

# P88-3

Optional Leroy Somer Alternator

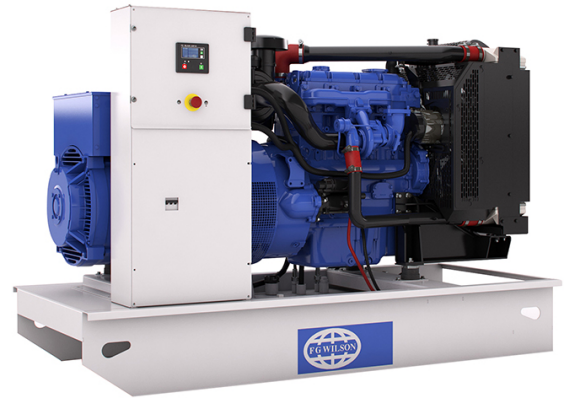


Image for illustration purposes only.

## Output Ratings

Voltage, Frequency	Prime	Standby
400V, 50 Hz	80.0 kVA / 64.0 kW	88.0 kVA / 70.4 kW
480V, 60 Hz	90.0 kVA / 72.0 kW	100.0 kVA / 80.0 kW

Ratings at 0.8 power factor.

Please refer to the output ratings technical data section for specific generator set outputs per voltage.

## Prime Rating

These ratings are applicable for supplying continuous electrical power (at variable load) in lieu of commercially purchased power. There is no limitation to the annual hours of operation and this model can supply 10% overload power for 1 hour in 12 hours.

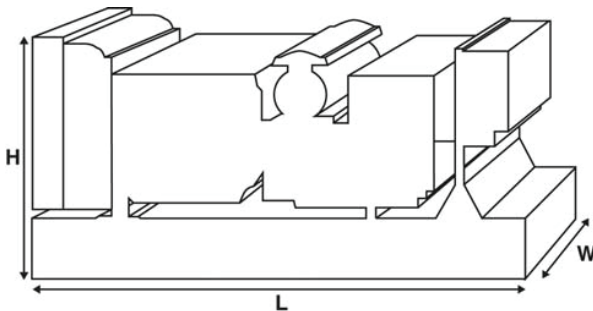
## Standby Rating

These ratings are applicable for supplying continuous electrical power (at variable load) in the event of a utility power failure. No overload is permitted on these ratings. The alternator on this model is peak continuous rated (as defined in ISO 8528-3).

## Standard Reference Conditions

Note: Standard reference conditions 25°C (77°F) Air Inlet Temp, 100m (328 ft) A.S.L. 30% relative humidity.

Fuel consumption data at full load with diesel fuel with specific gravity of 0.85 and conforming to BS2869: 1998, Class A2.



## Ratings and Performance Data

Engine Make & Model:	Perkins® 1104A-44TG2		
Alternator manufactured for FG Wilson by:	Leroy Somer		
Alternator Model:	LL3114D		
Control Panel:	DCP-10		
Base Frame:	Heavy Duty Fabricated Steel		
Circuit Breaker Type:	3 Pole MCCB		
Frequency:	50 Hz	60 Hz	
Engine Speed: rpm	1500	1800	
Fuel Tank Capacity: litres (US gal)	180 (47.6)		
Fuel Consumption: l/hr (US gal/hr)			
(100% Load)	- Prime	18.0 (4.8)	21.0 (5.5)
	- Standby	19.8 (5.2)	23.3 (6.2)

## Available Options

FG Wilson offer a range of optional features to tailor our generator sets to meet your power needs. Options include:

- Upgrade to CE Certification
- A wide range of Sound Attenuated Enclosures
- A variety of generator set control and synchronising panels
- Additional alarms and shutdowns
- A selection of exhaust silencer noise levels

For further information on all of the standard and optional features accompanying this product please contact your local Dealer or visit: [www.FGWilson.com](http://www.FGWilson.com)

## Dimensions and Weights

Length (L) mm (in)	Width (W) mm (in)	Height (H) mm (in)	Dry kg (lb)	Wet kg (lb)
1870 (73.6)	840 (33.1)	1333 (52.5)	964 (2125)	977 (2154)

Dry = With Lube Oil      Wet = With Lube Oil and Coolant

Ratings in accordance with ISO 8528, ISO 3046, IEC 60034, BS5000 and NEMA MG-1.22. Generator set pictured may include optional accessories.

Head Office

St Ivel Way, Warmley, Bristol BS30 8TY  
T. 0370 850 0858 F. 0370 850 0851

[www.powerelectronics.com](http://www.powerelectronics.com)  
[sales@powerelectronics.com](mailto:sales@powerelectronics.com)



### Engine Technical Data

<b>No. of Cylinders / Alignment:</b>	4 / In Line	
<b>Cycle:</b>	4 Stroke	
<b>Bore / Stroke:</b> mm (in)	105.0 (4.1)/127.0 (5.0)	
<b>Induction:</b>	Turbocharged	
<b>Cooling Method:</b>	Water	
<b>Governing Type:</b>	Mechanical	
<b>Governing Class:</b>	ISO 8528 G2	
<b>Compression Ratio:</b>	17.25:1	
<b>Displacement:</b> l (cu. in)	4.4 (268.5)	
<b>Moment of Inertia:</b> kg m <sup>2</sup> (lb/in <sup>2</sup> )	1.14 (3896)	
<b>Engine Electrical System:</b>		
- Voltage / Ground	12/Negative	
- Battery Charger Amps	65	
<b>Weight:</b> kg (lb)		
- Dry	463 (1021)	
- Wet	485 (1069)	

### Performance

	50 Hz	60 Hz
<b>Engine Speed:</b> rpm	1500	1800
<b>Gross Engine Power:</b> kW (hp)		
- Prime	73.4 (98.0)	84.5 (113.0)
- Standby	80.7 (108.0)	93.0 (125.0)
<b>BMEP:</b> kPa (psi)		
- Prime	1335.0 (193.6)	1280.0 (185.7)
- Standby	1468.0 (212.9)	1409.0 (204.4)

### Fuel System

<b>Fuel Filter Type:</b>	Replaceable Element			
<b>Recommended Fuel:</b>	Class A2 Diesel or BSEN590			
<b>Fuel Consumption:</b> l/hr (US gal/hr)				
	110%	100%	75%	50%
<b>Prime</b>	<b>Load</b>	<b>Load</b>	<b>Load</b>	<b>Load</b>
50 Hz	19.8 (5.2)	18.0 (4.8)	13.6 (3.6)	9.5 (2.5)
60 Hz	23.3 (6.2)	21.0 (5.5)	16.1 (4.3)	11.6 (3.1)
		100%	75%	50%
<b>Standby</b>		<b>Load</b>	<b>Load</b>	<b>Load</b>
50 Hz		19.8 (5.2)	14.9 (3.9)	10.3 (2.7)
60 Hz		23.3 (6.2)	17.7 (4.7)	12.5 (3.3)

(Based on diesel fuel with a specific gravity of 0.85 and conforming to BS2869, Class A2)

### Air Systems

	50 Hz	60 Hz
<b>Air Filter Type:</b>	Replaceable Element	
<b>Combustion Air Flow:</b> m <sup>3</sup> /min (cfm)		
- Prime	4.8 (170)	6.2 (219)
- Standby	5.1 (180)	6.5 (230)
<b>Max. Combustion Air Intake Restriction:</b> kPa (in H <sub>2</sub> O)	8.0 (32.1)	8.0 (32.1)

### Cooling System

	50 Hz	60 Hz
<b>Cooling System Capacity:</b> l (US gal)	13.0 (3.4)	13.0 (3.4)
<b>Water Pump Type:</b> Centrifugal		
<b>Heat Rejected to Water &amp; Lube Oil:</b>		
kW (Btu/min)	- Prime 46.0 (2616)	53.0 (3014)
	- Standby 51.0 (2900)	57.0 (3242)
<b>Heat Radiation to Room:</b> Heat radiated from engine and alternator		
kW (Btu/min)	- Prime 18.9 (1075)	20.1 (1143)
	- Standby 20.7 (1177)	22.1 (1257)
<b>Radiator Fan Load:</b> kW (hp)	1.0 (1.3)	1.7 (2.3)
<b>Radiator Cooling Airflow:</b> m <sup>3</sup> /min (cfm)	121.2 (4280)	140.4 (4958)
<b>External Restriction to Cooling Airflow:</b> Pa (in H <sub>2</sub> O)	120 (0.5)	120 (0.5)

Designed to operate in ambient conditions up to 50°C (122°F). Contact your local FG Wilson Dealer for power ratings at specific site conditions.

### Lubrication System

<b>Oil Filter Type:</b>	Spin-On, Full Flow	
<b>Total Oil Capacity:</b> l (US gal)	8.0 (2.1)	
<b>Oil Pan:</b> l (US gal)	7.0 (1.8)	
<b>Oil Type:</b>	API CG4 / CH4 15W-40	
<b>Oil Cooling Method:</b>	Water	

### Exhaust System

	50 Hz	60 Hz
<b>Maximum Allowable Back Pressure:</b> kPa (in Hg)	10.0 (3.0)	15.0 (4.4)
<b>Exhaust Gas Flow:</b> m <sup>3</sup> /min (cfm)		
- Prime	12.5 (441)	15.0 (530)
- Standby	13.3 (470)	15.9 (560)
<b>Exhaust Gas Temperature:</b> °C (°F)		
- Prime	555 (1031)	535 (995)
- Standby	580 (1076)	560 (1040)



Head Office

St Ivel Way, Warmley, Bristol BS30 8TY  
T. 0370 850 0858 F. 0370 850 0851



HIRE | SALES | SERVICE | PARTS | FABRICATION

www.powerelectronics.com  
sales@powerelectronics.com



Alternator Physical Data	
Manufactured for FG Wilson by:	Leroy Somer
Model:	LL3114D
No. of Bearings:	1
Insulation Class:	H
Winding Pitch Code:	2/3 - 6
Wires:	12
Ingress Protection Rating:	IP23
Excitation System:	SHUNT
AVR Model:	R250

Alternator Operating Data	
Overspeed: rpm	2250
Voltage Regulation: (Steady state)	+/- 0.5%
Wave Form NEMA = TIF:	50
Wave Form IEC = THF:	2.0%
Total Harmonic content LL/LN:	2.0%
Radio Interference:	Suppression is in line with European Standard EN61000-6
Radiant Heat: kW (Btu/min)	
- 50 Hz	6.7 (381)
- 60 Hz	7.1 (404)

Alternator Performance Data:	50 Hz				60 Hz			
	415/240V	400/230V 230/115V 200/115V	380/220V 220/110V	220/127V	480/277V 240/139V	380/220V 220/110V	240/120V 208/120V	440/254V 220/127V
Motor Starting Capability* kVA	196	184	168	217	215	143	168	185
Short Circuit Capacity** %	300	300	300	300	300	300	300	300
Reactances: Per Unit								
Xd	2.535	2.728	3.023	2.255	2.558	4.081	3.405	3.044
X'd	0.110	0.118	0.131	0.097	0.111	0.176	0.147	0.132
X''d	0.066	0.071	0.078	0.058	0.066	0.106	0.088	0.079

Reactances shown are applicable to prime ratings.  
 \*Based on 30% voltage dip at 0.6 power factor and SHUNT excitation.  
 \*\*With optional permanent magnet generator.

Output Ratings Technical Data 50 Hz				
Voltage	Prime:		Standby:	
	kVA	kW	kVA	kW
415/240V	80.0	64.0	88.0	70.4
400/230V	80.0	64.0	88.0	70.4
380/220V	80.0	64.0	88.0	70.4
230/115V	80.0	64.0	88.0	70.4
220/127V	80.0	64.0	88.0	70.4
220/110V	80.0	64.0	88.0	70.4
200/115V	80.0	64.0	88.0	70.4

Output Ratings Technical Data 60 Hz				
Voltage	Prime:		Standby:	
	kVA	kW	kVA	kW
480/277V	90.0	72.0	100.0	80.0
220/127V	90.0	72.0	100.0	80.0
380/220V	90.0	72.0	100.0	80.0
240/120V	90.0	72.0	100.0	80.0
440/254V	90.0	72.0	100.0	80.0
220/110V	90.0	72.0	100.0	80.0
208/120V	90.0	72.0	100.0	80.0
240/139V	90.0	72.0	100.0	80.0



Head Office

St Ivel Way, Warmley, Bristol BS30 8TY  
 T. 0370 850 0858 F. 0370 850 0851



HIRE | SALES | SERVICE | PARTS | FABRICATION

www.powerelectronics.com  
 sales@powerelectronics.com



**Documentation**

A full set of operation and maintenance manuals and circuit wiring diagrams.

**Generator Set Standards**

The equipment meets the following standards: BS5000, ISO 8528, ISO 3046, IEC 60034, NEMA MG-1.22.

FG Wilson is a fully accredited ISO 9001 company.



Head Office

St Ivel Way, Warmley, Bristol BS30 8TY  
T. 0370 850 0858 F. 0370 850 0851

HIRE | SALES | SERVICE | PARTS | FABRICATION

[www.powerelectrics.com](http://www.powerelectrics.com)  
[sales@powerelectrics.com](mailto:sales@powerelectrics.com)



AUTHORISED DEALER



UKAS is a member of Registrar of Standards (Holdings) Ltd.

UKAS is a member of Registrar of Standards (Holdings) Ltd.

UKAS is a member of Registrar of Standards (Holdings) Ltd.