




Image for demonstration purposes

 **Generating Set**
SUPERSILENT - Diesel

GE.YAS5.022/020.SS+012

1500 rpm - Trifase - 50Hz - 400V
Manual panel with sockets module



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
Special baffles for air intake and air expulsion
Inspection doors for controls and maintenance

Exhaust

Exhaust rain cap
Insulated exhaust pipes
Internal residential muffler - 35dB(A)

Fuel Supply

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

Handling

Lifting hook integrated into the bearing structure
Base frame with anti-overturning forklift pockets
Reinforced base frame and crossbar for mobile use
forkliftable on the short side

Base Frame

Bunded base at 110% of fuel tank capacity
Anti-vibrating mounting pads
Battery compartment externally accessible for easy service

Engine

High coolant temperature and low oil pressure shutdown system
External oil drain points
Engine liquids (oil and antifreeze)
Tropicalized radiator
Rotating parts protection

Alternator

AVR Automatic Voltage Regulator
Impregnation for marine environment
IP23

Panel & connection

Emergency Stop button
Differential
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
Wiring 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	<i>RPM</i>	1500
Frequency	<i>Hz</i>	50
PRP - Prime power	<i>KVA</i>	20
LTP - Standby power	<i>KVA</i>	22
PRP - Prime power	<i>KW</i>	16
LTP - Standby power	<i>KW</i>	17,6
Standard Voltage	<i>V</i>	400/230
Current	<i>A</i>	28,9
Voltage for current calculation	<i>V</i>	400
COSFI	<i>0,8</i>	0,8

General electrical protection

Rated current	<i>A</i>	32
Type	Magnetothermal switch on panel board	
Poles	<i>N</i>	4P

Noise level +/- 3dB(A)

LWA	<i>dB(A)</i>	84
Sound pressure level @ 7 mt	<i>dB(A)</i>	59
Sound pressure level @ 1 mt	<i>dB(A)</i>	68

Fuel Consumption

TYPE	Diesel	
Standard Fuel Tank capacity	<i>lt</i>	110
Autonomy @ 75% load	<i>h</i>	28
Fuel consumption at 100% load	<i>lt/h</i>	5,4
Fuel consumption at 75% load	<i>lt/h</i>	4
Fuel consumption at 50% load	<i>lt/h</i>	2,9

General data

Rated capacity	<i>Ah</i>	1x70
Auxiliary Voltage	<i>V</i>	12
Exhaust diameter	<i>mm</i>	50

Weight and Dimensions

Dimensions (L x W x H)	<i>cm</i>	175x90x140
Weight with liquids (excluding optionals and fuel)	<i>Kg (+/-3%)</i>	682

Engine

Factory		Yanmar
Model		4TNV88
Emissions stage		Stage 5
Speed governor		Mechanic
Radiator	°C	50
Cooling	Tipo	liquid (water + 50% Paraflu11)
Active net power	Kwm	18
Nominal net power	CV	24,5
Cycle	Tipo	4 strokes
Injection	Tipo	Direct
Aspiration	Tipo	Natural
Numbers of cylinders	N	4
Cylinders arrangement		L
Bore	mm	88
Stroke	mm	90
Total displacement	lt	2,188
Engine oil features		15W40-API CI-4/CH-4 ACEA E5-E7
Total oil capacity	lt	7,4
Total coolant capacity	lt	7,5

Alternator

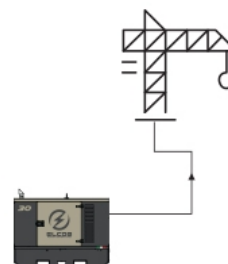
* May vary based on stock availability. However, a primary brand will be used.

Factory		Stamford
Model		SOL2-G1
PRP continuous power	KVA	20
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	%	86,8
Engine coupling		Elastic disk
Short circuit current		3x In (only with winding wdg 711)
Protection degree	IP	23
Cooling system		Self ventilating
Maxium overspeed	rpm	2250
Waveform distortion	%	<5
Exciter		Diode bridge

Environmental conditions

Ambient temperature	°C	40
Relative Humidity	%	60
Max altitude	mt	1000

Control Systems on board QMC-MAN-3F-4P-32-O1



operating scheme - schema di funzionamento

QMC Manual panel with sockets module

The manual control panel type QMC provides a reliable and simple solution for the control of the generating set. Thanks to the SM1 control module, the QMC control panel can allow the manual start and stop of the gen set and it can monitor the different parameters during its operation. The SM1 module allows you to connect some optional devices (provided by Elcos) for a complete remote management of the gen set.

Mechanical features

Protection degree	IP	55
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Sockets module

Protection	Type	Differential Magnetothermal breakers
Differential Sensivity	mA	30
Sockets		N. 1 CE 2P+T 16A 230V
Sockets		N. 1 CE 3P+T+N 16A 400V
Sockets		N. 1 CE 3P+N+T 32A 400V

Control Module



Model	SM1
Operating mode	Manual

Specifics

Applications

Stand-alone
Construction site/Rental
Self-production

ENGINE MEASURES

Fuel tank level %
Total run time
Battery voltage

ALTERNATOR MEASURES

Generator Voltage L1, L2
Generator frequency
Generator current L1
Generator Apparent Power kVA

EQUIPMENT

Voltmeter
Frequency meter
Ammeter
KW meter
Battery Voltage
Hour counter
Fuel level
Starting key removable
Remote control connector

PRE-ALARMS/ ALARMS

Common Alarm
Fuel reserve (pre-alarm)
Charge alternator failed (dinamo)
Low oil pressure (alarm)
High coolant temperature (alarm)

VISUALIZATIONS ON CONTROL MODULE/DISPLAY

Glow plugs status

CONTROL MODULE FUNCTIONS

Manual Start and Stop by key
Emergency stop button on panel board

OPTIONAL

⚙️ Fuel Supply



O.G-ACO-AT-C3V-01

External fuel tank connections with 3-way valve for supply from internal or external tank (10/100 kVA)



O.G-ACO-AT-C3V-AR-01

Quick coupling connectors with 3-way valve for internal or external fuel tank connection (10/100 kVA)



O.G-ACO-AT-CI-01

External tank connections for supply only from external tank (g without tank) GE 10/100



O.G-ACO-BT-C1750-600

600 Lt Oversized Fuel Tank on board for SS (10/20 kVA)



O.G-ACO-GA-01

Mechanical analogue float for internal fuel tank on board



O.G-ACO-GA-02

Electrical analogue float to monitor the external refilling point on board



O.G-ACO-RE-01

External refilling point for Gen Sets 10/250 kVA, SS, RB versions



O.G-ACO-RE-SP-01

External refilling point with warning light for Gen Sets 10/250 kVA, SS, RB versions

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

Diesel heater installed in the tank 220W 230V usable for RB 10/500, SS 130/750 and all oversized tanks (for GE from 10 to 100 KVA SS replace the tank from plastic to metal using the article O.G-ACO-TK-ST -...)



O.G-ACO-SP-01

Tank leak sensor with signal reported in the QPE/QLE-B control panel

⚙️ Alternator

O.G-ALT-AL-CHBR-01

Different brand alternator (10/40 kVA)

O.G-ALT-SEZ-IT-TN

Disconnecter for IT/TN system installed on the alternator for Gen-sets from 10 to 500 KVA only SS and RB version (check the feasibility)

⚙️ Batteries



O.G-BAT-BAE-01

Maintenance free high efficiency starter batteries (10/40 kVA)



O.G-BAT-STB-01

Battery isolator lockable (10/100 kVA)

⚙️ Canopy



O.G-COF-AM-01

Hinges and Doors with tamper-proof device (10/100 kVA)


O.G-COF-AP-01

Door opening alarm system (each door)

O.G-COF-C1750-INOX

Additional cost for stainless steel canopy (C1750)


O.G-COF-CA-C1750

IP 43 Conveyors for Gen Sets 10/20 kVA - supplied disassembled


O.G-COF-CH-01

Additional cost for larger canopy C1900 instead of standard C1750 - Dim. cm 190x90x150H - Fuel tank 110 lt

O.G-COF-DLO-C1750-05KW

Dummy Load 5kW on board for Gen Sets 20 kVA (Add optional O.Q-QPE-RIL-16RELE in case of MC4 control. Add optional O.Q-QBM-COM-BIO8 for Comap AMF25, IG200, IG500 control. For other controls, check with technical department.)


O.G-COF-EAF-01

Frontal air expulsion for Gen Sets 10/20 kVA (C1750) (change the noise level)


O.G-COF-FP-01

Door stop (10/100 kVA)

O.G-COF-IL-INT-01

Internal LED lighting with micro-switches for Gen Sets 10/250 kVA

O.G-COF-MC-INOX-01

Stainless steel handles and hinges (10/100 KVA SS, RB, PRO)


O.G-COF-PC-01

Steel cable holder for SS and RB versions from 10 to 40 KVA applied to the radiator inspection panel (Weight 20 Kg)


O.G-COF-PV-01

Lift off doors kit (10/100 kVA) for SS and PRO version

O.G-COF-TRT-MAR-01

High resistance canopy treatment for corrosive environments for 10/40 kVA (SS, RB Versions)

O.G-COF-VER-PAR-01

Canopy custom paint (Grey base-frame) for 10/40 kVA (SS, RB Versions)


O.G-COF-VER-TOT-01

Total canopy custom paint for 10/40 kVA (SS, RB Versions)

⚙️ Electrical on board


O.G-USP-32A5P

Output power socket 32A EC 5P (15/20 kVA) for Gen Sets SS Version +011 (specify if 6H or 1H)


O.G-USP-MO-01

Terminal box with tightening terminals inside the cable entry compartment for Gen Sets 10/40 kVA SS Version


O.G-USP-SW-MOT.0010-0040

Motorization switch on board machine, integrated in the panel for 10/40 Kva Ge - (for variant +11)

O.Q-QBM-CPI-BEN-01

Permanent insulation controller for IT networks up to 230V / 400V. BENDER IR423-D4-1. Adjustable threshold 10 ÷ 300 kohm. (2 DIN rail modules - check feasibility)


O.Q-QLE-K-DIF-M3

Adjustable differential protection only for MC2-PLUS controller for Gen Sets 10/500 kVA (+011 variant)


O.Q-QLE-QBM-COM-AMF25

QBM COMAP AMF25 panel replacing the standard QLE


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.


O.Q-QMC-K-DIF-R1

Adjustable differential protection only for QMC panel for Gen Sets 10/40 kVA (Variant +010 / +011)


O.Q-QMC-RX8-QMC

Start-stop radio control with max. radius 500 mt indoors and 5 km outdoors (for QMC panel).


O.Q-QMC-SAS-01

Auto Start-Stop at load request (QMC panel)

O.Q-QPE-INT-CST-01

GE main switch STATUS contact wired to terminal board inside the QPE panel on board generator (10 / 40KVA) (no variant +10)


O.Q-QPE-SAS-02

Auto Start-Stop at load request (QPE, QLE panels)

O.Q-QPE-SEL-2P

2 position selector switch on board cubicle (indicate the function of the selector)

O.Q-QPE-SEL-3P

3 position selector switch on board cubicle (indicate the function of the selector)

Engine


O.G-MOT-FC-1

Dust collector filter - for Gen Sets 10/20 kVA


O.G-MOT-FSA-1

Fuel/Water Separator Filter - for Gen Sets 10/20 kVA


O.G-MOT-K-40C-01

Engine liquids suitable for -40°C ambient temperature for Gen Sets 10/40 kVA


O.G-MOT-PO-01

Oil change pump for Gen Sets 10/100 kVA


O.G-MOT-RF-01

Electronic speed governor for Gen Sets 10/40 kVA


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

Engine pre-heater 230V with thermostat on board for Gen Sets 10/100 kVA (BF/PRO/SS/RB)


O.G-MOT-SC-AC-EL-02

Super hot engine heater 230V with thermostat on board for Gen Sets 10/100 kVA


O.G-MOT-SE-PO-LR

Oil pressure level and engine temperature sensors (from 10 to 100kVA)



O.G-MOT-SRO-AU-12L

Automatic oil refilling system (10/40 kVA)

⚙ Handling



O.G-MOV-CN-3

Off-road trailer with 2 pneumatic wheels and tow bar (SS, RB Gen Sets 10/40 kVA)

O.G-MOV-CO-RS-02

Spare wheel with support for On road traiver O.G-MOV-CO-RS-02



O.G-MOV-CO-ST-02

Roadworthy trailer (Maximal capacity 1200Kg) 80km/h for genset from 10 to 40 kVA (registration excluded). For ge SS combine with code O.G-MOV-KRM-SS-01



O.G-MOV-GC-BIG-01

Increased central lifting hook with 10x5cm hole (10/250 kVA SS version)

O.G-MOV-KAC-01

Kit of plates for anchoring unit on trailer using belts. Available for gen sets from 10 to 100kVA only SS and RB version.

O.G-MOV-KRM-SS-01

Reinforcement kit for mobile installation (dedicated trailers or wheeled machinery) SS Version from 10 to 40 kVA

⚙ ATS Panels



QC1.0060A

Separate ATS panel, 4P - 60A contactors (40 kVA 400V - 20 kVA 230V) Dim. 60 x 25 x 80 cm - 47 kg. (ex QC1.040)



QLTS.060A

Wall-mounted ATS switching panel 60A 4P (40 kVA 400V - 20 kVA 230V) Dim. 38x20xh45cm 19 kg

⚙ Quadro bordo GE

O.Q-QBM-BMIN-230V-01

Additional price for 230V minimum voltage coil on the modular main switch inside the control panel (check feasibility)



O.Q-QBM-COM-4G-GPS

Module cellular modem 2G/3G/4G in combination with a GPS/GLONASS receiver per INTELILITE 4 AMF25, AMF8, IG200, IG500 G2 and IG1000

O.Q-QBM-COM-BIO8

BIO8 expansion module for Comap INTELILITE4 AMF25, AMF8, IG200, IG500 G2 and InteliGen4 200 controllers complete with user terminal block and / or relay for relaying outputs - if used (check installation feasibility in the switchboard).

⚙ Exhaust



O.G-SCA-CAT-02

Catalytic converter (20 kVA)



O.G-SCA-FAP-K20

Particulate filter (DPF) for Gen Sets 10/20 kVA













O.G-SCA-GF-50

Exhaust bellow with flexible joint including flange and counter flange (10/40 kVA)



O.G-SCA-KS-50

Exhaust flex pipe for drainage (length 3 mt.)

	O.G-SCA-PF-01	Spark arrestor for Gen Sets 10/40 kVA
	O.G-SCA-PR-01	Exhaust pipe protection kit (10/20 kVA) , SS,RB version
 Test		
	MS.CP-LT-01	FAT - Factory Acceptance Test for single Gen Set from 10 to 100 kVA according to our standard procedures in Elcos factory (max 2 hours - max 4 people - max 1 hour of operation)
	MS.CP-SP-01	FAT - Factory Acceptance Test for single custom Gen Set from 10 to 100 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-01	FAT - Factory Acceptance Test for single Gen Set from 10 to 100 kVA according to our standard procedures in Elcos factory (max 4 hours - max 4 people - max 2 hour of operation)
	MS.RF-ST-01	Noise test report for single Gen Set from 10 to 250 kVA
	MS.TV-ST-01	Vibration test on 10 points with certificate for single Gen Set from 10 to 250 kVA
 Vari		
	O.G-VAR-CAT-01	Toolbox for ordinary maintenance.
	O.G-VAR-PUN-TER-01	Round earth spike, diam. 20 mm, height 1.5mt, galvanized, complete with clamp and 3m yellow/green cable model FS17 1x35mm ² with cable lugs.
	O.G-VAR-PUN-TER-02	Cross-shaped earth spike, height 1.5mt, galvanized, complete with clamp and 3m yellow/green cable model FS17 1x35mm ² with cable lugs.
	O.G-VAR-TPD-01	IP 55 document holder

PRP

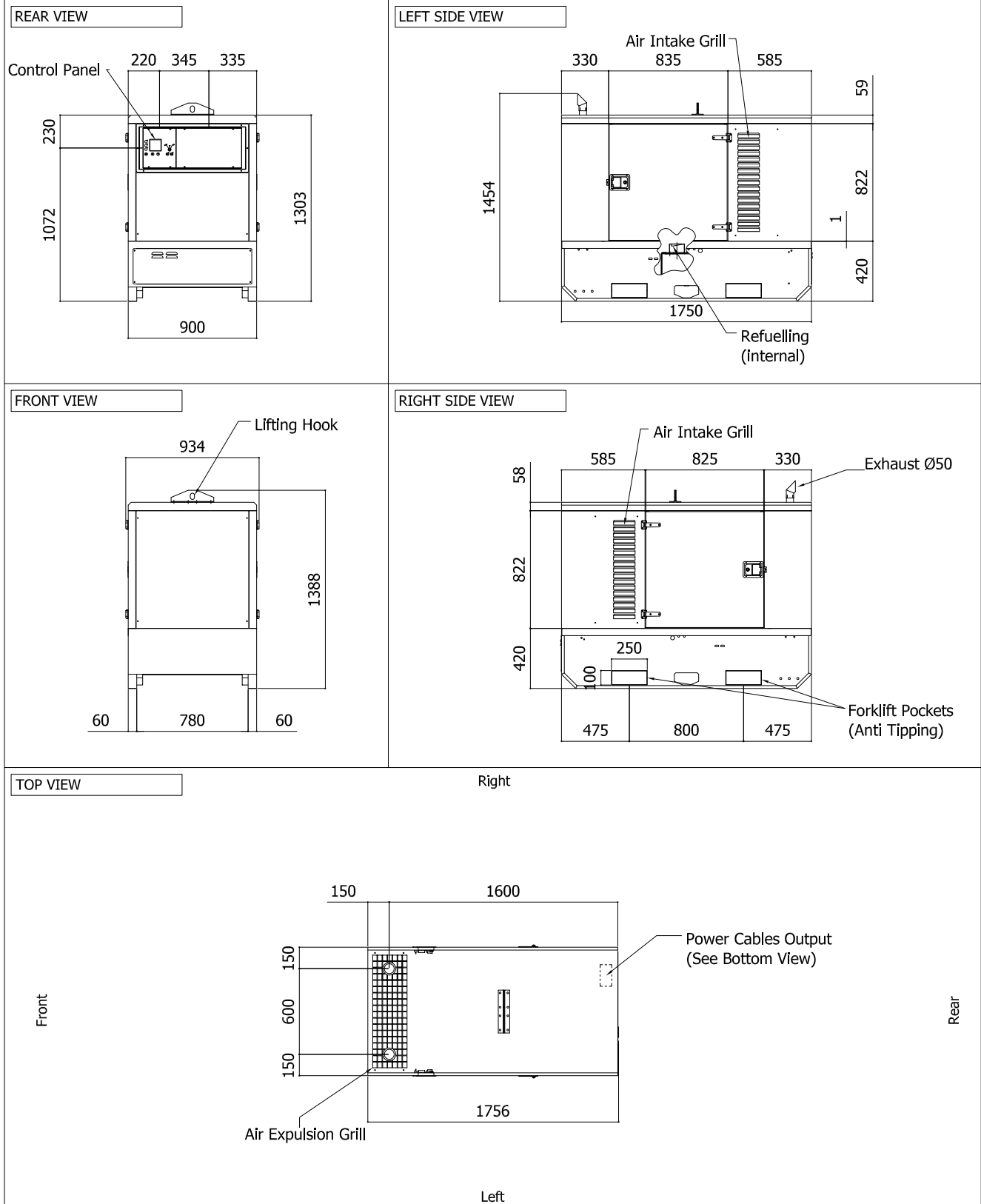
Engines of this rating provide unlimited hours of usage in a variable load application. The average load factor should not exceed 70% of the engine's prime power rating with a maximum number of 500 operational hours at 100% prime power rating. An overload capability of 10% is available, however, is limited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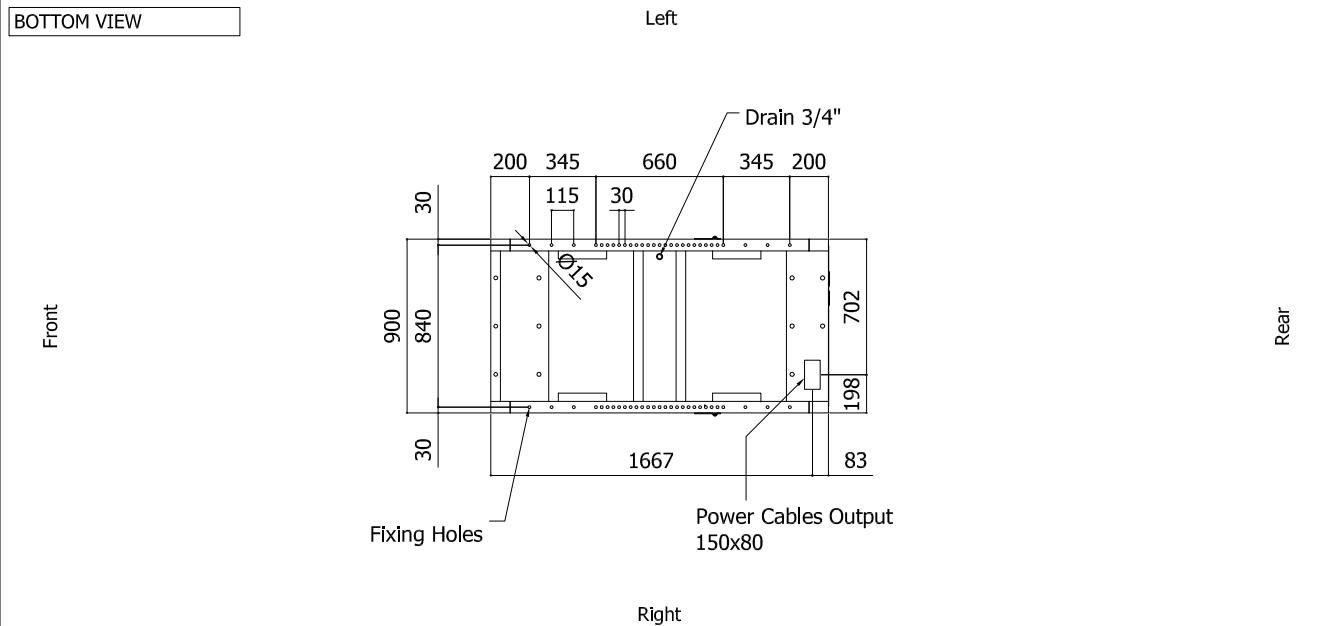
OVERALL DIMENSIONS [mm]



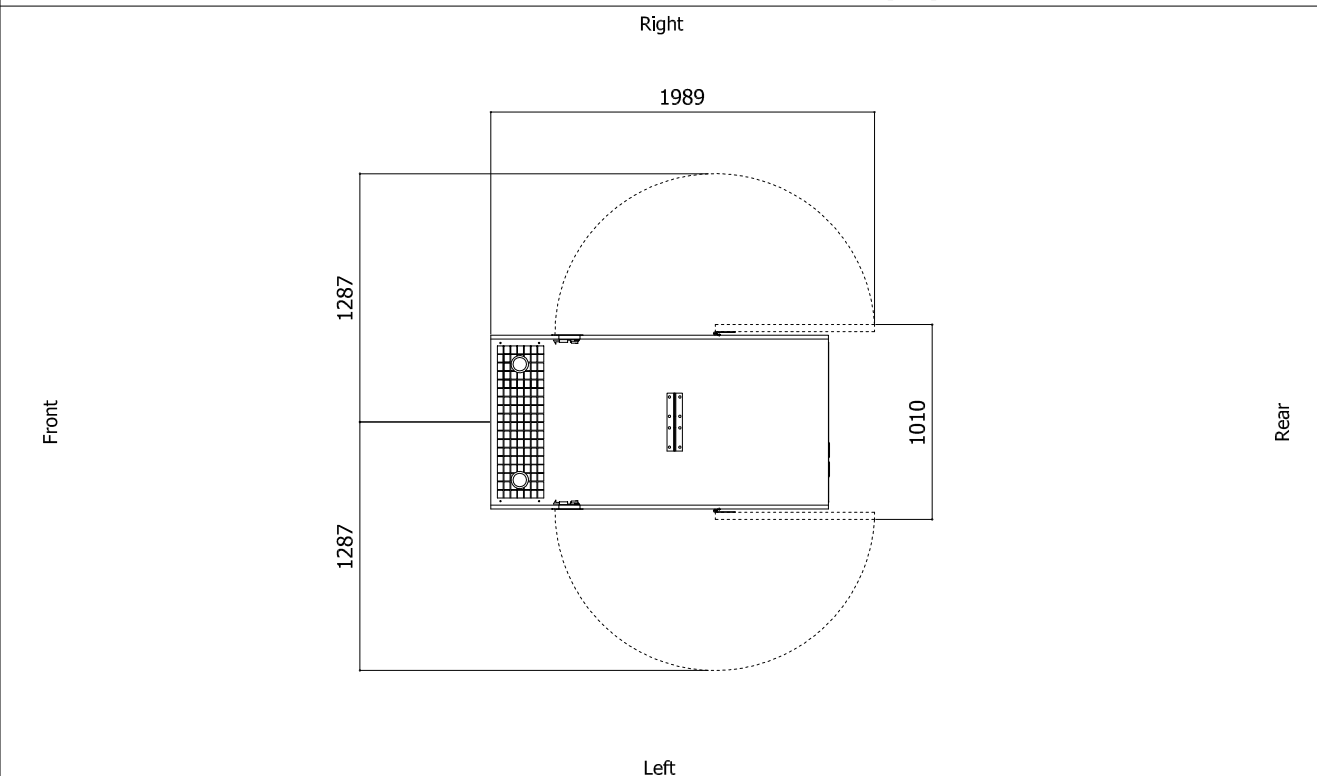
IMPORTANT:

- 1) Form and dimension refer to the generating set on catalogue
- 2) Form and dimension are subject to change in order to update or improve the products
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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: 0.26 m²

Expulsion: 0.21m²

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

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