

**Standby Power (ESP)**

Standby power is defined as the maximum power available during a variable electrical power sequence, under the stated operating conditions, for which a generating set is capable of delivering in the event of a utility power outage or under test conditions for up to 500 hours of operation per year under average of 70% load. Overloading is not permissible.

**Prime Power (PRP)**

Prime power is defined as being the maximum power which a generating set is capable of delivering continuously whilst supplying a variable electrical load. Average load should be 70%. The generator can be overloaded 10% for 1 hour per 12 hours.



Technical information and values are according to ISO8528, ISO3046, NEMA MG1.22, IEC 600341, BS 49995000, VDE 0530 standards. Producing with ISO9001, CE standards.

All information given in this leaflet is intended for general purposes only. Due to a policy continuous improvement REAL reserves the right to amend details and specifications without notice and all information given is subject to the REAL's current condition of sales.

**Power Output Ratings**

50 Hz. / 400 V

Standby Power (ESP)	kVA	410
	kW	328
Prime Power (PRP)	kVA	373
	kW	298

**Engine**

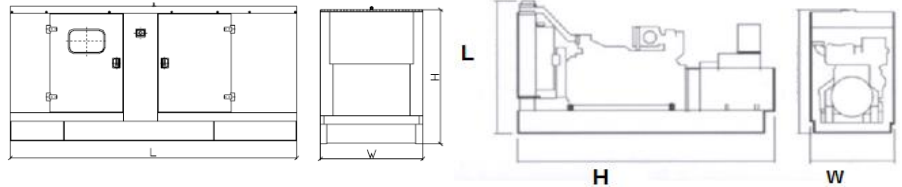
Manufacturer	DOOSAN	
Model	P158LE-I	
No of Cylinder / Configuration	V TYPE - 8	
Displacement lt	lt	14,6
Bore / Stroke	mm	128/142
Compression Ratio	15:01	
Aspiration	Turbo charged and Inter Cooled	
Governor Type	ELECTRONIC	
Cooling System	WATER	
Coolant Capacity	lt	88
Lubrication Oil Capacity	lt	35
Electrical System	VDC	24
Speed / Frequency	rpm	1500 rpm / 50 Hz
Engine Stand-by Power	kWm	362
Fuel Consumption lt/h	110%	
	100%	78,8
	75%	58
	50%	40
Exhaust Outlet Temperature	°C	580
Exhaust Gas Flow	m³/min	78,3
Combustion Air Flow	m³/min	25,5
Cooling Air Flow	m³/min	410

**Alternator**

Power Factor	0,8	
No of Bearing	SINGLE	
No of Poles	4	
No of Leads	12	
Voltage Regulation ( Steady State)	± %0,5	
Insulation	H	
Degree of Protection	IP23	
Excitation System	AVR, BRUSHLESS	
Connection Type	STAR	
Total Harmonic Content (No Load)	< %2	
Frequency	Hz	50
Voltage Output	VAC	231/400

**DIMENSION**

	L x W x H (mm)	Weight (kg)	Fuel Tank (lt)
Canopied	4900x1600x2500	4150	850
Open Skid	3360x1400x2040	2900	850



## DESIGN SPECIFICATIONS

High quality, reliable and complete power unit, Compact design, Easy start and maintenance possibility, Every generating set is subjected to a comprehensive test programme which includes full load testing and checking and providing of all control and safety shut down functions testing, Full engineered with a wide range of options and accessories: Canopy, soundproof and on road trailer.

## STANDARD GENSET SPECIFICATIONS

### ENGINE

DOOSAN heavy duty diesel engine - Four stroke, water cooled, turbocharged, charge air cooled - Direct injection fuel system - 24 VDC starter and charge alternator, Replaceable fuel filter, oil filter and dry element air filter - Cooling radiator and fan - Starter battery (with lead acid) including Rack and Cables - Flexible fuel connection hoses and oil sump drain valve - Industrial capacity exhaust silencer and steel bellows - Jacket water heater (at automatic models) - Operation manuals and circuit diagram documents

### ALTERNATOR

Brushless, single bearing system, 4 poles - Insulation class H - Standard degree of protection IP21 - Self-exciting and self-regulating - Impregnation with tropicalised epoxy varnish  
Solid state Automatic Voltage Regulator

### BASE FRAME

The complete genset is mounted as whole on a heavy-duty fabricated, steel base frame. Antivibration pads are fixed between the engine/ alternator feet and the base frame - Base frame design incorporates an integral fuel tank - The generating set can be lifted or carefully pushed / pulled by the base frame, Lifting eyes allow easy transportation by a crane - Dial type fuel gauge and drain plug on the fuel tank.

### CANOPY

All canopy parts are designed with modular principles - without welding assembly - Doors on each side - All metal canopy parts are painted by electrostatic - Exhaust silencer is protected against environment influences polyester powder paint - Thermally insulated engine exhaust system - Emergency stop push button is installed outside of canopy - Easy lifting and moving  
Easy maintenance and operation

### CONTROL SYSTEM

#### Panel Equipments;

Control, supervision and protection panel is mounted on the genset base frame.  
The control panel is equipped as follows:

#### 1-Auto. Mains Failure Control Panel

Control Panel Equipments:  
Control panel with DSE 7220 module  
Static battery charger  
Emergency stop push button

#### 1.1 Generating Set control module DEEP SEA 7220 features:

The module is used to monitor a mains supply and automatic start a stand-by generating set.  
Micro-processor based design  
Monitors engine performance and AC power output  
LED and LCD alarm indication  
Front panel configuration of timers and alarm trip points  
provides signal to change over switch panel  
event logging of shutdown alarms  
Remote communication via RS232 port or RS485 modbus output  
easy push button control  
STOP/RESET-MANUAL-AUTO-TEST-START  
Operation indicators accessed by the LCD display scroll push button.

#### Metering via LCD Display:

Generator Volts (L-L/L-N)  
Generator Amps (L1-L2-L3)  
Generator Frequency (Hz)  
Engine hours run  
Engine oil pressure (PSI&Bar)  
Engine speed RPM  
Engine temperature (C & F)  
Generator kVA  
Generator kW  
Generator power factor  
Mains Frequency (Hz)  
Mains Volts (F-F/F-N)  
Plant battery volts



#### Automatic shutdown on fault conditions

Under/Over Speed  
High Engine Temperature  
Low Oil Pressure  
Under/over generator volts  
Under/over generator frequency  
under/over mains frequency  
under/over mains voltage  
Low/High battery volts  
Fail to start  
Fail to stop  
Charge fail  
Over current  
Emergency stop  
CAN data fail  
CAN ECU fail

#### LED indications

Mains available  
Generator available  
Mains on load  
Generator on Load

#### 2. Power Outlet Terminal Board Mounted on the Genset Baseframe