BROCHURE

NobleLight®

Infrared Modules for Industrial Process Technology



excelitas®

The Precise Application of Heat



Contents

The Best Form of Energy

Noblelight Infrared modules from Excelitas deliver thermal energy in a practical form. This simplifies and accelerates operating stages, optimises energy usage and results in an exceptional finished product.

Whether they are large heating fields, tunnels, ovens or individual modules, our modular infrared systems are always precisely matched to your processes and materials. As a result, the infrared heat can be supplied in the right amounts, exactly where it is required.

Intelligent Heat for Your Processes

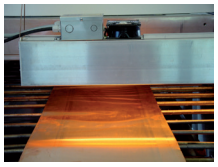
Infrared heat is intelligent heat; because it heats the material precisely and efficiently. Noblelight infrared modules from Excelitas are supplied ready-to-fit and can be integrated directly into the production process. Our infrared modules can be supplied with matching control units and hous ings. As such, they offer the ideal solutions for industrial heating processes.

Your Partner for Innovative Solutions

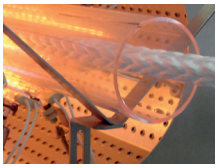
Our speciality? Problem solving. Thanks to our many years of experience, we can always provide professional and practical support, whatever your application. We can help you to optimise your processes through efficiency gains and minimise running costs with the introduction of infrared emitters. Solutions range from a simple module through to a purpose built system with control. The investment in a Noblelight infrared module is an investment in your future, which you can make today.



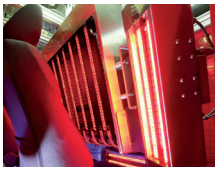
Noblelight Infrared Modules
A Subbrand of Excelitas



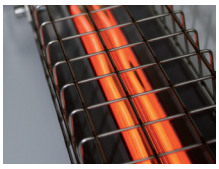
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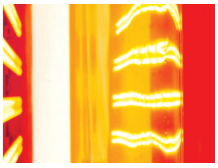
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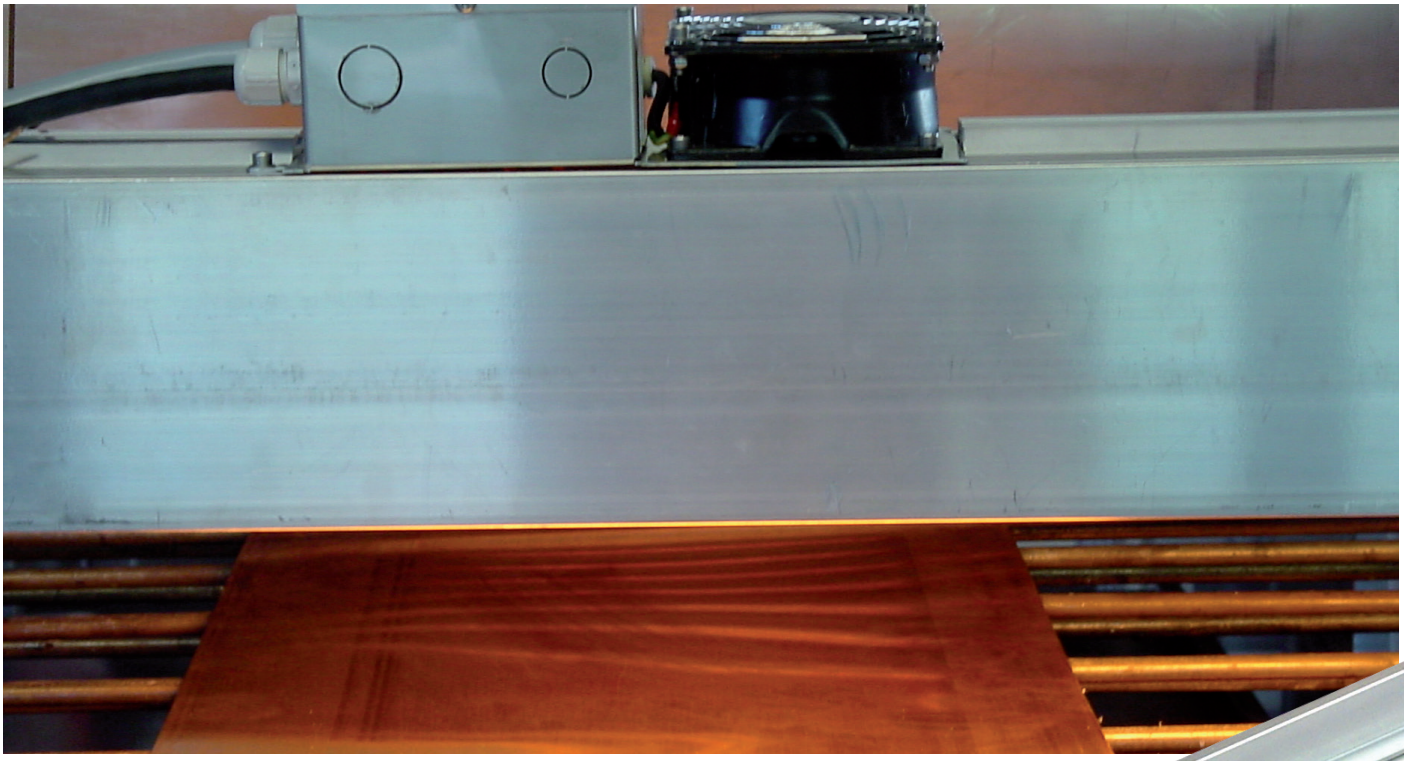
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Simply Constructed Modules

Infrared Ready-to-use at the Point-of-use



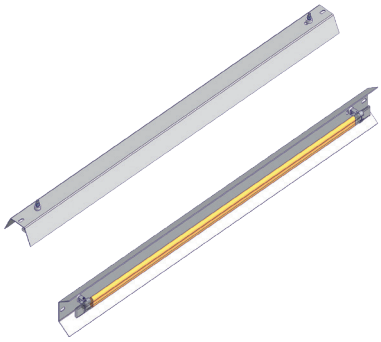


Ready-to-use

The modules of the M series contain one or more infrared emitters. Assembled ready for installation in a suitable housing including all the necessary electrical connections.

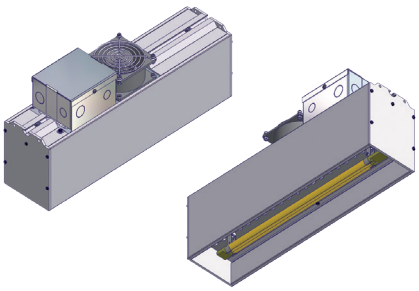
This makes the M-series heating modules very quick and easy to install and use. Several modules can be combined for larger heating panels.

The M-series modules can be easily retrofitted in existing systems and are extremely cost-efficient, not least due to their long service life.



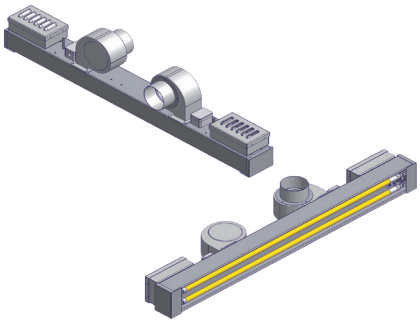
M 85

The M 85 is our simplest design of infrared module. It consists of an infrared emitter and an associated heat-reflector plate and holder.



M 110

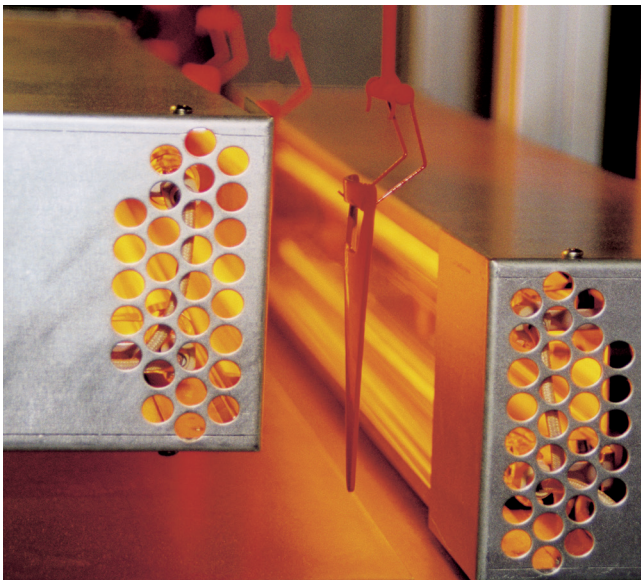
The Module M 110 consists of one or more emitters and the necessary ventilation. It can be installed where heat has to be applied rapidly and directly. The M 110 uses standard components and can be quickly produced and supplied.

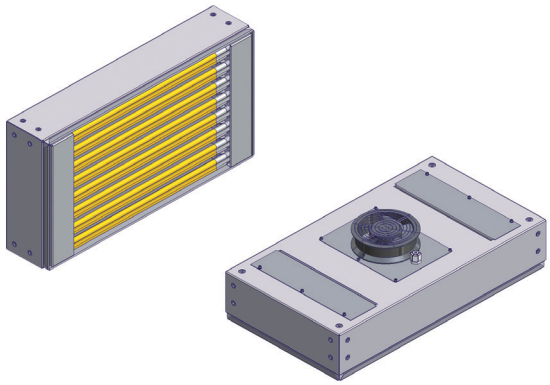


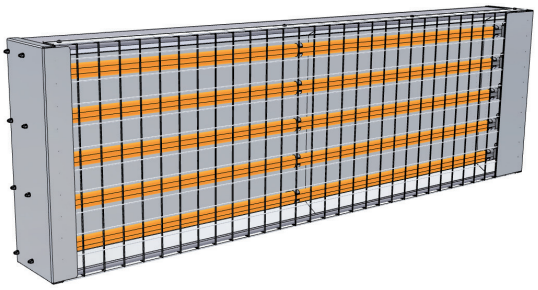
M 115

The M 115 module consists of either one or two length-adjusted infrared emitters and a ventilation system. Pyrometers, temperature switches and temperature fuses can also be integrated.

Simply Scalable

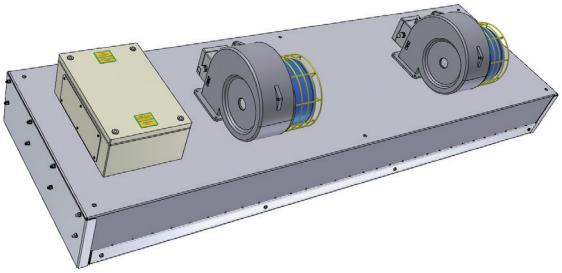




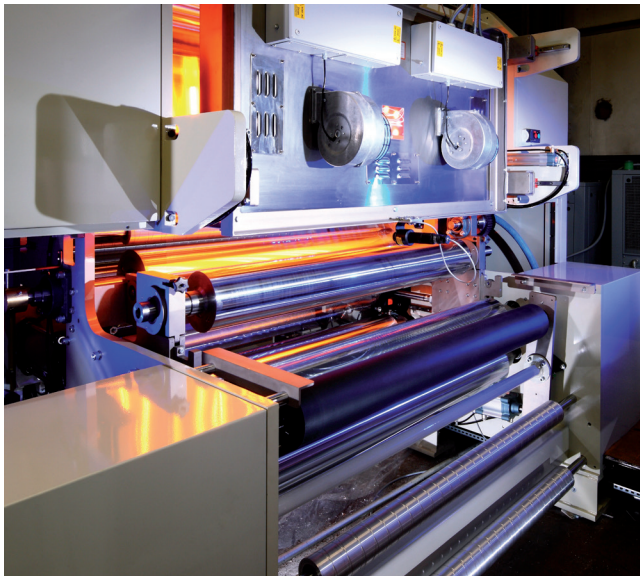


As Diverse as your Applications
Heating solutions with scalable infrared modules find applications in virtually all industrial sectors. Even though there are so many problems to be solved, one solution is constant: We shall always help you to find the best possible infrared solution to meet your requirements.

You Eat with your Eyes, An Example in the Food Sector
A delicious hamburger? Or a superb dessert? Chocolate with just the right taste? No matter what your preference, it is possible that its appetizing appearance owes much to an infrared module. Many ready meals owe their attractive presentation to infrared, which brown the topping prior to packaging. The sugar on crème brulé is glazed. Chocolate cup halves are melted and then quickly joined together. Modern food production is scarcely conceivable without infrared.



High quality plastics materials
Plastic materials can be coated, embossed, stretched or shrunk – and you need heat for all these processes. Infrared modules can heat significantly faster and more efficiently than conventional heating sources. You save energy, space and maintenance costs and improve productivity.

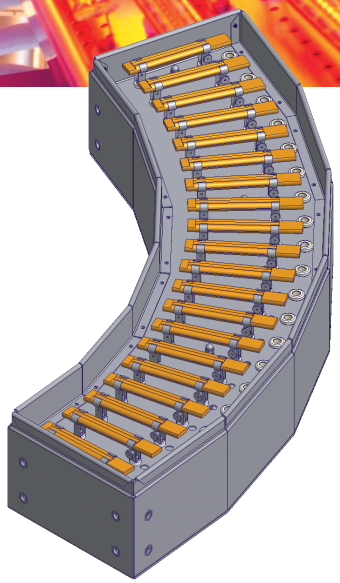


Plastics require very exact temperature profiles during production to achieve their high quality look. These temperature profiles are provided by infrared modules.

Advanced Infrared Modules

Developed for You

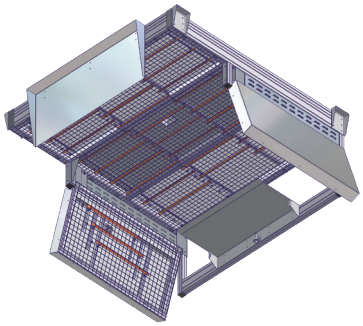




Heat as an intelligent solution to your problem. This is our task at Excelitas. With our years of experience and our know-how we are able to develop tailor-made system solutions which precisely meet your requirements.

We can call on our comprehensive databank containing over 3000 successful infrared test reports. In addition, in our application centers around the world we can determine the optimum solution to your heating requirements.





Convertible car hoods last longer if they are pre-treated with precisely matched infrared.

As versatile as the Applications of our Customers. Applications in Automotive Manufacture.
Whether it's engine blocks, filter housings, mirrors or carpets: in the manufacture of a motor car, there is scarcely a component which does not come into contact with infrared during its production. For these components are coated, welded, dried, hardened and activated. Due to its versatility, infrared heat is used in the most diverse of processes in the automotive sector. At the last count, it was over 200 different uses of infrared in this market. And new applications arise every day. Infrared modules are suited perfectly to the highly specialized processes in the automotive sector. As a result they allow car manufacturers and their suppliers to carry out efficient production and to achieve a competetive edge.

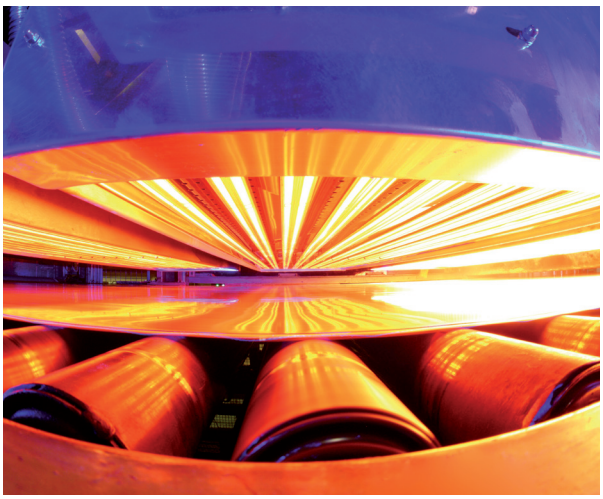
An Example in Glass Manufacture.
More and more processes in glass manufacture are enjoying the advantages of infrared modules. Whether it's the drying of coatings, glass cutting or mirror backing, the precise control of infrared emitters allows exact temperature profiling. An example is the use of infrared when cutting laminated glass. Infrared is used to heat and melt the plastic layer without heating the total glass plate.

Custom-built Applications: An Example in Plastics
Whethre it´s contact-free welding, laminating, precise fixing or embossing of plastics, infrared modules help to increase production speed, whilst improving quality and productivity.

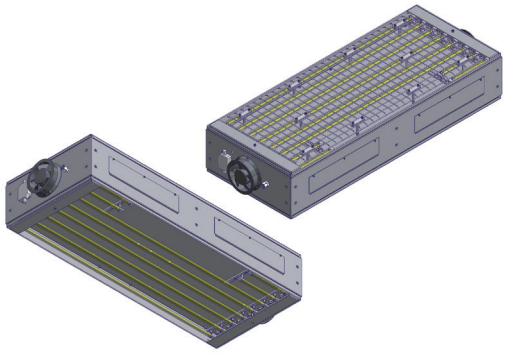
Faster Processing, Layer for Layer
An Example in Lacquer Drying
In the treatment of wood for furniture or metal strips for machine parts, different coatings are applied. Whether it is in the staining of wood or in coating of steel, drying can be achieved faster and more efficiently with infrared modules than with conventional methods. The material and the local environment remain cooler and temperature sensitive products are not overheated. The result: better quality and faster processing.



Curing of coatings on glass bottles



Embossing of plastics flooring



Systems

Excelitas - Your Partner

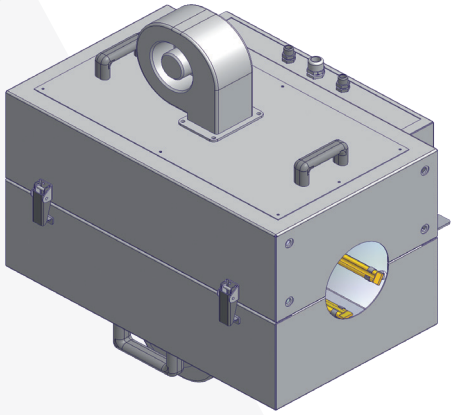
At Excelitas, we think in solutions, that are practical for you. You tell us your requirements, we develop your individual system, working in close co-operation with you. First of all we evaluate your requirements and then select the infrared emitters which are most suitable in terms of output, voltage and wavelength. The result: the best possible utilisation of the potential of our emitters – for an optimisation of your work flow.

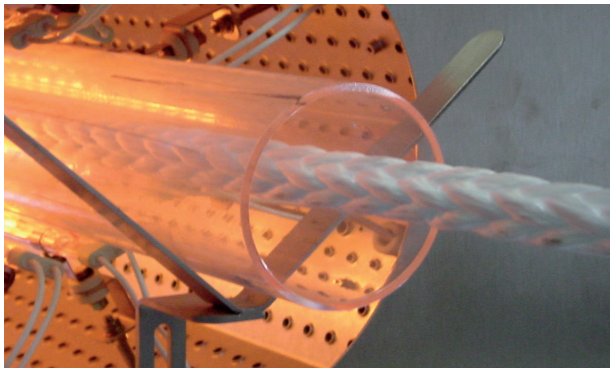
Heating Technology for the Most Exacting of Demands

We work closely with you during the complete process, no matter where in the world you are. You can send us information in a variety of data formats – in CAD data in STEP-, IGES-, DWG- and DXF-formats. The result: Short project times with conclusions which are matched to your requirements and, in the long term, ensure your competitive edge.

Innovative Solutions for Maximum Precision

One thing is common to all modules: They are all optimally matched to the relevant process and they all generate heat precisely where it is required. There is nothing which does this as efficiently.





Cables, fibres or wires are efficiently heated in a tube oven.





Infradry Modules with dedicated air management

Control and Regulation

To Meet all Demands



Your process goal is clearly set out at the planning stage. At the same time, small details are also important to ensure that your infrared system matches the application perfectly. If we know your application, then we can pro vide you with the optimum emitter, the most suitable infrared module and the correct control system.

From simple regulators to complex, fully integrated, automated solutions. In all power ranges, our control systems optimise the results of your infrared emitters.

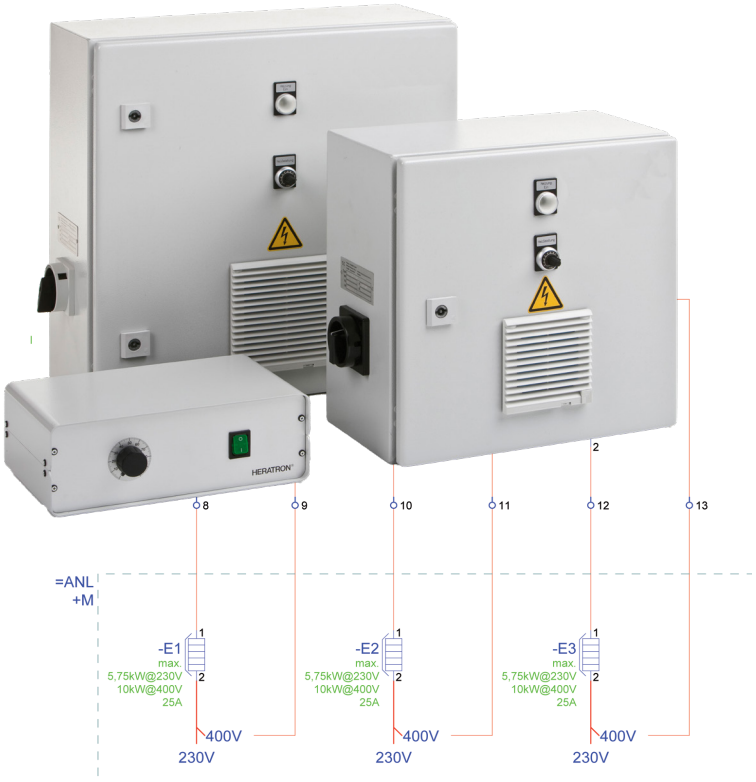
YOUR BENEFITS

- Infinitely variable power output setting, with zero wear, low loss semi-conductor power boards.
- Power-setting methods matched to your process.
- Nominal value setting for the infrared output by potentiometers, regulators or external signals.
- Interface points with the control can be classical contacts, analog signals or through modern fieldbus systems.
- Contact breakers or fuses protect emitter connections with small, easily manageable power cross-sections.
- An emergency stop for isolating the load from the mains supply in the event of emergency.

- The failure of an emitter, a load fuse, a load board or a load voltage can be identified and reported.
- Control and monitoring, including automatic control of module ventilation and temperature monitoring of the infrared emitter module.
- Industry-standard regulators, which are flexibly configurable, with display of nominal and actual values, timers, program indicator, ramp function, limit function PID self-optimization and manual/ automatic test.

Naturally, you will receive detailed documentation, which comprehensively describes the complete infrared system. This helps to simplify the installation and the integration into your total system.

Details of further equipment can be obtained on request.



Accessories

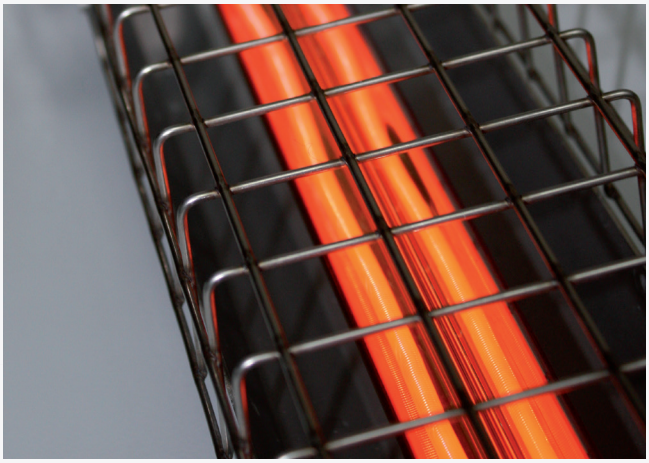
Quality Right to the Smallest Detail

Safe is sure. And for this reason we do not only demand the highest specifications of our emitters, we also expect the highest quality from our accessories. All materials that we use at Excelitas, are continuously checked in extensive tests to ensure that they meet our strict criteria. This ensures that we can meet you most stringent demands and can supply the most suitable of accessories. When all components in the system are perfectly matched, only then can an infrared module support your process in the best way possible.

Ask us. We would be pleased to advise you!



A wavelength converter takes in radiation, which is transmitted through transparent materials, and then re-emits it onto the material at a different wavelength. This can increase the energy output significantly.



Infrared Emitters IP 65 are protected against dust and spray. A sealing system allows the use of infrared systems for outdoor heating processes. The electrical connectors for such emitters are fed into the connection box via a special seal. This system conforms with VDE 0710 DIN40050, relating to IP 65.



We support your infrared drying processes with optimal air management, which is important especially for the drying of water-based inks and coatings.
Our Infradry, Air-Knife or exhaust strips feature a high-intensity and uniform air exchange that shortens the drying procedure and ensures a more efficient yield per unit of energy.

Application Center

Innovation From Tradition



Tests in the Application Center

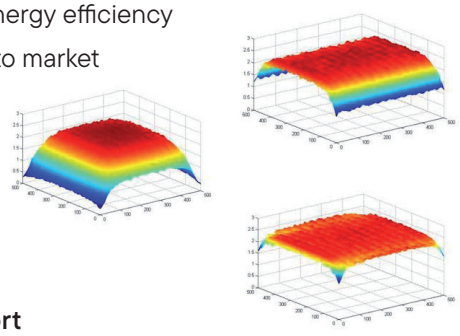
Excelitas has been producing heat that can be used by the industrial and scientific sectors for many years. With our intelligent Noblelight infrared heating technology we have been able to provide our customers with a competitive advantage. Innovations are today, without doubt, a key factor in any company's success. That is why, we continuously expand our product portfolio and our range of services with new ideas and well thoughtout concepts. These enable our customers to meet the challenges of today and the requirements of tomorrow.

The Point where Theory and Practice Meet.
In close contact with our customers and leading research organisations we continue to open up new applications for productive heat. At the same time we offer the capability for carrying out practical tests in our application center or even on site at customer locations carried out by qualified technical personnel. For this, we can hire out equipment consisting of complete infrared modules with the necessary electrical control equipment. Our sales engineers can work directly with you to find the best type of emitter and the best configuration for particular applications. As a result we can determine the heating process which most precisely and efficiently meets your requirements.

CAE simulation instead of trial and error
In the modern process development methodology, Numerical simulation tools (Computer-Aided-Engineering CAE) have become a key factor in the virtual analysis and optimization of highly competitive and advanced systems. Their use has enabled the manufacturers to reduce development costs and time while improving the safety, comfort, and durability of the goods they produce.

YOUR BENEFITS FROM CAE SIMULATION:

- Optimizes infrared heating processes
- Reduces development times and costs
- Avoids expensive trial and error
- Increases energy efficiency
- Faster time to market



Global Support
From initial design and manufacture through to installation and commissioning of your modules our qualified personnel are with you at all times to offer advice and support. Whether this is on the telephone or on site.

excelitas® Enabling the future

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