

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
FC90X-C	4BTA3.9-G11	LSA 44.3 M6 UCI274D FPA22-7510	240 (220-240)	1	72/90	80/100	375.0
		LSA44.3S4 UCI224G FPA22-689	380/220	3	72/90	80/100	136.7
		LSA44.3S4 UCI224G FPA22-648	208/120	3	72/90	80/100	249.8
		LSA44.3S3 UCI224G FPA22-648	220/127	3	72/90	80/100	236.2
		LSA44.3S3 UCI224G FPA22-648	230/132	3	72/90	80/100	225.9
		LSA44.3S2 UCI224F FPA22-648	480/277	3	72/90	80/100	108.3

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.

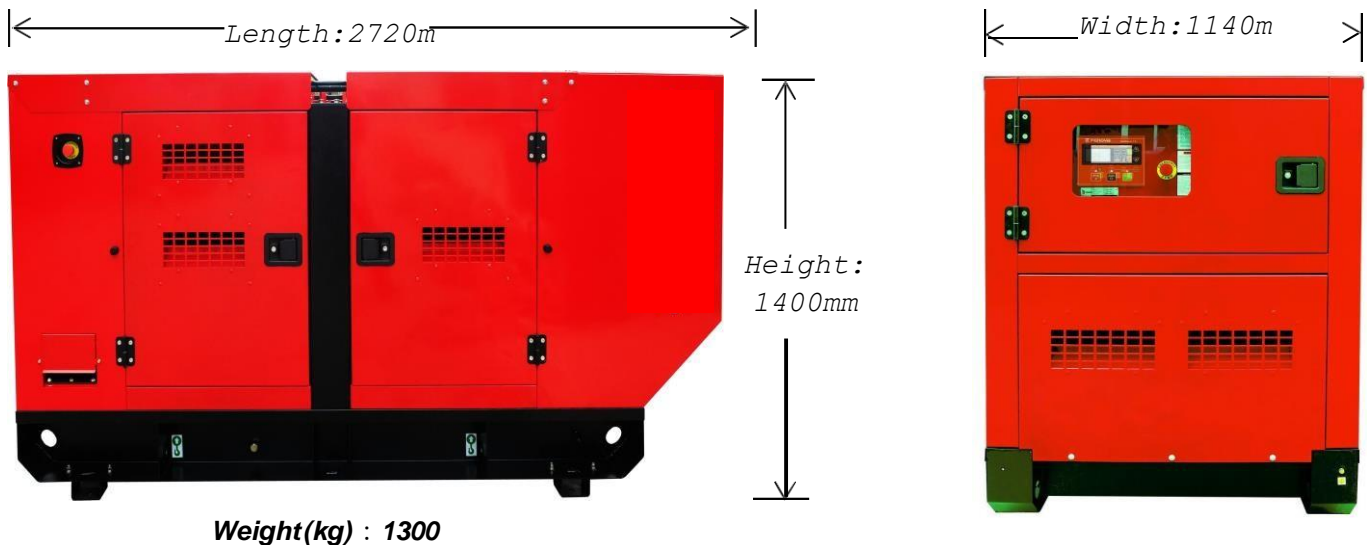
Prime Power:

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)



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"> • Comap Nano Plus for 4 cylinders engine • Comap IntelliLite AMF20 for 6 cylinders or 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		Lubrication System	
Manufacture	DCEC Cummins	Oil capacity (high - low)	9.5 - 8.5 Litre
Engine model	4BTA3.9-G11	Maximum oil temperature	121 °C
Engine type	4 cycle, in-line	Minimum required lube system capacity	10.9 Litres
Engine speed	1800 r.p.m	- Sump plus filters	10.9 Litres
Prime power	70kW/93hp	Fuel System	
Standby power	80kW/107hp	Type injection system	BYC PB direct injection
Governor type	Electronic	Total drain flow (constant for all loads)	30 Litres/hour
Governor make / model	BYC PB	Fuel consumption at 100% standby power	20 Litres/hour
Aspiration:	Turbocharger & Aftercooler	Fuel consumption at 100% prime power	17.6 Litres/hour
Displacement	3.9 L	Fuel consumption at 75% prime power	13.2 Litres/hour
Bore * Stroke	102mm x 120mm	Fuel consumption at 50% prime power	9.1 Litres/hour
NO. of cylinders	4	Fuel consumption at 25% prime power	5.3 Litres/hour
Compression ratio	17.3:1	Fuel tank capacity	16 hours
Engine idle speed	950-1050 rpm	Cooling System	
Piston speed	7.2 m/s	Coolant capacity - engine only	8.3 Litre
Noise level @7m	67 dBA	Standard thermostat (modulating) range	60Hz/1800R.P.M
Alternator		Maximum top tank temperature	83 °C
General Data		Insulation class	H
Maximum back pressure	Co 10 kPa	- Standby power	104 °C
Exhaust pipe size normally acceptable	Shunt / Brushless	Prime power	<100 °C
Exhaust gas temperature	393-405 °C	Electric System	
Exhaust gas flow	188 Litres/sec.	Electrical system voltage	Prime Power Standby Power 24V
Air Intake System		Battery	Maintenance-free
Maximum intake air restriction with heavy duty air cleaner		Connecting cables	Available
- Dirty element	6.2 kPa	Thermal Data	
- Clean element	3.7 kPa	Radiated heat to ambient	To be decided
Recommended intake piping size	76 mm	Heat rejection to coolant	To be decided
Intake air flow	93 Litres/sec.	Heat rejection to exhaust	To be decided

Brand	Alternator	Number of wires	AVR Model	PH	Voltage (V)	kW /kVA	kW /kVA
Leroy-Somer Stamford Tide	LSA 44.3 M6 UCI274D FPA22-7510	4	R250 AS440 SX460	1	240 (220-240)	78/98 76.8/96 72/90	86/108 N/A 80/100
Leroy-Somer Stamford Tide	LSA44.3S4 UCI224G FPA22-689	12	R250 AS440 SX460	3	380/220	71/89 80/100 75/94	78/98 85/106.3 82/102.5
Leroy-Somer Stamford Tide	LSA44.3S4 UCI224G FPA22-648	12	R250 AS440 SX460	3	208/120	78/98 75/93.8 76/95	86/107 81/101.3 84/105
Leroy-Somer Stamford Tide	LSA44.3S3 UCI224G FPA22-648	12	R220 AS440 SX460	3	220/127	74/92 78/97.5 76/95	81/101 85/106.3 84/105
Leroy-Somer Stamford Tide	LSA44.3S3 UCI224G FPA22-648	12	R250 AS440 SX460	3	230/132	77/96 80/100 76/95	84/105 85/106.3 84/105
Leroy-Somer Stamford Tide	LSA44.3S2 UCI224F FPA22-648	12	R250 AS440 SX460	3	480/277	70/88 75/93.8 76/95	77/96 82/102.5 84/105



Comap Nano Plus

Comap IntelliLite

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+	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

(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: W all-mounted & Floor standing
- Comes fully loaded with the technology to do the job.



Rated Current	Breaker Type		
	A	Chinese	ABB
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
 C : 600x400x1200
 E : 1000x800x1600

B : 500x300x650
 D : 800x600x1400



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