General Information

- Turnkey cogeneration system fully packaged inside a 40ft sound attenuated and thermally insulated container
- Highly efficient genset based on a Liebherr G9508 gas engine and a Stamford HCI434F generator
- Simultaneous production of 334 kWe prime electrical power and 418 kW thermal power as hot water at 90°C improves fuel efficiency from 37% to over 80%
- Automatic operation control and switchgear included.
- Silent operation with an average of 75 dBA at 7m using a critical grade muffler and custom acoustic designed air inlet and discharge ducting
- Extended service life based on indoor installation of equipment and waterproof protection
- Engine low emissions of NOX, CO and HC make the package very environmental friendly
**Standard Features**

- Engine and generator are directly coupled and mounted on a rugged steel skid. All components are designed for continuous usage, and suitable for prime or intermittent service.
- Equipment mounting provides easy accessibility and service. Removable enclosure walls allow for equipment overhaul or replacement when required.
- Spark plug ignition (non self-igniting) provides knock resistance operation even with alternating gas compositions.
- Rating is based on operation on ambient temperatures from -40°C to +30°C and an altitude up to 1000 meters (3300 ft). When conditions exceed these values please consult manufacturer for recommendations and derating information.
- One-year limited warranty for all systems and components.

**Engine**

- Manufacturer: Liebherr
- Model: G9508
- Displacement (L): 16.67 L
- Configuration: V-8
- Bore and Stroke (mm): 130 x 157
- Rated Speed: 1800 rpm
- Compression Ratio: 13.3 : 1
- Engine Weight (Dry): 1700 kg
- Flywheel Housing: SAE 1
- Fuel type: Natural gas
- Fuel Requirements -100% Load: 75 kg/hr
  - 80% Load: 62 kg/hr
  - 60% Load: 47 kg/hr
- Fuel Connection: 2” NPT
- Motor Oil Capacity (min/ max): 48 / 60 L
- Cooling water Capacity: 40 L
- Max. Pressure of Cooling Water: 36 psi
- Engine Combustion Air Flow: 2042 kg/hr (1017 cfm)
- Intake Air Max. Temperature: 35°C
- Engine exhaust flow at rated kWe: 2117 kg/hr (2553 cfm)
- Engine exhaust temperature at rated kWe: 448°C
- Engine maximum allowable back pressure: 20 inw (50 mbar)
- Critical grade muffler installed inside for extended service time
- Remote backup radiator for jacket water system
- Remote radiator for continuous cooling of the intercooler low temperature system

**Engine Standard Features:**

- Coordinated turbocharger
- Two-stage stainless steel intercooler
- Throttle actuator
- Ignition system specially developed for Liebherr
- Gas mixer
- Engine control unit
- Knock control
- Sensors and wiring harness as required

**Heat Recovery**

- Available waste heat recovered in two steps, from exhaust gas and engine jacket water, as hot water at 90°C:
  - 418 kWt @ 100% load
  - 360 kWt @ 80% load
  - 284 kWt @ 60% load
- Estimated overall efficiency 81%
- Exhaust gas shell and tube heat exchanger
- Jacket water plate and frame heat exchanger
- Three-way solenoid thermostat valves for automatic transition from heat recovery to backup cooling
- Three-way solenoid exhaust diverter valve for automatic transition from exhaust heat recovery to gas evacuation
- Flanged connections on container walls for customer piping

**Generator**

- Manufacturer: Newage Stamford
- Model: HCI434F
- Construction: Four pole, brushless, single bearing
- 60 Hz Voltages and Ratings (3 phase):
  - 334 kWe / 417 kVA - 240/480V @ 0.8 PF
  - 336 kWe / 420 kVA - 600V @ 0.8 PF
- Voltage Regulator (standard): MX341 AVR
  +/− 1.0%
- Winding Leads: 12
- Temperature Rise: 105°C rise Prime (40°C ambient)
  125°C rise Intermittent (40°C)
- Telephone Interference: THF < 2%
- Winding Pitch: Two thirds
- Control System: Self excited
- Weight: 1160 kg
- Cooling Air Flow: 1700 cfm

**Enclosure**

- Modified 40’ ISO high cube container
- Sheet metal construction: 40’ (L) x 8’ (W) x 9’-6” (H)
- Estimated overall weight: 33,000 lbs (15,000 kg)
- 3” Roxul insulation covered with perf. metal in walls and roof
- Two double doors and two single doors for convenient access
- Remote radiator located in a separate room for better cooling and noise control
- Custom acoustic designed air inlet and discharge ducting for reduced noise operation estimated at 75 dBA at 7m