Standby Power Rating
500 kW, 625 kVA, 60 Hz

Prime Power Rating*
450 kW, 563 kVA, 60 Hz

*EPA Certified Prime ratings are not available in the US or its Territories

Codes and Standards
Not all codes and standards apply to all configurations. Contact factory for details.

- UL2200, UL6200, UL1236, UL142
- CSA C22.2
- BS5514 and DIN 6271
- SAE J1349
- NFPA 37, 70, 99, 110
- NEC700, 701, 702, 708
- ISO 3046, 7637, 8528, 9001
- NEMA ICS10, MG1, 250, ICS6, AB1
- ANSI C62.41

Powering Ahead
For over 50 years, Generac has provided innovative design and superior manufacturing.

Generac ensures superior quality by designing and manufacturing most of its generator components, including alternators, enclosures and base tanks, control systems and communications software.

Generac gensets utilize a wide variety of options, configurations and arrangements, allowing us to meet the standby power needs of practically every application.

Generac searched globally to ensure the most reliable engines power our generators. We choose only engines that have already been proven in heavy-duty industrial applications under adverse conditions.

Generac is committed to ensuring our customers’ service support continues after their generator purchase.
SD500 | 15.2L | 500 kW
INDUSTRIAL DIESEL GENERATOR SET
EPA Certified Stationary Emergency

STANDARD FEATURES

ENGINE SYSTEM
- Oil Drain Extension
- Heavy Duty Air Cleaner
- Fan Guard
- Stainless Steel Flexible Exhaust Connection
- Critical Silencer (Enclosed Units Only)
- Factory Filled Oil and Coolant
- Radiator Duct Adapter (Open Set Only)

Fuel System
- Primary Fuel Filter

Cooling System
- Closed Coolant Recovery System
- UV/Ozone Resistant Hoses
- Factory-Installed Radiator
- 50/50 Ethylene Glycol Antifreeze
- Radiator Drain Extension

Electrical System
- Battery Charging Alternator
- Battery Cables
- Battery Tray
- Rubber-Booted Engine Electrical Connections
- Solenoid Activated Starter Motor

ALTENATOR SYSTEM
- UL2200 GENprotect™
- Class H Insulation Material
- Vented Rotor
- 2/3 Pitch
- Skewed Stator
- Amortisseur Winding
- Permanent Magnet Excitation
- Sealed Bearing
- Full Load Capacity Alternator
- Protective Thermal Switch

GENERATOR SET
- Internal Genset Vibration Isolation
- Separation of Circuits - High/Low Voltage
- Separation of Circuits - Multiple Breakers
- Wrapped Exhaust Piping (Enclosed Units Only)
- Standard Factory Testing
- 2 Year Limited Warranty (Standby Rated Units)
- 1 Year Limited Warranty (Prime Rated Units)
- Silencer Mounted in the Discharge Hood (Enclosed Units Only)

ENCLOSURE (If Selected)
- Rust-Proof Fasteners with Nylon Washers to Protect Finish
- High Performance Sound-Absorbing Material (Sound Attenuated Enclosures)
- Gasketed Doors
- Stamped Air-Intake Louvers
- Upward Facing Discharge Hoods (Radiator and Exhaust)
- Stainless Steel Lift Off Door Hinges
- Stainless Steel Lockable Handles
- RhinoCoat™ - Textured Polyester Powder Coat Paint

FUEL TANKS (If Selected)
- UL 142/ULC S-601
- Double Wall
- Vents
- Sloped Top
- Sloped Bottom
- Factory Pressure Tested (2 psi)
- Rupture Basin Alarm
- Fuel Level
- Check Valve in Supply and Return Lines
- RhinoCoat™ - Textured Polyester Powder Coat Paint
- Stainless Hardware

CONTROL SYSTEM

Digital H Control Panel- Dual 4x20 Display

Program Functions
- Programmable Crank Limiter
- 7-Day Programmable Exerciser
- Special Applications Programmable Logic Controller
- RS-232/485 Communications
- All Phase Sensing Digital Voltage Regulator
- 2-Wire Start Capability
- Date/Time Fault History (Event Log)
- Isochronous Governor Control
- Waterproof/Sealed Connectors
- Audible Alarms and Shutdowns

Full System Status Display
- Power Output (kW)
- Power Factor
- KW Hours, Total and Last Run
- Real/Reactive/Apparent Power
- All Phase AC Voltage
- All Phase Currents
- Oil Pressure

Alarms and Warnings
- Oil Pressure
- Coolant Temperature
- Coolant Level
- Engine Speed
- Battery Voltage
- Frequency

- Not in Auto (Flashing Light)
- Auto/Off/Manual Switch
- E-Stop (Red Mushroom-Type)
- NFPA110 Level I and II (Programmable)
- Customizable Alarms, Warnings, and Events
- Modbus® protocol
- Predictive Maintenance Algorithm
- Sealed Boards
- Password Parameter Adjustment Protection
- Single Point Ground
- 16 Channel Remote Trending
- 0.2 msec High Speed Remote Trending
- Alarm Information Automatically Annunciated on the Display
**ENGINE SYSTEM**
- Engine Coolant Heater
- Oil Heater
- Level 1 Fan and Belt Guards (Open Set Only)
- Radiator Stone Guard (Open Set Only)

**FUEL SYSTEM**
- NPT Flexible Fuel Line

**ELECTRICAL SYSTEM**
- 10A UL Listed Battery Charger
- Battery Warmer

**ALTERNATOR SYSTEM**
- Alternator Upsizing
- Anti-Condensation Heater

**CIRCUIT BREAKER OPTIONS**
- Main Line Circuit Breaker
- 2nd Main Line Circuit Breaker
- Shunt Trip and Auxiliary Contact
- Electronic Trip Breakers

**GENERATOR SET**
- 12 Position Load Center
- Extended Factory Testing

**ENCLOSURE**
- Weather Protected Enclosure
- Level 1 Sound Attenuated
- Level 2 Sound Attenuated
- Level 2 Sound Attenuated with Motorized Dampers
- Steel Enclosure
- Aluminum Enclosure
- IBC Seismic Certification/OSHPD Preapproval
- Up to 200 MPH Wind Load Rating (Contact Factory for Availability)
- AC/DC Enclosure Lighting Kit
- Enclosure Heater

**FUEL TANKS (Size On Last Page)**
- 8 in Fill Extension
- 13 in Fill Extension
- 19 in Fill Extension

**ENGINEERED OPTIONS**

**ENGINE SYSTEM**
- Fluid Containment Pan
- Coolant Heater Ball Valves

**ALTERNATOR SYSTEM**
- 3rd Breaker Systems

**CONTROL SYSTEM**
- Spare Inputs (x4) / Outputs (x4)
- Battery Disconnect Switch

**TANKS**
- Overfill Protection Valve
- UL 2085 Tank
- Stainless Steel Tank
- Special Fuel Tanks
- Vent Extensions
- 5 Gallon Spill Containment Box
- Dealer Supplied AHJ Requirements
## ENGINE SPECIFICATIONS

### General
- **Make**: Perkins
- **EPA Emissions Compliance**: Stationary Emergency
- **EPA Emission Reference**: See Emission Data Sheet
- **Cylinder #**: 6
- **Type**: In-Line
- **Displacement - in³ (L)**: 927.56 (15.2)
- **Bore - in (mm)**: 5.39 (137)
- **Stroke - in (mm)**: 6.73 (171)
- **Compression Ratio**: 16.0:1
- **Intake Air Method**: Turbocharged/Aftercooled
- **Cylinder Head Type**: 4-Valve
- **Piston Type**: Aluminum
- **Crankshaft Type**: I-Beam Section

### Engine Governing
- **Governor**: Electronic Isochronous
- **Frequency Regulation (Steady State)**: ±0.25%

### Lubrication System
- **Oil Pump Type**: Gear
- **Oil Filter Type**: Full-Flow
- **Crankcase Capacity - qt (L)**: 47.55 (45)

### Cooling System
- **Cooling System Type**: Closed Recovery
- **Water Pump Type**: Centrifugal Type, Belt-Driven
- **Fan Type**: Pusher
- **Fan Speed - RPM**: 1,658
- **Fan Diameter - in (mm)**: 36.5 (927)

### Fuel System
- **Fuel Type**: Ultra Low Sulfur Diesel #2
- **Carburetor**: ASTM
- **Fuel Filtering (Microns)**: Primary 10 - Secondary 2
- **Fuel Inject Pump Make**: Electronic
- **Injector Type**: MEUI
- **Engine Type**: Pre-Combustion
- **Fuel Supply Line - in (mm)**: 0.5 (12.7) NPT
- **Fuel Return Line - in (mm)**: 0.5 (12.7) NPT

### Engine Electrical System
- **System Voltage**: 24 VDC
- **Battery Charger Alternator**: Standard
- **Battery Size**: See Battery Index 0161970SBY
- **Battery Voltage**: (2)-12 VDC
- **Ground Polarity**: Negative

## ALTERNATOR SPECIFICATIONS

### Standard Model
- **K0500124Y23**

### Poles
- **4**

### Field Type
- **Revolving**

### Insulation Class - Rotor
- **H**

### Insulation Class - Stator
- **H**

### Total Harmonic Distortion
- <3% (3-Phase)

### Telephone Interference Factor (TIF)
- <50

### Standard Excitation
- **Permanent Magnet**

### Bearings
- **Single Sealed Cartridge**

### Coupling
- **Direct via Flexible Disc**

### Prototype Short Circuit Test
- **Yes**

### Voltage Regulator Type
- **Digital**

### Number of Sensed Phases
- **All**

### Regulation Accuracy (Steady State)
- ±0.25%
**POWER RATINGS - DIESEL**

| Three-Phase 120/208 VAC @0.8pf | 500 kW | Standby | 1,735 |
| Three-Phase 120/240 VAC @0.8pf | 500 kW | Standby | 1,504 |
| Three-Phase 277/480 VAC @0.8pf | 500 kW | Standby | 752 |
| Three-Phase 346/600 VAC @0.8pf | 500 kW | Standby | 601 |

**MOTOR STARTING CAPABILITIES (skVA)**

<table>
<thead>
<tr>
<th>skVA vs. Voltage Dip</th>
<th>277/480 VAC</th>
<th>30%</th>
<th>208/240 VAC</th>
<th>30%</th>
</tr>
</thead>
<tbody>
<tr>
<td>K0500124Y23</td>
<td>1,050</td>
<td></td>
<td>K0600124Y23</td>
<td>1,120</td>
</tr>
<tr>
<td>K0600124Y23</td>
<td>1,560</td>
<td></td>
<td>K0792124Y23</td>
<td>2,130</td>
</tr>
<tr>
<td>K0832124Y23</td>
<td>2,800</td>
<td></td>
<td>K0832124Y23</td>
<td>2,090</td>
</tr>
</tbody>
</table>

**FUEL CONSUMPTION RATES***

<table>
<thead>
<tr>
<th>Fuel Pump Lift - ft (m)</th>
<th>Percent Load</th>
<th>Standby</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 (3.7)</td>
<td>25%</td>
<td>11.2 (42.3)</td>
</tr>
<tr>
<td></td>
<td>50%</td>
<td>17.5 (66.3)</td>
</tr>
<tr>
<td></td>
<td>75%</td>
<td>24.2 (91.4)</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>32.0 (121.1)</td>
</tr>
</tbody>
</table>

* Fuel supply installation must accommodate fuel consumption rates at 100% load.

**COOLING**

<table>
<thead>
<tr>
<th>Coolant Flow</th>
<th>gpm (Lpm)</th>
<th>Standby</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>114.1 (432)</td>
<td></td>
</tr>
<tr>
<td>Coolant System Capacity</td>
<td>gal (L)</td>
<td>15.5 (586)</td>
</tr>
<tr>
<td>Heat Rejection to Coolant</td>
<td>BTU/hr (kW)</td>
<td>648,307 (190)</td>
</tr>
<tr>
<td>Inlet Air</td>
<td>scfm (m³/min)</td>
<td>30,582 (866)</td>
</tr>
<tr>
<td>Maximum Radiator Backpressure</td>
<td>in H₂O (kPa)</td>
<td>0.5 (0.12)</td>
</tr>
</tbody>
</table>

**COMBUSTION AIR REQUIREMENTS**

<table>
<thead>
<tr>
<th>Flow at Rated Power scfm (m³/min)</th>
<th>Standby</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1,483 (42)</td>
</tr>
</tbody>
</table>

**ENGINE**

<table>
<thead>
<tr>
<th>Rated Engine Speed</th>
<th>RPM</th>
<th>Standby</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horsepower at Rated kW***</td>
<td>hp</td>
<td>755</td>
</tr>
<tr>
<td>Piston Speed</td>
<td>ft/min (m/min)</td>
<td>2,020 (616)</td>
</tr>
<tr>
<td>BMEP</td>
<td>psi (kPa)</td>
<td>358 (2,468)</td>
</tr>
</tbody>
</table>

**EXHAUST**

<table>
<thead>
<tr>
<th>Exhaust Flow (Rated Output)</th>
<th>scfm (m³/min)</th>
<th>Standby</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Exhaust Backpressure</td>
<td>inHg (kPa)</td>
<td>2.01 (6.8)</td>
</tr>
<tr>
<td>Exhaust Temp (Rated Output - Post Silencer)</td>
<td>°F (°C)</td>
<td>1,022 (550)</td>
</tr>
</tbody>
</table>

*** Refer to “Emissions Data Sheet” for maximum bHP for EPA and SCAQMD permitting purposes.

Deration – Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions. Please contact a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528, and DIN6271 standards.
### OPEN SET (Includes Exhaust Flex)

<table>
<thead>
<tr>
<th>Run Time Hours</th>
<th>Usable Capacity Gal (L)</th>
<th>L x W x H - in (mm)</th>
<th>Weight - lbs (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Tank</td>
<td>-</td>
<td>154.4 (3,923) x 71.0 (1,803) x 67.3 (1,709)</td>
<td>10,435 (4,733)</td>
</tr>
<tr>
<td>9</td>
<td>334</td>
<td>158.5 (4,025) x 71.0 (1,803) x 81.3 (2,065)</td>
<td>12,110 (5,493)</td>
</tr>
<tr>
<td>28</td>
<td>1,001</td>
<td>158.5 (4,025) x 71.0 (1,803) x 103.3 (2,623)</td>
<td>15,272 (6,927)</td>
</tr>
<tr>
<td>28</td>
<td>1,001</td>
<td>228.0 (5,791) x 71.0 (1,803) x 92.3 (2,344)</td>
<td>13,585 (6,162)</td>
</tr>
<tr>
<td>57</td>
<td>2,002</td>
<td>290.0 (7,366) x 71.0 (1,803) x 103.3 (2,623)</td>
<td>15,285 (6,933)</td>
</tr>
</tbody>
</table>

### WEATHER PROTECTED ENCLOSURE

<table>
<thead>
<tr>
<th>Run Time Hours</th>
<th>Usable Capacity Gal (L)</th>
<th>L x W x H - in (mm)</th>
<th>Weight - lbs (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Tank</td>
<td>-</td>
<td>207.4 (5,268) x 70.9 (1,800) x 79.9 (2,031)</td>
<td>12,672 (5,748)</td>
</tr>
<tr>
<td>9</td>
<td>334</td>
<td>207.4 (5,268) x 70.9 (1,800) x 93.9 (2,387)</td>
<td>14,347 (6,508)</td>
</tr>
<tr>
<td>28</td>
<td>1,001</td>
<td>207.4 (5,268) x 70.9 (1,800) x 115.9 (2,945)</td>
<td>15,272 (6,927)</td>
</tr>
<tr>
<td>28</td>
<td>1,001</td>
<td>228.0 (5,791) x 70.9 (1,800) x 104.9 (2,666)</td>
<td>15,822 (7,177)</td>
</tr>
<tr>
<td>57</td>
<td>2,002</td>
<td>290.0 (7,366) x 70.9 (1,800) x 115.9 (2,945)</td>
<td>17,522 (7,948)</td>
</tr>
</tbody>
</table>

### LEVEL 1 SOUND ATTENUATED ENCLOSURE

<table>
<thead>
<tr>
<th>Run Time Hours</th>
<th>Usable Capacity Gal (L)</th>
<th>L x W x H - in (mm)</th>
<th>Weight - lbs (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Tank</td>
<td>-</td>
<td>247.5 (6,285) x 70.9 (1,800) x 80.0 (2,032)</td>
<td>13,677 (6,090)</td>
</tr>
<tr>
<td>9</td>
<td>334</td>
<td>247.5 (6,285) x 70.9 (1,800) x 94.0 (2,388)</td>
<td>15,352 (6,964)</td>
</tr>
<tr>
<td>28</td>
<td>1,001</td>
<td>247.5 (6,285) x 70.9 (1,800) x 116.0 (2,946)</td>
<td>16,277 (7,383)</td>
</tr>
<tr>
<td>28</td>
<td>1,001</td>
<td>247.5 (6,285) x 70.9 (1,800) x 105.9 (2,667)</td>
<td>16,827 (7,633)</td>
</tr>
<tr>
<td>57</td>
<td>2,002</td>
<td>290.0 (7,366) x 70.9 (1,800) x 115.9 (2,945)</td>
<td>18,527 (8,404)</td>
</tr>
</tbody>
</table>

### LEVEL 2 SOUND ATTENUATED ENCLOSURE

<table>
<thead>
<tr>
<th>Run Time Hours</th>
<th>Usable Capacity Gal (L)</th>
<th>L x W x H - in (mm)</th>
<th>Weight - lbs (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Tank</td>
<td>-</td>
<td>207.4 (5,268) x 70.9 (1,800) x 114.1 (2,899)</td>
<td>14,016 (6,357)</td>
</tr>
<tr>
<td>9</td>
<td>334</td>
<td>207.4 (5,268) x 70.9 (1,800) x 128.1 (3,255)</td>
<td>15,691 (7,117)</td>
</tr>
<tr>
<td>28</td>
<td>1,001</td>
<td>207.4 (5,268) x 70.9 (1,800) x 150.1 (3,813)</td>
<td>16,616 (7,536)</td>
</tr>
<tr>
<td>28</td>
<td>1,001</td>
<td>228.0 (5,791) x 70.9 (1,800) x 139.1 (3,534)</td>
<td>17,166 (7,786)</td>
</tr>
<tr>
<td>57</td>
<td>2,002</td>
<td>290.0 (7,366) x 70.9 (1,800) x 150.1 (3,813)</td>
<td>18,866 (8,557)</td>
</tr>
</tbody>
</table>

* All measurements are approximate and for estimation purposes only.

---

**YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER**

---

* Specification characteristics may change without notice. Dimensions and weights are for preliminary purposes only. Please contact a Generac Power Systems Industrial Dealer for detailed installation drawings.*