Protector® Series

GENERAC®

PROTECTOR® SERIES
Standby Generators
Liquid-Cooled Gaseous Engine

INCLUDES:

- Two-Line LCD Multilingual Digital Evolution™ Controller (English/Spanish/French/Portuguese) With External Viewing Window for Easy Indication of Generator Status and Breaker Position
- Isochronous Electronic Governor
- Sound Attenuated Enclosure
- Closed Coolant Recovery System
- Smart Battery Charger
- UV/Ozone Resistant Hoses
- ±1% Voltage Regulation
- Field Convertible Fuel Type With No Mechanical Adjustment Required.
- 5 Year Limited Warranty
- UL 2200 Listed
- Listed and labeled by the Southwest Research Institute allowing installation as close as 18 in (457 mm) to a structure*

*Must be located away from doors, windows, and fresh air intakes and in accordance with local codes.
https://assets.swri.org/library/DirectoryOfListedProducts/ConstructionIndustry/973_DoC_204_13204-01-01_Rev9.pdf

Standby Power Rating
Model RG048 (Aluminum - Bisque) - 48 kW 60 Hz
Model RG060 (Aluminum - Bisque) - 60 kW 60 Hz
Model RG080 (Aluminum - Bisque) - 80 kW 60Hz

*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. Digital voltage regulation at ±1%.
- **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®

GENERAC®

48 / 60 / 80 kW

application & engineering data

GENERATOR SPECIFICATIONS

	48 kW	60 / 80 kW
Type	Synchronous	Synchronous
Rotor Insulation Class	F	H
Stator Insulation Class	H	H
Telephone Interference Factor (TIF)	<50	<50
Alternator Output Leads 1-Phase	4 wire	4 wire
Alternator Output Leads 3-Phase	6 wire	6 wire
Bearings	Sealed Ball	Sealed Ball
Coupling	Flexible Disc	Flexible Disc
Excitation System	Direct	Brushless

VOLTAGE REGULATION

Type	Electronic
Sensing	Single Phase
Regulation	± 1%

GOVERNOR SPECIFICATIONS

Type	Electronic
Frequency Regulation	Isochronous
Steady State Regulation	± 0.25%

ELECTRICAL SYSTEM

Battery Charge Alternator	12 Volt 35 Amp
Static Battery Charger	2.5 Amp
Recommended Battery (battery not included)	Group 27F (48kW), 725CCA
System Voltage	12 Volts

GENERATOR FEATURES

Revolving field heavy duty generator
Directly connected to the engine
Operating temperature rise 120 °C above a 40 °C ambient
Class H insulation is NEMA rated
Class F 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.

ENGINE SPECIFICATIONS

	48 kW	60 / 80 kW
Make	Generac	Generac
Model	Inline 4 cylinder	Inline 4 cylinder
Cylinders	4	4
Displacement (Liters)	4.5	4.5
Bore (in/mm)	4.5 / 114.3	4.5 / 114.3
Stroke (in/mm)	4.25 / 107.95	4.25 / 107.95
Compression Ratio	9.9:1	8.85:1
Intake Air System	Naturally Aspirated	Turbocharged and aftercooled
Lifter Type	Hydraulic	Hydraulic

ENGINE LUBRICATION SYSTEM

Oil Pump Type	Gear
Oil Filter Type	Full Flow Spin-On Cartridge
Crankcase Capacity (qt / l)	12 / 11

ENGINE COOLING SYSTEM

Type	Ethylene Glycol 50 / 50 Mix
Water Pump	Belt-Driven
Fan Speed (rpm)	2,100
Fan Diameter 48 kW (in / cm)	20 (50.8)
Fan Diameter 60 kW and 80 kW (in / cm)	22 (55.9)
Fan Mode	Pusher

FUEL SYSTEM

Fuel Type	Natural Gas, Propane Vapor
Fuel Shut Off Solenoid	Standard
LP Fuel Pressure	7 - 14 in Water Column
NG Fuel Pressure	3.5 - 14 in Water Column

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

48 / 60 / 80 kW

operating data

GENERATOR OUTPUT VOLTAGE/kW - 60 Hz

		kW LPG	Amp LPG	kW Nat. Gas	Amp Nat. Gas	CB Size (Both)
RG048	120/240 V, 1Ø, 1.0 pf	48	200	48	200	200
	120/208 V, 3Ø, 0.8 pf	48	167	48	167	175
	120/240 V, 3Ø, 0.8 pf	48	144	48	144	150
	277/480 V, 3Ø, 0.8 pf	48	72	48	72	80
RG060	120/240 V, 1Ø, 1.0 pf	60	250	60	250	300
	120/208 V, 3Ø, 0.8 pf	60	208	60	208	200
	120/240 V, 3Ø, 0.8 pf	60	180	60	180	200
	277/480 V, 3Ø, 0.8 pf	60	90	60	90	100
RG080	120/240 V, 1Ø, 1.0 pf	75	312	80	333	400
	120/208 V, 3Ø, 0.8 pf	75	260	80	278	300
	120/240 V, 3Ø, 0.8 pf	75	226	80	241	300
	277/480 V, 3Ø, 0.8 pf	75	113	80	120	150

SURGE CAPACITY IN AMPS

		Voltage Dip @ < .4 pf	
		15%	30%
RG048	120 / 240 V, 1Ø	100	300
	120 / 208 V, 3Ø	118	242
	120 / 240 V, 3Ø	144	260
	277 / 480 V, 3Ø	64	123
RG060	120 / 240 V, 1Ø	150	413
	120 / 208 V, 3Ø	135	313
	120 / 240 V, 3Ø	117	289
	277 / 480 V, 3Ø	54	122
RG080	120 / 240 V, 1Ø	283	600
	120 / 208 V, 3Ø	236	500
	120 / 240 V, 3Ø	204	432
	277 / 480 V, 3Ø	102	192

ENGINE FUEL CONSUMPTION

		Natural Gas			Propane	
		(ft^3 / hr)	(m^3 / hr)	(gal / hr)	(ft^3 / hr)	(l / hr)
RG048	Exercise cycle	101	2.86	0.67	24.5	2.54
	25% of rated load	201	5.7	2.88	104.7	10.9
	50% of rated load	336	9.5	4.16	151.3	15.7
	75% of rated load	447	12.7	5.28	192	20
	100% of rated load	604	17.1	6.61	240.4	25
RG060	Exercise cycle	103	2.9	0.9	33.2	3.5
	25% of rated load	257	7.3	2.1	78	8.1
	50% of rated load	432	12.2	4.4	161.2	16.8
	75% of rated load	618	17.5	6.8	247.2	25.7
	100% of rated load	808	22.9	8.4	305.6	31.8
RG080	Exercise cycle	103	2.9	0.9	33.2	3.5
	25% of rated load	292	8.3	2.6	93.6	9.7
	50% of rated load	534	15.1	5.7	208.8	21.7
	75% of rated load	799	22.6	8.3	303.2	31.5
	100% of rated load	1,063	30.1	10.8	393.2	40.9

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®

48 / 60 / 80 kW

operating data

ENGINE COOLING

	48 kW	60 / 80 kW
Air Flow (inlet air including alternator and combustion air in cfm / cmm)	2,829 / 80.1	3,197 / 90.5
System Coolant Capacity (gal / liters)	2.9 / 11	4.5 / 17
Heat Rejection to Coolant (BTU per hr / MJ per hr)	201,600	204,570
Maximum Operation Air Temperature on Radiator (°F / °C)	150 / 66	150 / 66
Maximum Ambient Temperature (°F / °C)	140 / 60	140 / 60

COMBUSTION REQUIREMENTS

Flow at Rated Power (scfm / cmm)	92.7 / 2.6	170.4 / 4.8

SOUND EMISSIONS

Sound Output in dB(A) at 23 ft (7 m) With Generator*	68	68

*In exercise mode

EXHAUST

Exhaust Flow at Rated Output (scfm / cmm)	104 / 2.9	181 / 5.1
Exhaust Temperature at Muffler Outlet (°F / °C)	945 / 507	1,213 / 656

ENGINE PARAMETERS

Rated Synchronous rpm	1,800	1,800

POWER ADJUSTMENT FOR AMBIENT CONDITIONS

Temperature Deration ..... 3% for every 10 °C above 25 °C or 1.65% for every 10 °F above 77 °F
Altitude Deration (48 kW) ..... 1% for every 100 m above 183 m or 3% for every 1,000 ft above 600 ft
Altitude Deration (60 kW and 80 kW) ..... 1% for every 100 m above 915 m or 3% for every 1,000 ft above 3,000 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

48 / 60 / 80 kW

available accessories

Model #	Product	Description
G0071690	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.
G006478-0	Kit, Adapter Mobile Link L/C (Required for QT and RG Series)	The Harness Adapter Kit is required to make liquid-cooled units compatible with Mobile Link®.
G007992-0	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.
G007990-0	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.
G007991-0	Scheduled Maintenance Kit	The Liquid-Cooled Scheduled Maintenance Kits offer all the hardware necessary to perform complete maintenance on Generac liquid-cooled generators.
G006664-0	Local Wireless Monitor	Completely wireless and battery powered, Generac's wireless remote monitor provides you with instant status information without ever leaving the house.
G006665-0	Wireless Remote Extension Harness	Recommended for use with the Wireless Remote on units up to 60 kW, required for use on units 70 kW or greater.
G007993-0	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.
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.

48 kW

Drawing #A0000293718-C (1 of 2)

installation layout

GENERAC®

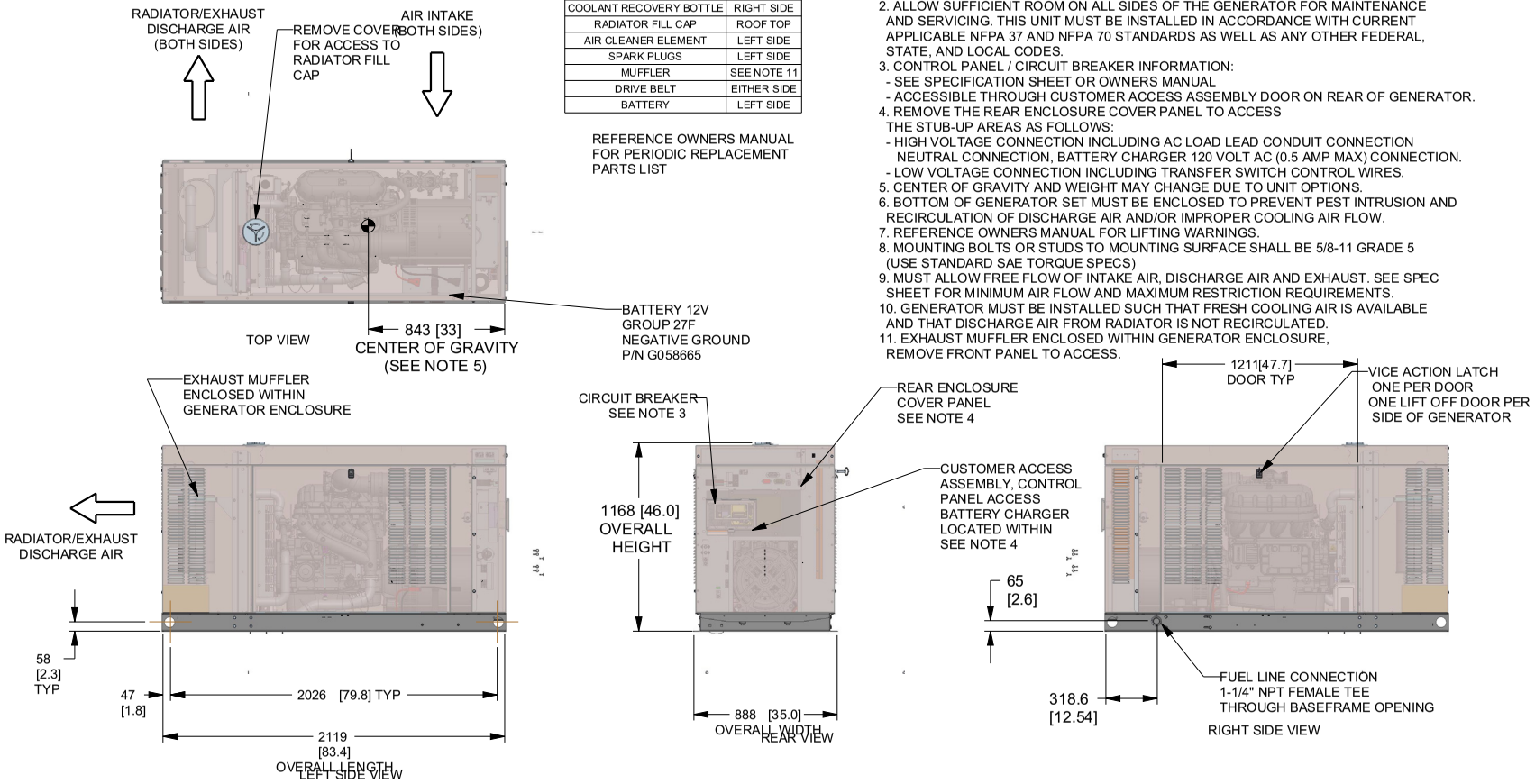
WEIGHT DATA				
ENGINE/KW	ENCLOSURE MATERIAL	WEIGHT GENSET ONLY KG [LBS]	WEIGHT SHIPPING SKID KG [LBS]	SHIPPING WEIGHT KG [LBS]
4.5L/48KW	AL	808 [1781]	51 [112]	859 [1893]

SERVICE ITEM	4.5L
OIL FILL CAP	LEFT SIDE
OIL DIP STICK	LEFT SIDE
OIL FILTER	LEFT SIDE
OIL DRAIN HOSE	RIGHT SIDE
RADIATOR DRAIN HOSE	RIGHT SIDE
COOLANT RECOVERY BOTTLE	RIGHT SIDE
RADIATOR FILL CAP	ROOF TOP
AIR CLEANER ELEMENT	LEFT SIDE
SPARK PLUGS	LEFT SIDE
MUFFLER	SEE NOTE 11
DRIVE BELT	EITHER SIDE
BATTERY	LEFT SIDE

REFERENCE OWNERS MANUAL FOR PERIODIC REPLACEMENT PARTS LIST

NOTES:

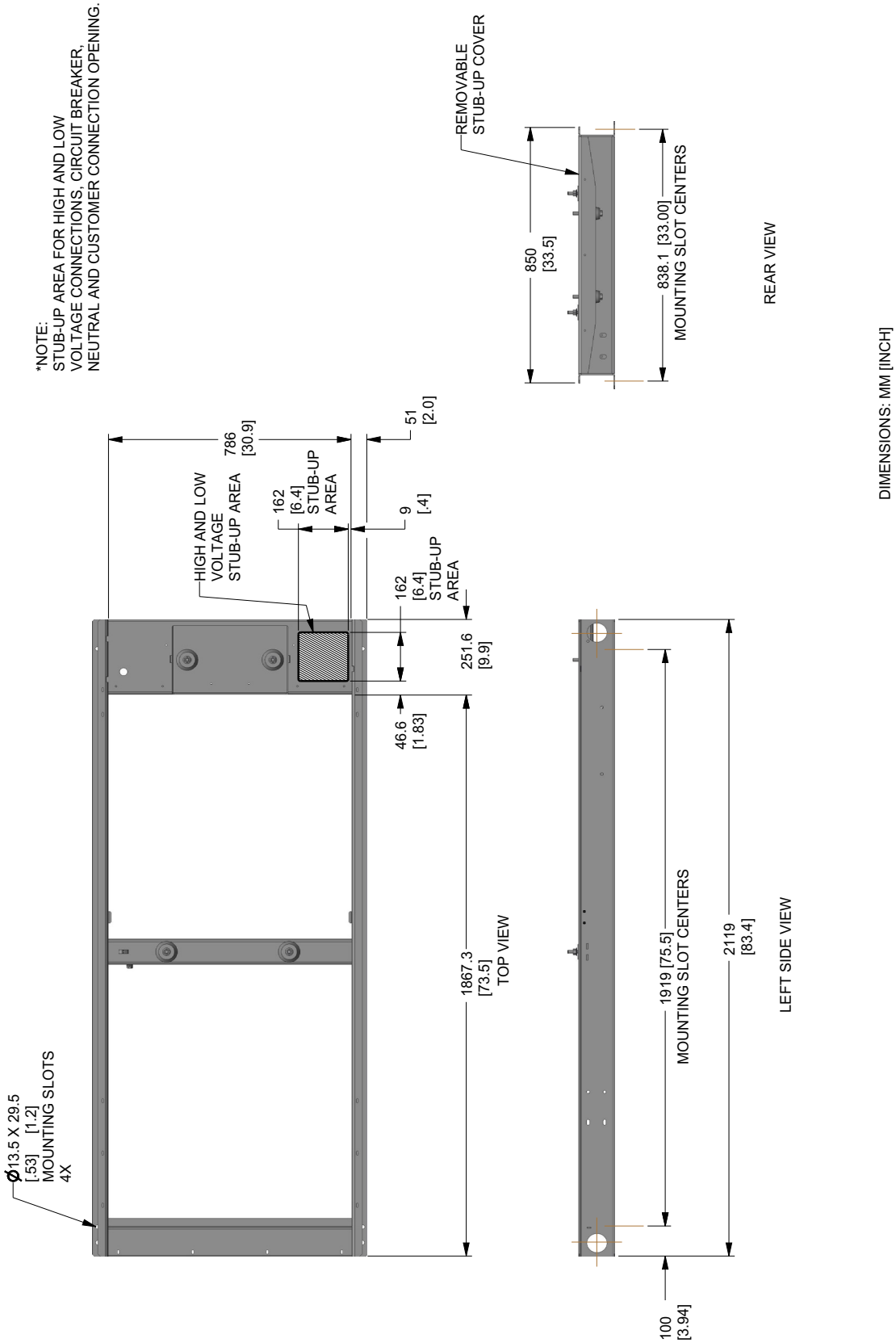
1. MINIMUM RECOMMENDED CONCRETE PAD SIZE IS 6" OFFSET OF OVERALL LENGTH AND WIDTH OF GENERATOR. {1193.8 (47") WIDE X 2423.2 (95.4") LONG}. REFERENCE INSTALLATION GUIDE SUPPLIED WITH THE UNIT FOR CONCRETE PAD GUIDELINES. REFERENCE MANUFACTURER'S SPECIFICATIONS IF USING ENGINEERED, PREFABRICATED SLABS.
2. ALLOW SUFFICIENT ROOM ON ALL SIDES OF THE GENERATOR FOR MAINTENANCE AND SERVICING. THIS UNIT MUST BE INSTALLED IN ACCORDANCE WITH CURRENT APPLICABLE NFPA 37 AND NFPA 70 STANDARDS AS WELL AS ANY OTHER FEDERAL, STATE, AND LOCAL CODES.
3. CONTROL PANEL / CIRCUIT BREAKER INFORMATION:
   - SEE SPECIFICATION SHEET OR OWNERS MANUAL
   - ACCESSIBLE THROUGH CUSTOMER ACCESS ASSEMBLY DOOR ON REAR OF GENERATOR.
4. REMOVE THE REAR ENCLOSURE COVER PANEL TO ACCESS THE STUB-UP AREAS AS FOLLOWS:
   - HIGH VOLTAGE CONNECTION INCLUDING AC LOAD LEAD CONDUIT CONNECTION NEUTRAL CONNECTION, BATTERY CHARGER 120 VOLT AC (0.5 AMP MAX) CONNECTION.
   - LOW VOLTAGE CONNECTION INCLUDING TRANSFER SWITCH CONTROL WIRES.
5. CENTER OF GRAVITY AND WEIGHT MAY CHANGE DUE TO UNIT OPTIONS.
6. BOTTOM OF GENERATOR SET MUST BE ENCLOSED TO PREVENT PEST INTRUSION AND RECIRCULATION OF DISCHARGE AIR AND/OR IMPROPER COOLING AIR FLOW.
7. REFERENCE OWNERS MANUAL FOR LIFTING WARNINGS.
8. MOUNTING BOLTS OR STUDS TO MOUNTING SURFACE SHALL BE 5/8-11 GRADE 5 (USE STANDARD SAE TORQUE SPECS)
9. MUST ALLOW FREE FLOW OF INTAKE AIR, DISCHARGE AIR AND EXHAUST. SEE SPEC SHEET FOR MINIMUM AIR FLOW AND MAXIMUM RESTRICTION REQUIREMENTS.
10. GENERATOR MUST BE INSTALLED SUCH THAT FRESH COOLING AIR IS AVAILABLE AND THAT DISCHARGE AIR FROM RADIATOR IS NOT RECIRCULATED.
11. EXHAUST MUFFLER ENCLOSED WITHIN GENERATOR ENCLOSURE, REMOVE FRONT PANEL TO ACCESS.



DIMENSIONS: MM [INCH]

48 kW

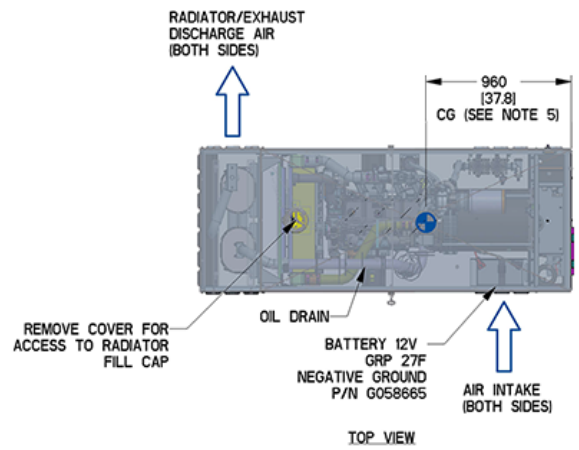
Drawing #A0000293718-C (2 of 2)



60 / 80 kW

Drawing #A0000293264 (1 of 2)

GENERAC®
installation layout



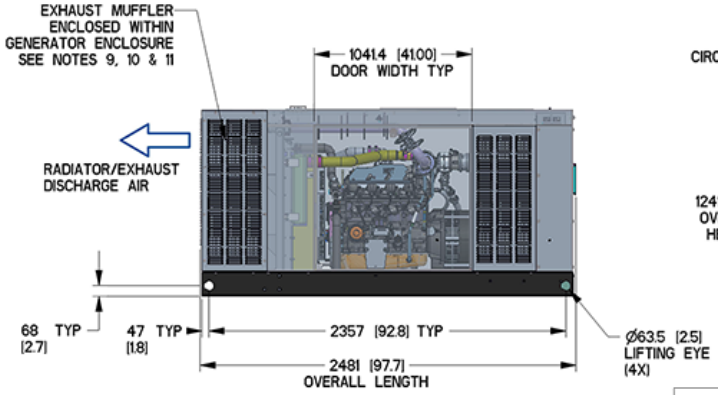
TOP VIEW

SERVICE ITEM	4.5L
OIL FILL CAP	LEFT SIDE
OIL DIP STICK	LEFT SIDE
OIL FILTER	LEFT SIDE
OIL DRAIN HOSE	LEFT SIDE
RADIATOR DRAIN HOSE	RIGHT SIDE
COOLANT RECOVERY BOTTLE	RIGHT SIDE
RADIATOR FILL CAP	ROOF TOP
AIR CLEANER ELEMENT	EITHER SIDE
SPARK PLUGS	LEFT SIDE
MUFFLER	SEE NOTE 11
FAN BELT	EITHER SIDE
BATTERY	LEFT SIDE

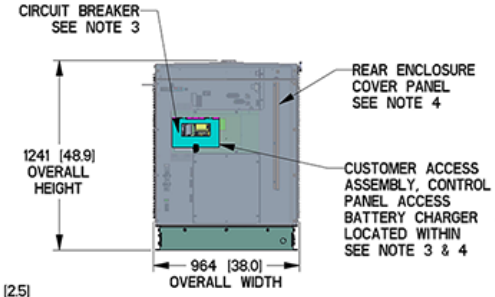
REFERENCE OWNERS MANUAL
FOR PERIODIC REPLACEMENT
PART LISTINGS.

NOTES:

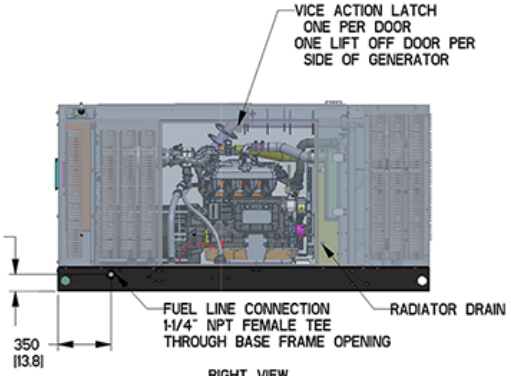
1. MINIMUM RECOMMENDED CONCRETE PAD SIZE: (6" LARGER PER SIDE THAN GENERATOR) 1269 [50"] WIDE 2786 [110"] LONG. REFERENCE INSTALLATION GUIDE SUPPLIED WITH UNIT FOR CONCRETE PAD GUIDELINES.
2. ALLOW SUFFICIENT ROOM ON ALL SIDES OF THE GENERATOR FOR MAINTENANCE AND SERVICING. THIS UNIT MUST BE INSTALLED IN ACCORDANCE WITH CURRENT APPLICABLE NFPA 37 AND NFPA 70 STANDARDS AS WELL AS ANY OTHER FEDERAL, STATE, AND LOCAL CODES.
3. CONTROL PANEL / CIRCUIT BREAKER INFORMATION:
   - SEE SPECIFICATION SHEET OR OWNERS MANUAL.
   - ACCESSIBLE THROUGH CUSTOMER ACCESS ASSEMBLY ON REAR OF GENERATOR.
4. INSIDE STUB-UP AREA FOR AC LOAD LEAD CONDUIT CONNECTION, NEUTRAL CONNECTION, BATTERY CHARGER 120 VOLT AC (.5 AMP MAX) CONNECTION AND ACCESS TO TRANSFER SWITCH CONTROL WIRES. REMOVE REAR COVER FOR ACCESS.
5. CENTER OF GRAVITY AND WEIGHT MAY CHANGE DUE TO UNIT OPTIONS.
6. BOTTOM OF GENERATOR SET MUST BE ENCLOSED TO PREVENT PEST INTRUSION AND RECIRCULATION OF DISCHARGE AIR AND/OR IMPROPER COOLING AIR FLOW.
7. REFERENCE OWNERS MANUAL FOR LIFTING WARNINGS.
8. MOUNTING BOLTS OR STUDS TO MOUNTING SURFACE SHALL BE 5/8-11 GRADE 5 (USE STANDARD SAE TORQUE SPECS)
9. MUST ALLOW FREE FLOW OF INTAKE AIR, DISCHARGE AIR AND EXHAUST. SEE SPEC SHEET FOR MINIMUM AIR FLOW AND MAXIMUM RESTRICTION REQUIREMENTS.
10. GENERATOR MUST BE INSTALLED SUCH THAT FRESH COOLING AIR IS AVAILABLE AND THAT DISCHARGE AIR FROM RADIATOR IS NOT RECIRCULATED.
11. REMOVE FRONT END PANEL TO ACCESS EXHAUST MUFFLER. ACCESS AVAILABLE THROUGH DOORS TO FAN BELT.



LEFT VIEW



REAR VIEW

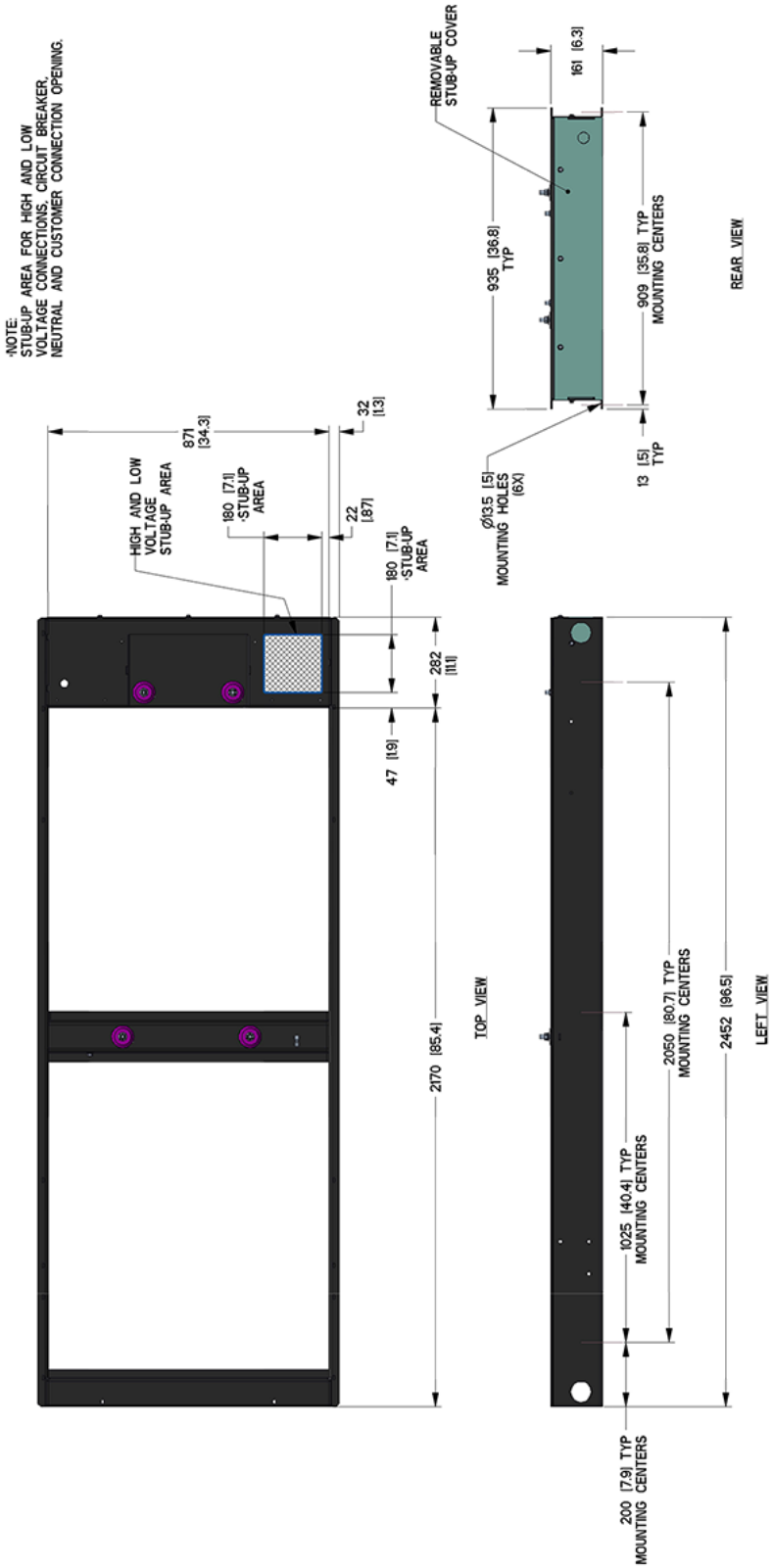


RIGHT VIEW

WEIGHT DATA				
ENGINE/KW	ENCLOSURE MATERIAL	WEIGHT GENSET ONLY KG [LBS]	WEIGHT SHIPPING SKID KG [LBS]	SHIPPING WEIGHT KG [LBS]
4.5L/60KW	AL	857 [1890]	79 [175]	936 [2064]
4.5L/80KW	AL	903 [1990]	79 [175]	983 [2165]

60 / 80 kW

Drawing #A0000293264 (2 of 2)



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