

PROUDLY 100% AUSTRALIAN OWNED

**MACFARLANE
GENERATORS**



ESTABLISHED 1949

VICTORIA (HEAD OFFICE) REC: 691

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Macfarlane Generators PTY. LTD. ACN 006 849 074 ABN 74 006 849 074

GRW115P



Generator engineered and designed to work in a wide variety of applications where temporary power supply is needed. Versatility, high efficiency, high structural resistance, high degree of protection and low noise emissions together with easy-to-use and easy access for maintenance make these generator sets the ideal solution for Rental companies.

Power Rating

Frequency	Hz	50
Voltage	V	400
Phases	No	3
Power factor	cos ϕ	0.8
Standby power LTP	kVA	110.00
Standby power LTP	kW	88.00
MAX current	A	159
Prime power PRP	kVA	100.00
Prime power PRP	kW	80.00
NOMINAL current	A	144



Ratings definition (According to standard ISO8528 1:2005)

PRP - Prime Power:

It is defined as being the maximum power which a generating set is capable of delivering continuously whilst supplying a variable electrical load when operated for an unlimited number of hours per year under the agreed operating conditions with the maintenance intervals and procedures being carried out as prescribed by the manufacturer. The permissible average power output over 24 h of operation shall not exceed 70 % of the prime power.

LTP - Limited-Time running Power:

It is defined as the maximum power available, under the agreed operating conditions, for which the generating set is capable of delivering for up to 500 h of operation per year (whose no more than 300 for continuative use) with the maintenance intervals and procedures being carried out as prescribed by the manufacturers. No overload capability is available.

Power supply 50Hz 230V Three Phase (with supplement VSS)

Frequency	Hz	50
Voltage	V	230
Phases	№	3
Power factor	cos ϕ	0.8
Standby power LTP	kVA	110.00
Standby power LTP	kW	88.00
MAX current	A	276
Prime power PRP	kVA	100.00
Prime power PRP	kW	80.00
NOMINAL current	A	251

**Power supply 60Hz 480V Three Phase (with supplement DFS)**

Frequency	Hz	60
Voltage	V	480
Phase	№	3
Power factor	cos ϕ	0.8
Standby power LTP	kVA	132.51
Standby power LTP	kW	106.01
MAX current	A	154
Prime power PRP	kVA	120.48
Prime power PRP	kW	96.38
NOMINAL current	A	139

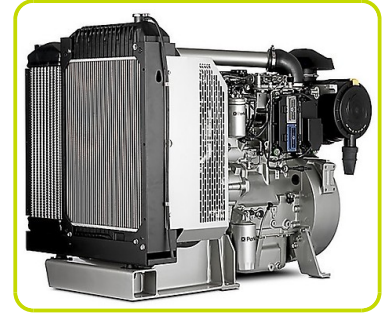
**Power supply 60Hz 208V Three Phase (with supplement VSS)**

Frequency	Hz	60
Voltage	V	208
Phase	№	3
Power factor	cos ϕ	0.8
Standby power LTP	kVA	119.00
Standby power LTP	kW	95.20
MAX current	A	330
Prime power PRP	kVA	108.00
Prime power PRP	kW	86.40
NOMINAL current	A	300



Engine specifications

Engine manufacturer	Perkins	
Model	1104D-E44TAG2	
Engine cooling system	Water	
Nr. of cylinder and disposition	4 in line	
Displacement	cm ³	4400
Aspiration	Turbocharged	
Speed governor	Electronic	
Oil capacity	l	8.4
Lube oil consumption @ PRP (max)	%	0.1
Coolant capacity	l	17
Electric circuit	V	12
VERSION SWITCHABLE [50/60Hz]	YES	
ENGINE DATA	Hz	50
[50Hz] Operating Speed-Nominal	rpm	1500
[50Hz] Exhaust emission level	Stage IIIA	
[50Hz] Specific fuel consumption @ 75% PRP	g/kWh	238
[50Hz] Specific fuel consumption @ 100% PRP	g/kWh	206
[60Hz] Exhaust emission optimized for EPA tier (EPA)	Tier 3	
[60Hz] Specific fuel consumption @ 75% PRP	g/kWh	227
[60Hz] Specific fuel consumption @ 100% PRP	g/kWh	213



Engine Equipment

Standards

The above ratings represent the engine performance capabilities to conditions specified in ISO 8528/1, ISO 3046/1:1986, BS 5514/1

Fuel system

Rotary type pump

Lube oil system

Wet steel sump with filler and dipstick

Filter

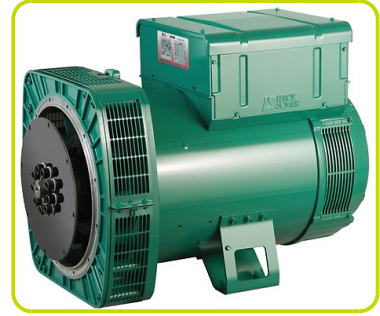
- Fuel filter
- Air filter
- Oil filter

Cooling system

- Mounted radiator
- Thermostatically-controlled system with belt driven coolant pump and pusher fan

Alternator Specifications

Alternator	LEROY SOMER
Model	LSA 44.3 S5
Type	Brushless
Class	H
IP protection	23
Insulation Protection Systems	Protection System 2
Poles	4
Winding leads	12
Voltage regulation system	Electronic
Standard AVR	R 438
Voltage tolerance	% 1



SPECIALY ADAPTED TO APPLICATIONS

The LSA 44.3 alternator is designed to be suitable for typical generator applications, such as: backup, marine applications, rental, telecommunications, etc.

TOP OF THE RANGE ELECTRICAL PERFORMANCE

- Class H insulation.
- Standard 12 wire re-connectable winding, 2/3 pitch, type no. 6.
- Voltage range:
 - 50 Hz: 220 V - 240 V and 380 V - 415 V
 - 60 Hz: 208 V - 240 V and 380 V - 480 V
- High efficiency and motor starting capacity.
- R 791 interference suppression conforming to standard EN 55011 group 1 class B standard for European zone (CE marking).

EXCITATION AND REGULATION SYSTEM

- Excitation system: AREP
- Voltage A.V.R.: R 438

REINFORCED MECHANICAL STRUCTURE

- Compact rigid assembly to better withstand generator vibrations.
- Steel frame and terminal box.
- Aluminium flanges and shields.
- single-bearing designed to be suitable for heat engines.
- Half-key balancing bearing.
- Permanently greased bearing (20 000h).

PROTECTION SYSTEM SUITED TO THE ENVIRONMENT

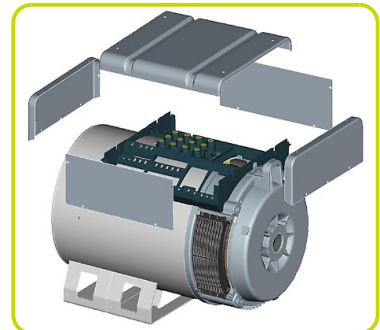
- The LSA 44.3 is IP 23.
- Winding Protection Standard: for clean environments with relative humidity $\leq 95\%$, including indoor marine environments.
- Winding Protection System 2: reinforced insulation for tropical environment (abrasive atmosphere), rental (except for coastal area), relative humidity $> 95\%$

COMPLIANT WITH INTERNATIONAL STANDARDS

The LSA 44.3 alternator conforms to the main international standards and regulations: - IEC 60034, NEMA MG 1.32-33, ISO 8528-3, CSA / UL 1146 (UL 1004 on request), marine regulations, etc.

It can be integrated into a CE marked generator.

The LSA 44.3 is designed, manufactured and marketed in an ISO 9001 environment and ISO 14001.



CANOPY

Canopy painted in RAL9016 made up of modular panels with 1000h+ tested salt spray resistant zinc metal sheet, with access doors on each side with high quality gaskets and lockable handles for easy maintenance and service.



SUPER SILENT

Soundproofing by means washable and fireproof soundproofing material, to get noise attenuation.

Exhaust silencer integrated in the genset shape with flat rain flap.



BASE FRAME

Heavy duty base guarantees the highest standards of durability and resistance, painted using a high quality powder coating process (1000+h tested salt spray resistance).

Fully bunded, able to retain 110% of all the sets fluids, the base frame is provided with integrated fork pockets and pull bar for easy maneuverability and site positioning.



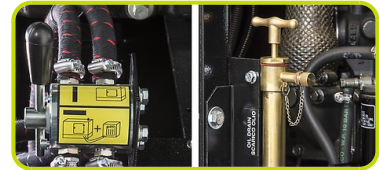
FUEL TANK

Integrated metal fuel tank complete with double fuel refilling point (one each side)



LEAK PROOF TRAY WITH DETECTOR SENSOR

Fluid leak check in the leak proof tray .



FUEL VALVE (6 WAY)

System designed for use the fuel from external tank and increase the autonomy of the generator



LUBE OIL DRAIN PUMP

Makes it easier to the engine oil change



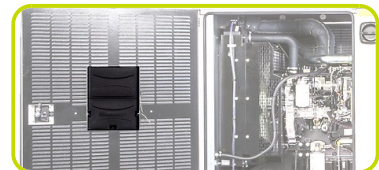
SINGLE LIFTING POINT

Access easy by rung and handle incorporated (available on both sides)



PLASTIC BUMPER

Protections for the transport and stocking



MANUAL BATTERY SWITCH

EARTH ROD

Earth stock with cable fixed inside the genset

DOCS HOLDER

Box intenal for documents, manuals and electrical drawings



Dimensional data

Length	(L) mm	3460
Width	(W) mm	1200
Height	(H) mm	1950
Dry weight	Kg	2460
Fuel tank material		Metal
Fuel tank capacity	l	530



Autonomy

[50Hz] Fuel consumption @ 75% PRP	l/h	19.34
[50Hz] Fuel consumption @ 100% PRP	l/h	22.14
[50hz] Running time @ 75% PRP	h	27.40
[50Hz] Running time @ 100% PRP	h	23.94
[60Hz] Fuel consumption @ 75% PRP	l/h	21.91
[60Hz] Fuel consumption @ 100% PRP	l/h	26.88
[60hz] Running time @ 75% PRP	h	24.19
[60Hz] Running time @ 100% PRP	h	19.72



Noise level 50Hz

Guaranteed noise level (LWA)	dB(A)	91
Noise pressure level @ 1 m	dB(A)	73
Noise pressure level @ 7 m	dB(A)	62



Installation data

[50Hz] Cooling air	m³/min	203.74
[50Hz] Exhaust gas flow @ PRP	m³/min	16.41
[50Hz] Exhaust gas temperature @ LTP	°C	657
[60Hz] Cooling air	m³/min	244.64
[60Hz] Exhaust gas flow @ PRP	m³/min	19.48
[60Hz] Exhaust gas temperature @ LTP	°C	634



Control panel availability

MANUAL CONTROL PANEL	MCP
AUTOMATIC CONTROL PANEL	ACP
MODULAR PARALLEL PANEL	MPP

ACP - Automatic Control Panel

Mounted on the genset, complete with digital control unit (AC-03) for monitoring, control and protection of the generating set, protected through doors with lockable handle.

CONTROL SECTION

- ON/OFF selector switch
- Differential protection with internal switch
- 5A Battery charger.
- Potentiometer for voltage adjustment (internal)
- Alternator AVR (single plug wiring)

Control unit (AC-03)

- Generating set voltage (3 phases).
- Mains voltage.
- Generating set frequency.
- Generating set current (3 phases).
- Battery voltage.
- Power (kVA - kW - kVAr - Cos ϕ).
- Hours-counter.
- Engine speed r.p.m.
- Fuel level (%).
- Engine temperature

Command and others:

- Four operation modes: OFF - Manual starting - Automatic starting - Test.
- Pushbutton for forcing Mains contactor or Genset contactor.
- Push-buttons: start/stop, fault reset, up/down/page/enter selection.
- Remote starting availability.
- Acoustic alarm.
- Automatic battery charger.
- RS232 Communication port.
- Settable PASSWORD for protection level

Protections:

- Engine protections: low fuel level, low oil pressure, high engine temperature,
- Genset protection: under/over voltage, overload, under/over battery voltage, battery charger failure.

Extra Instrumentation (analogue)

- Fuel level meter
- Mechanical hour counter

POWER SECTION

- It integrates 4 poles modular circuit breaker suitably rated with thermal and magnetic overloads.
- Large and robust busbar with cables passage opening from the bottom for easy power cable connection.
- Provided with safety switch to trip circuit breaker if operator open the power section door to operate on the bus bar.

SOCKET SECTION

Two wires facility for remote start/stop		✓
• Plug for auxiliary power supply		✓
• Multipin connector for LTS		✓
SUPPLEMENT - Only available when order		:
Socket Kit	Type	SPKB1
3P+N+T CEE 400V 125A	n	1
3P+N+T 400V 63A	n	1
3P+N+T CEE 400V 32A	n	1
3P+N+T CEE 400V 16A	n	1
2P+T CEE 230V 16A	n	1
230V 16A SCHUKO	n	1
Each socket with its own circuit breaker		•
Common differential protection for three phase sockets		•
Each single phase provided with earth fault protection		•
Other Kit Socket combinations available		✓

