

HERSCHEL[®]

far infrared heaters

2017/18 product catalogue



Efficiency with
smart, zoned
control

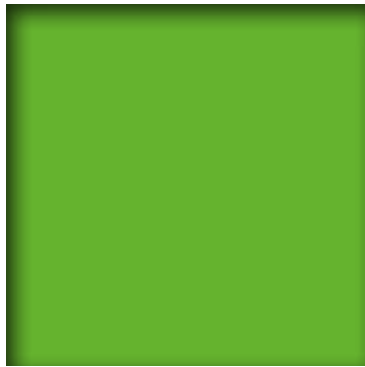
Herschel Far Infrared Heating

Completely changing the way we
heat ourselves

Energy efficient, sustainable
electric heating solution

- Commercial
- Industrial
- Domestic
- Outdoors





THE FUTURE IS ELECTRIC

In the future fossil fuels will be a thing of the past and **efficient electric heating** will be the standard way we heat ourselves.

Europe's focus on Energy resulted in the '20-20-20' targets for the EU to achieve by 2020.

- Greenhouse gas emissions 20% (or even 30%, if the conditions are right) lower than 1990
- 20% of energy from renewables
- 20% increase in energy efficiency



Herschel Far Infrared Heating can be utilised with other Green Energy Technologies

Herschel is a low energy heating solution that, when used with electricity generated by either solar, wind power or other renewable source, is **100% CO² free**.

Our panels can be linked to **solar** to provide free heating. As solar battery storage develops the Herschel fit with solar will become increasingly relevant. A typical 4kW Solar PV system combined with Herschel and battery storage could cover the annual heating requirements of the average house in the UK.

Herschel's perfect synergy with **renewable technologies** facilitates the achievement of Corporate Social Responsibility (CSR) policies and meeting targets for reducing carbon emissions.

We have a number of case studies which highlight both the energy savings from installing Herschel heaters as well as the reduction in carbon emissions.



HERSCHEL is the **FASTEST GROWING** of the **NEW, ALTERNATIVE HEATING** technologies

“Same feeling of warmth as the winter sun on your face”



Make your room a 360° radiator

In a cold room the building will 'take' your body heat and make you feel cold. However, if we use Herschel Far Infrared to directly heat the walls, floor and ceiling of a building (the 'thermal mass') the room will stop taking away our body heat, and radiate back the infrared heat, making us feel warm. Once the thermal mass of the building is warm ($>17^{\circ}\text{C}$), the heater only needs to be on to top up. Convection heaters (electric or gas) mostly heat the air and this does very little to heat the thermal mass of the building. This is why Herschel SAVES ENERGY.

HOW IT WORKS

What is Far Infrared heat?

Herschel Far Infrared is low energy electric heating, up to **60% more efficient** than traditional electric heating with the benefits of **increased comfort** levels. It also has many advantages over other alternative heating systems such as air source pumps due to **low costs** of installation, **zero maintenance** and unprecedented ability to **zone and control**.

Far Infrared is radiant heat, it's the same feeling of warmth as the winter sun on your face and the heat from a coal fire. It is even the same form of heat emitted by your own body.

It is the most basic form of heating known to man. Used by cavemen to heat themselves by fires, by Romans in their hypocausts, by log burners and tile stoves. Favoured for millennia because it heats objects, which then radiate back and keep the environment warm around you. Radiant heat does not heat air – which holds little heat and disappears.

But in the last 60 years, we have forgotten about radiant heating: not because a better technology replaced it, but because fossil fuels that powered central heating made it so cheap to heat air.

Today, new technology, in the form of our 100% energy efficient, zero light Herschel Far Infrared heating, is allowing us to use radiant heating once more in a stylish, comfortable and highly controllable way.

Infrared itself breaks into 3 bands, according to temperature: Near, Medium and Far Infrared, the one we're interested in for human '**Comfort**' heating is **Far Infrared** because this is the wavelength we naturally absorb when warm objects radiate heat.

It's the same heat we feel from an environment warmed by the sun, and the wavelength most efficiently absorbed by the body. It is 100% **safe and natural** (it's UV that is harmful, not infrared).



“Radiant heat
and convection
heat do not
compare”



Images show Select XL Glass Black (left) and Select XL Glass White (right)

RADIANT VS Convection

In terms of heat transfer efficiency, radiant heat (Far Infrared) and convection heat simply do not compare. They have very different heat transfer properties and as far as heating your home, office or workspace goes, it is important to know the difference. Radiant heaters heat objects in the environment which warm up and radiate back. Convection heaters heat air, which retains heat poorly and disappears on draughts. As a result heating air requires much higher energy.

Less intrusive than central heating: less building work and less cost during installation.

Consider

- Provision of electricity (simply plugs-in)
- Space to hang on a wall or ceiling

No requirement to consider

- Insulation behind the heat source
- Pipework for water
- Storage of fuel
- Flues / Chimneys
- On-going maintenance

Infrared requires no maintenance and has an incredibly long life so there is no risk of having to revisit the entire installation again in ten years time.

All other electric radiators are yesterday's technology

Because they heat the air, even the best market leading "low consumption" digital

electric convection radiators need around 40wm^3 . Herschel infrared panels do not heat the air and so typically only need 25wm^3 . Both Herschel and digital electric radiators run for around 40% of the required heating period (often referred to as the "effective power"). That's a massive saving of 37% on electricity consumption by Herschel with even higher savings of up to 60% compared to electric storage heaters.

Benefits to buildings:

- Reduction of causes of moisture. Far Infrared maintains a higher temperature in the material of a building and a lower temperature in the air so moisture is discouraged
 - **LESS** condensation
 - **LESS** corrosion of metal parts
 - **LESS** salt-damp in stonework
 - **LESS** likelihood of wood rot and bugs
 - **LESS** damage to paint (flaking)
- Far Infrared can be used to heat a zone within a building, something not possible with convection. Herschel heaters can directly heat people in the areas, where they need to be heated
- More constant temperature over periods of operation - fewer hot / cold cycles on the inside (e.g. plasterwork) of the building

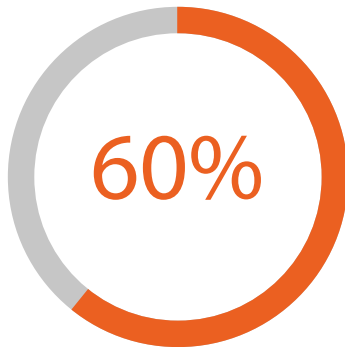
IF BUILDINGS
COULD DECIDE,
THEY WOULD
CHOOSE
HERSCHEL
FAR INFRARED



Image shows Inspire Mirror Panel

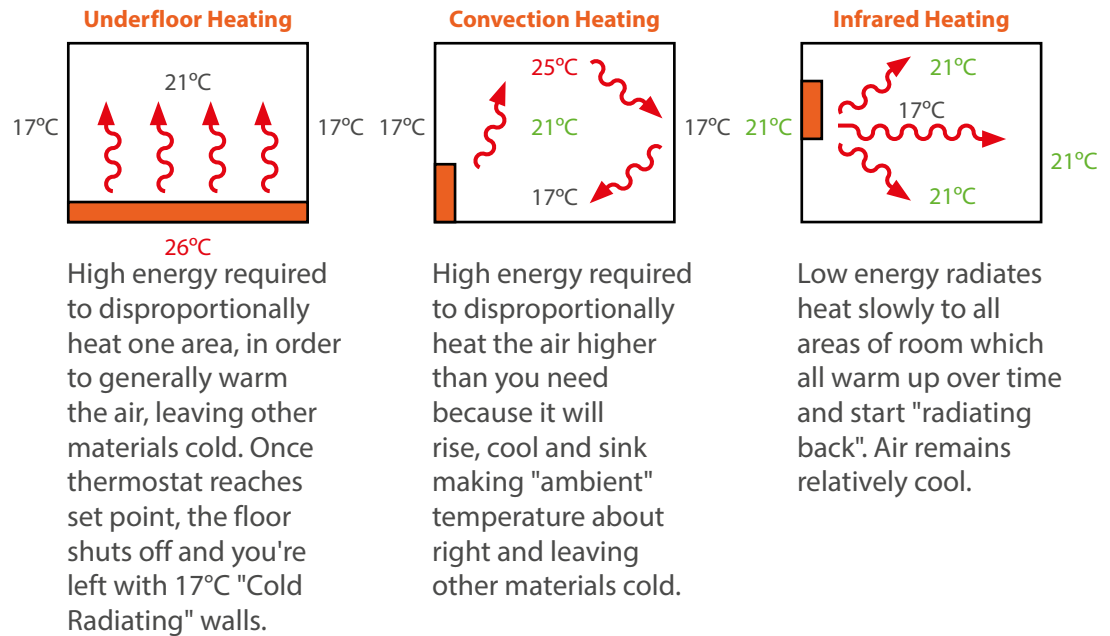
“Unbeatable combination of price, efficiency, payback, comfort”

COMPARISON OF HEATING TECHNOLOGIES

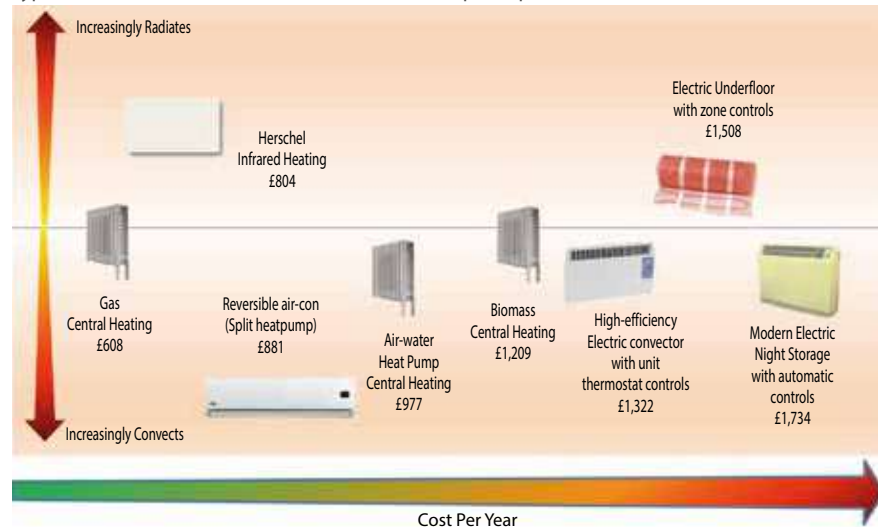


Delivers up to 60% savings on energy usage over traditional forms of electric heating.

Compared with new technologies such as heat pumps **HERSCHEL FAR INFRARED OFFERS SIGNIFICANTLY QUICKER PAYBACK TIMES** due to the lower costs of installation and lower maintenance.



Typical 3 Bed House - Total annual cost of ownership comparison



How Herschel Infrared Compares

vs Heatpumps

- much cheaper purchase price
- lower installation costs
- no ongoing maintenance
- no noisy fan
- no plumbing/leaks

vs Night storage heaters

- far more economical
- much better control
- does not require Economy 7
- much nicer looking

vs Biomass

- no central boiler - noise, space
- significantly cheaper purchase price
- no maintenance
- no ordering, delivery and storage of pellets / fuel
- no plumbing / leaks

Total cost of ownership includes: ■ purchase cost ■ installation cost ■ annual running cost ■ maintenance cost ■ replacement cost
All figures taken from manufacturer websites and UK Energy Savings Trust calculations for a 3 bedroom house. RHI and other grants not included.

CASE STUDIES

“Market leader”



A leading FM company instructed Herschel to look at a heating solution to reduce consumption within a vehicle testing and storage warehouse.

Issues:

- Existing gas fired heating system was not zoned
- Large amounts of air heated for significant time still unable to achieve a comfortable temperature
- Lack of heating controls and inefficient heating system meant significant costs

Herschel Solution:

- Combined Infrared electric heaters with pre-programmable push button timers
- Enabled heating to be zoned effectively in the areas required
- Controls mean heaters only used for time required

Estimated Annual Savings

- 90% reduction in energy consumption (kW/hrs)
- 71% saving off current energy bills
- 76% reduction in CO² and Carbon Emissions (kg)
- C.3.6 yr estimated payback period

Independent Field Trial at a leading UK national hotel chain

Herschel was approached to find an infrared solution to reduce heating costs and provide more effective heating for hotel rooms.

Key findings for February 1st to April 30th 2016

- ✓ Existing convector heaters consumed **c.21.5%** more energy on average than Herschel Select XL
- ✓ Higher savings for Herschel on colder days <5C and in rooms with more external walls (28%)
- ✓ Average 0.8kw per room per day saving = 190kwh per room per annum = £26 per room per annum saving*
- ✓ Estimated annual saving would be **£1.2m** per annum across entire estate**
- ✓ Would also free up wall space

Positive customer feedback

- "more comfortable than convector heaters"
- "no noise"
- "heats very quickly"
- "more stable with less need to adjust thermostat"

*Based on 34 weeks heating season (per Energy Saving Trust).

**Hotel chain has 44,000 UK rooms with electric convection heating

Take a look at our website, www.herschel-infrared.com, for more details on other Herschel case studies within the commercial, industrial, domestic and outdoor markets.

CHOOSE HERSCHEL

- SIX REASONS WHY

FAR INFRARED
HEATING IS
100% NATURAL

1

The human body is designed to accept and to emit infrared waves.

The fabric of the building can retain heat for longer, creating better thermal comfort, so your property will be warmer and cosier.

HEATS THE
FABRIC OF THE
BUILDING,
NOT AIR

2

LESS DAMP
AND MOULD

3

Herschel Far Infrared heating warms walls and keeps them dry.

Compared with other gas, oil or electric solutions, Herschel infrared heating can save up to 60% of the annual energy usage.

GREATLY
REDUCED
ENERGY USE

4

NO
MAINTENANCE
OR SERVICING

5

Solid state elements unlike water-based heating or fan-assisted systems, which often require servicing, inspection and repair costs.

Combined with electricity from wind or solar, it is one of the only heating systems that can truly claim to be **100% carbon free.**

CO2 FREE

6



Image shows Inspire White Glass



SAMPLE CALCULATIONS

Room Heating

The power (wattage) of the heater needed **averages 25wm³** but will depend upon the construction type and INSULATION levels. Better insulated rooms will need less power. The aim of Infrared is to heat the “thermal mass” of the room. This can mean 2-3 days of the heaters being fully on at the start of the winter season. After that the thermal mass just needs “topping up”. We estimate an average of 5 hours running time every day over the heating season. **This compares to an average of 40-45wm³ for convection heating.**

Watts per mtr cubed	Insulation levels	
7wm ³	Passive house	Completely airtight modern
20wm ³	New Build	Standard new build
25wm ³	Modern building	1950's onwards
30wm ³	Old building	Pre-1950's non cavity wall

Space Heating – Large areas and outdoors

It is very expensive to heat very large areas such as warehouses, churches, halls. With convection heating it is not possible to create zones within a large building or large area (the air can't be contained), so the whole building / large area needs to be heated. The benefit of radiant heating is that we can directly heat people in the areas where they need to be heated, so heaters can be mounted only in those areas (we call them zones).

Heater	Zone Indoors	Zone Outdoors
IR2 / XL2 1300w	6-9m ²	3-6m ²
IR3 / XL3 1950w	9-12m ²	4.5-9m ²
IRP4 2600w	12-21m ²	N/a
Pulsar 1800w	8-15m ²	N/a
Pulsar 2400w	12-20m ²	N/a

Within the lower range of the heated ZONE you will feel the heat and your body will absorb the heat whilst the heater is on. Within the entire zone, the far infrared will be absorbed by the building and if there are sufficient heaters in the area to build up THERMAL MASS then the ambient temperatures will increase. Note however, that this depends upon the construction of the building, the number of heaters within the area, the insulation levels and running times. This is a technical area which will need involvement of the Commercial and Technical Division. Our Commercial and Technical Division offer a survey service to assist here.



“Commercial,
domestic,
industrial,
outdoors”

Images show: Picture Panel, Mirror
Panel, Black Pulsar, Aspect XL.

PRODUCT RANGE

Indoor Space Heaters

Public spaces – Our Pulsar and Aspect ranges are the most stylish infrared heaters on the market, perfect for public spaces where aesthetics are important such as restaurants, churches or public halls.

Industrial and Commercial buildings – Our Advantage range is designed for large industrial spaces such as warehouses, depots and garages where effective zoned heating is required.

Outdoor Space Heaters

The Aspect range is the most attractive and best performing far infrared heater on the market.

Panels

Our panel heaters are ultra slimline, with large surface areas, specially designed for heating rooms. They can be ceiling or wall-mounted and a number of designs are available including standard white, glass, mirrors, and even bespoke pictures.

The **Select XL** is our performance range featuring our specially-developed Herschel COSIX Cell technology heating element and unique EASYFIX mounting system.

Select is our standard range, offering all the benefits of Far Infrared at great value.

Inspire is our premium range, made in Germany, available in the widest range of finishes and complete with a 10 year warranty.

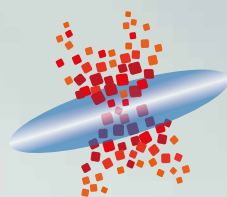
	Select	Select XL	Inspire
Wall and ceiling	✓	✓	✓
White finish	✓	✓	✓
Insulated		✓	✓
Frameless		✓	✓
Aluminium construction		✓	✓
Easyfix mounting	✓	✓	
Glass		✓	✓
Mirror		✓	✓
Picture			✓
10 year warranty**	*	*	✓

*Select and Select XL both come with 5 year warranty

** Requires online registration

All our panel ranges are fully tested by TÜV to GS, CE and international electrical Safety Standards.

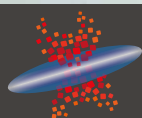
**ZERO LIGHT
COMFORT
HEATING
SOLUTION
FOR ANY
APPLICATION**



HERSCHEL[®]

far infrared heaters

Select XL 1000W



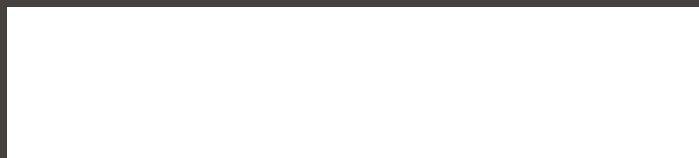
HERSCHEL[®]

the future of heating – today

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