

60Hz/1800 r.p.m-P.F.0.8					Prime Power	Standby Power	Rated Current
Genset	Engine	Alternator	Voltage (V)	PH	kW/kVA	kW/kVA	Amps
FC230X-K	P086TI	LSA46.2L6 UCI 274H FPA27-18010	380/220	3	184/230	200/250	349.5
		LSA46.2L6 UCI 274H FPA27-1508	208/120	3	184/230	200/250	638.4
		LSA46.2M5 UCI 274H FPA27-1508	220/127	3	184/230	200/250	603.6
		LSA46.2M5 UCI 274H FPA27-1508	230/132	3	184/230	200/250	577.4
		LSA46.2M3 UCI 274G FPA27-1508	480/277	3	184/230	200/250	276.7

**Ratings:** All three Phase generator sets are rated at 0.8 power factor. All single-phase generator sets are rated at 0.8 or 1.0 power factor. POWERGEN reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever.

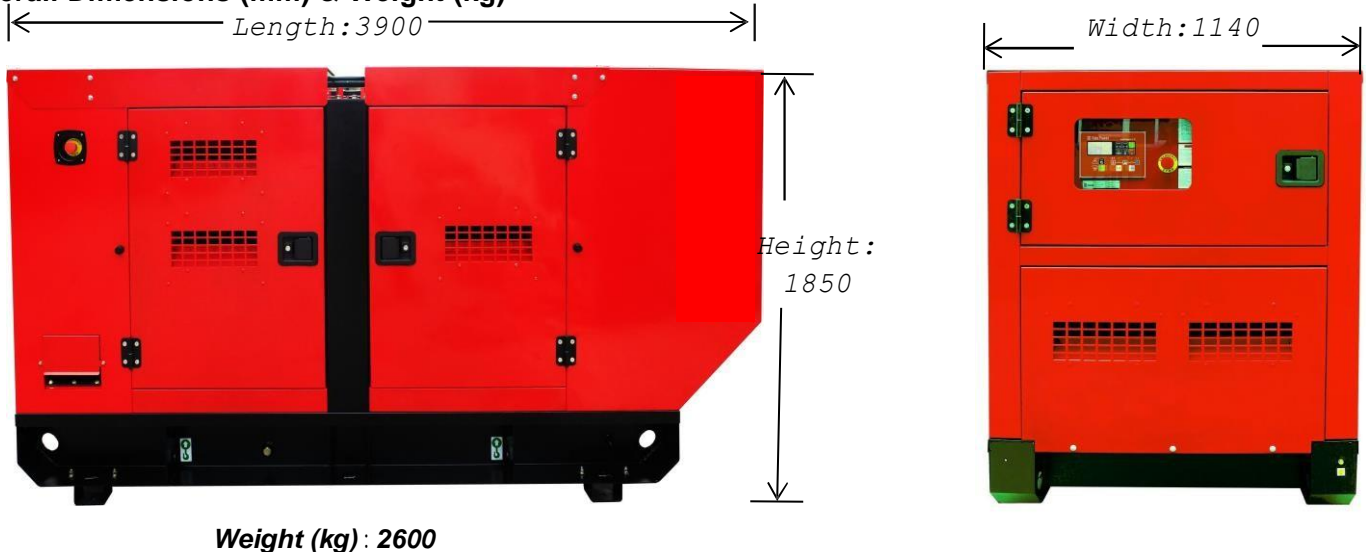
**Prime Power:**

Available continuously at variable load in lieu of commercially purchased power for an unlimited number of hours per year in accordance with ISO8528-1, and an overload of 10% permitted for one hour in every twelve hours of operation in accordance with ISO 3046-1.

**Standby Power:**

Emergency Standby Power in variable load applications in accordance with ISO8528-1 in the event of a utility power failure. No overload available for this service as relevant alternators are peak continuous rated at 27°C.

**Overall Dimensions (mm) & Weight (kg)**



## Standard and optional accessories

System	Standard ●	Optional ○
<b>Air Intake System</b>	<ul style="list-style-type: none"> <li>● Standard air filter</li> <li>● Air filter overload alarm</li> </ul>	<ul style="list-style-type: none"> <li>○ Air prefilter</li> <li>○ Heavy air filter</li> </ul>
<b>Cooling System</b>	<ul style="list-style-type: none"> <li>● 50°C radiator</li> <li>● Low water level alarm</li> <li>● Fan and belt guard</li> </ul>	<ul style="list-style-type: none"> <li>○ Antifreeze</li> <li>○ Water jacket heater</li> </ul>
<b>Exhaust System</b>	<ul style="list-style-type: none"> <li>● Discharge valve</li> <li>● Stainless steel bellow</li> <li>● Residential silencer</li> <li>● Complete exhaust pipe</li> </ul>	<ul style="list-style-type: none"> <li>○ Stainless steel silencer</li> <li>○ Stainless steel exhaust pipe</li> </ul>
<b>Fuel System</b>	<ul style="list-style-type: none"> <li>● Rain cap</li> <li>● 8 Hours integrated base fuel tank</li> <li>● Standard fuel filter</li> <li>● Fuel level gauge</li> <li>● Fuel filling cap</li> </ul>	<ul style="list-style-type: none"> <li>○ 6 Hours double wall base fuel tank</li> <li>○ Fuel-water separator</li> <li>○ Oil level sensor ① ②</li> <li>○ Automatic fuel top-up system ①</li> </ul>
<b>Lubrication System</b>	<ul style="list-style-type: none"> <li>● Fuel hose</li> <li>● Standard oil filter</li> <li>● Manual oil pump and drain</li> </ul>	<ul style="list-style-type: none"> <li>○ Oil heater</li> <li>○ Lube oil level indicator</li> </ul>
<b>Alternator and Electric Switch</b>	<ul style="list-style-type: none"> <li>● Shunt or self excited</li> <li>● Class H insulation</li> <li>● H class temperature rise</li> <li>● DELIXI MCCB</li> <li>● Terminal connection lugs (L1, L2, L3, LN)</li> </ul>	<ul style="list-style-type: none"> <li>○ Oil temperature indicator ①</li> <li>○ PMG or AREP (Leroy-Somer only)</li> <li>○ Alternator space heaters</li> <li>○ PT100 winding temperature sensors</li> <li>○ Weaver AVR</li> <li>○ Weaver prolapse transformer</li> <li>○ F class temperature rise</li> <li>○ 4 Pole circuit breaker with leakage protection</li> <li>○ Circuit breaker - 4 pole</li> <li>○ ABB MCCB</li> <li>○ MCCB auxiliary contact and shunt tripping device</li> </ul>
<b>Control System</b>	<ul style="list-style-type: none"> <li>● Comap Nano Plus for 4 cylinders engine</li> <li>● Comap Intelilite AMF20 for 6 cylinders or ECU engine</li> </ul>	<ul style="list-style-type: none"> <li>○ Panel lighting</li> </ul>
<b>Silent / Base</b>	<ul style="list-style-type: none"> <li>● 67-72 db(A) @ 3 meters</li> <li>● 4mm -6mm Steel base</li> <li>● Transportation support leg</li> <li>● Single hook</li> <li>● Power coating enclosure</li> <li>● Anti-vibration mounting between engine /alternator and baseframe</li> <li>● Emergency stop mounted outside the</li> </ul>	<ul style="list-style-type: none"> <li>○ Forklift holes</li> <li>○ Enclosure color:</li> <li>○ Trailer for off road or on road</li> </ul>
<b>Start / Charge</b>	<ul style="list-style-type: none"> <li>● canopy</li> <li>● Standard color: Ral 3020</li> <li>● Battery with bracket and cables</li> <li>● Engine battery charger</li> <li>● 3A Mains charger</li> </ul>	<ul style="list-style-type: none"> <li>○ Low temperature starting batteries</li> <li>○ Battery switch</li> <li>○ High current charger (10A, 20A)</li> </ul>

**Remark:**

① When you need the automatic oil top up system, you have to use the electrical oil level sensor.

② You can choose either electrical oil level sensor or oil temperature sensor.

## Engine

Engine specifications		Lubrication System	
Manufacture	DOOSAN DAEWOO	Oil Capacity (Max.- Min.)	15.5-12 Litre
Engine Model	P086TI	Lubrication Method	Fully forced pressure feed type
Engine Type	4 cycle, in-line	Oil Pump	Gear Type Driven by Crank-shaft Gear
Engine Speed	1800 r.p.m	Maximum oil temperature	120°C
Prime Power	205kW	Fuel System	
Standby Power	223kW	Type Injection System	Direct Injection
Governor Type	Electronic	Fuel feed pump Capacity	175 liters / h
Aspiration	Turbo charged & intercooled	Fuel Consumption at 100% Standby Power	56.8 Litres/hour
Displacement	8.071 L	Fuel Consumption at 100% Prime Power	50.6 Litres/hour
Bore * Stroke	111mm x 139mm	Fuel Consumption at 75% Prime Power	37.7 Litres/hour
NO. of Cylinders	6	Fuel Consumption at 50% Prime Power	25.1 Litres/hour
Compression Ratio	16.4:1	Fuel Consumption at 25% Prime Power	13.8 Litres/hour
Intake Air Flow	22.33 m3/min	Fuel Tank Capacity	8 hours
Rotation	Counter clockwise viewed from flywheel	Cooling System	
Mean Piston Speed	8.34 m/s	Coolant Capacity- Engine Only	14 Litre
Noise Level @3m	67-72 dBA	Coolant Capacity - with Radiator	44 Litre
Exhaust System		Standard Thermostat (Modulating) Range	71-85°C
Exhaust Gas Flow	40.9 m3/min	Maximum for Standby and Prime	103°C
Exhaust Gas Temperature	509°C	Coolant Flow Rate	166 liters / min
Maximum Back Pressure	5.9 kPa	Electric System	
Exhaust Pipe Size	N/A	Electrical System Voltage	24V
Air Intake System		Battery	Maintenance-free
Max. static pressure after Radiator	0.125 kPa	Connecting Cables	Available
Maximum Intake Air Restriction		Thermal Data	
. With Clean Filter Element	2.16 kPa	Radiated Heat to Ambient	18.1-20.3
. With Dirty Filter Element	6.23 kPa	kW Heat Rejection to Coolant	77.5-
		87.0 kW	
		Heat Rejection to Exhaust	178.3-200.2 kW

**60Hz/1800R.P.M**

## Alternator

General Data		Insulation Class	
Power Factor	Cos φ = 0.8	Bearing	Single
Excitation	Shunt / Brushless	Altitude	≤ 1000 m

## Ratings

Brand	Alternator	Number of wires	AVR Model	PH	Voltage (V)	Prime Power	Standby Power
						kW/kVA	kW/kVA
Leroy-Somer	LSA46.2L6	12	R250	3	380/220	206/257	228/285
Stamford	UCI 274H		AS440			190/237.5	205/256.3
Tide	FPA27-18010		SX440			200/250	220/275
Leroy-Somer	LSA46.2L6	12	R250	3	208/120	221/276	243/304
Stamford	UCI 274H		AS440			190/237.5	205/256.3
Tide	FPA27-1508		SX440			180/225	200/250
Leroy-Somer	LSA46.2M5	12	R250	3	220/127	184/230	202/252
Stamford	UCI 274H		AS440			196/245	212/265
Tide	FPA27-1508		SX440			180/225	200/250
Leroy-Somer	LSA46.2M5		R250			192/240	210/263
Stamford	UCI 274H	12	AS440	3	230/132	196/245	212/265
Tide	FPA27-1508		SX440			180/225	200/250
Leroy-Somer	LSA46.2M3		R250				

Stamford AS440	UCI 274G	12	3	480/277	182/228 185.1/231.4	204/255 202.6/253.3
Tide	FPA27-1508			SX440	180/225	200/250

# ControlSystem



Comap Nano Plus

Comap IntelliLite AMF20

Comap IntelliLite AMF25

Viewable parameters	Phase voltage	3	3	3
	Wire voltage	3	3	3
	Current	Instrument	3	3
	Frequency	●	●	●
	Active power	×	●	●
	Reactive power	×	●	●
	Apparent power	×	●	●
	Power factor	×	●	●
	Electric energy metering	×	×	●
Generator protection	Abnormal voltage	●	●	●
	Over-current warning	×	●	● Over
	current protection	×	●	● Over
	Frequency protection	●	●	● Short
	circuit protection	MCCB	MCCB+o	MCCB+o
Engine figure	Oil pressure	●	●	●
	Water temperature	●	●	●
	Fuel level	○	○	○
	Speed	●	●	●
	Battery voltage	●	●	●
	Elapsed time	●	●	●
Engine protection	Low oil pressure warning	●	●	●
	Low oil pressure protection	●	●	●
	High temperature warning	●	●	●
	High temperature protection	●	●	●
	Overspeed warning	●	●	●
	Overspeed protection	●	●	●
	Charge fault	●	●	●
Function	Remote start-stop	●	●	●
	AMF	●	●	●
	Programmable input	3	7	7
	Programmable output	6	7	7
	Port extension	USB	○	○
	Remote monitoring	×	○	○
	Communication port	×	○	○
	CAN	●	○	●
	Start/Stop time control	×	×	●
	Maintenance tips	×	×	●
	Fault record	×	×	●
	Multi-language function	×	●	●

**Remark:** ● Standard ○ Optional × NA

## (Safety Installation: Detect - Control – Switch System)

POWERGEN offers not only a changeover switch but also an integrated mains detection and switch system for your 24 Hour Power Protection. The system enables automatic start-up and operation of the generating set in the event of a mains power failure, overvoltage or loss of phase; and also mains automatic re-transfer once it come back. The system has a wide application such as hospital, bank, telecom, air port, broadcasting station and hotels.

### System Advantages

- Automatically transfer and re-transfer load from main power to gen-power without operator intervention.operation. (Both automatic and manual)
- ATS Controller (AMF function), seamless integration with Intelligent 5.0
- Available from 32 – 3200A, better protection for 4 pole switch.
- Available in standard, bypass isolation and service-entrance configurations.
- Configurable in open, closed and programmed transition operating modes.
- Designed to interface seamlessly with POWERGEN generators and switchgear.
- Drip Proof IP23 Enclosure.
- Easy Installation: Wall-mounted & Floor standing
- Comes fully loaded with the technology to do the job.



Rated Current	Breaker Type			
	A	Chinese	ABB	Socomec
32	x		B	x
63		A	B	B
80		x	x	B
100		A	B	B
125		x	B	B
160		B	B	B
200		x	B	x
250		C	B	B
300		x	x	x
315		x	C	x
400		C	C	C
630		C	D	D
800		D	D	D
1000		D	D	D
1250		D	D	D
1600		D	D	E
2000		E	E	E
2500		E	E	E
3200		E	x	E

### Dimensions : mm

A : 400x200x500

B : 500x300x650

C : 600x400x1200

D : 800x600x1400

E : 1000x800x1600



## **Controller**

### **StandardParameters**

- Gen phase voltage
- Generator frequency
- Engine speed
- Battery voltage
- Engine running hours cou
- Engine temperature
- Oil pressure



### **WarningandShutdownAlarms**

- Low oil pressure
- High engine temperature
- Over speed
- Under speed
- Start failure
- Stop failure
- Emergency stop
- High/low battery voltage
- Aux. shutdown alarm
- Aux. Warning