

# CERTIFIED

## PRODUCT DIRECTORY



## Commercial Finned Tube Radiation

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2014 Edition  
Effective date: June 5, 2014

**AHRI** Air-Conditioning,  
Heating, and  
Refrigeration Institute

The latest issue of the directory may be downloaded, at no charge, from [www.ahridirectory.org](http://www.ahridirectory.org).

Other certified products are published in the AHRI directories and on [www.ahridirectory.org](http://www.ahridirectory.org).

# CONTENTS

	Page
To the User of this Directory .....	1
Program Scope .....	4
Explanation of Basis of AHRI Ratings.....	7
Index of Manufacturers .....	12
Listings.....	13
Trade or Brand Name Index .....	28

## NOTICE

This Program is sponsored and administered by the Air-Conditioning, Heating, and Refrigeration Institute (AHRI).

At any time there may be some participants added or removed from the Program; also some models may be added, deleted or revised. The latest issue of the directory may be downloaded, at no charge, from [www.ahridirectory.org](http://www.ahridirectory.org). In the event of any question regarding the listing of any model or participant, communicate directly with

**Air-Conditioning, Heating, and Refrigeration Institute**  
**2111 Wilson Boulevard, Suite 500**  
**Arlington, VA 22201**  
**Phone: 703-524-8800**



# TO THE USER OF THIS DIRECTORY

This directory lists certified Commercial Finned Tube Radiation Units in accordance with the latest edition of the *AHRI Testing and Rating Standard for Commercial Finned Tube Radiation*.

The Air-Conditioning, Heating, and Refrigeration Institute sponsors and administers certification programs to help ensure that industry products perform as rated.

## PERSPECTIVE

The Air-Conditioning, Heating, and Refrigeration Institute (AHRI) is the trade association representing manufacturers of heating, cooling, and commercial refrigeration equipment. More than 300 members strong, AHRI is an internationally recognized advocate for the industry, and develops standards for and certifies the performance of many of the products manufactured by our members. AHRI's member companies account for more than 90 percent of the residential and commercial air conditioning, space heating, water heating and commercial refrigeration equipment manufactured and sold in North America.

AHRI traces its history back to 1903 when the Ice Machine Builders' Association of the United States started. Air-Conditioning and Refrigeration Institute (ARI) was formed in 1953 through a merger of two related trade associations. Since that time several other related trade associations have been merged into AHRI, making it the strong association that it is today.

AHRI has emerged as the major voice for the HVACR industry. Manufacturers are drawn to AHRI membership in part because of the variety of services and benefits afforded those who participate in AHRI activities. These activities include:

- Establishing standards for testing and rating products.
- Testing products to verify certified performance ratings, and publishing certification rating data.
- Providing representation and technical assistance to government entities on federal, state, and local legislative and regulatory matters.
- International trade research and analysis.
- Public relations and promotional programs for the industry.
- Consumer education programs.
- Credit information services.
- Regular statistical reports on product shipments.

## WHAT CERTIFICATION MEANS

Two of AHRI's most important functions are the development of performance rating standards and the administration of performance certification programs for eligible products. Each product section, with the support of the AHRI engineering staff, may develop certification programs for eligible products. Participation in the program is voluntary and open to members and nonmembers of AHRI on an equal level basis.

AHRI regularly selects random samples of equipment to be tested by an independent laboratory under contract to AHRI. The equipment is tested, using procedures stipulated in the corresponding AHRI standard, to verify that it meets the manufacturer's certified published performance ratings.

The AHRI certification label appearing on products has been an indication of verified performance for more than 40 years. Once a product is certified it is listed with its performance ratings in the appropriate AHRI directory. This directory serve as authoritative sources of specification and performance rating for manufacturers, wholesalers, retailers, contractors, utilities, architects, engineers, and consumers. The AHRI certification directories serve as reference manuals for many government agencies.

## COMMERCIAL FINNED TUBE RADIATION

This Directory of Certified Commercial Finned Tube Radiation Units lists all eligible models of this type of equipment produced by each manufacturer participating in AHRI Commercial Finned Tube Radiation Certification Program.

Listing in the directory means that the models have been certified for the manufacturers to AHRI, under the applicable standard, to meet the performance ratings claimed under test conditions described in the standards. Listing does not constitute a recommendation by AHRI regarding safety or reliability of any listed product.

Under the program, participating manufacturers must file certification data with AHRI on all models produced within the scope of the program. Through the random testing program AHRI conducts standard performance tests of each manufacturer's models each year.

In addition to the evaluation of the certified data by the AHRI ongoing random testing program, participating manufacturers which question certified ratings of competitors' models may challenge those models separately.

The manufacturer of a model which fails to pass the specified tests has two basic alternatives: re-rate the model in question to reflect its tested performance, or immediately stop production of that model.

If neither of the above solutions is accomplished, the manufacturer's right to use the AHRI certification symbol on *all* of his models is withdrawn, and the manufacturer's name and listings are removed from the directory.

The AHRI certification programs are designed to assure contractors and other equipment specifiers as well as consumers, that products manufactured by a program participant have been accurately rated and thus are eligible for the AHRI certification label.

### **AHRI STANDARD COVERED**

The latest edition of *AHRI Testing and Rating Standard for Commercial Finned Tube Radiation* specifies the conditions under which tests are conducted. They may be conducted initially by the manufacturers, and later verified in the AHRI contracted laboratory or all rating tests may be conducted in the AHRI contracted laboratory. AHRI ratings are approved only if the results of the AHRI contracted laboratory tests indicate that the requested ratings are accurate.

Copies of this standard may be downloaded from the AHRI website, [www.ahrinet.org](http://www.ahrinet.org).

### **TOLERANCES**

Directory users should note the tolerance provisions included in the latest edition of *AHRI Testing and Rating Standard for Commercial Finned Tube Radiation*. These tolerances are included in the standard and in the AHRI certification program for Commercial Finned Tube Radiation for the following reasons: Testing instrumentation accuracies, variations between laboratories and manufacturing tolerances.

# PROGRAM SCOPE

## A. STANDARD

The Program references the latest edition of *AHRI Testing and Rating Standard for Commercial Finned Tube Radiation*.

Certification by manufacturers of Commercial Finned Tube Radiation units under this standard requires that their certified ratings, including Standby Ratings, are established at the Standard Rating Conditions indicated in Table 1.

## B. EQUIPMENT COVERED AND EXCLUSIONS

Steam or water heated room heaters composed of a finned tube element fabricated from metallic tubing with a plurality of metallic fins attached to the tubing by means of a mechanical or other type bond. These heaters are designed for installation bare, or with open type grills, covers, or enclosures having top, front, or inclined outlets.

*Commercial Finned Tube Bare Element.* Commercial Finned Tube Bare Elements shall apply to elements fabricated from metallic tubing with a plurality of metallic fins attached to the tubing by means of a mechanical or other type bond.

## C. SCOPE OF THE PROGRAM

This program applies to Commercial Finned Tube Bare Elements, as defined in Section 1.2, for which published ratings are available.

*Scope Exclusions.* This program does not apply to:

- Residential Baseboard Radiation covered by the Residential Baseboard Radiation Operations Manual; and
- Convectors, which are designed only for installation in an enclosure.

## D. BASIS OF PARTICIPATION

Participation in this Program consists in general of the following:

1. Certification by the manufacturer that its models comply with all the applicable requirements of the latest edition of *AHRI Testing and Rating Standard for Commercial Finned Tube Radiation*.
2. Participation by the manufacturer in the random testing program. Units for testing are selected from manufacturers' stock by the AHRI staff.



## E. EVIDENCE OF CERTIFICATION

The participating manufacturer may indicate his participation in the Program by:

1. Display of the AHRI Performance Certified logo on all units of certified models.
2. Display of the AHRI Performance Certified logo on literature and advertising. (Where ratings are shown, or participation in this Program claimed, display of the logo is mandatory).
3. Distribution of this Directory of participating manufacturers, carrying the name of each participating manufacturer, and a list of the manufacturer's certified models and sizes together with their Standard Ratings.

### THE LOGO

The AHRI Certified Mark is illustrated below.



This logo has been registered with the U.S. Patent Office. The logo may not be reproduced or copied except by permission of AHRI. The logo may be displayed on qualified units in the form of a label obtained from AHRI, or may be an integral part of the unit nameplate.

### THE DIRECTORY

In this or future issues of the Directory of Certified Commercial Finned Tube Units will be found:

1. The names, addresses, and trade or brand names of the participating manufacturers
2. Listings of participating manufacturers
3. Withdrawals of listings for any reason
4. Any announcements concerning the Program

### **APPLICATION RATINGS**

Many applications of the Commercial Finned Tube Bare Elements may require ratings under conditions other than Standard Rating Conditions specified above. Specification sheets may show such application ratings, provided they include or are accompanied by the Standard Ratings, clearly designated as such.

## EXPLANATION OF BASIS OF AHRI RATINGS FOR COMMERCIAL FINNED TUBE RADIATION STEAM RATINGS

The AHRI Ratings listed in this book are Steam Ratings in Btuh per foot of active length at 215°F steam and 65°F inlet air. When the unit is installed as specified in the listings no adjustments to the listed ratings are required.

The steam ratings are based on the condensation capacity determined by laboratory tests as prescribed in the AHRI Standard but include an added percentage, ranging up to 15% depending on the installed height and type of cover or enclosure.

The AHRI Rating includes the factor shown in Table B below for the recommended installed height.

<b>TABLE B</b>	
<b>Installed Height</b>	<b>Factor</b>
36 or more	1
34	1.01
32	1.02
30	1.03
29	1.04
28	1.05
27	1.06
26	1.07
25	1.08
24	1.09
23	1.1
22	1.11
21	1.12
20	1.13
19	1.14
18 or less	1.15

If the unit is to be installed at a difference height than that recommended, the AHRI Rating must be adjusted as follows:

AHRI Rating Multiplied By:

$$\frac{\text{Factor from Table B for the actual Installed height}}{\text{Factor from Table B For the recommended installed height}}$$

### INSTALLED HEIGHT

The term “installed height“ is used to define the installed location that is the basis of the rating, as well as to determine the percentage that the manufacturer may add to the condensation capacity. The method of measuring installed height varies depending upon the type of cover or enclosure. It is the vertical distance from the floor to (1) the highest point of a top outlet cover or enclosure, or (2) the center of the outlet of an inclined outlet cover or enclosure. Round outlet enclosures are treated the same as inclined outlet enclosures. The installed height of a bare element is the vertical distance from the floor to the top of the uppermost element.

The term “mounting height” is sometimes used, which is the vertical height from the floor to the top of the bare element, cover, or enclosure.

### PERCENTAGES ADDED TO CONDENSATION CAPACITY

When the installed height of a unit is less than 36”, the manufacturer may add a percentage to the condensation capacity to determine the rating. For a bare unit, a unit in an open type grille or cover, and for front outlet enclosures, the maximum percentage is taken directly from Table B. For inclined outlet enclosures, the percentages shown in Table B are multiplied by:

$$\frac{\text{Angle of Outlet to Horizontal}}{90}$$

(For example, a 45 sloping top enclosure with an installed height of 18” should have a percentage of  $45/90 \times 15 = 7.5$  added to the condensation capacity.)

No percentage may be added to the condensation capacity of top outlet enclosures.

### WATER RATINGS

Water ratings at various average water temperatures (applicable to water flow rates of three or more feet per second) are determined from Table I (Refer to *Testing and Rating Standard for Finned Tube (Commercial) Radiation*).

Table I was computed as specified in the Standard using the following factors:

<b>TABLE C</b>	
Factors use to convert AHRI Steam Ratings to Hot Water Ratings ar Temperature Indicated	
<b>Average Radiator Temperature</b>	<b>Factor</b>
100	0.15
110	0.20
120	0.26
130	0.33
140	0.40
150	0.45
155	0.49
160	0.53
165	0.57
170	0.61
175	0.65
180	0.69
185	0.73
190	0.78
195	0.82
200	0.86
205	0.91
210	0.95
215	1.00
220	1.05
225	1.09
230	1.14
235	1.20
240	1.25

### **CORRECTION FACTORS FOR WATER FLOW RATES LESS THAN 3 FEET PER SECOND**

The factors in Table I may be used only when the water flow rate through the finned tube unit is known and where the flow rate is not less than 3 feet per second. To determine the output at less than 3 feet per second, multiply the AHRI Water Rating by the factor in this Table which applies to the known flow rate.

<b><u>TABLE D</u></b>	
Factors for Determining Outputs at Water Flow Rates of less than 3 ft/sec	
<b>Flow Rate</b>	<b>Factor</b>
3.00	1.000
2.75	0.996
2.50	0.992
2.25	0.988
2.00	0.984
1.75	0.979
1.50	0.973
1.25	0.966
1.00	0.957
0.75	0.946
0.50	0.931
0.25	0.905

### **RELATIONSHIP OF DIMENSIONS TO OUTPUT**

Experience has demonstrated that variations in dimensions can have a serious effect on the output of a unit. The Standard specifies that manufacturer's literature must list the details of the unit to which the AHRI ratings apply including:

1. Fin size, nominal thickness, nominal spacing (fins per foot) and external finish of finned tube element; i.e., unpainted or painted (including color of paint).
2. Recommended installed height (the installed height upon which the AHRI rating is based).
3. In the case of multiple tier assemblies of finned tube elements, the distance between centers of the tiers on which the ratings are based.
4. A statement that ratings are based on active length.
5. The difference between active length and total length expressed in inches.
6. A cross-sectional drawing indicating essential dimensions, including the height and depth of enclosure, size of inlet and outlet openings and the location of the element with respect to the enclosure.

It is important that a check be made to assure that the radiation delivered conforms to the dimensions ordered. It is also important that the radiation be installed in accordance with the manufacturer's instructions.

**FAILURE TO COMPLY WITH PROVISIONS OF THE PROGRAM**

If, under the procedure agreed to by the participating manufacturers, it is demonstrated that a manufacturer has failed to comply with the provisions of the Program or performance requirements of the Standard, and has failed to make proper correction, the right to claim AHRI certification and/or the use of the Certification Symbol will be withdrawn, not only for the specific model concerned, but for all models produced by that manufacturer, and the manufacturer's name and listing will be removed from the Directory.

# INDEX OF MANUFACTURERS

**Mestek, Inc.**  
Westfield, MA .....13

**Modine Manufacturing Company**  
Racine, WI .....18

**Slant/Fin Corporation**  
Greenvale, NY .....19

**Zehnder Rittling**  
Buffalo, NY .....20



AHRI DIRECTORY OF CERTIFIED PERFORMANCE															
Mestek, Inc.															
Trade/Brand Name	Model Number	Tube/Pipe Size (Nominal OD)  (inches)	Tube Material  C = Copper S = Steel	Fin Size (height)  (inches)		Fin Size (width)  (inches)	Fin Thickness  (inches)	Fin Material  A = Aluminum S = Steel	Fin Finish	Fins per Foot	Tiers of Element	Tier Spacing  (inches)	Installed Height  (inches)	Heating Effect  (%)	AHRI Ratings  (Btuh/ft/hr)
STERLING	RO1	3/4	C	2-1/2	x	2-1/4	.011	A	None	50	1	N/A	8 7/8	15	800
STERLING	RO2	3/4	C	2-1/2	x	2-3/4	.010	A	None	60	1	N/A	8 7/8	15	950
STERLING	RO4	3/4	C	3-3/4	x	2-3/4	0.0135	A	None	50	1	N/A	8 7/8	15	1130
STERLING	RO3	1	C	2-1/2	x	2-3/4	.011	A	None	55	1	N/A	8 7/8	15	930
STERLING	RO5	1	C	3-3/4	x	2-3/4	.011	A	None	50	1	N/A	8 7/8	15	1120
STERLING	RO7	1	C	5	x	2-3/4	.020	A	None	50	1	N/A	10	15	1260
STERLING	RO8	1-1/4	C	3-3/4	x	2-3/4	.020	A	None	50	1	N/A	8 7/8	15	1070
STERLING	R10	1-1/4	C	5	x	2-3/4	.020	A	None	50	1	N/A	10	15	1230
STERLING	RO4R	3/4	C	2-3/4	x	3-3/4	0.0135	A	None	50	1	N/A	8 7/8	15	1280
STERLING	RO5R	1	C	2-3/4	x	3-3/4	.011	A	None	50	1	N/A	8 7/8	15	1270
STERLING	RO7R	1	C	2-3/4	x	5	.020	A	None	50	1	N/A	8 7/8	15	1610
STERLING	RO8R	1-1/4	C	2-3/4	x	3-3/4	.020	A	None	50	1	N/A	8 7/8	15	1250
STERLING	R10R	1-1/4	C	2-3/4	x	5	.020	A	None	50	1	N/A	8 7/8	15	1600
STERLING	C3/4-33	3/4	C	3-1/4	x	3-1/4	.020	A	None	32	1	N/A	8 7/8	15	970
STERLING	C3/4-34	3/4	C	3-1/4	x	3-1/4	.020	A	None	40	1	N/A	8 7/8	15	1140
STERLING	C3/4-35	3/4	C	3-1/4	x	3-1/4	.020	A	None	50	1	N/A	8 7/8	15	1260
STERLING	C33	1	C	3-1/4	x	3-1/4	.020	A	None	32	1	N/A	8 7/8	15	970
STERLING	C34	1	C	3-1/4	x	3-1/4	.020	A	None	40	1	N/A	8 7/8	15	1080
STERLING	C35	1	C	3-1/4	x	3-1/4	.020	A	None	50	1	N/A	8 7/8	15	1210
STERLING	C133	1-1/4	C	3-1/4	x	3-1/4	.020	A	None	32	1	N/A	8 7/8	15	970
STERLING	C134	1-1/4	C	3-1/4	x	3-1/4	.020	A	None	40	1	N/A	8 7/8	15	1060
STERLING	C135	1-1/4	C	3-1/4	x	3-1/4	.020	A	None	50	1	N/A	8 7/8	15	1170
STERLING	C43	1	C	4-1/4	x	4-1/4	.020	A	None	32	1	N/A	9 3/8	15	1340
STERLING	C44	1	C	4-1/4	x	4-1/4	.020	A	None	40	1	N/A	9 3/8	15	1490
STERLING	C45	1	C	4-1/4	x	4-1/4	.020	A	None	50	1	N/A	9 3/8	15	1680
STERLING	C143	1-1/4	C	4-1/4	x	4-1/4	.020	A	None	32	1	N/A	9 3/8	15	1400
STERLING	C144	1-1/4	C	4-1/4	x	4-1/4	.020	A	None	40	1	N/A	9 3/8	15	1660

Mestek, Inc.															
Trade/Brand Name	Model Number	Tube/Pipe Size (Nominal OD)  (inches)	Tube Material  C = Copper S = Steel	Fin Size (height)  (inches)		Fin Size (width)  (inches)	Fin Thickness  (inches)	Fin Material  A = Aluminum S = Steel	Fin Finish	Fins per Foot	Tiers of Element	Tier Spacing  (inches)	Installed Height  (inches)	Heating Effect  (%)	AHRI Ratings  (Btuh/ft/hr)
STERLING	C145	1-1/4	C	4-1/4	x	4-1/4	.020	A	None	50	1	N/A	9 3/8	15	1710
STERLING	C3/4-433	3/4	C	3-5/8	x	4-1/4	.020	A	None	32	1	N/A	9 3/8	15	1210
STERLING	C3/4-434	3/4	C	3-5/8	x	4-1/4	.020	A	None	40	1	N/A	9 3/8	15	1450
STERLING	C3/4-435	3/4	C	3-5/8	x	4-1/4	.020	A	None	50	1	N/A	9 3/8	15	1600
STERLING	C433	1	C	3-5/8	x	4-1/4	.020	A	None	32	1	N/A	9 3/8	15	1260
STERLING	C434	1	C	3-5/8	x	4-1/4	.020	A	None	40	1	N/A	9 3/8	15	1410
STERLING	C435	1	C	3-5/8	x	4-1/4	.020	A	None	50	1	N/A	9 3/8	15	1600
STERLING	C1433	1-1/4	C	3-5/8	x	4-1/4	.020	A	None	32	1	N/A	9 3/8	15	1310
STERLING	C1434	1-1/4	C	3-5/8	x	4-1/4	.020	A	None	40	1	N/A	9 3/8	15	1440
STERLING	C1435	1-1/4	C	3-5/8	x	4-1/4	.020	A	None	50	1	N/A	9 3/8	15	1600
STERLING	R11	1	S	3-3/4	x	2-3/4	.024	S	Pnt Blk	40	1	N/A	8 7/8	15	880
STERLING	R15	1	S	5	x	2-3/4	.024	S	Pnt Blk	50	1	N/A	10	15	940
STERLING	R16	1-1/4	S	5	x	2-3/4	.024	S	Pnt Blk	50	1	N/A	10	15	960
STERLING	R15R	1	S	2-3/4	x	5	.024	S	Pnt Blk	50	1	N/A	8 7/8	15	1140
STERLING	R16R	1-1/4	S	2-3/4	x	5	.024	S	Pnt Blk	50	1	N/A	8 7/8	15	1170
STERLING	S133	1-1/4	S	3-1/4	x	3-1/4	.031	S	Pnt Blk	32	1	N/A	8 7/8	15	900
STERLING	S134	1-1/4	S	3-1/4	x	3-1/4	.031	S	Pnt Blk	40	1	N/A	8 7/8	15	1000
STERLING	S143	1-1/4	S	4-1/4	x	4-1/4	.031	S	Pnt Blk	32	1	N/A	9 3/8	15	1310
STERLING	S144	1-1/4	S	4-1/4	x	4-1/4	.031	S	Pnt Blk	40	1	N/A	9 3/8	15	1480
STERLING	S242	2	S	4-1/4	x	4-1/4	.031	S	Pnt Blk	25	1	N/A	9 3/8	15	1140
STERLING	S243	2	S	4-1/4	x	4-1/4	.031	S	Pnt Blk	32	1	N/A	9 3/8	15	1320
VULCAN	VRO1	3/4	C	2-1/2	x	2-1/4	.011	A	None	50	1	N/A	8 7/8	15	800
VULCAN	VRO2	3/4	C	2-1/2	x	2-3/4	.010	A	None	60	1	N/A	8 7/8	15	950
VULCAN	VRO4	3/4	C	3-3/4	x	2-3/4	0.0135	A	None	50	1	N/A	8 7/8	15	1130
VULCAN	VRO3	1	C	2-1/2	x	2-3/4	.011	A	None	55	1	N/A	8 7/8	15	930
VULCAN	VRO5	1	C	3-3/4	x	2-3/4	.011	A	None	50	1	N/A	8 7/8	15	1120
VULCAN	VRO7	1	C	5	x	2-3/4	.020	A	None	50	1	N/A	10	15	1260
VULCAN	VRO8	1-1/4	C	3-3/4	x	2-3/4	.020	A	None	50	1	N/A	8 7/8	15	1070
VULCAN	VR10	1-1/4	C	5	x	2-3/4	.020	A	None	50	1	N/A	10	15	1230
VULCAN	VRO4R	3/4	C	2-3/4	x	3-3/4	0.0135	A	None	50	1	N/A	8 7/8	15	1280

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Trade/Brand Name	Model Number	Tube/Pipe Size (Nominal OD)  (inches)	Tube Material  C = Copper S = Steel	Fin Size (height)  (inches)		Fin Size (width)  (inches)	Fin Thickness  (inches)	Fin Material  A = Aluminum S = Steel	Fin Finish	Fins per Foot	Tiers of Element	Tier Spacing  (inches)	Installed Height  (inches)	Heating Effect  (%)	AHRI Ratings  (Btuh/ft/hr)
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VULCAN	VRO7R	1	C	2-3/4	x	5	.020	A	None	50	1	N/A	8 7/8	15	1610
VULCAN	VRO8R	1-1/4	C	2-3/4	x	3-3/4	.020	A	None	50	1	N/A	8 7/8	15	1250
VULCAN	VR10R	1-1/4	C	2-3/4	x	5	.020	A	None	50	1	N/A	8 7/8	15	1600
VULCAN	VC3/4-33	3/4	C	3-1/4	x	3-1/4	.020	A	None	32	1	N/A	8 7/8	15	970
VULCAN	VC3/4-34	3/4	C	3-1/4	x	3-1/4	.020	A	None	40	1	N/A	8 7/8	15	1140
VULCAN	VC3/4-35	3/4	C	3-1/4	x	3-1/4	.020	A	None	50	1	N/A	8 7/8	15	1260
VULCAN	VC33	1	C	3-1/4	x	3-1/4	.020	A	None	32	1	N/A	8 7/8	15	970
VULCAN	VC34	1	C	3-1/4	x	3-1/4	.020	A	None	40	1	N/A	8 7/8	15	1080
VULCAN	VC35	1	C	3-1/4	x	3-1/4	.020	A	None	50	1	N/A	8 7/8	15	1210
VULCAN	VC133	1-1/4	C	3-1/4	x	3-1/4	.020	A	None	32	1	N/A	8 7/8	15	970
VULCAN	VC134	1-1/4	C	3-1/4	x	3-1/4	.020	A	None	40	1	N/A	8 7/8	15	1060
VULCAN	VC135	1-1/4	C	3-1/4	x	3-1/4	.020	A	None	50	1	N/A	8 7/8	15	1170
VULCAN	VC43	1	C	4-1/4	x	4-1/4	.020	A	None	32	1	N/A	9 3/8	15	1340
VULCAN	VC44	1	C	4-1/4	x	4-1/4	.020	A	None	40	1	N/A	9 3/8	15	1490
VULCAN	VC45	1	C	4-1/4	x	4-1/4	.020	A	None	50	1	N/A	9 3/8	15	1680
VULCAN	VC143	1-1/4	C	4-1/4	x	4-1/4	.020	A	None	32	1	N/A	9 3/8	15	1400
VULCAN	VC144	1-1/4	C	4-1/4	x	4-1/4	.020	A	None	40	1	N/A	9 3/8	15	1660
VULCAN	VC145	1-1/4	C	4-1/4	x	4-1/4	.020	A	None	50	1	N/A	9 3/8	15	1710
VULCAN	CC3/4-433	3/4	C	3-5/8	x	4-1/4	.020	A	None	32	1	N/A	9 3/8	15	1210
VULCAN	VC3/4-434	3/4	C	3-5/8	x	4-1/4	.020	A	None	40	1	N/A	9 3/8	15	1450
VULCAN	VC3/4-435	3/4	C	3-5/8	x	4-1/4	.020	A	None	50	1	N/A	9 3/8	15	1600
VULCAN	VC433	1	C	3-5/8	x	4-1/4	.020	A	None	32	1	N/A	9 3/8	15	1260
VULCAN	VC434	1	C	3-5/8	x	4-1/4	.020	A	None	40	1	N/A	9 3/8	15	1410
VULCAN	VC435	1	C	3-5/8	x	4-1/4	.020	A	None	50	1	N/A	9 3/8	15	1600
VULCAN	VC1433	1-1/4	C	3-5/8	x	4-1/4	.020	A	None	32	1	N/A	9 3/8	15	1310
VULCAN	VC1434	1-1/4	C	3-5/8	x	4-1/4	.020	A	None	40	1	N/A	9 3/8	15	1440
VULCAN	VC1435	1-1/4	C	3-5/8	x	4-1/4	.020	A	None	50	1	N/A	9 3/8	15	1600
VULCAN	VR12	1	S	2-3/4	x	5	.024	S	Pnt Blk	40	1	N/A	8 7/8	15	880
VULCAN	VR15	1	S	2-3/4	x	5	.024	S	Pnt Blk	50	1	N/A	10	15	940

Mestek, Inc.															
Trade/Brand Name	Model Number	Tube/Pipe Size (Nominal OD)  (inches)	Tube Material  C = Copper S = Steel	Fin Size (height)  (inches)		Fin Size (width)  (inches)	Fin Thickness  (inches)	Fin Material  A = Aluminum S = Steel	Fin Finish	Fins per Foot	Tiers of Element	Tier Spacing  (inches)	Installed Height  (inches)	Heating Effect  (%)	AHRI Ratings  (Btuh/ft/hr)
VULCAN	VR16	1-1/4	S	2-3/4	x	5	.024	S	Pnt Blk	50	1	N/A	10	15	960
VULCAN	VR12R	1	S	5	x	2-3/4	.024	S	Pnt Blk	40	1	N/A	8 7/8	15	1140
VULCAN	VR15R	1	S	5	x	2-3/4	.024	S	Pnt Blk	50	1	N/A	8 7/8	15	1170
VULCAN	VS35	1	S	3-1/4	x	3-1/4	.031	S	Pnt Blk	50	1	N/A	8 7/8	15	900
VULCAN	VS133	1-1/4	S	3-1/4	x	3-1/4	.031	S	Pnt Blk	32	1	N/A	8 7/8	15	1000
VULCAN	VS45	1	S	4-1/4	x	4-1/4	.031	S	Pnt Blk	50	1	N/A	9 3/8	15	1310
VULCAN	VS143	1-1/4	S	4-1/4	x	4-1/4	.031	S	Pnt Blk	32	1	N/A	9 3/8	15	1480
VULCAN	VS145	1-1/4	S	4-1/4	x	4-1/4	.031	S	Pnt Blk	50	1	N/A	9 3/8	15	1140
VULCAN	VS243	2	S	4-1/4	x	4-1/4	.031	S	Pnt Blk	32	1	N/A	9 3/8	15	1320
WALL FIN	RO1	3/4	C	2-1/2	x	2-1/4	.011	A	None	50	1	N/A	8 7/8	15	800
WALL FIN	RO2	3/4	C	2-1/2	x	2-3/4	.010	A	None	60	1	N/A	8 7/8	15	950
WALL FIN	RO4	3/4	C	3-3/4	x	2-3/4	0.0135	A	None	50	1	N/A	8 7/8	15	1130
WALL FIN	RO3	1	C	2-1/2	x	2-3/4	.011	A	None	55	1	N/A	8 7/8	15	930
WALL FIN	RO5	1	C	3-3/4	x	2-3/4	.011	A	None	50	1	N/A	8 7/8	15	1120
WALL FIN	RO7	1	C	5	x	2-3/4	.020	A	None	50	1	N/A	10	15	1260
WALL FIN	RO8	1-1/4	C	3-3/4	x	2-3/4	.020	A	None	50	1	N/A	8 7/8	15	1070
WALL FIN	R10	1-1/4	C	5	x	2-3/4	.020	A	None	50	1	N/A	10	15	1230
WALL FIN	RO4R	3/4	C	2-3/4	x	3-3/4	0.0135	A	None	50	1	N/A	8 7/8	15	1280
WALL FIN	RO5R	1	C	2-3/4	x	3-3/4	.011	A	None	50	1	N/A	8 7/8	15	1270
WALL FIN	RO7R	1	C	2-3/4	x	5	.020	A	None	50	1	N/A	8 7/8	15	1610
WALL FIN	RO8R	1-1/4	C	2-3/4	x	3-3/4	.020	A	None	50	1	N/A	8 7/8	15	1250
WALL FIN	R10R	1-1/4	C	2-3/4	x	5	.020	A	None	50	1	N/A	8 7/8	15	1600
WALL FIN	C3/4-33	3/4	C	3-1/4	x	3-1/4	.020	A	None	32	1	N/A	8 7/8	15	970
WALL FIN	C3/4-34	3/4	C	3-1/4	x	3-1/4	.020	A	None	40	1	N/A	8 7/8	15	1140
WALL FIN	C3/4-35	3/4	C	3-1/4	x	3-1/4	.020	A	None	50	1	N/A	8 7/8	15	1260
WALL FIN	C33	1	C	3-1/4	x	3-1/4	.020	A	None	32	1	N/A	8 7/8	15	970
WALL FIN	C34	1	C	3-1/4	x	3-1/4	.020	A	None	40	1	N/A	8 7/8	15	1080
WALL FIN	C35	1	C	3-1/4	x	3-1/4	.020	A	None	50	1	N/A	8 7/8	15	1210
WALL FIN	C133	1-1/4	C	3-1/4	x	3-1/4	.020	A	None	32	1	N/A	8 7/8	15	970
WALL FIN	C134	1-1/4	C	3-1/4	x	3-1/4	.020	A	None	40	1	N/A	8 7/8	15	1060

Mestek, Inc.															
Trade/Brand Name	Model Number	Tube/Pipe Size (Nominal OD)  (inches)	Tube Material  C = Copper S = Steel	Fin Size (height)  (inches)		Fin Size (width)  (inches)	Fin Thickness  (inches)	Fin Material  A = Aluminum S = Steel	Fin Finish	Fins per Foot	Tiers of Element	Tier Spacing  (inches)	Installed Height  (inches)	Heating Effect  (%)	AHRI Ratings  (Btuh/ft/hr)
WALL FIN	C135	1-1/4	C	3-1/4	x	3-1/4	.020	A	None	50	1	N/A	8 7/8	15	1170
WALL FIN	C43	1	C	4-1/4	x	4-1/4	.020	A	None	32	1	N/A	9 3/8	15	1340
WALL FIN	C44	1	C	4-1/4	x	4-1/4	.020	A	None	40	1	N/A	9 3/8	15	1490
WALL FIN	C45	1	C	4-1/4	x	4-1/4	.020	A	None	50	1	N/A	9 3/8	15	1680
WALL FIN	C143	1-1/4	C	4-1/4	x	4-1/4	.020	A	None	32	1	N/A	9 3/8	15	1400
WALL FIN	C144	1-1/4	C	4-1/4	x	4-1/4	.020	A	None	40	1	N/A	9 3/8	15	1660
WALL FIN	C145	1-1/4	C	4-1/4	x	4-1/4	.020	A	None	50	1	N/A	9 3/8	15	1710
WALL FIN	C3/4-433	3/4	C	3-5/8	x	4-1/4	.020	A	None	32	1	N/A	9 3/8	15	1210
WALL FIN	C3/4-434	3/4	C	3-5/8	x	4-1/4	.020	A	None	40	1	N/A	9 3/8	15	1450
WALL FIN	C3/4-435	3/4	C	3-5/8	x	4-1/4	.020	A	None	50	1	N/A	9 3/8	15	1600
WALL FIN	C433	1	C	3-5/8	x	4-1/4	.020	A	None	32	1	N/A	9 3/8	15	1260
WALL FIN	C434	1	C	3-5/8	x	4-1/4	.020	A	None	40	1	N/A	9 3/8	15	1410
WALL FIN	C435	1	C	3-5/8	x	4-1/4	.020	A	None	50	1	N/A	9 3/8	15	1600
WALL FIN	C1433	1-1/4	C	3-5/8	x	4-1/4	.020	A	None	32	1	N/A	9 3/8	15	1310
WALL FIN	C1434	1-1/4	C	3-5/8	x	4-1/4	.020	A	None	40	1	N/A	9 3/8	15	1440
WALL FIN	C1435	1-1/4	C	3-5/8	x	4-1/4	.020	A	None	50	1	N/A	9 3/8	15	1600
WALL FIN	R12	1	S	2-3/4	x	5	.024	S	Pnt Blk	40	1	N/A	8 7/8	15	880
WALL FIN	R15	1	S	2-3/4	x	5	.024	S	Pnt Blk	50	1	N/A	10	15	940
WALL FIN	R16	1-1/4	S	2-3/4	x	5	.024	S	Pnt Blk	50	1	N/A	10	15	960
WALL FIN	R12R	1	S	5	x	2-3/4	.024	S	Pnt Blk	40	1	N/A	8 7/8	15	1140
WALL FIN	R15R	1	S	5	x	2-3/4	.024	S	Pnt Blk	50	1	N/A	8 7/8	15	1170
WALL FIN	S35	1	S	3-1/4	x	3-1/4	.031	S	Pnt Blk	50	1	N/A	8 7/8	15	900
WALL FIN	S133	1-1/4	S	3-1/4	x	3-1/4	.031	S	Pnt Blk	32	1	N/A	8 7/8	15	1000
WALL FIN	S45	1	S	4-1/4	x	4-1/4	.031	S	Pnt Blk	50	1	N/A	9 3/8	15	1310
WALL FIN	S143	1-1/4	S	4-1/4	x	4-1/4	.031	S	Pnt Blk	32	1	N/A	9 3/8	15	1480
WALL FIN	S145	1-1/4	S	4-1/4	x	4-1/4	.031	S	Pnt Blk	50	1	N/A	9 3/8	15	1140
WALL FIN	S243	2	S	4-1/4	x	4-1/4	.031	S	Pnt Blk	32	1	N/A	9 3/8	15	1320

Modine Manufacturing Company															
Trade/Brand Name	Model Number	Tube/Pipe Size (Nominal OD) (inches)	Tube Material C = Copper S = Steel	Fin Size (height) (inches)		Fin Size (width) (inches)	Fin Thickness (inches)	Fin Material A = Aluminum S = Steel	Fin Finish	Fins per Foot	Tiers of Element	Tier Spacing (inches)	Installed Height (inches)	Heating Effect (%)	AHRI Ratings (Btuh/ft/hr)
MODINE, AIREDALE	CP	3/4	C	4 1/4	x	4 1/4	0.018	A	None	34	1		9.25	15	1350
MODINE, AIREDALE	CP	3/4	C	4 1/4	x	4 1/4	0.018	A	None	42	1		9.25	15	1480
MODINE, AIREDALE	CP	3/4	C	4 1/4	x	4 1/4	0.018	A	None	50	1		9.25	15	1610
MODINE, AIREDALE	CP	1	C	4 1/4	x	4 1/4	0.018	A	None	34	1		9.25	15	1400
MODINE, AIREDALE	CP	1	C	4 1/4	x	4 1/4	0.018	A	None	42	1		9.25	15	1530
MODINE, AIREDALE	CP	1	C	4 1/4	x	4 1/4	0.018	A	None	50	1		9.25	15	1640
MODINE, AIREDALE	CP	1-1/4	C	4 1/4	x	4 1/4	0.018	A	None	34	1		9.3	15	1450
MODINE, AIREDALE	CP	1-1/4	C	4 1/4	x	4 1/4	0.018	A	None	42	1		9.3	15	1580
MODINE, AIREDALE	CP	1-1/4	C	4 1/4	x	4 1/4	0.018	A	None	50	1		9.3	15	1670
MODINE, AIREDALE	CP	3/4	C	2 3/4	x	4 1/4	0.018	A	None	34	1		6.7	15	1110
MODINE, AIREDALE	CP	3/4	C	2 3/4	x	4 1/4	0.018	A	None	42	1		6.7	15	1250
MODINE, AIREDALE	CP	3/4	C	2 3/4	x	4 1/4	0.018	A	None	50	1		6.7	15	1390
MODINE, AIREDALE	CP	1	C	2 3/4	x	4 1/4	0.018	A	None	34	1		6.7	15	1110
MODINE, AIREDALE	CP	1	C	2 3/4	x	4 1/4	0.018	A	None	42	1		6.7	15	1240
MODINE, AIREDALE	CP	1	C	2 3/4	x	4 1/4	0.018	A	None	50	1		6.7	15	1370
MODINE, AIREDALE	CP	1-1/4	C	2 3/4	x	4 1/4	0.018	A	None	34	1		6.7	15	1110
MODINE, AIREDALE	CP	1-1/4	C	2 3/4	x	4 1/4	0.018	A	None	42	1		6.7	15	1230
MODINE, AIREDALE	CP	1-1/4	C	2 3/4	x	4 1/4	0.018	A	None	50	1		6.7	15	1350

Slant/Fin Corporation															
Trade/Brand Name	Model Number	Tube/Pipe Size (Nominal OD) (inches)	Tube Material C = Copper S = Steel	Fin Size (height) (inches)		Fin Size (width) (inches)	Fin Thickness (inches)	Fin Material A = Aluminum S = Steel	Fin Finish	Fins per Foot	Tiers of Element	Tier Spacing (inches)	Installed Height (inches)	Heating Effect (%)	AHRI Ratings (Btuh/ft/hr)
Slant/Fin	H-1	3/4"	C	3	x	3 1/4	0.024	A	None	48	1		8.750	15	1090
Slant/Fin	C-340	3/4"	C	4 1/4	x	4 1/4	0.020	A	None	40.2	1		10.000	15	1610
Slant/Fin	C-440	1"	C	4 1/4	x	4 1/4	0.020	A	None	40.2	1		10.000	15	1650
Slant/Fin	H-5X	1-1/4"	C	3	x	3 1/4	0.020	A	None	48	1		8.750	15	940
Slant/Fin	C-540	1-1/4"	C	4 1/4	x	4 1/4	0.020	A	None	40.2	1		10.000	15	1700
Slant/Fin	H-6X	1-1/4"	S	3	x	3 1/4	0.028	S	Galv.	48	1		8.750	15	850
Slant/Fin	S-532	1-1/4"	S	4 1/4	x	4 1/4	0.024	S	Galv.	32	1		10.000	15	1080
Slant/Fin	S-540	1-1/4"	S	4 1/4	x	4 1/4	0.024	S	Galv.	40	1		10.000	15	1300
Slant/Fin	S-832	2"	S	4 1/4	x	4 1/4	0.024	S	Galv.	32	1		10.000	15	1130

Zehnder Rittling															
Trade/Brand Name	Model Number	Tube/Pipe Size (Nominal OD)  (inches)	Tube Material  C = Copper S = Steel	Fin Size (height)  (inches)		Fin Size (width)  (inches)	Fin Thickness  (inches)	Fin Material  A = Aluminum S = Steel	Fin Finish	Fins per Foot	Tiers of Element	Tier Spacing  (inches)	Installed Height  (inches)	Heating Effect  (%)	AHRI Ratings  (Btuh/ft/hr)
Zehnder Rittling	1S-3-1/4x3-1/4-32	1	S	3.250	x	3.250	0.03	S	None	32.0	1		8.9	15%	890
Zehnder Rittling	1S-3-1/4x3-1/4-40	1	S	3.250	x	3.250	0.03	S	None	40.0	1		8.9	15%	960
Zehnder Rittling	1S-3-1/4x3-1/4-48	1	S	3.250	x	3.250	0.03	S	None	48.0	1		8.9	15%	1030
Zehnder Rittling	1-1/4S-3-1/4x3-1/4-32	1 1/4	S	3.250	x	3.250	0.03	S	None	32.0	1		8.9	15%	870
Zehnder Rittling	1-1/4S-3-1/4x3-1/4-40	1 1/4	S	3.250	x	3.250	0.03	S	None	40.0	1		8.9	15%	930
Zehnder Rittling	1-1/4S-3-1/4x3-1/4-48	1 1/4	S	3.250	x	3.250	0.03	S	None	48.0	1		8.9	15%	980
Zehnder Rittling	1S-4-1/4x4-1/4-32	1	S	4.250	x	4.250	0.03	S	None	32.0	1		8.9	15%	1140
Zehnder Rittling	1S-4-1/4x4-1/4-40	1	S	4.250	x	4.250	0.03	S	None	40.0	1		8.9	15%	1250
Zehnder Rittling	1S-4-1/4x4-1/4-48	1	S	4.250	x	4.250	0.03	S	None	48.0	1		8.9	15%	1360
Zehnder Rittling	1-1/4S-4-1/4x4-1/4-32	1 1/4	S	4.250	x	4.250	0.03	S	None	32.0	1		8.9	15%	1130
Zehnder Rittling	1-1/4S-4-1/4x4-1/4-40	1 1/4	S	4.250	x	4.250	0.03	S	None	40.0	1		8.9	15%	1240
Zehnder Rittling	1-1/4S-4-1/4x4-1/4-48	1 1/4	S	4.250	x	4.250	0.03	S	None	48.0	1		8.9	15%	1350
Zehnder Rittling	2S-4-1/4x4-1/4-32	2	S	4.250	x	4.250	0.03	S	None	32.0	1		8.9	15%	1090
Zehnder Rittling	2S-4-1/4x4-1/4-40	2	S	4.250	x	4.250	0.03	S	None	40.0	1		8.9	15%	1200
Zehnder Rittling	2S-4-1/4x4-1/4-48	2	S	4.250	x	4.250	0.03	S	None	48.0	1		8.9	15%	1310
Zehnder Rittling	3/4C-2-3/4x4-32	3/4	C	4.000	x	2.750	0.02	A	None	32.0	1		8.9	15%	1010
Zehnder Rittling	3/4C-2-3/4x4-40	3/4	C	4.000	x	2.750	0.02	A	None	40.0	1		8.9	15%	1160
Zehnder Rittling	3/4C-2-3/4x4-48	3/4	C	4.000	x	2.750	0.02	A	None	48.0	1		8.9	15%	1310
Zehnder Rittling	1C-2-3/4x4-32	1	C	4.000	x	2.750	0.02	A	None	32.0	1		8.9	15%	1010
Zehnder Rittling	1C-2-3/4x4-40	1	C	4.000	x	2.750	0.02	A	None	40.0	1		8.9	15%	1190
Zehnder Rittling	1C-2-3/4x4-48	1	C	4.000	x	2.750	0.02	A	None	48.0	1		8.9	15%	1300
Zehnder Rittling	1-1/4C-2-3/4x4-32	1 1/4	C	4.000	x	2.750	0.02	A	None	32.0	1		8.9	15%	1010
Zehnder Rittling	1-1/4C-2-3/4x4-40	1 1/4	C	4.000	x	2.750	0.02	A	None	40.0	1		8.9	15%	1150
Zehnder Rittling	1-1/4C-2-3/4x4-48	1 1/4	C	4.000	x	2.750	0.02	A	None	48.0	1		8.9	15%	1290
Zehnder Rittling	3/4C-3-1/4x3-1/4-32	3/4	C	3.250	x	3.250	0.02	A	None	32.0	1		8.9	15%	940
Zehnder Rittling	3/4C-3-1/4x3-1/4-40	3/4	C	3.250	x	3.250	0.02	A	None	40.0	1		8.9	15%	1060
Zehnder Rittling	3/4C-3-1/4x3-1/4-48	3/4	C	3.250	x	3.250	0.02	A	None	48.0	1		8.9	15%	1190
Zehnder Rittling	1C-3-1/4x3-1/4-32	1	C	3.250	x	3.250	0.02	A	None	32.0	1		8.9	15%	930
Zehnder Rittling	1C-3-1/4x3-1/4-40	1	C	3.250	x	3.250	0.02	A	None	40.0	1		8.9	15%	1050
Zehnder Rittling	1C-3-1/4x3-1/4-48	1	C	3.250	x	3.250	0.02	A	None	48.0	1		8.9	15%	1210



Zehnder Rittling															
Trade/Brand Name	Model Number	Tube/Pipe Size (Nominal OD)  (inches)	Tube Material  C = Copper S = Steel	Fin Size (height)  (inches)		Fin Size (width)  (inches)	Fin Thickness  (inches)	Fin Material  A = Aluminum S = Steel	Fin Finish	Fins per Foot	Tiers of Element	Tier Spacing  (inches)	Installed Height  (inches)	Heating Effect  (%)	AHRI Ratings  (Btu/ft/hr)
Zehnder Rittling	1-1/4C-3-1/4x3-1/4-32	1 1/4	C	3.250	x	3.250	0.02	A	None	32.0	1		8.9	15%	920
Zehnder Rittling	1-1/4C-3-1/4x3-1/4-40	1 1/4	C	3.250	x	3.250	0.02	A	None	40.0	1		8.9	15%	1030
Zehnder Rittling	1-1/4C-3-1/4x3-1/4-48	1 1/4	C	3.250	x	3.250	0.02	A	None	48.0	1		8.9	15%	1130
Zehnder Rittling	3/4C-4-1/4x4-1/4-32	3/4	C	4.250	x	4.250	0.02	A	None	32.0	1		8.9	15%	1260
Zehnder Rittling	3/4C-4-1/4x4-1/4-40	3/4	C	4.250	x	4.250	0.02	A	None	40.0	1		8.9	15%	1420
Zehnder Rittling	3/4C-4-1/4x4-1/4-48	3/4	C	4.250	x	4.250	0.02	A	None	48.0	1		8.9	15%	1590
Zehnder Rittling	1C-4-1/4x4-1/4-32	1	C	4.250	x	4.250	0.02	A	None	32.0	1		8.9	15%	1300
Zehnder Rittling	1C-4-1/4x4-1/4-40	1	C	4.250	x	4.250	0.02	A	None	40.0	1		8.9	15%	1460
Zehnder Rittling	1C-4-1/4x4-1/4-48	1	C	4.250	x	4.250	0.02	A	None	48.0	1		8.9	15%	1620
Zehnder Rittling	1-1/4C-4-1/4x4-1/4-32	1 1/4	C	4.250	x	4.250	0.02	A	None	32.0	1		8.9	15%	1350
Zehnder Rittling	1-1/4C-4-1/4x4-1/4-40	1 1/4	C	4.250	x	4.250	0.02	A	None	40.0	1		8.9	15%	1500
Zehnder Rittling	1-1/4C-4-1/4x4-1/4-48	1 1/4	C	4.250	x	4.250	0.02	A	None	48.0	1		8.9	15%	1650

## Trade/Brand Name Index

<b>Trade or Brand Name</b>	<b>Company</b>
Sterling, Vulcan, Wall Fin	Mestek, Inc.
Modine, Airdale	Modine Manufacturing Company
Slant/Fin	Slant/Fin Corporation
Zehnder Rittling	Zehnder Rittling