
Stroke	120 mm
Speed	50 Hz & 1500 RPM
Cooling System	Water Cooled
Cycle	4-Stroke
Gross Power PRP (KWm)	86-KWm /115-HP
Gross Power STP (KWm)	92-KWm /123-HP
Gross Power PRP	115 HP
Compression Ratio	17.3:1
Rotation	Anti-Clockwise
Lubricating Capacity	16.4L
Coolant Capacity	9.9 L
Thermostat Operation Range	82-95° C
Coolant & water Ratio	50:50
Exhaust Gas Temperature	526° C
Heat Rejection Coolant	66-KW
Intake Air Flow L/sec	100
Exhaust Gas Flow L/sec	250
Allowable Back Pressure	10 Kpa
Exhaust Outlet Size	75 mm
Battery Charging Alternator	63 Amps
Starter Motor	3 KW, 12V
Oil Pressure	207-345 kPa
Dry Weight (Kg)	411
Recommended Oil Grade	API-CH4-SAE15W-40
Battery Voltage	12 V
Fuel Type	Diesel
Recommended Fuel	Grade # 2

## OTHER INFORMATION:

ATS /AMF Panel	Optional
External Fuel Tank	Optional
Trailer/Trolley	Optional
Remote Monitoring	Optional
Operating Temperature	Up to 50° C
Low Fuel Level Sensor	Available
4-Pole Breaker	Optional
Sound Level @ 7M	74 dBs (Approx.)
Synchronizing System	Optional
Customized Color	Optional
Customized Sound Level	Optional

## STANDARD SPECIFICATIONS:

**1.ENGINE** Perkins 4 stroke heavy duty high performance industrial type diesel engine.

**2.ENGINE FILTRATION SYSTEM** • Air filter. • Fuel filter. • Full flow lube oil filter. All filters have replaceable elements.

**3.COOLING RADIATOR.** Radiator and cooling fan, complete with safety guards, designed to cool the engine at high ambient temperatures

**4.EXHAUST SYSTEM** Heavy duty Industrial Exhaust Silencer.

**5. CIRCUIT BREAKER TYPE** 3 pole MCB. (4 pole is optional)

**6. FUEL SYSTEM** On Generating Sets up to 500 KVA, the base frame design is incorporated with an integral fuel tank with capacity of approx. 5-8 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.

**7. ALTERNATOR 7.1 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 anti-tracking varnish additional protection against moisture or condensation. **7.2 AUTOMATIC VOLTAGE REGULATOR (AVR)** The fully sealed Automatic Voltage Regulator maintains the Voltage Regulation at  $\pm >2\%$ . Nominal adjustment by means of a trim pot incorporated on the AVR.

**8. MOUNTING ARRANGEMENT 8.1 BASE FRAME** The complete Generating Set is mounted as a whole on a heavy duty fabricated steel Base frame. **8.2 COUPLING** The Engine and Alternator are directly coupled by means of an SAE flange. The Engine flywheel is flexibly coupled to the Alternator rotor. **8.3 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. **8.4 SAFETY GUARDS** The Fan & Fan Drive along with the Battery Charging Alternator are Safety Guard protected for personnel protection.

**9. 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.

**10. DOCUMENTATIONS** Operation & Maintenance manual, Circuit wiring diagrams and Commissioning / Fault Finding instruction leaflets are accompanied with the Generator.

**11. WARRANTY** All of the Generating Sets are covered under a warranty policy for a period of 12 months or 1000 Hours Warranty of the equipment is in line with manufacturers warranty terms & conditions. (check warranty statement for more details, as it may vary for different countries)

**Disclaimer:** In-line with continuous product development, we reserve the right to change specifications without prior notice.

CONTROLLER LCD DISPLAY:	Deep Sea DSE 4520	Deep Sea DSE 6020
Voltage between Phases (L-L)	✓	✓
Voltage between Neutral and Phase (L-N)	✓	✓
Frequency	✓	✓
3 Phase Current	✓	✓
Real Power (KW) and Apparent Power (KVA)	✓	✓
Power Factor	✓	✓
Engine Speed	✓	✓
Running Hours	✓	✓
Coolant Temperature	✓	✓
Oil Pressure	✓	✓
Battery Voltage	✓	✓
LCD Alarm Indication	✓	✓
3 Phase Mains (Utility) Sensing	✓	✓

### PROTECTING FUNCTIONS:

Emergency Stop Button	✓	✓
High coolant Temperature	✓	✓
Low Oil Pressure	✓	✓
Over Current / Load	✓	✓
Under/Over Speed, Frequency & Voltages	✓	✓
Low / High Battery Voltages	✓	✓
Low Fuel Level Warning at 20%	✓	✓
Low Fuel Level Shutdown at 10%	✓	✓

### RATINGS DEFINITIONS:

**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.

### STANDARD REFERENCE CONDITIONS:

Output ratings are presented at 25° C air inlet temperature, barometric pressure 100 kPa relative humidity 30%. This rating set is designed to operate at high ambient temperature up to 50° C, humidity up to 99% and higher altitude. De-rating may apply. (Some of the specifications are not standard on all Genset models)

### OPTIONAL ITEMS



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INNOVATIVE POWER SOLUTIONS

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