



S Y M E S®

Mr. Matthew Johnson, Chair
Concord Planning Board
141 Keyes Road
Concord, MA 01742

RE: Energy Conservation, Center & Main, 1450 Main Street; Home Energy Rating System (**HERS**) Index

Dear Mr. Johnson and fellow Members of the Board:

We will commit to reducing the HERS rating on an aggregate average basis to 50 with the current building code being at 55. We will do this by taking a certain number of houses and reducing their energy consumption through a potential combination of solar panels, air source heat pumps and some net zero energy practices. A potential combination could be one of the aforesaid energy saving measures or could be all three in an individual standard home. Building style, solar orientation and other factors influence those decisions. Some homes could end up with a HERS rating in the mid 30 range and some homes would meet code at 55. A sample chart illustrating:

Units	HERS	Total	Average HERS
34	55	1870	55
24	55	1320	
10	36	360	
			49.41

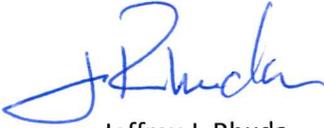
A more precise plan at this point in time is not available as our architectural plans are not developed enough to run a HERS modeling program - complete building plans are needed to complete that task.

We feel that by building a certain number of homes with reduced energy consumption as a standard and modeling it accomplishes two goals: 1) It reduces the carbon footprint of the overall project beyond the code requirement as the board has asked; 2) It merchandises energy saving options for the consumer to purchase. All of the enclosed options or equivalent (plus others as construction plans are completed) will be promoted and available to purchase by any buyer. We intend to partner with SunBug Solar (or a like kind vendor) to promote the panels where roofs are appropriate. The homebuyers purchasing solar panels will receive tax credits of approximately \$7600.

S Y M E S A S S O C I A T E S , I N C .

We have endeavored to respond to the board's requests while trying to maintain financial feasibility. The project has undergone previously requested revisions relating to energy reduction when we reduced 25% of the units to under 2,000 SF of heated living space and reduced 13 car garages to 1 car garages. While we do not have all the units with 1 car garages or an average HERS score of 40, we have a reasonable combination in our sincere attempt to bridge the wants of the community to financial feasibility.

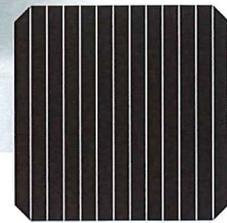
Sincerely,

A handwritten signature in blue ink, appearing to read "J. Rhuda", with a stylized, cursive script.

Jeffrey J. Rhuda

LG NeON[®] 2 Black

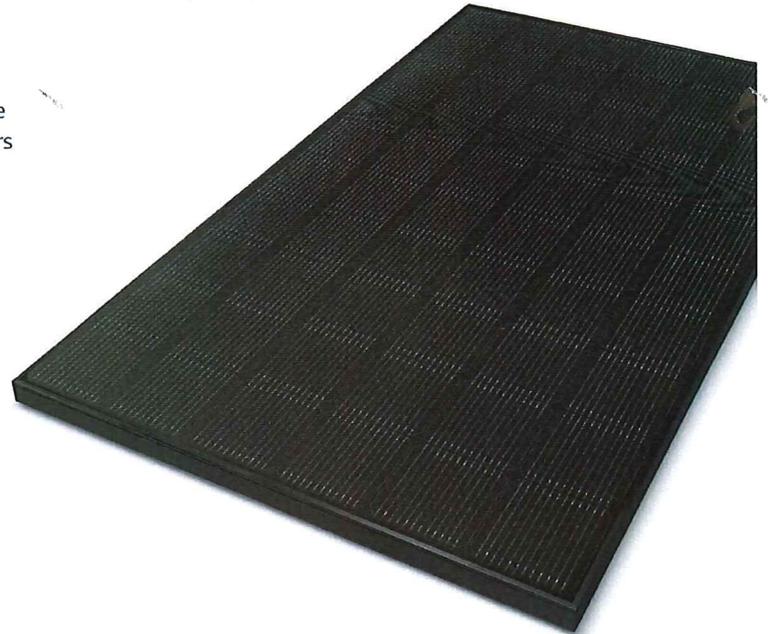
LG335N1K-V5



60

335W

The LG NeON[®] 2 is LG's best selling solar module, and is one of the most powerful and versatile modules on the market today. Featuring LG's Cello Technology, the LG NeON[®] 2 increases power output. New updates include an extended performance warranty from 86% to 90.08% to give customers higher performance and reliability.



Features



Enhanced Performance Warranty

LG NeON[®] 2 Black has an enhanced performance warranty. After 25 years, LG NeON[®] 2 Black is guaranteed at least 90.08% of initial performance.



Enhanced Product Warranty

LG has extended the warranty of the NeON[®] 2 Black to 25 years including labor, which is top level in the industry.



Better Performance on a Sunny Day

LG NeON[®] 2 Black now performs better on sunny days, thanks to its improved temperature coefficient.



Roof Aesthetics

LG NeON[®] 2 Black has been designed with aesthetics in mind using thinner wires that appear all black at a distance. LG NeON[®] 2 Black can increase the value of a property with its modern design.

When you go solar, ask for the brand you can trust: LG Solar

About LG Electronics

LG Electronics is a global leader in electronic products in the clean energy markets by offering solar PV panels and energy storage systems. The company first embarked on a solar energy source research program in 1985, supported by LG Group's vast experience in the semi-conductor, LCD, chemistry and materials industries. In 2010, LG Solar successfully released its first MonoX[®] series to the market, which is now available in 32 countries. The NeON[®] (previous MonoX[®] NeON), NeON[®]2, NeON[®]2 BiFacial won the "Intersolar AWARD" in 2013, 2015 and 2016, which demonstrates LG's leadership and innovation in the solar industry.

LG Solar

LG NeON[®] 2 Black

LG335N1K-V5

General Data

Cell Properties (Material/Type)	Monocrystalline/N-type
Cell Maker	LG
Cell Configuration	60 Cells (6 x 10)
Number of Busbars	12EA
Module Dimensions (L x W x H)	1,686mm x 1,016mm x 40 mm
Weight	17.1 kg
Glass (Material)	Tempered Glass with AR Coating
Backsheet (Color)	Black
Frame (Material)	Anodized Aluminium
Junction Box (Protection Degree)	IP 68 with 3 Bypass Diodes
Cables (Length)	1,000mm x 2EA
Connector (Type/Maker)	MC 4/MC

Certifications and Warranty

Certifications	IEC 61215-1/-1-1/2:2016, IEC 61730-1/2:2016, UL 1703 ISO 9001, ISO 14001, ISO 50001 OHSAS 18001
Salt Mist Corrosion Test	IEC 62701:2012 Severity 6
Ammonia Corrosion Test	IEC 62716:2013
Fire Rating	Class C (UL 790)
Solar Module Product Warranty	25 Years
Solar Module Output Warranty	Linear Warranty*

*Improved: 1st year 98%, from 2-24th year: 0.33%/year down, after 25th year: 90.08%

Temperature Characteristics

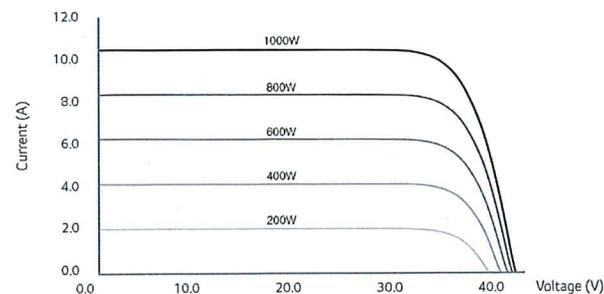
NMOT*	[°C]	42 ± 3
Pmax	[%/°C]	-0.36
Voc	[%/°C]	-0.27
Isc	[%/°C]	0.03

*NMOT (Nominal Module Operating Temperature): Irradiance 800 W/m², Ambient temperature 20 °C, Wind speed 1 m/s, Spectrum AM 1.5

Electrical Properties (NMOT)

Model	LG335N1K-V5	
Maximum Power (Pmax)	[W]	250
MPP Voltage (Vmpp)	[V]	32.3
MPP Current (Impp)	[A]	7.75
Open Circuit Voltage (Voc)	[V]	38.6
Short Circuit Current (Isc)	[A]	8.29

I-V Curves



Electrical Properties (STC*)

Model	LG335N1K-V5	
Maximum Power (Pmax)	[W]	335
MPP Voltage (Vmpp)	[V]	34.5
MPP Current (Impp)	[A]	9.72
Open Circuit Voltage (Voc 5%)	[V]	41.1
Short Circuit Current (Isc 5%)	[A]	10.31
Module Efficiency	[%]	19.6
Power Tolerance	[%]	0 ~ +3

*STC (Standard Test Condition), Irradiance 1000 W/m², Cell temperature 25°C, AM 1.5, Measure Tolerance: ±3%

Operating Conditions

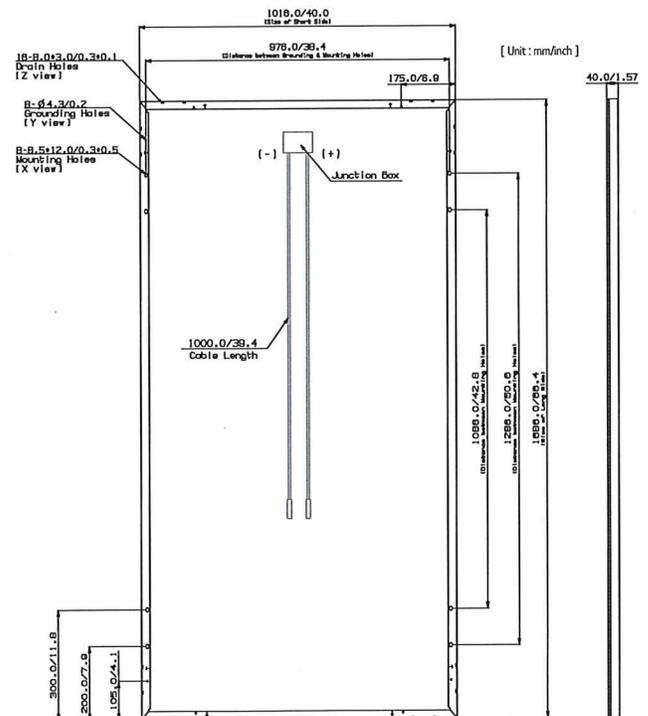
Operating Temperature	[°C]	-40 ~ +90
Maximum System Voltage	[V]	1,000(UL), 1000(IEC)
Maximum Series Fuse Rating	[A]	20
Mechanical Test Load (Front)	[Pa/psf]	5,400/113
Mechanical Test Load (Rear)	[Pa/psf]	4,000/84

*Manufacturer Declaration according to IEC 61215:2005
Mechanical Test Loads 5,400 Pa/4,000 Pa based on IEC 61215-2:2016
(Test Load = Design Load x Safety Factor (1.5))

Packaging Configuration

Number of Modules per Pallet	[EA]	25
Number of Modules per 40ft HQ Container	[EA]	650
Packaging Box Dimensions (L x W x H)	[mm]	1,750 x 1,120 x 1,221
Packaging Box Gross Weight	[kg]	464

Dimensions (mm/inch)



LG Electronics Inc.
Solar Business Division
2000 Millbrook Drive
Lincolnshire, IL 60069
www.lg-solar.com

Product specifications are subject to change without notice.
LG335N1K-V5.pdf

© 2019 LG Electronics. All rights reserved.





The new degree of comfort™

Rheem *Prestige Series*™ Communicating Two Stage Variable Speed Multi position Gas Furnaces

R96V- Series

96% A.F.U.E.†

Input Rates from 60 to 100 kBTU
[17.58 to 29.31 kW]



All Models
except
R96VA085

†A.F.U.E. (Annual Fuel Utilization Efficiency) calculated in accordance with Department of Energy test procedures.

- 96% residential gas furnace CSA certified
- 4 way multi-poise design
- Two stages of operation to save energy and maintain optimal comfort level.
- Variable speed blower motor technology provides ultimate humidity control, quieter sound levels, and year round energy savings.
- EcoNet™ enabled HVAC Product
- PlusOne™ Diagnostics 7-Segment LED all units
- PlusOne™ Ignition System – DSI for reliability and longevity
- PlusOne™ Water Management System with patented Blocked Drain Sensor
- Heat exchanger is removable for improved serviceability. Aluminized steel primary and stainless steel secondary construction provide maximum corrosion resistance and thermal fatigue reliability.
- Low profile “34 inch” cabinet ideal for space constrained installations.
- Blower Shelf design – serviceable in all furnace orientations
- Pre marked hoses – insures proper system drainage
- Vent with 2" or 3" PVC
- Replaceable Collector box
- Hemmed edges on cabinet and doors
- Quarter turn fasteners for tool less access
- Integrated control boards feature dip switches for easy system set up
- Self priming condensate trap
- Solid bottom included
- Compatible with single or two stage thermostats. For optimal performance a two stage thermostat is recommended.





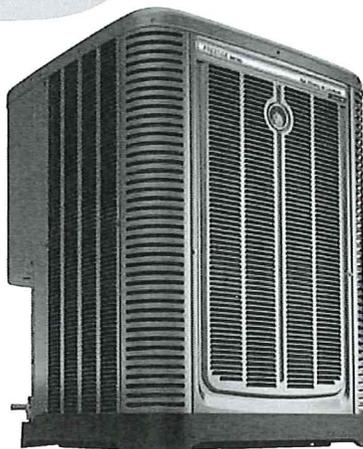
The new degree of comfort™

Air | Heat Pumps
RP20 Series

Rheem Prestige® Series Variable Speed Heat Pumps

RP20 Series

Efficiencies up to 20 SEER/14 EER/11.5 HSPF
Nominal Sizes 2, 3, 4 & 5 Ton
[7.03, 10.6, 14.06 & 17.6 kW]
Cooling Capacities 17.3 to 60.5 kBTU
[5.7 to 17.7 kW]



"Proper sizing and installation of equipment is critical to achieve optimal performance. Split system air conditioners and heat pumps must be matched with appropriate coil components to meet Energy Star. Ask your Contractor for details or visit www.energystar.gov."



- **PlusOne® Energy Efficiency** offers up to 20 SEER and 11.5 HSPF system performance across all capacities. The RP20 achieves these performance measurements with RHMV variable speed air handlers, R802V two-stage, variable-speed 80% furnaces, R96V two-stage, variable-speed 96% furnaces and R97V and R98V modulating furnaces.
- **PlusOne® Expanded Valve Space** – 3"-4"-5" service valve space – provides a minimum working area of 27-square inches for easier access
- **PlusOne® Triple Service Access** – 15" wide, industry leading corner service access – makes repairs easier and faster. The three fastener removable corner allows optimal access to internal unit components. Individual louver panels come out once fastener is removed, for faster coil cleaning and easier cabinet reassembly
- **EcoNet® Enabled product.** The EcoNet Smart Home System provides advanced air & water control for maximum energy savings and ideal comfort.
- New composite base pan – dampens sound, captures louver panels, eliminates corrosion and reduces number of fasteners needed
- Powder coat paint system – for a long lasting professional finish
- The Copeland Scroll™ Variable Speed Compressor has a modulating technology which provides more precise temperature control, lower humidity and greater efficiency.
- Modern cabinet aesthetics – increased curb appeal with visually appealing design
- Equipped with electronic expansion valve to precisely control variable refrigerant flow.
- Improved tubing design – reduces vibration and stress, making unit quieter and reducing opportunity for leaks
- Optimized defrost characteristics - decrease defrosting and provide better home comfort
- Optimized reversing valve sizing – improves shifting performance for quieter unit operation and increased life of the system
- Enhanced mufflers – help to dissipate vibration energy for quieter unit operation
- Integrated heat pump lift receptacle – allows standard CPVC stands to be inserted into the base
- Curved louver panels – provide ultimate coil protection, enhance cabinet strength, and increased cabinet rigidity
- Optimized fan orifice – optimizes airflow and reduces unit sound
- Rust resistant screws – confirmed through 1500-hour salt spray testing
- Diagnostic service window with two-fastener opening – provides access to the high and low pressure.
- External gauge port access – allows easy connection of "low-loss" gauge ports
- Single-row condenser coil – makes unit lighter and allows thorough coil cleaning to maintain "out of the box" performance
- 35% fewer cabinet fasteners and fastener-free base – allow for faster access to internal components and hassle-free panel removal
- Service trays – hold fasteners or caps during service calls
- QR code – provides technical information on demand for faster service calls
- Fan motor harness with extra long wires allows unit top to be removed without disconnecting fan wire.
- High and low pressure transducers standard on all models.

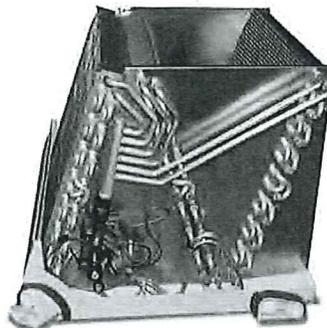
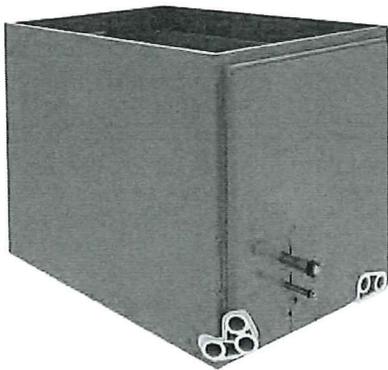
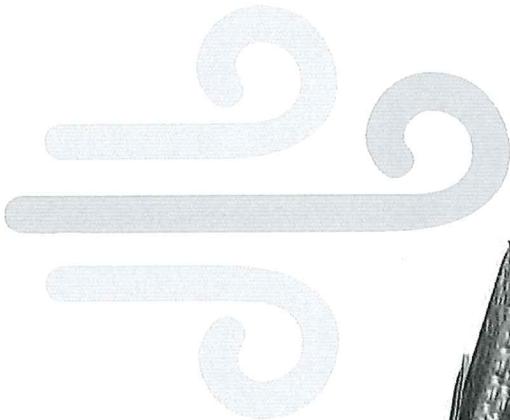


INTEGRATED HOME COMFORT



The new degree of comfort™

Cased/Uncased Coils For Gas And Oil Furnaces



(TXV Metering Device Shown)

RCF- Series

featuring Industry Standard R-410A
Refrigerant
Airflow Capacity
600-1,900 CFM [283-897 L/s]



- Rheem® Indoor Furnace cased coils and replacement uncased coils are designed for use with Rheem outdoor units and are available for vertical upflow or downflow, and horizontal left or horizontal right airflow. When matched with Rheem outdoor units, the coils provide a nominal capacity range from 18,000 BTU/HR [5.24 kW] to 60,000 BTU/HR [17.6 kW].
- Constructed of aluminum fins bonded to internally grooved aluminum tubing.
- Coils are tested at the factory with an extensive refrigerant leak check.
- Coils have copper sweat refrigerant connections.
- Feature two sets of 3/4" [14.1 mm] N.P.T. Condensate drain connections for ease of connection.
- Chatleff metering device connections, at inlet and outlet of TXV or EEV and equalizer connections (TXV only).
- Approved for system application with variety of Rheem outdoor units.
- Condensate drain pan is constructed of high grade, heat resistant, corrosion free thermal-set material.
- Compatible with Germicidal Light System (UV resistant)
- Bi-Directional airflow eliminates the need to switch any internal components from horizontal left to right.
- Unique drain pan design maximizes application flexibility and condensate removal.
- N-Coil design maximizes performance and minimizes height required at installation.
- Coils are AHRI certified for system application with a variety of Rheem outdoor units.

