

Model V550T

## VOLVO PENTA TIER 4 FINAL

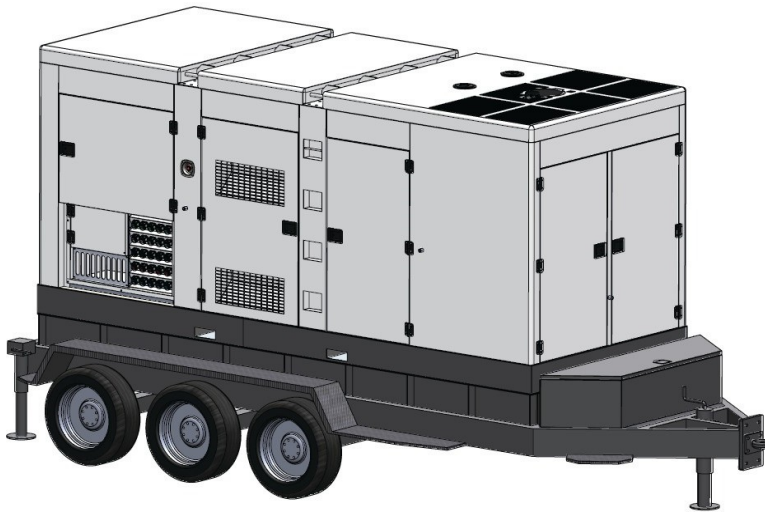


60Hz MOBILE/PRIME/STANDBY POWER  
550kW/60Hz/Mobile/1800RPM

### Description

KSL Power Mobile Generators are an efficient, reliable and versatile source of mobile electrical power and are designed to operate in the most extreme working conditions. All LEL Critical Mobile Generators combine an innovative design and the use of high-quality materials that provide the user with the most dependable power that you can rely on for non-stop power with easy to operate controls.

Powered by a radiator-cooled, industrial VOLVO PENTA Diesel engine, which meets current Environmental Protection Agency (EPA) TIER 4 Final non-road exhaust emission regulations, driving a single bearing, four-pole, three-phase alternator, with IP23 protection. The Prime Power kVA rating for generator set is given with a 105-degree o C alternator winding temperature rise.



VOLTAGE VAC	120/208V	139/240V	277/480V
RATING	Prime Standby	Prime Standby	Prime Standby
PHASE	3	3	3
PF	0.8	0.8	0.8
HZ	60	60	60
KW	550 605	550 605	550 605
KVA	687 756	687 756	687 756
AMPS	1906 2098	1653 1819	826 909
SKVA@30%			
VOLTAGE DIP2300	2300	2300	2300
MLCB (AMPS)2000	2000	2000	2000

## Features and Benefits

### Cooling

Radiator with belt driven pusher fan.

### Air Filter

Heavy-duty replaceable element air cleaner.

### Alternator

Single bearing, rotating field, self-excited, self-ventilated, 12-wire re-connectable, 60Hz brushless alternator with permanent magnetic generator (PMG), with Class F insulation. Automatic voltage regulator (AVR) providing close voltage regulation and kVA starting capability for electric motor loads.

### Fuel Filtration

Standard and secondary water separator with visible level on fuel Filters

### Voltage Change Over Board

Two-position, manual change over board. 120/208 and 277/480V 3-phase.

### Fuel Tank

Double walled environmentally friendly steel base welded sub-base fuel tank with 100% containment capability for any diesel fuel, coolant or engine oil spills. Easy access for maintenance activities.

### Enclosure

Fully sound attenuated enclosure, robust design. All metals are shot blasted to SA2.5 before paint applied. C4 grade powder coated provides weather resistant, high gloss finish. Curved edges, top lift points and forklift ports. Ample layer of durable Rockwool sound insulating material placed all around the inside of the enclosure, doors and ducting with metal retaining panels, it is oil and fire resistant. Vertical air discharge for quiet operation.

### Controls

Digital control panel with manual and automatic start and stop features. Many programmable automatic functions for local and remote controls with LED lights, tamper proof engine hour recorder. Load Connections: Covered distribution panel for easy access to cable power outlets, receptacles, lugs and camlocks.

### Standard Features

#### Shore Power

- One 120V shore power connection for jacket water heater
- Customer convenience panel with multiple receptacles
- Remote start terminals

#### Internal Lighting

- Two internal DC lights

#### Trailer

- Three-axle with six wheels
- Electrical brake system
- ST245/75R16 Load Range Tires
- Manual Lifting jacks
- Standard tow hook with safety chain
- Foldable pedal and storage box

#### Circuit Breaker (ABB)

- 2000A fixed type, 3 poles, generator set mounted, electrically operated, insulated case CB
- Solid state trip unit for overload (time overcurrent) and fault (instantaneous)
- Over current protection
- Includes DC shunt trip coil activated on any monitored engine or electrical fault, 42KA-interrupting capacity at 480 VAC

#### Battery Charger and Batteries

- 24VDC/10A battery charger with float/equalize modes
- Two oversized maintenance-free batteries

#### Emergency Stop Pushbutton (ESP)

- Two external ESP on both sides

### Lifting

The generating set should only be lifted using the designated lifting points or the fork pockets where provided.

Do not lift the unit by the alternator or engine lifting eyes. These are designed only to carry the weight of the specific unit (engine or alternator) and not for the weight of the fully assembled generating set.

NOTE: Always ensure that lifting equipment is rated to lift the load. Weights are shown on the generator rating plate on the side of the panel. These weights exclude fuel and coolant, and while both the fork pockets and top lifting lugs are rated to allow lifting including fuel and coolant, the operator needs to ensure that they have adequate lifting capacity.

#### Transformers

- CTs rated 2500:5
- Potential transformers 4:1 ratio

#### Distribution

- Three-phase, plus full rated neutral, copper bus bars with standard hole pattern for connection of customer load cables and generator cables
- Bus bars are sized for full load capacity of the generator set at 0.8 power factor
- Copper ground bus, for connection to the generator frame ground and field ground cable
- Customer convenience panel with multiple output receptacles

3 – 240V, 50A twist lock

1 – 240V, 50A twist lock (External input)

2 – 120V, 20A duplex receptacles with GFCI

#### Link Board Assembly (480V Only)

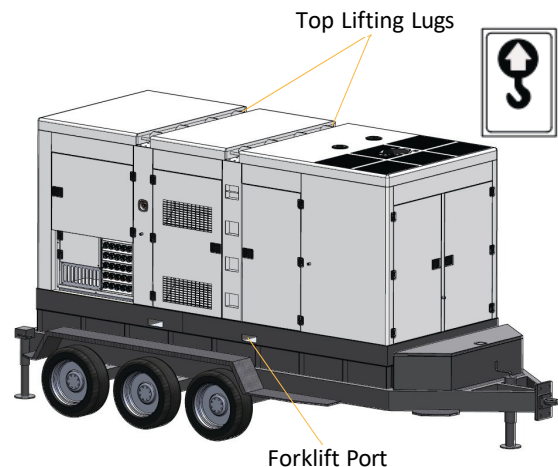
- 2000A link board for 208/240/400/480 wye operation
- Reconnection via movable link board
- Includes switch to determine operation mode

#### AC Distribution

- Provides 120 VAC for all module accessories
- Includes controls to de-energize jacket water heaters and generator space heater when the engine is running

#### Jacket Water Heater

- Hotstart brand (UL certified)
- Forced circulation
- 120VAC/60hz, single phase
- High temperature resistant connections and piping



### Application Data

#### ENGINE SPECIFICATION

Manufacturer	VOLVO PENTA
Model	TWD 1673 GE
EPA certified	Tier 4 FINAL
Crankshaft speed	1,800 rpm
Type	Diesel, 4-stroke
Injection	Direct
Aspiration	Turbocharged
Number of Cylinders	6
Cylinder arrangement	In-line
Displacement CID (liters)	983.9 (16.12)
Bore and Stroke ins (mm)	5.67 x 6.5 (144 x 165)
Nominal power	809 HP
Cooling	Liquid
Governor	Electronic
Governor Regulation Class	ISO 8528 Part 1 Class G3
Frequency Regulation	Isochronous
Starting motor & alternator	12 volt
Compression ratio	16.8:1
Air cleaner type	Heavy duty -single cartridge
Exhaust gas flow cu. ft./minute (cu.m. /minute)	4471 (126.6)
Max. Exhaust temp at full load degrees o F (o C)	851 (455)
Max. permissible back pressure - ins H2O (kPA )	76 (19)

#### COOLING SYSTEM

Engine cooling air flow - cu. ft./min (cu. m/min)	30,207 (912)
Alternator cooling flow - cu. ft./min (cu. m/min)	220 (72)
Total cooling air flow (engine + alternator + combustion) - cu. ft./min (cu. m/min)	TBD
Total cooling capacity - US gallons (liters)	25.3 (96)
Max. Operating Temperature o F (o C)	113 (45)

#### LUBRICATION SYSTEM

Oil pan capacity - US gallons (liters)	11.1 (42)
Oil pan capacity with filter - US gallons (liters)	12.7 (48)
Oil cooler	Liquid
Recommended lubricating oil grade	SAE 10W-40 conventional DH4 (refer to owners manual)
Oil consumption at full load	< 0.1% of fuel consumption
Oil pressure – psi (kPA)	58 (399)

### ENGINE ELECTRICAL SYSTEM

Starting motor voltage	24 volt
Cold Cranking Amps - minimum Battery charging	300 Amp X 2
Alternator Battery capacity	N/A
	200 Amps X 2

### FUEL SYSTEM

Recommended fuel	# 2 - ULSD
Fuel supply line, min. ID mm(in.)	9.5 (3/8")
Fuel return line, min. ID, mm (in.)	9.5 (3/8")
Max. lift, fuel pump, type, m (ft)	TBD
Fuel filter	Secondary 5 Microns @ 98%
DEF Tank capacity - US Gal.	Efficiency 42.3

### FUEL and DEF COMPSUMTION FUEL (Prime Power Rating) DEF (% of fuel consumption)

100% load – US gallons/hour (L/hr)	36.8 (139.3)	6.4 %
75% load - US gallons/hour (L/hr)	27.6 (104.4)	TBA
50% load - US gallons/hour (L/hr)	19.1 (72.3)	TBA
25% load - US gallons/hour (L/hr)	10.7 (40.5)	TBA

### ALTERNATOR SPECIFICATION

Manufacturer	LEROY SOMER
Model	LSA47.3M8 with PMG
Voltages	120/208V - 277/480
Alternator Type	Four pole, rotating field, 60Hz, 3
Excitation System	Phase Brushless PMG-excited
Power factor	0.8
Number of leads	12 leads, reconnectable
Stator Pitch	2/3
Insulation	Class H
Windings – Temperature Rise	Class F (105/40° C)
Enclosure (IEC-34-S)	IP23
Bearing	Single, sealed
Coupling	Flexible disc
Amortisseur windings	Full
Voltage regulation – no load to full load with	MX341 AVR ± 1%
TIF	<50
Radio Frequency Emissions compliance	Meets requirements of most industrial and commercial applications
Line harmonics	5% maximum

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|---|---|
| <ul style="list-style-type: none"> <li>• Air Filter Restriction Indicator</li> <li>• Water Jacket Heater</li> <li>• Battery Isolator Switch</li> <li>• Crankcase Ventilation Filter</li> <li>• Oil/Coolant Drain Extension</li> <li>• Distribution Panel 2000A</li> </ul> | <ul style="list-style-type: none"> <li>• Leak Proof Tray</li> <li>• MLCB Auxiliary Contacts</li> <li>• Shunt Trip on MLCB</li> <li>• 2 Positions Voltage Change Over Board</li> <li>• PMG Excitation on Alternator</li> <li>• Low Coolant Level Sensor</li> </ul> |
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## OPTIONAL ACCESSORIES

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• Battery Blanket</li> <li>• Fuel heater</li> <li>• Anti-condensation heater</li> <li>• 3-Way Fuel valve</li> <li>• 6 Amp battery charger, 12/24V</li> </ul> | <ul style="list-style-type: none"> <li>• Space heater</li> <li>• Engineered Options available upon request</li> <li>• Control Panel Heater</li> <li>• Oil Pan Heater</li> <li>• Extended bulk fuel tank (UL-142)</li> </ul> |
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## CONTROL SYSTEMS STANDARD FEATURES

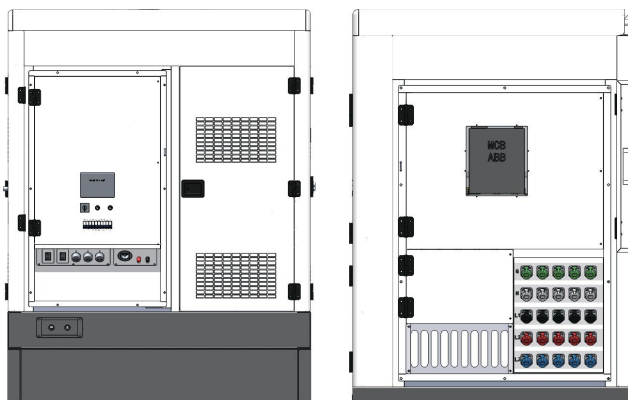
### Generator Digital Control Panel



ComAP IG-NT-BB+IV5 Control Panel: The IntelliGen NT digital control panel is back-lit with icon LCD text display and is PC configurable. IntelliGen NT is a comprehensive controller for both single and multiple gen-sets operating in standby or parallel modes. Compact construction is optimized for these purposes and various modifications allow customers to select the optimum type for a particular application. A built-in synchronizer and digital isochronous load share allow a totally integrated solution for gensets in standby, island parallel or mains parallel. Native cooperation of up to 32 gensets is a standard feature. IntelliGen NT supports many standard ECU types and is specially designed to easily integrate new ones.

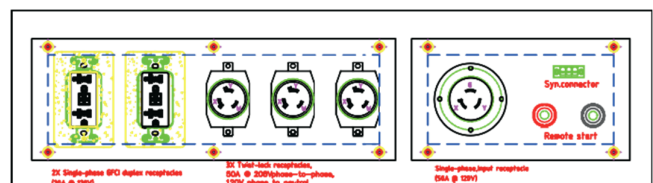
Engine alarms included: High coolant temperature, low oil pressure, low coolant level, unexpected shutdown, low fuel level, stop failure, low battery voltage, battery charging alternator failure, over-speed, under-speed, start failure and emergency stop. Support of engines with ECU (J1939, Modbus and other proprietary interfaces); alarm codes displayed in text for Alternator alarms included: Overload, unbalanced voltage, over voltage, under voltage, over frequency, under frequency.

## Distribution Panel



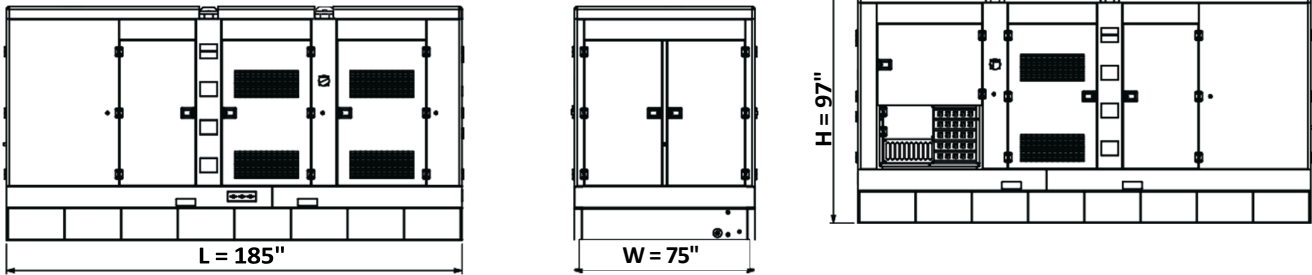
Genset provides various output connections options, including mechanical terminal lugs, optional cam lock connectors and customer convenient receptacles etc.

### Customer Convenient Receptacles



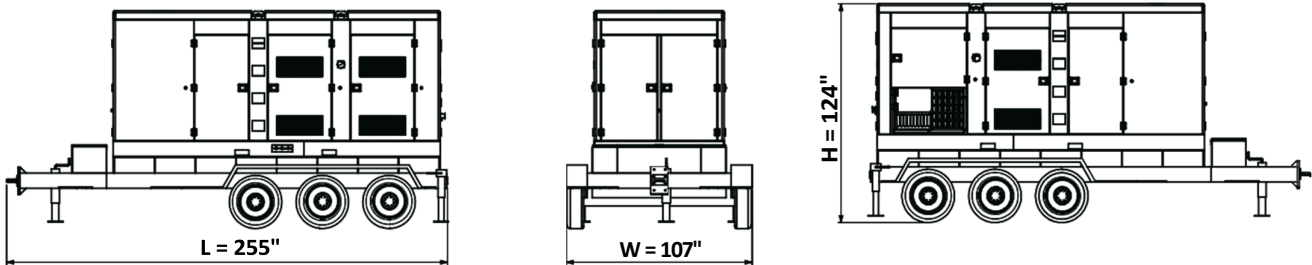
## Dimensions, Weights & Sound Levels

### Enclosed Set



Configuration	Fuel Tank Data (base option)		Generator Data *				
	Run Time Hours	Capacity (Gals)	L = Length	W = Width	H = Height	Weight lbs	dBA
<b>Enclosed Set</b>	<b>12</b>	<b>400</b>	<b>185"</b>	<b>75"</b>	<b>97"</b>	<b>16556</b>	<b>77</b>

### Enclosed Set With Trailer



Configuration	Fuel Tank Data (base option)		Generator Data *				
	Run Time Hours	Capacity (Gals)	L = Length	W = Width	H = Height	Weight lbs	dBA
<b>Enclosed Set</b>	<b>12</b>	<b>400</b>	<b>255"</b>	<b>107"</b>	<b>124"</b>	<b>21200</b>	<b>77</b>

\* All measurements are approximate and for estimation purposes only. Weights are without fuel tank. Sound levels measured at 23ft (7m) and do not account for ambient site conditions.



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