



Diesel



Watercooled

**60
Hz**

Model: ETPG186

INDUSTRIAL RANGE

Powered by Perkins



Perkins®

STAMFORD
power generation

**LEROY
SOMER**

Generating Rates

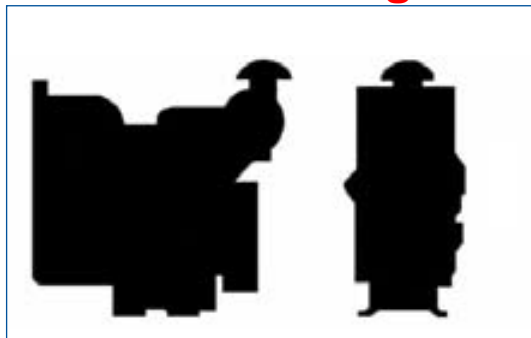
POWER RATING		PRIME	STANDBY
POWER	kVA	169	186
	kW	135	149
Rated Speed	r.p.m	1800	
Standard Voltage	V	480	
Available Voltages	V	480/277-440/254-220/127-208/120	
Rated at power factor	Cos Phi	0.8	

Ambient conditions of reference: 1000 mbar, 25°C, 30% relative humidity. Power according to ISO 3046 normative.

P.R.P. Prime Power - ISO 8528 : prime power is the maximum power available during a variable power sequence, which may be run for an unlimited number of hours per year, between stated maintenance intervals. The permissible average power output during a 24 hours period shall not exceed 80% of the prime power. 10% overload available for governing purposes only.

Standby Power (ISO 3046 Fuel Stop power): power available for use at variable loads for limited annual time (500h), within the following limits of maximum operating time: 100% load 25h per year – 90% load 200h per year. No overload available. Applicable in case of failure of the main in areas of reliable electrical network.

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Engine Specifications 1800 r.p.m.

ENGINE		PRP		STANDBY	
Rated Output	kW	146.4		163.4	
Manufacturer		Perkins			
Model		1106C-E66TAG3			
No. of Cylindirs and Build		4 Cycle; In-line;6 Cylinder Diesel			
Aspiration and Cooling		Turbocharged air-to-air charge cooled			
Bore/Stroke	mm	105X127			
Compress the ratio		16.2:1			
Cooling system		Water-cooled			
Engine Speed/Frequency	rpm/Hz	1800/60HZ			
Coolant Capacity	L	N/A			
Starting System		Electric 12 volt DC			
Displacement	L	6.6			
Lubricant system Capacity	L	N/A			
Battery Volatge / Capacity		12VDC			
Governing Type	Type	ECM			
Air Filter	Type	Dry			
Fuel Consumption	Load	100%	75%	50%	25%
	L/h	39.1	30.0	21.2	10.6

ENGINE--Industrial 4 stroke cooled diesel engine complete with air, fuel and oil filters, electric starting and charging equipment, engine protection against low water level.

COOLING--Radiator and cooling fan complete with protection guards, designed to cool engine at specified output in air temperatures up to 45 °C, radiators suitable for higher temperatures are available. Low water level protection fitted as standard.

ELECTRICAL SYSTEM--12V upto. Axial type starter motor, battery charging alternator, high capacity lead acid battery, and battery tray mounted on the generator base frame, and heavy duty interconnecting cable with terminations.

EXHAUST SYSTEM--Heavy duty industrial exhaust silencer with flexible piping.

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Alternator Technical Specifications

ALTERNATOR BRAND		LEROY SOMER	STAMFORD
Model		LSA44.2M95	UCI274E
Exciter System		Self-excited, brushless	
Poles	Num	4	
Cooling Fan		Cast alloy aluminum	
Bearing		Single,double shielded	
Windings		100% copper	
Connection Type		Reconnectable	
Insulation Type	Class	Class H	
Pitch		2/3	
Amortisseur Winding		Full	
Voltage Regulator		A.V.R. (Electronic)	
Steady Voltage Precision		± 1%	
Underspeed Protection		Standard	
Overexcitation Protection		IP23	
TIF (1960 Weightings)		<50	

ALTERNATOR--Brushless,self exciting,self regulation,sreen protected,drip proof rated in accordance with IEC60034.Voltage regulation maintained within $\pm 0.5\%$ from no load to full load.between 0.8 lagging and unity.All standard voltages available.

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Control Panel Technical Specifications

Control Panel- SMARTGEN 6110/6120

The base mounted control panel in a vibration isolated sheet steel enclosure. The control panel is equipped as follows:

- a) Instruments: Analogue Voltmeter, Hours Run Meter, Water pressure Meter.
- b) Controls: Emergency Stop Pushbutton, Voltmeter Phase Selector Switch.
- c) Control module: Standard collocation is smartgen Auto start with AMF.

Smartgen®

Main Features:

- Δ Automatic mains failure
- Δ Engine control, Generator protection
- Δ Built in alarms and warnings
- Δ Remote Start operation available
- Δ Fuel pump control
- Δ Mains simulation
- Δ Block heater control
- Δ Field adjustable parameters
- Δ Free MS-Windows Remote monitoring
- Δ LED displays
- Δ Configurable analogue inputs
- Δ I/O expansion capability



Protection Circuits

- WARNING
- Battery charge failure
- Low battery voltage
- SHUT DOWNS
- Fail to start
- Emergency stop
- Low oil pressure
- High engine temperature
- Over /Under speed
- Under/over generator frequency
- Failed to reach loading voltage
- Electrical trip
- Generator over current

Instruments

- ENGINE
- Engine speed
- Oil pressure
- Coolant temperature
- Run time
- Battery volts
- TOR
- Voltage (L-N)
- Current (L1-L2-L3)
- Frequency
- Mains
- Voltage (L-L, L-N)

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Generating Sets Standard Features

Three phase four wire, output voltage 480V/277V, 60HZ, between 0.8 lagging, protection capability according with the standard of NAME1 and IP23.

General Features:

- Δ Composed of Perkins diesel engine and Stamford or Leroy somer alternator
- Δ Oil and fuel filter fitted, water separator
- Δ Lube-oil drain valve fitted
- Δ Electric Starter Charge motor 12 VD.C
- Δ Water-cooled
- Δ 8-hours operation base tank
- Δ Auto start
- Δ Optional soundproof and weatherproof canopy
- Δ 3 pole MCCB Delixi breaker
- Δ Operation & Maintenance manual
- Δ Special Integrated Steel Base tank and sprayed overall in gloss enamel paint

Voltage Regulation:

- Voltage regulation maintained within $\pm 0.5\%$
- Between 0.8 and 1.0 lagging and unity
- From no load to full load
- At speed droop variation upto 4.5%

Frequency Adjustable Ratio:

- Change load from 0-100%, within 1.0% (electric speed regulator), within 4.5% (mechanical speed regulator)

Frequency Undulation:

- load from 0-100%, frequency undulation within 0.25%
- No load wire volts max undulation ration\ within 1.8%
- Three Phrase balanced load in the order of 5%
- Effect factor of Telecom
- TIF better than 50
- THF to IEC60034 Part 40 better than 2%

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Soundproofed Version Features

Robust Corrosion Resistant Construction

- Δ Black finish stainless steel lock and hinges
- Δ Body made from steel components treated with polyester powder coating

Excellent Access for Maintenance

- Δ Two large doors on each side
- Δ Radiator fill access plate
- Δ Lube oil and cooling water drains pipes to exterior of the enclosure

Security and Safety

- Δ Control panel viewing window in a lockable access door
- Δ Emergency stop push button (red) mounted on enclosure interior
- Δ Cooling fan and battery charging alternator fully guarded
- Δ Exhaust silencing system totally enclosed for operator safety



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Generating Sets other Features

Generating Sets Optional Features

- ΔLow fuel level alarm shutdown
- ΔAutomatic Fuel Filling System
- ΔEngine oil feeding and drain pump
- ΔAuto Transfer Switch(ATS)
- ΔParallel control panels
- ΔCircuit Breaker MCCB & ACB
- ΔRemote Control Panel
- Δweatherproof/soundproof Canopy
- ΔTrailer type Gensets

Quality Standards

ISO9001:2000,ISO14000,ISO3046
ISO8528 BS4999
BS5514,AS1359,ICE34
CE Compliance

Gensets Dimensions & Weight

Open type:LxWxH (mm) Net Weight Kgs

2645*730*1630/1539KGS

Silent type:LxWxH (mm) Net Weight Kgs

3430*1110*2060/2114KS

Authorized