



weaveTM SALES GUIDE

PARC[®]
A Price Company

CONTENTS

Introduction to Weave.....	3
Marketing	4
Key Selling Points.....	4
Target Market/Applications.....	4
Marketing Material.....	4
Sales Process.....	7
Approved Countries.....	7
Project Vetting.....	7
Contacting PARC.....	7
Product Design Overview.....	8
Mounting Options.....	8
Important Dimensions.....	8
Textile	8
Flex Hoses.....	9
Third Party Devices	9
Curved Weave Panel	9
Performance.....	9
Thermal Performance.....	9
Energy Savings.....	10
Reducing Fluid Transport	10
Human Temperature Perception	10
Heat Distribution to Occupants.....	11
System Temperatures.....	11
Manufacturing	12
Materials and Manufacturing	12
Lead Time.....	12
Pricing	12
Unit Pricing.....	12
Installation Pricing.....	12
Warranty	12
Installation.....	12
Maintenance	13
Environmental Schemes.....	13
Competitors.....	14

This document is available to all sales agents or representatives responsible for promoting Weave Radiant Textile Panels™ ("Weave") and has been designed to give a clear overview of Weave as well as its key selling features and responses to common inquiries. This should enable the sales agent or representative to handle initial enquiries and vet them prior to sending to PARC's dedicated team of Project Engineers for detailed review and quoting.

INTRODUCTION TO WEAVE

Developed in conjunction with Kvadrat Acoustics, Weave provides thermal and acoustic comfort as well as infinite design possibilities. Weave radiant panels function as part of a hydronic system to provide sensible heating and cooling for superior thermal comfort while innovative textile technology allows the transmission of thermal radiation through the textile face to provide a unique aesthetic without compromising performance.

Available in bespoke shapes and sizes, Weave panels are upholstered in Kvadrat textiles to provide colour and texture options for seamless integration with any design scheme. Capable of both heating and cooling, Weave can be applied to most spaces, especially those with high sensible loads, high indoor air quality requirements, or where acoustics, thermal comfort and energy efficiency are major design considerations.



MARKETING

KEY SELLING POINTS

Unlike many competitive radiant panels, Weave is available with many customization options including:

- Four standard textile colour options, plus custom colours
- Completely customizable sizes, up to a maximum standard size of a single panel of 120 in x 60 in [3000 mm x 1500 mm]
- Custom shapes and sizes available, including planar curves
- The thermally activated textile panel face is held in contact with the aluminum panel using Soft Cells' patented tensioning mechanism for optimal heat transfer, resulting in thermal performance comparable to a typical metal radiant panel. The quality of the contact will not diminish over time.
- Weave provides an acoustic panel solution for meeting the required sound absorption criteria in many spaces. Weave provides Class B acoustic performance and is typically applied with higher ceiling coverage than standard acoustic panels.
- Weave can be refreshed to meet changing interior requirements. Quick to install, each panel can just as easily be demounted, reupholstered and reinstalled.
- Weave radiant textile panels can easily integrate with other ceiling fixtures including Node™ by PARC for integration of lighting and other building services.
- Weave and Kvadrat Soft Cell panels can be installed side by side with matching textile and appearance to ensure a consistent ceiling aesthetic.
- High quality flexible hoses prevent leaks, can be rerouted as necessary, and allow access to individual panels for maintenance.

TARGET MARKET/APPLICATIONS

Weave is initially presented as a premium quality product aimed at high-end commercial construction projects designed by prominent global or local architecture firms. Suitable applications would include:

- Class A office spaces¹ occupied (and ideally owned) by large end users that are typically prestigious global brands.
- High-end hospitality spaces such as luxury hotels and restaurants.
- High-profile spaces within public buildings such as airports and shopping centers.

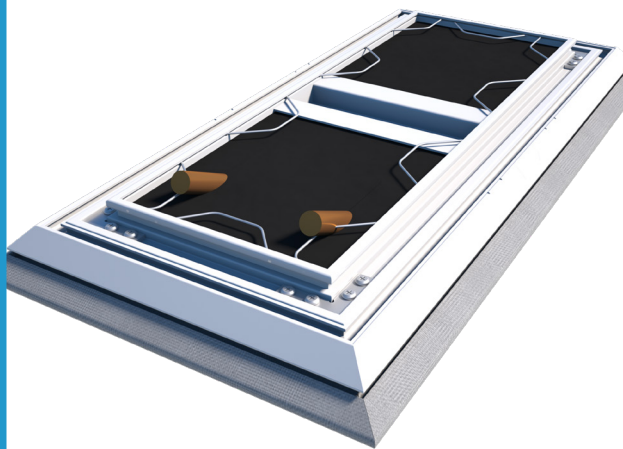
PARC has had the most success to date with promoting Weave to owner-occupied midrise office buildings. Weave could possibly appeal to high-end leased space as well. In either case, a highly motivated and involved owner and/or architect is generally critical to the sale.

MARKETING MATERIAL

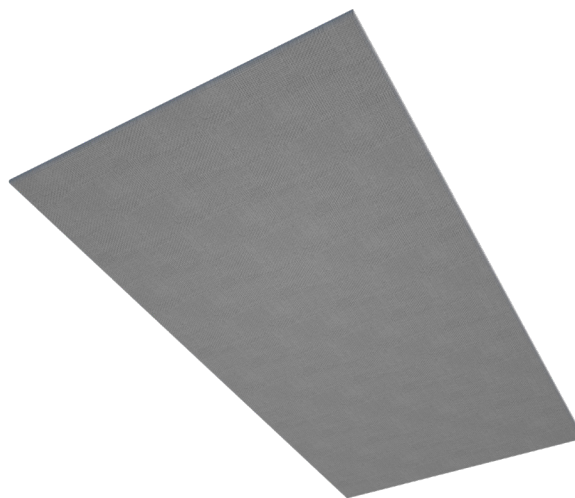
- PARC is able to organise **office visits and CPD or sales presentations** to give an overview of the system to prospective customers.
NOTE: Presentations cannot be shared directly with customers and must be presented by a PARC team member.
- **Weave Catalog** – available upon request from PARC or online
- **Weave datasheets, installation documentation and technical details**
- **Weave and Weave accessories samples** - Available upon request from PARC or via the "Request a Sample" link on the PARC website.

¹ The Building Owners and Managers Association (BOMA) classifies office space into three categories: Class A, Class B, and Class C. According to BOMA, Class A office buildings have the "most prestigious buildings competing for premier office users with rents above average for the area". BOMA states that Class A facilities have "high quality standard finishes, state of the art systems, exceptional accessibility and a definite market presence". BOMA describes Class B office buildings as those that compete "for a wide range of users with rents in the average range for the area". BOMA states that Class B buildings have "adequate systems" and finishes that "are fair to good for the area", but that the buildings do not compete with Class A buildings for the same prices. According to BOMA Class C buildings are aimed towards "tenants requiring functional space at rents below the average for the area."





Weave Sample Top View



Weave Sample Bottom View



Torsion Spring



Flex Hose

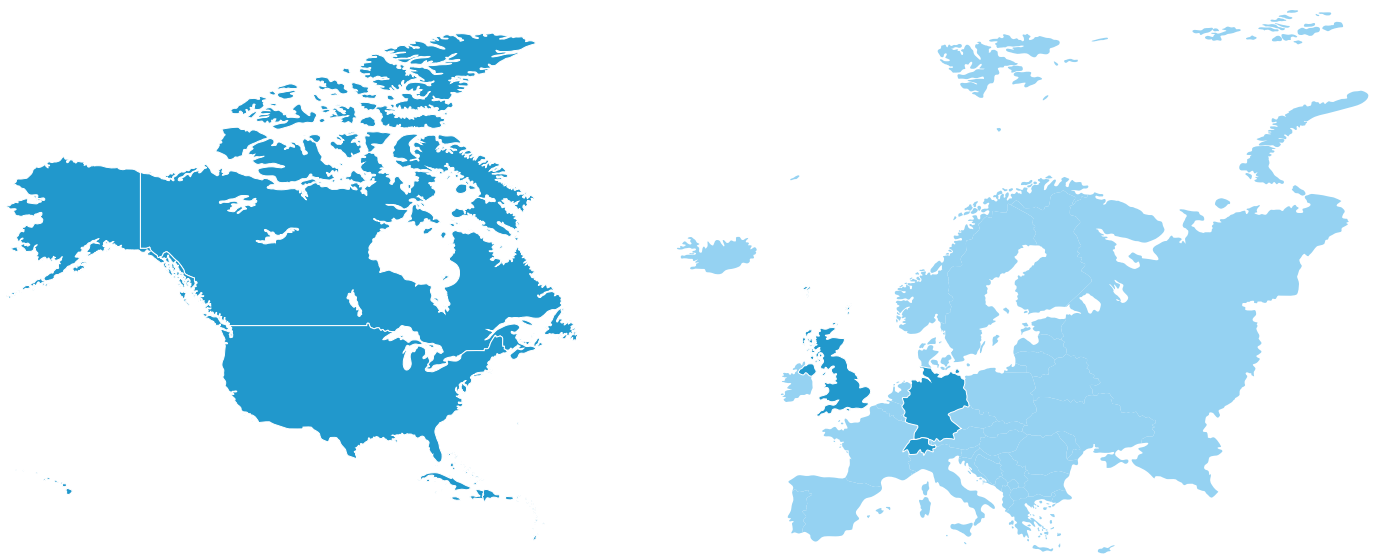
Product information is available in both English and German.
Please inquire with PARC if additional languages are required.

SALES PROCESS

APPROVED COUNTRIES

It is our intention to limit our marketing efforts to Canada, the United States, the United Kingdom and the EU (with an emphasis on Germany and Switzerland) for the time being. This allows us to be successful in supporting project delivery, with known recommended installers and familiarity with the procurement processes in these countries.

We would consider opportunities in other countries only if there is a compelling strategic value in doing so.



PROJECT VETTING

Sales agents should complete an initial vetting on the opportunity in advance of engaging the PARC team. Below are the key questions that we would suggest a PARC sales representative address with the design team:

- Is a radiant system contemplated for the building? Does the engineer know this technology is contemplated?
- Is acoustic performance a major design consideration?
- Does the space require flexibility in terms of shapes and sizes of panels?
- Is sustainability a major design consideration? Is the building targeting a WELL, LEED, BREEAM, rating etc.?
- Is there a clear drive from the building owner to create a unique and compelling aesthetic (and associated budget)?

In order to qualify a project as a strong Weave lead, we would expect the answer to all of these questions to be yes. If that is the case, we would suggest proceeding with the details of our initial project requirements:

- | | |
|-----------------------|---|
| • Project Name | • Engineer |
| • Representative Lead | • Projected Installation Date |
| • Owner | • Opportunity Size (ft ² or m ²) |
| • Architect | • Location |

CONTACTING PARC

All enquiries should be directed to info@parc-ceilings.com

PRODUCT DESIGN OVERVIEW

Further information can be found in the Weave and Core Data Sheet

MOUNTING OPTIONS



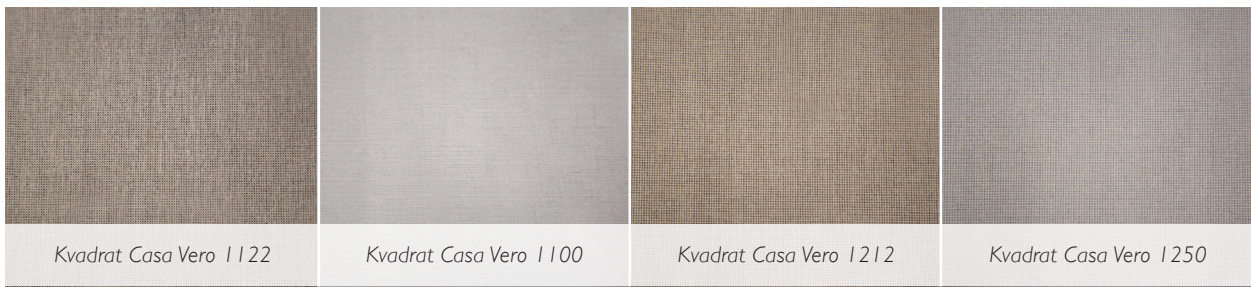
IMPORTANT DIMENSIONS

Max. panel length	Max. panel width	Min. installation height below ceiling	Filled panel
120 in [3000 mm]	60 in [1500 mm]	5.1 in [130 mm]	4.1 lbs/ft ² [20 kg/m ²]

Larger dimension, curved and asymmetric shaped panels are available on request.

TEXTILE

The following standard textiles are offered:



PARC can also offer custom textile colours. Customers may choose from the full Casa range from Kvadrat, however custom colours are subject to performance verification, minimum order quantities and possible longer lead times.

Weave uses a patented aluminized textile in order to increase the heat transmission throughout the panel surface. The patented Kvadrat Soft Cells tensioning system also ensures that the textile maintains full contact to the panel surface at any time. This mechanism ensures that there are no air pillows between textile and perforated sheet metal.

FLEX HOSES

Flex hoses come in a 39 in [1 m] standard length, but other lengths provided as required for the hydronic layout.

THIRD PARTY DEVICES

Integration of third party devices into the panel face is possible. The suitability of the device will be evaluated on a case-by-case basis for each device and carries an engineering setup charge for each device. PARC will require a device sample to analyze the devices properties (dimensional data, electronic properties) in order to ensure that it fits within a Weave panel and devise an appropriate mounting mechanism.

The cutout can affect the panel performance. For cutouts with a diameter below 3.5 in [90 mm], appropriately located within the panel, there will be no performance impact. Information on the performance impact of larger cutout sizes can be provided by PARC on request.

CURVED WEAVE PANEL

The Weave Panel can have curved edges, however, this would require a custom, curved extrusion which carries a substantial cost premium. Please inquire with PARC for further information.

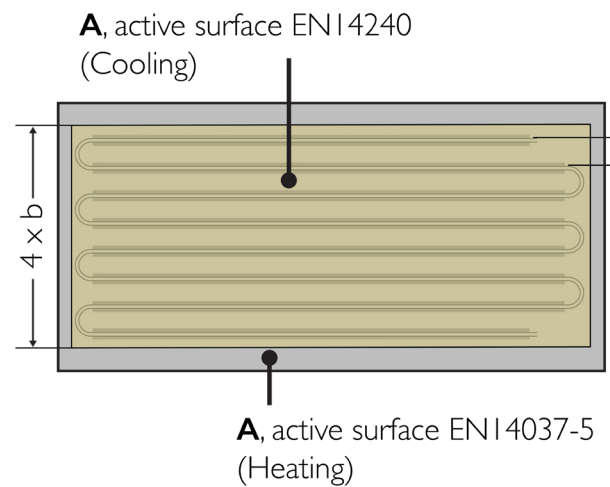
PERFORMANCE

All performance data - cooling performance, heating performance, acoustic, fire resistance and certification information - can be found on the Weave Data Sheet.



Thermal Performance

Weave panels provide both heating and cooling and their performance has been third party verified at WSP labs, Stuttgart, Germany. Cooling is tested to EN 14240, whilst heating is tested to EN 14037, the output of these tests allows us to calculate a W/m² output at different water temperatures, however the area referred to in 'W/m²' is the active area of the panel. The active area of the panel will be determined by how much of the panel is in thermal contact with the copper coil, and it is determined differently for heating and cooling, as shown in the image below.



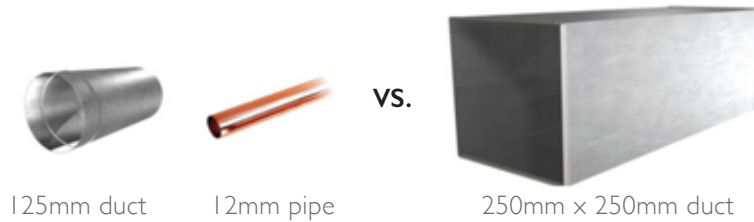
The thermal performance communicated in the Weave data sheet takes into account all of these factors, however for complex panel shapes, or panels with cut-outs please contact PARC's Project Engineering team to prepare performance schedules.

Energy Savings

Radiant panel systems, such as Weave can provide a 20-40% energy saving over more conventional systems like all-air system or fan coil units. There are a number of contributing factors which result in this energy saving;

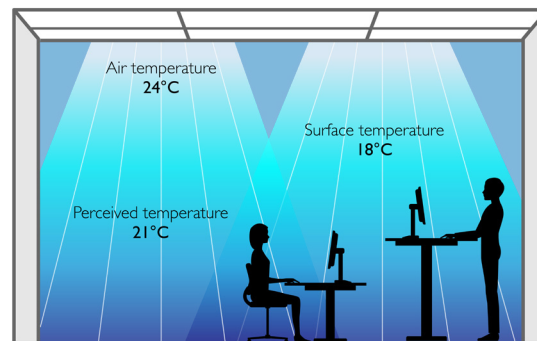
1. Reducing fluid transport

Water has a specific heat capacity approx. 3,400 times greater than air. To deliver the same amount of energy, far less water needs to be transported than air. This means that the pumps that drive water through the radiant system will typically use less energy than the fans and pumps driving the alternative air-based space conditioning.



2. Human temperature perception

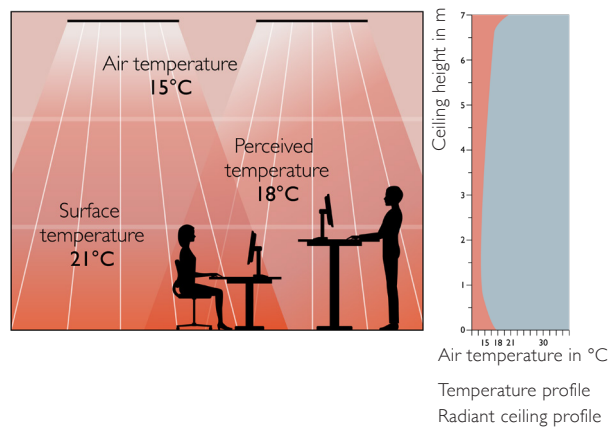
The temperature that occupants feel in a space is a combination of the air temperature and the surface temperature, known as the operative temperature. In a space with radiant cooling, the air temperature might be 24°C, but the radiant panel is 18°C, and the operative temperature could be 21°C – this is cooler than the air temperature. With occupants feeling comfortable at a higher air temperature, there is less cooling capacity necessary and therefore less energy used for cooling.



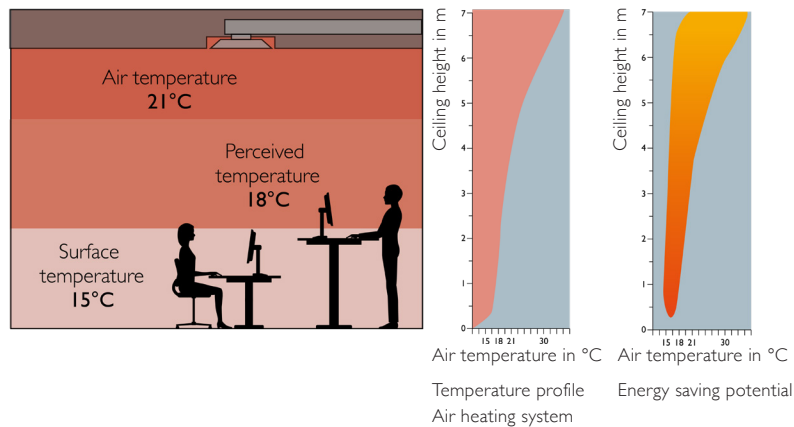
3. Heat distribution to occupants

Radiant heat exchange is the exchange of electromagnetic waves between surfaces of differing temperature. This means that the heat from a radiant panel is transferred directly to occupants and the surfaces around them. This results in an even air temperature throughout the room. This is compared to all air systems, which rely on convection where parts of the room will be heated to a much higher temperature because the heated air rises within the space.

With radiant ceiling panels



With air heating systems



4. System temperatures

Radiant systems typically run at higher chilled water temperatures than fan coil units or all air systems. In general, chiller efficiencies improve approximately 4% for every degree Celsius that chilled water supply temperature is increased.

Similarly, radiant panels such as Weave are ideally suited to low temperature hot water systems. Again, the coefficient of performance is much greater for low temperature hot water system. For example, if you use a heat transfer system that runs at a flow temperature of 50 °C, you will use around 90 % more energy than with a system that runs at a flow temperature of 30 °C.

Acoustic Performance

Weave has a fixed reflection area per panel due to the perforated sheet metal on the backside of the panel. As a result, it is not possible to increase the class B performance.

Humidity Controls

Generally, we recommend using closed loop humidity controls, for example, wall-mounted humidity sensors, when using radiant technology of any kind.

MANUFACTURING

MATERIALS AND MANUFACTURING

Product Type	Material	Manufacturing Location	Assembly Location
Weave Panels	Aluminium extrusion and sheet metal	Canada	Canada
Copper Coils	5/8" copper coils on the backside of the panel	Canada	Canada

LEAD TIME

PARC will issue a periodic *Lead Time Statement*.

PRICING

UNIT PRICING

Weave has no standard list price. Pricing for Weave will naturally depend on the panel area and quantity of cutouts for a particular project and PARC can only provide quotations against a reflected ceiling plan showing the precise devices and interfaces included in a project.

However, for most panel sizes the selling price for Weave will be between 40 USD/ft² and 70 USD/ft² [375€/m² and 600€/m²] exclusive of freight and installation (which will vary considerably depending on project location).

These prices are PARC's selling price and do not take into account any profit margin for a reseller, such as a sub-contractor, or for installation. As a result, where the sale is made to such an intermediary rather than directly to the owner of the building (which will typically be the case). These prices further do not include installation.

INSTALLATION PRICING

Installation cost depends on the location as hourly wages of installers vary from country to country.

The cost for our Core mounting solution is between 3 USD/ft² and 5 USD/ft² [30€/m² and 40€/m²] (supply only).

WARRANTY

The Weave panels carry a limited two-year warranty. However, this warranty does not apply to components or items supplied which may be warranted separately by the original manufacturer of the component or item or to controls and components supplied directly by third parties for mounting into the Weave panel.

INSTALLATION

We would expect a ceiling contractor to install the panels and the hose connections to be made by a qualified mechanical contractor. The installation manual can be found on our website.

The connection between the main water system and Weave panels is made with a flex-hose that has a push-connection on the panel side. The other connection to the main water distribution system can be modified as per request.



MAINTENANCE

Typically, there is no maintenance required after the installation. In the event that that textile becomes dirty, the customer can either wash the textile (as per the manual) without uninstalling the panel or exchange the textile when required. Re-upholstering can be done on site by qualified Kvadrat personnel.

In the unlikely event that a Weave panel is leaking, we would recommend clearing the space below the leakage immediately. Next, we would recommend engaging a qualified mechanical technician to shut off the circuit valve in order to avoid continuous water flow through the affected circuit and drain the circuit and look for leakage.

ENVIRONMENTAL SCHEMES

Weave can offer credit towards LEED and BREEAM schemes. Please refer to the LEED and BREEAM guides on our website for more details.

COMPETITORS

Weave is a unique product, and there continue to be no direct, like-for-like competitors that PARC are aware of. The closest competitor product is the Barrisol Radiant Clim, described below.

Manufacturer	Model	Overview	Competitive Advantages
Barrisol	Radiant Clim	<p>The Barrisol Clim® is a stretch ceiling combined with radiant panels.</p> <p>Radiant panels are installed in the plenum, they can be suspended or directly attached to the slab.</p> <p>The hidden surfaces behind the fabric radiate directly through the surface of the stretched ceiling to people and objects within the room below.</p> <p>LED lighting can be integrated into the system (by fixing to a sub-structure or directly to the underside of the panels) so that the ceiling is illuminated over its entire surface.</p> <p>Barrisol Clim® peripheral profiles have openings that allow air exchange between the plenum and the room, which significantly increases the cooling capacity.</p> <p>Advantageously integrated into the system, the mechanical ventilation (blowing and extraction) becomes invisible. The system then works in forced convection, thus additional allowing an additional gain in power.</p>	<ul style="list-style-type: none"> • Can integrate LED lighting across the whole surface • Overall ceiling solution relies on circulation of fresh air throughout the plenum with radiant cassette to achieve performance of approx. 100W/m2 in cooling

Otherwise, the true market competitor for Weave is a more typical metal radiant panel. While these are somewhat different aesthetically, they are widely available for a lower price point than Weave and often have higher performance options available. In order to avoid value engineering towards these more 'commodity' products the value proposition of Weave must be highlighted, including its aesthetic, acoustic and accessibility benefits.

Manufacturer	Model	Overview	Competitive Advantages
Frenger	EcoStrip XP	EcoStrip XP is designed for the heating of larger buildings such as industrial buildings, commercial buildings and sports centres. EcoStrip XP is suitable for both high and low installation.	<ul style="list-style-type: none"> Panel run lengths from 1m up to 100m.
Frenger	Modula	<p>Modula is an unobtrusive modular heating cassette. The cassettes are manufactured from 1.0mm thick smooth-faced steel panels and are designed to be integrated within a standard 24mm exposed grid ceiling system. Copper pipes are expanded under pressure into extruded aluminium pipe seats to give high metal-to-metal contact and the pipe seats are then securely fixed to the rear of the steel panels.</p> <p>Panels are insulated with 25mm thick class 'O' foil 'wrapped' mineral wool insulation 45kg/m³ density. The technology employed in the construction of the cassette results in very high heating capacity at low water mass flow rates.</p>	<ul style="list-style-type: none"> Up to 588W/m² @ 55 dtK room (mwt - room temp)
Frenger	Frengerwarm	<p>Frengerwarm is a system of custom made, smooth faced aluminium or steel panels manufactured to any length to suit the application. Panels can be wall mounted, free-hanging, surface mounted or recessed into a suspended ceiling system. Copper pipes are fixed rigidly to the rear of the aluminium panels and heat transfer is enhanced by extruded aluminium pipes seats. Panels are backed with 50mm thick foil-backed class 'O' insulation, and are finished polyester powdercoat white RAL9010 as standard.</p> <p>Frengerwarm has been specifically developed for use in schools, sports halls, offices and healthcare environments, where a smooth faced panel with high heating capacity is the preferred solution. Frengerwarm is tested in accordance with the new harmonised European Standard EN 14037.</p>	<ul style="list-style-type: none"> Up to 588W/m² @ 55 dtK room (mwt - room temp) Can be wall mounted

Manufacturer	Model	Overview	Competitive Advantages
Lindner	Plafotherm B100	This cost-effective system with visible linear Post Caps comfortably heats and cools your room by means of radiation. This chilled ceiling system with low construction height can be adapted to building shapes and combined with thermally passive components. Partitions can be fastened to the linear Post Cap – thus, flexible room layouts are possible. The Post Cap can also be used for the integration of installations. For maintenance works in the ceiling void, each ceiling panel can be removed or swung down.	<ul style="list-style-type: none"> • Ventilation components as part of the panel system • Supply of hydronic components such as headers and valves • 3 different installation methods (Lay-In with Hook-On edge, Lay-In with Hook-On notch, Lay-In, Swing-Down and slide option on short side)
Lindner	Plafotherm B100 SD	This longitudinally sound-reduced Post Cap ceiling creates a pleasant room climate. It is the perfect solution to fasten partitions and offers great freedom in office design. The visible linear Post Caps can be used as design element or for the integration of installations. The space-saving system can easily be opened: the ceiling panels can be operated without the need for any tools. Even round or curved building shapes can be realised. A combination of thermally active and passive areas is possible.	<ul style="list-style-type: none"> • Integration of luminaires into the panels • Supply of hydronic components such as headers and valves
Lindner	Plafotherm B110	This Post Cap ceiling creates an ideal indoor climate thanks to radiant heating and cooling. Cross Noggins define the visual appearance of this system and offer many advantages: partitions can be fastened to Post Caps in both directions. Moreover, possible future room sizes can be identified. Luminaires or technical installations can be integrated into the Post Caps. The Post Cap ceiling with Cross Noggins has a low construction height and is maintenance-friendly thanks to ceiling panels that can individually be operated. Thermally active and passive areas can be combined.	<ul style="list-style-type: none"> • Integration of luminaires into the panels • Ventilation components as part of the panel system • Supply of hydronic components such as headers and valves • 3 different installation methods (Lay-In with Hook-On edge, Lay-In with Hook-On notch, Lay-In, Swing-Down and slide option on short side)

Manufacturer	Model	Overview	Competitive Advantages
Lindner	Plafotherm B 147 SD	This longitudinally sound-reduced system guarantees best climate in your rooms – furthermore, luminaires can easily be integrated. Concealed Post Cap profiles offer you the possibility to reversibly fasten partitions and create a homogeneous ceiling appearance. Thus, you are flexible in your room layout. The ceiling elements of Plafotherm® B 147 SD have an easy maintenance option.	<ul style="list-style-type: none"> • Integration of luminaires into the panels • Ventilation components as part of the panel system • Supply of hydronic components such as headers and valves • 3 different installation methods (Lay-In with Hook-On edge, Lay-In with Hook-On notch, Lay-In, Swing-Down and slide option on short side)
Lindner	Plafotherm E 200	This Hook-On ceiling economically creates a pleasant room climate thanks to heating and cooling by means of radiation. Overlapping metal ceiling panels generate a homogeneous ceiling surface with concealed substructure. Different panel shapes and sizes can be realised and offer design freedom. For maintenance works, the ceiling panels can easily be removed without the need for any tools. On demand, thermally active and passive areas can be combined.	<ul style="list-style-type: none"> • Integration of luminaires into the panels • Ventilation components as part of the panel system • Seismic Safety • 3 different installation methods (Lay-In with Hook-On edge, Lay-In with Hook-On notch, Lay-In, Swing-Down and slide option on short side)
Lindner	Plafotherm E 210	The ceiling system with concealed substructure and continuous butt joints creates a pleasant climate and homogeneous ceiling surface in your rooms. Self-adjusting ceiling panels that can individually be removed without tools ensure an automatic joint alignment. The maintenance-friendly Hook-On ceiling with low construction height is an economic solution. You are very flexible in the combination of thermally active and passive areas.	<ul style="list-style-type: none"> • Integration of luminaires into the panels • Automatic joint alignment thanks to self-adjusting ceiling panels • Supply of hydronic components such as headers and valves
Lindner	Plafotherm E 213	The heated/chilled Hook-On ceiling Plafotherm® E 213 is characterised by a homogeneous ceiling surface with accentuated joints. Your rooms are effectively heated and chilled by means of radiation. Thus, a pleasant room climate is created. The Hook-On ceiling panels can individually and variably be designed: a multitude of panel sizes and shapes is possible. The ceiling panels can be removed or swung down and slid without tools to guarantee a quick access to the ceiling void for maintenance works. A combination of thermally active and passive areas is possible.	<ul style="list-style-type: none"> • Compensation of tolerances on the wall is possible due to an adjustable wall connection • Integration of luminaires into the panels • Supply of hydronic components such as headers and valves • 2 different installation methods (Hook-On, Hook-On Swing-Down)

Manufacturer	Model	Overview	Competitive Advantages
Lindner	Plafotherm E 214	This Hook-On ceiling with concealed substructure and open joints creates a pleasant and comfortable temperature in your rooms. The open joint between the ceiling panels can also be used for airflow or the independent installation of luminaires or other fixtures. The shape and size of the ceiling panels can individually be designed and operated without tools. On demand, thermally active and passive areas can be combined.	<ul style="list-style-type: none"> • Integration of luminaires into the panels • Supply of hydronic components such as headers and valves • Ventilation components as part of the panel system
Lindner	Plafotherm E 312	Plafotherm® E 312 comfortably heats and cools your corridors by means of radiation. Thermally active and passive areas can be combined. The freely spanned ceiling panels are hooked onto the concealed construction on both sides. This adjustable wall connection can compensate tolerances on the wall. To facilitate maintenance works in the corridor, each ceiling panel can be operated or swung down and slid without the need for any tools.	<ul style="list-style-type: none"> • Compensation of tolerances on the wall is possible due to an adjustable wall connection • Integration of luminaires into the panels • Supply of hydronic components such as headers and valves • 2 different installation methods (Hook-On, Hock-On Swing-Down)
Lindner	Plafotherm DS 312	The frameless metal canopy ceiling can freely be arranged in your rooms and offers individual design options. Thanks to the open construction, it can easily be installed and impresses with high heating/cooling capacities and sound absorption. This canopy ceiling combines pleasant room climate with impressive acoustics. The ceiling panels can be removed without the need for any tools. With this economic canopy, you can flexibly combine thermally active and passive areas. The exposed concrete between the canopy ceilings can be used for installations.	<ul style="list-style-type: none"> • Integration of luminaires into the panels • Supply of hydronic components such as headers and valves • Ventilation components as part of the panel system
Lindner	Plafotherm DS 320	The metal canopy ceiling in open construction provides for pleasant climate and good acoustics in your rooms. The large-sized ceiling panels can be designed with vertical or angled edge. They can individually be arranged in your rooms. The free space between the canopies offers you the possibility to independently fasten installations. The ceiling panels can quickly be installed. No tools are required to remove the ceiling panels. It is possible to combine thermally active and passive areas of this cost-effective system.	<ul style="list-style-type: none"> • Large-sized ceiling panels optionally with 90° or 65° turn-up • Integration of luminaires into the panels • Supply of hydronic components such as headers and valves • Ventilation components as part of the panel system • Seismic Safety • 3 different installation methods (90°-turn-up as individual/border or central panel, 65°-turn-up as individual panel, 65°-turn-up as border panel for extension on short side)

Manufacturer	Model	Overview	Competitive Advantages
Lindner	Plafotherm DS Tabs	Plafotherm® DS Tabs is a thermo-active canopy ceiling that is thermally connected to the activated concrete ceiling. The building mass remains as thermal energy storage and the room is acoustically regulated thanks to the high sound absorption of the canopy. The radiation surface of the concrete core is reflected on the metal ceiling surface. Moreover, this system impresses with reduced energy consumption and low CO ₂ emissions. Vertical or angled edges of the canopy as well as an individual arrangement offer free design options in your rooms.	<ul style="list-style-type: none"> Integration of luminaires into the panels
Lindner	Plafotherm L 608	This linear baffle ceiling is especially suitable for areas with increased maintenance demands. Thanks to movable baffles, you can comfortably reach the ceiling void. The open construction guarantees high cooling capacities and variable design options. Create unique appearances in your well-tempered rooms by means of freely selectable centre distances and baffle sizes. The ceiling void between the baffles can be used for installations. The metal baffles can quickly be installed – a combination with passive baffles is also possible.	<ul style="list-style-type: none"> Integration of luminaires into the panels Supply of hydronic components such as headers and valves 2 different installation methods (one-piece, two-piece)
Lindner	Plafotherm St 213	For maintenance works in the ceiling void, the Hook-On ceiling panels of this expanded metal ceiling can be removed without the need for any tools. Accentuated joints create a homogeneous ceiling surface. Thanks to integrated heating/cooling technologies, an ideal room climate is achieved – a combination of thermally active and passive areas is possible. A multitude of different meshes offers versatile design options.	<ul style="list-style-type: none"> Integration of luminaires into the panels Supply of hydronic components such as headers and valves
Lindner	Plafotherm KN	Plafotherm® KN in modular construction achieves high cooling capacities and creates a pleasant room climate by means of convection. With its open construction and extensive combination possibilities, this convection element offers a wide variety of designs: it can be installed alone or in combination with different ceiling systems – for example with suspended expanded metal ceilings or baffle ceilings with an open area exceeding 65% without capacity losses.	<ul style="list-style-type: none"> Supply of hydronic components such as headers and valves

Manufacturer	Model	Overview	Competitive Advantages
Lindner	Plafotherm GK HEKDA	This cost-effective system enables jointless surfaces – a multitude of plain or perforated panellings are available. All components of Plafotherm® GK HEKDA are tested as complete system and provide for best comfort and a pleasant room climate. The profile fuses with the substructure as constructive element and is screwed to the plasterboard panel. This plasterboard ceiling can achieve a high occupancy rate up to 100 %, even in case of rooms with several ceiling fixtures. Height differences and flexible shapes can be realised.	<ul style="list-style-type: none"> • Integration of luminaires into the panels • Supply of hydronic components such as headers and valves • Ventilation components as part of the panel system
Lindner	Plafotherm DS TAS	This hybrid heated/chilled canopy ceiling provides ideal climatic conditions in your rooms by means of radiation and convection. Plafotherm® DS TAS is extremely versatile thanks to the combination of cooling, heating and venting. Comfort according to DIN, ISO and SIA is guaranteed. Another advantage: As acoustically effective solution, it improves the room acoustics in buildings with subsequent concrete core working. The system is very efficient due to the utilisation of free cooling in night operation and a low CO ₂ consumption.	<ul style="list-style-type: none"> • Heating/cooling by both radiation and convection • high level of energy efficiency by using the free cooling in night operation • Integration of luminaires into the panels • Supply of hydronic components such as headers and valves
Lindner	Plafotherm AirHybrid	Post Cap and Hook-On ceilings can be combined with ventilation components on the rear side. The ventilation hood is not visible from below – a homogeneous ceiling surface is guaranteed. Best comfort is achieved thanks to an even distribution of supply air – through panel perforations and induction outlets in the ceiling void. The ventilation component can be removed and cleaned according to VDI 6022. Besides supplying fresh air, Plafotherm® AirHybrid can be used for the activation of the concrete core.	<ul style="list-style-type: none"> • Thermoactive for the activation of the concrete core • Integration of luminaires into the panels • Supply of hydronic components such as headers and valves

Manufacturer	Model	Overview	Competitive Advantages
Lindner	Plafotherm DS AirHybrid	Combined with hybrid ventilation components, Plafotherm® DS heated/chilled canopy ceilings are multifunctional canopy ceilings with guided supply air that can be used for the activation of the concrete core. The ventilation hood is integrated on the rear side of the ceiling panel and is not visible from below. Perforated ceiling panels and induction outlets in the ceiling void evenly distribute tempered fresh air above resp. below the ceiling without generating unpleasant draught. Comfort according to DIN, ISO and ISO as well as a pleasant room climate is guaranteed.	<ul style="list-style-type: none"> • Thermoactive for the activation of the concrete core • Inserts supply air through panel perforation or induction outlets in the ceiling void • Integration of luminaires into the panels
SAS	Radiant Ceiling Panels	Ceiling mounted Radiant Heating Panels offer a space saving alternative to traditional wall or floor mounted heating systems. Radiant Heating Panels with their rapid warm up times, radiate heat downwards, warming the occupants and surfaces in a space. Panels can be manufactured to a variety of sizes and integrate into a plasterboard surround or suspended ceiling grid.	<ul style="list-style-type: none"> • none
SAS	Radiant Ceiling Rafts	Radiant rafts are a freely suspended and cost-effective way of combining heating, lighting and acoustic absorption. Ideal for class rooms, the exact choice of raft will be a result of the: <ul style="list-style-type: none"> • Building design and area • Heat output required • Location of the primary pipework • Acoustic and aesthetic requirements 	<ul style="list-style-type: none"> • Rafts can be manufactured with an aperture for lights and other services. The aperture width can be adjusted to suit the choice of light.
Zehnder	Carboline	The Zehnder Carboline sets new standards in terms of performance, temperature distribution and controllability. Constructed from steel sheeting and a patented graphite and copper insert, the Zehnder Carboline is a smooth, flat and lightweight panel designed for both heating and cooling. This high-performance system can easily and practically be integrated into existing, new grid and suspended ceilings.	<ul style="list-style-type: none"> • Models available for both open and closed ceilings as well as plasterboard ceiling solutions • A-rated fire protection insulation

Manufacturer	Model	Overview	Competitive Advantages
Zehnder	ZBN	Zehnder ZBN radiant ceiling panels heat and cool a building comfortably and efficiently. They can be used in all rooms from approx 2 m - 50 m in height and compared to other systems, they can achieve energy savings of over 40%. Zehnder ZBN radiant ceiling panels are available in many different dimensions, with the exact length tailored to the building in question. Special versions can also be manufactured.	<ul style="list-style-type: none"> • Long panel runs (max. 120 m) • A-rated fire protection insulation • 5 different installation methods (Timber Beams, Concrete Ceiling, Steel Profile, Trapezoidal Sheet Metal, Inclined/Horizontal Steel Girder)
Zehnder	ZIP	Zehnder ZIP radiant ceiling panels have multiple design possibilities thanks to their modular construction making them ideal for every industrial installation situation. Above all, the much lower weight not only makes installation easier, but also makes the panel the number one choice for roof constructions that are only able to support lighter loads. All components are corrosion resistant, which also makes them the ideal choice for use in damp rooms.	<ul style="list-style-type: none"> • Long panel runs (max. 50 m) • 5 different installation methods (Timber Beams, Concrete Ceiling, Steel Profile, Trapezoidal Sheet Metal, Inclined/Horizontal Steel Girder)

