Merriott

HD Radiant Panel

What does Merriott stand for?

Our bespoke heating and cooling solutions are the better choice for commercial applications across the UK and Ireland.

Merriott offers a diverse and versatile range of designer heating solutions.

Whether they are building consultants, architects or designers, our customers can tailor our bespoke range of products to satisfy their specification requirements.

We have invested in world-class production facilities and manufacture products of the very highest standard - backed by revolutionary technology, rigorous testing and stringent quality control.

As a company, we have an unwavering commitment to innovation and sustainability, pioneering products that lead the way in design, performance and energy efficiency.

Underpinning all of this is our relationship with our customers: ensuring they can rely on best-in-class service and support, from specification right through to delivery.

Content

Range Overview

HD (Heavy Duty) radiant panel

Whether the ceiling height is 3m or 30m, Merriott provide a robust, ceiling mounted radiant panel for large spaces that are challenging to heat.

Merriott HD radiant panels are manufactured from steel pipes welded in to profiled steel sheets with thermal insulation attached to the upper surface. When hot water circulates through the pipes, downward radiant heat is emitted from the panels and warms the walls, floor and occupants of the room. The temperature of the surfaces in the room rises 1-3°C above the room air temperature, and in turn these surfaces warm the air as a secondary action.

COLOUR FINISHES

- Merriott HD radiant panels are finished to a high quality powder coated RAL 9016 as standard
- Alternative RAL colour finishes are available

ACCESSORIES

- Ball protection (sports halls)
- Dust covers
- Flexible Hoses for flow and return connections
- Combination volume flow/regulating/preset commissioning valves
- Mounting sets for suspensions on trapezoidal steel sheets, structured steel girders or concrete ceilings

PACKAGING

- Panels are delivered stacked on pallets to a maximum of nine panels each individually wrapped in plastic film

WARRANTY

The Merriott HD radiant panel is guaranteed for a period of five years with regards to defective materials and workmanship. In order for the warranty to be valid, designers and installers must observe and adhere to BS EN 12828:2003, "Heating systems in buildings – design for water based heating systems" and installers must adhere to BS EN 14336:2004 "Heating system in buildings – installation and commissioning of water based heating systems.

In addition Merriott recommends that designers and installers observe and adhere to the British Standard code of practice for the treatment of water in domestic hot water central heating systems and BS 7593:2006. Merriott recommends the use of corrosion inhibitor for all applications, failure to observe this may result in the invalidation of warranty.

Product Description

Features and applications

- **Robust construction -** Manufactured from 1.2mm thick cold rolled steel plate and utilising precision steel tubes (28mm OD x 1.5mm) welded on 150mm centres, the Merriott HD radiant panel will provide long and reliable service and is suitable for applications requiring working pressures up to 10 bar
- **Wide range of dimensions -** Available in nine panel widths, from 300mm to 1500mm in 150mm increments. Long panel runs can be achieved by connecting panels on site using supplied press fittings (or welding for higher service pressures and temperatures)
- **Sports Hall safety -** Ball protection guards are available as optional extras and are recommended in free-hanging installations including gymnasiums and sports halls. The robust design of the Merriott HD panel has been tested in accordance with DIN 18032 part 3
- **Highly insulated -** In order to prevent heat loss by convection, each Merriott HD radiant panel is factory pre-fitted with a 40mm thick layer of quality, non-flammable aluminium foil backed insulating material with a density of approximately 16kg/m² and a thermal conductivity of 0.04W/mK
- **Certified outputs -** Merriott HD radiant panels have been independently tested and their outputs certified in accordance with EN 14037 Parts 1 to 3
- **Cut-out openings -** Panels can be manufactured with round, square or rectangular cut-out openings to facilitate the inclusion of light fittings, loudspeakers or ventilation diffusers
- **Cover plates and mitre-cut panels -** To add the finishing touch to an installation of Merriott HD radiant panels, cover plates for concealing the space between multiple panel modules are provided as standard
- **Dummy panels -** Merriott HD radiant panels can be designed to create a contrasting feature in a ceiling and where sufficient heat can be provided by less panels than is desirable for aesthetic effect, dummy panels can be specified to complete a pattern
- **Dust covers -** In order to prevent dust build up on the back of the panel, dust covers can be provided

BENEFITS

- An energy-efficient alternative to Gas Fired Radiant Heating
- Rapid response warm-up times
- Even temperature distribution within spaces
- Valuable wall and floor space is made available
- Less dust movement, leading to healthier buildings
- Reduced maintenance thanks to no moving parts
- Silent in operation
- All pipe-work is installed at high level
- Maintenance free
- No open flame within the building
- Merriott HD radiant panels can be used with renewable energy sources

Technical Specification

Merriott HD radiant panels are made of cold rolled steel plate DC01 1.2mm thick, with lateral and upper edges angled to 90° with welded precision steel tubes 28mm OD, providing additional stability. For fixing purposes suspension bars are welded to the top of the panels. Panels are insulated with thermal insulation consisting of dimensionally stable laminated mats with a minimum thickness of 40mm, lined with reinforced aluminium foil and with A1 fire rating according to EN13501. Panels are finished in a white RAL 9016, toxin free powder coating in accordance with EN ISO 2409-2.

RANGE

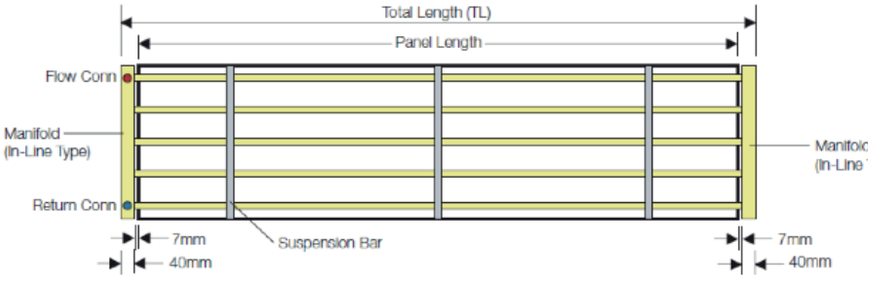
- **Widths:** 300mm, 450mm, 600mm, 750mm, 900mm, 1050mm, 1200mm, 1350mm & 1500mm.
- **Depth:** 50mm.
- **Lengths:** Merriott HD radiant panels are available in a single length of up to 4m (6m available upon request). For total lengths exceeding this, several modules are supplied and are joined together using crimp fittings.
- **Tube dimensions:** 28 x 1.5mm, distance 150mm centre to centre.
- **Connections:** Two horizontal or superimposed manifolds (on request) with welded connecting sockets, external diameter DN 15 to DN 25 for tube connections, air-venting or draining respectively, as well as corresponding baffles.
- **System Pressure:** Merriott HD radiant panels are pressure tested for a system pressure of up to 10 bar.
- **Output:** Tested according to EN 14037, part 1 to part 3. Registered under registration number: 6 D 007/2004 at DIN CERTCO, Berlin.
- **Finish:** Emissivity of external painted surface is 0.96

SPECIAL VERSIONS

- Perforated radiant panel fascia to a maximum width of 1200mm
- Special manifolds
- Cut-out openings for light fittings, speakers, smoke alarms
- Angled (e.g. plate mitred) or straight dummy panels
- Alternative RAL colours
- Max flow temp 120°C

SINGLE PANEL

Single panel lengths are available from 1500mm – 6000mm
The total length of a single Merriott HD radiant panel (max 6000mm) is composed of the radiant steel plate length, the projecting ends of tubes (2 x 7mm) if using horizontal connections, plus manifolds (2 x 40mm). The heat output always refers to the Total Length (TL).



Outputs & Weights and Water Content

HEATING OUTPUTS - WATTS PER LINEAR METRE

Delta T	Model								
	SHD 300/2	SHD 450/3	SHD 600/4	SHD 750/5	SHD 900/6	SHD 1050/7	SHD 1200/8	SHD 1350/9	SHD 1500/10
	'n'								
	1.18	1.17	1.16	1.17	1.18	1.19	1.20	1.21	1.22
10	25	35	46	55	63	72	80	88	95
12	31	44	57	68	79	89	99	109	119
14	38	53	68	81	94	107	120	132	143
16	44	62	79	95	111	126	140	155	169
18	51	71	91	109	127	145	162	179	195
20	57	80	103	124	144	164	184	203	222
22	64	90	115	139	161	184	206	228	249
24	71	99	128	153	179	204	229	253	277
26	78	109	140	169	197	225	252	279	306
28	85	119	153	184	215	245	275	305	335
30	93	129	166	200	233	266	299	332	364
32	100	139	178	215	252	288	323	359	394
34	107	149	192	231	270	309	348	386	424
36	115	160	205	247	289	331	373	414	455
38	123	170	218	264	309	353	398	442	486
40	130	181	232	280	328	376	423	471	518
42	138	192	245	296	347	398	449	499	549
44	146	202	259	313	367	421	475	528	582
46	154	213	273	330	387	444	501	558	614
48	162	224	287	347	407	467	527	587	647
50	170	235	301	364	427	491	554	617	680
52	178	246	315	381	448	514	580	647	713
54	186	257	329	399	468	538	607	677	747
55	190	263	336	407	478	550	621	693	764
56	194	269	343	416	489	562	634	708	781
58	202	280	357	434	510	586	662	739	815
60	210	291	372	451	530	610	689	770	850
62	219	303	386	469	551	634	717	801	884
64	227	314	401	487	573	659	745	832	919
66	235	326	416	505	594	684	773	864	955
68	244	337	430	523	615	708	802	896	990
70	252	349	445	541	637	733	830	928	1026

NOTE:
For outputs using other ΔT°C not stated above, please contact the Merriott Sales Office.
Flow rates and Pressure drops available on request.

Width (mm)	300	450	600	750	900	1050	1200	1350	1500
Panel Model	300/2	450/3	600/4	750/5	900/6	1050/7	1200/8	1350/9	1500/10
No. of tubes	2	3	4	5	6	7	8	9	10
Water content (kg/m)	1.0	1.6	2.1	2.7	3.2	3.7	4.3	4.8	5.2
Weight (kg/m) Including Water and Insulation	6.6	9.9	13.2	16.5	19.8	23.1	26.4	29.8	33.1
Nominal Heat Output @ Δt 50k (W/m)	172	238	305	369	432	497	560	632	700

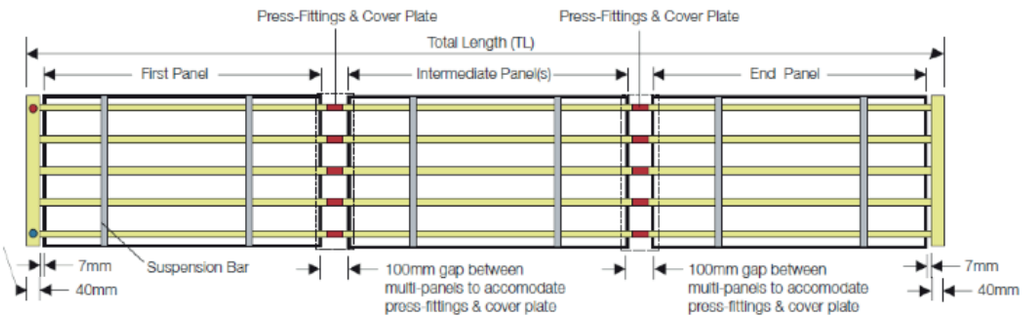
NOTE:
Perforated ceiling panels are available to a maximum width of 1200mm.

Connection Panels in Series

MULTI-PANEL MODULES IN SERIES

Where panels are to be joined, the usual method is to use Viega 28mm Ø Press/Crimped fittings (supplied), unless the water temperature is to exceed 110°C when the joints should be welded.

Multiple modules can be combined to achieve required length, utilising press fittings for the connection. Cover plates are supplied to conceal the connections and present a continuous appearance.

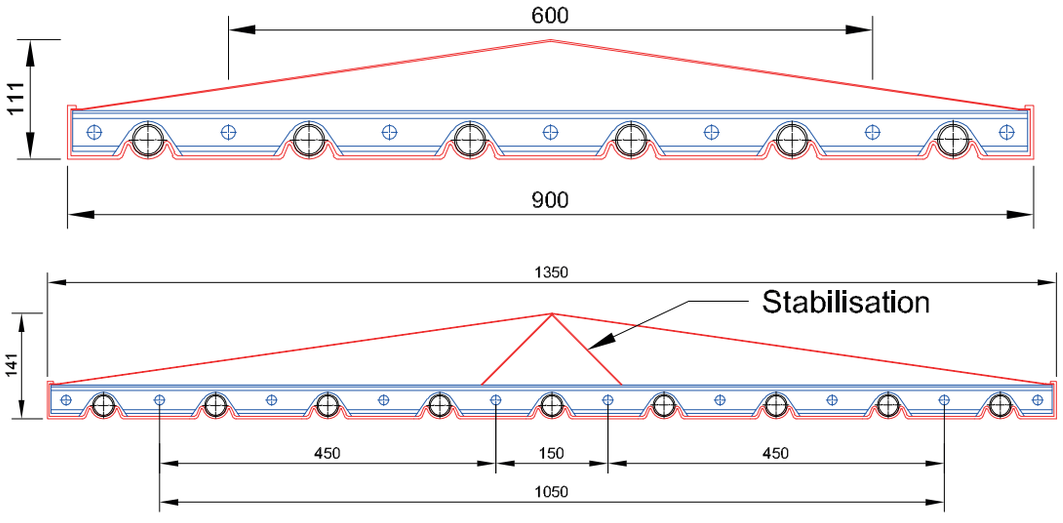


The first and last modules are provided with header arrangements to control the flow and return, with a choice of configurations.

Installation Information

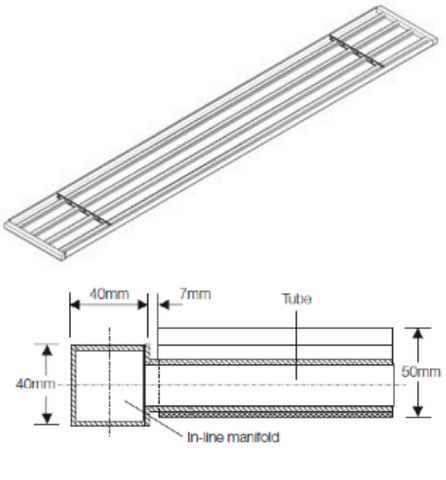
SUSPENSION BARS

- Total width 300 – 1200mm = 2 suspension positions
- Total width 1350 – 1500mm = 3 suspension positions

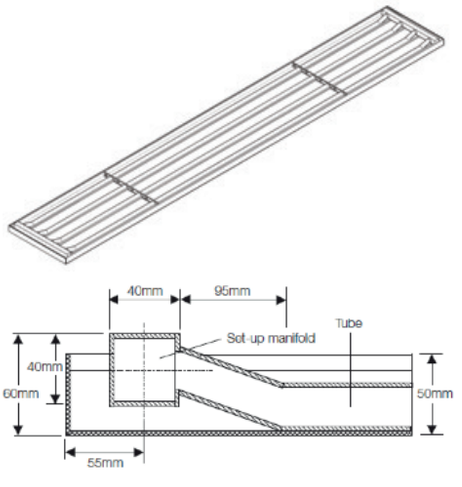


MANIFOLD ARRANGEMENTS

Manifolds can either be "In-line" or "Set-up/Superimposed" type as shown in the diagrams below. A variety of connection arrangements are available for the connection of system flow/return pipes and air vents.



STANDARD OPTION



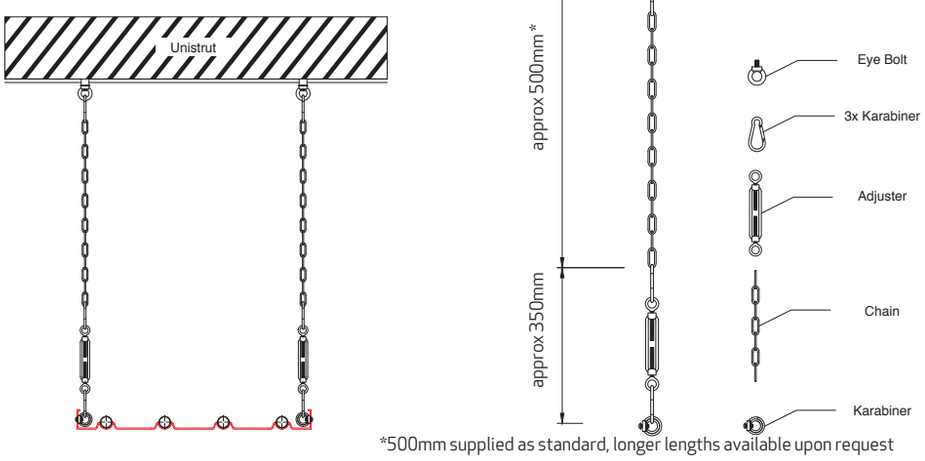
AVAILABLE UPON REQUEST

Fixing Options and Accessories

FIXING ACCESSORIES

Suspension kits are available to suit the most common forms of ceiling construction and include as standard 1m of chain per hanging position. Longer chains can be provided upon request at no extra charge above the standard provision.
Ensure type of suspension components are specified at time of ordering panels.

TYPICAL FIXING KIT



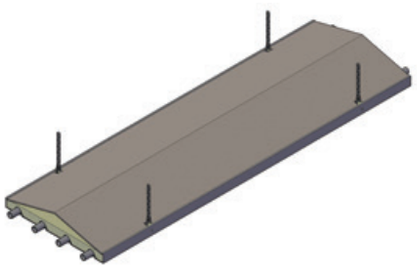
*500mm supplied as standard, longer lengths available upon request

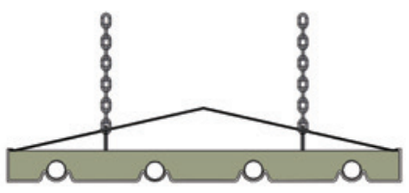
BALL GUARDS FOR SPORTS HALLS

Ball deflectors consist of roof-shaped PU hard foam panels with a top stable aluminium cardboard coating which is 10 mm thick, and have a fire resistance rating of B1 in accordance with DIN 4102. A galvanised steel option is available upon request. They are used in sports halls on freely suspended radiant ceiling panels. Ball deflectors prevent damage to the thermal insulation and prevent balls (except shuttlecocks) from flying up or getting stuck.

Ball deflectors are made to order and supplied separately.

Weight of Ball Guards									
Panel Width (mm)	300	450	600	750	900	1050	1200	1350	1500
Weight (kg/m) - PU	0.30	0.44	0.58	0.73	0.87	1.02	1.16	1.32	1.46
Weight (kg/m) - 0.75mm Galvanised Steel	1.2	1.75	2.40	2.90	3.50	4.10	4.70	5.25	5.80





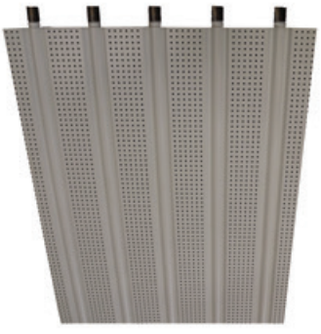
REAR DUST COVERS

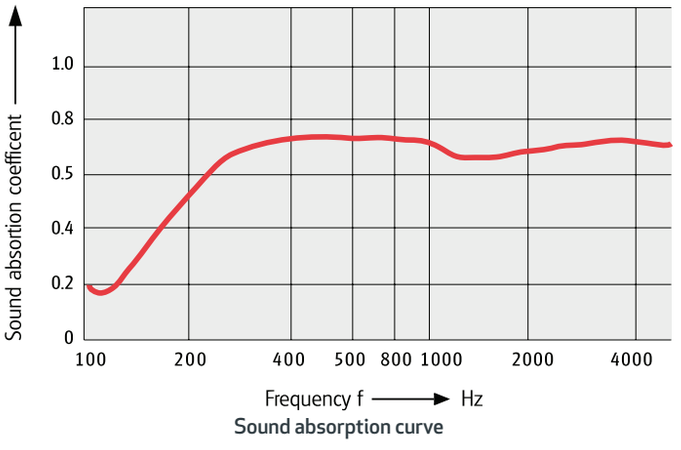
The same steel or composite sheets can be laid flat as dust protection, the same additional weights apply to this option.

Fixing Options and Accessories

PERFORATED PANELS FOR SOUND ABSORPTION

Echo attenuation can be achieved by the use of perforated panels and these are particularly useful in sports halls and auditoriums. Panels can be provided perforated with multi-holes of 5mm diameter. This feature provides a noticeable reduction in noise level through the absorption of sound by the thermal insulation layer and is tested to DIN EN ISO 354.





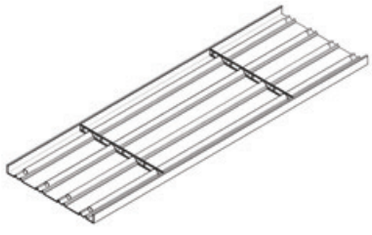
Sound absorption curve

SPECIAL PANELS

Cut-out openings in round, square or rectangular form are available upon request to accommodate lighting fittings, loudspeakers or ventilation grilles in the panels, particularly useful for closed ceiling construction arrangements. Mitred angled panels are also available upon request, to suit site requirements.

DUMMY PANELS

Where for aesthetic reasons it is desirable to finish a pattern created by panels within the ceiling as a whole, but to use standard panels would result in overheating of an area, then Dummy Panels can be provided for integration into the installation.



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Merriott UK & Ireland
Purmo Group (UK) Ltd
Eastern Avenue, Team Valley
Gateshead, Tyne & Wear, NE11 0PG
0330 0415 472
sales@merriottuk.com / sales@merriott.ie
www.merriottuk.com

Follow us on @merriottuk and

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