

TABLE 1. COLUMN-TYPE CAST-IRON RADIATOR

HEIGHT Inches	GENERALLY ACCEPTED RATING PER SECTION ^a					
	One Column		Two Column		Three Column	
	Sq Ft	Btu/hr	Sq Ft	Btu/hr	Sq Ft	Btu/hr
15			1½	360		
18					2¼	540
20	1½	360	2	480		
22			2¼	540	3	720
23	1½	400	2½	560		
26					3¾	900
32	2¼	600	2¾	640	4½	1080
38	3	720	3¾	800	5	1200
45			5	1200	6	1440
	Four Column		Five Column		Six Column	
	Sq Ft	Btu/hr	Sq Ft	Btu/hr	Sq Ft	Btu/hr
13					3	720
16					3¾	900
18	3	720	4¾	1120	4½	1080
20					5	1200
22	4	960				
26	5	1200	7	1680		
32	6½	1560				
38	8	1920	10	2400		
45	10	2400				

^a These ratings are based on steam at 215 F and air at 70 F. They apply only to installed radiators exposed in a normal manner; not to radiators installed behind enclosures, grilles, or under shelves. For Btu per hour ratings at other temperatures, divide table values by factors found in Table 7.

TABLE 2. LARGE-TUBE CAST-IRON RADIATORS

Sectional, cast-iron, tubular-type radiators of the large-tube pattern, that is, having tubes approximately 1½ in. in diameter, 2½ in. on centers.

NUMBER OF TUBES PER SECTION	CATALOG RATING PER SECTION ^a		HEIGHT In.	WIDTH In.	SECTION CENTER SPACING ^b In.	LEG HEIGHT ^c TO TAPPING In.
	Sq Ft	Btu/hr				
3	1¾	420	20	4¾	2½	4½
	2	480	23		2½	4½
	2½	560	26		2½	4½
	3	720	32		2½	4½
	3½	840	38		2½	4½
4	2¼	540	20	6¼-6¾	2½	4½
	2½	600	23		2½	4½
	2¾	660	26		2½	4½
	3¼	840	32		2½	4½
	4¼	1020	38		2½	4½
5	2¾	640	20	8-8½	2½ ^d	4½
	3	720	23		2½ ^d	4½
	3½	840	26		2½ ^d	4½
	4½	1040	32		2½ ^d	4½
	5	1200	38		2½ ^d	4½
6	3	720	20	9-10¾	2½	4½
	3½	840	23		2½	4½
	4	960	26		2½	4½
	5	1200	32		2½	4½
	6	1440	38		2½	4½
7	2½	600	14	11¾-12¾	2½	3
	3	720	17		2½	3
	3½	880	20		2½	3 or 4½

^a These ratings are based on steam at 215 F and air at 70 F. They apply only to installed radiators exposed in a normal manner; not to radiators installed behind enclosures, grilles, or under shelves. For Btu per hour ratings at other temperatures, divide table values by factors found in Table 7.

^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 For 5-tube hospital-type radiation, this dimension is 3 in.

it emits and is generally expressed in units of: Btu per hr; *Mbh* (1000 Btu per hr); or in equivalent direct radiation (e.g., 240 Btu per hr for steam).

RADIATORS

Column and large-tube radiators are no longer manufactured, but since many of these units are still in use, Tables 1 and 2 are included to provide principal dimensions and average ratings of them.

The small-tube type radiators, with a spacing of 1½ in. per section, are about the only available cast-iron radiating surface for homes and office buildings. Small-tube radiators occupy less space than the older column and large-tube radiators, and are particularly suited for installation in recesses.

After a study of the demand for various sizes of radiators, the *Institute of*

TABLE 3. SMALL-TUBE CAST-IRON RADIATORS

NUMBER OF TUBES PER SECTION	CATALOG RATING PER SECTION ^a	SECTION DIMENSIONS					
		A Height ^c	B Width		C Spacing ^b	D Leg Height ^c	
			Minimum	Maximum			
	Sq Ft	Btu/hr	In.	In.	In.	In.	
3 ^d	1.6	384	25	3¼	3¼	1¾	2½
4 ^d	1.6	384	19	4¾	4¾	1¾	2½
	1.8	432	22	4¾	4¾	1¾	2½
	2.0	480	25	4¾	4¾	1¾	2½
5 ^d	2.1	504	22	5¾	5¾	1¾	2½
	2.4	576	25	5¾	5¾	1¾	2½
6 ^d	2.3	552	19	6¾	8	1¾	2½
	3.0	720	25	6¾	8	1¾	2½
	3.7	888	32	6¾	8	1¾	2½



^a These ratings are based on steam at 215 F and air at 70 F. They apply only to installed radiators exposed in a normal manner; not to radiators installed behind enclosures, grilles, or under shelves. For Btu per hour ratings at other temperatures, divide table values by factors found in Table 7.

^b Length equals number of sections times 1½ in.

^c Overall height and leg height, as produced by some manufacturers, are one inch greater than shown in Columns A and D. Radiators may be furnished without legs. Where greater than standard leg heights are required this dimension shall be 4½ in.

^d Or equal.

Boiler and Radiator Manufacturers, in cooperation with the Division of Simplified Practice, *National Bureau of Standards*, established Simplified Practice Recommendation R174-47 for small-tube cast-iron radiators. Table 3 shows the size and dimensions now being manufactured.

Wall radiators are hung from wall brackets and are well adapted to use in factory buildings. Tests have shown that the heat emitted from a wall-type radiator may be reduced from 5 to 10 percent 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 between the floor level and the ceiling that it becomes difficult to heat the living zone of the rooms satisfactorily. Dimensions and heat emission rates for wall radiators are given in Table 4.

CONVECTORS

A typical recessed convector is shown in Fig. 1. The room air enters the convector enclosure near the floor line, below the heating element, is heated in passing through the element, and is delivered to the room through