

MODEL	EP-1650 (50HZ)
Standby Power (50Hz)	1320KW /1650KVA
Prime Power (50Hz)	1200KW /1500KVA

### Standard Features

#### General Features:

- Engine (Perkins 4012-46TAG2A)
- Radiator 40°C max, fans are driven by belt, with safety guard
- 24V charge alternator
- Alternator (Marathon, Siemens, Leroy Somer or Equal), single bearing alternator IP22/IP23, insulation class H/H
- Absorber
- Dry type air filter, fuel filter, oil filter, coolant filter
- Main line circuit breaker
- Standard control panel
- Batteries, rack and cable
- Ripple flex exhaust pipe, exhaust siphon, flange, muffler
- User manual



### Generator Ratings

Voltage	HZ	Phase	P.F (COS $\phi$ )	Standby Amps	Standby Ratings (KW/KVA)	Prime Ratings (KW/KVA)
440/254	50	3	0.8	2165	1320/1650	1200/1500
415/240	50	3	0.8	2296	1320/1650	1200/1500
400/230	50	3	0.8	2382	1320/1650	1200/1500
380/220	50	3	0.8	2507	1320/1650	1200/1500

Remarks: High Voltage of 6.3kv, 6.6kv, 10.5kv, 13.8kv etc are available.

**Prime Power (PRP):** Prime power is available for an unlimited number of annual hours in variable load application, in accordance with GB/T2820-97 (equivISO8528); A 10% overload capability is available for a period of 1 hour within a 12-hour period of operation.

**Standby Power Rating (ESP):** The standby power rating is applicable for supplying emergency power for the duration of a utility power interruption. No overload, utility parallel or negotiated outage operation capability is available at this rating.

### Sales Promises

Ettes Power provides a full line of brand new and high quality products. Each and every unit is strictly factory tested. Warranty is according to our standard conditions: 12 months or 1,500 running hours, subject to the earlier one. And what's more, Perkins gensets enjoy world-wide united Warranty from Perkins engine agency or service centre at the client's local side.



# Diesel Generating Set



## ENGINE DATA

Manufacturer / Model:	Perkins 4012-TAG2A 4-cycle
Air Intake System:	Turbo, Air/Water cooling
Fuel System:	Direct Injection
Cylinder Arrangement:	12 V
Displacement:	45.8 L
Bore and Stroke:	160x190 (mm)
Compression Ratio:	13.6:1
Rated RPM:	1500 rpm
Max. Standby Power at Rated RPM:	1437KW/1955HP
Governor Type:	Electronic

### Exhaust System

Exhaust Gas Flow(after turbo):	315m <sup>3</sup> /min
Exhaust Temperature:	450°C
Max Back Pressure:	6.12kPa

### Air Intake System

Max Intake Restriction:	3.8kPa
Consumption:	128 m <sup>3</sup> /min
Air Flow:	1308 m <sup>3</sup> /min

### Fuel System

100%(Prime Power) Load:	200 g/kw.h
75%(Prime Power) Load:	201 g/kw.h
50%(Prime Power) Load:	203 g/Kw.h
100%(Prime Power) Load:	295.1 L/h

### Oil System

Oil Consumption:	0.52 g/Kw.h
Engine Oil Tank Capacity:	159L
Oil Pressure at Rated RPM:	340kPa

### Cooling System

Total Coolant Capacity:	212L
Thermostat:	71-85°C
Max Water Temperature:	96°C



# Diesel Generating Set



## ALTERNATOR SPECIFICATION

### GENERAL DATA

Compliance with GB755, BS5000, VDE0530, NEMAMG1-22, IED34-1, CSA22.2 and AS1359 standards.

### Alternator Data

Manufacturer / Type:	Marathon, Siemens, Leroy Somer or Equal
Number of Phase:	3
Connecting Type:	3 Phase and 4 Wires, "Y" type connecting
Number of Bearing:	1
Power Factor:	0.8
Protection Grade:	IP22/IP23
Altitude:	≤1000m
Exciter Type:	Brushless, self-exciting
Insulation Class, Temperature Rise:	H/H
Telephone Influence Factor (TIF):	< 50
THF:	< 2%
Voltage Regulation, Steady State:	≤±1%
Alternator Capacity:	1550KVA
Alternator Efficiencies:	95.7%
Air Cooling Flow:	2.69m <sup>3</sup> /s

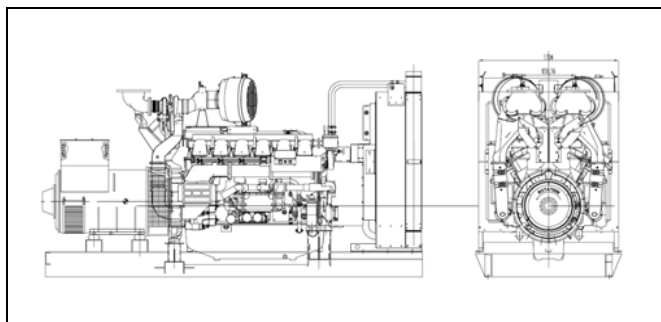
## GENERATING SET DATA

Voltage Regulation:	≥±5%
Voltage Regulation, Stead State:	≤±1%
Sudden Voltage Warp (100% Sudden Reduce):	≤+25%
Sudden Voltage Warp (Sudden Increase):	≤-20%
Voltage Stable Time (100% Sudden Reduce):	≤6S
Voltage Stable Time (Sudden Increase)	≤6S
Frequency Regulation, Stead State:	≤5%
Frequency Waving:	≤1%
Sudden Frequency Warp (100% Sudden Reduce):	≤+12%
Sudden Frequency Warp (Sudden Increase):	≤-10%
Frequency Recovery Time (100% Sudden Reduce):	≤5S
Frequency Recovery Time (Sudden Increase):	≤5S

## Options

Engine	Fuel System	Control System
<ul style="list-style-type: none"> <li>● Heater</li> </ul>	<ul style="list-style-type: none"> <li>● Daily Fuel Tank</li> <li>● Water Separator</li> </ul>	<ul style="list-style-type: none"> <li>● Remote Control Panel</li> <li>● Auto Transfer Switch (ATS) Control Panel</li> <li>● Paralleling System</li> <li>● Electricity Output Cabinet</li> </ul>
Alternator	Others	Data
<ul style="list-style-type: none"> <li>● Anti Condensation Heater</li> <li>● Drop CT (For Paralleling)</li> </ul>	<ul style="list-style-type: none"> <li>● Rainproof Type</li> <li>● Soundproof Type</li> </ul>	<ul style="list-style-type: none"> <li>● Spare Parts</li> </ul>

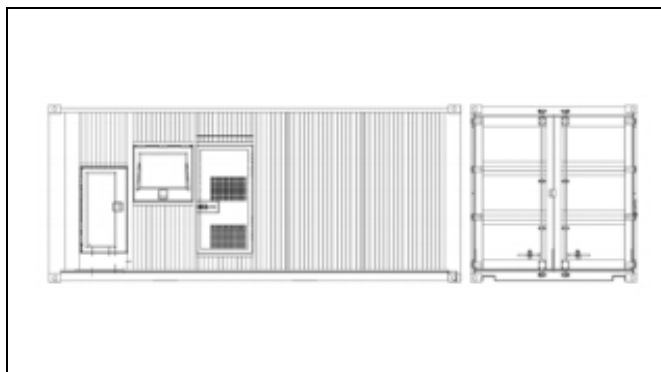
## Dimension & Weight



### Standard (Open Type) Without Base Fuel Tank

Overall Size: 4750 (mm) x1710 (mm) x2300 (mm)

Weight: 12500kg



### Soundproof Type (40" high Container)

Overall Size: 6058 (mm) x2438 (mm) x2896 (mm)

Weight: 17500kg

## Standard Control Panel/LCD



Ettes Power Standard Control Panel, usually adopts control module of UK Deepsea DSE6020 or Smargen 6110/6120 series, using micro processing techniques integrating digital, intelligent and network techniques which can carry out functions including auto start/stop, data measure, alarming. The controller uses LCD display, optional Chinese and English display interface with operation easy and reliable. It can be widely used in all types of generator automatic control system for compact structures, advanced circuits, simple connections and high reliability □

## Auto Module Control Panel/Automatic Transfer Switch



Auto Module Control Panel, usually adopt control module of UK Deepsea DSE 7320 or Equal, is the configuration for nobody on duty generators control, This kind of panel adopts auto module control system, with large LCD display to show the menu. Features: receive remote output signal from ATS and realize auto start and stop of generators. RS232 or 485 interface which can communicate with PC to realize remote operation. Auto Mains Failure controller, can realize furthermore can detect ATS and control directly.

## Auto Synchronization Parallel Control Panel



Automatic Parallel Control Panel, usually adopting intelligent control module of UK Deepsea DSE 7510 or SDE8610 or Equal, This new automatic parallel system is inserted and folded installed, no need the peripheral relay and logic circuit. The main switch adopts electronic breaker or frame breaker, combined together with the generator, which is very reliable. One generator, one panel. The panel can be used both for single genset working or Gensets Parallel working. This kind of panel also can be used to parallel generator when the capability of the power plant needs to be enlarged in the future. □