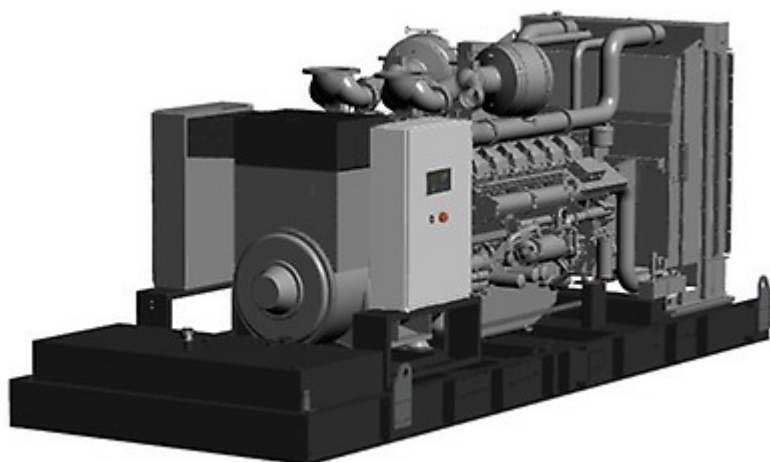


## GSW3100M



### Main Features

Frequency	Hz	50
Voltage	V	400
Power factor	cos $\phi$	0.8
Phase and connection		3

### Power Rating

Standby power LTP	kVA	3171
Standby power LTP	kW	2537
Prime power PRP	kVA	2876
Prime power PRP	kW	2301

#### 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.

## Engine specifications

Engine manufacturer		MTU
Model		20V4000G63
Version		50 Hz
Engine cooling system		Water
Nr. of cylinder and disposition		20 V
Displacement	cm <sup>3</sup>	95400
Aspiration		Turbocharged aftercooled
Speed governor		Electronic
Operating Speed-Nominal	rpm	1500
Prime gross power PRP	kW	2420
Maximum gross power LTP	kW	2662
Oil capacity	l	390
Fuel		Diesel
Specific fuel consumption @ 75% PRP	g/kWh	198
Specific fuel consumption @ PRP	g/kWh	192
Starting system		Electric
Electric circuit	V	24

## Electric radiator

Dry weight	Kg	2600
Wet weight	Kg	3000
Coolant capacity	l	300
Cooling fan airflow rate	m <sup>3</sup> /min	3000
Electrical motor power	kW	90

### Fuel system:

- Electronically controlled high-pressure injection with single unit injection pumps (EUP)
- Fuel delivery pump
- Fuel main filter
- Fuel priming pump for initial system filling and venting
- Closed fuel system

### Lube oil system:

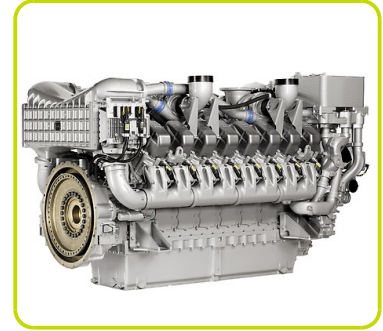
- Forced-feed lubrication system with piston cooling
- Lube oil circulation pump with safety valve
- Lube oil multi-stage filter
- Lube oil heat exchanger
- Oil filler neck and oil dipstick for measurement on non-running engine
- Closed crankcase venting system

### Combustion air system:

- Exhaust turbochargers
- Set of dry-type air filters with contamination indicator

### Cooling system :

- Coolant circulation pump and coolant thermostat for jacket water cooling systems
- Electric radiator for jacket water and charge air cooling circuit with integrated expansion tank
- Coolant level sensor



## Alternator Specifications

Brand	Leroy Somer	
Model	LSA53.1 M80	
Voltage	V	400
Frequency	Hz	50
Power factor	$\cos \phi$	0.8
Voltage regulation system	Electronic	
Poles	4	
Standard AVR	R449	
Voltage tolerance	%	0.5
Efficiency @ 75% load	%	96.5
Class	H	
IP protection	23	
Phases	3	



## Genset equipment

### BASE FRAME:

Base frame made of welded steel profiles, complete with anti-vibration mountings properly sized.

The baseframe has a grounding point to connect all metal parts of the generating set and it provides a high structural strength.

### ENGINE COMPLETE WITH:

- Liquids (no fuel)
- Manual oil Draining pump

### PROTECTIONS:

- Moving and rotating parts protection against accidental contacts

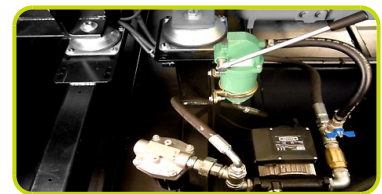
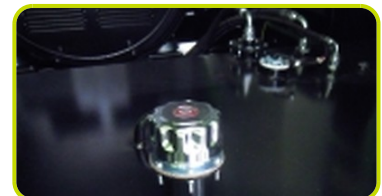
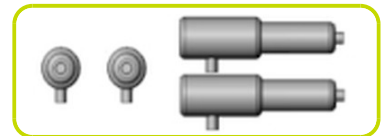
### LIFTING:

- Lifting points frame structure.



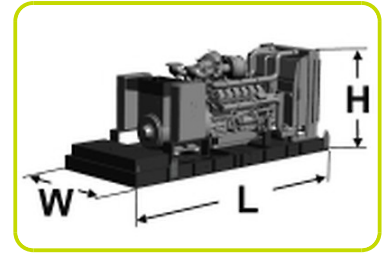
### Genset Equipment - Basic Configurations Available:

BAT – LEAD-ACID STARTING BATTERIES KIT			:
Battery	n		4
Battery Capacity	Ah		220
MBS - Manual Battery Switch			•
EXHAUST SILENCER - VERSIONS AVAILABLE			:
IES - Industrial silencer	dB(A)		-15
RES - Residential silencer	dB(A)		-35/38
FEC - Flexible Exhaust Compensator Bellow and flanges			•
Hot parts protection			•
INTEGRATED FUEL TANK - VERSIONS AVAILABLE			:
IFT1 - Integrated Fuel Tank (steel)	l		500
IFT2 - Integrated Fuel Tank (steel)	l		1000
FBD - Fully bundled base frame			•
LDS - Leakage detection sensor (only with FBD)			•
FCV - Fuel Cut Off Valve			•
AFP - Automatic Fuel Pump			•
DFP - Double Automatic Fuel Pump			•
PHS - Coolant Pre-Heating System - available for models:			•
ALS - Automatic Lube Oil Top Up System with lube oil tank 100L			•
• : Supplement available			.
Other Configurations and-or special versions available on requests			.



### Dimensional data

Length	(L) mm	7535
Width	(W) mm	2280
Height	(H) mm	3390



### Consumption

Fuel consumption @ 75% PRP	l/h	410.45
Fuel consumption @ 100% PRP	l/h	531.78

### Installation data

Total air flow	m <sup>3</sup> /min	3330.00
Exhaust gas flow @ PRP	m <sup>3</sup> /min	438
Exhaust gas temperature @ LTP	°C	535

### Data Current

MAX current	A	4462.87
Circuit breaker	A	4000

### Control panel availability

AUTOMATIC CONTROL PANEL	ACP
MODULAR PARALLEL PANEL	MPP

## ACP - Automatic control panel

Mounted on the genset, complete with digital control unit AC03 for monitoring, control and protection of the generating set

### DIGITAL INSTRUMENTATION (through AC-03)

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

### COMMANDS AND OTHERS

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

### PROTECTIONS WITH ALARM

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

### PROTECTIONS WITH SHUTDOWN

- Engine protections: low fuel level, low oil pressure, high engine temperature
- Genset protection: under/over voltage, overload, under/over battery voltage, battery charger failure
- Earth Fault included in the control unit



## ACP - Basic Configurations Available:

POWER PANEL - BREAKERS AVAILABLE:		
GCB1 - Genset Circuit Breaker 3-pole	A	4000
GCB2 - Genset Circuit Breaker 4-pole	A	4000
ETB - External Terminal Board (with GCB)		Standard
RCG - Various Supplement fof Remote Control		•
IRB - Various supplements for remote signals		•
CPA - Control Panel Anti-Condensation Heater (ACP)		•
• : Supplement available		.
Other Configurations and-or special versions available on requests		.



**MPP - Modular parallel panel**

Mounted on the genset, complete with digital control unit Intelvision5 for monitoring, control, protection and load sharing for both single and multiple gen-sets operating in standby or parallel modes (up to 32 gen-sets in island).

**DIGITAL INSTRUMENTATION (Graphical display 320x240 pixels)**

- Mains: voltage, Intensity, Frequency.
- Mains kW - kVAr -Power factor Cos f.
- Generating set voltage (3 phases).
- Generating set frequency.
- Generating set current (3 phases).
- Generating set Power (kVA - kW - kVAr - Cos f).
- Generating set kWh and kVAh.
- Battery voltage.
- Hours-counter.
- Engine speed r.p.m.
- Fuel level (%).
- Engine temperature - Oil pressure

**COMMAND AND OTHERS**

- Operation modes: OFF - AMF function - Single Parallel to mains Island application - Single Parallel to Mains AMF application - Multiple parallel genset Island application.
- Pushbutton for forcing Mains Breaker/contactor or Genset Breaker/contactor.
- Push-buttons: start/stop, fault reset, up/down/page/enter selection.
- Multiple parallel and Power Management operation with digital load AVR sharing.
- Automatic synchronizing and power control (via speed governer or ECU)
- Baseload Import/Export and Peak shaving
- Voltage and PF control (AVR).
- Configurable digital I/O (12/12) and analogue inputs (3).
- Integrate PLC programmable functions.
- Event-based history (up to 500records).
- Selectable measurement range 120/277V and 0-1/0-5A.
- Remote starting and Blocking signal availability.
- DC system disconnection switch.
- Acoustic alarm.
- Automatic battery charger.
- 2xRS232/RS485/USB Comuncation ports.
- Multi-pin connettor (in and out) for parallel with other generators

**PROTECTION**

- Engine protections: low fuel level, low oil pressure, high engine temperature.
- Genset protections: under/over voltage, overload, under/over frequency, starting failure, under/over battery voltage
- Others: overcurrent, shortcircuit, reverse power, Earth fault
- Emergency stop button.



**MPP - Basic Configurations Available:**

POWER PANEL - BREAKERS AVAILABLE:			
GMB1 - Genset Circuit Breaker 3-pole motorized	A	4000	:
GMB2 - Genset Circuit Breaker 4-pole motorized	A	4000	:
ETB - External Terminal Board (with GMB)		Standard	:
RCG - Various Supplement fof Remote Control			•
IRB - Various supplements for remote signals			•
CPA - Control Panel Anti-Condensation Heater (MPP)			•
• : Supplement available			.
Other Configurations and-or special versions available on requests			



## Accessories

Items available as accessory equipment

### LTS - LOAD TRANSFER SWITCH - Accessories ACP

The Load Transfer Switch (LTS) panel operates the power supply changeover between the generator and the Mains in backup applications, guarantying the feeding to the load within a short period of time.

It consists of a standalone cabinet which can be installed separate from the generating set. The logic control of the power supply changeover is operated by means of the Automatic Control panel mounted on the generating set, so therefore none logic device is required on the LTS panel.

#### Main features

The enclosure is made of metal sheet folded and painted with high-resistance epoxy powder, guarantying external IP40 and internal IP20. Standard color is RAL7035. The lower side of the panel presents a removable plate for power cables connection.

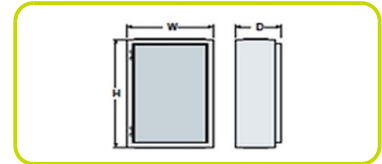
The front door presents an emergency push-button to stop of the generator. Inside the enclosure it is provided a lever which allows a manual selection of the power supply between the generator and the Mains (I-0-II).

According to the changeover control signal, the power supply is transferred from one source to the other by means of two motorized IV-poles change-over switches. A mechanical and electrical interlocking prevents both power sources to be connected at the same time, avoiding any damage for the load or the alternator.



### NOMINAL CURRENT & DIMENSIONS PANEL LTS (standard\*)

Nominal Current	A	4000
Width	(W) mm	1260
Height	(H) mm	2300
Depth	(D) mm	1260
Weight	Kg	550



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