Infrared Heating System

Description

One major cause of static filter failure in sub-zero temperature climate is the formation of frost. Depending on the weather conditions such as temperature versus relative humidity, frost then ice on the air filters will lead to filter clogging / reduce the airflow. At some point, the equipment is not able to operate in satisfactory conditions and is tripped / stopped.

Infrared heating systems of Filsure prevent freezing of air intake filters of gas power and gas compression stations in the cold season. Infrared heating for anti icing can be integrated into the filtration system to make it more efficient and to save energy.

We have developed a range of infrared anti-icing emitters suitable for gas turbine / compressor combustion air intake systems. Infrared heating systems of Filsure prevent the freezing of air intake filters of gas power and gas compression stations in the cold season. Infrared heating for anti icing can be integrated into the filtration system to make it more efficient and to save energy.

It is important to select the correct emitter for the product, as the wavelength has a significant influence on the heating process. Short wave radiation can penetrate deep into some solid materials and ensure a uniform through heating.

All materials absorb a fraction of the infrared spectrum, reflect a fraction at the surface and allow a fraction of the radiation to pass through. By selecting emitters with suitable spectra, the largest possible fraction of the radiation is absorbed in the material and converted into heat.

Working Principle

The principle of infrared heating is that warmth is transferred in waves from the device to the colder things and surfaces directly, without loss of heat in empty space. This is a direct heat transfer path. Much depends on the features of different things to absorb heat and ensure its further transmission.

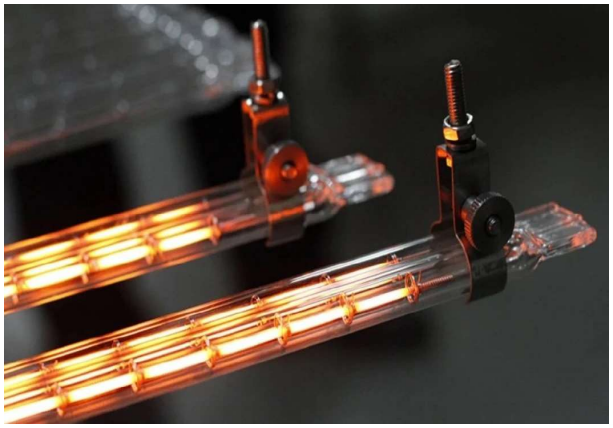
An infrared heater distributes heat to objects, which then transfer heat. Thus, the air is heated by the convective energy of these heated objects.

Technical Specification

- Type of emitters : Medium / Short wave
- Typical distance from media : 500 - 600 mm. (Recommended)
- Typical radiation angle : 60 Degree.
- Radiation overlap : Minimum 5%
- Typical length of emitter : 600 - 2500 mm.

Area of application

- Anti Icing system for Air Intake system.
- In Other Industries e.g. Food & Beverages, Automotive textile, paper, furniture etc.



Infrared heating

How to Order

For order technical specifications, See "How to order" section

Key Features / benefits

Speed heating process:
IR quartz emitters need short time to switch on and switch off (few seconds); this fact reduces the time of operation and optimizes the homogeneity of the heating up of the material.

Energy saving and less heat generation in the surrounding area:
Due to the fast switch on of the IR emitters, it is possible to start them and concentrate the heat only where and when it is really necessary.

Easy controls of emitters:
The emitters can be controlled by wave modulators or they can work in simply On/Off way.

Absence of direct contact with the material and no surrounding area contamination:
Working by the radiation, IR emitters do not need to be in contact with the material to be heated.

Smaller size and dimension of IR quartz heating modules and ovens respect of traditional hot air heating equipment:
The small dimension of the IR quartz emitters and their convenient shape simplify the machinery construction design and the maintenance process of the heating area.

Infrared Heating System

Information required to size Infrared heating system

- Material to be heated.
- Heater to material maximum distance available.
- Heat up time required.
- Specific heat of material.
- Size and shape of material.
- Conveyor speed (If applicable).
- Emissivity of material or absorption spectrum.
- Proposed heater layout: size, spacing, heating one or both sides.
- Are there secondary heat loads, such as air, conveyor, etc.?
- Available utility details e.g. Power supply etc.