Protector® Series

PROTECTOR® SERIES
Standby Generators
Liquid-Cooled Gaseous Engine

INCLUDES:

- Two-Line LCD Multilingual Digital Evolution™ Controller (English/Spanish/French/Portuguese)
- 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 RG10090 (Aluminum - Bisque) - 100 kW 60 Hz

*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**
  - ✓ **NEMA MG1-22 EVALUATION**
  - ✓ **SYSTEM TORSIONAL TESTED**
  - ✓ **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®

100 kW application & engineering data

GENERATOR SPECIFICATIONS

	100 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	2.5 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

	100 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	9.9:1
Intake Air System	Naturally Aspirated
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	11 - 14 in Water Column
NG Fuel Pressure	11 - 14 in Water Column

100 kW operating data

GENERATOR OUTPUT VOLTAGE/kW - 60 Hz

		kW LPG	Amp LPG	kW Nat. Gas	Amp Nat. Gas	CB Size (Both)
RG10090	120/240 V, 1Ø, 1.0 pf	96	400	96	400	400
	120/208 V, 3Ø, 0.8 pf	100	347	96	333	400
	120/240 V, 3Ø, 0.8 pf	100	300	96	288	350
	277/480 V, 3Ø, 0.8 pf	100	150	96	144	175

SURGE CAPACITY IN AMPS

		Voltage Dip
		30%
RG10090	120 / 240 V, 1Ø	854
	120 / 208 V, 3Ø	430
	120 / 240 V, 3Ø	372
	277 / 480 V, 3Ø	244

ENGINE FUEL CONSUMPTION

		Natural Gas		Propane	
		(ft^3 / hr)	(m^3 / hr)	(ft^3 / hr)	(m^3 / hr)
RG10090	25% of rated load	429	12.1	141	4.0
	50% of rated load	667	18.9	218	6.2
	75% of rated load	913	25.9	280	7.9
	100% of rated load	1,148	32.5	360	10.2

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.

GENERAC®

100 kW operating data

ENGINE COOLING

	100 kW
Air Flow (Fan Air Flow Across Radiator) - Open Set scfm (m^3 / min)	6,589 (186)
System Coolant Capacity (gal / liters)	5.5 (20.8)
Heat Rejection to Coolant (BTU per hr / MJ per hr)	Contact Factory
Maximum Operation Air Temperature on Radiator (°F / °C)	Contact Factory
Maximum Ambient Temperature (°F / °C)	122 (50)

COMBUSTION REQUIREMENTS

Flow at Rated Power scfm (m^3/min)	230 (6.5)

SOUND EMISSIONS

Sound Output in dB(A) at 23 ft (7 m) With Generator*	71 db

*In normal operation

EXHAUST

Exhaust Flow at Rated Output scfm (m^3/min)	771 (21.8)
Exhaust Temperature (Rated Output) °F (°C)	1,350 (732)

ENGINE PARAMETERS

Rated Engine Speed (RPM)	1,800

POWER ADJUSTMENT FOR AMBIENT CONDITIONS

Temperature Deration NG & LP	77°F before derate	3.3% per 10°F above 77°F
Altitude Deration	3% for every 1,000 ft above 600 ft	

CONTROLLER FEATURES

Two-Line Plain Text LCD Display ..... Simple user interface for ease of operation.
Mode Switch: AUTO ..... Automatic Start on Utility failure. 7 day exerciser.
OFF ..... Stops unit. Power is removed. Control and charger still operate.
MANUAL ..... Start with starter control, unit stays on. If utility fails, transfer to load takes place.
Programmable Start Delay Between 10-30 Seconds ..... 10 sec standard
Engine Start Sequence ..... Cyclic cranking: 16 sec on, 7 rest (90 sec maximum duration)
Engine Warm-up ..... 5 sec
Engine Cool-Down ..... 1 min
Starter Lock-Out ..... Starter cannot re-engage until 5 sec after engine has stopped.
Smart Battery Charger ..... Standard
Automatic Voltage Regulation With Over and Under Voltage Protection ..... Standard
Automatic Low Oil Pressure Shutdown ..... Standard
Overspeed Shutdown ..... Standard, 72 Hz
High Temperature Shutdown ..... Standard
Overcrank Protection ..... Standard
Safety Fused ..... Standard
Failure to Transfer Protection ..... Standard
Low Battery Protection ..... Standard
50 Event Run Log ..... Standard
Future Set Capable Exerciser ..... Standard
Incorrect Wiring Protection ..... Standard
Internal Fault Protection ..... Standard
Common External Fault Capability ..... Standard
Governor Failure Protection ..... Standard

100 kW available accessories

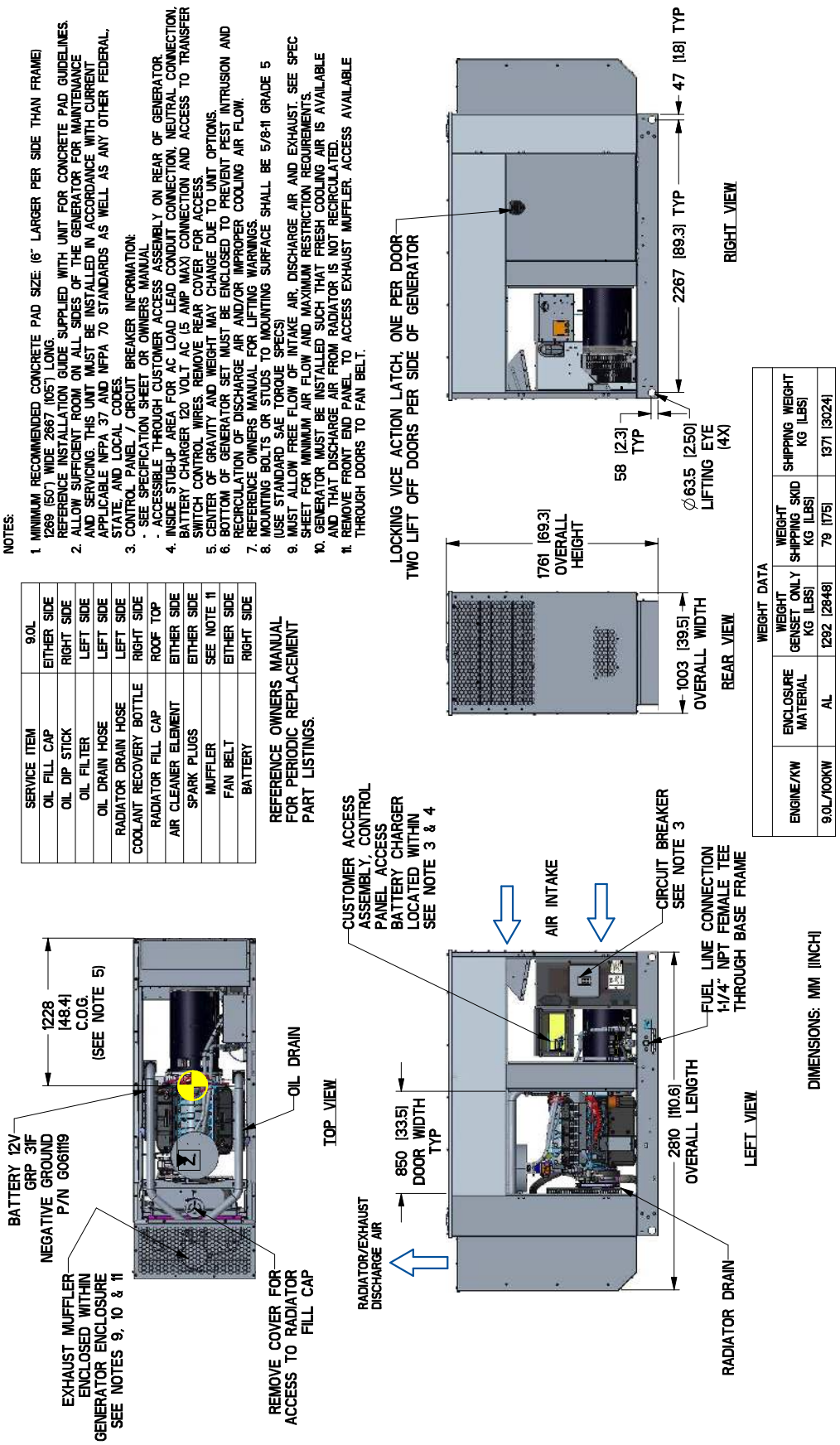
Model #	Product	Description
G007169-0	Mobile Link® 4G LTE Cellular Accessory	Generac's Mobile Link allows you to check the status of your generator from anywhere that you have access to an Internet connection from a PC or with any smart device. You will even be notified when a change in the generator's status occurs via e-mail or text message. Note: Harness Adapter Kit required. Available in the U.S. only.
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) 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.

100 kW

GENERAC®

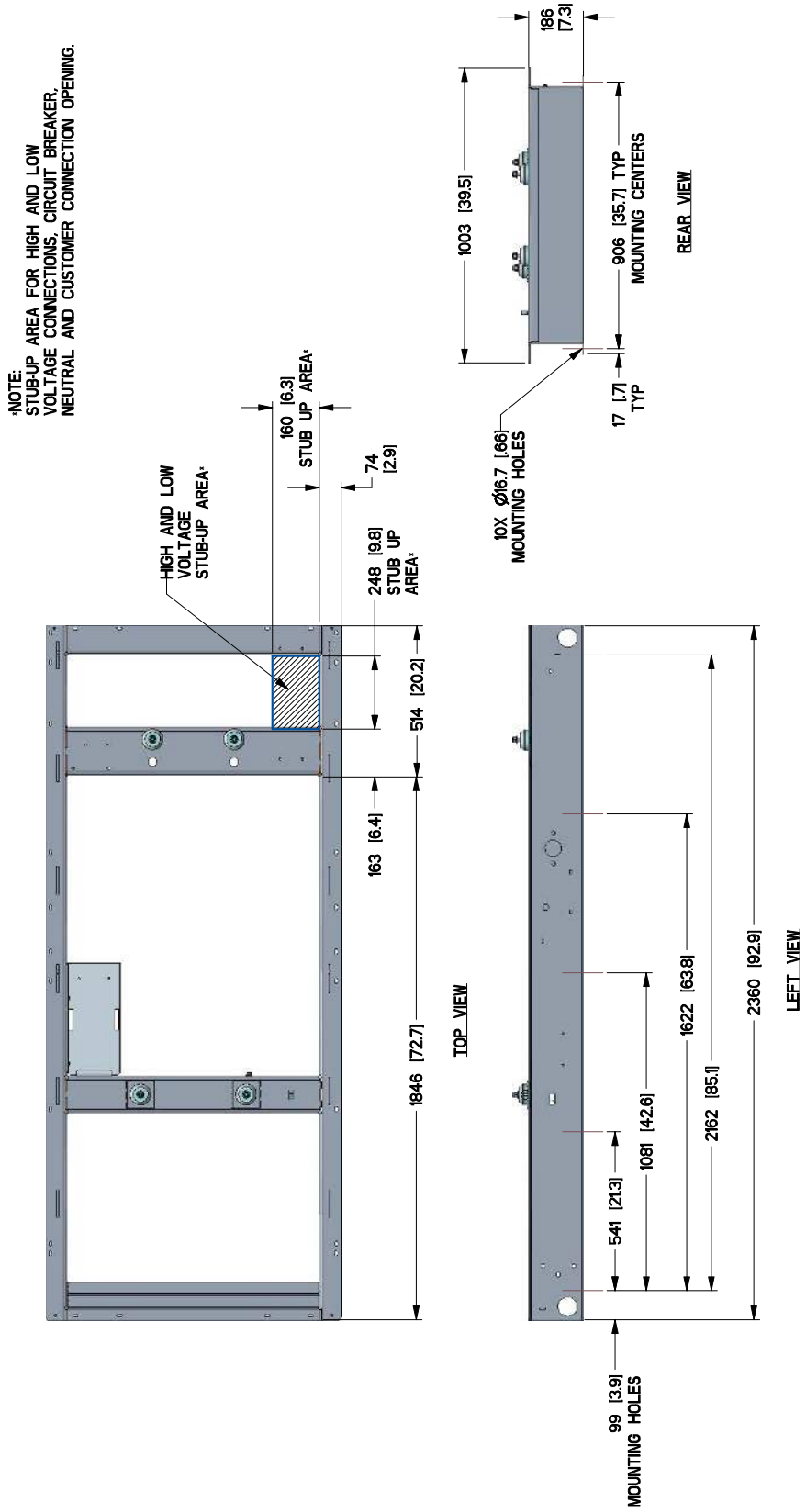
installation layout

Drawing #A0001453011 (1 of 2)



100 kW

Drawing #A0001453011 (2 of 2)



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