- BASERAY BASEBOARDS
- RADIANT RADIATORS
- SLENDERIZED RADIATORS

Burnham Hydronics

CAST IRON HEAT DISTRIBUTORS

BURNHAM HYDRONICS CAST IRON HEAT DISTRIBUTORS

A Heating Investment That Lasts a Lifetime

Burnham's line of cast iron heat distributors offers the benefits of hot water or steam heat together with the advantages of cast iron construction for a lifetime of durability and trouble-free performance. Isn't that what you're looking for in your home?

Radiant Heat Brings Sunshine Indoors

Imagine a sunny winter day with calm winds and the temperature hovering at 32°F. While standing in the radiant rays of the sun, you don't seem to mind the freezing temperature. As a matter of fact, you feel comfortable. But, if you walk under a shaded overhang, you feel really cold.

This simple sun/shade analogy illustrates the radiant heat principle at work. Just as the sun's rays warmed you and your surroundings on that winter day, Burnham's cast iron heat distributors will warm you, the floors, walls, and the furniture in your rooms.

At the heart of the heating system is a Burnham boiler, which generates hot water or steam and is then, circulated through pipes to heat every room in your home. Because water absorbs heat so quickly, it can be circulated efficiently throughout your home, allowing you to accurately control the temperature of each room.

This type of home heating, referred to as hydronic heating, has proven itself over the years to be the most comfortable and economical home heating system available. So it's not surprising that it is the preferred heating method of knowledgeable builders, architects, engineers, and homeowners.

Heat and comfort go hand-in-hand at Burnham which is why its cast iron heat distributors, like the Baseboard, Radiant Radiators, and Slenderized Radiators are such an integral part of Burnham's complete home heating offer.

The Advantages of Hydronic Heating

The advantages of a well designed properly maintained hydronic system are long term comfort and economy. You'll never experience hot or cold spots, nor will you feel drafts so common with forced air systems. No drafts and no moving air means no circulation of smoke, odor, pollen or dust from room to room making your home cleaner and healthier—which is just another benefit of the comfort of hydronic heat.

Hydronic systems can be easily zoned, saving fuel and providing comfortable temperatures in the various living areas of your home. Zoning allows the thermostats of different areas or rooms of your home to be adjusted to the desired temperature for the use of that area. For example, you may want your family room warm for watching TV, but you want your bedrooms cooler for more comfortable sleeping. Putting these two areas on two different zones allows this versatility.

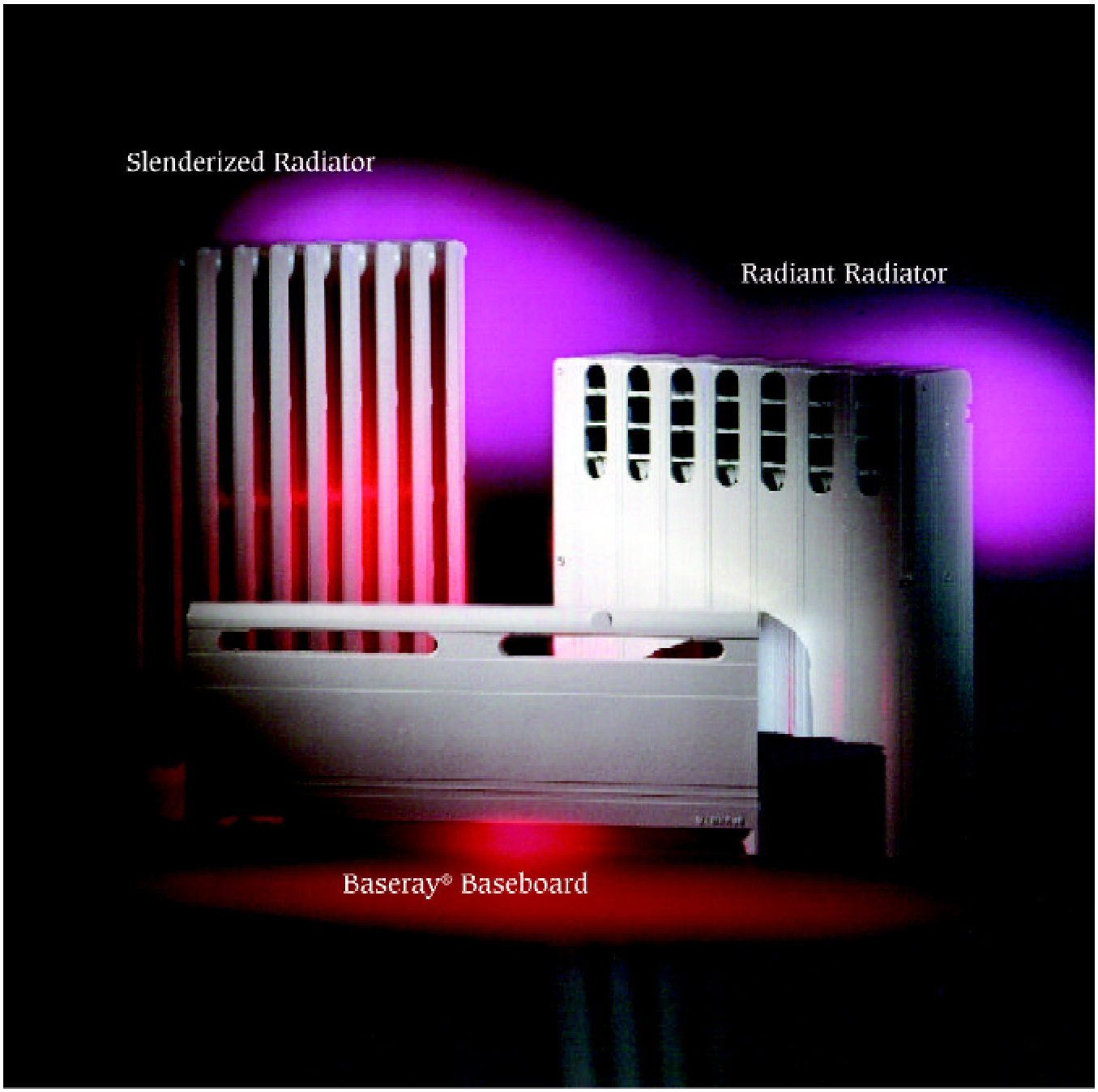
Without question, hydronic heating is cleaner, more versatile, and above all, more comfortable than alternative heating systems.

The Security of the Burnham Hydronics Name

When you select Burnham, you're buying more than just an appliance. Burnham is dedicated to providing you with a heating system that operates efficiently and effectively.

So, if you're investigating a heating system for your new home, or if you're planning to modernize or expand your present hydronic heating system, choose Burnham. Burnham is the one company you can rely on for your complete home heating comfort. Whether you prefer hot water or steam heat, oil or gas, Burnham has a boiler designed to heat your home and keep you and your family comfortable.

Add to the efficiency of any boiler with the Alliance™ family of indirect water heaters, electronic controls, radiant heat pipe and accessories, and of course, cast iron heat distributors like the low profile Baseray baseboard and modern radiators to create a truly comfortable home heating environment.


Slenderized Radiator
Radiant Radiator
Baseray® Baseboard

BURNHAM HYDRONICS BASERAY®

A Burnham Hydronics Original

Baseray is the original cast iron radiant baseboard designed by Burnham with performance and dependability in mind. Its low profile, sleek design fits well with any décor, and it can be painted with a high-grade enamel paint to coordinate with your room's color scheme.

Comfortable, Even Heat

Although its low profile may be misleading, Baseray cast iron baseboard supplies more than five times as much radiant heat as thin metal fabricated baseboard. Its design allows free airflow over the integral cast iron fins allowing the baseboard to emit more radiant heat into the living space.

Also, because of Baseray's design, heat is disbursed in both horizontal and vertical directions. Installed on exterior walls, Baseray radiators radiate uniform heat throughout the room, resulting in a less than two-degree temperature variation from floor to ceiling and eliminating drafts.

Once installed, Baseray is filled with heated water from top to bottom. The cast iron construction of the Baseray baseboard cools slowly, providing evenly balanced comfort long after the boiler has shut down. Metal fabricated baseboards hold only a small volume of water, which results in rapid temperature reduction.

baseboard radiant graphic

Durable Construction and Quiet Operation

Since Burnham's Baseray baseboard heat distributors are constructed in one piece of cast iron, you can rest easy knowing that they will provide uniform heat year after year. They are corrosion resistant and can withstand everyday abuse. They won't dent, bend, or come apart, unlike the multi-metal fabricated baseboard units.

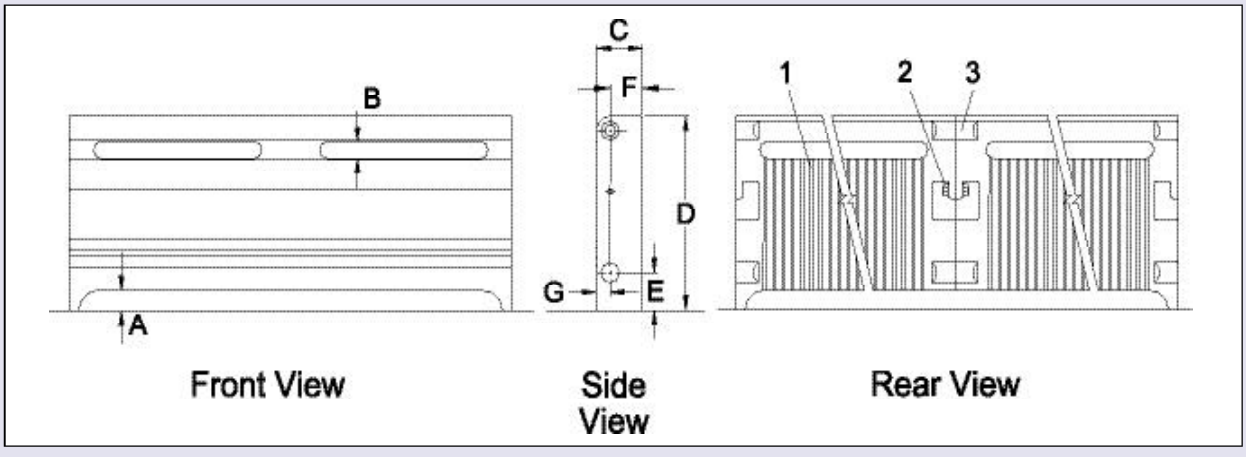
Quiet operation is essential to a homeowner with a hydronic heating system. Expansion noises—that annoying pinging sound during the warm-up and cool down cycle—and air trapped in the system are the two most common homeowner complaints.

Baseray baseboard's one-piece cast iron construction virtually eliminates expansion noises created during the heating and cooling cycles. Different metal expansion rates create the noises prevalent with other hydronic heat distributors.

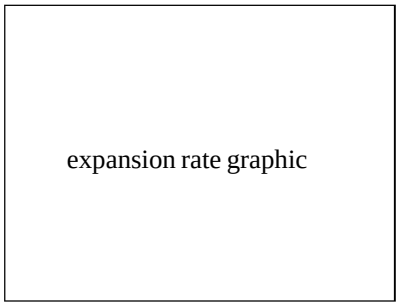
Dimensions

A	B	C	D	E	F	G
1"	7/8"	2-1/2"	9-7/8"	1-3/4"	1-3/4"	3/4"

1. Fins
2. Tie Bolt
3. Push Nipple



The second most common noise complaint—air gurgling in the system piping—is less likely to occur because of the large water cavity design of the Baseray. The larger volume of water promotes easier air elimination with the use of manual or automatic vents, assuring quiet, comfortable heating.



Burnham's Baseray baseboard is a contemporary, reliable way to get quiet, warm comfort this winter and for many winters to come.

BASERAY® RATINGS Steam and Hot Water

MODEL NO.	FLOW RATE	I=B=R STEAM RATING		I=B=R WATER RATINGS BTUH Per Linear Foot At Average Water Temperatures Indicated									
	Lb./Hr.	Sq. Ft.	BTU/Hr. At 215°F	150°F	160°F	170°F	180°F	190°F	195°F	200°F	210°F	220°F	230°F
9A	2000	3.40	820	410	480	550	620	690	720	750	810	880	940
	500	3.40	820	390	450	520	590	650	680	710	770	830	890

Use of the 2,000 Lb./Hr. ratings is limited to installations where the flow rate through the baseboard unit is equal to or greater than 2,000 Lb./Hr. (4GPM).

Where the water flow rate through the Baseray is not known, the ratings at the standard flow rate of 500 Lb./Hr. (1GPM) must be used.

I=B=R Ratings are determined from tests made in accordance with the I=B=R Testing and Rating Code for baseboard type radiation, including an allowance of 15% for heating effect permitted by the Code.

Maximum allowable working pressure - 30 PSI, water; 15 PSI, steam.
Water content - 0.3 gal./lineal foot.

For pressure drop information, see installation manual.

Ratings are based on active length. Active length equals total length.

ASSEMBLY CHARTS

Baseray assemblies up to and including 6 lineal ft. are shipped in one piece.
Longer assemblies are shipped in two or more pieces or sub-assemblies, none of which exceeds 6 lineal feet.

ASSEMBLIES	18" Left End	24" Left End	24" Int.	24" Right End	12" Right End	18" Panel	24" Panel
1-1/2 Ft. Assembly	-	-	-	-	-	1	-
2 Ft. Assembly	-	-	-	-	-	-	1
2-1/2 Ft. Assembly	1	-	-	-	1	-	-
3 Ft. Assembly	-	1	-	-	1	-	-
3-1/2 Ft. Assembly	1	-	-	1	-	-	-
4 Ft. Assembly	-	1	-	1	-	-	-
4-1/2 Ft. Assembly	1	-	1	-	1	-	-
5 Ft. Assembly	-	1	1	-	1	-	-
5-1/2 Ft. Assembly	1	-	1	1	-	-	-
6 Ft. Assembly	-	1	1	1	-	-	-
SUB-ASSEMBLIES							
5-1/2 Ft. L.H. Sub-Assembly	1	-	2	-	-	-	-
6 Ft. L.H. Sub-Assembly	-	1	2	-	-	-	-
6 Ft. Center Sub-Assembly	-	-	3	-	-	-	-
All R.H. Sub-Assemblies	-	-	Req'd #	1	or 1	-	-

ASSEMBLY LENGTH	L.H.	CENTER	R.H.
6-1/2 Ft.	5-1/2 Ft.	-	1 Ft.
7 Ft.	6 Ft.	-	1 Ft.
7-1/2 Ft.	5-1/2 Ft.	-	2 Ft.
8 Ft.	6 Ft.	-	2 Ft.
8-1/2 Ft.	5-1/2 Ft.	-	3 Ft.
9 Ft.	6 Ft.	-	3 Ft.
9-1/2 Ft.	5-1/2 Ft.	-	4 Ft.
10 Ft.	6 Ft.	-	4 Ft.
10-1/2 Ft.	5-1/2 Ft.	-	5 Ft.
11 Ft.	6 Ft.	-	5 Ft.
11-1/2 Ft.	5-1/2 Ft.	-	6 Ft.
12 Ft.	6 Ft.	-	6 Ft.
12-1/2 Ft.	5-1/2 Ft.	6 Ft.	1 Ft.
13 Ft.	6 Ft.	6 Ft.	1 Ft.

Note: Available in any length with similar sub-assemblies.
Maximum recommended length for steam: 10 Ft.

BURNHAM HYDRONICS RADIANT AND SLENDERIZED

Comfort for Your Home or Office

Burnham's line of modern cast iron radiators is suitable for both residential and commercial applications. Whether you choose the slenderized or radiant design, they supply a continuous flow of radiant heat. After the boiler has run a full cycle, the hot water in the radiator sections continues to emit heat. The result is a cozy room with less than a two-degree temperature variance from floor to ceiling.

This radiant heat combined with convected heat provides a warm comfortable environment throughout the entire room. It shields outside walls and windows to stop cold air from infiltrating a room practically eliminating drafts. Also, with radiators, unlike forced air systems, the chilling effect of blowing air moving over your body is eliminated.

Made of Durable Cast Iron

All Burnham radiators are constructed of durable cast iron. They won't dent, bend or come apart, even after years of service. In fact, Burnham radiators could outlast your home.

The radiator's cast iron construction ensures extended warming time. When the circulator shuts off you will not have a sensation of sudden cooling because of the volume of water inside the radiator system and the ability of cast iron to retain and emit heat.

Another benefit of cast iron construction is the quiet operation. Expansion noises are virtually eliminated, so you get home heating comfort that is felt, not heard.

Ideal for Remodeling

Burnham radiators can be easily installed one room at a time when replacing existing bulky, old-fashioned radiators. And best of all, no extensive repiping is required.

As you expand your home over the years, your hydronic heating system can usually be expanded to heat additional rooms. Supplementary radiators can be added to provide heat for a basement family room, an enclosed porch, or a converted attic. Consult your Burnham Home Heating Team contractor to discuss and evaluate your expansion capabilities.

Radiant Radiator Advantages

Burnham's Radiant radiator can be fully or partially recessed into a wall to maximize your living or work space. The piping is on the inside to allow for a cleaner installation, and the optional grill can be added to cover all piping and valves. So for maximum heat output in a convenient size, choose the Radiant radiator.

Dimensions

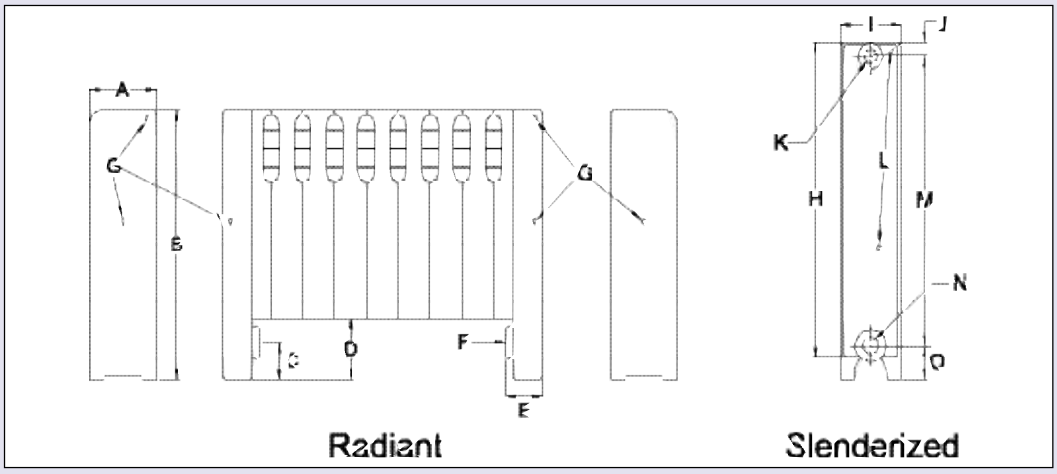
Radiant

A	B	C	D	E	F	G*
5"	20"	2-3/4"	4-1/2"	1-7/8"	1-1/4" NPT	1/8" NPT

*Vent tapping sizes; high vents for water, mid-height vents for one pipe steam

Slenderized

Size	H	I	J	K	L*	M	N	O
25-6	23-13/16"	6-15/16"	1-1/16"	1" NPT	1/8" NPT	21-7/16"	1-1/4" NPT	2-1/2"
25-4	23-13/16"	4-7/16"	1-1/16"	1"	1/8"	21-7/16"	1-1/4"	2-1/2"
19-4	17-13/16"	4-7/16"	1-1/16"	1"	1/8"	15-7/16"	1-1/4"	2-1/2"



Roughing-In Data: Obsolete Sizes -- All Types

Burnham Radiant Radiators

23 X 7-1/2 3.40 sq. ft. per sec.	Wall 2.25 sq. ft. per sec.

Burnham Slenderized - 1-1/2" center

Height	RATING - Square Feet Per Section			
	3 Tube	4 Tube	5 Tube	6 Tube
14"	. . .	. . .	. . .	1.5
17"	. . .	. . .	. . .	1.8
19"	1.1	1.4	. . .	. . .
20"	. . .	. . .	1.8	2.2
22"	1.3	1.6	. . .	. . .
23"	. . .	. . .	2.1	. . .
25"	1.5	1.8	. . .	. . .
26"	. . .	. . .	2.4	2.9
32"	. . .	. . .	3.0	. . .

Fero - 2-1/2" center

Height	RATING - Square Feet Per Section				
	3 Tube	4 Tube	5 Tube	6 Tube	7 Tube
14"	. . .	. . .	. . .	. . .	2.67
17"	. . .	. . .	. . .	. . .	3.25
20"	1.75	2.25	2.67	3.0	3.67
23"	2.00	2.50	3.00	3.5	. . .
26"	2.33	2.75	3.50	4.0	4.75
32"	3.00	3.50	4.33	5.0	5.50
38"	3.50	4.25	5.00	6.0	6.75

Burnham Slenderized - 1-3/4" center

Height	RATING - Square Feet Per Section			
	3 Tube	4 Tube	5 Tube	6 Tube
14"	. . .	. . .	. . .	1.6
17"	. . .	. . .	. . .	2.0
19"	. . .	. . .	. . .	2.3
22"	. . .	1.8	2.1	. . .
25"	1.6	. . .	2.4	. . .
32"	. . .	. . .	3.0	3.7

Federal - old style column radiation

Height	RATING - Square Feet Per Section				
	1 Col. 2-1/2" Centers	2 Col. 2-1/2" Centers	3 Col. 2-1/2" Centers	4 Col. 3" Centers	5 Col. 3" Centers
14"	. . .	. . .	. . .	. . .	4.00
17"	. . .	. . .	. . .	. . .	4.00
18"	. . .	. . .	2.25	3.00	5.00
20"	1.50	2.00	. . .	. . .	5.00
22"	. . .	. . .	3.00	4.00	6.00
23"	1.67	2.33	. . .	. . .	. . .
26"	2.00	2.67	3.75	5.00	. . .
32"	2.50	3.33	4.50	6.50	. . .
38"	3.00	4.00	5.00	8.00	. . .
44"	. . .	. . .	. . .	10.00	. . .
45"	. . .	5.00	6.00	. . .	. . .

Radiator Ratings

Slenderized Radiators

Size No. of Sections	Length 1-3/4" per Sections ? (inches)	Square Feet - EDR*		
		4-Tube		6-Tube 25" High
		19" High	25" High	
4	7"	6.4	8	12
6	10-1/2"	9.6	12	18
8	14"	12.8	16	24
10	17-1/2"	16.0	20	30
12	21"	19.2	24	36
14	24-1/2"	22.4	28	42
16	28"	25.6	32	48
18	31-1/2"	28.8	36	54
20	35"	32.0	40	60
22	38-1/2"	35.2	44	66
24	42"	38.4	48	72
26	45-1/2"	41.6	52	78
28	49"	44.8	56	84
30	52-1/2"	48.0	60	90
32	56"	51.2	64	96
34	59-1/2"	54.4	68	102
36	63"	57.6	72	108
38	66-1/2"	60.8	76	114
40	70"	64.0	80	120
42	73-1/2"	67.2	84	126
44	77"	70.4	88	132
46	80-1/2"	73.6	92	138
48	84"	76.8	96	144

Center leg section furnished on 30 section and better
*Heating surface based upon the standard heat emission of 240 BTU per square foot per hour.
? Add 1/2" for each bushing.
Furnished in even number section up to 48 sections.
Maximum allowable working pressure - 50 PSI, water; 15 PSI steam.
Consult factory for higher pressure.
Water content - 19-4:0.08 Gal./section;25-4:0.12 Gal./section; 26-6:0.17 Gal./section

Radiant Radiators

SIZE No. of Sections	LENGTH 2 1/4" Per Section (inches)	FREE STANDING *Square Feet per section 2.25
4	9"	9.0
6	13-1/2"	13.5
8	18"	18.0
10	22-1/2"	22.5
12	27"	27.0
14	31-1/2"	31.5
16	36"	36.0
18	40-1/2"	40.5
20	45"	45.0
22	49-1/2"	49.5
24	54"	54.0
26	58-1/2"	58.5
28	63"	63.0
30	67-1/2"	67.5
32	72"	72.0
34	76-1/2"	76.5
36	81"	81.0
38	85-1/2"	85.5
40	90"	90.0
42	94-1/2"	94.5
44	99"	99.0

*Increase radiator size 10% when recessed.

Heating surface based upon the standard heat emission of 240 BTU per square foot per hour.

Furnished in even number of sections up to 44 sections.

Maximum allowable working pressure - 30 PSI, water; 15 PSI, steam.

Water content - 0.15 Gal./section

SPECIFICATIONS

RECOMMENDED SYSTEM PIPING

ONE-PIPE STEAM

Up to 28 sq. ft. . . . . .1 inch
Up to 62 sq. ft. . . . . 1 1/4 inches

HOT WATER - Two-Pipe Forced Circulation

Up to 100 sq. ft. . . . . .1/2 inch
101 sq. ft. and larger . . . . . .3/4 inch

HOT WATER - TWO-PIPE GRAVITY SYSTEM

First floor - Up to 20 sq. ft. . . . . .1/2 IN
21 to 50 sq.ft. . . . . 3/4 IN
51 to 100 sq. ft. . . . . 1 IN
101 to 175 sq. ft. . . . . .1 1/4 IN
Second floor - Up to 30 sq. ft. . . . . 1/2 IN
31 to 70 sq. ft. . . . . .3/4 IN
71 to 120 sq. ft. . . . . 1 IN
121 to 250 sq. ft. . . . . .1 1/4 IN
Third floor - Up to 40 sq. ft. . . . . 1/2 IN
41 to 100 sq. ft. . . . . .3/4 IN
101 to 175 sq. ft. . . . . 1 IN
175 to 300 sq. ft. . . . . .1 3/4 IN

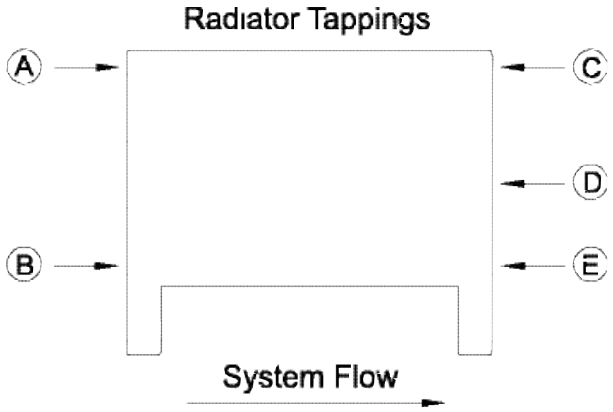
NOTES:

All sizes based on steel pipe. Vapor tappings, top and bottom opposite ends; supply 3/4 inch, return 1/2 inch.

For tappings on one-pipe hot water systems see I=B=R Installation Guide.

The last connection taken off the main should be run to a first floor radiator.

Radiators in which mains terminate should have one size larger valves.



	A	B	C	D	E
One Pipe Steam	*	supply	+vent	vent	*
Two Pipe Steam	supply	+supply	*	*	return
Hot Water	*	supply	vent	*	return

*** Plug**

+ Alternate

Heat Emission Chart (Based on room temp. of 70°F)

Ave. water temp. in radiators, °F	150	160	170	180	190	200	210	215
Heat emission, BTU/Hr. per sq. ft.	110	130	150	170	190	210	230	240

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