



LISTED
Radiant Heating Panel
4UH6

Certified Underwriters
Laboratories Inc & UL 1683



WARM WAVES

FAR INFRARED HEATING FILM FOR RESIDENTIAL AND COMMERCIAL USE



WARMWAVES.COM

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SECTION 1

SUMMARY: WHAT IS WARM WAVES?

Warm Waves is a UL certified, state-of-the-art technology that creates comfortable and consistent heat. It is the most energy efficient way of providing this type of heating system, easy to install, reliable and extremely durable.

Most floor heating solutions involve coils that can be punctured, ruptured and shorted easily and have to be removed completely to identify the compromised area. They also involve intermittent heat, leaving some areas out in the cold. Warm Waves film heats evenly across the entire surface.

Warm Waves is a cost effective and efficient heating solution for a wide variety of applications: bathrooms, under floors, carpet, concrete etc.

Performance Benefits

- 20% to 30% more efficient than competitors
- Controlled by any line voltage thermostat
- Unlimited size of installation area



SECTION 2

HOW DOES WARM WAVES WORK?

Every object emits Infrared energy. When an object has a higher temperature than its surroundings, the infrared light it emits will warm nearby objects. This is also called “indirect” heating.

Far-infrared is the most efficient and healthy way to heat people and objects. As with the sun, Warm Waves film heats surfaces, which in turn heat floors, walls and the objects contained within a space. It uses only safe and known healthy “invisible light” at wavelengths in the 7,500 to 10,000 nm (7.5 to 10 micrometer) region; this region in the spectrum is also called “Far- or Therapeutic infrared.”



Besides the immediate effect of warming the people in the space, Warm Waves far-infrared operates at a part of the spectrum that allows it to travel through the floor and heat other surfaces. So when doors or windows are open, the warmth does not escape, but stays in the floor and objects. Within seconds or minutes of closing the door or window, the space becomes warm again. Unlike with traditional heating, there are no transportation or “duct losses,” no conversion losses or air-flow losses. All stored energy can be used.

Since Warm Waves is able to store heat energy at night (and other times when the rates are lower) and release this energy during the day, it’s a very energy efficient and cost-effective solution.



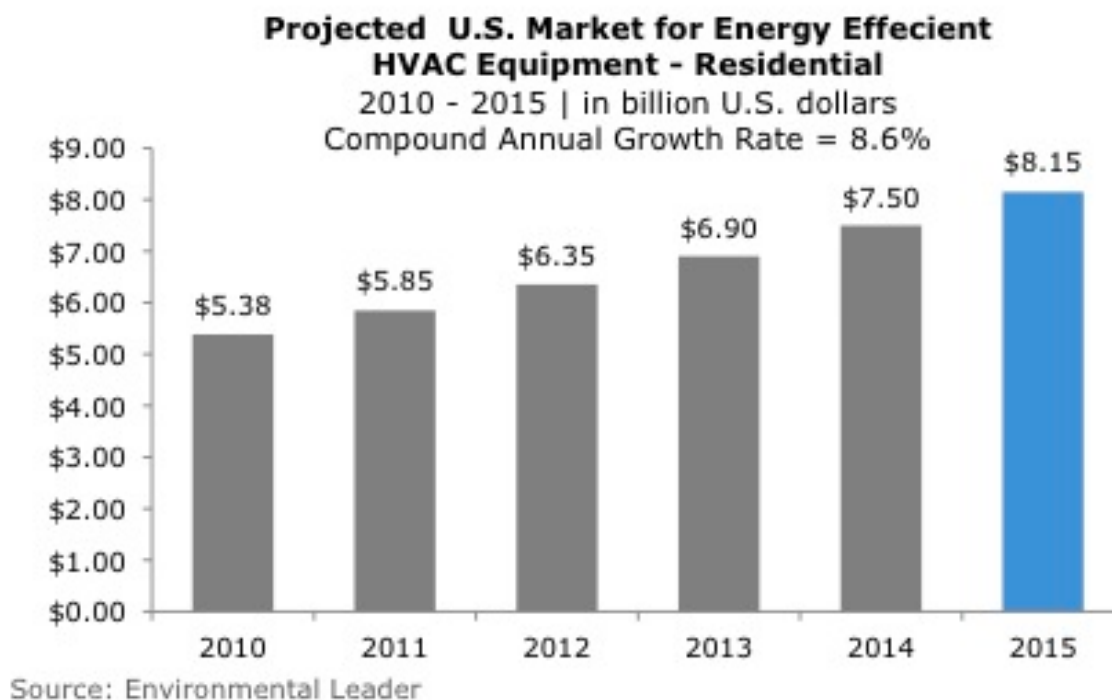
SECTION 3

WHAT ARE THE POTENTIAL USES FOR WARM WAVES HEATING FILM?

Warm Waves developed this exceptional and effective technology for United States and Canada. Below are the summaries of the current in-floor heating market opportunities:

U.S. Energy Efficient HVAC Equipment

- In floor heat as primary heat is a \$6.35 billion industry.
- Total Accessible Market (TAM), high performance radiant heating market is \$900 million.
- Poor performance of conventional mechanical systems is a known.
- Far-infrared heat is 20% to 30% more efficient than hydronic heat depending on the fuel source. Warm Waves can be much more efficient when compared to lower tiered options.



U.S. Bathrooms and Kitchens

- Infloor heat in U.S. bathrooms and kitchens is a \$460 million industry.
- Total Accessible Market (TAM) is estimated to be \$110 million.
- 85% of installs are wire resistant.
- Other resistant wire systems have hot spots and are not installation friendly. The wire function used to warm the floor does not heat the room; it is floor warming only.
- Warm Waves infrared heat is far superior to resistant, wired systems at the same cost.

Warm Waves reduces cost of BTU output allowing for better ROI (desired properties at a much lower cost) 13 Watts per square foot.

Using simple math, 13 watts of electricity creates 44 BTU's of heat. This is not a theory but a fact. If Warm Waves infrared were blocked, it would be the same as resistant wire heat. Hence, the electricity consumed would equal the same amount of heat.

The difference is the infrared effect. The best way to describe how it works is to think of it like an echo. Once the infrared is released, it is absorbed by all the parts of the room and then released again and again. The energy is then compounded, which evens out the temperature and essentially turns the room into a heater. Consequently, this causes less energy to be used in order to maintain the same temperature.



SECTION 4

EFFICIENCY AND COST COMPARISONS

Performance of Warm Waves Far-Infrared Heating vs. Other Systems

1 KW of electrical energy produces 3412 BTUs. Warm Waves, like any electric heater, converts 100% of the energy into heat, but with less heat loss.

A baseboard heater, for instance, converts a 100% of the energy into heat, but is only 30-40% efficient (60-70% convection losses), and the coils or elements burn out every 3-5 years from heavy use.

A forced air system has a starting efficiency of approximately 60-95% depending on the type of heater (straight transfer of hot gasses or secondary heat exchanger). Even a 95% efficient heater suffers from duct loss and ventilation requirements, and results in typically 35% efficiency because it only heats the air and not the objects or people in the space. In addition, unless the floor is warm, people are still cold when the room is 75 or 80 degrees.

A good “hydronic” (in-floor) system can approach the efficiency of Warm Waves if it is geothermal, but geothermal is very expensive and won’t work at all temperatures. A fuel based hydronic system will not compete in efficiency; in many cases it needs our panels as a supplement.

Warm Waves has an efficiency of approximately 70%, meaning that 70% of the energy supplied is converted into usable heat. As with all other types of heating or heating products, energy may still be lost as a result of heat loss through doors, poor windows, or connecting slabs, etc.



HOW DOES WARM WAVES COMPARE TO HYDRONIC HEAT?

Hydronic heat has been the industry standard for years for primary floor heating. It is a high cost, high maintenance system to install and maintain. Some deficiencies in the hydronic system include:

- There are potential points of catastrophic failure.
- There are multiple pumps, boilers and pipes.
- All components rely on each other in a system.
- Each system is unique and its value is based on the engineering and quality of the designer installer and products specified.
- The system can take weeks to balance.
- The model involves load calculations and random zoning requirements.
- The size of zones is limited to 300 feet or less. The potential for failure only increases with size.
- The boilers, pumps, etc. take up a lot of space within the structure.
- The system can only be zoned with multiple pumps valves and controls.



HOW DOES WARM WAVES COMPARE TO ELECTRIC RESISTANT WIRE SYSTEMS?

An electric resistant wire heating system can be used as a replacement to hydronic systems in small markets, but it has its challenges as well:

- It is tedious to install.
- The biggest problem is nicking the wire and causing an electrical shortage.
- Some companies require an alarm to be installed during the installation of wires.
- This is comforting until the wire is embedded and does not work.
- The system requires raised floor heights to incorporate the large wire.
- The system creates hot spots that are unacceptable and uncomfortable.



- The type of heat is resistant and conducts heat through a mass. There are no infrared benefits and some systems release an electromagnetic field.

HOW DOES WARM WAVES INFLOOR HEATING FILM COMPARE IN EFFECTIVENESS?

- Warm Waves heating film adapts to any size installation.
- Enables previously unachievable efficiency.
- Increases reliability, wear/stress and longevity.
- Reduces all routine maintenance issues.
- Provides superior zoning for all residential and commercial applications.
- Reduces planning to minutes instead of months.

Forced Air	Loss	Efficiency	Net Total
Older Furnace		58%	0.58
Average Blower		88%	0.52
Duct Losses Average	50%	50%	0.26
Air rising to the ceiling and escaping through doors when opened	35%	65%	0.17
System efficiency at identical building heat losses			16.59%

Electric	Loss	Efficiency	Net Total
Baseboard		100%	1
Surround		99%	0.99
Convection Losses	60%	40%	0.4
Air rising to the ceiling and escaping through doors when opened	35%	65%	0.26
System efficiency at identical building heat losses			25.74%

Forced Air	Loss	Efficiency	Net Total
Best Furnace		97%	0.97
Best Blower		93%	0.9
Duct Losses at Best	18%	82%	0.74
Air rising to the ceiling and escaping through doors when opened	35%	65%	0.48
System efficiency at identical building heat losses			48.08%



Hydronic Base	Loss	Efficiency	Net Total
Fuel Boiler		90%	0.9
Pumps		90%	0.81
Hose Run Losses	15%	85%	0.69
Air rising to the ceiling and escaping through doors when opened	25%	75%	0.52
System efficiency at identical building heat losses			51.64%

All Comparisons of Efficiency	Summary
Older Furnace Forced Air	17%
Baseboard	26%
Best Furnace Forced Air	58%
Hydronic Base	52%
Warm Waves	70%



SECTION 6

ITEMS AND ORDERING LIST



OJ Programmable Thermostat

- Simple user interface and thoughtful installation design
- Pre-programmed for quick set-up
- Monitored energy consumption
- Simple operation – no need for manual
- Multi voltage: 120 – 240 V (incl.208 V)
- Output relay: 15 A
- Large back-lit display for easy reading
- UDG: single thermostat for all applications (room, floor, room with floor limitation and as regulator)
- Class A GFCI for wet room installation



Honeywell Programmable Thermostat

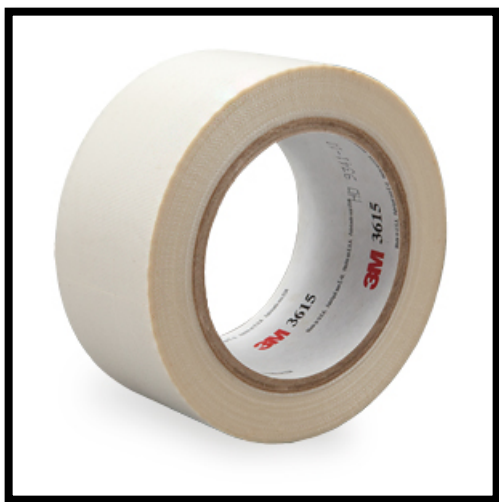
- Programmable floor sensing thermostat
- Built-in GFCI with test light
- Easy to operate and install
- 120V or 240V
- Output relay 15AMP





Power Module with GFCI

- Master thermostat with a dual voltage power module
- GFCI, 5mA, 15AMP
- 120V or 240V



3M Glass Cloth Tape

- Helps insulate and protect against high temperatures and/or flame
- Provides solvent and abrasion resistance
- High tensile strength for splicing materials with low internal strength
- Conforms to many irregular surfaces



End Seal Tape

- End seal tape is available in rolls 50' long, 4" and 6" wide
- Easy to work with and extremely flexible
- Never loses its adhesion
- Used for covering both ends of the film





Synthetic Cork Underlayment

- Enhances heat insulation along with increasing proper heat distribution
- Can be used with thinset as an underlayment



PREFERRED LIST PRICE – PARTS AND ACCESSORIES

ITEM	PART NUMBER	PRICE
Warm Waves Heating Film:		
WWF13NW 530 square feet	WWF13NW	\$6,000
WWF13GNW 530 square feet	WWF13GNW	\$7,200
WWF13NW 250 square feet	WWF13NW	\$3,600
WWF13GNW 250 square feet	WWF13GNW	\$3,800
WWF13NW 100 square feet	WWF13NW	\$1,350
WWF13GNW 100 square feet	WWF13GNW	\$1,450
OJ Thermostats:		
120V-240V 5 MA	ADG-4999	\$179
Honeywell Thermostats:		
120V-240V 5 MA	TH I 15-AF-GA/U	\$194
Non-Program. 120V 5 MA	TH I 14-AF-120GA	\$162
Non-Program. 240V 5 MA	TH I 14-AF-240GA	\$162
Honeywell Slave Units:		
Slave 5 MA	CT230-GA/U	\$136
Honeywell Master Units:		
Master	TH I 15-AF-12VDC	\$175
Tapes:		
End Seal Tape 4" x 50	WW-EST 50-4	\$51
End Seal Tape 6" x 50'	WW-EST 50-6	\$72
3M Glass Cloth Electrical Tape	WW-GC-66	\$36



SECTION 7

FREQUENTLY ASKED QUESTIONS AND ADDITIONAL INFORMATION

Warm Waves heat film is a cost effective, high quality heating solution for any structure or situation.

Warm Waves radiant heating system costs 20-30% less to operate than traditional heating methods, and is healthier for you and your family.

Easily installed under any type of flooring, Warm Waves is completely ductless, completely zonable and completely maintenance free.

This far-infrared heating technology is highly efficient and effective. It does not waste energy heating the air in a room, but directly heats the objects in the room, including you.

How Warm Waves Works

Warm Waves generates heat through an electric current, creating natural far-infrared heat rays that distribute heat safely and evenly.

Warm Waves provides a healthier breathing atmosphere by not circulating dust or air pollutants. With no moving parts, Warm Waves is a permanent, maintenance-free heating solution.

Installed under flooring and completely concealed, Warm Waves does not waste valuable wall space with unattractive heating equipment or ductwork, and eliminates any exposure to hot or sharp surfaces that can be dangerous or unsightly.

Warm Waves Efficiency

Warm Waves heats the space the same way the sun heats the Earth — the objects in the room absorb the heat. By not unnecessarily heating the air in the room, Warm Waves dramatically reduces wasted power. It allows for lower thermostat settings than traditional heating methods require while providing the same comfort level. Ceiling height does not affect the heating performance; the living space will be warm and comfortable even in rooms with high or vaulted ceilings.



Create Heat Zones with Warm Waves

Warm Waves is controlled with any line-load thermostat, allowing for complete zonability. By installing multiple thermostats for different rooms, or for different areas within the same room, Warm Waves creates heat only where it is needed. During the day, a bedroom could remain at 50°F while a home office is kept at 72°F without closing vents or readjusting dampers. In an office setting, each cubicle could have its own thermostat, providing the perfect work environment for every individual.

Warm Waves Creates Healthy Environments

Warm Waves is a ductless heating system so it does not circulate dust or air pollutants and is completely silent. The far-infrared rays naturally and safely prevent bacteria growth as well as eliminate mold and odors.

Warm Waves is completely concealed, providing even heat and removing unsafe or unsightly heating elements. Warm Waves uses extremely low electrical amperage and is water resistant, making it the safest electrical heating system on the market.

Warm Waves Is Easy to Install

Installing Warm Waves is easier and less expensive than any other radiant heating system. Measure the room; cut and place the Warm Waves material; connect the electrical wires. Since there are no expensive boilers or ductwork necessary, Warm Waves cuts installation time up to 90% when compared with traditional heating systems.

Warm Waves Is Durable

Warm Waves is extremely thin and durable. Unlike other electric infloor heating products, Warm Waves fibers will not easily break during installation, and are sealed in their own moisture-protected barrier. Warm Waves solid-state technology has no moving parts to wear out — it is completely maintenance free. Manufactured under ISO 9001 Certified processes, Warm Waves ensures consistent quality in every roll. It has been tested and certified by UL.

What type of flooring can be installed over Warm Waves?

Any type of floating floor can be installed over Warm Waves, including engineered hardwood, laminates, vinyl, tile and carpeting. Of the most common flooring types in use today, the only non-suitable type is nail-down hardwood flooring due to the risk of nails penetrating the film's surface. If Sleepers are used that can protect from nail penetration, Warm Waves is the solution.



How does Warm Waves compare to a standard forced air furnace system?

Standard furnace systems use ductwork and forced air to transmit heat. Warm Waves is a much more efficient system. Since hot air rises, forced air systems need to create a convection current throughout a room in order to move the hot air from where it wants to go (the ceiling) to where you want it to be (heating you). This convection current means that the hot air travels in a circular pattern around the walls, ceilings and floors of an area, which leads to tremendous inefficiencies overall, particularly in rooms or spaces with higher than normal ceilings.

Warm Waves works more efficiently by heating the objects in the room, not the air. By the time the heat reaches the ceiling of your room, you are already done using it.

How does Warm Waves compare to hydronic (water-based) radiant heating systems?

Warm Waves is much easier to install than hydronic systems, has no moving parts that require maintenance, and doesn't require expensive boiler systems. Warm Waves provides a much more consistent heat, and significantly reduces the number of hot and cold spots in the floor after installation. For whole house installations of Warm Waves and hydronic systems, the yearly operating costs are similar, but the Warm Waves installation does not have any expensive maintenance costs. Warm Waves systems also have a longer expected lifespan than most hydronic systems.

How does Warm Waves compare to wire-based radiant heating systems?

Warm Waves is more durable, easier to install, more powerful, less expensive, and has fewer hot and cold spots than wire-based radiant heating systems. Warm Waves also provides the ability to easily direct the heating rays upward with the use of a radiant heat barrier, which means that you are not paying for heat that you are not using.

How does Warm Waves compare to wire heating systems?

The heating wires used by many under floor heating systems can create many problems. The wires can be nicked or cut during installation and handling. For this reason, many wired systems require you to purchase an "alarm system" to detect cut wires, which adds to the expense to install the system. Also, wired heating systems degrade over time due to their resistance. Wires rely on the conduction of heat through thin set and tile under which they are installed.



Many tile types do not conduct heat well and the result is a noticeable variation in temperature on the floor being heated. Warm Waves film will not degrade over time. The design of the film allows for distributed heat across the entire floor surface eliminating hot and cold areas.

How powerful is Warm Waves?

Warm Waves is a very powerful under floor heating system at 140 watts per square meter (13 watts per square foot). The more powerful the heater, the quicker the flooring surface warms and the less time the power needs to be supplied to the film.

Can I use Warm Waves for heating my whole house, or should I just install it in areas that need extra heat?

The simple answer is both. Warm Waves is powerful enough to be used to heat an entire home, and flexible enough to be installed in any area where supplemental heat is desired.

How warm does the floor get when heated with Warm Waves?

When fully powered and allowed to reach its maximum temperature, Warm Waves reaches approximately 104° F. In practice, however, the thermostat attached to the Warm Waves will limit the temperature to your preferred setting and simply cycle the film off and on to maintain your desired temperature. Even though lower maximum heat values lead to a much more energy efficient system, this principle has not been used in conventional heating systems due to the power necessary to start the system.

How fast does Warm Waves heat up?

Warm Waves heat film reaches its maximum temperature within minutes. Because there are no moving parts in the heating system, there is no ramp-up time required. How fast the top of the finished flooring will heat up is a function of the density of the flooring material as well as the properties of the insulating material installed with Warm Waves.

Is Warm Waves zonable?

Warm Waves is the most zonable heating product on the market today. You could separate zones into 1.4 square feet sections if you chose to with no special concerns — the only thing that would be different from a standard installation would be the number of thermostats. Because of this inherent flexibility, Warm Waves allows heating solutions never possible before, such as having each member of your office able to set the desired temperature in his or her office cubicle.



Tell me about the thermostat.

A Warm Waves installation uses a Dual Input Thermostat, which provides control from both a floor sensor and from the ambient air temperature.

- Floor temperature can be limited in this fashion
- Room temperature can be controlled at a comfortable setting
- “A/F Mode” controls the floor and room temperature together.

Will I get hot and cold spots with Warm Waves like I will with other kinds of radiant heat?

Unlike other radiant heating systems, Warm Waves' creates a consistent heating temperature across the surface. The density of the finish flooring will also play a part in the overall surface temperature — the denser the material, the more heat it will absorb and the more even your heating will be.

My HVAC professional told me that I should plan on having about 9 Watts per square foot of heating in my house. Can Warm Waves do this?

Absolutely. The rule of thumb is to multiply the square footage of the area by 0.75. Since Warm Waves provides 13 Watts per square foot where installed, it provides 10.5 Watts per square foot over the entirety of the area ($13 \times 0.75 = 9.75$). (See Installation Manual)

How does Warm Waves work with non-rigid flooring types (e.g. carpeting, vinyl floors, etc)? Won't it get crushed?

Installation of Warm Waves under non-rigid flooring is as simple as installing a rigid surface between the Warm Waves and the flooring itself in order to spread the weight on the floor evenly. Plywood, high-density fiberboard (Hardboard) or a similar product can be used. (See Installation Manual)

Is there anything special I should think about before installing Warm Waves under carpet?

For carpet installations, you will need a rigid surface between the carpet pad and your Warm Waves (see non-rigid FAQ entry). In addition, the efficiency of your Warm Waves system will be greatly enhanced by selecting carpeting and carpet padding designed for radiant heat systems, since those types of floor coverings are designed to allow heat to pass through them without trapping the heat with the carpet or the pad. (See Installation Manual)

How do I install Warm Waves under ceramic tile?

There are a few different ways to install Warm Waves under standard ceramic tile flooring. You can install the cement board first, then Warm Waves, then proceed with a standard tile installation. Another option is to install the underlayment and Warm Waves, and then cover with a self-leveling masonry product that will provide a solid surface for your tile installation. (See Installation Manual)

What is the maximum area that Warm Waves can be installed in?

When properly installed, there is no limit to the area suitable for Warm Waves installation. For large areas, the thermostats' supply power and configuration will be the only limiting factor for the size of the area. For a basic understanding you can install up to 240 sf. on a 240v circuit, and 120 sf. on a 120v circuit. On a single thermostat you can install 2400 SF on 240v circuit based on a modified configuration. For specific details please review the installation manual.

How much Warm Waves will I need?

The amount of Warm Waves you will need to install depends on the goal of the system. When used as a standalone heat source, the rule of thumb is the number of square feet in an area multiplied by 0.75. For example, in a 20 ft x 10 ft family room, you should plan on installing 150 square feet of Warm Waves ($20 \times 10 \times 0.75 = 150$). Warm Waves should not be installed under permanent fixtures, such as cabinets; as such installation could lead to a localized high-temperature area. (See Installation Manual)

Can anyone install the film?

Due to the complexity of the interactions between the necessary components of any heating system, we recommend that a qualified professional perform all Warm Waves installations to ensure that your heating system is properly sized and installed for your environment. (See Installation Manual)

How long does it take to install Warm Waves?

Since every building is different, installation time varies from project to project. However, we have found that on average, an experienced installer can install between 1000 – 1500 square feet easily in one day.

Is it possible to install Warm Waves over existing flooring?



If you treat your old floor the same way you would treat a standard subfloor material, you can install Warm Waves over existing flooring. Install the underlayment over the top of the old floor and then continuing installation as normal, finishing the installation with your new flooring material. (See Installation Manual)

Is it possible to install Warm Waves anywhere other than the floor?

In addition to standard under-floor installations, Warm Waves can be installed under walls, above ceilings, and even inside poured concrete. (See Installation Manual)

What if I find a new place or method for installing Warm Waves that is not included in the installation instructions?

Please tell us about it. We will perform extensive testing of your method or place to ensure that it meets our strict quality standards, and if possible, add it to the installation instructions to inform other customers. In order to maintain the quality reputation of Warm Waves, we do need to conduct the testing prior to qualifying the installation for the warranty. Warm Waves is flexible enough to meet all kinds of heating needs, and we believe in your creativity.

How does Warm Waves work?

Electrical current is passed from your main electrical box into a thermostat controller unit that monitors either ambient or floor (or both) temperature. If the temperature is less than the temperature setting on the thermostat, power is supplied to the Warm Waves installation, where the electricity is passed into the copper bus bars on the sides of the film. From the bus bars, the electricity passes over the heating element, generating far infrared rays, which we feel as heat.

Is Warm Waves safe?

Warm Waves is one of the safest overall heating systems on the market that is also UL approved. Due to its low maximum temperature output, there is no danger of burning yourself on any part of the system. Its design and installation method, emphasis on maintaining steady heat with low amperage, and its inherent moisture resistance prevent most common electrical concerns. Manufactured under strict ISO 9001 quality controls and inspected quarterly by third parties, all Warm Waves products have human safety and comfort as their number one priority. UL (Underwriter's Laboratories) has tested Warm Waves extensively and the product is certified under Standard UL 1683.

Can Warm Waves be powered by solar panels?



Warm Waves can be powered by solar panels as easily as the rest of the electrical equipment in your home. Simply attach the Warm Waves system leads to a circuit powered by your solar panels and enjoy warmth with no costs and no fossil fuels. As always, please consult a qualified electrician for details.

Do I have the right kind of electrical system for Warm Waves?

Warm Waves is available for both 120V and 240V electrical systems, and the number of circuit breakers needed will be determined by the total installed area of Warm Waves. As with any electrical system, please consult a qualified electrician for advice on your specific situation. (See Installation Manual)

How thin is Warm Waves?

Warm Waves is paper thin at 0.3 mm, eliminating any issues that may arise from raised flooring.

What are Far Infrared Rays?

Infrared light is part of the Sun's invisible spectrum and since it can't be seen, it is experienced as heat. One of Far Infrared light's characteristics is the ability to easily penetrate your skin, giving you that wonderful natural warmth. When this happens, it creates a natural resonance, which has many beneficial properties including muscle relaxation and increased circulation. Far Infrared heat is completely healthy and safe for all living things.

How will I cool my house without ductwork? Won't I have to install ducts anyway?

We recommend pairing Warm Waves with a ductless air conditioning system, which have greatly matured in the past few years. Due to their high efficiency ratings and ductless technology leading to a healthier lifestyle, they are an excellent complement to a Warm Waves heating system.

Does Warm Waves offer a warranty?

Warm Waves offers a 10-year limited warranty for installations performed in accordance with the installation instructions. For all intents and purposes, however, once Warm Waves is working in your home, you shouldn't need to worry about any maintenance or replacement costs for many, many years. (See Installation Manual)



What is the structure of Warm Waves?

Far infrared heat is generated from fiber mats that are attached to contact bus bars connected to copper electrical strips. The copper provides superior electrical current transmission while preventing arcing at contact points. The components are then completely sealed between two plastic sheets of PET film. Similar to soda bottle material, the film is thin, transparent and very durable.

Part	Function	Material	Production Standard
Insulating	Base Film	PET	Insulation and Moisture Barrier
	Laminating Film		
Heating	Conduction	Proprietary	Maintaining resistance, even print surface
Conductive	Bus Bar	Copper	Maintaining conductivity and adhesion
	Connecting		

Electrical Specifications of Warm Waves

240 volt, 13 watt: Draws less than .061 amps per square foot and delivers 14 watts of heat per square foot

120 volt, 13 watt: Draws less than .125 amps per square foot and delivers 14 watts of heat per square foot (See Installation Manual)

Dimensions of Warm Waves

537 square feet per roll

W: 100 cm (40 in)

L: 50 m (164 ft)

0.3 mm Thick

Applications for Warm Waves

Warm Waves is very versatile and has been used in multiple applications in homes, commercial buildings, vacation homes / cabins, trailers, and outbuildings.

Under Flooring: Warm Waves installed under floating floors provides even, silent and efficient heat throughout the room. (See Installation Manual)



Greenhouses: Warm Waves provides the perfect warm climate for your plants while promoting plant growth with Biogenetic rays. (See Installation Manual)

Countertops: Countertops become warming plates when Warm Waves is installed underneath. (See Installation Manual)

Concrete: Garages and warehouses can be cozy and comfortable when Warm Waves is installed directly in the concrete for almost any concrete application. (See Installation Manual)

Recreational Vehicles/ Trailers: Warm Waves is the only real solution for heating an RV or trailer. Nothing can compare to its efficiency and comfort. (See Installation Manual)



CONTACT US

If you're interested in learning more about Warm Waves heat film and its industrial, commercial and residential applications, please contact us at the numbers below.

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