

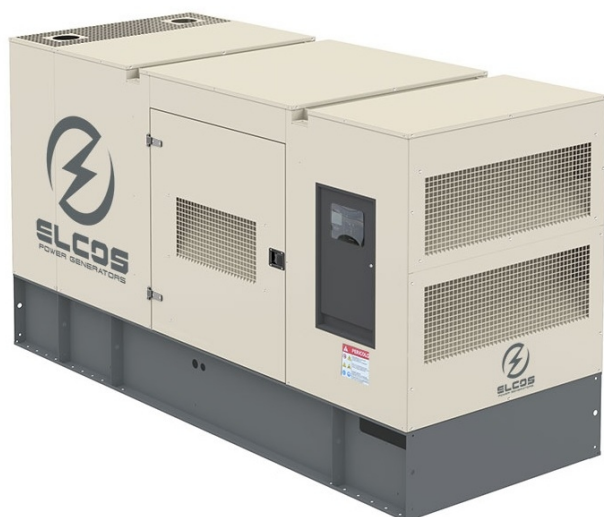


Image for demonstration purposes

 **Generating Set**
PROFESSIONAL - Diesel

GE.PK.450/400.PRO+011

1500 rpm - Threephase - 50Hz - 400V
Multifunction panel without switching on board



Standard equipment

⚙️ Canopy Soundproofing

Removable soundproof canopy
Painting canopy (ral) in galvanized sheet steel
Soundproofing with class 1 polyester material
Handles with key lock and automatic closing
Inspection doors for controls and maintenance
Inspection doors with hermetic gasket

⚙️ Exhaust

Exhaust rain cap
Insulated exhaust pipes
Internal residential muffler

⚙️ Fuel Supply

Single wall daily tank with bunded base
Automatic shutdown system for low fuel level
Fuel gauge

⚙️ Handling

N.4 lifting hooks integrated into the bearing structure
Loadable side by side for truck transportation

⚙️ Base Frame

Anti-vibrating mounting pads
Anti pollution bunded base

⚙️ Engine

Oil pressure and coolant temperature gauge (only with qpe or +14 variant)
Tropicalized radiator
Electronic speed governor

⚙️ Alternator

Avr automatic voltage regulator
Avr pre-arranged for parallel
Impregnation for marine environment
Ip23

⚙️ Panel & connection

Emergency stop button
Magnetothermal circuit breaker on alternator board
Tamperproof panel ip55
Cable output from the bottom
Ip44 wiring
Start-up battery (pre-charged)
Grounding point

⚙️ Documentation

Ce conformity declaration
User and maintenance manual
Wirings diagrams

⚙️ Normatives

All generating sets are compliant to CE marking
2014/30/UE electromagnetic compatibility
2000/14/CE noise emission for outdoor use
Factory-designed systems built according to ISO 9001:2015
Cei en 60204-1:2018 - electrical equipment of machines

Primary data

General Information

Speed	RPM	1500
Frequency	Hz	50
PRP	KVA	400
Prp - prime power	KW	320,0
Ltp - standby power	KVA	450
Ltp - standby power	KW	360,0
Standard voltage	V	400/230
Current	A	578,03
Voltage for current calculation	V	400
Cosfi	0,8	0,8

General electrical protection

Circuit-breaker rated current	A	630
Type	Magnetothermal switch on the alternator board	
Circuit-breaker poles	N	4P

Noise level +/- 3dB(A)

LWA	dB(A)	96
Sound pressure level @ 7 mt	dB(A)	71
Sound pressure level @ 1 mt	dB(A)	80

Fuel Consumption

Type	Diesel	
Standard fuel tank capacity	lt	400
Autonomy @ 75% load	h	7
Fuel consumption at 100% load	lt/h	81
Fuel consumption at 75% load	lt/h	62
Fuel consumption at 50% load	lt/h	42

General data

Rated capacity	Ah	2x120
Auxiliary voltage	V	24
Exhaust gas temperature	°C	630
Exhaust gas flow	l/s	1200
Combustion air flow	l/s	445
Cooling fan airflow	mc/s	10,9
Exhaust diameter	mm	140

Weight and Dimensions

Dimensions (l x w x h)	cm	395x154x220
Weight with liquids (excluding optionals and fuel)	Kg (+/-3%)	4184

Engine

Factory		Perkins
Model		2206A-E13TAG3
Emissions stage		Stage 0
Speed governor		Electronic
Radiator	°C	50
Cooling	Tipo	liquid (water + 50% Paraflu11)
Active net power	Kwm	354
Nominal net power	CV	481
Cycle	Tipo	4 strokes
Injection	Tipo	Direct
Aspiration	Tipo	Turbo
Numbers of cylinders	N	6
Cylinders arrangement		L
Bore	mm	130
Stroke	mm	157
Total displacement	lt	12,497
Engine oil features		15W40-API CI-4/CH-4 ACEA E5-E7
Total oil capacity	lt	40
Total coolant capacity	lt	51
Iso 8528-5 class		G2

Alternator

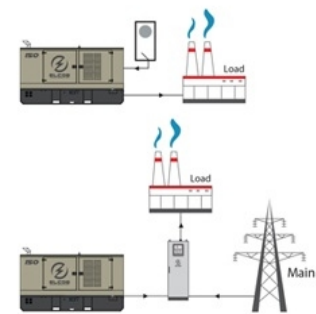
* May vary based on stock availability. However, a primary brand will be used.

Factory		Stamford
Model		S4L1D-F
Single-phase range	KVA	415
Voltage regulator (voltage accuracy)	+/- %	1
Poles	N°	4
Phases	N°	3+N
Standard windings connection		Star Series
Stator/rotor impregnation		H (Outdoor Temp 40°C)
Efficiency	%	93,2
Engine coupling		Elastic disk
Short circuit current		>= 300% (3In)
Protection degree	IP	23
Cooling system		Self ventilating
Maxium overspeed	rpm	2250
Waveform distortion	%	<5
Exciter		Diode bridge

Standard operating environmental conditions

Ambient temperature	°C	25
Relative humidity	%	30
Max altitude	mt	1000

Control Systems on board QLE-A-SC-3F-V1



operating scheme - schema di funzionamento

QLE Multifunction panel without switching on board

The QLE command and control panel offers outstanding protection, monitoring and control for small and middle size generator sets. Elcos's control module MC2 offers advanced features to meet the most demanding on-site application. Elcos's control module MC2 is designed to offer an easy user interface. Variant with transfer switch on board. Switching made with a pair of contacts electrically and mechanically interlocked. The output line is protected by a breaker which protects from overload, short circuit.

Mechanical features

Protection degree	IP	55
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Battery charger

Model	ELCOS - CB1	
Maximum output current	A	2,5
Output dc voltage (selectable)	Vdc	12-24
Input ac voltage (selectable)	Vac	220-260
Frequency	Hz	50-60

Remotable functions in terminal box

Gs start	Gs lock
Genset contactor close/open command	Mains contactor close/open command
Common alarm - volt free output	Common alarm - dc output
Gs test without load	

Control Module



Brand	ELCOS
Model	MC2
Operating mode	AMF - MRS

Specifics

Applications

Emergency to the mains
Stand-alone

ENGINE MEASURES

Fuel tank level %
Total run time
Battery voltage
Battery charging voltage
Start-ups counter
Engine speed

ALTERNATOR MEASURES

Generator voltage I1, I2, I3
Generator voltage I1-n, I2-n, I3-n
Generator frequency

MAINS MEASURES

Mains voltage I1, I2, I3
Mains voltage I1-n, I2-n, I3-n
Mains frequency

COMMUNICATION PORTS

Configurable via pc using usb port

EQUIPMENT

Microprocessor logic
Back-lit display
Programmable by pc software
10 event log
Icons management
Stop button
Start button
Aut mode button
Reset alarm button

PRE-ALARMS/ ALARMS

Common alarm
Fuel reserve (pre-alarm)
Low fuel level (alarm)
Charge alternator failed (dinamo)
Low oil pressure (alarm)
High coolant temperature (alarm)
Battery undervoltage
Gs failure to start
Gs failure to stop
Genset overvoltage
Genset undervoltage
Genset high frequency
Genset low frequency
Maintenance request
Emergency button pressed
Genset negative phase sequence

VISUALIZATIONS ON CONTROL MODULE/DISPLAY

Pre-alarms
Alarms
Engine measures
Alternator measures
Mains measures
Operating mode
Genset status
Mains status
Mains contactor status
Genset contactor status

CONTROL MODULE FUNCTIONS

Automatic start and stop when the mains fails (7)
Remote start and stop
Manual start and stop
Emergency stop button on panel board
Remote emergency stop
Remote lock

OPTIONAL

⚙️ Fuel Supply



O.G-ACO-AT-CI-02

External tank connections for supply only from external tank (g without tank) GE 130/700



O.G-ACO-BT-P3700-1000

600 Lt Oversized Fuel Tank on board for BF/PRO (180/250 kVA) (Increased weight and size)



O.G-ACO-BT-P3700-600

1000 Lt Oversized Fuel Tank on board for BF/PRO (180/250 kVA), (Increased weight and size)



O.G-ACO-ST-BG-ES2

"Easy" automatic fuel refilling system on board, controlled by QST2 for QLE panel

⚙️ Batteries



O.G-BAT-BAE-03

Maintenance free high efficiency starter batteries (130/250 kVA)



O.G-BAT-STB-02

Battery isolator lockable(130/700 kVA)

⚙️ Electrical on board



O.Q-QLE-K-DIF-M2

Adjustable differential protection only for MC2 controller for Gen Sets 50/250 kVA



O.Q-QLE-QBM-COM-AMF25

Additional price for QBM COMAP AMF25 panel replacing the standard QLE-A.



O.Q-QLE-QBM-DSE-7320

Additional price for QBM DSE7320 panel replacing the standard QLE-A.



O.Q-QLE-QPE-MC4

Additional price for QPE-C panel with MC4 replacing the standard QLE-A.

⚙️ Engine



O.G-MOT-K-40C-03

Engine liquids suitable for -40°C ambient temperature for Gen Sets 130/250 kVA



O.G-MOT-PO-02

Oil change pump for Gen Sets 130/700 kVA



O.G-MOT-SC-AC-EL-01

Engine pre-heater 230V with thermostat on board for Gen Sets 10/100 kVA + 130/250 PRO version



O.G-MOT-SC-AC-EL-03

Super hot engine heater 230V with thermostat on board for Gen Sets 130/250 kVA

⚙️ Handling


O.G-MOV-GC-S2700

Lifting hook (150/250 kVA) PRO Version

ATS Panels

QLTS.250A

Wall-mounted ATS switching panel 250A 4P (275 kVA 400V - 160 kVA 230V) Dim. 80 x 28 x 60 cm - 40 kg.

Test


MS.CP-LT-02

FAT - Factory Acceptance Test for single Gen Set from 130 to 400 kVA according to our standard procedures in Elcos factory (max 2 hours - max 4 people - max 1 hour of operation)


MS.CP-SP-02

FAT - Factory Acceptance Test for single custom Gen Set from 130 to 400 kVA max 4 operating hours or parallel system up to 4 units for 1 operating hour, in Elcos factory (max 4 hours - max 4 people)


MS.CP-ST-02

FAT - Factory Acceptance Test for single Gen Set from 130 to 400 kVA according to our standard procedures in Elcos factory (max 4 hours - max 4 people - max 2 hour of operation)

PRP

Engines of this rating provide unlimited hours of usage in a variable load application. The average load factor should not exceed 70% of the engine's prime power rating with a maximum number of 500 operational hours at 100% prime power rating. An overload capability of 10% is available, however, is limited to a period of 1 in every 12 hours

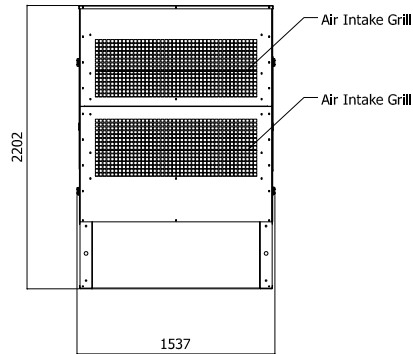
LTP

Limited-time running power is defined as the maximum power available, under the agreed operating conditions, for which the generating set is capable of delivering for up to 500h of operation per year with the maintenance intervals. The overload is not allowed.

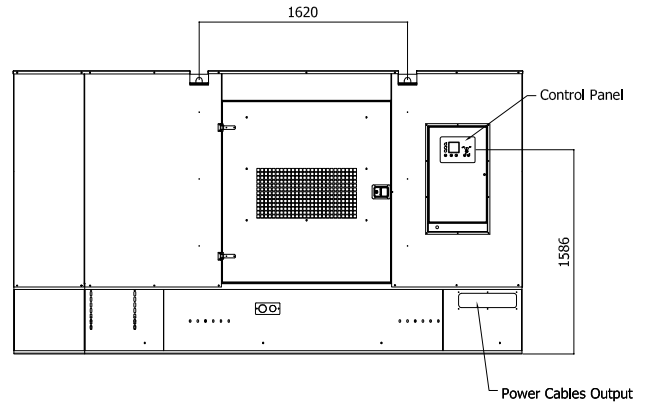
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OVERALL DIMENSIONS [mm]

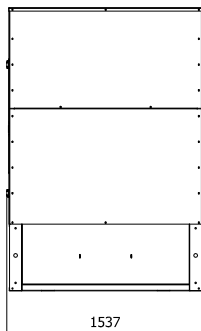
REAR VIEW



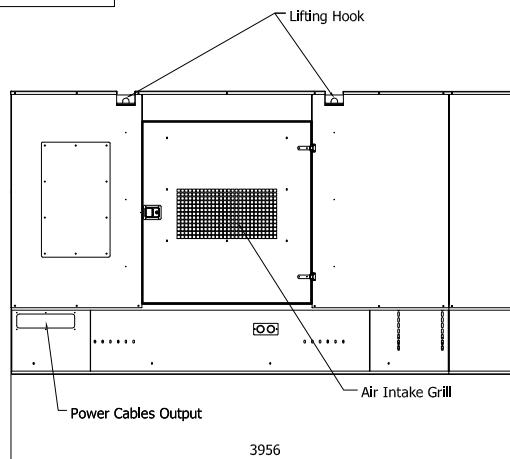
LEFT SIDE VIEW



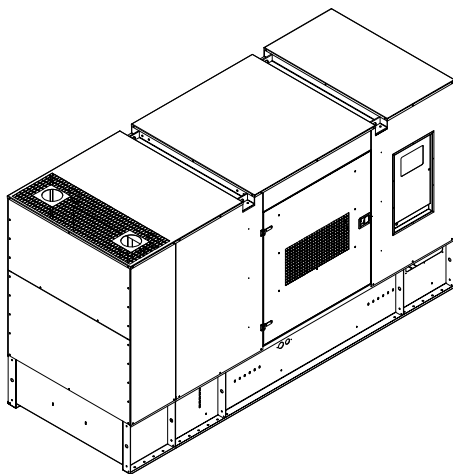
FRONT VIEW



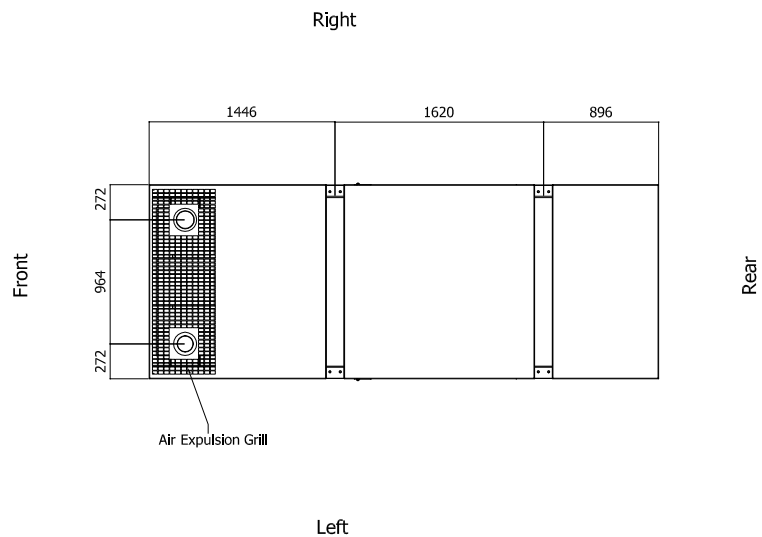
RIGHT SIDE VIEW



3D VIEW



TOP VIEW

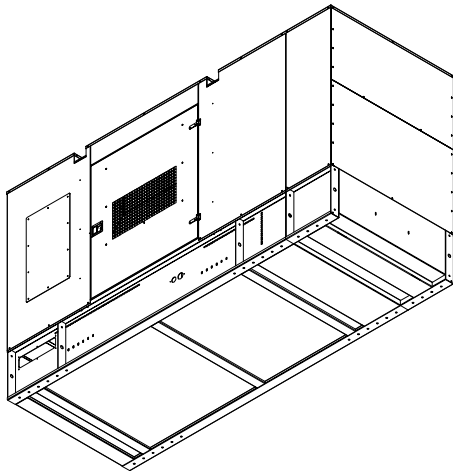


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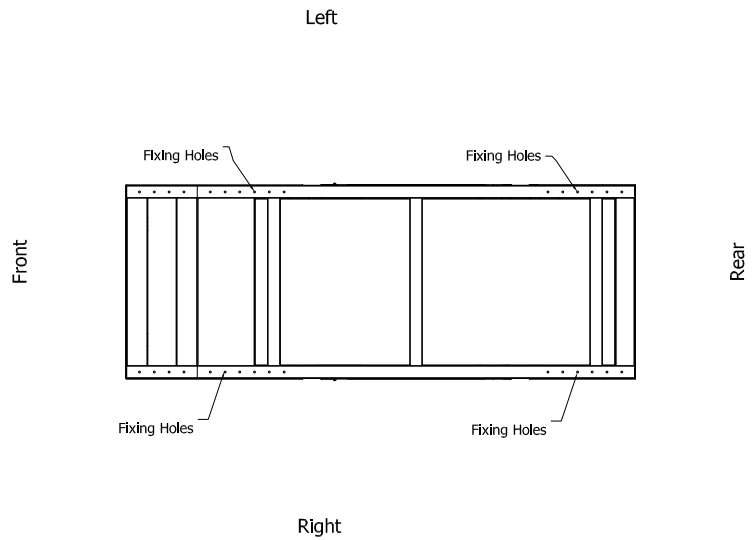
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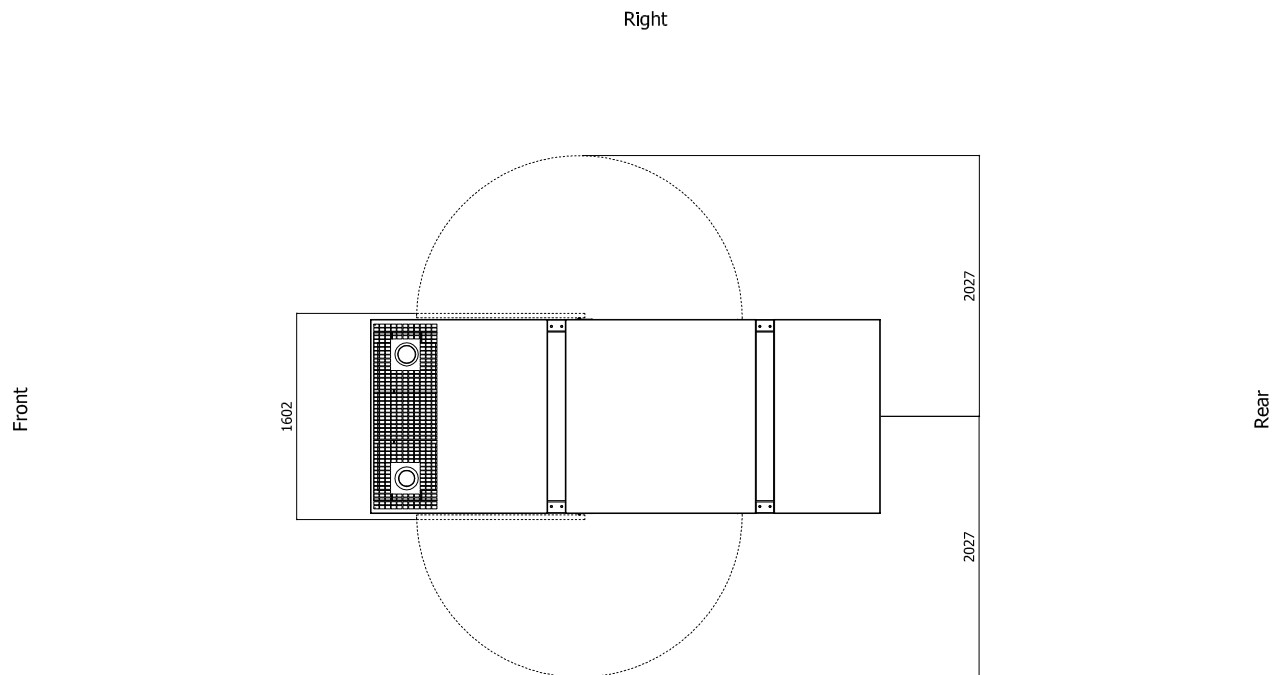
3D BOTTOM VIEW



BOTTOM VIEW



DIMENSIONS WITH OPEN DOORS [mm]



Note: With Lifting-Off Door Solution consider only canopy dimensions.
(Models with "Control Panel" behind rear door will mount a special cover to protect it)

VENTILATION OF THE ROOM

The windows area in the generating set room needs to be (recommended):

Aspiration: 0.90 m²

Expulsion: 0.60 m²

ATTENTION: for a correct ventilation the expulsion air and the exhaust gas needs to be conveyed in the open-air

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