

- Interior Design ad accent heating by using F.I.R. Far Infrared modules (8-15µm).
- Energy efficiency reduction of harmful emissions
- Protection of the enviroment
- Interior design at state of the art by using F.I.R. Modules.
- Positive effects on health
- Multidisciplinary technology, nanoCarbon Crystal heating film, Far Infrared F.I.R.,
- Point to point modules Control via SPhone or PC.
- Heat Up and Decor ...

When, Where and as much as it need

# HATHOR PREMIUM

**F.I.R.** Far Infrared Heaters as Interior Design



BY

### Who we are





W W W.CMPARCHITECTURE.IT W W W.CUSTOMHOME.IT Wealth Srls (Start Up) is the result of synergies between the Architectural and Contract Design brands C+M+P architecture, and Custom Home and the technologists who have experimented the technology

The aim is to propose technologically innovative products and solutions, such as F.I.R. electric infrared accent heating and related electronic control systems, as Heating and Interior Design.

#### The result is is

Energy Efficiency ....

Reduction of harmful emissions ..... Environmental protection .... Positive health effect .

to furnish at the state of the art



Far Infrared Heaters as Interior Design



### Winter accent heating with F.I.R. infrared radiation panels (8-15µm) as Interior Design

Intelligently heating the home and rooms in winter requires the use of multiple types of heating, designed to make each space more comfortable and welcoming. Often, however, it is necessary to emphasize heating in a specific area of the house, by using accent heating.

What does accent heating mean? Accent heating is used to specifically heat areas where specific activities are carried out, such as dining room, drawing, reading, resting, living room and relaxation areas used for viewing media and then living areas.

- Accent on Heating, in fact, means placing the accent, or rather the attention, on a specific area. In general, accent heating is 30% higher as intense as ambient heating.
- In the case of kitchen, sofas, living rooms, bedrooms, we can choose wall panels, ceiling panels, recessed panels, as they can be direct and angular and therefore perfect to place the emphasis on this or on an area where you want to emphasize heating.
- Is it possible to emphasize and accentuate the heating in specific areas? Is it worthwhile? Is it possible to renovate a house and modify or implement the heating system without expensive and invasive works?.

The solution is in the new technologies that allow you to use electricity, 'electronics and software to produce and save energy by using them intelligently.

Starting with domestic heating, the advanced point to point electronic control systems that can maximize the efficiency of energy systems and reduce emissive of harmful substances.





#### The sun radiation in the house

The F.I.R. Far infrared Panels , in Glass of various colours, Mirror or Aluminium white powder coated, in nano Carbon Crystal technology are used for accent winter heating. FIR Modules guarantee healthy environments with excellent temperature comfort. The heating is perceived in a similar way to the perception of solar radiation. The surrounding air is not heated but only objects, surfaces and people exposed to radiation.

Using large modules with limited surface temperature (Max temperature 90°C) you have a very safe system.

The radiation emitted between 8 and 15µm, absorbed by the human body, improves blood circulation, relieves joint pain, improves metabolism. No convective movements and air circulation are created in the rooms, thus avoiding the formation of mites, dust and improving the quality of the same.

Respiratory problems for children, the elderly and those suffering from asthma are avoided.

Finally, no thermal stratifications are created, and measuring the temperature at different levels of height you notice a small difference within 1.5 C  $^\circ$  .





### The basic modules

The emitting surface, Glass - Mirror (Tempered 5mm thick) – or White Powder coated Aluminium, Heating Film and Rear Reflecting Surface, assembled and pressed at high temperature configure the **HATHOR** Base Module.

### NanoCarbonCrystal technology inK.

Nano carbon crystals are the basis of inks obtained using carbon nanopowders. Micro particles of rare minerals are added in order to emphasize the emission of radiation in the far infrared spectrum between 8-15um. Nano Carbon Crystal inks are universally considered the closest element to the emissions of the "perfect black body"

At low temperatures (from 293K/20°C to 368K/95°C) the maximum emission corresponds to values close to 9.5µm (WIEN's law), then within the emission ranges (8-15µm). Crossing the electric current through the deposited layers of carbon ink, an increase in temperature is created with emission of far infrared radiation (F.I.R.) in the spectrum 8-15µm, which correspond to the ideal frequencies of absorption of infrared radiation of the human body. This results in an increase in body temperature due to radiation.

#### Heating Film Technology.

Using screen printing technology for large surfaces, the mineralized nano Carbon Crystal ink is deposited on a 0.2mmm epoxy resin sheet activated by positive and negative copper strips on both sides of the sheet. Several successive steps are necessary in order to obtain a controlled and homogeneous thickness on the whole surface of the deposit. Two EMF shielding layers of 0.2 mm epoxy resin are positioned on the emissive side of the film, and one EMF shielding layer on the back. Using the technology of the production processes of the PCBs multilayers (high pressure and temperature presses), the production process of the films is completed. The films will be heat resistant, totally resistant to humidity, acids and alkaline substances. Total module thickness 10mm.

#### **The Modules**

The emitting surface, Glass - Mirror - White Coated Powder Aluminium, Heating Film and Rear Reflecting Surface, assembled and pressed at high temperature form the basic module of **HATHOR**.





#### Design

The elegant and refined design allows you to furnish with great elegance. The modules in dark tempered glass/mirror can be equipped with handpainted glass or ceramic, or in aluminium frame. Both the mirror/glass modules and the white coated poweder Aluminium modules, can be customised with images or paintings deposited either in digital print or manually printed by professional painters.

The aluminium modules can also be customised with Images deposited on the emitting surface, both in digital print and in UV print as well painted by professional Painter.

#### **Functionality**

Each panel is equipped with an independent and programmable control unit, easy to use and intuitive, which allows you to program times and irradiation power in an ideal way according to your needs and the characteristics of the environment.

Due to the absence of moving parts, Carbon Crystal radiant panels do not require any periodic maintenance. The transmission and absorption of heat from the source to the consumer can take place in various ways. The human body can be heated by means of a thermal vector (water, air, etc.), or by means of radiation that allows the transport of energy in vacuum spaces, as happens in nature for solar radiation. The sun's radiation extends over a wide range of wavelengths, only a part of the spectrum reaches us, the rest is retained and attenuated by the atmosphere as the harmful parts of the ultraviolet



## **The Products**

Items can be supplied with issuer emitting surface :

♦ Mirror

- ◆Tempered Glass black or white
- ♦White Powder Coated Aluminium

Mirrors, glass, aluminium can be customised with images in digital print, or they can be manual painted by professional Painter. Aluminium Modules emitting surface photos or images are also imprintable in U.V. print.

#### **Technical Specifications:**

Heating Film Technology	nanoCarbon crystal			
F.I.R. infrared emission	8-15µm			
Conversion electric energy into radiation	98%			
Power Supply	220Vac-230Vac 50Hz			
Max temperature heating film	105°C			
Max Temp. Emitting surface	95°C			
Conversion energy into FIR radiation	>80% /			
Convection	18%			
Life Cycle	>100.000 ore or 20 anni			

Installation	Wall—Ceiling			
Emitting Surface	Mirror, tempered Glass , White Powder Coated aluminium			
Certification	CE RoHS ErP			
Electric Power according Domension	From 320W to 1200W			
Protection	IP54			
Over temperature Protection	With Internal Sensors			
Control System	Wireless/ Fuzzy Logic& Smart tune e A.I.			





# HATHORPREMIUM The Products



#### **Dimension and Models: Glass and Mirror**

1		2	3	4		Examples		
Glass Mirr	or	Black White	0606	Wall Celing	GB 1006 W	Glass Black	1000x600	Wall
					MI 1206 C	Mirror	1200x600	Wall

Mod	Dimensioni mm	Power W	Notes
GB 0606 W	600x600x12	320	Glass Black 600X600 Wall
GB 0806 W	800x600x12	450	Glass Black 800X600 Wall
MI 1006 W	1000x600x12	580	Mirror 1600X600 Wall.
GB 1206 W	1200x600x12	700	Glass Black 600X600 Wall

Other dimensions on request

#### Dimension and Models: White Powder Coated Aluminium.

	1	2		3	4		Examples						
4	Alumin	Whit Othe	e er	0606	Wall Celing	Wall AV Celing		N 1006 C	Al White	1000x600	Ceiling		
	Mod Dimension mm				m Pov	ver W	Note						
	AW 0606	AW 0606 W 605x605x12			3	350	0 AL White 600x600 Wall						
	AC 1006	С	2 1005x605x12		2 5	580		AL White 1005x605 Ceiling					
	AW 1206	W	120	5x605x12	2 7	700			AL White 1205x605 Wall				
	AW 1209	209 W 1		5x905x12	2 1	1100		1100			AL White 1	205X905 Wal	





## Heating design

Total Apartment Heating BY using **HATHOR PREMIUM** 

Recommended environments:

- New construction in Energy Class A+ A .B
- Renovations to Energy Class A+ A B.
- Geographical areas with mild winter climate. Centre and South Italy Islands.

#### Benefits .

- Fuzzylogic, Smart tune with intelligent control algorithm, integrated in the electronic control module.
- Supervision, and setting of physical and logical parameters from PC-Smartph-Tablet.
- Distributed intelligence control system.
- Energy efficiency by being able to program the energy consumption of the HATHOR modules point to point and independently for each room.
- How much, when and where needed.

Design, Thermotechnical Design is required

Mix, HATHOR PREMIUM as heating accent in specific areas and gas boiler

Recommended enviroments:

- Existing dwellings, autonomous heating with gas combustion boiler.
- Energy Classes B C D E. For lower Energy classes, it is necessary to carry out an accurate analysis and subsequent feasibility study.

#### Benefits

- Use the HATHOR modules as a support in the areas subject to the need to accentuate the heating, for example ..... Bathrooms, upholstered area, study, bedrooms, living room, **only and when necessary**.
- Via Point to Point control system, become easy to set modules power independently. **Resulting in significant energy savings**.
- Easy of installation

#### when, where and as needed.



**Heating Design** 

### **Energy consumption by using FIR modules as accent heating in existing Houses**

As mentioned before, it should be considered that 95% of the current apartments heating system in several countries, are based on hot water circulation (Gas boiler and radiators), radiators and heat pump, floor heating with hot water. Than have already existing winter heating system that provides circulation of hot water as well heating via convection.

**The accent winter heating** is therefore aimed at these specific users. Some simple operations allow to reduce the consumption by 20% to 30%.

- Set ambient temperature by means of chronothermostat to 18.0°C i.e., and reduce the temperature of the heating water circuit to 50°C-52°c.
- Using accent heating system with far-infrared modules, we therefore emphasize heating only in areas that need superior comfort because we live or station for longer time such as Bathrooms, upholstered area, study, bedrooms, livig room only and when necessary
- Wireless modules control system, let you able to set power of of individual modules independently.

The control is not suggested to be based on temperatures but on the feeling of comfort. For example, if you stand in a padded area watching the TV, you raise the power (radiated energy) only in that area, until you find a correct feeling of comfort.

It should be noted that the feeling of well-being is absolutely similar to when in winter and sunny day you stand in an area radiated by the sun and compares with the area in 'shade... The air temperature is similar but the feeling of better well-being is relevant.



## Some examples of accent heating by means of FIR Modules

Ceiling white powder coated Aluminium

Heating Film back on glass





## Some examples of accent heating by means of FIR Modules





## Esempi di come accentuare riscaldamento in zone specifiche

Interior Design by using FIR Modules films

Hathor Premium FIR Aluminium modules painted





## Esempi di come accentuare riscaldamento in zone specifiche



Mirrors Heating FIR modules with led on edge



## Esempi di come accentuare riscaldamento in zone specifiche









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