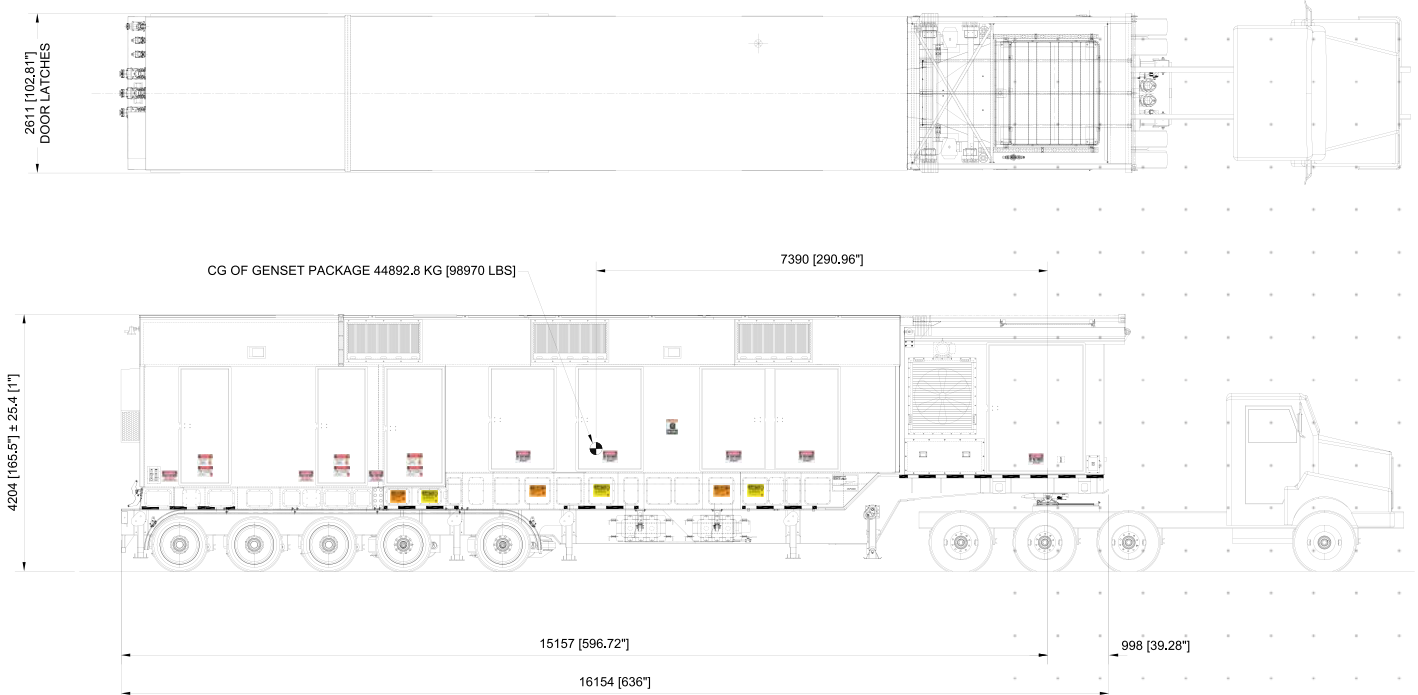


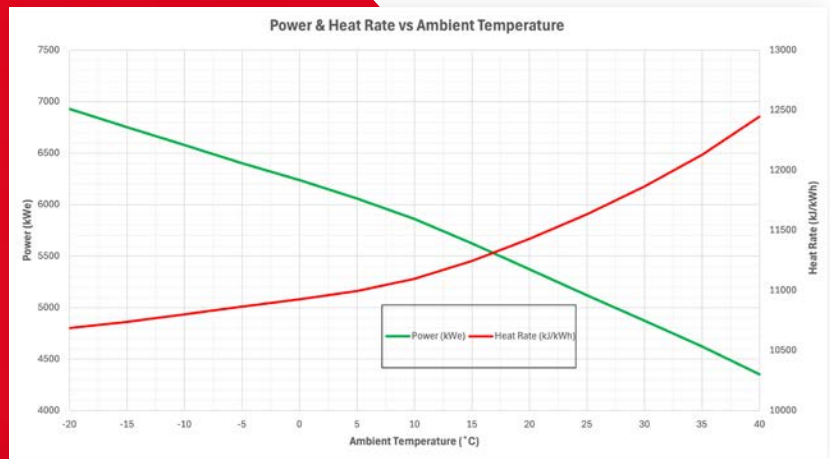
CXA05 Mobile

Gas Turbine Generator Set

CENTRAX
GAS TURBINES



Power Output	5624 kWe
Heat Rate	11245 kJ/kWh 10658 BTU/kWh
Exhaust Flow	21.3 kg/s 47 lb/s
Exhaust Temperature	515°C 959°F
Exhaust Thermal Energy	17567 kWth
Electrical efficiency at generator terminals	32%



ISO rating is based on the following characteristics:

Ambient Temperature 15°C (59°F), Altitude (Sea level) 0m (0ft), Ambient Pressure 1013 mbar (29.91 inHg), Relative Humidity 60%, Natural Gas fuel (LHV) 47497 kJ/kg (20420 BTU/lb)

* Inlet losses, exhaust losses & package auxiliary losses are excluded

Capable of a high number of starts per year, easily accepts instantaneous increases/decreases in power output, fast start capabilities, cold and hot start, no lock out period.

Centrax Gas Turbines Ltd

Shaldon Road, Newton Abbot, Devon, TQ12 4SQ, England

Registered in England No. 00592720. VAT No. GB 141 5342 02.

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General specifications – Siemens SGT-A05 Mobile

Gas Turbine

- Aero-derivative single shaft design 1000kg (2205lb)
- 14 Stage axial compressor with additional zero stage boost module
- Pressure ratio 14.4:1, 9 blow-off valves to prevent compressor surge
- Combustion module
 - 6 axial flow combustion chambers (cans)
 - Standard ignition system, 2 exciters and 2 ignitors
 - Gas fuel Dry Low Emissions (DLE) *
 - Gas/liquid or dual fuel with water injection emission control *
- 4 Stage turbine
- Power take-off shaft assembly (cold end drive)
- 6 main rolling element bearings – no DC standby rundown pump required

Gearbox

- Epicyclic speed reduction gearbox
- Reduce engine speed down to 1500rpm (50Hz) or 1800rpm (60Hz)

Generator

- 4 poles, 3 phase synchronous
- Wide range of voltages available for both 50Hz and 60Hz machines
- Open ventilation (IEC 60034-6:1991 classification IC0A1)
- Inlet and outlet air temperature monitoring
- Bearing temperature & vibration and stator winding temperature monitoring

Mobile Baseplate

- Trailer mounted single-skid baseplate for driver and driven equipment
- Designed to support the machinery drive train, acoustic enclosure, and all auxiliary systems
- Transmits all operational package loads to grade via interated jacking legs
- Integral oil tank is incorporated within the trailer baseplate
- Allows for quick deployment of power with minimum transport permitting

Acoustic enclosure

- Fabricated from marine grade Aluminium with integrated acoustic insulation
- Corrosion protection to ISO 12944 C4 (high) for long-term outdoor installations
- Acoustic enclosure covering complete drive train and associated systems
- Integral engine removal jib beam
- Interior lighting
- Gas detection system, fire protection and CO2 suppression system in accordance with EN54 and EN12094 or NFPA 12 and NFPA 72

Integrated lube oil system

- Gearbox driven main lube oil pump
- AC driven priming pump
- No requirement for a lube oil supply after package shutdown due to the type of engine bearings utilised, no emergency lube oil pumps or associated power supplies needed
- Oil module regulates pressure and temperature
- On-skid oil filtration
- Oil to air heat exchanger with safe area axial fans
- Lube oil tank heater
- Oil tank ventilation system with oil mist coalescer to reduce emissions
- Stainless steel piping
- First fill of oil included

Fuel system

- Natural gas
- Liquid fuel *
- Dual fuel (Natural gas / liquid) *
- Low BTU gas *
- Natural gas / Hydrogen mix *
- Methanol *

Start system

- Start system incorporating 132kW 3 phase AC motor
- Diesel generator to provide black start capability even with no available site power

Turbine wash system

- Motoring (cold) wash
- Mobile wash tank

Turbine intake system

- 2 stage filtration system, 1st Stage M5 (ISO 29461:1 T5 ePM10 ≥50%), 2nd Stage F9 (ISO 29461:1 T9 ePM1 ≤85%)
- 2 stage optionally fitted with high efficiency filters (ISO 29461 T12 EPA MPPS ≥99.5%)*
- Weather protection included as standard
- Heated Vane Separator (HVS) anti-icing system*
- Intake attenuation

Acoustic enclosure ventilation system

- Heated vane separator (HVS) anti-icing system, single stage filtration system M5 (ISO 16890 ePM10 60%)
- Air outlet extractor fan
- Air outlet shut-off damper for CO2 retention
- Intake and outlet attenuation

Turbine exhaust system

- Axial exhaust exit
- Thermal expansion compensator
- Thermal / Acoustic shroud

Package control

- On-skid control suite
- Fire protection panel

Turbine control

- Rockwell Allen Bradley “Guardlogix” PLC, Rockwell Point I/O, Safety Point I/O and Flex I/O modules
- Dual Redundant ethernet ring (DLR) communication
- Hardwired interlocks to balance of plant (HRSG, gas compressor etc)
- Safety systems: Rockwell Allen Bradley “GuardLogix” Safety Integrity Level (SIL) PLC, hardwired emergency stop safety chain to SIL 2
- 19” touch screen human machine interface, system graphics, alarm display and historical logging
- Data communication link available for remote control & monitoring
- Vibration monitoring using Rockwell Dynamix 1444 condition monitoring system

Generator control and protection

- Electronic Automatic Voltage Regulator (AVR) with protection functions
 - ANSI 58 - Rotating diode failure,
- Digital integrated protection relay comprising: ANSI 21 - Under impedance,
 - ANSI 24 - Over excitation
 - ANSI 27 - Three-phase undervoltage,
 - ANSI 32R - Reverse power,
 - ANSI 40 - Loss of excitation,
 - ANSI 46 - Negative phase sequence,
 - ANSI 50/51 - Overcurrent,
 - ANSI 50BF - Breaker failure, *
 - ANSI 51N - Stator earth fault,
 - ANSI 59 - Three-phase overvoltage,
 - ANSI 59N - Neutral voltage displacement
 - ANSI 67N - Directional earth fault, *
 - ANSI 81O - Over frequency,
 - ANSI 81U - Underfrequency,
 - ANSI 87G/T - Differential fault
- Additional generator protection by PLC
 - ANSI 38 - Generator bearing thermal protection,
 - ANSI 49S - Stator thermal protection

Synchronising equipment

- ANSI 15 - automatic synchroniser
- ANSI 25 - check synchroniser
- Automatic or manual forward and back synchronising, MV circuit breaker control

Motor control centre

- Skid mounted 400V, 50Hz or 480/575V, 60Hz, 3ph MCC, allowing a single point of connection for the customer

Documentation

- Drawings
- Quality manual
- Test reports

Testing

- Factory testing of turbine
- Full fired package test

* Optional equipment

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