



# GENERAC® GUARDIAN® SERIES STANDBY GENERATORS

## 45 kW

### Liquid-Cooled Engine Generator Sets

Standby Power Rating

Model QT045 (Bisque) - 45 kW 60Hz

#### INCLUDES:

- Generac Naturally Aspirated Gaseous Fueled 2.4L Engine
- Two Line LCD Tri-lingual Digital Nexus™ Controller
- Isochronous Electronic Governor
- Closed Coolant Recovery System
- Smart Battery Charger
- UV/Ozone Resistant Hoses
- $\pm 1\%$  Voltage Regulation
- Natural Gas or LP Operation
- 2 Year Limited Warranty
- UL 2200 Listed



**QUIET-TEST™**

Meets EPA Emission Regulations  
CA/MA emissions 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.
- **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. An unequalled  $\pm 1\%$  voltage regulation.
- **TEST CRITERIA:**
  - ✓ **PROTOTYPE TESTED**
  - ✓ **SYSTEM TORSIONAL TESTED**
  - ✓ **NEMA MG1-22 EVALUATION**
  - ✓ **MOTOR STARTING ABILITY**
- **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 that the GENERAC product line includes its own transfer systems and controls for total system compatibility.

# GENERAC®

GENERATOR SPECIFICATIONS

TYPE	Synchronous
ROTOR INSULATION	Class H
STATOR INSULATION	Class H
TELEPHONE INTERFERENCE FACTOR (TIF)	< 50
ALTERNATOR OUTPUT LEADS 3 PHASE	4 wire
BEARINGS	Sealed Ball
COUPLING	Flexible Disc
LOAD CAPACITY (STANDBY RATING)	45 kW
EXCITATION SYSTEM	Direct

VOLTAGE REGULATION

TYPE	Electronic
SENSING	Single Phase
REGULATION	± 1%

GENERATOR FEATURES

Revolving field heavy duty generator Directly connected to the engine Operating temperature rise 120 °C above a 40 °C ambient Insulation is Class H rated at 150 °C rise All models are fully prototyped tested
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ENCLOSURE FEATURES

Galvanized steel 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.

ENGINE SPECIFICATIONS

MAKE	Generac
MODEL	In line
CYLINDERS	4
DISPLACEMENT	2.4 Liter, 146 in. <sup>3</sup>
BORE	3.41
STROKE	3.94
COMPRESSION RATIO	8.5:1
INTAKE AIR SYSTEM	Naturally Aspirated
VALVE SEATS	Precision ground
LIFTER TYPE	Overhead Valve Push Rod, Hydraulic

GOVERNOR SPECIFICATIONS

TYPE	Electronic
FREQUENCY REGULATION	Isochronous
STEADY STATE REGULATION	± 0.25%

ENGINE LUBRICATION SYSTEM

OIL PUMP	Gear
OIL FILTER	Full flow spin-on cartridge
CRANKCASE CAPACITY	4 Quarts

ENGINE COOLING SYSTEM

TYPE	Pressurized Closed
WATER PUMP	Belt driven
FAN SPEED	2060
FAN DIAMETER	22 inches
FAN MODE	Pusher

FUEL SYSTEM

FUEL TYPE	Natural gas, propane vapor
CARBURETOR	Down Draft
SECONDARY FUEL REGULATOR	Standard
FUEL SHUT OFF SOLENOID	Standard
OPERATING FUEL PRESSURE	5" - 14" H <sub>2</sub> O

ELECTRICAL SYSTEM

BATTERY CHARGE ALTERNATOR	12V 30 Amp
STATIC BATTERY CHARGER	2 Amp
RECOMMENDED BATTERY	Group 26, 525CCA
SYSTEM VOLTAGE	12 Volts

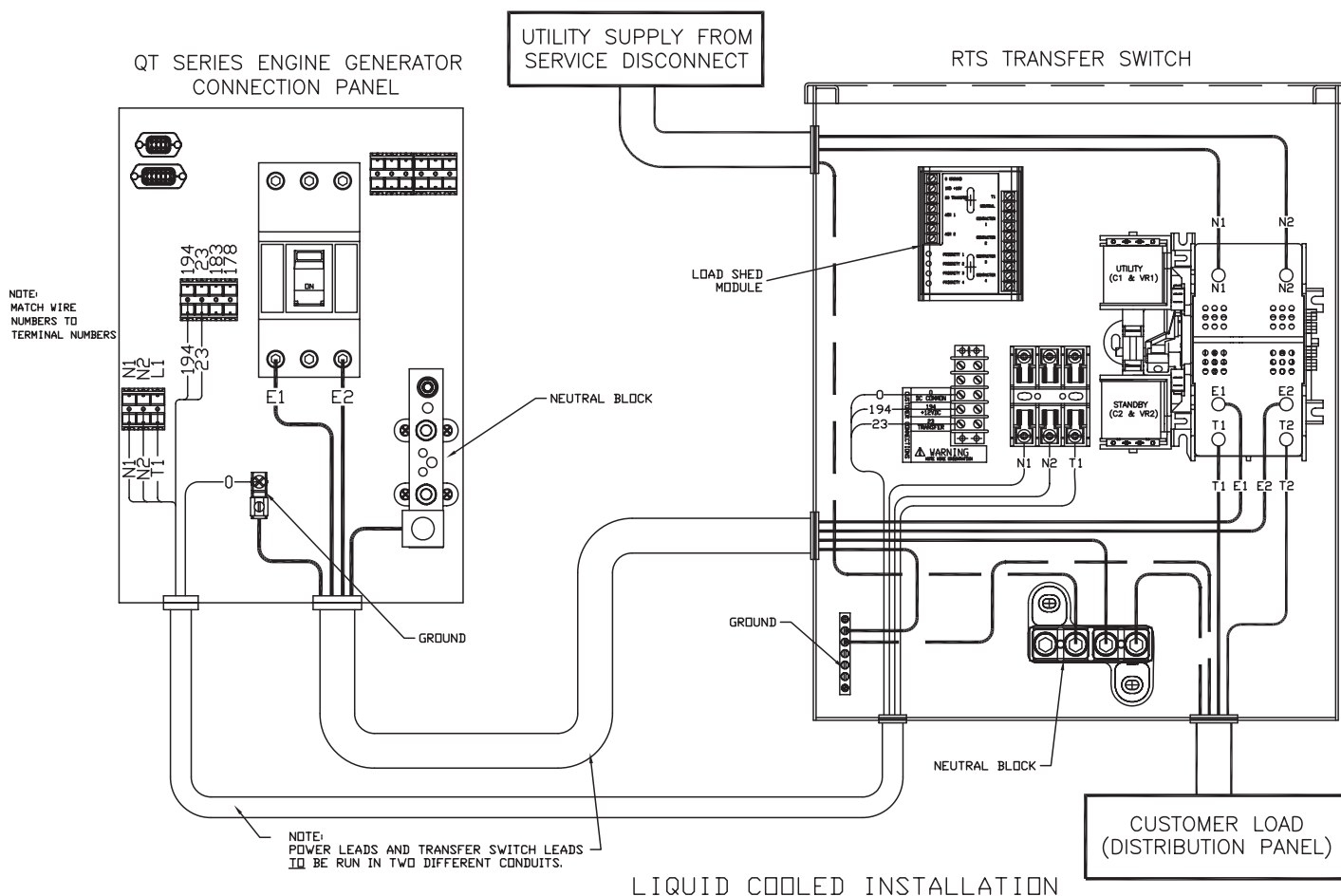
Rating definitions - Standby: Applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this rating. (All ratings in accordance with BS5514, ISO3046 and DIN6271). (All ratings in accordance with BS5514, ISO3046, ISO8528, SAE J1349 and DIN6271).

OPERATING DATA			
KW RATING (LP/NG)	45/45		
ENGINE SIZE	2.4 Liter 4 cyl. inline		
GENERATOR OUTPUT VOLTAGE/KW - 60Hz	KW	AMP	CB Size
120/240V, 1-phase, 1.0 pf	45	188	200
120/208V, 3-phase, 0.8 pf	45	156	175
120/240V, 3-phase, 0.8 pf	45	135	150
277/480V, 3-phase, 0.8 pf	45	68	80
ENGINE FUEL CONSUMPTION (Natural Gas) (Propane)	Natural Gas (ft³/hr.)		Propane (gal/hr.)      cu ft/hr
Exercise cycle	65		0.7      25
25% of rated load	210		2.3      831
50% of rated load	380		4.2      151
75% of rated load	545		5.9      216
100% of rated load*	730		8.0      290
For Btu content, multiply ft³/hr x 2520 (LP) or ft³/hr x 1000 (NG)			
ENGINE COOLING			
Air flow (inlet air including alternator and combustion air)	ft³/min.	2,725	
System coolant capacity	US gal.	3.0	
Heat rejection to coolant	BTU/hr.	173,000	
Max. operating air temp. on radiator	°C (°F)	60 (150)	
Max. ambient temperature	°C (°F)	50 (140)	
COMBUSTION AIR REQUIREMENTS			
Flow at rated power 60 Hz	cfm	144	
SOUND EMISSIONS IN DBA			
Exercising at 7 meters	61		
Normal operation at 7 meters	73		
EXHAUST			
Exhaust flow at rated output 60 Hz	cfm	429	
Exhaust temp. at muffler outlet	°F	1150	
ENGINE PARAMETERS			
Rated synchronous RPM	60 Hz	3600	
POWER ADJUSTMENT FOR AMBIENT CONDITIONS			
Temperature Deration	25		
3% for every 10 °C above - °C	77		
1.65% for every 10 °F above - °F			
Altitude Deration	183		
1% for every 100 m above - m	600		
3% for every 1000 ft. above - ft.			

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

**RATING:** All three phases units are rated at 0.8 power factor. All single phase units are rated at 1.0 power factor. **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.

KW rating is based on LPG Fuel and may derate with natural gas.



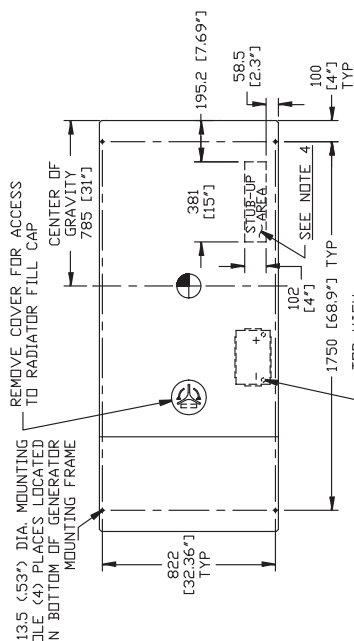
## NEXUS™ CONTROL FEATURES

2-Line Plain Text LCD Display	Simple user interface for ease of operation
Mode Switch	Automatic Start on Utility failure. 7 day exerciser
-Auto	
-Off	Stops unit. Power is removed. Control and charger still operate.
-Manual/Test (start)	Start with starter control, unit stays on. If utility fails, transfer to load takes place.
Programmable start delay between 10-30 seconds	Standard
Engine Start Sequence	Cyclic cranking: 16 sec. on, 7 rest (90 sec. maximum duration)
Engine Warm-up	5 seconds
Engine Cool-Down	1 minute
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, 72Hz
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

\*Single and three phase connections may vary , refer to the owner's manual for specific connection information.

SERVICE ITEM ACCESSIBILITY CHART			
SERVICE ITEM	2. 4L	2. 4L	2. 4L
OIL FILL CAP			EITHER DOOR
OIL DIP STICK			THRU RIGHT DOOR
OIL FILTER			THRU RIGHT DOOR
OIL DRAIN HOSE			THRU RIGHT DOOR
RADIATOR DRAIN HOSE			THRU LEFT DOOR
AIR CLEANER ELEMENT			EITHER DOOR
SPARK PLUGS			THRU RIGHT DOOR
MUFFLER			SEE NOTE 6
FAN BELT			SEE NOTE 6
BATTERY			THRU LEFT DOOR

REFERENCE OWNERS MANUAL FOR PERIODIC REPLACEMENT PART LISTINGS



REMOVE COVER FOR ACCESS TO RADIATOR FILL CAP  
HOLE (4) PLACES LOCATED ON BOTTOM OF GENERATOR MOUNTING FRAME

13.5 (53") DIA. MOUNTING HOLE (4) PLACES LOCATED ON BOTTOM OF GENERATOR MOUNTING FRAME

822 [32.36] TYP

195.2 [7.69] TYP

102 [4] TYP

1750 [68.9] TYP

1139 [44.84] TYP

1950 [76.77] TYP

884 [34.8] TYP

1145.5 [45.1] TYP

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WEIGHT DATA			
ENGINE/KW	ENCLOSURE MATERIAL	WEIGHT (GENSET ONLY) KG (LBS)	WEIGHT (WOODEN SHIPPING PAD) KG (LBS)
2. 4L/29KW	STEEL	631 (1393)	44 (98)
2. 4L/29KW	ALUMINUM	579 (1276)	44 (98)
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2. 4L/29KW	ALUMINUM	579 (1276)	44 (98)
2. 4L/29KW	STEEL	641 (1414)	44 (98)
2. 4L/29KW	ALUMINUM	588 (1297)	44 (98)

NOTES:  
1) MINIMUM RECOMMENDED CONCRETE PAD SIZE: 1155 (45.5") WIDE X 2255 (88.8") 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 FOR MINIMUM DISTANCES FROM OTHER STRUCTURES.

3) CIRCUIT BREAKER INFORMATION:  
SEE SPECIFICATION SHEET WITHIN OWNERS MANUAL

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 FRONT COVER FOR ACCESS.

4A) FIELD CUT-HOLE IS ONLY REQUIRED FOR MOUNTING OF GENERATOR ON AN EXISTING PAD.

5) REFERENCE OWNERS MANUAL FOR LIFTING WARNINGS.

6) REMOVE EITHER LEFT OR RIGHT HAND SIDE PANEL TO ACCESS EXHAUST MUFFLER AND FAN BELT.

EXHAUST MUFFLER ENCLOSED WITHIN, SEE NOTE 6

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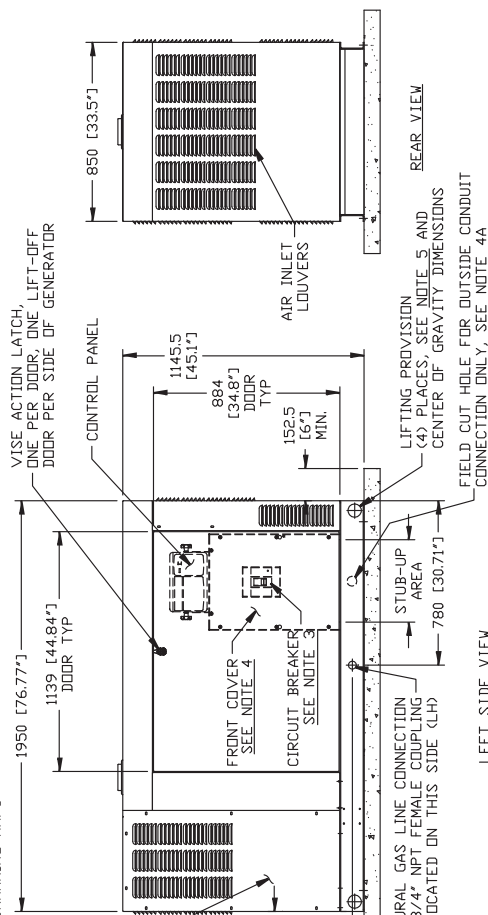
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