

GENERAC®

PROTECTOR™ SERIES
AUTOMATIC STANDBY DIESEL GENERATOR

15-50 kW



Choose the #1 Selling Standby Generator Brand

Founded in 1959, Generac was the first to engineer affordable home standby generators, along with the first engine developed specifically for the rigors of generator use, and is now the #1 manufacturer of home standby generators. Generac manufactures the widest range of power products in the marketplace including portable, residential, commercial and industrial generators. We are also the leading designer and manufacturer of manual and fully automatic transfer switches and accessories for backup power applications up to 50 kW. Generac revolutionized the commercial generator market with the first standby generators powerful enough to back your entire business without the cost of expensive configured systems. Whether you are protecting your home or your business, Generac is your trusted source for all your backup power needs.



PROTECTOR™ SERIES

AUTOMATIC STANDBY DIESEL GENERATOR

All the conveniences of modern living—heat, central air, refrigeration, communication—are nothing without power. When the power supply is disrupted, our lives and businesses can come to a sudden halt. An automatic standby generator protects you from power failures, restoring power within seconds of an outage, so you can have peace of mind and the power you need.

Generac's new Protector™ Series diesel generators raise the bar for residential and light commercial diesel generators. Building and zoning codes can vary wildly from one region to another. In the past, the only answer was to order expensive, custom-configured solutions.

Until now.

Generac's diesel-powered Protector Series features Code Ready, a set of popular preconfigured options and a range of code-driven accessories, so you can feel confident that your generator will be able to conform to the required local codes. The Protector Series is versatile, adaptable, meets UL requirements, and is an affordable optional standby diesel generator for your backup power needs.

FEATURES:



EVOLUTION™ CONTROLLER – The next generation of intuitive controllers featuring a multilingual, two-line LCD text display with color-coded, backlit buttons.



QUIET-TEST™ – Protector Series diesel generator with Quiet-Test, a weekly self-test mode that runs at a lower RPM, is quieter, and consumes less fuel.



5 YEAR LIMITED WARRANTY – We are proud of our innovative product design, high quality and first-class reliability so we stand behind them with a strong 5-year limited warranty.



CODE READY – The Protector Series offers compatibility with a variety of environments, with external vent and fill, a UL/CUL 142-listed, double-walled base tank, a UL/CUL 2200-listed generator, and a wide range of code-driven accessories.



ADDITIONAL FEATURES:

- Ease of installation and service
 - External viewing window for easy inspection of generator status and breaker position
 - Removable doors for easy service and fuel fill access
- Isochronous Governor – electronic governor control for tight and precise load response and voltage (+/- 1%) and frequency regulation
- Available in single- and three-phase configurations

SPECIFICATIONS

	15 kW	20 kW	30 kW	48 / 50 kW
Model Number	RD015	RD020	RD030	RD048* / RD050
Engine/Alternator RPM	1800/1800			
Engine	In-line 4-cylinder			
Fuel Type	Diesel			
Output Voltage 120/240 V, 1Ø, 1.0 pf	62	83	125	200
Output Voltage 120/208 V, 3Ø, 0.8 pf	52	69	104	173
Output Voltage 120/240 V, 3Ø, 0.8 pf	45	60	90	150
Output Voltage 277/480 V, 3Ø, 0.8 pf	n/a	n/a	45	75
Fuel Consumption @ 1/2 load - gal/hr (L/hr)	0.79 (2.99)	1.05 (3.97)	1.45 (5.5)	2.3 (8.71)
Fuel Consumption @ full load - gal/hr (L/hr)	1.48 (5.58)	1.98 (7.48)	2.74 (10.4)	4.3 (16.36)
Quiet-Test Mode	Yes			
db(A) at exercise	65			
db(A) at normal operating load	70			
Enclosure	Steel			
Enclosure Color	Gray			
Warranty	5-year limited			
Dimensions (L" x W" x H")	49.4 x 80.8 x 30.55		55.4 x 95.4 x 35	
Weight (lbs.)	1474	1574	1755	2114
EPA Emission Regulations	Yes			

*1Ø only

Nationwide Dealer Service Network

Generac's commitment to service includes scheduled maintenance programs, warranty assistance and emergency service to ensure that Generac customers are never left powerless. The largest nationwide dealer network has factory-trained technicians on staff and maintains large inventories of Generac parts, components and accessories. Find a dealer near you at generac.com.



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 Mobile Link sold separately.



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Protector™ Series

Standby Generators Diesel 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
- Smart Battery Charger
- UV/Ozone Resistant Hoses
- ±1% Voltage Regulation
- Integrated Base Tank Provides 24 Hour Run Time Minimum at 1/2 Load
- 5 Year Limited Warranty
- UL/CUL2200/UL 142 Listed
- Meets code requirements for External Vent and Fill

Not for sale outside of US/CA

Standby Power Rating

- Model RD015 (Gray) - 15 kW 60 Hz
- Model RD020 (Gray) - 20 kW 60 Hz
- Model RD030 (Gray) - 30 kW 60 Hz
- Model RD048 (Gray) - 48 kW 60 Hz (single phase only)
- Model RD050 (Gray) - 50 kW 60 Hz (three phase only)



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.
- **TEST CRITERIA:**
 - ✓ PROTOTYPE TESTED
 - ✓ SYSTEM TORSIONAL TESTED
 - ✓ NEMA MG1-22 EVALUATION
 - ✓ MOTOR STARTING ABILITY
- **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 that the GENERAC product line includes its own transfer systems and controls for total system compatibility.

15 • 20 • 30 • 48 • 50 kW**application & engineering data****GENERATOR SPECIFICATIONS**

Type	Synchronous
Rotor Insulation Class	H (15 & 20 kW) or F (30 & 50 kW)
Stator Insulation Class	H
Telephone Interference Factor (TIF)	<50
Alternator Output Leads 1-Phase	3 wire
Alternator Output Leads 3-Phase	6 wire
Bearings	Single Sealed Cartridge
Coupling	Direct, Flexible Disc
Excitation System	Direct

VOLTAGE REGULATION

Type	Electronic
Sensing	Single Phase
Regulation	± 1%
Features	Adjustable Voltage & Gain

GOVERNOR SPECIFICATIONS

Type	Electronic Isochronous
Steady State Regulation	± 0.25%

ELECTRICAL SYSTEM

Battery Charge Alternator	50 Amp (15 & 20 kW) or 70 Amp (30, & 50 kW)
Smart Battery Charger	2 Amp
Recommended Battery	Group 27F, 700 CCA
System Voltage	12 Volts

GENERATOR FEATURES

<p>Revolving field heavy duty generator Directly connected to the engine Operating temperature rise 120°C above a 40°C ambient Class H insulation is rated at 150°C rise at 25°C ambient Class F insulation is rated at 145°C rise at 25°C ambient All models fully prototype tested</p>

ENCLOSURE FEATURES

Steel weather protective enclosure with aluminum roof	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 and maximize sound dampening.
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: 15 & 20 kW

Make	Generac
Model	In-line
Cylinders	4
Displacement (Liters)	2.28
Bore (in./mm)	3.46/88
Stroke (in./mm)	3.70/94
Compression Ratio	21.3:1
Intake Air System	Naturally Aspirated
Cylinder Head Type	Cast Iron OHV
Piston Type	Aluminum
EPA Emissions Compliance	Emergency Stationary

ENGINE SPECIFICATIONS: 30 kW

Make	Generac
Model	In-line
Cylinders	4
Displacement (Liters)	2.4
Bore (in./mm)	3.54/90
Stroke (in./mm)	3.70/94
Compression Ratio	21.3:1
Intake Air System	Turbocharged
Cylinder Head Type	Cast Iron OHV
Piston Type	Aluminum
EPA Emissions Compliance	Emergency Stationary

ENGINE SPECIFICATIONS: 48/50 kW

Make	Generac
Model	In-Line
Cylinders	4
Displacement (Liters)	3.4
Bore in/mm	3.86/98
Stroke in/mm	4.45/113
Compression Ratio	18.5:1
Intake Air System	Turbocharged/Aftercooled
Cylinder Head Type	Cast Iron OHV
Piston Type	Aluminum
EPA Emissions Compliance	Emergency Stationary

ENGINE LUBRICATION SYSTEM

Oil Pump Type	Gear
Oil Filter Type	Full flow spin-on canister
Crankcase Capacity (quarts/liters)	6.87/6.5 - 15 & 20 kW 6.8/6.4 - 30 kW 7.4/7 - 48 & 50 kW

ENGINE COOLING SYSTEM

Type	Pressurized radiator - 15 & 20 kW Closed recovery - 30, 48 & 50 kW
Water Pump	Pre-lubed, self-seating
Fan Speed (rpm)	1800 - 15 & 20 kW 2061 - 30 kW 2029 - 48 & 50 kW
Fan Diameter (in./mm)	18.11/460 (15 & 20 kW) or 22/559 (30, 48 & 50 kW)
Fan Mode	Pusher

FUEL SYSTEM

Fuel Type	Ultra Low Sulfur Diesel Fuel
Fuel Pump Type	Mechanical Engine Driven Gear
Injector Type	Mechanical
Fuel Supply Line (mm/in)	7.94/0.31 (ID)
Fuel Return Line (mm/in)	7.94/0.31(ID)
Fuel Specification	ASTM
Fuel Filtering (microns)	5 (15, 20 & 30 kW) or 10 (48 & 50 kW)

TANK SPECIFICATIONS

Total Size (gallons/liters)	34/128.7 - 15 & 20 kW 62/234.7 - 30, 48 & 50 kW
Usable Size (gallons/liters)	32/121.1 - 15 & 20 kW 57/215.8 - 30, 48 & 50 kW
Run Time @ 1/2 Load (hrs)	38 - 15 kW 28.6 - 20 kW 36.7 - 30 kW 24 - 48 & 50 kW
Listings	UL142

15 • 20 • 30 • 48 • 50 kW

GENERATOR OUTPUT VOLTAGE/kW - 60 Hz

		kW (Standby)	Amp (Standby)	CB Size
RD015	120/240 V, 1Ø, 1.0 pf	15	62	70
	120/208 V, 3Ø, 0.8 pf	15	52	60
	120/240 V, 3Ø, 0.8 pf	15	45	50
RD020	120/240 V, 1Ø, 1.0 pf	20	83	100
	120/208 V, 3Ø, 0.8 pf	20	69	80
	120/240 V, 3Ø, 0.8 pf	20	60	70
RD030	120/240 V, 1Ø, 1.0 pf	30	125	150
	120/208 V, 3Ø, 0.8 pf	30	104	125
	120/240 V, 3Ø, 0.8 pf	30	90	100
	277/480 V, 3Ø, 0.8 pf	30	45	50
RD048/RD050	120/240 V, 1Ø, 1.0 pf	48	200	200
	120/208 V, 3Ø, 0.8 pf	50	173	200
	120/240 V, 3Ø, 0.8 pf	50	150	175
	277/480 V, 3Ø, 0.8 pf	50	75	90

SURGE CAPACITY IN AMPS

		Voltage Dip @ < .4 pf	
		15%	30%
RD015	120/240 V, 1Ø	53	129
	120/208 V, 3Ø	37	90
	120/240 V, 3Ø	32	78
RD020	120/240 V, 1Ø	87	211
	120/208 V, 3Ø	59	143
	120/240 V, 3Ø	51	124
RD030	120/240 V, 1Ø	66	168
	120/208 V, 3Ø	59	144
	120/240 V, 3Ø	51	125
	277/480 V, 3Ø	26	64
RD048/RD050	120/240 V, 1Ø	69	189
	120/208 V, 3Ø	90	218
	120/240 V, 3Ø	78	189
	277/480 V, 3Ø	36	87

ENGINE FUEL CONSUMPTION

		gal/hr	L/hr
RD015	25% of rated load	0.51	1.93
	50% of rated load	0.79	2.99
	75% of rated load	1.14	4.31
	100% of rated load	1.48	5.58
RD020	25% of rated load	0.67	2.6
	50% of rated load	1.05	3.97
	75% of rated load	1.52	5.32
	100% of rated load	1.98	7.48
RD030	25% of rated load	0.92	3.5
	50% of rated load	1.45	5.5
	75% of rated load	1.96	7.4
	100% of rated load	2.74	10.4
RD048/RD050	25% of rated load	1.35	4.92
	50% of rated load	2.15	8.71
	75% of rated load	3.06	12.5
	100% of rated load	3.98	16.36

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.

15 • 20 • 30 • 48 • 50 kW

ENGINE COOLING

	15 kW	20 kW	30 kW	48/50 kW
Air flow (inlet air including alternator and combustion air in cfm/cmm)	2824/80	2824/80	3038/86	2824/80
System coolant capacity (gal/liters)	2.8/10.6	2.8/10.6	2.8/10.6	2.8/10.6
Heat rejection to coolant (BTU per hr/MJ per hr)	63,535/67	63,535/67	111,000/117.1	135,900/143.4
Maximum operation air temperature on radiator (°C/°F)	50/122			
Maximum ambient temperature (°C/°F)	50/122			

COMBUSTION REQUIREMENTS

	15 kW	20 kW	30 kW	48/50 kW
Flow at rated power (cfm/cmm)	190/5.38	190/5.38	190/2.55	190/5.38

SOUND EMISSIONS

Exercising at 7 meters/23 feet (dB(A))	65
Normal operation at 7 meters/23 feet (dB(A))	70

*Sound levels are taken from the front of the generator. Sound levels taken from other sides of the generator may be higher depending on installation parameters.

EXHAUST

	15 kW	20 kW	30 kW	48/50 kW
Exhaust flow at rated output (cfm/cmm)	448/12.7	448/12.7	230/6.51	448/12.7
Exhaust temperature at rated output (°C/°F)	604.4/1120	604.4/1120	454.4/850	604.4/1120

ENGINE PARAMETERS

Rated Synchronous RPM	1800			
HP at rated kW	26.4	33.5	49	85

POWER ADJUSTMENT FOR AMBIENT CONDITIONS

Temperature Deration	3% for every 5 °C above 25 °C or 1.7% for every 5 °F above 77 °F
Altitude Deration (15, 30, 48 & 50 kW)	1% for every 100 m above 915 m or 3% for every 1000 ft above 3000 ft
Altitude Deration (20 kW)	1% for every 100 m above 305 m or 3% for every 1000 ft above 1000 ft

CONTROLLER FEATURES

2-Line Plain Text Multilingual LCD Display	Simple user interface for ease of operation.
Mode Buttons: Auto	Automatic Start on Utility failure. 7 day exerciser.
Manual	Start with starter control, unit stays on. If utility fails, transfer to load takes place.
Off	Stops unit. Power is removed. Control and charger still operate.
Ready to Run/Maintenance Messages	Standard
Engine Run Hours Indication	Standard
Programmable start delay between 2-1500 seconds	Standard (programmable by dealer only)
Utility Voltage Loss/Return to Utility Adjustable	From 140-171 V/190-216 V
Future Set Capable Exerciser/Exercise Set Error Warning	Standard
Run/Alarm/Maintenance Logs	50 Events Each
Engine Start Sequence	Cyclic cranking: 16 sec on, 7 rest (90 sec maximum duration).
Starter Lock-out	Starter cannot re-engage until 5 sec after engine has stopped.
Smart Battery Charger	Standard
Charger Fault/Missing AC Warning	Standard
Low Battery/Battery Problem Protection and Battery Condition Indication	Standard
Automatic Voltage Regulation with Over and Under Voltage Protection	Standard
Under-Frequency/Overload/Stepper Overcurrent Protection	Standard
Safety Fused/Fuse Problem Protection	Standard
Automatic Low Oil Pressure/High Oil Temperature Shutdown	Standard
Overcrank/Overspeed (@ 72 Hz)/RPM Sense Loss Shutdown	Standard
High Engine Temperature Shutdown	Standard
Internal Fault/Incorrect Wiring Protection	Standard
Common External Fault Capability	Standard
Field Upgradable Firmware	Standard

15 • 20 • 30 • 48 • 50 kW

Model #	Product	Description
006502-0	Spill Box	The 5-gallon spill box screws into the existing fuel fill port of the base tank. It captures and contains fuel if over fueling or spilling occurs during the fill process.
006504-0	90% Fuel Level Alarm	The 90% fuel level alarm alerts the fuel fill operator when the tank reaches a 90% fill level by sounding an audible alarm and triggering an LED warning light.
006505-0 - 15 & 20 kW 006506-0 - 30 & 50 kW	Tank Risers	Tank risers are required in some municipalities to help avoid potential base tank corrosion caused by mounting on rough surfaces.
006507-0	Fuel Fill Drop Tube	A powder coat painted, steel fuel fill drop tube is required in some municipalities to prevent sparking due to static electricity buildup, which can be caused by the fuel dropping into the tank from the fill area. Using a drop tube also results in submerged filling, which increases the fuel delivery flow rate and reduces vapors, foam and potential tank evaporation.
006513-0 - 15 & 20 kW 006517-0 - 30 kW 006516-0 - 50 kW	Stainless Steel Fuel Lines	Some municipalities require the use of stainless steel fuel lines instead of the standard hoses provided with the diesel generator products. These stainless steel lines are fire resistant for additional safety.
006510-0	E-Stop	E-stop allows for immediate fuel shutoff and generator shutdown in the event of an emergency.
006511-0	Spill Box Drainback Kit	The spill box drainback kit allows fuel that was captured in the 5-gallon spill box to be drained directly back into the fuel tank to avoid vapors.
006512-0	Lockable Fuel Cap	The cast iron, lockable fuel cap provides the ability to lock the fuel system to prevent unwanted fuel tampering or fuel siphoning.
006572-0 - 15 & 20 kW 006571-0 - 30 kW 006570-0 - 50 kW	Maintenance Kits	The Protector Maintenance Kits offer all the hardware necessary to perform complete maintenance on Generac Protector generators.
006560-0 - 15 & 20 kW 006559-0 - 30 kW 006558-0 - 50 kW	Cold Weather Kits	Recommended for generators installed in regions where the temperature regularly falls below 32 °F (0 °C). The Cold Weather Kits consist of a block heater with all necessary mounting hardware and a battery warmer with a thermostat built into the battery wrap.
006576-0	Fuel Maintenance Kit	The Fuel Maintenance Kit contains everything needed to maintain and clean a diesel fuel system
005704-0	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.
005928-0	Basic Wireless Remote	Completely wireless and battery powered, Generac's wireless remote monitor provides you with instant status information without ever leaving the house.
005951-0	Advanced Wireless Remote	Remotely control generator functions with the advanced model's LCD display. In addition to remote testing of the generator, set the exercise cycle and maintenance interval reminders.
006199-0	PMM Starter Kit	The PMM Starter Kit consists of a 24 VAC, field installed transformer that enables the use of the 24 VAC Power Management Modules (PMMs) and one PMM. The standard controller (without starter kit) can control two HVAC loads with no additional hardware. Not compatible with pre-wired switches.
006186-0	Power Management Module (50 Amps)	Power Management Modules are used in conjunction with the Smart Switch to increase its power management capabilities. It gives the Smart Switch additional power management flexibility not found in any other transfer switch. Not compatible with pre-wired switches. Note: PMM Starter Kit required.
006463-0	Mobile Link™	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.
006478-0	Harness Adapter Kit	The Harness Adapter Kit is required to make liquid-cooled units compatible with Mobile Link™.