

CHP POWER PLANT

**CHP POWER PLANT fueled by SYNGAS (Woodgas) with
electrical capacity 140 kWel
and thermal capacity 280kWth**

DETAILED ENGINE (CHP) DESCRIPTION:

Engine:		
Make:	HYUNDAI	
Model:	GV222Ti	
Capacity:	21.927 L	
Bore x Stroke	128mm x 142mm	
Cylinders:	12	
Valves:	24	
RPM.:	1500	
Compression ratio:	10.2:1	
Oiling:	Separate oil circuit for each cylinder bank (water cooled)	
Oil capacity:	40L + additional 40L tank with circulation	
Engine color:	RAL 7036	
Engine sensor set:	12pcs cylinder temperature sensors 2pcs exhaust gas temperature sensors, 1pcs coolant temperature sensor, 1pcs HUEGO sensor, 1pcs MAT sensor, oil temperature sensor, oil pressure sensor, oil level sensor	
ICU:	Altronic CPU-95 CDI with external display unit	
Ignition:	Altronic Blue Epoxy coils NGK IR IFR7AC-4 sparkplugs	
AFR Mixer:	FORTES mixer with Motortech ITB regulator (LAMBDA=1)	
Aspiration:	Naturally aspired	
Speed control:	ComAp Econ4 with Heinzmann STG throttle	
Alternator:		
Make:	Nidec Leroy - Somer	
Model:	LSA 46.3 S5 (AREP Excitation)	
RPM:	1500	
Connection:	3F. 400V. 50Hz	

Power:	250kVa (max 200kW)
Temperature class:	H
AVR:	NIDEC AVR D550 (With included PF controller)
Electrical:	
Control cabinet:	1200x2000x400 (Schneider Electric)
GCB:	NS 400 by Schneider Electric
Screen:	ComAp IntelliVision8
Controller:	ComAp IntelliSys GAS
Modules:	ComAp and Motortech
Speed control	ComAp Econ4
Cooling system:	
Temperature gradient:	90/70 °C/°C
Primary loop temp. control:	Electronic, 3-way valve
Cooling medium volume flow:	25 m3/h
Primary loop circulation:	Calpeda (IT) or similar manufacturer water pump, 3kW
Prim/sec loop isolation:	Plate Heat exchanger
Secondary loop circulation:	External pump (Not included)
Secondary loop temp. control:	External (Not included)
Gas requirements for Syngas:	
Gas consumption:	~350Nm ³ /h
MIN gas pressure:	-75mbar
Carburetor/regulator:	FORTES mixer with Motortech ITB regulator
LABDA regulation:	YES
Container/sound isolation:	
Container dimensions:	1550x2280x3700
Sound proofing:	50mm
Container ventilation:	1pcs 710mm INTAKE fan, temperature controlled 1pcs 630mm EXHAUST fan, pressure controlled
Sound level (1-meter from CHP):	70.1 dB

