# Protector® Series

GENERAC®

# PROTECTOR® SERIES

## Standby Generators

## Liquid-Cooled Gaseous Engine

INCLUDES:

- Power Zone 410 controller
- Isochronous Electronic Governor
- Sound Attenuated Enclosure
- Closed Coolant Recovery System
- Smart Battery Charger
- UV/Ozone Resistant Hoses
- Voltage and Frequency Regulation Designed for Sensitive Electronics
- 5 Year Limited Warranty
- UL 2200 Listed

Standby Power Rating
Model RG13090 (Aluminum - Bisque) - 130 kW 60 Hz
Model RG15090 (Aluminum - Bisque) - 150 kW 60 Hz


* Product may vary slightly from above image.

*Assembled in the USA using domestic and foreign parts

Meets EPA Emission Regulations
CA / MA Emission Compliant

# FEATURES

- **INNOVATIVE DESIGN & PROTOTYPE TESTING** are key components of GENERAC'S success in "IMPROVING POWER BY DESIGN." But it doesn't stop there. Total commitment to component testing, reliability testing, environmental testing, destruction and life testing, plus testing to applicable CSA, NEMA, EGSA, and other standards, allows you to choose GENERAC POWER SYSTEMS with the confidence that these systems will provide superior performance.
- **TEST CRITERIA:**
  - ✓ **PROTOTYPE TESTED**
  - ✓ **SYSTEM TORSIONAL TESTED**
  - ✓ **NEMA MG1-22 EVALUATION**
  - ✓ **MOTOR STARTING ABILITY**
- **MOBILE LINK® CONNECTIVITY:** Free with select Protector Series standby generator sets, Mobile Link Wi-Fi allows users to monitor the generator set status from anywhere in the world using a smartphone, tablet, or PC. Easily access information such as the current operating status and maintenance alerts. Users can connect an account to an authorized service dealer for fast, friendly, and proactive service. With Mobile Link, users are taken care of before the next power outage.
- **SOLID-STATE, FREQUENCY COMPENSATED VOLTAGE REGULATION.** This state-of-the-art power maximizing regulation system is standard on all Generac models. It provides optimized FAST RESPONSE to changing load conditions and MAXIMUM MOTOR STARTING CAPABILITY by electronically torque-matching the surge loads to the engine.
- **SINGLE SOURCE SERVICE RESPONSE** from Generac's extensive dealer network provides parts and service know-how for the entire unit, from the engine to the smallest electronic component.
- **GENERAC TRANSFER SWITCHES.** Long life and reliability are synonymous with GENERAC POWER SYSTEMS. One reason for this confidence is the GENERAC product line is offered with its own transfer systems and controls for total system compatibility.

GENERAC®

# 130 / 150 kW

# application & engineering data

## GENERATOR SPECIFICATIONS

| | 130 / 150 kW |
|---|---|
| Type | Synchronous |
| Rotor Insulation Class | H |
| Stator Insulation Class | H |
| Telephone Interference Factor (TIF) | <50 |
| Alternator Output Leads 1-Phase | 4 wire |
| Alternator Output Leads 3-Phase | 12 wire |
| Bearings | Sealed Ball |
| Coupling | Flexible Disc |
| Excitation System | Synchronous Brushless |
| Total Harmonic Distortion | <5% |

## VOLTAGE REGULATION

| | |
|---|---|
| Type | Full Digital |
| Sensing | All |
| Regulation | Designed for Sensitive Electronics |

## GOVERNOR SPECIFICATIONS

| | |
|---|---|
| Type | Electronic |
| Frequency Regulation | Isochronous |
| Steady State Regulation | Designed for Sensitive Electronics |

## ELECTRICAL SYSTEM

| | |
|---|---|
| Battery Charger Alternator | 40 Amp |
| Static Battery Charger | 5 Amp |
| Recommended Battery (battery included) | Group 31, 925 CCA |
| System Voltage | 12 Volts |

## GENERATOR FEATURES

Revolving field heavy duty generator
Directly connected to the engine
Operating temperature rise 135° C above 25° C ambient
Class H insulation is NEMA rated
All models fully prototyped tested

## ENCLOSURE FEATURES

| | |
|---|---|
| Aluminum weather protective enclosure | Ensures protection against mother nature. Electrostatically applied textured epoxy paint for added durability. |
| Enclosed critical grade muffler | Quiet, critical grade muffler is mounted inside the unit to prevent injuries. |
| Small, compact, attractive | Makes for an easy, eye appealing installation. |
| SAE | Sound attenuated enclosure ensures quiet operation. |

(All ratings in accordance with BS5514, ISO3046, ISO8528, SAE J1349 and DIN6271)

## ENGINE SPECIFICATIONS

| | 130 / 150 kW |
|---|---|
| Make | Generac |
| Type | V |
| Cylinders | 8 |
| Displacement - $In^3$ (L) | 540 (8.86) |
| Bore (in / mm) | 4.5 / 114.3 |
| Stroke (in / mm) | 4.25 / 107.95 |
| Compression Ratio (Turbo Charged) | 9.1:1 |
| Intake Air System | Turbocharged and Aftercooled |
| Lifter Type | Hydraulic Roller |

## ENGINE LUBRICATION SYSTEM

| | |
|---|---|
| Oil Pump Type | Gear |
| Oil Filter Type | Full Flow Spin-On Cartridge |
| Crankcase Capacity (qt / L) | 10.5 / 9.9 |

## ENGINE COOLING SYSTEM

| | |
|---|---|
| Type | Pressurized Closed |
| Water Pump | Belt-Driven |
| Fan Speed (rpm) | 2,330 |
| Fan Diameter (in / cm) | 22 (55.9) |
| Fan Mode | Pusher |

## FUEL SYSTEM

| | |
|---|---|
| Fuel Type | Natural Gas, Propane Vapor |
| Carburetor | Down Draft |
| Secondary Fuel Regulator | Standard |
| Fuel Shut Off Solenoid | Standard |
| LP Fuel Pressure | 7 - 11 in Water Column |
| NG Fuel Pressure | 7 - 11 in Water Column |

GENERAC

# 130 / 150 kW

# operating data

## GENERATOR OUTPUT VOLTAGE/kW - 60 Hz

| | | kW LPG | Amp LPG | kW Nat. Gas | Amp Nat. Gas | CB Size (Both) |
|---|---|---|---|---|---|---|
| RG13090 | 120/240 V, 1Ø, 1.0 pf | 130 | 542 | 130 | 542 | 600 |
| | 120/208 V, 3Ø, 0.8 pf | 130 | 451 | 130 | 451 | 500 |
| | 120/240 V, 3Ø, 0.8 pf | 130 | 391 | 130 | 391 | 400 |
| | 277/480 V, 3Ø, 0.8 pf | 130 | 195 | 130 | 195 | 225 |
| RG15090 | 120/240 V, 1Ø, 1.0 pf | 134 | 558 | 144 | 600 | 700 |
| | 120/208 V, 3Ø, 0.8 pf | 140 | 486 | 150 | 520 | 600 |
| | 120/240 V, 3Ø, 0.8 pf | 140 | 421 | 150 | 451 | 500 |
| | 277/480 V, 3Ø, 0.8 pf | 140 | 210 | 150 | 226 | 250 |

## SURGE CAPACITY IN AMPS

| | | Voltage Dip |
|---|---|---|
| | | 30% |
| RG13090 | 120 / 240 V, 1Ø | 854 |
| | 120 / 208 V, 3Ø | 816 |
| | 120 / 240 V, 3Ø | 707 |
| | 277 / 480 V, 3Ø | 351 |
| RG15090 | 120 / 240 V, 1Ø | 617 |
| | 120 / 208 V, 3Ø | 619 |
| | 120 / 240 V, 3Ø | 536 |
| | 277 / 480 V, 3Ø | 351 |

## ENGINE FUEL CONSUMPTION

| | | Natural Gas | | Propane | |
|---|---|---|---|---|---|
| | | ($ft^3$ / hr) | ($m^3$ / hr) | ($ft^3$ / hr) | ($m^3$ / hr) |
| RG13090 | 25% of rated load | 509 | 14.4 | 172 | 4.9 |
| | 50% of rated load | 858 | 24.3 | 278 | 7.9 |
| | 75% of rated load | 1,206 | 34.1 | 385 | 10.9 |
| | 100% of rated load | 1,555 | 44.0 | 491 | 13.9 |
| RG15090 | 25% of rated load | 562 | 15.9 | 187 | 5.3 |
| | 50% of rated load | 963 | 27.3 | 306 | 8.7 |
| | 75% of rated load | 1,370 | 38.8 | 432 | 12.2 |
| | 100% of rated load | 1,768 | 50.1 | 559 | 15.8 |

Note: **Fuel pipe must be sized for full load.**

For BTU content, multiply $ft^3$ / hr x 2,520 (LP) or $ft^3$ / hr x 1,000 (NG).

For megajoule content, multiply $m^3$ / hr x 93.15 (LP) or $m^3$ / hr x 37.26 (NG).

Refer to "Emissions Data Sheets" for maximum fuel flow for EPA and SCAQMD permitting purposes.

STANDBY RATING: Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Ratings are in accordance with ISO-3046-1. Design and specifications are subject to change without notice.

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# 130 / 150 kW operating data

## ENGINE COOLING

| | 130 kW | 150 kW |
|---|---|---|
| Air Flow (Fan Air Flow Across Radiator) - Open Set scfm ($m^3$ / min) | 5,415 (153.3) | 5,598 (158.5) |
| System Coolant Capacity (gal / liters) | 6.3 (24.0) | 6.3 (24.0) |
| Heat Rejection to Coolant (BTU per hr / MJ per hr) | Contact Factory | Contact Factory |
| Maximum Operation Air Temperature on Radiator (°F / °C) | Contact Factory | Contact Factory |
| Maximum Ambient Temperature (°F / °C) | 122 (50) | 122 (50) |

## COMBUSTION REQUIREMENTS

| | | |
|---|---|---|
| Flow at Rated Power scfm ($m^3$/min) | 371 (10.5) | 343 (9.7) |

## SOUND EMISSIONS

| | | |
|---|---|---|
| Sound Output in dB(A) at 23 ft (7 m) With Generator* | 75 db | 80 db |

*In normal operation

## EXHAUST

| | | |
|---|---|---|
| Exhaust Flow at Rated Output scfm ($m^3$/min) | 1,198 (34.0) | 1,206 (34.1) |
| Exhaust Temperature (Rated Output) °F (°C) | 1,285 (696) | 1,440 (782) |

## ENGINE PARAMETERS

| | | |
|---|---|---|
| Rated Engine Speed (RPM) | 1,800 | 1,800 |

## POWER ADJUSTMENT FOR AMBIENT CONDITIONS

| | | |
|---|---|---|
| Temperature Deration RG13090 on NG & LP | 77°F before derate | 3.3% per 10°F above 77°F |
| Temperature Deration RG15090 on NG | 77°F before derate | 4% per 5°F above 77°F |
| Temperature Deration RG15090 on LP | 77°F before derate | 5.5% per 5°F above 77°F |
| Altitude Deration (130kW) | 3% for every 1,000 ft above 600 ft | |
| Altitude Deration (150 kW) | 2.1% for every 1,000 ft above 600 ft | |

## CONTROLLER FEATURES

### Standard Features

| | | |
|---|---|---|
| 128 x 64 Graphical Display with Heater | Multi-Lingual | Full System Status |
| Three Phase Sensing Digital Voltage Regulator | Full Range Standby Operation | Remote Communication |
| Programmable Auto Crank | Emergency Stop | On / Off Manual Switch |
| Not in Auto Flashing Light | Selectable Low Speed Exercise | NFPA 110 Capable** |
| 5 A Integrated Battery Charger*** | | |

Full System Status: •Three Phase AC Volts •Three Phase Amps •kW •Power Factor •Oil Pressure •Water Temperature •Oil Temperature* •Oil Level* •Fuel Pressure and Level •Engine Speed •Battery Voltage •Alternator Frequency •Time •Date •Line Power and Gen Power •Run Hours •Service Reminders •Fault History (Alarm Log)

### Standard Protections

| | | |
|---|---|---|
| Low Oil Pressure | Low Coolant Level | High / Low Coolant Temperature |
| Oil Temperature | Over / Under Speed | Over / Under Voltage |
| Over / Under Frequency | Over / Under Current | Over Load |
| Battery Voltage | Battery Charger Current | Phase to Phase and Phase to Neutral Short Circuits ($I^2T$ Algorithm) |
| Ground Fault | | |

### Display

| | | |
|---|---|---|
| Easy Menu Structure | Multi-Lingual | On Screen Editable Paraeters |

Key Function Monitoring: •Three Phase Voltage, Amperage, kW, kVa, and kVAr •Selectable Average or Line to Neutral Voltage Measurements •Frequency •RPM •Engine Coolant Temperature •Engine Oil Temperature •Battery Voltage •Warning and Alarm Indication •Diagnostics •Maintenance Events / Information •Hourmeter

### Control Panel

| | | |
|---|---|---|
| Audible Alarm and Silence† | Auxiliary Shutdown Rocker Switch | Not in Auto Indication |

AUTO / OFF / MANUAL: •Operation Through Onboard Buttons or Optional Key Switch •Indication Through Display Screen and LEDs

** Optional; When Available.*

*** See NFPA 110 in Accessory Section.*

**** Operation Disabled when Optional 10A Battery Charger is Installed.*

*† When Selected; See Modular NFPA 110 Components Section.*

# 130 / 150 kW

## available accessories

| Model # | Product | Description |
|---|---|---|
| G009883-0 | Cold Weather Kit | If the temperature regularly falls below 32 °F (0 °C), install a cold weather kit to maintain optimal battery temperature. Kit consists of battery warmer with thermostat built into the wrap. |
| G009884-0 | Extreme Cold Weather Kit | Recommended where the temperature regularly falls below 32 °F (0 °C) for extended periods of time. For liquid cooled units only. |
| G005651-0 | Base Plug Kit | Add base plugs to the base of the generator to keep out debris. |
| G005703-0 - Bisque | Paint Kit | If the generator enclosure is scratched or damaged, it is important to touch-up the paint to protect from future corrosion. The paint kit includes the necessary paint to properly maintain or touch-up a generator enclosure. |
| G009882-0 | Scheduled Maintenance Kit | The Liquid-Cooled Scheduled Maintenance Kits offer all the hardware necessary to perform complete maintenance on Generac liquid-cooled generators. |
| G006510-0 | E-Stop | E-stop allows for immediate fuel shutoff and generator shutdown in the event of an emergency. |
| G007005-0 | Wi-Fi LP Fuel Level Monitor | The Wi-Fi enabled LP fuel level monitor provides constant monitoring of the connected LP fuel tank. Monitoring the LP tank's fuel level is an important step in making sure your generator is ready to run during an unexpected power failure. Status alerts are available through a free application to notify when your LP tank is in need of a refill. |
| G007000-0 (50 amp)<br>G007006-0 (100 amp) | Smart Management Module | Smart Management Modules (SMM) are used to optimize the performance of a standby generator. They manage large electrical loads upon startup and shed them to aid in recovery when overloaded. In many cases, using SMM's can reduce the overall size and cost of the system. |
| G009885-0 | 400 A CB Kit | 400 A Circuit Breaker Kit designed for three phase products built with a factory installed circuit breaker greater than 400 A. |
| A0000018981 | Ultrasonic Cleaner Solution | An ultra-concentrated anti-corrosive cleaning solution engineered to reach the smallest cavities to clean the toughest contaminants. This water based formula is non-toxic, biodegradable, safe for both metal and plastic surfaces, and is superior in rinsability. |
| A0000019001 | All Surface Protectant | All surface protectant for vinyl, rubber, plastics creates a barrier that seals & protects surfaces from water, UV rays while renewing the look of the surface. |
| G0074110 | Phase Sense Kit, 120-240 V, PZ410 | 3-Phase Sensing Wire Upgrade Power Zone® 410 Kit (120-240 V Switches) |
| G0074120 | Phase Sense Kit, 240-480 V, PZ410 | 3-Phase Sensing Wire Upgrade Power Zone® 410 Kit (240-480 V Switches) |

# 130 kW

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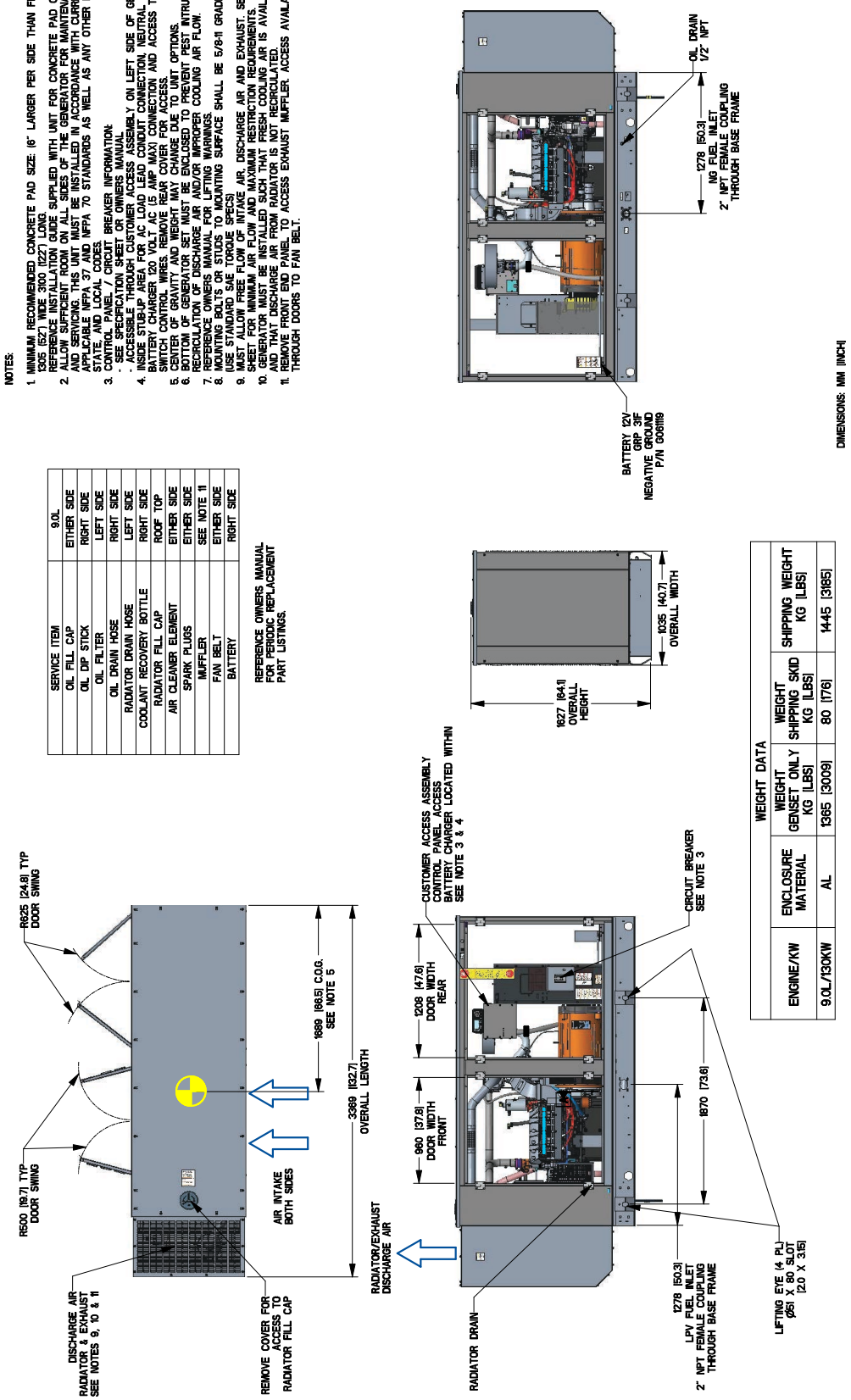
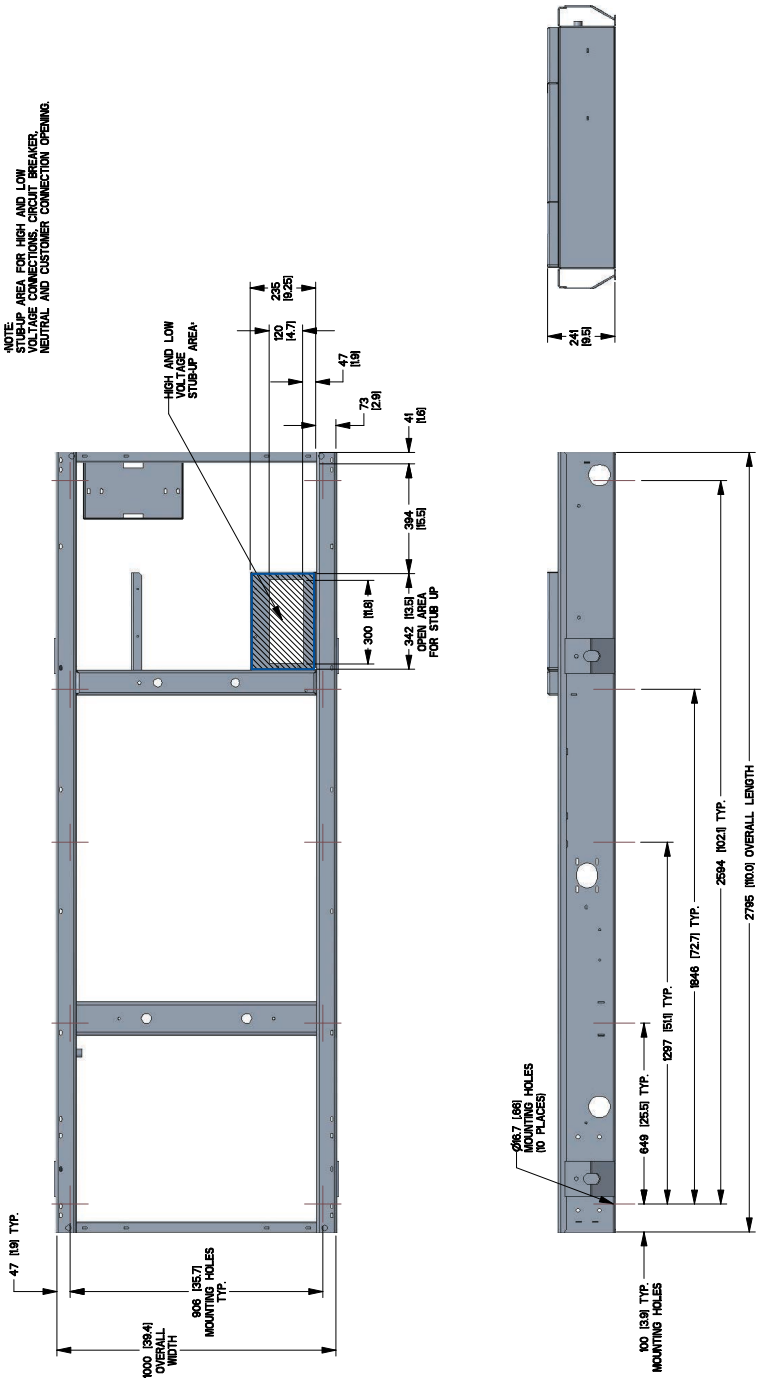
## installation layout

Drawing #A0001618959 (1 of 2)



# 130 kW

Drawing #A0001618959 (2 of 2)

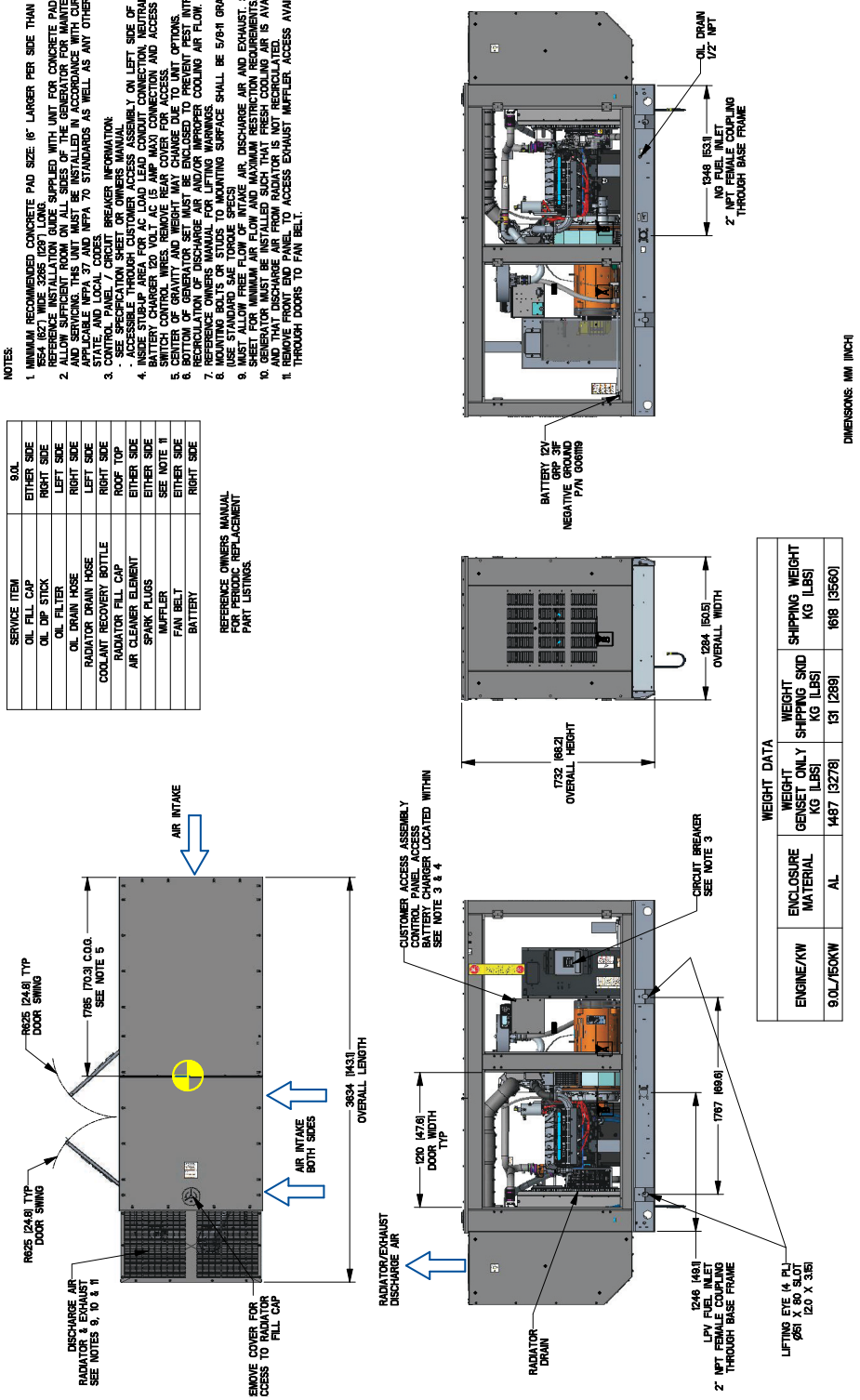


# 150 kW

GENERAC®

## installation layout

Drawing #A0001618957 (1 of 2)



# 150 kW

Drawing #A0001618957 (2 of 2)