

<https://www.lamppakuuma.com/vapor-fire-100/>

Kuuma Vapor-Fire 100 Specs

The **EPA Phase 2 Certified**, Kuuma Vapor-Fire 100 is our largest Vapor-Fire wood burning furnace. The wood length is approximately 20" and requires seasoned wood that has an 18-28% moisture content. It has a large 2-speed blower that delivers 500 to 1500 CFM (cubic feet per minute) on demand, controlled by a thermostat. It can stand alone as a central furnace, or be used as an add-on to an existing oil, gas, or electric furnace.

The bonnet opening is 2'x2' and your heat duct outlet should be 180-200 square inches to prevent excess back pressure on the blower system. It gives you a clean, safe, and automatic front to back burn that delivers very even heat for 10-12 hours per load followed by many hours of coals. Even heat output results from the front to back burn principle in our Vapor-Fire wood burning furnace.

A properly installed Vapor-Fire 100 will comfortably heat a home up to 3500 square feet including your basement. It may heat larger homes based on your geographic location and the physical design of your home. The heating capacity will also depend on how well the premises is insulated and if doors and windows provide good seals. A properly installed furnace will require adequate cold air returns – just like any other forced air furnace.

The VF-100 is best installed in a central location in the home or shop to allow for even distribution of warm air via heating ducts. For this reason, VF-100's are often installed in basements or garages.

Dimensions:

50 inches tall

52 ½ inches long – with the blower installed (blower is 18 ¼" long)

36 inches long (without the blower installed)

32 inches wide once air damper box is bolted on

Combustion Chamber: 23" L x 15.5" W x 20" H, 20" wood is ideal

Weight: 675 pounds

Shipping weight: 800 pounds total and ships on 2 pallets. The main pallet weighs 700 pounds and measures 33" wide, 43" deep and 50" tall. Second pallet (blower) weighs 100 pounds and measures 29" wide, 24" deep and 36" tall.

Installation Dimensions:

27 inches wide when off the pallet. It goes through doors and isn't 32 inches until the air damper box is bolted on.

Also, once the fire-box is unloaded removing all the stuff we ship in it, plus removing the fire-brick and cast iron grate – then the furnace only weighs 430 pounds and is much easier to handle than if you think it weighs 675 pounds to



Shipping weight: 800 pounds total and ships on 2 pallets. The main pallet weighs 700 pounds and measures 33" wide, 43" deep and 50" tall. Second pallet (blower) weighs 100 pounds and measures 29" wide, 24" deep and 36" tall.

Installation Dimensions:

27 inches wide when off the pallet. It goes through doors and isn't 32 inches until the air damper box is bolted on.

Also, once the fire-box is unloaded removing all the stuff we ship in it, plus removing the fire-brick and cast iron grate – then the furnace only weighs 430 pounds and is much easier to handle than if you think it weighs 675 pounds to handle. That is a big difference if you want to get it down a stairway.

Installation Video's:

[How to install the Kuuma Vapor-Fire 100 Chimney \(Video Link\)](#)

[How to install the Kuuma Vapor-Fire 100 Ducting \(Video Link\)](#)

[How to install the Kuuma Vapor-Fire 100 Electrical Hook-up \(Video Link\)](#)

Required Clearances:

Side clearance is 6 inches

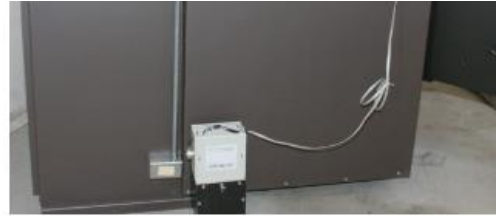
Front clearance is 48 inches

Back or rear clearance between the blower and any obstruction is 12 inches.

The VF-100 will take up to 22" wood and the fire-box can be filled to the top.

The chimney pipe takes a 6" 24 gauge black stove pipe from the furnace throat to the chimney connection. Then the chimney needs to be either masonry/tile lined or class A stainless steel pipe.

The furnace comes with height adjustable legs to allow for leveling the furnace on uneven floors.



Intertek Testing Results

High Burn

1.0 Grams/Hr of Emissions
.02 Grams/MJ of Emissions
99.4% Combustion Efficiency
82.4% Overall Efficiency

Medium Burn

.45 Grams/Hr of Emissions
.01 Grams/MJ of Emissions
98.1% Combustion Efficiency
84.4% Overall Efficiency

Low Burn

.65 Grams/Hr of Emissions
.02 Grams/MJ of Emissions
98.9% Combustion Efficiency

[Product Manual \(PDF\)](#)

[Wiring Instructions \(PDF\)](#)

[Warranty Details \(PDF\)](#)

[VF-100 Sales Flyer \(PDF\)](#)

[Intertek Efficiency and Emissions Testing \(PDF\)](#)

[Vapor Fire 100 EPA Test Report \(PDF\)](#)

[EPA Competitive Comparison \(PDF\)](#)

[Heat Efficiency Paper \(PDF\)](#)



Frequently Asked Questions

What I need to know about the Kuuma Vapor-Fire 100's EPA Phase 2 certification?

We are pleased to advise that the Lamppa Vapor-Fire 100 is EPA certified. Further, it is the only cord-wood warm-air furnace certified to the EPA Phase 2 standard.

We have been working towards the certification for nearly 3 years and have invested several hundred thousand dollars to that end.

What sets us apart is that we chose not to pursue the EPA NSPS Phase 1, which only certified a manufacturer from May 15th, 2017 until May 15th of 2020. Instead, we chose to go immediately after the 2020 Phase 2 emission standard (much harder!), meaning that each certified test burn had to result in emissions below 0.15 pounds of particulate matter per million Btu's of heat generated. Our Vapor-Fire 100 came in 40% below this tougher standard.

But the road to certification was not an easy one. It was a paperwork nightmare and a red tape jungle. It took from October 2016 until October 2017 before we finally received our certificate.

We currently have our Vapor-Fire 200 model cord-wood warm-air furnace sitting at the EPA test lab waiting to be tested also to the Phase 2 standard.

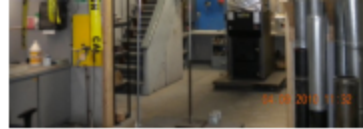
The Lamppa Vapor-Fire 100 currently holds 2 records. It is the cleanest cord-wood furnace the EPA has ever tested and it is the highest efficiency cord-wood furnace every tested. We believe that taking the extra time to get everything right was worth the time and energy invested.

What I need to know about BTU ratings?

A lot of people are mixed up on the BTU's required to heat a home because oil and gas furnaces do not run steady hour after hour. If they did you'd spend \$20,000/yr. to heat a home. As it is some people are spending over \$4000/yr. to heat their homes. They cycle on and off. Your BTU needs are delivered intermittently. If your home is poorly insulated, or if for some reason you let it cool down, your oil and gas furnace would then run steady. Generally, a furnace rated at 100,000 BTU/hr. runs from 1/4 to 1/3 of an hour on the coldest of MN days delivering about 30 to 40,000 BTU's/hr. to maintain a comfortable heat level for your home, i.e. 70 degrees F. Most people feel cool in their homes in between the on and off cycles of the oil and gas furnaces, therefore many people prefer wood heat because it's continuous.

Now, heating a home with our Kuuma Vapor-Fire furnaces is really special because they deliver very even continuous heat hour after hour. They don't smolder the wood and then blast the wood (the two extremes) like other wood furnaces. Instead, its unique automatic draft system avoids these extremes with a continuous front to back burn pattern that allows the user to adjust the burn rate, which in turn varies the BTU output. In mild weather you use a low setting for 15-25,000 BTU's/hr., in moderate weather a medium setting for 25-45,000 BTU's/hr., and in cold weather a high setting for 45-60,000 BTU's / hr. It adjusts simply by turning the knob on the computer from low to high and anywhere in between. Most people never go above the medium setting all winter long.

Keep in mind that all wood has the same # of BTU's per pound. The heavier more dense wood (oak, hickory, maple) have more available BTU's/piece than the lighter less dense wood such as poplar and pine, only because each piece weighs more. Every pound of wood that is 100% dry has approximately 8,600 BTU's /pound. Say for instance your home needed 100,000 BTU's/hr. to heat, it would take 11.6 pounds/hr. of 100% dry wood to heat it. Now, if your wood has a 20% moisture content, each pound of wood has only 6,880 BTU's in it (it's 8600 x .80). Then if your wood furnace is only 80% overall efficient, your BTU's would only be 4,128 BTU's/pound (that's 6,880x.80). This would result in a ridiculous amount of wood, 24.2 pounds/hr., to get the needed 100,000 BTU's/hr. In a 24 hr. period that would mean 576 pounds of wood needed for 100,000 BTU's/hr. after hr. This would result in probably more than 20 cords of wood to heat your home for one winter. It makes more sense to say that most homes in the coldest of weather only use the 30-40,000 BTU's/hr. and probably use 7-10 cords of wood/season to heat their homes. With our Kuuma Vapor-Fire furnaces that are 85% overall efficient and 99% combustion efficient most people use only 3-5 cords of wood to heat their home/season and that's what makes our furnace very special. To top it off we also have the clean burn of less than 1 gr. emissions/hr.



I would like to say how much I have enjoyed my Kuuma Vapor-Fire 100 wood stove that I bought last year (i.e., this is my second heating season). I have heated my entire house with wood heat for 30 out of the last 33 years. I have used two different stoves during that time but the Vapor-Fire 100 is vastly superior to either of these. The stove is more costly but will be well worth the money. There are three major characteristics that I really like. First, its higher efficiency requires less wood to be cut, stacked and burned. Second, it requires virtually no adjustments or stoking between loadings. I live in Tennessee and it does not get extremely cold so I load the stove in the morning when I leave for work and again when I return home. There is almost nothing to do between loadings. I am an engineer and like fiddling with the stove but there is nothing to do. Third, the furnace control system produces a very steady burn. The temperature in the house stays at a very constant temperature (with no interim adjustments) without the high and low swings that occurred with my other stoves. My wife really likes the steady temperatures. Finally (and this should have been first on my list), Daryl and Garrett are fine people and provide very good service. Last fall while I was on vacation, a squirrel fell down my chimney and, while trying to escape, did significant damage to the exposed soft high-temperature insulation at the top of the fire box. I was able to quickly get the replacement insulation and instructions on the best method to complete the repairs. Within a short period of time the stove was back in operation.



John Platfoot
Kingston, TN

Vapor-Fire 100 & 200