

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
FC113X-C	6BT5.9-G1	LSA46.2M3 UCI274G TPA274S6	240 (220-240)	1	90/113	100/125	491.3
		LSA44.3M6 UCI274C TPA274VS2	380/220	3	90/113	100/125	170.9
		LSA44.3M6 UCI274C TPA274VS1	416/240	3	90/113	100/125	156.1
		LSA44.3S5 LSAP 44C UCI274C TPA224VL7	440-460	3	90/113	100/125	147.6 (440V) 141.2 (460V)
		LSA44.3S4 LSAP 44C UCI274C TPA224VL7	480/277	3	90/113	100/125	135.3

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.

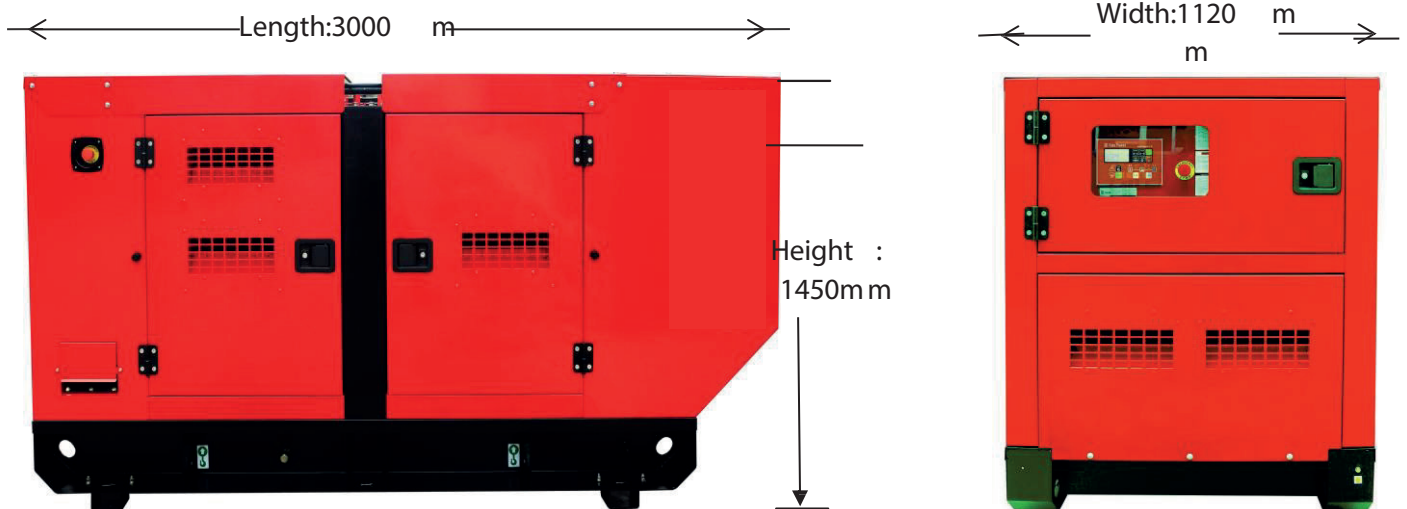
Prime Power:

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)



Weight (kg): 1500

Standard and optional accessories

System	Standard ●	Optional ○
Air Intake System	<ul style="list-style-type: none"> ● Standard air filter ● Air filter overload alarm 	<ul style="list-style-type: none"> ○ Air prefilter ○ Heavy air filter
Cooling System	<ul style="list-style-type: none"> ● 50°C radiator ● Low water level alarm ● Fan and belt guard ● Discharge valve 	<ul style="list-style-type: none"> ○ Antifreeze ○ Water jacket heater
Exhaust System	<ul style="list-style-type: none"> ● Stainless steel bellow ● Residential silencer ● Complete exhaust pipe ● Rain cap 	<ul style="list-style-type: none"> ○ Stainless steel silencer ○ Stainless steel exhaust pipe
Fuel System	<ul style="list-style-type: none"> ● 8 Hours integrated base fuel tank ● Standard fuel filter ● Fuel level gauge ● Fuel filling cap ● Fuel hose 	<ul style="list-style-type: none"> ○ 6 Hours double wall base fuel tank ○ Fuel-water separator ○ Oil level sensor ① ② ○ Automatic fuel top up system ①
Lubrication System	<ul style="list-style-type: none"> ● Standard oil filter ● Manual oil pump and drain 	<ul style="list-style-type: none"> ○ Oil heater ○ Lube oil level indicator ○ Oil temperature indicator ①
Alternator and Electric Switch	<ul style="list-style-type: none"> ● Shunt or self excited ● Class H insulation ● H class temperature rise ● DELIXI MCCB ● Terminal connection lugs (L1, L2, L3, LN) 	<ul style="list-style-type: none"> ○ PMG or AREP (Leroy-somer only) ○ Alternator space heaters ○ PT100 winding temperature sensors ○ Weaver AVR ○ Weaver prolapse transformer ○ F class temperature rise ○ 4 Pole circuit breaker with leakage protection ○ Circuit breaker - 4 pole ○ ABB MCCB ○ MCCB auxiliary contact and shunt tripping device
Control System	<ul style="list-style-type: none"> ● Intelligent 1.0 for 4 cylinders engine ● Intelligent 3.0 for 6 cylinders engine ● Intelligent 5.0 for ECU engine 	<ul style="list-style-type: none"> ○ Panel lighting
Silent / Base	<ul style="list-style-type: none"> ● 67-72 db(A) @ 3 meters ● 4mm -6mm Steel base ● Transportation support leg ● Single hook ● Power coating enclosure ● Anti-vibration mounting between engine /alternator and baseframe ● Emergency stop mounted outside the canopy ● Standard color: Ral 3020 	<ul style="list-style-type: none"> ○ Forklift holes ○ Enclosure color: ○ Trailer for off road or on road
Start / Charge	<ul style="list-style-type: none"> ● Battery with bracket and cables ● Engine battery charger ● 3A Mains charger 	<ul style="list-style-type: none"> Low temperature starting batteries Battery switch High current charger (10A, 20A)

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	
Manufacture	DCEC Cummins
Engine model	6BT5.9-G2
Engine type	4 cycle, in-line
Engine speed	1800 r.p.m
Prime power	100kW/133hp
Standby power	110kW/147hp
Governor type	Electronic
Governor make / model	BYC A
Aspiration:	Turbocharger
Displacement	5.9 L
Bore * Stroke	102mm x 120mm
NO. of cylinders	6
Compression ratio	17.3:1
Engine idle speed	750-850 rpm
Piston speed	7.2 m/s
Air cleaner type	Dry
Exhaust System	
Maximum back pressure	10 kPa
Exhaust pipe size normally acceptable	75 mm
Exhaust gas temperature	564-577 °C
Exhaust gas flow	312 Litres/sec.
Air Intake System	
Maximum intake air restriction with heavy duty air cleaner	
- Dirty element	6.2 kPa
- Clean element	3.7 kPa
Recommended intake piping size	76 mm
Intake air flow	111 Litres/sec.

Lubrication System	
Oil capacity (high - low)	14.2-12.3 Litres
Maximum oil temperature	121 °C
Minimum required lube system capacity	
- Sump plus filters	16.4 Litres
Fuel System	
Type injection system	BYC A direct injection
Total drain flow (constant for all loads)	30 Litres/hour
Fuel consumption at 100% standby power	31.3 Litres/hour
Fuel consumption at 100% prime power	28.5 Litres/hour
Fuel consumption at 75% prime power	20.7 Litres/hour
Fuel consumption at 50% prime power	14.4 Litres/hour
Fuel consumption at 25% prime power	9.0 Litres/hour
Fuel tank capacity	8 hours
Cooling System	
Coolant capacity - engine only	7.9 Litres
Standard thermostat (modulating) range	82 - 95 °C
Maximum top tank temperature	
- Standby power	104 °C
- Prime power	100 °C
Electric System	
Electrical system voltage	24V
Battery	Maintenance-free
Connecting cables	Available
Thermal Data	
Radiated heat to ambient	19-21 kW
Heat rejection to coolant	68-71 kW
Heat rejection to exhaust	TBD

Alternator

60Hz/1800R.P.M

General Data	
Power factor	Cos ϕ = 0.8
Excitation	Shunt / Brushless

Insulation class	H
Bearing	Single
Altitude	≤ 1000 m

Ratings

Brand	Alternator	Number of wires	AVR Model	PH	Voltage (V)	Prime Power	Standby Power
						kW/kVA	kW/kVA
Leroy-somer	LSA46.2M3	12	R250		240 (220-240)	102/128	113/141
Stamford	UCI274G	12	AS440	1		98.7/123.4	N/A
Tide	TPA274S6	12	SX460			92/115	100/125
Leroy-somer	LSA44.3M6	12	R250		380/220	99/124	109/136
Stamford	UCI274C	12	AS440	3		96/120	105.6/132
Tide	TPA274VS2	12	SX460			100/125	110/137.5
Leroy-somer	LSA44.3M6	12	R250		416/240	108/135	119/149
Stamford	UCI274C	12	AS440	3		90/112.5	96/120
Tide	TPA274VS1	12	SX460			90/113	97/121
Leroy-somer	LSA44.3S5	12	R220		440-460	92/115	101/126
Leroy-somer	LSAP 44C	6	R201	3		88/110	93/116.5
Stamford	UCI274C	12	AS440			94/117.5	102/127.5
Tide	TPA224VL7	12	SX460			89/111	95/119
Leroy-somer	LSA44.3S4	12	R220			90/113	99/124
Leroy-somer	LSAP 44C	6	R201	3	480/277	90/113	96/120
Stamford	UCI274C	12	AS440			100/125	110/137.5
Tide	TPA224VL7	12	SX460			94/117.5	101/126

ControlSystem



Intelligent 1.0 Intelligent 3.0 Intelligent 5.0

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+○	MCCB+○
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

Automatic Transfer Switch

A.T.S - 4 Poles

(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

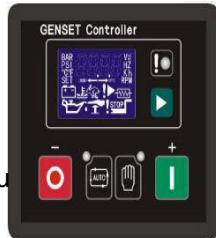
E: 1000x800x1600



Controller

StandardParameters

- Gen phase voltage
- Generator frequency
- Engine speed
- Battery voltage
- Engine running hours counter
- 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