# MODEL: LSC490S3-6 Powered by CUMMINS



**LEES generator sets meet the standards of**

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

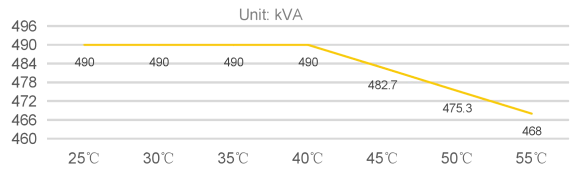
## Standard Features

- 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 60Hz generator set engine is certified by the Environmental Protection Agency (EPA Tier) to conform to EPA, ESE Tier3 or Tier4 nonroad emissions regulations.(≤560kW)
- A one-year limited warranty covers all systems and components. Two-, three-year extended warranties are also available.

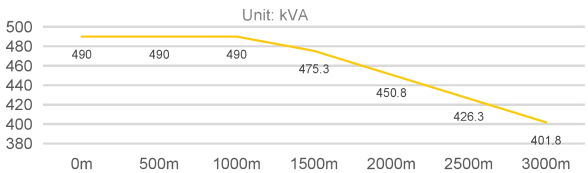
## Generator Features

- 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 | | | LSC490S3-6 |
|---|---|---|---|
| Power Pf.0.8 | Standby | kVA | 490 |
| | | kW | 392 |
| | Prime | kVA | 445 |
| | | kW | 356 |
| | Frequency | Hz | 60 |
| | Voltage | V | 120/208, 240/416, 127/220 , 255/440, 138/240, 277/480 |
| | Temp Rise | Clas | H |
| | Insulation | Clas | H |
| | Rated speed | rpm | 1800 |

## 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 - 24V
- 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……CUMMINS

Model……QSZ13-G7

Type…… 4 Cycle; In-line 6

Displacement……13.0L

Bore……130mm

Stroke……163mm

Compression ratio……17.0:1

Rated rpm……1800

Engine governor……Electronic

Maximum power……392kW

Steady state frequency band……60HZ

**Air cleaner**

Liquid capacity……23.1L

Total oil system……78.0L

Engine jacket water capacity……23.1L

System coolant capacity……78.0L

**Electrical**

Electric volts DC……24V

Cold cranking amps under -18 ℃

Batteries……1250

DC Charger…… 24V

**Fuel system**

Fuel supply connection size……N/A

Fuel return connection size……N/A

Maximum fuel lift……N/A

Recommended fuel ……0# Diesel

Total fuel flow……N/A

**Fuel consumption**

At 100% of power rating……101.3 (L/h)

At 75% of power rating…… 82.4 (L/h)

At 50% of power rating……59.4 (L/h)

**Cooling - radiator system**

Ambient capacity of radiator……50℃

Maximum restriction of cooling air…… N/A

Water pump capacity…… 6.8L/S

Heat rejection to coolant……162kW

Heat rejection to after cooler……N/A

Heat radiated to ambient……68kW

Fan power……N/A

**Air requirements**

Aspirating……Turbocharged & Charge Air Cooled

Air flow required for radiator cooled unit……N/A

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

25 ℃ rise…… N/A

* Air density = 1.184 kg/m3

**Exhaust system**

Gas temperature (stack)……513℃

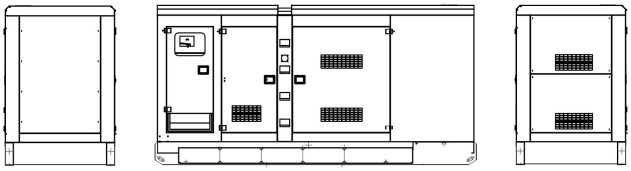
Gas volume at stack temperature……43.1kg/min.

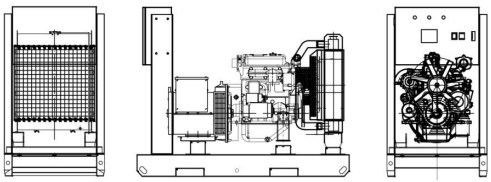
Maximum allowable back pressure at outlet of engine, before piping……13kPA

## Standard and optional features

| System | Standard | Optional |
|---|---|---|
| Air intake system | • Standard dry type air filters<br>• Charge air intercooler<br>• Air intake pipework | • Heavy-duty two stage air filters with mechanic dust evacuation<br>• Exhaust turbochargers |
| Exhaust system | • Standard engine interface<br>• Exhaust elbows<br>• Exhaust bellows<br>• Exhaust silencers 15 db(A) | • Exhaust silencers 25 db(A)<br>• Exhaust silencers 30 db(A)<br>• Exhaust silencers 40 db(A)<br>• Stainless Steel Exhaust Pipe (304) |
| Base frame | • Resilient mounting for engine and alternator<br>• Lifting lugs<br>• Forklift pockets | • Integrated fuel tank<br>• Integrated spill-proof design |
| Electrical | • Maintenance-Free Lead-Acid Battery<br>• Battery switch<br>• 3PMCCB<br>• DSE6120 MKIII<br>• 3A charger<br>• Starter battery | • DSE / DEIF / ComAp<br>• Low-Temperature Cylindrical Wound Battery<br>• 4P MCCB circuit breaker<br>• 100-4000ATS<br>• GMS monitoring<br>• Water jacket heater<br>• 5A / 10A charger |
| Alterator | • Automatic Voltage Regulator<br>• Class H insulation, H temperature rise<br>• IP23 Protection<br>• Excitation<br>• Single bearing alternator | • Windings RTD<br>• Bearing RTD<br>• Anti-condensation heater<br>• SIE 3 Harsh Environment Protection<br>• Excitation Failure Protection Module<br>• Class F or class B temperature rise<br>• Double bearing<br>• IP41 Protection |
| Fuel System | • 1140L(Silent type) | • Electric shut-off valve<br>• Switching type fuel level sensor<br>• 4-20mA fuel level sensor<br>• Turbine type fuel flow meter<br>• 1000L Double-Layer Fuel Tank<br>• Fuel-water separator |
| Cooling System | • 50℃ copper radiator driven by motor | • 50℃ or 55℃ radiator<br>• VFD electric fan |
| Packing | • Engine manual<br>• Alternator manual<br>• Gensets operation and maintenance manual<br>• Tool kit | |
| Baseframe | • Forklift pockets<br>• Pulling slots<br>• Earth wire protection<br>• Built-in anti vibration mountings<br>• Fuel outlet value<br>• Standard fuel tank (Silent type) | • Enlarged fuel tank (optional)<br>• Separated fuel tank (optional) |

## Overview Dimension & Weight





| LSC490S3-6 (Silent type) | | | |
|---|---|---|---|
| Configuration | L×W ×H (mm) | Weight (kg) | Fuel Tank Capacity(L) |
| Silent type | 4700×1630×2400 | 5100 | 1140 |

| LSC490E3-6 (Open type) | | | |
|---|---|---|---|
| Configuration | L×W ×H (mm) | Weight (kg) | Fuel Tank Capacity(L) |
| Open type | 3160×1380×2250 | 3800 | / |

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) | / |
| Enclosed power unit (dB(A) at 7m) | / |

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


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