SILENT CANOPY THREE-PHASE DIESEL GENERATING SET

PERKINS 2250 kVA PRIME / 2500 kVA STANDBY

50 Hz · 380–415 V · 0.8 pf
UK assembled silent set · Model PL2250

PRIME (PRP)	STANDBY (ESP)	CURRENT @ 400 V	ENGINE
2250 kVA	2500 kVA	3248 A	4016-61TRG3
1800 kWe	2000 kWe	per phase, 0.8 pf	Perkins 61.1 L · 16V T/CAC

A UK-assembled silent (acoustic canopy) generating set built around the Perkins 4016-61TRG3 ElectropaK and a Leroy Somer LSA52L9 alternator. Configured as a dual-duty machine: Prime Power for continuous or variable-load site use, and Standby / Emergency Power for automatic mains-failure backup. The canopied set is intended for plant rooms, farms, yards and occupied sites where weather protection and reduced noise are required.

RATINGS & ELECTRICAL OUTPUT — 50 HZ, 3-PHASE, 4-WIRE

Parameter	Prime PRP	Standby ESP	380 V	400 V	415 V	Notes
Apparent power	2250 kVA	2500 kVA	—	—	—	ISO 8528
Active power (0.8 pf)	1800 kWe	2000 kWe	—	—	—	Net electrical
Line current / phase	—	—	3417.3 A PRP	3247.6 A PRP	3129.9 A PRP	At 0.8 pf
Standby current / ph	—	—	3797.0 A ESP	3608.4 A ESP	3477.6 A ESP	At 0.8 pf
Frequency / speed	50 Hz	50 Hz	—	—	—	1,500 r/min
Voltage regulation	±1 %	±1 %	—	—	—	Steady state, AVR
Power factor	0.8 lag	0.8 lag	—	—	—	Standard 3-phase
Circuit breaker	3500 A	3500 A	—	—	—	3-pole MCCB + CTs

RATING DEFINITIONS

PRIME POWER (PRP) — ISO 8528-1

Unlimited running hours in a variable-load application in place of a mains supply. Average load factor over 24 hours not to exceed 70% of the PRP rating. A 10% overload is available for 1 hour in any 12 hours of operation.

STANDBY / EMERGENCY (ESP) — ISO 8528-1

Available under variable load in the event of a utility outage. No overload capability is permitted on the ESP rating. Typical annual utilisation is limited; intended for automatic mains-failure duty, not continuous baseload.

TYPICAL APPLICATIONS

- **Industrial & manufacturing**
  Process lines, workshops, batch plant, factories needing either prime site power or standby cover.
- **Healthcare & care**
  Clinics, care homes and support services where a tested standby source is specified.
- **Agriculture & rural**
  Grain stores, dairies, pumping and remote sites with limited grid capacity.
- **Commercial buildings**
  Offices, retail, hotels, data rooms and mixed-use sites with automatic mains-failure duty.
- **Construction & hire**
  Silent prime power for compounds, towers and temporary works.
- **Utilities & infrastructure**
  Pumping stations, comms, water treatment and critical plant rooms.

PRIME AND STANDBY CONFIGURATION — SUPPLIED AS ONE DUAL-DUTY PACKAGE

This data sheet covers the SILENT (acoustic canopy) generating set in both Prime and Standby duty. The mechanical package is common. Duty is selected at build: Prime sets include engine glow-plug / pre-heat for reliable cold starting on variable-load sites; Standby sets include a mains-powered coolant heater and mains battery charger so the set is always ready for automatic start on utility failure. Both duties use the Deep Sea 6120 Autostart / AMF controller, 3500 A three-phase MCCB, tropical radiator and an 8-hour insulated bunded base fuel tank.

ENGINE — PERKINS 4016-61TRG3 ELECTROPAK

Manufacturer	**Perkins Engines (UK design)**	Gross power PRP	**1975 kWm / 2648 hp**
Model	**4016-61TRG3**	Gross power ESP	**2183 kWm / 2927 hp**
Configuration	**6 cylinder, vertical in-line**	Net power PRP	**1875 kWm**
Cycle / combustion	**4-stroke, direct injection**	Net power ESP	**2083 kWm**
Aspiration	**Turbocharged, air-to-air CAC**	Cooling	**Liquid, tropical radiator**
Bore × stroke	**160 × 190 mm**	Coolant capacity	**252 litres (engine package)**
Displacement	**61.12 litres**	Oil capacity	**237 litres**
Compression ratio	**13.6 : 1**	Electrical system	**12 V DC negative earth**
Rated speed	**1,500 r/min (50 Hz)**	Starting	**Heavy-duty lead-acid battery**
Rotation (flywheel)	**Anti-clockwise**	Combustion air (PRP)	**approx. 37 m^3/min**
Governor	**Mechanical**	Exhaust flow (ESP max)	**approx. 37 m^3/min**
Emissions class	**Fuel-optimised**	Max exhaust temp.	**approx. 450–520 °C**

FUEL CONSUMPTION — 1,500 R/MIN, PERKINS PUBLISHED DATA

Load point	g/kWh	Litres / hour	Approx. 8 h use	Duty reference
Standby (ESP)	—	528 L/h	—	Standby rating
100 % prime (PRP)	—	470 L/h	≈ 3760 L	Full prime load
75 % prime	—	344 L/h	≈ 2752 L	Typical average load
50 % prime	—	234 L/h	≈ 1872 L	Light / standby test
25 % prime	—	≈ 130 L/h	≈ 1040 L	Light load running

Fuel figures are engine manufacturer data at 1,500 r/min on distillate diesel to the relevant BS / EN specification, and will vary with site altitude, ambient temperature, fuel quality, load profile and installation. The standard base tank is an insulated bunded 8-hour tank with contents gauge, typically sized around 75 % prime load. Bulk tanks, bunded day tanks and automatic fuel-transfer systems are available.

ALTERNATOR — LEROY SOMER LSA52L9

Manufacturer	**Leroy Somer (Nidec)**	Continuous rating 40 °C	**2250 kVA class (2500 ESP)**
Model	**LSA52L9**	Frequency / speed	**50 Hz / 1,500 r/min**
Type	**Brushless, 4-pole, self-excited**	Voltage range	**380 / 400 / 415 V star**
Winding	**2/3 pitch, 6-wire (12-wire opt.)**	THD (no-load, typ.)	**< 2.5 – 3.5 %**
Bearings	**Single bearing, SAE coupled**	THD (linear load, typ.)	**< 5 %**
Insulation	**Class H**	Waveform THF / TIF	**< 2 % / < 50**
Enclosure	**IP23, drip-proof, self-cooled**	Overspeed	**2,250 r/min**
AVR (typical)	**R150 shunt (±0.8 to ±1 %)**	Altitude (std derate)	**≤ 1,000 m asl**

CONTROL, PROTECTION & ELECTRICAL PACKAGE

Controller	**Deep Sea DSE6120**	Circuit breaker	**3500 A 3-pole MCCB**
Function	**Autostart + AMF**	Current transformers	**Fitted as standard**
Display	**Back-lit LCD + LED alarms**	Emergency stop	**Set-mounted E-stop**
Sensing	**3-ph generator & 3-ph mains**	Engine protection	**HET, over/under speed**
Current	**Generator / load CTs**	Electrical protection	**V, Hz, I, battery**
Modes	**Stop / Manual / Auto / Test**	Remote start	**Input available**
Event log	**10 events (configurable)**	Outputs	**Fuel, crank, configurable**
PC software	**DSE Configuration Suite**	Control voltage	**12 V DC**

DSE6120: automatic mains-failure start/return, 3-phase V / Hz / I monitoring, oil pressure, coolant temperature, fuel level, battery volts, hours-run, pre-heat and warning/shutdown protection. Configured by front panel or PC.

STANDARD SPECIFICATION — SILENT CANOPY SET

- Perkins 4016-61TRG3 diesel engine with tropical radiator, fan and matrix guards, radiator drain valve
- Air, fuel and lubricating-oil filters; industrial exhaust silencer and flexible bellows
- Inboard anti-vibration mounts (AVMs) between engine/alternator and fabricated steel baseframe
- Leroy Somer LSA52L9 single-bearing alternator, Class H, IP23, AVR regulated
- Deep Sea 6120 Autostart / AMF controller with 3-phase generator and mains sensing
- 3500 A three-phase MCCB with current transformers and set-mounted emergency stop
- 12 V DC control system and heavy-duty lead-acid starting battery
- Insulated bunded 8-hour base fuel tank with contents gauge
- High engine-temperature and over / under-speed protection
- Works test to ISO 8528 with test certificate issued with the set
- PRIME BUILD: engine glow plugs / cold-start aid for reliable starting on variable-load prime sites
- STANDBY BUILD: mains-powered engine coolant heater and mains battery charger so the set remains warm and the battery charged while on standby
- Powder-coated acoustic canopy with lockable access doors, residential-grade silencer and weather protection
- Powder-coated / industrial finish baseframe designed for forklift / sling handling points as built
- Operation and maintenance documentation pack
- UK assembly and pre-delivery inspection before despatch
- Free mainland UK delivery on the PL2250 silent set (offloading by others unless HIAB is specified)

OPTIONAL EXTRAS & SYSTEM UPGRADES

ACOUSTIC / SITE
Weather canopy or container conversion; residential silencers; attenuation packs; plant-room acoustic treatment advice.

ELECTRICAL
4-pole MCCB; motorised breaker; AMF / ATS panel; synch / load-share (DSE86xx class); earth-fault; dual voltage; socket kits.

FUEL
Bulk bunded tanks; automatic fuel transfer; polishing; water-in-fuel alarms; extended-run base tanks; HVO compatibility advice.

STARTING & HEATING
Additional battery set; battery isolator; jacket water heater upgrade; oil-sump heater; anti-condensation heater on alternator.

MONITORING
Remote monitoring & control — fuel, performance, alarms and start/stop from off-site; SMS / cloud options.

EMISSIONS / FUEL
Guidance on fuel-optimised operation, HVO blends and local planning / environmental constraints.

HYBRID / OFF-GRID
Battery storage, UPS and solar-hybrid packages to cut run hours and fuel on prime or remote sites.

INSTALLATION KIT
Flue / extract design, flexible exhaust, wall flashings, drip-trays, cable containment, plinth design.

INSTALLATION ENVELOPE, ENVIRONMENT & COMPLIANCE

Set type	**Silent acoustic canopy**	Design ambient	**Tropical radiator (hot climate)**
Typical L × W × H	**Issued on GA drawing**	Standard altitude	**≤ 1,000 m (derate above)**
Typical wet weight	**Issued on GA drawing**	Works test	**ISO 8528 load test**
Engine dry weight	**approx. 1,200 kg (ElectropaK)**	Genset standard	**ISO 8528**
Engine package L×W×H	**2,657 × 1,120 × 1,718 mm**	Alternator std.	**IEC 60034 / ISO 8528-3**
Fuel tank	**8 h insulated bunded base**	Engine std.	**ISO 3046 / ISO 8528**
Noise (canopy)	**Typ. 65–70 dB(A) @ 7 m**	Wiring	**BS 7671 installation practice**
Cooling air	**Free inlet & discharge required**	Handling	**Fork / lift points as built**

- The acoustic canopy is weather-protecting for outdoor siting but still needs free cooling-air inlet and discharge, a correct exhaust route and a level plinth. Do not enclose the canopy in an unventilated shed.
- Typical canopy noise is around 65–70 dB(A) at 7 m and is confirmed on the general arrangement. Critical or planning-sensitive sites can be quoted with a higher-attenuation enclosure.
- Final dimensions, wet weight, tank litres, exhaust flange size and cable-entry details are confirmed on the general arrangement drawing issued with the quotation / order acknowledgement.
- Ratings are at 25 °C, 100 kPa, 30 % RH unless stated. Site derate applies for altitude, temperature and poorly ventilated rooms — GES Power Ltd will calculate this at survey.
- A 10 % overload on Prime is available for 1 hour in 12. Standby (ESP) has no overload. Do not apply ESP as a continuous rating.

Why specify GES Power Ltd

Family-run UK specialists in diesel generation. We do not just sell a skid — we size, build, deliver, install, commission and look after the set for its working life.

REASONS CLIENTS CHOOSE GES POWER LTD

1 One accountable UK partner

Supply, installation, electrical connection, commissioning and aftercare sit in one company. You are not passed between a seller, an electrician and a service agent when the set is on site.

2 Genuine Perkins-powered, UK-assembled sets

British-built Perkins and Caterpillar powered generators from small commercial units through to 2,000 kVA industrial machines. This 2250 / 2500 kVA silent set is assembled and works-tested in the UK before it leaves.

3 Right-sized, not oversold

We design the package around your actual load, starting kVA, ambient, fuel strategy and budget. That avoids wasted capital, excess fuel burn and hire-set overspend.

4 Prime and standby from one platform

The same silent set can be built for continuous / prime site duty or automatic standby. Glow plugs, coolant heaters, battery chargers, ATS and remote monitoring are selected to match how you will actually run the machine.

5 Turnkey installation nationwide

Site survey, plinth and location advice, HIAB offload and positioning, certified electrical installation to BS 7671, exhaust and extract systems, bulk fuel tanks and fuel-transfer, cable containment and making-good.

6 Commissioning that is more than a start-up

Functional testing of AMF / ATS, protection settings, load proving, customer training and a documented handover so your team know how to run, test and call for help.

7 Planned maintenance, not breakdown roulette

Prime and standby service schedules, genuine filters and parts, annual black-start / blackout tests and load-bank testing to prove the set still carries the building when the grid fails.

8 Repair, fault-finding and 24/7 support

Power cuts and failed starts do not keep office hours. Engineers operate nationwide from Chesterfield with common Perkins and control-system spares. Critical-site response is part of the offer, not an afterthought.

9 Life-extension and compliance support

Controller upgrades, remote monitoring, exhaust and extract redesign, fuel polishing, battery replacement, and help meeting insurer, healthcare and facilities-management test regimes.

10 Wider power systems, not just a diesel

ATS / AMF and synchronising panels, UPS, off-grid battery and solar-hybrid packages, and installation into vehicles or vessels. The generator can sit inside a larger resilience scheme.

11 Plain commercial terms

Clear quotations, free mainland UK delivery on this PL2250 silent set, and a family-run team you can actually speak to on 01246 380525. Established 2016 with more than twenty years' combined industry experience.

12 Return on the investment

Reduced downtime, fewer emergency hire invoices, lower fuel through correct sizing, and a maintained asset that holds value. The set is only half the product — the service wrap is the other half.

FULL SERVICE WRAP AVAILABLE WITH THIS GENERATING SET

- Load assessment & kVA sizing
- Site survey & plant-room design
- Open or canopied build options
- HIAB delivery & positioning
- Certified electrical installation
- AMF / ATS panel supply & wire-in
- Exhaust, flue & extract systems
- Bulk fuel tanks & transfer
- Remote monitoring & telemetry
- Training & documented commission
- Planned service agreements
- Load-bank & black-start testing
- 24/7 breakdown attendance
- Genuine parts & service kits
- Controller / ATS upgrades
- Hybrid battery & off-grid packages

Talk to an engineer before you buy

Written for every type of client — facilities managers, contractors, farmers, healthcare estates and industrial engineers. If you are unsure about Prime versus Standby, open versus silent, ATS, exhaust routing or a service contract, call us. We will size the set and quote the installation as well as the machine.

01246 380525 GES Power Ltd · Unit 2 Cavendish Business Park, Chesterfield S41 9EY · Nationwide UK · Out-of-hours power-failure support