GOLDEN MAJD Co.

800 - 880S

Rating @ 0.8 PF		Prime rating	Stand-by rating
Voltage *1	Freq. *2	PT800 *3	PT880S *4
400 V	50 Hz	800.0 KVA	880.0 KVA
480 V	60 Hz	844.0 KVA	938.0 KVA

The above ratings represent the generating set capability guarantied within ±3% at the references conditions equivalent to those specified in ISO 8528/1, ISO 3046/1 and BS 5514/1

NOTES

1 - The applicable voltage range is 380V to 415V for 50Hz applications and 380V to 480V for 60Hz applications.
2 - This generating set is of fixed speed of 1500rpm or 1800rpm.
3 - **PT800** is the prime power rating of the generating set, where a variable load and unlimited hours usage are applied on the generating set with an average load factor of 80% of the prime rating over each 24 hour period. Noting that a 10% overload is available for 1 hour in every 12 hours operation.
4 - **PT880S** is the standby power rating of the generating set, where a variable load limited to an annual usage up to 500 hours is applied, with 300 hours of which may be continuous running. Noting that no overload is permitted.

Engine Technical Data		
Model	Perkins 4006C-23TAG3A	
Cylinders	6; vertical in-line	
Aspiration	Turbocharged & A/A charge-cooled	
Combustion	Direct injection	
Cooling System	Water cooled	
Displacement	22.921 L	
Oil consumption	0.25 % of fuel consumption	
Lube oil capacity	113.4 L Max	
Coolant capacity	105.0 L	
Governor	Electronic	
Emissions regulations	½ TA-Luft (1986)	
Speed	1500 rpm	1800 rpm
Fuel Consumption PT800	167.4 L/H	189.6 L/H
Fuel Consumption PT880S	193.5 L/H	213.5 L/H
Radiator Cooling Air Flow	1200 m^3/min	1320 m^3/min
Max Exhaust Gas Flow	193 m^3/min	209 m^3/min

The above performance data are valid as per the following specs:
- Diesel Fuel is according to BS2869 Class A2 or equivalent.
- Lubricating oil is according to API CG4 (15W/40).
- The coolant should be 50% antifreeze and 50% fresh water.

Alternator Technical Data		
Model	Leroy Somer LSA 49.1 M75	
Regulation	± 0.5 %	
International protection	IP23	
Insulation class	H	
Terminals	6	
Frequency	50 Hz	60 Hz
Coolant Air Flow	1.0 m^3/s	1.2 m^3/s

Shipping Data			
Length	Width	Height	Weight
4250 mm	1920 mm	2290 mm	6300 kg

All information given in this leaflet is correct at the time of printing but it may be changed subsequently by the Company

ISO 9001 : 2000
Certificate Number: CC1680-009512,009912

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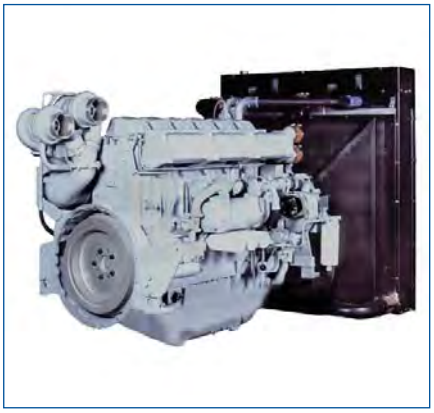


The Perkins 4000 Series is a family of 6, 8, 12 and 16 cylinder diesel engines, designed to address today's uncompromising demands within the power generation industry with particular aim at the standby market sector. Developed from a proven engine range that offers superior performance and reliability.

The 4006-23TAG3A is a newly developed, turbocharged and air-to-air charge cooled, 6 cylinder diesel engine. Its premium features and design provide economic and durable operation as well as an exceptional power to weight ratio, excellent load acceptance and improved gaseous emissions, plus the overall performance and reliability characteristics essential to the power generation market.

4000 Series

4006-23TAG3A

Diesel Engine – ElectropaK

760 kWm at 1500 rpm
795 kWm at 1800 rpm

Economic power

Individual 4 valve cylinder heads giving optimised gas flows.
Unit fuel injectors ensure ultra fine fuel atomisation and hence controlled rapid combustion.
Commonality of components with other engines in the 4000 Series family for reduced stocking levels.

Reliable power

Developed and tested using the latest engineering techniques.
Piston temperatures controlled by an advanced gallery jet cooling system.
Tolerant of a wide range of temperature without derate.
Over 4,000 distributors and dealers in 160 countries.

Compact, clean and efficient power

Exceptional power to weight ratio and compact size give optimum power density for easier transportation and installation.
Designed to provide excellent service access for ease of maintenance.
Engines to comply with major international standards.
Low gaseous emissions that will satisfy the requirements of ½ TA Luft (1986).

Engine Speed (rev/min)	Type of Operation	Typical Generator Output (Net)		Engine Power			
				Gross		Net	
		kVA	kWe	kWm	bhp	kWm	bhp
1500	Continuous Baseload	640	512	566	759	540	724
	Prime Power	800	640	705	945	679	910
	Standby (maximum)	900	720	786	1054	760	1019
1800	Continuous Baseload	675	540	614	823	570	764
	Prime Power	844	675	759	1017	715	958
	Standby (maximum)	938	750	839	1125	795	1066

The above ratings represent the engine performance capabilities to conditions specified in ISO 8528/1, ISO 3046/1:1986, BS 5514/1.
Derating may be required for conditions outside these; consult Perkins Engines Company Limited.

Generator powers are typical and are based on an average alternator efficiency and a power factor (cos. θ) of 0.8.
Fuel specification: BS 2869: Part 2 1998 Class A2 or ASTM D975 D2. **Lubricating oil:** 15W40 to API CG4.

Rating Definitions
Baseload Power: Power available for continuous full load operation. No overload is permitted on baseload power.
Prime Power: Power available at variable load with a load factor not exceeding 80% of the prime power rating. There is no overload permitted on baseload power.
Standby Power: Power available in the event of a main power network failure up to a maximum of 500 hours per year of which up to 300 hours may be run continuously. Load factor may be up to 100% of standby power. No overload is permitted.

4000 Series

4006-23TAG3A

Standard ElectropaK Specification

Air inlet
- Mounted air filter

Fuel system
- Direct fuel injection system, fuel lift pump
- Fuel cooler

Governing
- Heinzmann digital governor – governing to ISO 8528-5 Class G2

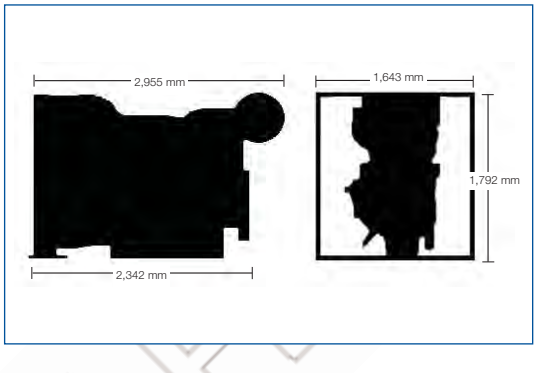
Lubrication system
- Wet sump with filler and dipstick
- Lubrication oil filters
- Oil cooler with separate filter header

Cooling system
- Twin thermostats, water pump
- System designed for ambients up to 50ºC
- Radiator supplied loose incorporating air-to-air charge cooler

Electrical equipment
- 24 volt starter motor, 24 volt 70 amp battery charging alternator with integral voltage regulator and activating switch
- Flywheel and Housing
- SAE J620 size 18 flywheel
- SAE '0' flywheel housing

Literature
- User's Handbook and Parts Manual

Optional Equipment
- Heavy-duty air cleaners – paper element with pre-cleaner
- Changeover lubrication oil filter
- Changeover fuel filter
- Immersion heater with thermostat
- Additional manuals
- 4 metre wiring harness



General Data

Number of cylinders	6
Cylinder arrangement	Vertical in-line
Cycle	4 stroke
Induction system	Turbocharged and air-to-air charge cooled
Combustion system	Direct injection
Cooling system	Water-cooled
Bore and stroke	160 x 190 mm
Displacement	22.921 litres
Compression ratio	13:1
Direction of rotation	Anti-clockwise, viewed on flywheel
Firing order	1, 5, 3, 6, 2, 4
Total lubrication system capacity	122.7 litres
Total coolant capacity	156 litres
Length	2,341 mm
Width	1,900 mm
Height	1,810 mm
Dry weight (engine)	2,400 kg

Fuel Consumption				
Engine Speed	1500 rev/min		1800 rev/min	
	g/kWh	l/hr	g/kWh	l/hr
At Standby Power Rating	207	183	219	202
At Prime Power Rating	205	162	219	182
At Baseload Power Rating	TBA	TBA	TBA	TBA
At 75% of Prime Power Rating	TBA	TBA	TBA	TBA
At 50% of Prime Power Rating	TBA	TBA	TBA	TBA

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Distributed by

LEROY SOMER®

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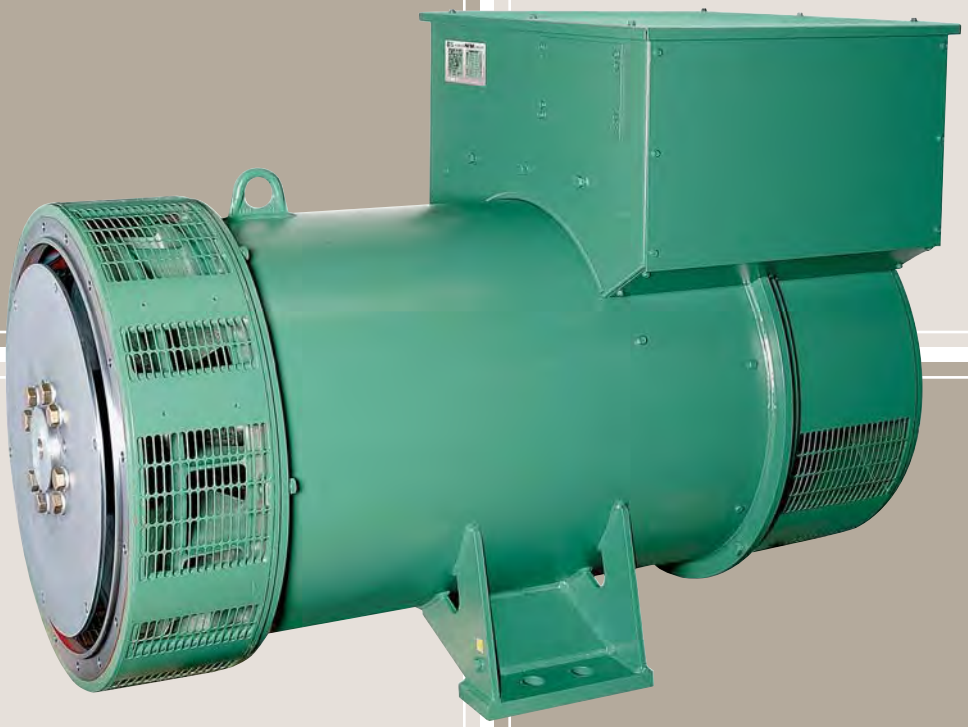


Alternators
LSA 49.1 - 4 Pole

Electrical and mechanical data

Common data

Insulation class	H	Excitation system	A R E P or PMG
Winding pitch	2/3 (N° 6S)	A.V.R. model	R 448
Terminals	6	Voltage regulation (*)	± 0,5 %
Drip proof	IP 23	Sustained short-circuit current	300% (3 IN) : 10s
Altitude	≤ 1000 m	Total harmonic (* *) TGH / THC	at no load < 4 % - on load < 4%
Overspeed	2250 min^{-1}	Waveform : NEMA = TIF - (* *)	< 50
Air flow	1 m^3/s (50Hz) / 1,2 (60Hz)	Wave form : C.E.I. = FHT - (* *)	< 2 %

(*) Steady state duty. (**) Total harmonic content line to line, at no load or full rated linear and balanced load.

Ratings 50 Hz - 1500 R.P.M.

kVA / kW - Power factor = 0,8

Duty T°C		Continuous duty / 40 °C			Continuous duty / 40 °C			Stand-by / 40 °C			Stand-by / 27 °C		
Class / T° K		H / 125° K			F / 105° K			H / 150° K			H / 163° K		
Phase		3 ph.			3 ph.			3 ph.			3 ph.		
Y		380V	400V	415V	380V	400V	415V	380V	400V	415V	380V	400V	415V
Δ		220V	230V	240V	220V	230V	240V	220V	230V	240V	220V	230V	240V
49.1 S4	kVA	660	**660**	660	594	594	594	693	693	693	725	**725**	725
	kW	*528*	***528***	*528*	*475*	*475*	*475*	*554*	*554*	*554*	*580*	***580***	580
49.1 M6	kVA	725	**725**	725	653	653	653	760	760	760	800	**800**	800
	kW	580	***580***	*580*	*522*	*522*	*522*	*608*	*608*	*608*	*640*	***640***	*640*
49.1 M75	kVA	775	**800**	775	698	720	698	810	840	810	850	**880**	850
	kW	620	***640***	*620*	*558*	*576*	*558*	*648*	*672*	*648*	*680*	***704***	*680*
49.1 L9	kVA	880	**880**	880	792	792	792	920	920	920	960	**960**	960
	kW	704	***704***	*704*	*634*	*634*	*634*	*736*	*736*	*736*	*768*	***768***	*768*
49.1 L10	kVA	890	**910**	890	800	820	800	934	955	934	979	**1000**	979
	kW	712	***728***	*712*	*640*	*656*	*640*	*747*	*764*	*747*	*783*	***800***	783

Ratings 60 Hz - 1800 R.P.M.

kVA / kW - PF = 0,8

Duty / T° C		Continuous duty / 40 °C				Stand-by / 40 °C				Stand-by / 27 °C			
Class / T° K		H / 125° K				F / 105° K				H / 150° K				H / 163° K			
Phase		3 ph.				3 ph.				3 ph.				3 ph.			
Y		380V	416V	440V	480V	380V	416V	440V	480V	380V	416V	440V	480V	380V	416V	440V	480V
Δ		220V	240V			220V	240V			220V	240V			220V	240V		
49.1 S4	kVA	710	710	725	**792**	639	639	652	712	745	745	760	830	781	781	798	**871**
	kW	568	568	580	**634**	511	511	522	570	596	596	608	664	625	625	638	**697**
49.1 M6	kVA	780	780	800	**870**	702	702	720	783	819	819	840	913	858	858	880	**957**
	kW	624	624	640	**696**	562	562	576	626	655	655	672	730	686	686	704	**766**
49.1 M75	kVA	866	936	960	**960**	780	842	865	865	910	983	1008	1008	953	1030	1056	**1056**
	kW	693	749	768	**768**	624	674	692	692	728	786	806	806	762	824	845	**845**
49.1 L9	kVA	910	980	1010	**1056**	819	882	909	950	955	1029	1060	1108	1000	1078	1111	**1162**
	kW	728	784	808	**845**	655	706	727	760	764	823	848	886	800	862	889	**930**
49.1 L10	kVA	958	1020	1050	**1092**	862	918	945	983	1006	1071	1102	1146	1054	1122	1155	**1200**
	kW	766	816	840	**874**	690	734	756	786	805	857	882	917	843	898	924	**960**

COMPACT (Big Range)

A larger type of the compact enclosure that is used in tigh spaces and almost having the same look. The difference between the two is mainly the number of the doors and the silenced exhaust system which is mounted externally.

GHADDAR
MACHINERY Co. S.A.L.

YOUR POWER PARTNER

Charasteristics:

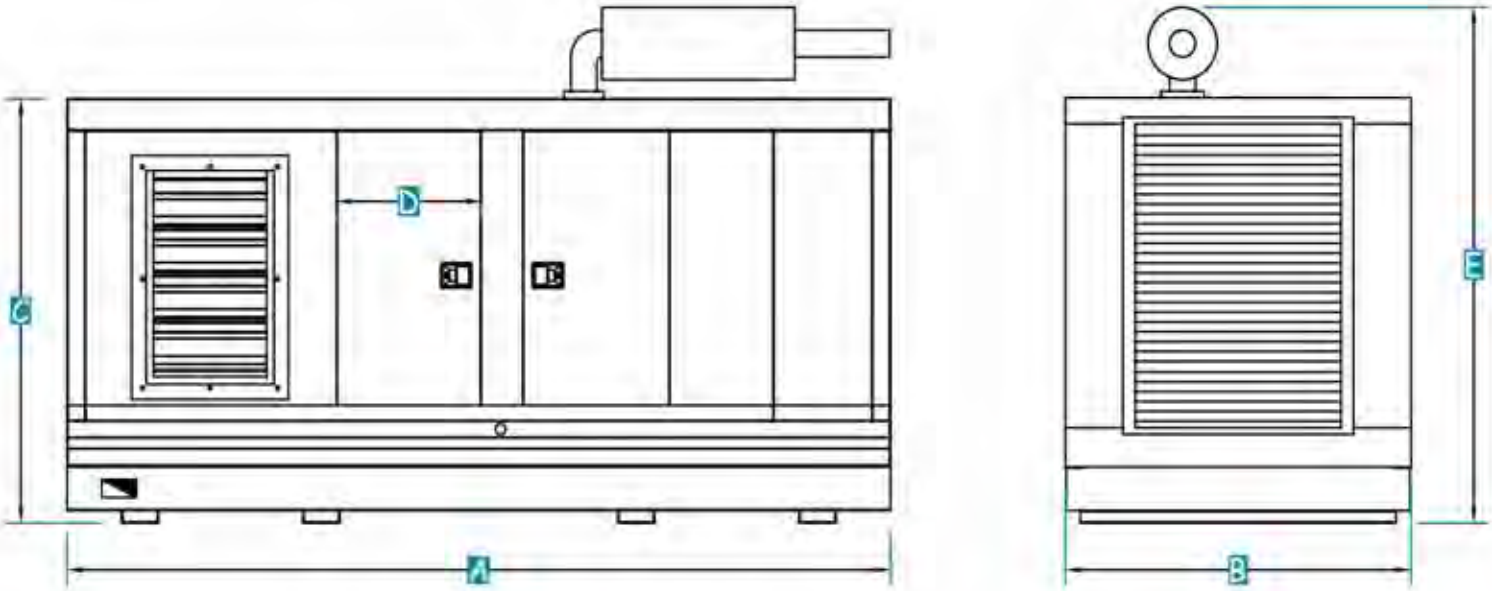
> Body and components made of steel painted with highly corrosive synthetic gloss.
> Stainless steel locks and hinges.
> Two large doors on each side for easy maintenance access.
> Lube oil pipe can be reached externally to allow easy drainage.
> Special viewing window for the control panel in a lockable door.
> Lifting points on the base frame.
> Fuel fill and battery are secured through lockable doors.
> Exhaust silencing system mounted externally.
> Emergency stop push button installed on the exterior of the enclosure (optional).

Range
200 - 800 KVA

ISO 9001 :2000
QMI REGISTERED
IQNet CERTIFIED MANAGEMENT SYSTEM
Certificate Numbers: CC1680-009512. 009912

Sound Pressure Levels (dBA)

		50 Hz						60 Hz					
		1 m		3 m		7 m		1 m		3 m		7 m	
Generating Set	Powertech	0%	100%	0%	100%	0%	100%	0%	100%	0%	100%	0%	100%
Engine model	KVA	Load	Load	Load	Load	Load	Load	Load	Load	Load	Load	Load	Load
1306C-E87TAG3	200	79.7	82.4	76.2	78.3	71.2	73.6	82.6	85.3	79.1	81.2	74.1	76.5
1306C-E87TAG6	250	79.7	82.4	76.2	78.3	71.2	73.6	82.6	85.3	79.1	81.2	74.1	76.5
2306C-E14TAG2	350	81.2	83.9	77.7	79.8	72.7	75.1	84.1	86.8	80.6	82.7	75.6	78
2306C-E14TAG3	400	81.2	83.9	77.7	79.8	72.7	75.1	84.1	86.8	80.6	82.7	75.6	78
2806C-E16TAG1	450	81.9	84.6	78.4	80.5	73.4	75.8	85	87.7	81.5	83.6	76.5	78.9
2806C-E16TAG2	500	81.9	84.6	78.4	80.5	73.4	75.8	85	87.7	81.5	83.6	76.5	78.9
2806C-E18TAG1	550	83.1	86	79.6	82.9	74.6	77.2	86.3	89.2	82.8	86.1	77.8	80.4
2806C-E18TAG2	625	83.1	86	79.6	82.9	74.6	77.2	86.3	89.2	82.8	86.1	77.8	80.4
4006C-23TAG2A	725	83.8	86.7	80.3	83.6	75.3	77.9	87.3	90.2	83.8	87.1	78.8	81.4
4006C-23TAG3A	800	84.1	87.6	80.6	84.5	75.6	78.8	87.5	91	84	87.9	79	82.2



Dimensions

Generating Set	Powertech	A: mm	B: mm	C: mm	D: mm	E: mm
Engine model	KVA					
1306C-E87TAG3	200	4150	1800	2250	735	2570
1306C-E87TAG6	250	4150	1800	2250	735	2570
2306C-E14TAG2	350	4750	2000	2350	729	2850
2306C-E14TAG3	400	4750	2000	2350	729	2850
2806C-E16TAG1	450	5250	2000	2350	822	2850
2806C-E16TAG2	500	5250	2000	2350	822	2850
2806C-E18TAG1	550	5500	2200	2470	822	2920
2806C-E18TAG2	625	5500	2200	2470	822	2920
4006C-23TAG2A	725	5750	2200	2470	822	2920
4006C-23TAG3A	800	5750	2200	2470	822	2920