

**AL-022 - LOMBARDINI - LDW 2204**

**1.500 R.P.M. | 50 Hz**

## TECHNICAL SPECIFICATIONS



Model:

**AL-022**

Gen set with manual control panel.

Image for guidance purposes.

ENGINE	MAKE	MODEL
	LOMBARDINI	LDW 2204
ALTERNATOR	MODEL	
	MECC-ALTE ECP 28-M/4	

(400 / 230 V)

CONTINUOUS POWER: (PRP "Prime Power" norma ISO 8528-1)	<b>20 kVA</b>
STAND-BY POWER: (LTP "Limited Time Power" norma ISO 8528-1)	<b>22 kVA</b>

### Amperes in the different voltages:

VOLTAGE	HZ	PHASE	COS Ø	PRP KVA/KW	LTP KVA/KW	AMPERAGE
415/240	50	3	0,8	19,4/15,5	21,4/17,1	29,74
400/230	50	3	0,8	19,4/15,5	21,4/17,1	30,86
380/220	50	3	0,8	19,4/15,5	21,4/17,1	32,48
240/139	50	3	0,8	19,4/15,5	21,4/17,1	51,43
230/133	50	3	0,8	19,4/15,5	21,4/17,1	53,66
220/127	50	3	0,8	19,4/15,5	21,4/17,1	56,1

**ELECTRO EXIM SRL**

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## ENGINE CHARACTERISTICS

MAKE	MODEL
LOMBARDINI	LDW 2204

### GENERAL DATA

Power PRP (kWm)	17.70
Power LTP (kWm)	19.50
No. cylinders	4
Cylinder capacity (L)	-
Diameter per stroke (mm)	88 x 90,4
Compression ratio	22.10
Cooling system	LIQUID
Injection	INDIRECT
Suction	NATURAL
Series regulator	MECHANICAL
Fly wheel coupling	4 - 7,5"

### Lubrication system

Oil capacity (L)	5.70
Oil consumption (%)	0.03
Min. alarm oil pressure (bar)	1.50

### Ventilation system

Air cooling flow (m3/h)	3199
Combustion air flow (m3/h)	82.40
Max. back pressure for fan (mbar)	0

### Exhaust system

Exhaust gas flow (m3/h)	-
Exhaust back pressure (mbar)	-
Temp. exhaust gases (°C)	-

### Electrical system

VDC (V)	12
Battery (Ah)	60
Engine start-up (kW)	-

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## ALTERNATOR CHARACTERISTICS

### MODEL

MECC-ALTE ECP 28-M/4 (400 / 230 V)

### GENERAL DATA

Power PRP (kVA)	20.00
Power LTP (kVA)	22.00
Efficiency Alt. 3/4 %	88.00
Efficiency Alt. 4/4 %	87.60
No. Poles	4
Voltage regulator	DSR
No. wires	12
Insulation	H
Xd (%)	175.00
X'd (%)	16.50
X	9.40
Degree of protection	IP23

## GENERATOR SET CONSUMPTION

% POWER USED	LITRES/HOUR
50%	2.74
75%	4.06
100%	5.40

## DIMENSIONS, CAPACITIES, APPROXIMATE WEIGHT AND NOISE

LENGTH	DIMENSIONS (MM)	
	WIDTH	HEIGHT
1300	580	1398
FUEL TANK (LITRES)		WEIGHT (KG)
80		480.00
NOISE LEVEL (dB (A))		

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## INMESOL GENERATOR SET

### GENERAL DESCRIPTION

The "INMESOL" generator set is an electrical energy generating machine which is used in places where there **is no mains supply** or when there is a MAINS failure.

The mobile elements, distribution belt, fan, etc., and those parts which reach high temperatures during operation, exhaust manifold, etc, include their corresponding protections, in compliance with the requirements of the Machinery Directive **2006/42**.

### REGULATIONS

The machine holds the "CE" marking, and the corresponding Declaration of Conformity is issued with each of them, in which it specifies that the machine complies with **R.D 842/2002 Low Voltage Regulations and with the European Directives:**

- 2006/42 on Safety in Machinery.
- 2006/95/CE on Electrical Safety.
- 2004/108/CE on Electromagnetic Compatibility.
- 2005/88/CE on NOISE EMISSIONS by equipment for outdoor use (for SOUNDPROOF GENERATOR SETS).

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**IN INDUSTRIAL RANGE / SCOPE OF SUPPLY**

		
Engine/alternator monobloc directly connected and installed via silent blocks on a frame made from high tensile electro welded steel profiles that are treated with degreasing liquids and aplicated with a phosphate coat and epoxi paint.	✓	✓
Canopy of steel sheet sound proofed with fireproof rockwool, and treated with degreasing liquids and aplicated with a phosphate coat and epoxi paint.	•	✓
Fuel tank integrated in the base frame provided with fuel level jauge and fuel connections to the engine.	✓	✓
Engine with mechanical engine driven pusher fan.	✓	✓
Industrial silencer with -15 db(A) noise reduction and exhaust outlet tube.	✓	•
Residencial silencer with -35 db(A) noise reduction with exhaust tube and protection cap.	•	✓
Electric control cubicle with control module including protection and reading of electrical meassures engine instrumentation fuel level and engine running hours, etc.	✓	✓
Termal and magnetic circuit breaker and termal and magnetic circuit breaker and earth fault relay.	✓	✓
Battery charge alternator.	✓	✓
Starter battery complete with cables to the engine and pole protection.	✓	✓
Installation prepared for earthing spike (spike not included).	✓	✓
Security protection for heat and moving parts as well as live electrical components.	✓	✓
External emergency stop push button.	✓	✓
Manual engine oil extraction pump.	•	✓
Self excited and auto regulated alternator.	✓	✓
Integrated lifting hook for single point lifting with crane, gensets up to 450 kVA (Except in swing-out cover model)	•	✓
4 Lifting points for gen sets from 450 kVA and bigger.	✓	•
Preparate for extended fuel tank, fully bomded for leakage protection.	✓	✓
Base frame is prepared for trailer kit installation.	✓	✓
Standard electronic speed governor on engines from 220 kVA (LTP) and up.	✓	✓
Horizontal outlet for hot air	•	✓

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## DSE 3110 MANUAL CONTROL PANEL

### DSE 3110 MANUAL CONTROL PANEL

MANUAL CONTROL, PROTECTION AND DISTRIBUTION panel, assembled on the generator set in metal cabinet with a DSE 3110 engine protection unit.



It has the following:

Image for guidance purposes.

**1** STARTER SWITCH

**2** EMERGENCY STOP PUSHBUTTON

**3** MEASURING INSTRUMENTS:

- Analogue ammeters
- Analogue voltmeter
- Fuel level indicator.
- Digital Hz display and hour meter (DSE 3110)

## DSE 3110 MANUAL CONTROL PANEL

### 4 SET CONTROL AND ENGINE PROTECTION: DSE 3110, allows:

- START AND STOP the set MANUALLY.
- Possibility of doing it AUTOMATICALLY via START ON SIGNAL
- Digital readings of the operating hours and the Frequency
- Controls the main characteristics of the engine, causing an alarm or stopping the machine:
  - 1.Low and High Voltage (STOP)
  - 2.Low and High Frequency and Speed (STOP)
  - 3.Low Oil Pressure and High Coolant Temperature (STOP)
  - 4.Failure of the Alternator Battery-Charger (ALARM)
  - 5.Low fuel level (ALARM)

### 5 PROTECTIONS:

- Magnetothermal Protections
- Earth Leak Protection
- Protection fuses for control module

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**DSE 3110 MANUAL CONTROL PANEL**

For OPEN sets - Three-phase generators (single phase by request):

CONT . POW.	MAGNETO. PROTECTION (A)	EARTH LEAK PROTECTION	DISTRIBUTION
SET POWER	10 kVA	4P, 16A (B) 1P+N 16 A (C)	Mod. 16A, 300 mA 1 BASE CEE 3P+N+T 16A 1 BASE CEE 2P+T 16 A
	15 kVA	4P, 25A (B) 1P+N 16 A (C)	Mod. 25A, 300 mA 1 BASE CEE 3P+N+T 32A 1 BASE CEE 2P+T 16 A
	20 kVA	4P, 32A (B)	Mod. 32 A, 300 mA POWER TERMINALS
	30 kVA	4P, 50 A (B)	Mod. 63 A, 300 mA POWER TERMINALS
	40 kVA	4P, 63 A (B)	Mod. 63 A, 300 mA POWER TERMINALS
	50 kVA	4P, 80 A (B)	Electronic adjustable POWER TERMINALS
	60 kVA	4P, 100 A (B)	Electronic adjustable POWER TERMINALS
	75-80 kVA	4P, 125 A (B)	Electronic adjustable POWER TERMINALS
	100 kVA	3P, 160 A (B)	Electronic adjustable POWER TERMINALS
	125-170 kVA	3P, 250 A (B)	Electronic adjustable POWER TERMINALS
	180-275 kVA	3P, 400 A (B)	Electronic adjustable OUTPUT DIRECTLY FROM THE CIRCUIT BREAKER
	300-430 kVA	3P, 630 A (B)	Electronic adjustable OUTPUT DIRECTLY FROM THE CIRCUIT BREAKER
	450-550 kVA	3P, 800 A (B)	Electronic adjustable OUTPUT DIRECTLY FROM THE CIRCUIT BREAKER
	570-665 kVA	3P, 1000 A (B)	Electronic adjustable OUTPUT DIRECTLY FROM THE CIRCUIT BREAKER



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## DSE 3110 MANUAL CONTROL PANEL

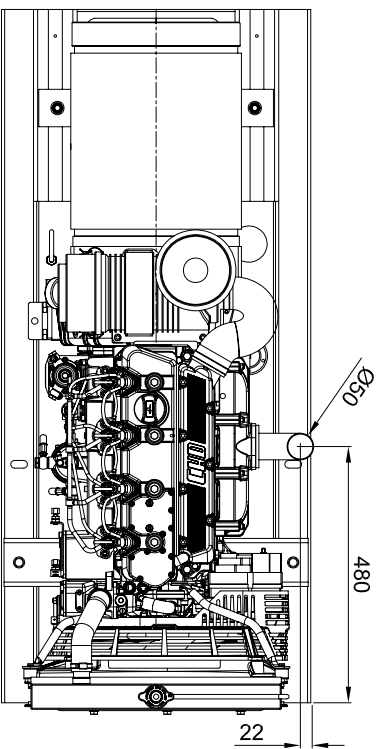
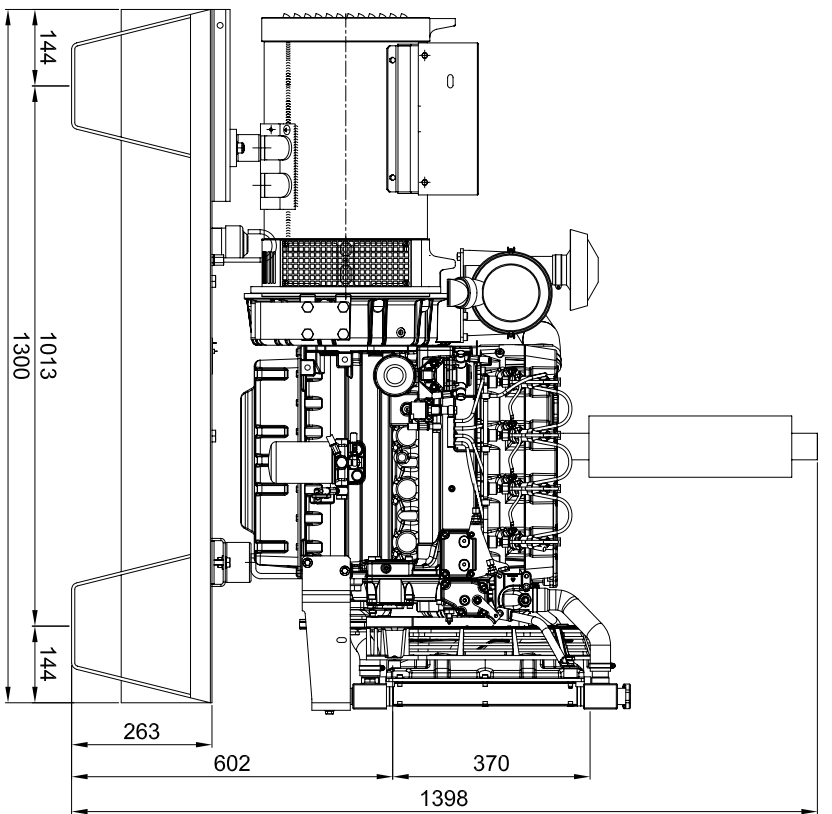
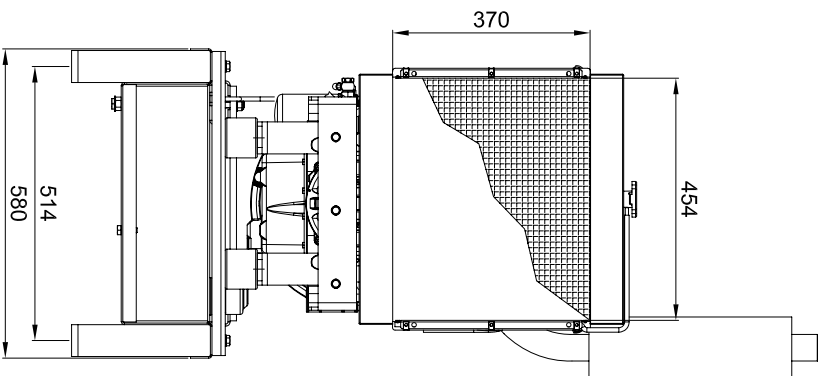
### 6 OPTIONAL:

AUTOMATIC PANEL FOR MANUAL GENERATOR: ATS DSE 334


- This panel provides the manual control generator with a reserve operation from the Mains, as the ATS sends the command to start and stop the generator, when it detects a supply failure and when the Mains is restored

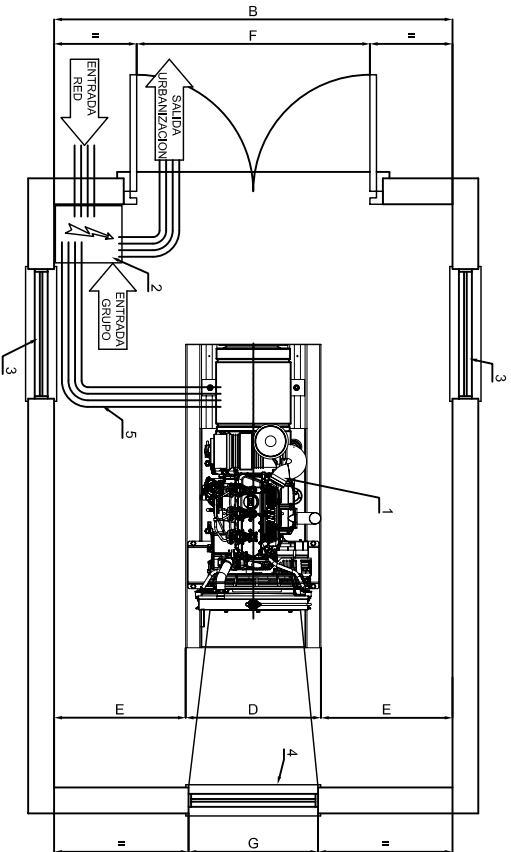
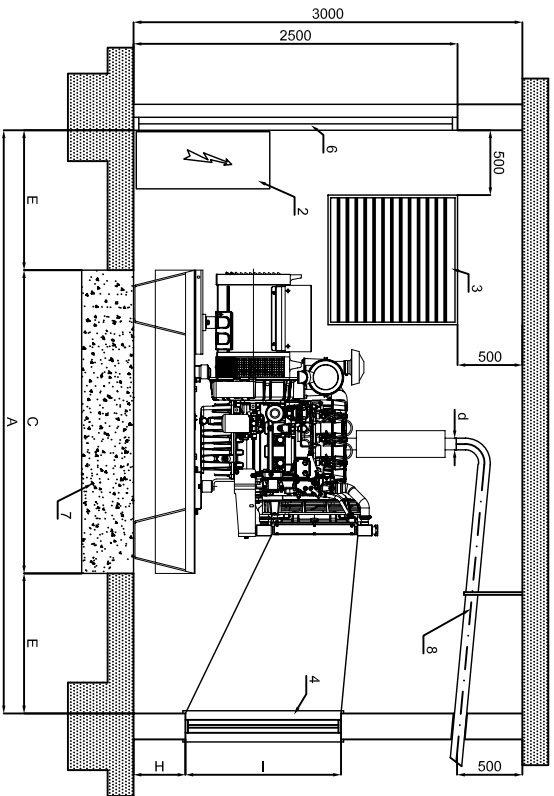


Cubicle composed of the electronic control module which is detecting a mains failure and of 2 contactors mechanically and electrically interlocked or a motorized switch controlled by the above electronic controller who are realizing the change of supply from the GEN SET or the MAINS to the load.



CAPACIDAD DE DEPOSITO = 80 LTS

		PROYECTO: <b>G.E. EST-STD 20 Kva LOMBARDINI (LDW2204)</b>	
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MODIFICADO	J.G. SAEZ	MATERIAL	
DIBUJADO	J.G. SAEZ	TOLERANCIA GENERAL	
COMPROBADO	J.L. SOLANO	UDS.	
CONIGO		EXEDIENTE:	
PESO		Nº MOD.	
ESCALA		Nº PLANO	
DENOMINACION: <b>G.E. EST-STD 20 Kva LOMBARDINI</b>		MARCA	
DIMENSIONES GENERALES			



DIMENSIONES DE SALA SEGUN POTENCIA												
POTENCIA	A	B	C	D	E	F	G	H	I	d	PESO	SECCION HUECO ENTRADA AIRE
6 Kva AIRE	2092	1600	1092	600	1000	620	400	500	600		260	2x0.50 m2
7 Kva	3300	1580	1300	580	1000	600	400	500	600	50	300	2x0.50 m2
11 Kva	3300	1580	1300	580	1000	600	700	500	600	50	320	2x0.50 m2
15 Kva AIRE	3300	1580	1300	580	1000	600	700	500	600	50	380	2x0.50 m2
15 Kva	3300	1580	1300	580	1000	600	700	500	600	50	400	2x0.50 m2
19 Kva	3300	1580	1300	580	1000	600	700	500	600	50	480	2x0.50 m2

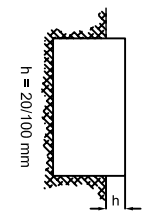
- NOMENCLATURA**
- 1 - GRUPO ELECTROGENO
  - 2 - CUADRO DE CONTROL
  - 3 - HUECO ENTRADA DEL AIRE
  - 4 - TUNEL DE EXPULSION DEL AIRE
  - 5 - BANDEJA PASACABLES
  - 6 - PUERTA DE ACCESO
  - 7 - BASE HORMIGON ARMADO H-175
  - 8 - TUBO DE ESCAPE

EL Ø DE LA TUBERIA DE EXTENSION DEL ESCAPE PUEDE SER EL MISMO QUE EL DEL SILENCIADOR HASTA 5 m. PARA DISTANCAS MAYORES DE 5 m. DEBE AUMENTARSE EL Ø DE LA TUBERIA 10 mm POR CADA 10 m MAS DE DISTANCIA ENTRE EL GRUPO ELECTROGENO Y LA SALIDA EXTERIOR

**CALCULO ESPESOR LOSA DE HORMIGON**

$$E = \frac{W}{d \times D \times C}$$

E = altura bloque de hormigon  
W = peso total grupo electrogeno  
d = densidad del hormigon (2400 kg/m<sup>3</sup>)  
D = anchura bloque de hormigon (m)  
C = longitud bloque de hormigon (m)



		<b>GRUPO ESTATICO ESTANDAR LOMBARDINI</b>	
MODIFICADO	J.S.BELAR	07-11-2011	MATERIAL
DIBUJADO	J.S.BELAR	03-04-2008	TOLERANCIA GENERAL
COMPROBADO	A.L.SOLANO	07-11-2011	UDS.
CODIGO			EXPEDIENTE:
PESO			Nº PLANO
ESCALA			MARCA
<b>PROYECTO:</b>		<b>GRUPOS EST.-STD LOMBARDINI</b>	
<b>DENOMINACION:</b>		<b>DIMENSIONES DE SALA</b>	