Infrared Heating System

• Aerospace Industry
• Steel Industry
• Paper Industries
About KERONE

KERONE is possessing experience of 40 years in engineering excellence.

KERONE is one of the most admired and valuable company for customer satisfaction.

KERONE is pioneer in application and implementation engineering.

KERONE is having immense expertise in manufacturing and implementing various types of heaters and dryers.

KERONE is possessing employee strength of more than 140 experts continuously putting efforts for happy industrial heating solutions.

KERONE has reported annual revenue of $8 to $10 Million, increasing year-on-year.
Our Vision and Mission

Vision

• Turn into world leader in providing specialized, top-notch quality and ecological industrial heating, cooling and drying solution across the globe.

• To attain global recognition as best of quality and environment friendly engineering solution company.

Mission

• To enhance the value of customer operation through our customer need centric engineering solution.

• We are committed to provide our customers, unique and best in class products in Industrial heating, drying and cooling segment, with strategic tie-up for the technical know-how with renowned leader in the industry specific segment.

• We are company that believes in strong ethics and timely commitment helps to build long term relationship.
Value Propositions

- 40 years of rich experience
- Sound infrastructure
- Adherence to standards
- Timely delivery
- Highly customized product
- Cost effective solutions
- Team of experts delivering quality
- Great after sale support

KERONE Engineering Solutions Pvt. Ltd.

(An Iso 9001-2008 Company)

A CRISIL-NSIC RATED COMPANY
ISO-9001-2008 COMPANY
AFFILIATED TO THE UNIVERSITY OF NOTTINGHAM
MEMBER OF A.M.P.E.R.E.,(EUROPE)

Supporting Accreditations:

- ASCB(E) Certification for Best practice
- IRQAO Certified for quality
- Member of A.M.P.E.R.E. (Europe)
- ISO 9001-2008 Certified company
- CRISIL Verified
- Recognized and Rated by CRISIL

In Association with SVCH-Technologii, Moscow (Russia)
Introduction of Infrared

Infrared Heating System are part of Electromagnetic heating family.

Infrared heaters uses IR radiating waves falls just below visible light spectrum.

Infrared radiators heats produces heat on the surface of material.

Heat is transferred from outer surface to inner body.

Infrared heating system produces heat same as ‘SUN’ from hot surface to cold surface.
Infrared Heating Systems Classification

Infrared Heating System are basically classified based on its emitting wave length:

- **Short Wave** (780 nm to 1400 nm)
- **Medium Wave** (1400 nm and 3000 nm)
- **Far Infrared** (3000 nm and Above)
<table>
<thead>
<tr>
<th>Infrared Heating System</th>
<th>Conventional Heating System</th>
</tr>
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<tbody>
<tr>
<td>IR heating systems are fast heating system, results in saving of time.</td>
<td>Conventional heaters have slow heating rate, heat is transferred via means of air.</td>
</tr>
<tr>
<td>Instant heating of the material, hence no warm up time.</td>
<td>Instance heating does not take place, it requires warm-up of surrounding.</td>
</tr>
<tr>
<td>Environmental friendly and green heating solution, no carbon emission.</td>
<td>Produces carbon or toxic gases hence not much environmental friendly heating solutions.</td>
</tr>
<tr>
<td>100% energy utilization, Heats only desired spot of material.</td>
<td>100% energy utilization is not possible, as material is heated by surrounding hot air.</td>
</tr>
<tr>
<td>Better floor utilization index.</td>
<td>Poor floor utilization index.</td>
</tr>
<tr>
<td>No Temperature loss in surrounding, ambient workplace.</td>
<td>Surrounding air temperature rises with rise in heater temperature.</td>
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# Infrared Heating System Vs Microwave Heating System

<table>
<thead>
<tr>
<th>Infrared Heating System</th>
<th>Microwave/RF Heating System</th>
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<tbody>
<tr>
<td>IR heating systems utilizes electromagnetic system uses wavelength of about 0.01 centimeters.</td>
<td>Microwave heating systems utilizes electromagnetic system uses wavelength of about 1 centimeters.</td>
</tr>
<tr>
<td>Heats the object from surface of object.</td>
<td>Heats the objects from within the object.</td>
</tr>
<tr>
<td>Compact system providing better floor utilization index.</td>
<td>Microwave heaters also does not require large space hence offers better floor utilization index.</td>
</tr>
<tr>
<td>Infrared heaters are better substitution of traditional convention heaters.</td>
<td>Microwave heaters cant not substitute the conventional heaters.</td>
</tr>
<tr>
<td>Depth of heat penetration is lower in infrared heaters as it heats from surface.</td>
<td>Depth of heat penetration is higher in Microwave heaters.</td>
</tr>
<tr>
<td>Rate of heating depends on the surface characteristics of material.</td>
<td>Rate of heating depends on the moisture content within the material.</td>
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Pharmaceutical industries have various applications that require efficient heating/drying for quality and hygienic output. These applications include:

- Drying of Tablets
- Aqueous film coating
- Chemical Processing
- Powder Making
- Herbs Drying
- Bottle Sterilization

Infrared Dyer for Bandage manufacturing
Infrared Heating System for Pharmaceutical

Infrared Dyer for Pharma

Infrared Dyer for Herbs dryer
Infrared Heating System for Pharmaceutical

Infrared based Umbrella dryer

Infrared Dyer for Bottle Sterilization
Infrared Heating System for Pharmaceutical

Infrared for Powder making

Infrared oven for chemical Processing
Plastic and Rubber has increased its application in various application, so the demand. Below and few important applications those require heating:

**Plastic Thermoforming**

**Rubber extrusions**

**Curing thermoset plastics**

**Drying for injection molding**
Infrared Heating System in Plastic and Rubber Industries

- Rubber Curing
- Plastic Annealing
- Heat thermoset composites
- Plastic Welding
- Re-glossing
The packing industry is evolving with large amount of packed goods required to be transported with care. Following are the areas require IR heating:

- Activate adhesives
- Seal plastic foil packages
- Safety seal bottles
- Shrink film
Paper is one of the oldest industrial production processes that require heating at very large scale from manufacturing to Printing. Below are some applications in which IR fits in:

- Corrugated cardboard adhesive curing
- Dry paper sheet
- Drying of Printing Ink
- Coating of Paper
## Infrared Heating System in Glass and Ceramics

Infrared Heaters find multiple application in Glass and Ceramics:

<table>
<thead>
<tr>
<th>Application</th>
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<tbody>
<tr>
<td>Bend glass</td>
</tr>
<tr>
<td>Bond double-pane and laminated safety glass</td>
</tr>
<tr>
<td>Dry extruded ceramic</td>
</tr>
<tr>
<td>Temper glass</td>
</tr>
<tr>
<td>Fire glazes</td>
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</tbody>
</table>
Infrared heaters and dryers find following applications in metal industries:

- Foundries
- Annealing
- Brazing and soldering
- Stress relief of springs
Infrared Heating System in Automobile Industries

Infrared heaters and dryers find following applications in Automobiles:

- Drying Paints
- Super plastic forming
- Rapid heat treating
- Weld stress relief
Trusted Partner of following consultants
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