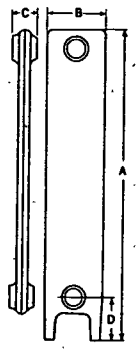
TYPES OF RADIATORS

Present day radiators may be classified as tubular, wall, or window types, and are generally made of cast-iron. There are two types of tubular radiators available, that known as large-tube which has a spacing of 2½ in. per section, and that known as small-tube which has a spacing of 1¾ in. per section. The tubes in the latter type of radiator are materially

TABLE 1. LARGE-TUBE CAST-IRON RADIATORS

Sectional, cast-iron, tubular-type radiators of the large-tube pattern, that is, having tubes approximately 1⅜ in. in diameter, 2½ in. on centers

Number of Tubes per Section	Catalog Rating per Section[a]	Section Dimensions					
		A	B Width		C	D	
		Height	Minimum	Maximum	Spacing[b]	Leg Height[c]	
	Sq Ft	In.	In.	In.	In.	In.	
4	2½	23	6¼	6 13/16	2½	4½	
	2¾	26	6¼	6 13/16	2½	4½	
	3½	32[d]	6¼	6 13/16	2½	4½	
	4¼	38[e]	6¼	6 13/16	2½	4½	
5	2⅔	20	8	8 9/16	2½[g]	4½	
	3	23	8	8 9/16	2½[g]	4½	
	3½	26	8	8 9/16	2½[g]	4½	
	4⅓	32[d]	8	8 9/16	2½[g]	4½	
	5	38[e]	8	8 9/16	2½[g]	4½	
6	4	26	9	10⅜	2½	4½	
	6	38[e]	9	10⅜	2½	4½	
7	2½	14[f]	11⅜	12 3/16	2½	3	
	3⅔	20	11⅜	12 3/16	2½	3 or 4½	



[a]The square foot of equivalent direct steam radiation is defined as the ability to emit 240 Btu per hour, with steam at 215 F, in air at 70 F. These ratings apply only to installed radiators exposed in a normal manner; not to radiators installed behind enclosures, grilles, etc. (See A.S.H.V.E. Code for Testing Radiators.)

[b]Maximum assembly 60 sections. Length equals number of sections times 2½ in.

[c]Where greater than standard leg heights are required, this dimension shall be 6 in., except for 7-tube sections, in heights from 13 to 20 in., inclusive for which this dimension shall be 4½ in. Radiators may be furnished without legs.

[d]Alternate height by 1 producer is 30 in.

[e]Alternate height by 2 producers is 36 in.; by another, 37 in.

[f]Alternate height by 1 producer is 13 in.; by 2 producers 13½ in.; by another, 15 in.

[g]For 5-tube hospital-type radiation, this dimension is 3 in.

smaller than those in the large-tube type. Small-tube radiators occupy less space and are particularly suited for installation in recesses.

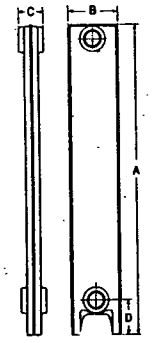
After a complete study of the demand for various sizes of radiators, the *Institute of Boiler and Radiator Manufacturers*, acting for the manufacturers, in cooperation with the Division of Simplified Practice, *National Bureau of Standards*, established Simplified Practice Recommendation R174-41 for large-tube cast-iron radiators. Under this program the number of stock sizes of large-tube radiators was reduced to 13. A program is now in progress for the establishment of a similar recommendation

for small-tube cast-iron radiators. Tables 1 and 2 show the sizes and dimensions of large-tube and small-tube cast-iron radiators which are being manufactured at the present time.

Wall radiators are now rated in terms of equivalent square feet, the same as large-tube and small-tube radiators. Tests have shown that the heat emitted from a wall-type radiator may be reduced from 5 to 10 per cent if the radiator is placed near the ceiling with the bars horizontal and in an air temperature exceeding 70 F. When radiators are placed near the ceiling, there is usually such a large difference in the temperature

TABLE 2. SMALL-TUBE CAST-IRON RADIATORS

Number of Tubes per Section	Catalog Rating per Section[a]	Section Dimensions				
		A	B Width		C	D
		Height[c]	Minimum	Maximum	Spacing[b]	Leg Height[c]
	Sq Ft	In.	In.	In.	In.	In.
3[d]	1.6	25	3¼	3½	1¾	2½
4[d]	1.6	19	4 7/16	4 13/16	1¾	2½
	1.8	22	4 7/16	4 13/16	1¾	2½
	2.0	25	4 7/16	4 13/16	1¾	2½
5[d]	2.1	22	5⅝	6 5/16	1¾	2½
	2.4	25	5⅝	6 5/16	1¾	2½
	3.0	32	5⅝	6 5/16	1¾	2½
6[d]	1.6	14	6 13/16	8	1¾	2½
	2.3	19	6 13/16	8	1¾	2½
	3.0	25	6 13/16	8	1¾	2½
	3.7	32	6 13/16	8	1¾	2½



[a]The square foot of equivalent direct steam radiation is defined as the ability to emit 240 Btu per hour, with steam at 215 F, in air of 70 F. These ratings apply only to installed radiators exposed in a normal manner; not to radiators installed behind enclosures, grilles, etc. (See A.S.H.V.E. Code for Testing Radiators.)

[b]Even number of sections only available. Maximum assembly 60 sections. Length equals number of sections times 1¾ in.

[c]Overall height and leg height, as produced by some manufacturers is one inch (1 in.) greater than shown in columns A and D. Radiators may be furnished without legs.

[d]Or equal.

between the floor level and the ceiling that it becomes difficult to heat the living zone of the room satisfactorily.

Pipe coils are assemblies of standard pipe or tubing (1 in. to 2 in.) which are used as radiators. In older practice these coils were commonly used in factory buildings, but now wall type radiators are most frequently used for this service. When coils are used, the miter type assembly is to be preferred as it best cares for expansion in the pipe. Cast manifolds or headers, known as branch tees, are available for this construction.

The heat emission of pipe coils placed vertically on a wall with the pipes horizontal is given in Table 3. This has been developed from available data and does not represent definite results of tests. For such coils the heat emission varies as the height of the coil. The heat emission of