

INFRARED

heating guide

ecological, energy-saving and comfortable heating



What Is Infrared Heating?

Infrared heating works by providing electromagnetic radiation with wavelengths between 780 nm and 1 mm that is invisible to the eye.

Heating by infrared rays has existed since the creation of the earth. Our biggest source of infrared heating is of course the sun, which can feel warm on your skin even in a freezing winter. Whether you feel warm or cold does not always depend on the temperature of the surrounding air. For example, snowboarders and skiers do not freeze even in extremely cold, but sunny, air.

The same principle applies to infrared heating for your home. Our infrared panels radiate their heat onto all objects in the space in very much the same way the sun would. When infrared waves touch a surface, heat energy is released regardless of the surrounding air temperature. Most objects absorb infrared heat and then slowly release it back into the space. The same goes for people.

How Infrared Heating Works

Infrared rays do not heat the air, but target directly objects, persons and materials in their immediate surroundings: walls, ceilings, floors, furniture, and people. Warm walls, ceiling and floor ensure a perfect thermal comfort that can not be achieved with conventional convection heat.

Infrared heating works efficiently: no energy is wasted heating the air!

Furthermore, infrared heating is a healthy, natural and comfortable way of heating: infrared rays penetrate deep into the body, just like the infrared radiations from the sun. It basically feels like sunlight, but indoors! Infrared heating has long been used in medical applications such as physiotherapy to improve rehabilitation.

Infrared heating: long waves and short waves

Short and medium-infrared waves are generated by patio heaters, whereas long waves are generated by infrared panels. Long waves are invisible.

Only rays between 0.75 and 14 microns produce heat. Especially effective is the radiation between 6 and 14 microns (IR-radiation). Tests show that our infrared heating panels produce 99.82% of rays in this particular range. Our panels are equipped with a unique reflector technology that spreads IR radiation all around. An optimal surface for heat production, produced with a low to very low electrical power.

Why should I use infrared heating?

Infrared provides warm, non-drying heat. It is as close to the natural effect of the sun without the harmful UV rays.



It heats the objects and you in a highly energy-efficient manner. The heaters can provide heat when and where you need it in a zone, on an individual thermostat or controller. They can also be used to heat your entire home. Zone heating is especially effective in limiting overall heating costs. There's no need to heat an entire home if you only use a couple rooms at certain times of the day. Infrared heating designed by zone, allows you to heat the rooms you need.

- The operating costs for infrared heating are especially lower compared to other methods of home or space heating.
- The heaters can be a picture, a beautiful works of art or plain panels placed on walls or your ceiling.
- Infralia heating panels are very low maintenance with no filters or exhaust/ducts to keep clean.
- They are very durable with a life expectancy exceeding 100.000 hours.
- The heating panels can be controlled individually or with intelligent wireless controls.

Infrared panels as energy-saving heating

High efficiency for low power consumption

Electric heating absorbs a lot of energy. Consumption is high, the efficiency remains low. Moreover, the feeling of comfort and quality is often substandard.

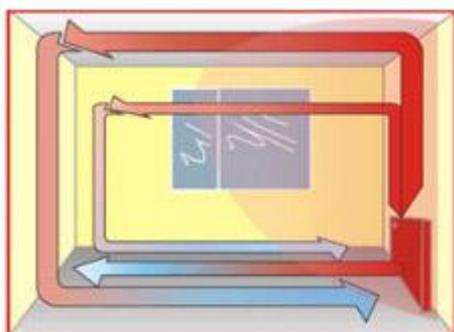
Except for infrared panels. Infrared heating panels also work on electricity, but heating with infrared rays do not heat the air.

Infrared panels are energy efficient because of the way they work. The rays act directly on the objects, materials and people in the room. They offer high efficiency for low energy consumption.

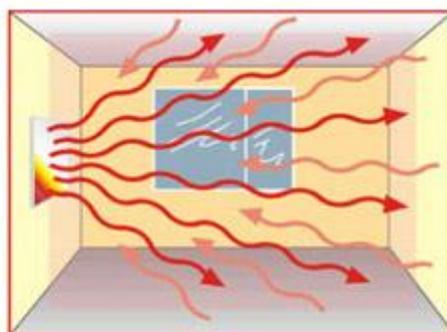
How do infrared panels work?

A classic convection heater heats initially circulating air. Our infrared heating panels first people and objects, not the air around it. Infrared rays heat up the skin in a short time, and that warm glow goes through the blood circulation around the body. So you feel pretty soon a comfortable warmth while the surrounding air can be cooler.

This illustration shows the difference between conventional and convection heat infrared heater:



Heating path via a conventional (convection) heating system



Heat Distribution from Infrared Heater Panel

Infrared in nature

The best example of infrared in nature, is the sun. The infrared rays from the sun penetrate deep into us and give a warm feeling, regardless of the ambient temperature. Therefore, we can often ski in a T-shirt one schnapps drink on a terrace, while still only -5°C outside. And for the same reason you get the home or office, even in cold areas quickly warm. With low consumption.

Design Infrared Heaters

The wide range of Infralia design infrared heaters offers plenty of options for every design interior. In addition to the standard models of wall or ceiling heating, there is also the option to personalize with your own visual motif, such as a photo, artwork or logo.

The possibilities are numerous, which means you can make your Infrared heating panel an eye-catching feature in your home, or make it so that no one would ever suspect that the lovely picture or the beautiful artwork also functions as a heating panel.

The panel is easily mounted to the wall and can be connected to the electricity with a plug socket. Suppose you want to use the heating panel in another room then this can be done quite easy. You can also change the coating film on the panel so you can completely redesign your heating panel.

Design Infrared Heaters : not just a pretty picture

The different models combine functionality with design. For companies it can be a fun way to integrate their logo in their interior and boost their ecological reputation at the same time.

There are also very practical solutions: a whiteboard in your kitchen or office can be a heating panel for example.



How safe are the infrared panels?

Looking for safe electric heating? Then the Infralia infrared heating panels are for you. Not only are they safe, they are also energy efficient and can be integrated almost invisibly into your interior.

Infrared waves have nothing to do with microwaves, UV-rays or X-rays. They are sent out by each object that has a temperature above the absolute minimum (-273 ° C). This includes the human body.

The waves travel through the air or space and continue to do so until they reach an object or a body that will absorb them and release them again.

Infrared waves are divided into three sections: IR-A (short wave) IR-B (medium wave) and IR-C (long wave). The Alpina infrared panels provide only IR-C radiation with a wavelength of 10,000 nm. That wavelength is one hundred percent safe for humans and animal and has additional health benefits.

Safe for children and pets

A panel operating at full capacity has a warm surface, but not to the extent that a child, adult or pet could get burnt by touching it. Nor will other materials catch fire from it. So it is perfectly possible to hang a towel dryer near or over an infrared panel.

Finally, an electric infrared heating system produces no carbon monoxide (CO), which eliminates any chance of poisoning.

Energy efficient and environmentally friendly

Over the years, ecological heating has become an interesting option when deciding on the heating system for the home or office. Naturally, two factors play a decisive role in this choice: Does it minimise harm to the environment? Is it affordable? Until recently, this was a no-win scenario: either there was ecological pollution from combustion or the truly ecological options were unaffordable.

With infrared heating a new era has dawned. The biggest difference is that, instead of heating the air, the objects and people in the room are heated directly.

This heating is achieved with infrared rays, the same rays that the sun uses to heat the earth. This way of heating requires much less energy than traditional ways of heating.

The benefits of infrared heating are:

- 50% less usage than traditional methods of heating
- optimal and fast heat distribution
- constant room temperature
- each panel consists of 100% recyclable materials
- infrared heating is sustainable energy

Cost Infrared heating



What about the costs? With infrared heating via heating panels, you only pay for the panel, which you can easily install using a plug socket.

You therefore save a lot on the installation of a pipe system, which is required for conventional central heating. Moreover, this electric panel heater consumes much less electricity than a conventional electric heater that heats air.

The infrared radiation is pleasant and comfortable and does not dry out like other electric heaters.

Infrared Heater Health Benefits

Is infrared heating healthy? This is a common question when choosing the right heater. And the answer is 'Yes'. Infrared heating works on infrared radiation. Just like the infrared radiation from the sun, the Infralia infrared panels have a positive and healthy effect on humans and animals. It is a very pleasant way of heating that basically feels like sunlight, but indoors.

Infrared heating has long been used in medical applications such as physiotherapy to improve rehabilitation. Infrared radiation can be especially useful in cases of muscle aches and joint pains in reducing the pain and speeding up the recovery process. But infrared radiation can also be beneficial for the common cold.

Infrared Heating and air quality

In a healthy environment air quality plays an important role: both humidity and the presence of dust and mites particularly affect the quality of the air. Unlike conventional heating, which heats the air with radiators, infrared panels heat the objects (such as walls, furniture and ceilings).

When heating with infrared panels there is no circulation of dust and dust mites, which has a very positive effect on the respiratory tract. It also does not affect the humidity of the air, contributing significantly to health and comfort. Air that is too dry can irritate the respiratory tract and mucous membranes.

However, it is not the damp itself that makes people sick. Moisture promotes the growth of mould and dust mites. These can cause asthma and bronchitis in people who are predisposed to these conditions.

Dust mites can also cause eczema. Residents of damp homes are more likely to develop colds, bronchitis and asthma. Damp housing does not cause arthritis, but rheumatism may be exacerbated in cold, damp homes.

A healthy indoor humidity is between 50-60% at a temperature of 18-22°C. For optimum living hygiene relative humidity should be around 50%. Humidity below 40% is too dry, 65% is too moist. Not only do human beings benefit from good humidity levels, but so do animals, plants, furniture, flooring and musical instruments.

Infrared heating by Infralia positively contributes to a good balance of temperature and humidity and therefore a comfortable living environment.

- completely silent and odourless operation
- absolutely fireproof because the unit does not heat up
- no risk of CO poisoning
- no dust circulation (good for asthmatics, people with contact lenses or allergies)
- stable humidity (good for those who suffer from rheumatism)
- infrared heat is often used in medicine because of its healing properties

How Efficient Is Infrared Heating ?

A 600 watt infrared panel will generally heat about the same area as a 1500 watt traditional space heater with convection heat. That's a savings of about 60%!

The Infralia infrared heating panel has a rated life expectancy of more than 30 years. The consumer will likely purchase several replacement space heaters over the same period of time. Also, infralia does not require the use of humidifiers to maintain comfort, another savings.

Infralia can be used for zone heating an entire home. If the consumer gets up in the morning, goes in the bathroom, then the kitchen, ... before leaving for the day, there is no need to heat an entire home.

Infrared Heating Panels Calculator

Below is a list of the required power (watts) per square meter to help you choose the most appropriate panel size, number and capacity. Feel free to [contact us](#). We'll be happy to guide you to choose the right kind of heating panels for your specific situation.

Homes		Poorly insulated	Well insulated
	Recommended temperature °C	Required Watts per m ²	Required Watts per m ²
Living room	22°C	85 Watt	75 Watt
Bedroom	18 °C	70 Watt	60 Watt
Kitchen	20°C	77 Watt	70 Watt
Study room	22°C	85 Watt	75 Watt
Bathroom	24°C	93 Watt	85 Watt
Offices/work space		Non-insulated – Watt per m ²	Insulated – Watt per m ²
Office	22°C	95 Watt	85 Watt
Front desk	22°C	95 Watt	85 Watt
Shop	18°C	90 Watt	80 Watt

- To calculate the total amount of watts needed, it is necessary for the heat to be well-spread and well-devided. The goal is thus to divide the total energy capacity into smaller elements (several panels) in order to heat up the overall space.

- An extra 15% should be added for old or poorly insulated apartments or houses. 10% should be added to individual houses, 25% to individual poorly insulated houses.
- An output of 150 Watt / m² is applied when the space is insufficient insulated. An output of 60 Watts / m² is used when the space meets the current insulation standards.

Where to use?

1. Installing an infrared heater in the bathroom

An infrared heater can fit in anywhere in your home, even in the bathroom!

The panels are extremely light and flat: they're easy to install and hang anywhere, even on plaster walls.



A bathroom usually consists of a limited amount of space: most of the time, installing only one panel will be more than enough to warm up the entire bathroom. The only thing you need is a power outlet. You don't need to build or install anything: no tubes and no hefty installation.

You can choose whether to mount the infrared heating panel in the ceiling or on the wall of the bathroom. An infrared panel is a healthy low-cost heating system coming in with a 5-year warranty. If you ever move to another home, just take the panel off to install it in your new home.

Or contact us for any questions you may have about measuring and calculating the amount of energy needed.

Bathroom heating, why choose infrared?

Infrared heating in the bathroom creates a pleasant and intense feeling compared to the same amount of heat produced with a traditional air heating system. Unlike other heating methods, infrared heaters do not warm up the air, but target directly objects and persons.

This phenomena is called radiant heat. The infrared radiations warm up your body, not the air around, enabling you to enjoy a comfortable warm feeling, even when you have to go out of the shower ! A relaxing warmth welcomes you as soon as you step out of the shower or bath.

You'll also notice that the bathroom and towels dry faster. Bathroom mold becomes a thing of the past: the walls of the bathroom dry faster, the whole room becomes healthier.

An IR-heater in the bathroom is thus the perfect form of heating for anyone looking for an environmentally-conscious, healthy and comfortable heating solution. Feel free to contact us if you have any questions!

2. Infrared room heaters for your living room

The Infralia Infrared heating panels are both decorative and functional. They're not recognizable as a heating element. They fit perfectly into a modern contemporary living space or a classic interior. They generate a pleasant radiant warmth and ensure a direct and constant temperature in the living room.



Pleasant warmth

Invisible infrared rays heat up bodies and objects (walls, furniture, ceilings, etc.). As a result, the objects are generally about half a degree warmer than the room itself. Condensation on the walls

doesn't get a chance! Humidity problems such as molds can be prevented. Because of the warmer walls, the unpleasant sensation of a cold air flow is reduced when a door opens.

The absorbed heat is released back by the objects in the rest of the space. An even warmth is created as a result. Objects can retain more heat than air. The opening of a door doesn't create a strong immediate decrease of the temperature in the room.

Heating in a healthy environment

Infralia infrared heating panels don't heat the air, such as conventional heating does. Heating through radiators or convectors makes the air circulate, as well as dust and dust mites. This can have unpleasant consequences for people suffering from asthma. Moreover, infrared heating, just like the sun, has a positive effect on people and their immune systems. This all contributes to a healthier environment. Heating by infrared panels doesn't need any preheating mode or delay such as underfloor heating. You feel a pleasant instant warmth suddenly after the activation of your panels.

3. Infrared heating for an entrance hall or a staircase

Because of the presence of exterior doors, interior doors and/or a stairwell, it is not easy to heat a hall or staircase and keep it at the same temperature. The heat rises and gets lost. Conventional radiators heat the air which is immediately replaced by cold air during the opening of an external door.

Temperature then drops significantly. The thermostat of the heating system being normally located in the main room, the heating system cannot react to this sudden drop in temperature, which causes the space to stay unpleasantly cold.

4. Infrared heating for industrial buildings

Basically, this is the same problem as in the entrance hall, but often the ceilings are much higher! People working at the reception are constantly in the cold during the winter months. With infrared heating panels these annoying problems are finally solved. The infrared panels can be discreetly attached in the ceiling or into the walls. Or you can even place your company logo on it with a layer of coating. Your heating panel becomes an instant eye-catcher and contributes to the company's branding.

Infrared radiant heat

Infrared radiant heat does not heat the air but objects and people. The objects (walls, ceilings, furniture, etc.) absorb radiations which they then give back to the space.

As a result, the objects are warmer than the air. In spite of the fact that cold air still comes in via an external door, the perceived temperature doesn't drop dramatically. Temperature variations are taken care of by a separate thermostat that drives the panel.

Space-saving heating

An additional argument to choose infrared heating in a hallway is the lack of space. With a coat rack and some storage, a hall is already filled up quite quickly. Infralia heating panels offer a perfect solution: they take up very little space, and can even add decoration or color to your entrance hall.

5. Infrared office heaters for the workplace

Infralia Infrared heating panels offer a simple, fast, beautiful and healthy way to heat up offices.

Radiant heat is experienced as very pleasant. Think of the comfortable feeling of the sun, or the radiation heat from a wood stove.



With infrared heating, electricity is converted into infrared light. Infralia heating systems make use of the non-visible portion of the infrared spectrum. No air is heated, but the walls, objects and bodies are targeted. Objects absorb the radiation and project it back to the space they are in.

Heat office spaces separately

The entire office building doesn't need to be heated. You only heat up the space you really used. For example, if a meeting room is not in use, it doesn't have to be heated. The same applies to the offices of persons who are not present. Infralia Infrared heating panels provide an easy and quick way to separate heat for these different spaces. The temperature can be controlled in each room. Warmth, whenever and wherever you really need it.

Space efficient heating panels

Infrared panels easily find their place in confined spaces. Besides as ceiling panels, they can also be used as wall panels, or as front panel displaying a logo for your reception desk. In the meeting room, it is possible to give a Power Point presentation on a standard white panel or to use the panel as a white board.

Clock thermostat

A clock thermostat makes it possible for the panels to be turned on and off automatically at desired times. Using the thermostat keep the premises at the desired temperature.

In the workplace

Workshops, warehouses, public offices with old heating systems can install infrared panels as an easy efficient solution. One thermostat is sufficient for a constant temperature in each area of the building, no matter the number of panels.

6. Infrared Heating for the Kitchen

Infrared panels fit anywhere in your home, even in the kitchen. You can equip them with a cheerful design that fits your interior with a layer of a coating. You can completely personalise your IR-panels into something truly unique.

How about a family photo or an image? If you want your panel to be more discrete, they'll also fit into the kitchen's ceiling!

The weight of the panels is low, and the panels consist of flat screens that are easy to install and hang, even on plaster walls.



Benefits of Infrared Kitchen Heating

Individual room temperature control: why should the whole house be heated in the morning when you just want to eat breakfast in the kitchen?

An Infralia infrared panel can be turned on with a separate thermostat without having to turn on the total central heating system. An infrared panel provides a comfortable warmth during breakfast. Once everybody is out the door, the thermostat can be switched back to save on heating costs.

Space-saving heating

There is often no room in the kitchen for a radiator. An infrared panel is unobtrusive in your home. It is both decorative and functional and unrecognizable as a heating element.

Hygiene in the kitchen

A convection radiator heat up the air which consequently make dust mites and bacteria circulate around. A Infralia panel in your kitchen is therefore very hygienic. The panels are also attached to the ceiling or wall, which does not cause dust accumulations around the heating panels. A dream for anyone who loves a hygienic kitchen.

7. Infrared heating in the bedroom

Sleep, hobby rooms and attic spaces usually require a lower temperature than other living areas. It is often needed to increase the temperature temporarily during, for example, homework or practicing a hobby.



Such an adjustment in temperature is often not possible because the thermostat of the existing heating system is located in the living room. Previously electric heating offered a solution, but it had some obvious drawbacks, including energy use and dry ambient air.

Now there is a new kind of bedroom electric heating. It combines the advantages of the classic electric heater with a low energy consumption and a comfortable warmth. It has no effect on the air humidity. Heating with infrared does not heat air, but warm up objects and people in the room. No more dry air, or loss of energy by heating the air.

Infralia infrared heating panels provide an easy and quick way to separate rooms when heating your home. The temperature is managed with a separate thermostat. Warmth, but only whenever and wherever you need it.

Infralia offers a broad range of IR-panels to fit in your interior. You can even personalize your panel using a visual to fit a child's room. The plug-and-play and mobility of our panels make them ideal supplementary heaters. You can place the panel where you need it. All you need is a plug socket.

8. Infrared Heating for Businesses

Industrial infrared heaters are a relatively new way of heating which has been enjoying an increasing popularity to heat up companies's spaces.

There are indeed many advantages for using IR-panels in business settings and factories.

Infrared Industrial Heating

Infrared heaters can be a good solution to heat up industrial premises. This often requires multiple panels to warm up a fixed number of cubic meters.

Infrared heaters are discreetly mounted into the ceiling, or can be used as eye-catching panels on the walls.

Our IR-panels can be easily inserted in the ceiling or on the walls of offices or studios. They give companies an environmentally-friendly image. And they can be taken off easily if you need to move to other premises.

Infrared panels are the most efficient solution for offices or workshops with old heating systems. An effective solution for offices, workplaces, and government buildings as well.

9. Infrared Heating Hospital

Infrared heating is beneficial even in hospitals. An increasing number of medical environments such as pharmacies and laboratories choose to install infrared heating panels. Infrared heating in a hospital is chosen for many reasons. The compelling reasons being:

- Bacteria spread less quickly. Infralia Photo Power infrared panels reduce the risk of transmission of infections through heated air. The heating happens through IR or infrared radiations, which requires little or no air movement. Often, bacteria and dust particles are spread by air heaters and represent an additional risk for patients. Infrared heating panels reduce the spreading greatly. A room heated with infrared heat is a healthy space.

- Hygienic: the smooth, flat and white panels are designed to be attached to the wall or ceiling. They can be cleaned easily and they don't collect any dust.
- Healthy: infrared radiation is a natural comfortable way of heating that doesn't make the air dry out. It is particularly suitable for people with respiratory infections, for whom dry air causes extra cough incentives. Moreover, IR radiation has a beneficial and healing effect on people with muscle aches and joint pain.
- Energy efficient: save up to 50% on the energy bill by heating with infrared.
- Space-saving: by attaching the thin panels on the wall, valuable space can be saved in a small hospital room.
- Safe: infrared heaters will not overheat. They can be integrated as towel heaters. There is much less risk of fire than with conventional methods of heating.

10. Laboratory heating pads

When heating up a laboratory, hygiene and the guarantee of a constant temperature become extremely important. There are numerous reasons why infrared heating is the right choice for laboratory heating:

- IR radiant heat: unlike traditional heating, no air convection heating, less bacteria and dust 'fly around'.
- Infrared heating reduces risk of fungi: objects, materials and walls are heated by radiant heat.
- Smooth, flat and white surface of the IR-panel can be quickly and hygienically cleaned.

The PhotonPower infrared panels reduce the risk of transmission of infections through the air. Often, bacteria and dust particles are spread by air heaters and create an additional risk of cross-contamination in laboratories and hospitals. An infrared heating panel reduces the spread greatly.

A room heated with infrared heat is a healthy space. Infrared panels are ideal for heating up laboratory areas.

11. Infrared heating for the outdoors

On a lovely late summer day, once the sun goes down, the temperature gets chilly very quickly. You can now extend those summer evenings a little longer by spreading a pleasant heat with our infrared radiant heaters.

We offer heating solutions for covered terraces, pool houses, indoor spaces etc.



1. Unique feeling of warmth

Just like the sun, the infrared patio heaters make sure people and objects are heated directly. Heat is transferred directly by radiation: no air must be heated. This heat causes an increase of the sensed temperature and works very purposeful. The panel does not emit light and stays stylish and unobtrusive.

2. Minimal maintenance

The installation and maintenance costs are minimal. You simply need to fix the panels to the wall or ceiling and ensure an electrical connection. The heating panels require no maintenance: there is no burner, filter or fuel involved.

3. Cost saving (-50%)

Infrared heating is more than half the price of heating with propane-butane gas, and a comfortable feeling is achieved even at lower temperatures.

4. Safe & flexible

The heating panel is extremely safe because no flame or gas cylinders are used. Ideal for safe heating of smoking corners or outdoor events. The panels can be mounted anywhere on a wall or ceiling with a fixed or flexible arm bracket.

- Constant reliable temperature: an open door is much less of a problem than with convection heating. Infrared warmth is much more constant.
- No loss of space: extremely thin heating pads.

BUILT-INN PANELS



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