

## **Part III : Technical Specification GL621A 170kWe**

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### **General Data**

GasLine industrial gas generator set, type GL 621 A.

Output	<b>kVA</b>	: 200
	<b>kWe</b>	: 160
Frequency	<b>Hz</b>	: 60
Air temperature	<b>°C</b>	: 25

### **COP, Continuous power**

For continuous operation at a constant load for unlimited number of hours per year. Power definition according to ISO 8528. Power test code ISO 3046.

### **Reference conditions**

Atmospheric conditions

Barometric pressure	<b>hPa</b>	: 1000
Relative humidity	<b>%</b>	: 30

Fuel

Energy value	<b>kJ/m<sup>3</sup></b>	: 31000
Density	<b>kg/dm<sup>3</sup></b>	: 0,67
Methane Number		: 80 *)

\*) Note:

Output determined as per above is called sold output and is what is stated in Technical Data and Brochures. Deviating figures may cause output corrections.

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### **Engine Data**

Water-cooled, 4-stroke, lean-burn gas engine with turbo charger and intercooler (air to water):

Engine		: SANDFIRDEN
Type		: SGI-13
Power output *)	<b>kW</b>	: 184
Curve		: COP
Speed	<b>rpm</b>	: 1800
Cycle		: D2
Number of cylinders		: 6 in line
Displacement	<b>dm<sup>3</sup></b>	: 12,7
Bore x stroke	<b>mm</b>	: 130 x 160
Compression ratio		: 12,6 : 1

\*) Outputs have been determined under certain given test conditions according to the international performance standard ISO 3046.

### **Fuel system**

Heavy duty industrial ignition system with controller.

One ignition coils per cylinder.

Sparkplugs for industrial use.

Electronically adjustable air/fuel mixer.

Throttle valve with actuator.

Speed control.

Gas fuel train for natural gas and a gas flow capacity of 80 m<sup>3</sup>/h, including:

- gas filter
- 0-oressure regulator
- double solenoid valve
- two (2) manometers
- various accessories

Stainless steel hose to mixer, dia. 1,5" and lenght 650 mm.

Gas fuel train build on set.

### **Lub oil system**

Centrifugal lub oil cleaner.

Full flow lub oil filter.

Gear driven lub oil pump.

Lub oil cooler.

Lub oil drain pump.

Piston cooling by oil nozzles.

Enlarged oil sump.

Lub oil level monitoring system consisting of:

- oil level controller.
- lub oil tank, capacity 22 litre.

### **Air inlet system**

Engine mounted airfilter

Intercooler, suited for natural gas.

### **Exhaust system**

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Dry exhaust manifold.  
Turbo charger.  
90° exhaust bend including flanges and gaskets.  
Exhaust compensator with flange and jam-locks.  
Insulation for exhaust manifold and exhaust bend.  
Thermo couples for every cylinder.

### **Cooling system**

Engine driven cooling water pump for HT-system.  
Engine driven cooling water pump for LT-system.  
Thermostat.  
Steel bleed pipes cooling water.

### **Electrical system**

Battery charger, 24 V, 30 Amp, build on the control box frame.  
Electric starter, 24 V, single poled.  
Without alternator.

### **Several**

Flywheel housing SAE 1.  
Flywheel, 14".  
Internal crankcase ventilation.  
Operators manual and parts catalogue in PDF.  
Engine painted in Sandfirden Blue RAL 5010.  
Belt protection.

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### **Alternator Data**

Generator		: STAMFORD
Type		: UCI 274 H
Voltage	<b>V</b>	: 440
		: 3-phase serie star winding no. 311
Frequency	<b>Hz</b>	: 60
Load factor		: 0,8
Insulation class		: H
Temperature rise class		: H, 125°C rise at 40°C ambient temp.
Protection		: IP23
Short circuit current		: 300%
AVRi interface Module.		

Scope of supply includes:

SAE adaptor flange.  
Single bearing.  
AVR control system type MX-341.

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### **Engine Control and Monitoring System**

#### **General**

Engine control box with All-In-One GAS engine controller, AFR controller and 12" Vision Touch display.

Wiring and sensors mounted on the engine including cable harness to control box.

#### **Engine controller**

All-In-One GAS is a dedicated controller for genset applications. It controls, monitors and protects the gas engine and alternator. The controller is equipped with a powerful graphic display with icons, symbols and bar graphs for intuitive operation.

Engine control functions

- engine control
- engine monitoring and protections
- speed measurement
- running hours counter
- voltage monitoring starter batteries
- number of start attempts registration
- on screen alarm list indication
- event and time driven engine history for back tracing
- binary, analogue and CAN engine communication
- languages selectable
- MODBUS communication selectable

Generator control functions

- Generator Circuit breaker control
- Main circuit breaker control
- Synchronization

#### **Monitoring system**

Alarms consisting of:

- alarm cooling water temperature (high)
- alarm cooling water level (low)
- alarm lub oil pressure engine (low)
- alarm lub oil temperature engine (high)

Engine shut down consisting of:

- cooling water temperature (high high)
- lub oil pressure engine (low low)
- overspeed (high)

Generator monitoring consisting of:

- 3 phase monitoring
- Over/Under Frequency
- Over/Under voltage
- Overload protection

AIN8 Analog Input Module.

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Knock detection system.  
Control box mounted back side of skid.

### **Distribution board**

Distribution board, 400 Amp, set mounted in separate panel, consisting of:

- MCCB switch
- Thermal protection
- Motor drive
- Feedback signal
- G99 Compliant relays (Only for sets in UK)

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### **Assembly**

#### **Frame and assembly**

Engine and alternator flexible mounted on a common base frame.

Radiator mounted on frame.

Frame painted black and provided with:

- Drip tray.
- Drain plug.
- Mounting strips for electrical wiring.
- 6-point support for the genset.

Battery container, integrated in the genset frame.

Starter batteries, 2x 12V with cold cranking amps >800 Amp, maintenance free types.

#### **Test run and classification**

Genset tested on Sandfirden test bench, and contains

- FAT and performance test according to test protocol
- acceptance by class (if applicable)
- alarm and shut down test
- parallel running (if applicable, "max. 2x 600 kWe")
- final check before delivery

#### **Finishing**

Genset painted in Sandfirden blue (RAL 5010).

Set provided with warning stickers and hoisting instructions.

Genset sealed in plastic.

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### **Miscellaneous**

#### **Shipped loose parts**

Silencer 6" with SA 35 dB(A) incl mounting kit.

#### **Documents**

One (1) documentation binder (Eng.), consisting of:

- Factory Acceptance Testreports
- General Arrangement Drawing
- Electric diagrams
- Operator manuals
- Part catalogues
- Additional information

Data CD/USB Stick with documentation is included.

#### **Warranty**

8000 Running hours or twelve (12) months after start-up, but not beyond eighteen (18) months after delivery from Suppliers plant, whichever occurs first. For more information we refer to our Terms and Conditions.