



**SUNSPA**  
ZORGELOOS GENIETEN

# **INFRARED SAUNA INFORMATION GUIDE**



# WHAT IS INFRARED RADIATION?

Infrared is a part of the light spectrum. By infrared light we mean the wavelengths and frequencies experienced on our skin as heat. Infrared or infrared radiation is imperceptible to the human eye.

The sun that is in the sky, as we know, is an enormous source of energy. This energy is transported to earth through electromagnetic rays. These rays are divided into different wavelengths. The unit for this subdivision is the nanometer (nm). One nm stands for one millionth of a millimeter.

Each wavelength transports a certain amount of energy. The faster the frequency of these waves, the shorter the wavelength and the more energy the radiation can transport. So the higher the frequency, the shorter the wavelength, the more energy.





## THE EFFECTS OF INFRARED RADIATION

Infrared light penetrates deep into the skin, warming the body. The heat causes the body temperature to rise, as well as the heart rate and blood circulation. This stimulates the metabolism and causes waste products to be disposed of faster. This is the basis of how infrared light works. Various physical complaints can be relieved or even remedied.

Through the accelerated removal of waste, accumulated acids disappear quickly and muscle pain is greatly reduced. Not only are waste products removed faster, nutrients and building materials are also supplied faster. This also allows the body to recover faster from a major effort or a condition. The accelerated metabolism also ensures that muscles are better supplied with blood, which in turn makes them longer and more supple.

Muscle and joint disorders are common complaints. There are many different types of joint disorders and the pain has different causes. The heat from the infrared radiation penetrates deep into the skin and stimulates blood circulation. As muscle tension decreases and the limbs are less stiff, joint pain also decreases. It is widely used to relieve pain in rheumatism.

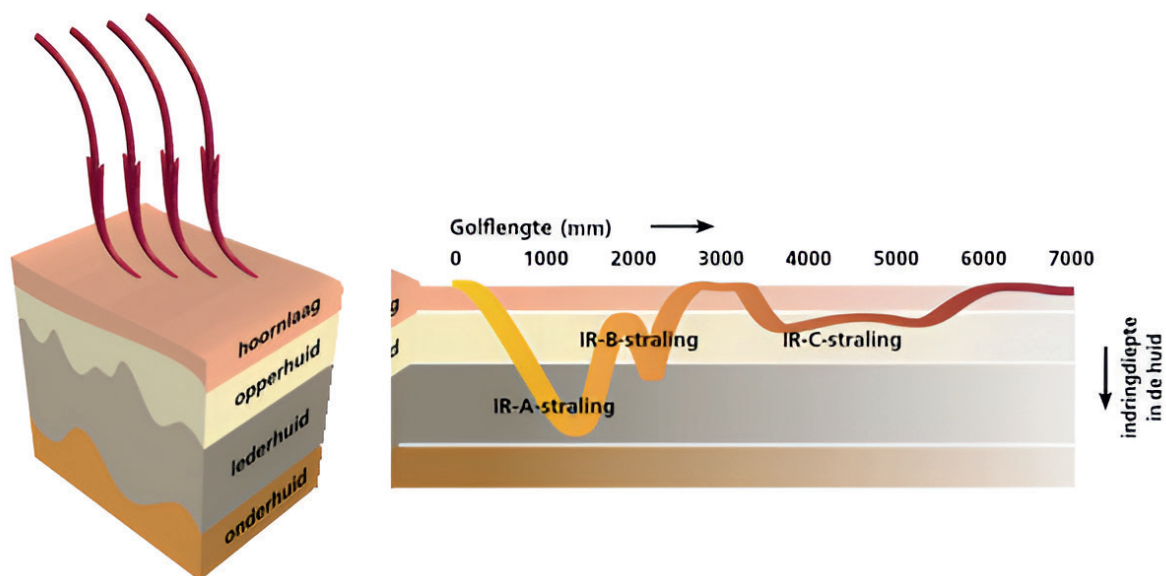


## WHAT HAPPENS IN THE INFRARED SAUNA?

In an infrared sauna, infrared rays are generated by electric radiators. These are positioned so that they are directed optimally at those present in the sauna. The infrared rays are identical to the infrared rays emitted by the sun, but they have the correct wavelength for optimal action on the human body.

Because of the infrared sauna's double walls, we can also raise the ambient temperature to 40°C to 60°C. This allows us to obtain a double effect; namely, the penetration of the infrared rays into our body and a pleasant ambient temperature that makes our body perspire even more.

Even people who do not like a warm ambient temperature can enjoy the effects of the infrared sauna by opening the door, for example. In this way, one does not use the ambient temperature but only the penetrating heat of the infrared radiators.



# TYPES OF INFRARED RADIATORS

## Ceramic radiators

Ceramic radiators consist of tubes 30 to 65 cm in length and 12 to 14 mm in diameter, constructed of white or black ceramic. The wall thickness of the tube is about 2 to 3 mm. Ceramics are porcelain, that is, clay fired at a very high temperature. Inside the sleeve is an uncompressed mixture of 15 different types of minerals, sand and magnesium oxide. The metal wire resistance located in the core of the emitters is spiral-shaped and measures about 16 m when stretched out. Each emitter sits in a housing consisting of a concave reflector made of polished aluminum.

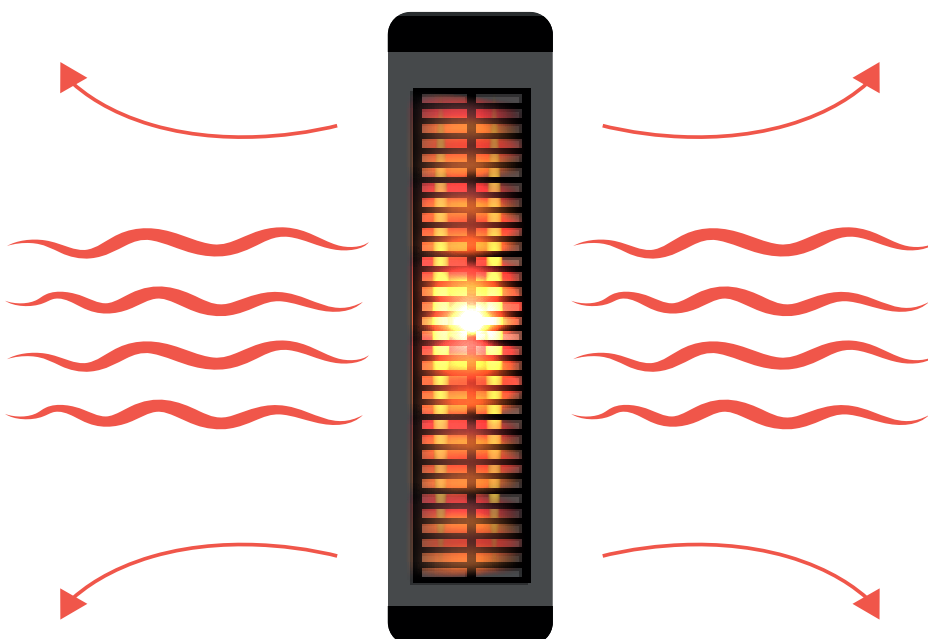
During the 1970s, ceramic emitters were used in Japan in the first, commercialized infrared cabins. It was a derivative, generalized form of Dr. Tadashi Ishikawa's medical radiators. The spectrum of infrared radiation they emit approximates the natural radiation spectrum of a hot stone mass such as in an Indian sweat lodge or the well-known soapstone stove. People therefore also speak of BIO-ceramic radiators. For more than 40 years, ceramic heaters have proven their safety and efficiency all over the world.

Ceramic heaters are characterized by a progressive build-up of different infrared frequencies. They emit a soft, pleasantly tactile and deeply penetrating energy that feels like natural, secure warmth.

### Radiation:

IR-C 78% long wave

IR-B 22% middle wave



### Incoloy / Magnesium Oxide Radiators

Like the ceramic emitters, the stainless steel, aluminum and Incoloy® emitters belong to the group of long- and medium-wave dark radiation emitters. The proportion of effective short-wave rays is kept to a minimum and only comes into play at the end of the infrared session when the radiator reaches its peak temperature.

The construction of these emitters is almost identical to that of the ceramic emitters but the sleeve or tube surrounding the resistor is made of stainless steel, aluminum or Incoloy® respectively. The diameter of the tube is about 7 mm and the wall thickness is 0.3 mm. Inside and around the spiral resistor there is only magnesium oxide which is compressed under pressure. A thin layer of ceramic coating is put on the outside of the metal tube to obtain infrared frequencies.

Unlike ceramic emitters, metal emitters can be bent into different shapes. In fact, it is necessary to bend the sleeves in a U or M shape in order to influence the length of the element and the temperature in that way if I want to achieve the same frequencies of a solid, straight, traditional ceramic sleeve.

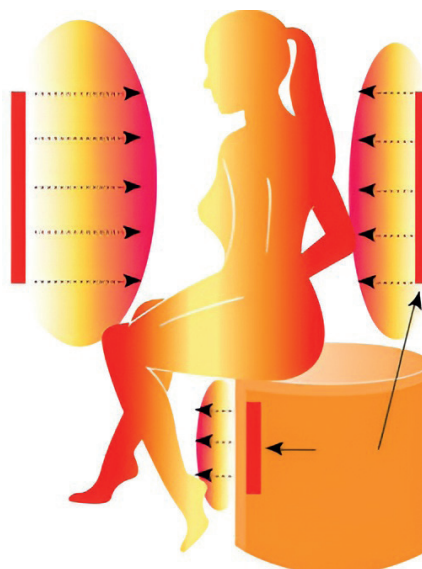
Incoloy® is a popular version of the stainless steel radiator. The American company Special Metals Corporation is the manufacturer of this nickel-chromium-aluminum alloy and owns the registered trademark Incoloy®. As such, Incoloy® has nothing to do with infrared heaters but is used as a stable alloy mainly for manufacturing electrical resistors in the chemical industry. Incoloy® resistors can be found in many household appliances, folded into various shapes and lengths, for heating water in the dishwasher and coffee maker or cooking meat on an electric grill.

To generate beneficial infrared frequencies, an ordinary Incoloy® resistor is ceramic-coated and brought to a specific length. Incoloy® emitters come in U and M shapes and are built into reflectors. Compared to ceramic emitters, Incoloy® emitters emit slightly less mid- and short-wave infrared radiation.

#### Radiation:

IR-C 95% long wave

IR-B 5% medium wave



### **DUO radiant heaters**

Duo emitters are emitters with two different types of emitters in one housing. In our Duo emitters you will find a magnesium oxide emitter and a full spectrum emitter in one.

The best of both worlds.

With a push button on the emitter you can easily switch between the two different types.

### **Triple heaters**

Triple heater infrared heaters offer you all types of infrared heaters in one fixture. You can enjoy Ceramic, Magnesium Oxide and Full Spectrum emitters during your infrared sauna session.



# SAUNA AND HEALTH

A stay in an infrared sauna or Finnish sauna has numerous effects and health benefits. For example, infrared radiation from an infrared sauna, because of its positive effects on the body and mind, has been used in medicine for decades.

From various national and international studies and experiences of users, various effects on health and well-being have been observed.

## Some of the benefits of a sauna on your health

Improved blood flow and muscle metabolism
Improved oxygen uptake in the muscles
Expulsion of various physical wastes such as lactic acid
Beneficial for sore and injured muscles
Ideal prior to a massage treatment
As a treatment of whiplash, shoulder stiffness, tennis elbow, among others
Effective for joint and tendon inflammation (including Ischlas)
Pain relieving in rheumatism, fibromyalgia, lumbago, gout, hernia, etc.
Effective in conditions such as polymyalgia, polymyositis
Preventive action/ warming-up
Increase in performance in physical exercise
Faster recovery from muscle injuries and other injuries
Reduction of cellulite
Reduces the aging process of the skin
Improvement in conditions such as acne, psoriasis and eczema
Faster wound healing

**\* This overview is purely indicative, always consult your physician before use.**



Infrared has a positive effect on a sore muscle system, everyone recognizes. Doctors employ infrared heat to treat tightness, tissue diseases, arthritis, swelling, stiffness and muscle pain.

**Increasing elasticity of muscle tissue:** One exercise that is important for injured or malfunctioning muscles is to warm it up to 45 degrees and then stretch it. This produces a 50% expansion, which is maintained even when stretching is ended.

**Blood circulation:** Poor blood circulation causes many complaints. Blood circulation and related blood flow can be improved with infrared heat systems and you will feel significantly better with such treatment.

**Heart and Vascular Diseases:** Chinese researchers have made heart-worthy conclusions in heart attacks. According to the well-known macrobiotic teacher Hermann Aihare, the success of IR heat treatment can be substantiated by the following elements. If the blood contains a lot of cholesterol and fat, this leads to the following effects: The blood thickens and red blood cells clump together, thus reducing the workable surface area of the blood. This activates 20 to 30% oxygen transport. And oxygen is simply necessary for organs, tissues and cells. A lack of oxygen causes various sensations of pain. The veins become blocked (in the case of congestion), this increases blood pressure and can cause heart attacks.

**Reduction of stiffness of joints:** At a temperature of 45°C in finger stiffness, for example, a reduction of 20% occurs compared to a normal body temperature, in this way the other joints also react.

**Reduction of muscle tension:** Muscle tension is reduced by heating. The result is achieved by heat and radiation, because the cells and organs relax.

**Reduction of pain sensation:** Pains are reduced by the reduction of muscle tension. Sciatica pains are caused by muscle tension. This vicious cycle can be broken with IR heat. The heat reduces pain stings, both at the nerve root and in the surrounding tissue.

**Stimulating blood circulation:** Warming certain body parts causes reflexes in the other body parts and has a vasodilatory effect. Warming muscles, like exercise, results in an increase in blood circulation.

**Stimulating the healing process in diseases, inflammations and perspiration:** Recently, this therapy has also been used in cancer treatment, but this method is still in the experimental stage.



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