MODEL: LSP22S3 Powered by PERKINS





LEES generator sets meet the standards of

ISO9001, CE，BS5000, ISO 8528, ISO 3046, IEC 60034, NEMA MG-1.22.

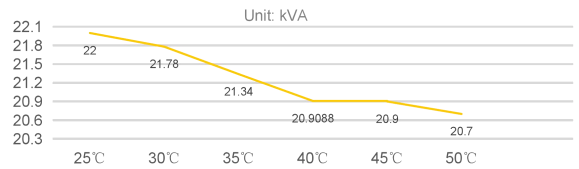
Standard Features

- LEES Power provides one-source responsibility for the generating system and accessories.
- The generator set and its components are prototype-tested, factory-built, and production-tested.
- The generator set complies with ISO 8528-5, Class G2 or G3 requirements for transient performance.
- The generator set accepts rated load in one step.
- The 50Hz generator set engine is certified by the Environmental Protection Agency (EU or MEP) to conform to EU2、EU3 nonroad emissions regulations.(≤560KW)
- A one-year limited warranty covers all systems and components. Two-, three-year extended warranties are also available.

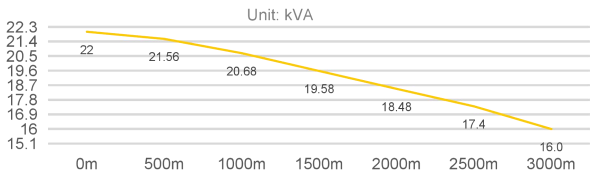
Generator Features

- The brushless, rotating-field generator has broadrange reconnectability.
- The pilot-excited, permanent-magnet generator (PMG) provides superior short-circuit capability
- Controllers are available for all applications. See controller features inside.
- The low coolant level shutdown prevents overheating (standard on radiator models only).
- Integral vibration isolation eliminates the need for under-unit vibration spring isolators.
- An electronic, isochronous governor delivers precise frequency regulation.
- Electronic engine controls and a generator microprocessor controller combine to deliver one of the most advanced control systems in today's generator market.

Temperature (Celsius) Derate Curves



Altitude (meters) Derate Curves



MODEL			LSP22S3
Power Pf.0.8	Standby	kVA	22
		kW	18
	Prime	kVA	20
		kW	16
	Frequency	Hz	50
	Voltage	V	230/400V
	Max Current	A	32
	Temp Rise	Clas	H
	Insulation	Clas	H
	Rated speed	rpm	1500

Standard reference Conditions:

Standard reference condition 25℃ (77℉) air inlet temp, 100m (328ft) A.S.L 30% relative humidity. Fuel consumption data with diesel fuel with specific gravity of 0.85 and conforming to BS 2869: 1998, Class A2.

Standard Equipment

Engine

- Air cleaners
- Oil pump
- Oil drain extension and shut-off valve
- Full flow oil filters
- Closed crankcase ventilation
- Jacket water pump
- Thermostats
- Blower fan and fan drive
- Radiator - unit mounted
- Electric starting motor - 2kW, 12volts
- Governor - electronic isochronous
- Base - formed steel
- SAE flywheel and bell housing
- Charging alternator - 24V
- Battery and cables
- Flexible fuel connectors
- Flexible exhaust connection

General

- Q255 carbon steel material
- Acoustic enclosure and base frame with powder-coated coating
- Minimum sheet metal thickness of the acoustic enclosure: ≥ 2.0 mm
- Protection rating: IP23 (static), IP21 (dynamic)Weatherproof & sound-attenated canopy
- Sound-absorbing material
- Lifting lug
- Emergency stop button
- Inside silencer

Digital control panel(s)

- Digital metering
- Engine parameters
- Generator protection functions
- Engine protection
- CANBus ECU communications
- Windows®-based software
- Multilingual capability
- Communications to remote annunciator
- Programmable input and output contacts
- UL recognized, CSA certified, CE approved
- Event recording
- IP 54 front panel rating with integrated gasket
- NFPA 110 compatible

Generator

- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting
- Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
- Self-ventilated and drip-proof
- Superior voltage waveform
- Digital, solid state, volts-per-hertz regulator
- Brushless alternator with brushless pilot exciter
- 4 pole, rotating field
- 125 ° C prime temperature rise
- 1-bearing, sealed
- Flexible coupling
- Full amortisseur windings
- 125% rotor balancing
- 3-phase voltage sensing
- ± 0.25% voltage regulation no load to full load
- 100% of rated load - one step
- 5% maximum total harmonic distortion

Brushless, rotating field generator

- 2/3 pitch windings
- Permanent Magnet Generator (PMG) supply to regulator
- 300% short circuit capability

Packing

- Engine manual
- Alternator manual
- Generator protection functions
- Tool kit

Digital control unit

- Automatically transfers between mains (utility) and generator(DSE6120 MKIII only) for convenience.
- Hours counter provides accurate information for monitoring and maintenance periods
- User-friendly set-up and button layout for ease of use
- Multiple parameters are monitored & displayed simultaneously for full visibility
- The module can be configured to suit a wide range of applications for user flexibility
- PLC editor allows user configurable functions to meet user specific application requirements.

Application Data

Engine

Manufacturer……PERKINS

Model……404A-22G1

Type…… 4-cyl NA

Displacement……2.216litres

Bore…… 84mm

Stroke…… 100mm

Compression ratio…… 23.3:1

Rated rpm…… 1500

Engine governor…… Mechanical

Maximum power……20.6kW (Standby)

Steady state frequency band…… 50HZ

Air cleaner

Liquid capacity……10.6litres

Total oil system……10.6litres

Engine jacket water capacity……3.6

System coolant capacity……7.0litres

Electrical

Electric volts DC……12V

Cold cranking amps under -18 ℃

Batteries…… 780CCA

DC Charger……12V

Fuel system

Fuel supply connection size……DN25

Fuel return connection size……DN25

Maximum fuel lift……10kPa

Recommended fuel ……0# Diesel

Total fuel flow……5L/H

Fuel consumption

At 100% of power rating……5.3 (L/h)

At 75% of power rating…… 4 (L/h)

At 50% of power rating……2.9 (L/h)

Cooling - radiator system

Ambient capacity of radiator……55℃

Maximum restriction of cooling air……0.08kPa

Water pump capacity……42.9litres/min

Heat rejection to coolant……17.0kW

Heat rejection to after cooler……N/A

Heat radiated to ambient……3.3kW

Fan power…… 0.3kW

Air requirements

Aspirating……Naturally aspirated

Air flow required for radiator cooled unit……0.67m³/S

Remote cooled applications; air flow required for dissipation of radiated generator set heat for a maximum of

25 ℃ rise…… 0.8m³/S

* Air density = 1.184 kg/m3

Exhaust system

Gas temperature (stack)……540℃

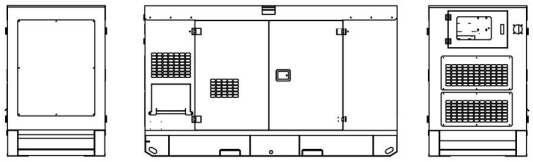
Gas volume at stack temperature……3.64m³/min

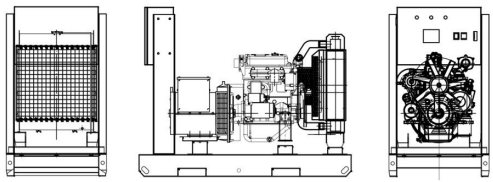
Maximum allowable back pressure at outlet of engine, before piping……10.2kPa

Standard and optional features

System	Standard	Optional
Air intake system	• Standard dry type air filters • Charge air intercooler • Air intake pipework	• Heavy-duty two stage air filters with mechanic dust evacuation • Exhaust turbochargers
Exhaust system	• Standard engine interface • Exhaust elbows • Exhaust bellows • Exhaust silencers 15 db(A)	• Exhaust silencers 25 db(A) • Exhaust silencers 30 db(A) • Exhaust silencers 40 db(A) • Stainless Steel Exhaust Pipe (304)
Base frame	• Resilient mounting for engine and alternator • Lifting lugs • Forklift pockets	• Integrated fuel tank • Integrated spill-proof design
Electrical	• Maintenance-Free Lead-Acid Battery • Battery switch • 3PMCCB • DSE6120MKIII • 3A charger • Starter battery	• DSE / DEIF / ComAp • Low-Temperature Cylindrical Wound Battery • 4P MCCB circuit breaker • 100-4000ATS • GMS monitoring • Water jacket heater • 5A / 10A charger
Alterator	• Automatic Voltage Regulator • Class H insulation, H temperature rise • IP23 Protection • Excitation • Single bearing alternator	• Windings RTD • Bearing RTD • Anti-condensation heater • SIE 3 Harsh Environment Protection • Excitation Failure Protection Module • Class F or class B temperature rise • Double bearing • IP41 Protection
Fule System	• 180L(Silent type)	• Electric shut-off valve • Switching type fuel level sensor • 4-20mA fuel level sensor • Turbine type fuel flow meter • 1000L Double-Layer Fuel Tank • Fuel-water separator
Cooling System	• 50℃ copper radiator driven by motor	• 50℃ or 55℃ radiator • VFD electric fan
Packing	• Engine manual • Alternator manual • Gensets operation and maintenance manual • Tool kit	
Baseframe	• Forklift pockets • Pulling slots • Earth wire protection • Built-in anti vibration mountings • Fuel outlet value • Standard fuel tank (Silent type)	• Enlarged fuel tank (optional) • Separated fuel tank (optional)

Overview Dimension & Weight





LSP22S3 (Silent type)			
Configuration	L×W ×H (mm)	Weight (kg)	Fuel Tank Capacity(L)
Silent type	1840×805×1120	660	180

LSP22E3 (Open type)			
Configuration	L×W ×H (mm)	Weight (kg)	Fuel Tank Capacity(L)
Open type	1470×690×1280	480	/

Note: For reference only. Do not use for installation design. Contact your local dealer for precise weights and dimensions.

Sound Data

Unit type	Prime 75% load
Open power unit (dB(A) at 7m)	80dba
Enclosed power unit (dB(A) at 7m)	76.4 dB(A) at 1m

Sound dala is provided at 7 mn(23 ft).

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