

RPM/RPMS

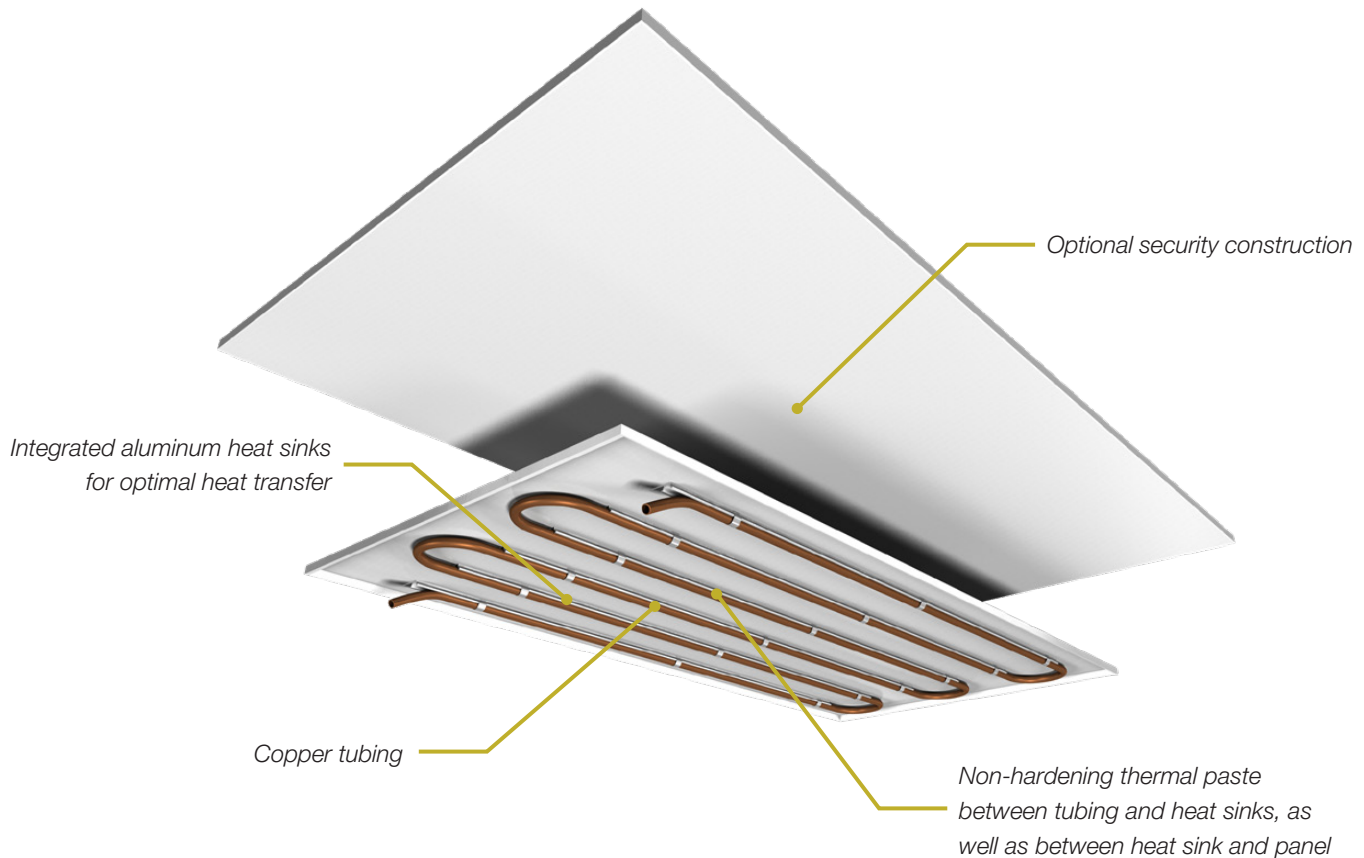
RADIANT PANEL MODULAR



RPM/RPMS

Radiant Panel Modular

The Modular Radiant Panel (RPM) is designed to provide radiant heating and/or cooling in exposed standard or tegular suspended ceiling system applications. The RPM can also be recessed or flush mounted on a drywall ceiling.



CONSTRUCTION

- + Face finish
 - Perforated
 - Smooth
- + Material
 - Aluminum
 - Steel
- + Piping
 - 2 pipe
 - 4 pipe
 - Inactive section
- + Connections
 - NPT
 - Sweat
- + Options
 - Security construction (RPMS)
 - Acoustical insulation
 - Foil backed insulation
 - Tegular panel
- + Finish
 - Standard white (B12)
 - Custom finishes available

ENERGY EFFICIENT

- + Radiant panel hydronic systems efficiently satisfy the sensible loads of a space while relying on a separate air-side system to provide ventilation and satisfy latent loads.
- + Hybrid air-hydronic systems require significantly lower supply air volumes than all-air systems, reducing fan power requirements by 60-80% and resulting in a smaller, more efficient system.

SUPERIOR THERMAL COMFORT

- + Radiant cooling and heating efficiently conditions a space while maintaining a high degree of thermal comfort.
- + As a result of the reduced supply air volume requirements associated with hydronic-air systems, air velocities are kept low, minimizing draught risk and fan energy.
- + For superior thermal comfort, radiant panels work to change the operative temperature of a space including both the air temperature and the surface temperatures within the space. All-air systems change only the air temperature, neglecting surface temperatures that are an important aspect in determining thermal comfort.



MINIMAL SPACE REQUIREMENT

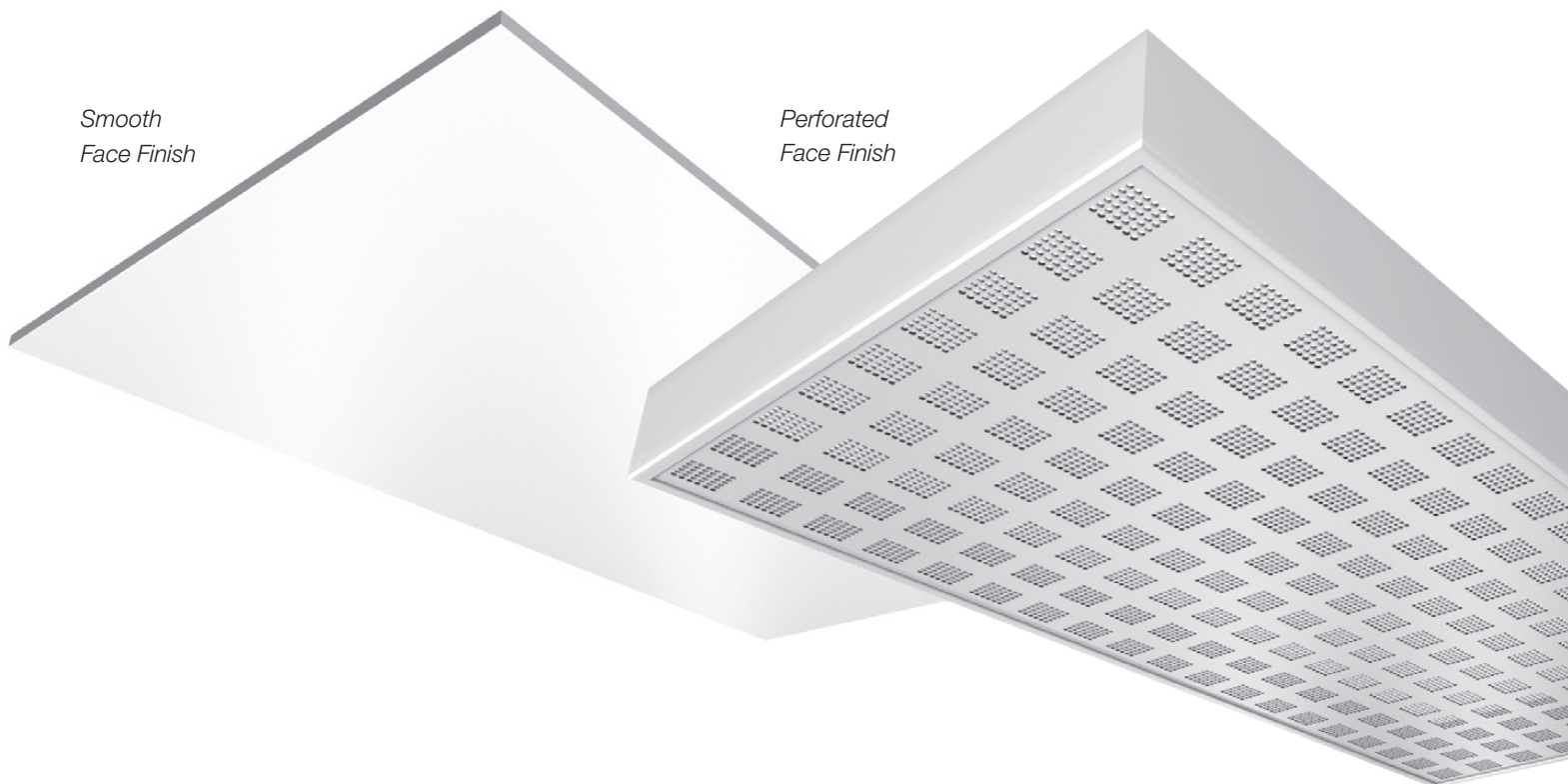
- + The reduced supply air volume of hydronic systems reduces ductwork requirements allowing smaller plenum heights, making radiant systems ideal for installation in tight spaces and creating the potential for lower construction costs, higher ceilings and more usable floor space.
- + Air-handling equipment can be downsized, saving initial cost, energy costs and providing more flexibility in equipment location.

CUSTOM APPEARANCE

- + In addition to material and face finish options, the RPM can be silk screened to simulate a wide variety of non-textured and minimally textured ceiling tile patterns.

OPTIONAL SECURITY CONSTRUCTION

- + The heavy duty design of the security modular panel (RPMS) enables its use in psychiatric hospitals, police holding cells and other correctional institutions.
- + The RPMS is built in 10 gauge sheet steel to prevent vandalism and any means for injury and is supplied with tamperproof security screws and mounting angles that can be anchored to concrete walls or ceilings.



PERFORMANCE DATA

RPM Imperial

Heating Water

Panel Dimensions (ft.)	# of Passes	Mean Water Temperature (°F)																		
		120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210
2 x 2	Even	320	380	440	470	500	540	580	620	660	700	740	780	840	880	920	980	1040	1100	1160
	Odd	270	290	320	350	380	410	440	480	520	560	600	640	680	720	770	820	870	925	960
2 x 4	Even	640	760	880	940	1000	1080	1160	1240	1320	1400	1480	1560	1680	1760	1840	1960	2080	2200	2320
	Odd	540	580	640	700	760	820	880	960	1040	1120	1200	1280	1360	1420	1540	1640	1740	1850	1920
2 x 5	Odd	870	970	1060	1160	1250	1350	1450	1540	1640	1740	1840	1950	2110	2230	2350	2450	2570	2690	2810
4 x 4	Even	1280	1520	1760	1880	2000	2160	2320	2480	2640	2800	2960	2120	3360	3520	3680	3920	4160	4400	4640

Outputs expressed in Btu/h*panel and are based on 70°F Room Temperature. Derate 7% for perforated panels.

Heating 50/50 Propylene

Dimensions (ft.)	# of Passes	Mean Water Temperature (°F)																		
		120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210
2 x 2	Even	294	350	407	435	464	502	540	578	617	655	694	734	792	832	870	929	987	1046	1104
	Odd	248	267	296	324	353	381	410	448	486	524	563	602	641	680	728	777	826	880	914
2 x 4	Even	589	701	813	870	928	1003	1080	1157	1234	1310	1388	1468	1584	1663	1741	1858	1974	2092	2209
	Odd	497	535	591	648	705	762	819	896	972	1048	1126	1204	1282	1342	1457	1555	1651	1759	1828
2 x 5	Odd	800	894	979	1074	1160	1254	1350	1437	1533	1629	1726	1835	1990	2107	2223	2323	2439	2558	2675
4 x 4	Even	1178	1401	1626	1741	1856	2007	2160	2314	2468	2621	2776	2936	3168	3326	3481	3716	3948	4184	4417

Outputs expressed in Btu/h*panel and are based on 70°F Room Temperature. Derate 7% for perforated panels.

Heating 50/50 Ethylene

Dimensions (ft.)	# of Passes	Mean Water Temperature (°F)																		
		120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210
2 x 2	Even	279	332	385	413	440	476	513	549	587	624	661	698	754	792	830	886	942	999	1054
	Odd	235	253	280	307	334	362	389	425	462	499	536	573	611	648	695	741	788	840	873
2 x 4	Even	557	663	771	825	880	953	1025	1099	1173	1247	1322	1396	1509	1584	1660	1772	1884	1998	2109
	Odd	470	506	561	615	669	723	778	851	925	998	1072	1146	1221	1278	1389	1483	1576	1680	1745
2 x 5	Odd	758	847	929	1018	1100	1191	1282	1364	1458	1550	1643	1745	1895	2007	2120	2215	2328	2443	2554
4 x 4	Even	1115	1327	1542	1651	1760	1905	2051	2197	2347	2495	2643	2792	3017	3168	3319	3544	3769	3995	4218

Outputs expressed in Btu/h*panel and are based on 70°F Room Temperature. Derate 7% for perforated panels.

Cooling Water

Room Designation	Room Air Temperature minus Mean Water Temperature (°F)																		
	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
A (Interior Room)	17	19	21	22	24	26	28	30	31	33	35	37	39	40	42	44	46	48	49
B (Perimeter)	21	23	25	27	28	30	32	34	36	38	40	42	43	45	47	49	51	53	55

Performance Notes:

1. Outputs expressed in Btu/h*square foot of panel.
2. Values are based on BSRIA BS3528:1977.
3. ASHRAE A138 values are available as per DIN14037 (Heating) and DIN14240 (Cooling).

PERFORMANCE DATA

RPM Metric

Heating Water

Panel Dimensions (mm)	# of Passes	Mean Water Temperature (°C)																		
		48.9	51.7	54.4	57.2	60.0	62.8	65.6	68.3	71.1	73.9	76.7	79.4	82.2	85.5	87.8	90.6	93.3	96.1	98.9
600 x 600	Even	94	111	129	138	147	158	170	182	194	205	217	229	246	258	270	287	305	323	340
	Odd	79	85	94	103	111	120	129	141	152	164	176	188	199	211	226	240	255	271	281
600 x 1200	Even	188	222	258	276	294	316	340	364	388	410	434	458	492	516	540	571	610	646	680
	Odd	158	170	188	206	222	240	258	282	304	328	352	376	398	422	452	480	510	542	562
600 x 1500	Even	255	284	311	340	367	396	425	452	481	510	540	572	619	654	689	718	754	789	824
500 x 1500	Odd	212	236	258	282	304	328	352	375	400	425	451	477	502	527	549	571	596	621	646
1200 x 1200	Even	376	444	516	552	588	632	680	728	776	820	868	916	984	1032	1080	1148	1220	1292	1360

Outputs expressed in Watts/panel and are based on 21°C Room Temperature. Derate 7% for perforated panels.

Heating 50/50 Propylene

Dimensions (ft.)	# of Passes	Mean Water Temperature (°C)																		
		48.9	51.7	54.4	57.2	60	62.8	65.6	68.3	71.1	73.9	76.7	79.4	82.2	85.5	87.8	90.6	93.3	96.1	98.9
600 x 600	Even	86	102	119	128	136	147	158	170	181	192	204	215	232	244	255	272	289	307	324
	Odd	73	78	87	95	103	111	120	132	142	154	165	177	188	199	214	228	242	258	268
600 x 1200	Even	173	205	238	256	273	294	317	340	363	384	407	431	464	488	511	541	579	614	647
	Odd	145	157	174	191	206	223	240	263	284	307	330	354	375	399	428	455	484	515	535
600 x 1500	Even	235	262	287	315	341	368	396	422	450	477	507	538	584	618	652	681	716	750	784
500 x 1500	Odd	195	218	238	261	282	305	328	350	374	398	423	449	473	498	519	541	566	591	615
1200 x 1200	Even	346	409	477	511	546	587	633	679	726	768	814	862	928	975	1022	1088	1158	1229	1295

Outputs expressed in Watts/panel and are based on 21°C Room Temperature. Derate 7% for perforated panels.

Heating 50/50 Ethylene

Dimensions (ft.)	# of Passes	Mean Water Temperature (°C)																		
		48.9	51.7	54.4	57.2	60	62.8	65.6	68.3	71.1	73.9	76.7	79.4	82.2	85.5	87.8	90.6	93.3	96.1	98.9
600 x 600	Even	82	97	113	121	129	139	150	161	172	183	194	205	221	232	244	259	276	293	309
	Odd	69	74	82	90	98	106	114	125	135	146	157	168	179	190	204	217	231	246	255
600 x 1200	Even	164	194	226	242	259	279	301	323	345	365	388	410	442	464	487	516	553	587	618
	Odd	138	148	165	181	195	212	228	250	270	292	314	337	357	380	408	434	462	492	511
600 x 1500	Even	222	248	272	299	323	349	376	400	428	454	482	512	556	589	621	649	683	716	749
500 x 1500	Odd	185	206	226	248	268	289	311	332	356	379	403	427	451	474	495	516	540	564	587
1200 x 1200	Even	327	388	452	485	517	557	601	645	690	731	775	820	884	929	974	1038	1105	1173	1236

Outputs expressed in Watts/panel and are based on 21°C Room Temperature. Derate 7% for perforated panels.

Cooling Water

Room Designation	Room Air Temperature minus Mean Water Temperature (°C)																		
	5.5	6.1	6.7	7.2	7.8	8.3	8.9	9.4	10.0	10.6	11.1	11.7	12.2	12.8	13.3	13.9	14.4	15.0	15.6
A (Interior Room)	54	60	66	69	76	82	88	95	98	104	110	117	123	126	132	139	145	151	155
B (Perimeter)	66	73	79	85	88	95	101	107	114	120	126	132	136	142	148	154	161	167	174

Performance Notes:

1. Outputs expressed in Watts/square meter of panel.
2. Values are based on BSRIA BS3528:1977.
3. ASHRAE A138 values are available as per DIN14037 (Heating) and DIN14240 (Cooling).

PERFORMANCE DATA

RPMS Imperial

Heating Water

Mean Water Temperature (°F)													
150	155	160	165	170	175	180	185	190	195	200	205	210	215
141	150	160	171	183	192	202	211	225	234	247	258	273	286

Outputs expressed in Btu/h*quare foot and are based on 70°F Room Temperature and 6 in. centers.

Heating 50/50 Propylene

Mean Water Temperature (°F)													
150	155	160	165	170	175	180	185	190	195	200	205	210	215
131	140	150	160	172	181	190	199	213	222	234	245	260	273

Outputs expressed in Btu/h*quare foot and are based on 70°F Room Temperature and 6 in. centers.

Heating 50/50 Ethylene

Mean Water Temperature (°F)													
150	155	160	165	170	175	180	185	190	195	200	205	210	215
125	133	142	152	163	172	181	190	203	212	224	234	248	261

Outputs expressed in Btu/h*quare foot and are based on 70°F Room Temperature and 6 in. centers.

RPMS Metric

Heating Water

Mean Water Temperature (°C)													
65.6	68.3	71.1	73.9	76.7	79.4	82.2	85.5	87.8	90.6	93.3	96.1	98.9	101.7
460	490	520	545	580	615	640	680	710	745	770	805	840	875

Outputs expressed in Watts/square meter and are based on 21°C Room Temperature and 150 mm.

Heating 50/50 Propylene

Mean Water Temperature (°C)													
65.6	68.3	71.1	73.9	76.7	79.4	82.2	85.5	87.8	90.6	93.3	96.1	98.9	101.7
428	457	486	510	544	579	604	643	672	706	731	766	800	835

Outputs expressed in Watts/square meter and are based on 21°C Room Temperature and 150 mm.

Heating 50/50 Ethylene

Mean Water Temperature (°C)													
65.6	68.3	71.1	73.9	76.7	79.4	82.2	85.5	87.8	90.6	93.3	96.1	98.9	101.7
407	434	462	486	518	550	575	612	640	673	698	731	764	797

Outputs expressed in Watts/square meter and are based on 21°C Room Temperature and 150 mm.



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