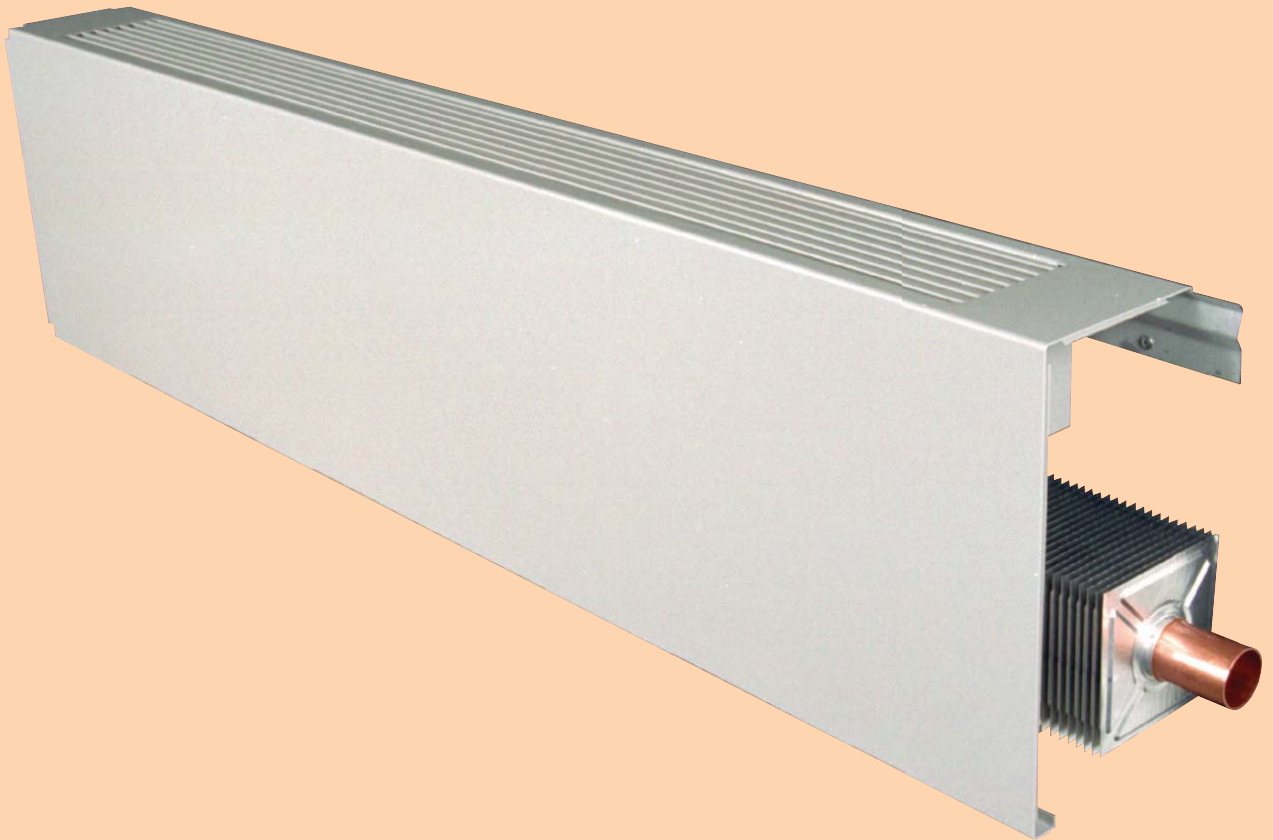
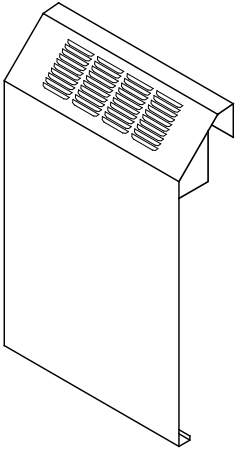


WF Series
Finned Tube Radiation

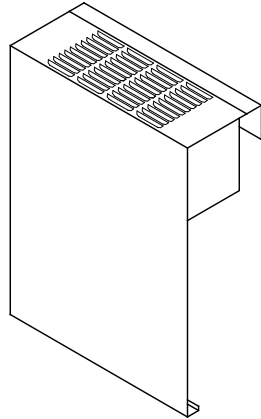


AIRTEX™
HYDRONIC SYSTEMS

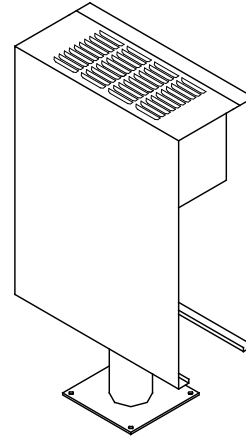
HEAT TRANSFER DIVISION



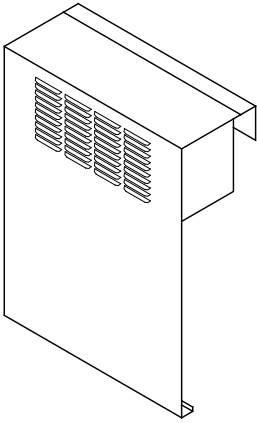
WF-1X
SLOPE
TOP
OUTLET



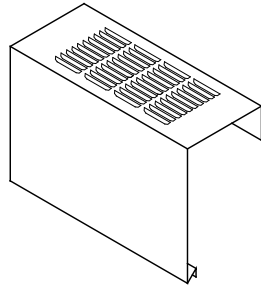
WF-2X
TOP
OUTLET
GRILLE



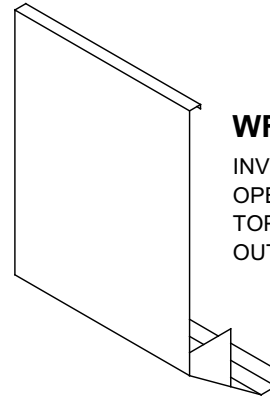
**WF-2A,
3A or
6A
- FS**
FREE
STANDING



WF-3X
FRONT
OUTLET
GRILLE

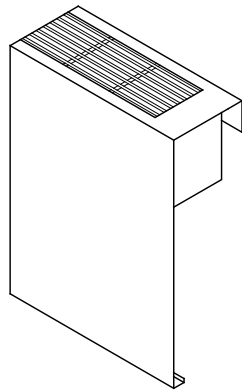


WF-4X
COMPACT
ENCLOSURE
FOR
FLAT
JOGGLE

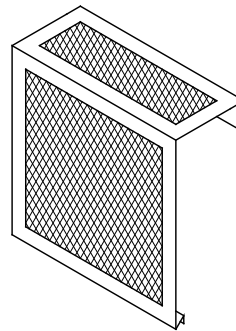


WF-5A
INVERTED
OPEN
TOP
OUTLET

BAR GRILLE
AVAILABLE ON
WF-3, WF-6,
- FS AND
- C BOTTOM.

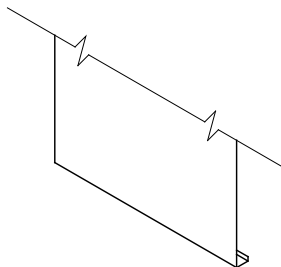


WF-6X
TOP
BAR
GRILLE
FOR
FLAT
JOGGLE

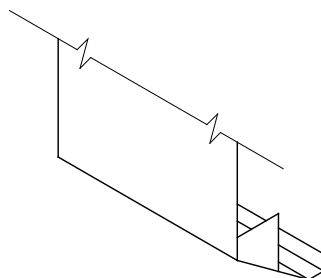


WF-7A
EXPANDED
METAL
FOR
FLAT
JOGGLE

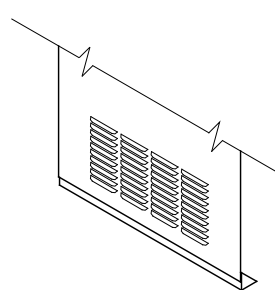
NOTE: X DENOTES BOTTOM TYPE A, B or C



TYPE A
OPEN
BOTTOM
INLET



TYPE B
SLOPED
BOTTOM
INLET



TYPE C
BOTTOM
TO
FLOOR
WITH
FRONT
INLET
GRILLE

ENCLOSURES

Airtex standard enclosures are produced in the following styles: Slope Top (WF-1), Flat Top (WF-2) and Front Outlet (WF-3). Enclosure inlets can be supplied with Open Bottom (Type A), Slope bottom (Type B) and Front Inlet Grille (Type C). Models are available in a variety of heights from 6" (152mm) to 36" (914mm) with lengths from 2'-0" (610mm) to 6'-0" (1829mm) increments.

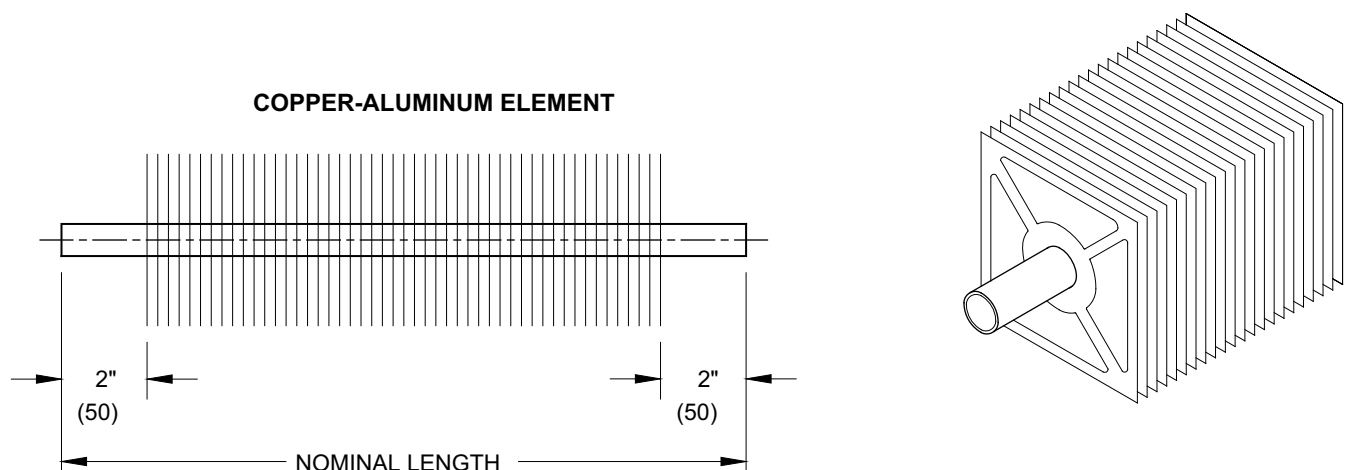
In addition to standard enclosures, Airtex can provide, upon request, custom designed models in a size, metal type, gauge and paint finish to suit any desired application.

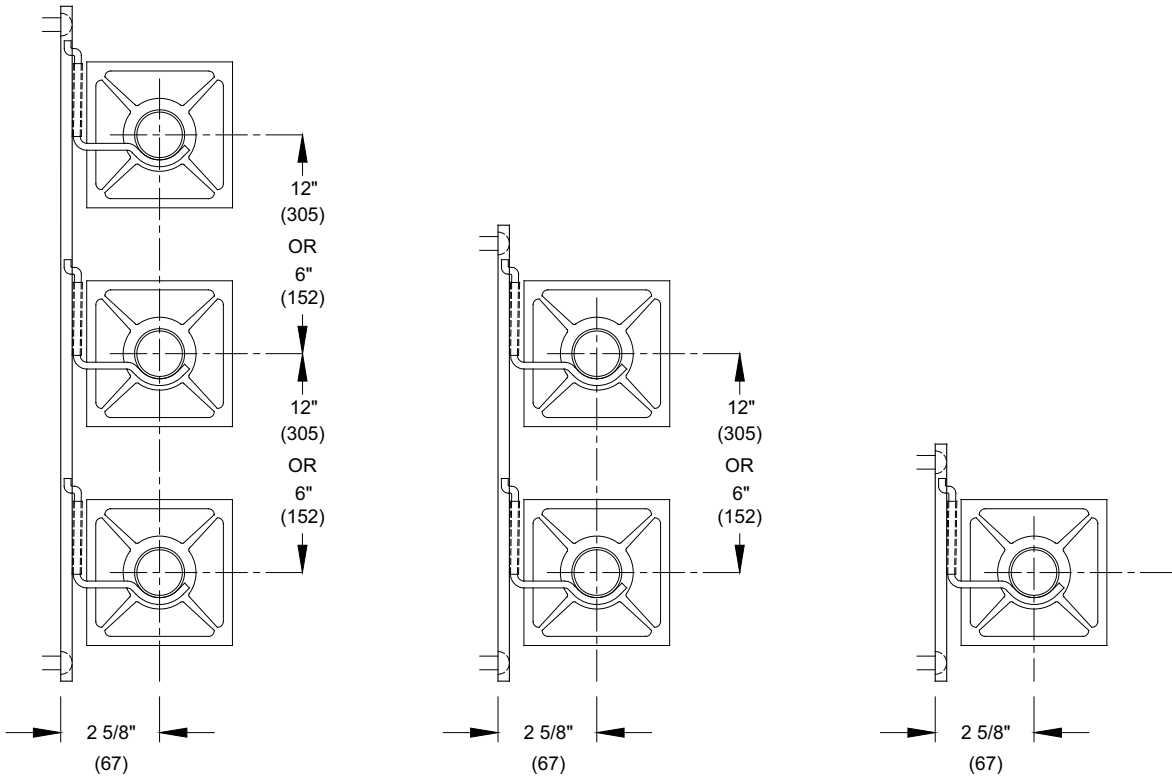
ACCESSORIES

For ease of installation and design continuity, Airtex manufactures brackets, element hangers, joggle strips, end caps, inside and outside corners, laps, access doors, pilaster kits and manual dampers, Manual dampers must be factory installed.

COPPER-ALUMINUM ELEMENT

The element is constructed of 1 1/4" (32mm) nominal (1 3/8" (35mm) O.D.) or 3/4" (19mm) nominal (7/8" (22mm) O.D.), seamless copper tubing. The aluminum fins are 4" (102mm) x 4" (102mm), for either tube diameter (optional 3 1/4" (83mm) x 2 1/2" (64mm) available with 3/4" (19mm) nominal tube, with a stamped pattern which provides strength and rigidity. Integral collars provide uniform spacing and maximum heat transfer. Permanent contact between fin and tube is obtained by mechanical expansion of the tube. Tube ends are suitable for standard sweat fittings. These elements are manufactured with 50 fins/ft (164 fins/m), with nominal lengths from 2'-0" (610mm) to 7'-6" (2286mm) in 6" (152mm) increments.

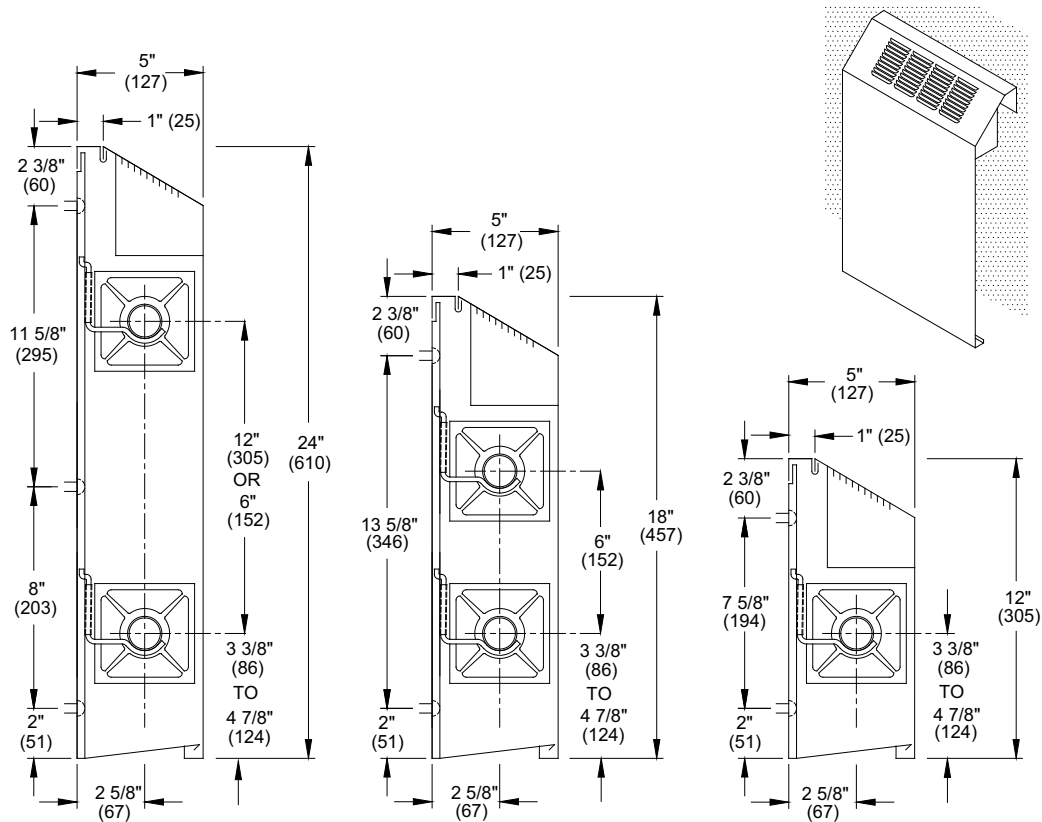




CAPACITIES OF ELEMENTS WITHOUT ENCLOSURES

	ELEMENT	ROWS	STEAM CAP. / FT	HOT WATER CAPACITY BTU/HR/FT AT 65°F AIR					
			1 PSI AT 65°F AIR	AVERAGE WATER TEMPERATURE °F					
			BTU/HR/FT	220	210	200	190	180	170
IMPERIAL	1 1/4" COPPER TUBE 4" X 4" ALUMINUM FIN 50 FINS/FT	1	1740	1830	1650	1500	1360	1200	1060
		2 (6" CENTERS)	2910	3060	2760	2500	2270	2010	1780
		2 (12" CENTERS)	3550	3730	3370	3050	2770	2450	2170
		3 (6" CENTERS)	3880	4070	3690	3340	3030	2680	2370
		3 (12" CENTERS)	4930	5180	4680	4240	3850	3400	3010
	ELEMENT	ROWS	STEAM CAP. / m	HOT WATER CAPACITY kW/m at 18°C AIR					
			6.89 kPa at 18°C AIR	AVERAGE WATER TEMPERATURE °C					
			kW/m	104	99	93	88	82	77
METRIC	32mm COPPER TUBE 102mm X 102mm ALUMINUM FIN 164 FINS/M	1	1.67	1.76	1.59	1.44	1.31	1.15	1.02
		2 (152mm CTRS)	2.80	2.94	2.65	2.40	2.18	1.93	1.71
		2 (305mm CTRS)	3.41	3.59	3.24	2.93	2.66	2.36	2.09
		3 (152mm CTRS)	3.73	3.91	3.55	3.21	2.91	2.58	2.28
		3 (305mm CTRS)	4.74	4.98	4.50	4.08	3.70	3.27	2.89

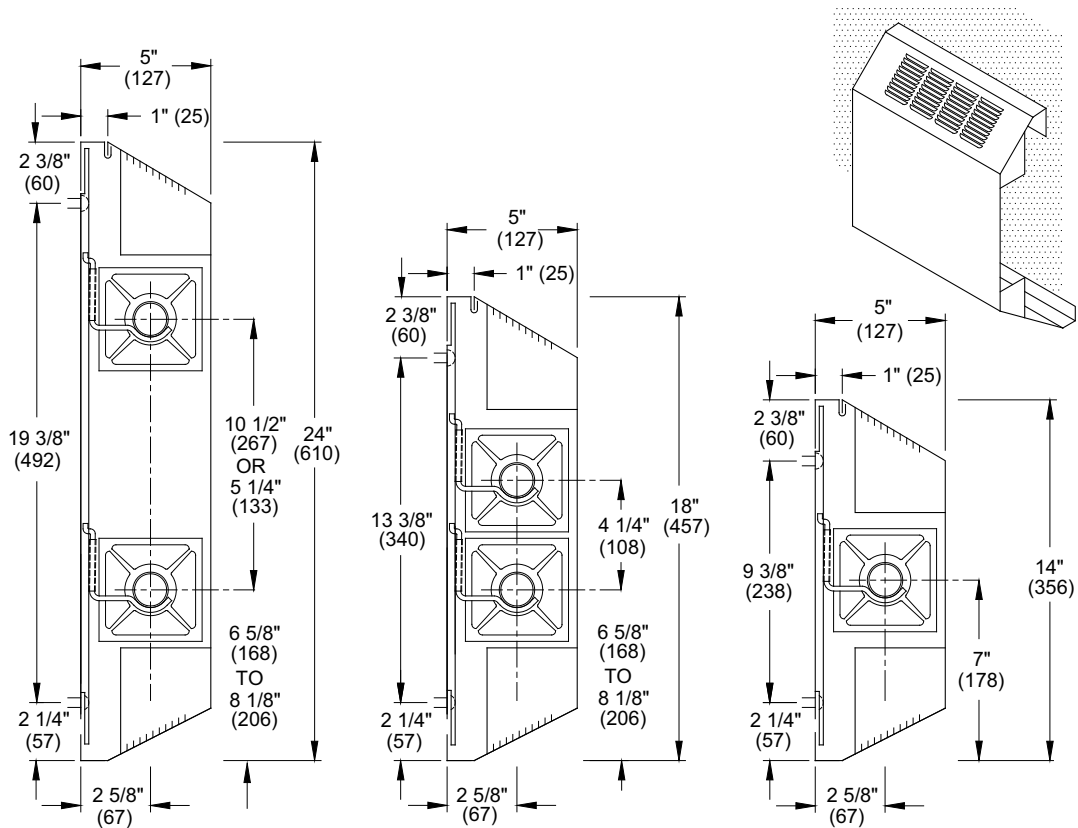
NOTES: Capacities are based on 3 fps (0.9 m/s) water velocity.
 3/4" x 4" x 4" (19mm x 102mm x 102mm) Cu/AL element has the same capacity as
 1 1/4" x 4" x 4" (32mm x 102mm x 102mm) Cu/AL element for the same flow rate (GPM (L/s))
 For capacity correction see page 81.
 Refer to flow chart on page 86 for pressure drop data.



CAPACITIES OF TYPE WF-1A ENCLOSURES

	ELEMENT	ROWS	ENCLOSURE HEIGHT	STEAM CAP. / FT	HOT WATER CAPACITY BTU/HR/FT AT 65°F AIR					
				1 PSI AT 65°F AIR	AVERAGE WATER TEMPERATURE °F					
				BTU/HR/FT	220	210	200	190	180	170
IMPERIAL	1 1/4" COPPER TUBE 4" X 4"	1	12"	1970	2070	1870	1690	1540	1360	1200
		1	18"	2180	2290	2070	1870	1700	1500	1330
		1	24"	2280	2390	2170	1960	1780	1570	1390
	ALUMINUM FIN 50 FINS/FT	2 (6" CENTERS)	18"	2790	2930	2650	2400	2180	1930	1700
		2 (6" CENTERS)	24"	2990	3140	2840	2570	2330	2060	1820
		2 (12" CENTERS)	24"	3400	3570	3230	2920	2650	2350	2070
	ELEMENT	ROWS	ENCLOSURE HEIGHT	STEAM CAP. / m	HOT WATER CAPACITY kW/m at 18°C AIR					
				6.89 kPa at 18°C AIR	AVERAGE WATER TEMPERATURE °C					
				kW/m	104	99	93	88	82	77
METRIC	32mm COPPER TUBE 102mm X 102mm	1	305mm	1.89	1.99	1.80	1.62	1.48	1.31	1.15
		1	457mm	2.09	2.20	1.99	1.80	1.63	1.44	1.28
		1	610mm	2.19	2.30	2.08	1.88	1.71	1.51	1.34
	ALUMINUM FIN 164 FINS/M	2 (152mm CTRS)	457mm	2.68	2.81	2.55	2.31	2.09	1.85	1.63
		2 (152mm CTRS)	610mm	2.87	3.02	2.73	2.47	2.24	1.98	1.75
		2 (305mm CTRS)	610mm	3.27	3.43	3.10	2.81	2.55	2.26	1.99

NOTES: Capacities are based on 3 fps (0.9 m/s) water velocity.
 3/4" x 4" x 4" (19mm x 102mm x 102mm) Cu/AL element has the same capacity as
 1 1/4" x 4" x 4" (32mm x 102mm x 102mm) Cu/AL element for the same flow rate (GPM (L/s)).
 For capacity correction see page 81 and page 16 for type C bottom.
 Refer to flow chart on page 86 for pressure drop data.

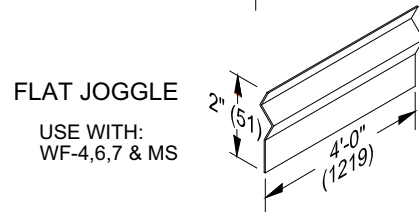
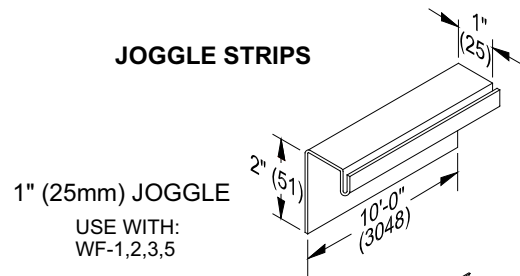
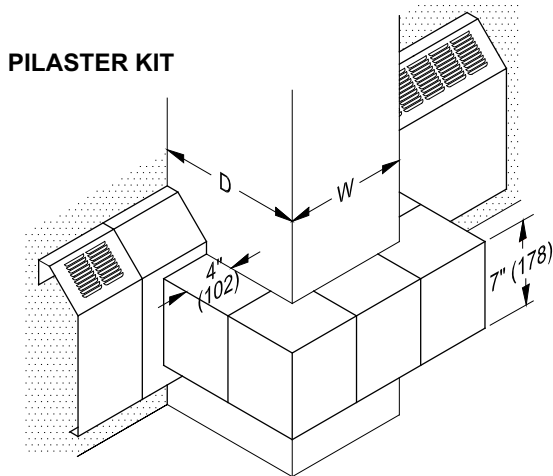
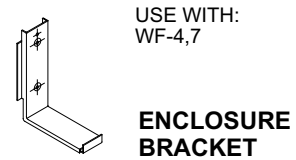
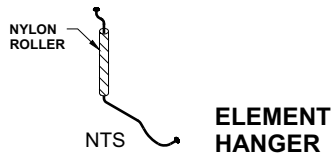
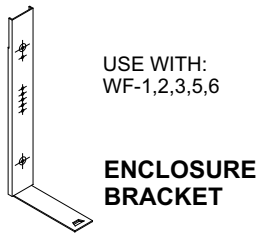
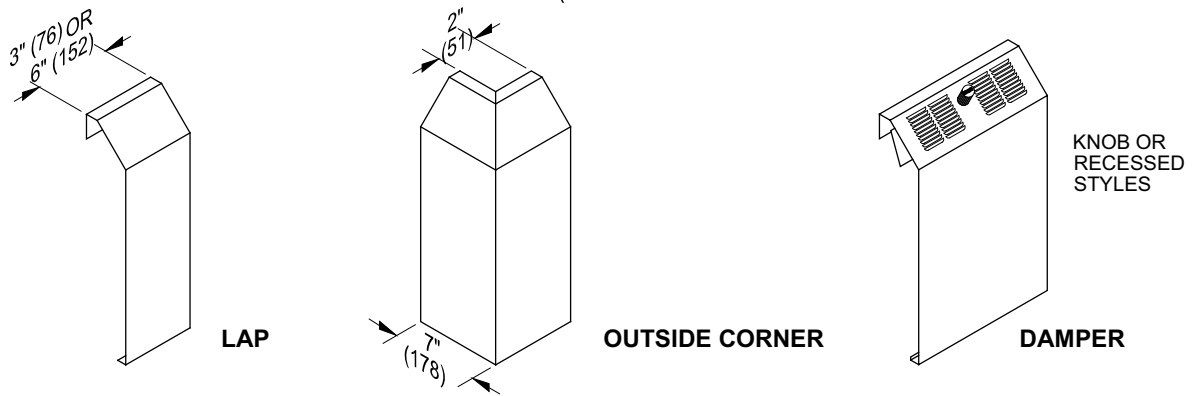
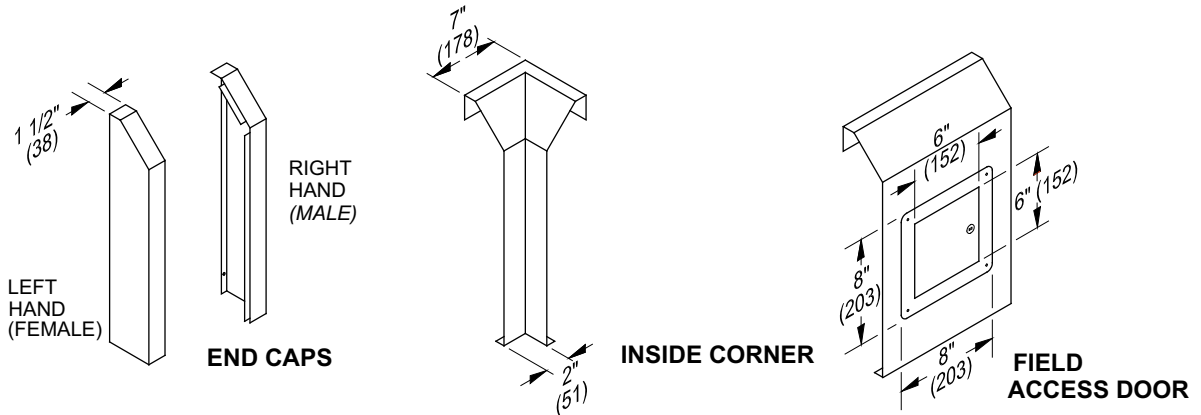


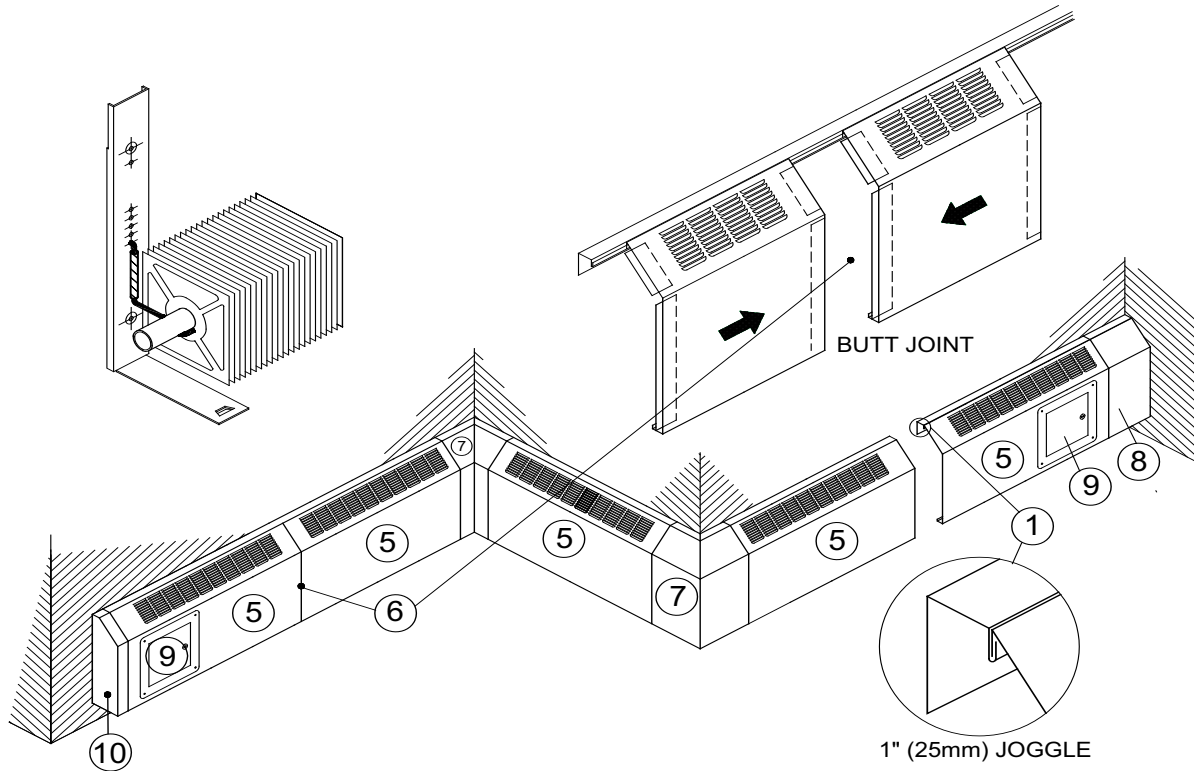
CAPACITIES OF TYPE WF-1B ENCLOSURES

	ELEMENT	ROWS	ENCLOSURE HEIGHT	STEAM CAP. / FT 1 PSI AT 65°F AIR	HOT WATER CAPACITY BTU/HR/FT AT 65°F AIR AVERAGE WATER TEMPERATURE °F					
				BTU/HR/FT	220	210	200	190	180	170
IMPERIAL	1 1/4" COPPER TUBE 4" X 4" ALUMINUM FIN 50 FINS/FT	1	14"	1710	1800	1627	1470	1343	1180	1047
		1	18"	1830	1920	1740	1570	1430	1260	1120
		1	24"	1910	2010	1820	1650	1490	1320	1170
		2 (4 1/4" CTRS)	18"	2350	2460	2230	2020	1830	1620	1430
		2 (5 1/4" CTRS)	24"	2510	2640	2390	2160	1960	1730	1530
		2 (10 1/2" CTRS)	24"	2850	3000	2710	2450	2230	1970	1740
	ELEMENT	ROWS	ENCLOSURE HEIGHT	STEAM CAP. / m 6.89 kPa at 18°C AIR	HOT WATER CAPACITY kW/m at 18°C AIR AVERAGE WATER TEMPERATURE °C					
				kW/m	104	99	93	88	82	77
METRIC	32mm COPPER TUBE 102mm X 102mm ALUMINUM FIN 164 FINS/M	1	356mm	1.64	1.73	1.56	1.41	1.29	1.13	1.01
		1	457mm	1.76	1.85	1.67	1.51	1.30	1.21	1.08
		1	610mm	1.84	1.93	1.75	1.59	1.43	1.27	1.13
		2 (108mm CTRS)	457mm	2.26	2.37	2.14	1.94	1.76	1.56	1.38
		2 (133mm CTRS)	610mm	2.41	2.54	2.30	2.08	1.88	1.66	1.47
		2 (267mm CTRS)	610mm	2.74	2.88	2.61	2.36	2.14	1.89	1.67

NOTES: Capacities are based on 3 fps (0.9 m/s) water velocity.
 3/4" x 4" x 4" (19mm x 102mm x 102mm) Cu/AL element has the same capacity as
 1 1/4" x 4" x 4" (32mm x 102mm x 102mm) Cu/AL element for the same flow rate (GPM (L/s)).
 For capacity correction see page 81.
 Refer to flow chart on page 86 for pressure drop data.

THE FOLLOWING ACCESSORIES ARE AVAILABLE IN SEVERAL SIZES AND MOST STYLES OF ENCLOSURES





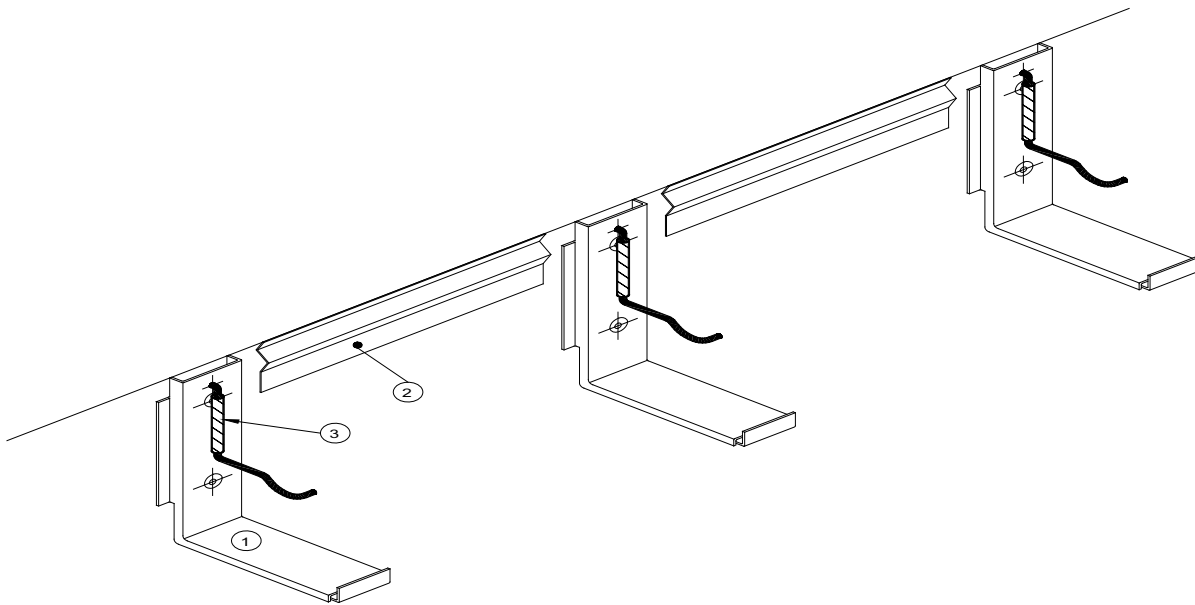
ENCLOSURE AND ACCESSORIES

Airtex enclosures are manufactured for quick and simple installation to minimize job-site labor. In order to provide the most rigid installation, support should be provided in the finished wall and should extend along the top edge of all enclosures to provide rigid support for the joggle strip.

INSTRUCTIONS FOR INSTALLATION

A chalk line should be drawn on the wall at the height of the enclosure (plus 4" (102mm) for Type A bottom).

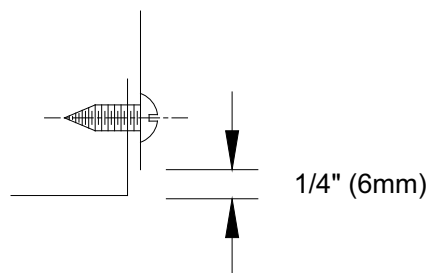
1. **Joggle Strip:** fasten directly below the chalk line with screws or nails. 1" joggle strip is installed continuously with enclosure. Where laps or corners are to be installed, run joggle to within 1" (25mm) of the corner or adjacent wall. Joggle should be slightly loose to allow the lap or corner to fit between joggle and wall. Where end caps are to be installed, joggle should be flush with the end of the enclosure.
2. **Enclosure Bracket:** butt the enclosure bracket up to the joggle strip and on 4'-0" (1219mm) centers (maximum). Fasten to the wall through the dimpled holes.
3. **Element Hanger:** mount element hanger on enclosure bracket at desired height.
4. **Element:** set the element onto the hanger and connect the element to the system.
5. **Enclosure:** hook the enclosure into the joggle strip. Press on face of the enclosure until the lower edge clips into place.
6. **Butt Joints:** after hooking the enclosure to the joggle strip, slide sideways to connect successive enclosure lengths.
7. **Corners:** hook top edge of inside and outside corners over joggle strip and bend tabs at bottom, securing the corner to the enclosure.
8. **Laps:** used where the enclosure is wall to wall. Hook the lap over the joggle strip and bend tabs at bottom securing it to the enclosure.
9. **Field Mount Access Doors:** cut 6 1/2" x 6 1/2" (165mm x 165mm) hole in cabinet front at required location (must be 1 1/4" (32mm) from edge or break) and mount access door using sheet metal screws.
10. **End Caps:** complete the enclosure installation by installing end caps where required.



WF-4 & WF-7 INSTALLATION OF BRACKETS AND JOGGLE

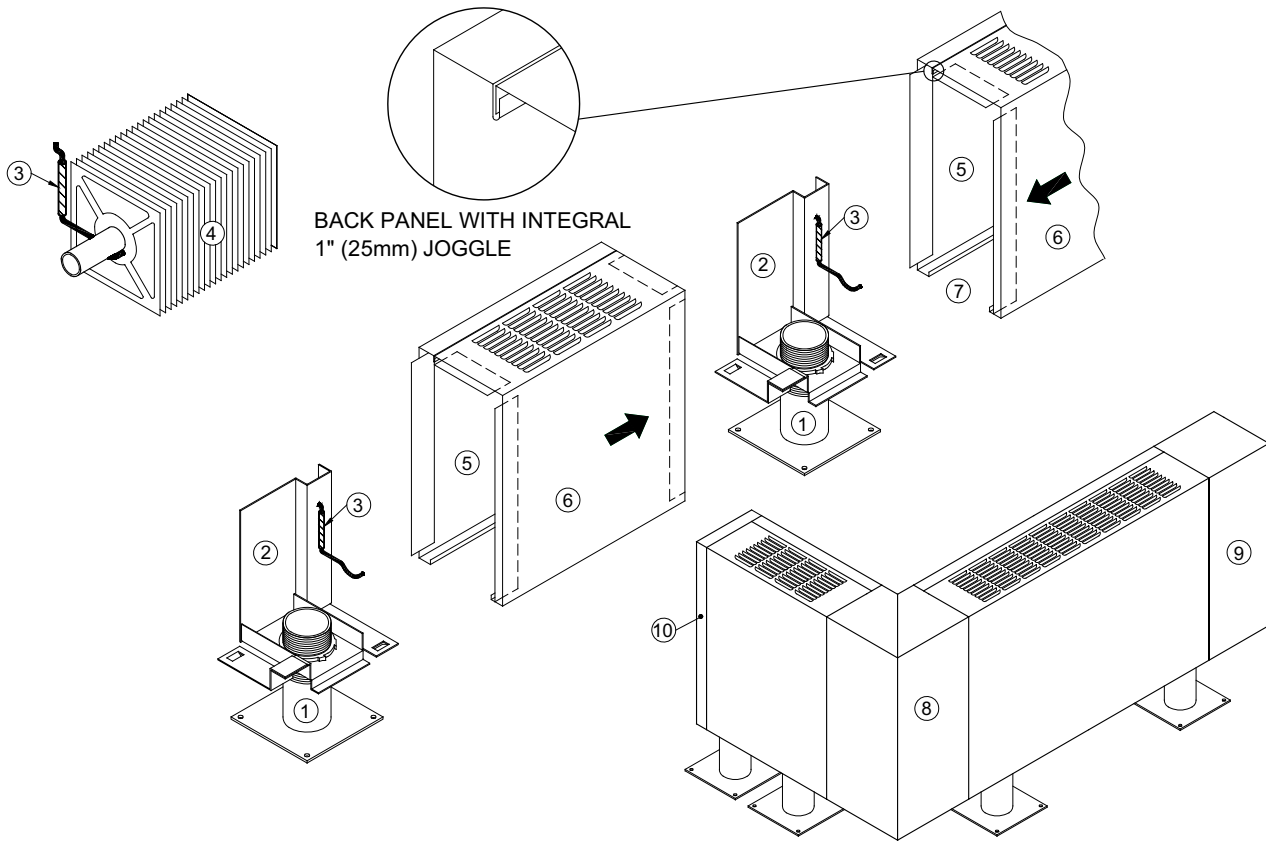
A chalk line should be drawn on the wall at the height of the enclosure (plus 4" (102mm) for Type A bottom).

1. **Enclosure Bracket:** fasten directly below the chalk line with screws or nails.
2. **Flat Joggle:** fasten directly below the chalk line next to the enclosure bracket. Alternate joggle and bracket insuring that there are at least two enclosure brackets per piece of enclosure and an enclosure bracket within 6" (152mm) of the end of a run of enclosure.



TYPE 'C' BOTTOM INSTALLATION

1. Fasten 'C' floor angle to floor. The floor angle is mounted at the enclosure depth from the wall (typically 5" (127mm) for standard enclosure). The floor angle is installed continuously with the enclosure. Where laps are to be installed, run the floor angle to within 1" (25mm) of the adjacent wall. Where corners are to be installed run the floor angle to within 1" (25mm) of the adjacent floor angle.
2. Hook the enclosure into the joggle strip at the top and attach the bottom of the enclosure to the floor angle as required.
3. Laps and corners are designed to be screwed to the floor angle at the bottom.



ENCLOSURE AND ACCESSORIES

All enclosures are manufactured for quick and simple installations to minimize job-site labour.

FREE STANDING (WF-2A-FS) INSTALLATION INSTRUCTIONS

1. Pedestals: align the pedestals allowing 2 pedestals per piece of enclosure, and mount solidly to the floor. (keep 5" (127mm) clear of panel joints to avoid interference between vertical members of pedestal and male/female joiners).
2. Enclosure Bracket: adjust the height of the enclosure brackets so that they are level. The enclosure brackets are height adjustable on the pedestal to accommodate floor level variations.
3. Element Hanger: mount element hanger on vertical member of the enclosure bracket at desired height.
4. Element: set the element onto the hanger and connect the element to the system.
5. Back Panel: install the back panel. This panel has an integral 1" (25mm) joggle at the top, which fits over the vertical member of the enclosure bracket. The bottom of the panel is retained by the spring clip. The back panel incorporates male/female joiners to align the butt joints. After placing the back panel on the enclosure bracket, slide sideways to connect successive back panel lengths.
6. Front Panel: hook the enclosure front panel into the joggle and press on face of the enclosure until the spring clip engages the bottom channel.
7. Butt Joints: after hooking the enclosure to the joggle strip, slide sideways to connect successive enclosure lengths.
8. Corners: corners are one piece and cover the back panel as well as the front panel. Gently spread the corner apart and place over the enclosure. Bend tabs at bottom in front and back securing it to the enclosure.
9. Laps: used where the enclosure is wall to wall. Laps are one piece and cover back panel as well as the front panel. Gently spread the lap apart and place over the enclosure. Bend tabs at bottom in front and in back securing it to the enclosure.
10. End Caps: complete the enclosure installation by installing end caps where required.

ENCLOSURE AND BRACKET SELECTION GUIDE

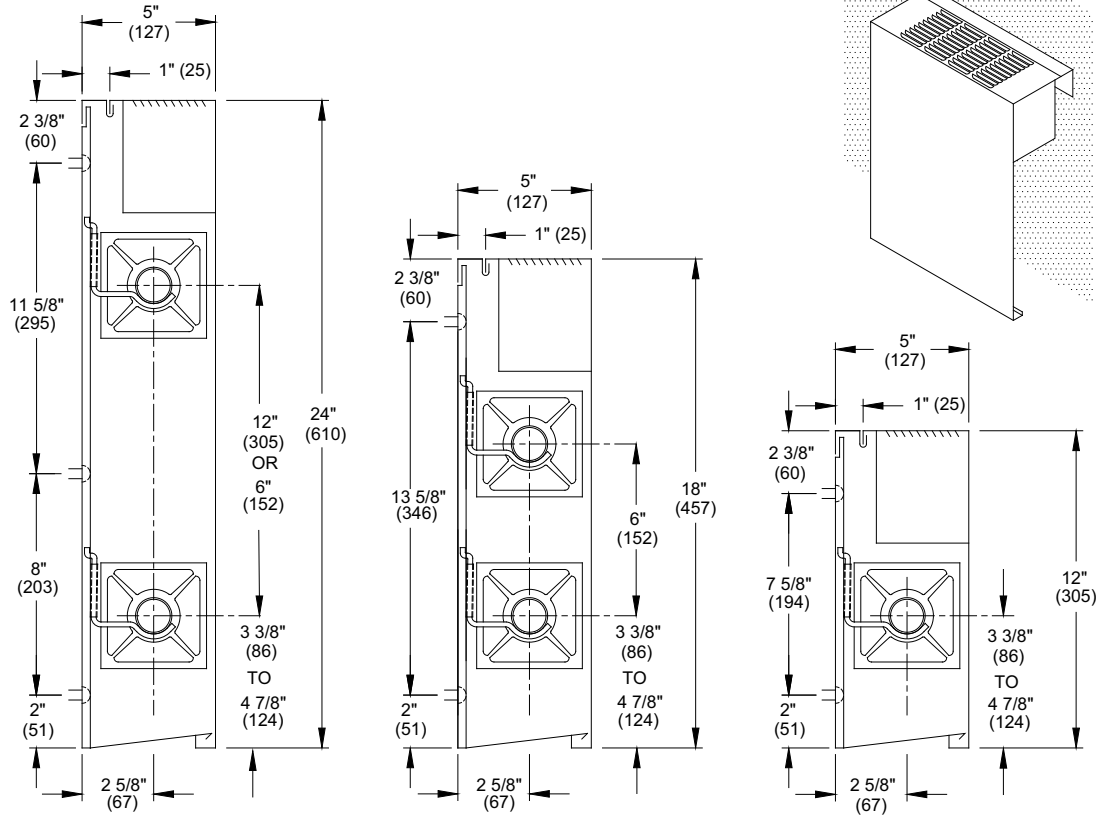
Enclosure Length Required	WF Series Enclosures	Enclosure Brackets	Enclosure Length Required	WF Series Enclosures	Enclosure Brackets	Enclosure Length Required	WF Series Enclosures	Enclosure Brackets
6' and under (1828mm)	Varies	2	17' 6" (5334mm)	1 - 5' 6" 2 - 6'	6	29' (8839mm)	2 - 5' 6" 3 - 6'	10
6' 6" (1981mm)	1 - 3' 1 - 3' 6"	4	18' (5486mm)	3 - 6'	6	29' 6" (8991mm)	1 - 5' 6" - 6'	4 10
7' (2133mm)	2 - 3' 6"	4	18' 6" (5638mm)	3 - 4' 6" 1 - 5'	8	30' (9144mm)	5 - 6'	10
7' 6" (2286mm)	1 - 3' 6" 1 - 4'	4	19' (5791mm)	2 - 4' 6" - 5'	2 8	30' 6" (9296mm)	5 - 5' 5' 6"	5 12
8' (2438mm)	2 - 4'	4	19' 6" (5943mm)	1 - 4' 6" 3 - 5'	8	31' (9448mm)	4 - 5' 2 - 5' 6"	12
8' 6" (2590mm)	1 - 4' - 4' 6"	1 4	20' (6096mm)	4 - 5'	8	31' 6" (9601mm)	3 - 5' 3 - 5' 6"	12
9' (2743mm)	2 - 4' 6"	4	20' 6" (6248mm)	3 - 5' - 5' 6"	1 8	32' (9753mm)	2 - 5' 5' 6"	4 12
9' 6" (2895mm)	1 - 4' 6" 1 - 5'	4	21' (6400mm)	2 - 5' 5' 6"	2 8	32' 6" (9906mm)	1 - 5' 5 - 5' 6"	12
10' (3048mm)	2 - 5'	4	21' 6" (6553mm)	1 - 5' - 5' 6"	3 8	33' (10058mm)	6 - 5' 6"	12
10' 6" (3200mm)	1 - 5' - 5' 6"	1 4	22' (6705mm)	4 - 5' 6"	8	33' 6" (10210mm)	5 - 5' 6" 1 - 6'	12
11' (3352mm)	2 - 5' 6"	4	22' 6" (6858mm)	3 - 5' 6" 1 - 6'	8	34' (10363mm)	4 - 5' 6" 2 - 6'	12
11' 6" (3505mm)	1 - 5' 6" 1 - 6'	4	23' (7010mm)	2 - 5' 6" 2 - 6'	8	34' 6" (10515mm)	3 - 5' 6" 3 - 6'	12
12' (3657mm)	2 - 6'	4	23' 6" (7162mm)	1 - 5' 6" 3 - 6'	8	35' (10668mm)	2 - 5' 6" 4 - 6'	12
12' 6" (3810mm)	2 - 4' 4' 6"	1 6	24' (7315mm)	4 - 6'	8	35' 6" (10820mm)	1 - 5' 6" 5 - 6'	12
13' (3962mm)	1 - 4' 4' 6"	2 6	24' 6" (7467mm)	1 - 4' 6" 4 - 5'	10	36' (10970mm)	6 - 6'	12
13' 6" (4114mm)	3 - 4' 6"	6	25' (7620mm)	5 - 5'	10	36' 6" (11125mm)	4 - 5' - 5' 6"	3 14
14' (4267mm)	2 - 4' 6" 1 - 5'	6	25' 6" (7772mm)	4 - 5' 5' 6"	1 10	37' (11277mm)	3 - 5' - 5' 6"	4 14
14' 6" (4419mm)	1 - 4' 6" - 5'	2 6	26' (7924mm)	3 - 5' 2 - 5' 6"	10	37' 6" (11430mm)	2 - 5' 5 - 5' 6"	14
15' (4572mm)	3 - 5'	6	26' 6" (8077mm)	2 - 5' 3 - 5' 6"	10	38' (11582mm)	1 - 5' 6 - 5' 6"	14
15' 6" (4724mm)	2 - 5' - 5' 6"	1 6	27' (8229mm)	1 - 5' 5' 6"	4 10	38' 6" (11734mm)	7 - 5' 6"	14
16' (4876mm)	1 - 5' 2 - 5' 6"	6	27' 6" (8382mm)	5 - 5' 6"	10	39' (11887mm)	6 - 5' 6" 1 - 6'	14
16' 6" (5029mm)	3 - 5' 6"	6	28' (8534mm)	4 - 5' 6" 1 - 6'	10	39' 6" (12039mm)	5 - 5' 6" 2 - 6'	14
17' (5181mm)	2 - 5' 6" 1 - 6'	6	28' 6" (8686mm)	3 - 5' 6" 2 - 6'	10	40' (12192mm)	4 - 5' 6" 3 - 6'	14

WF-2A-FS requires 2 pedestals per enclosure piece minimum. This guide is intended for standard applications only.

FINNED TUBE RADIATION

1. Copper-aluminum element shall be _____ 1 1/4" (32mm) _____ 3/4" (19mm) nominal I.D. seamless copper with 4"x4" (102x102mm) aluminum fin. Fins to be stamped for rigidity and have integral collars to provide even spacing of 50 fins/foot (164 fins/m) and maximum heat transfer. Tube ends suitable for sweat connecting. Heavy gauge element hangers shall be provided for mounting on the enclosure bracket and shall consist of rigid galvanized steel with peg board style mounting hook and nylon roller bearing to allow for free expansion. Element hanger shall swing from mounting hole for free expansion of element. Centre on minimum 4 ft. (1.2m).
2. Enclosure cabinets shall be constructed of 18 gauge (1.2mm) (16 gauge (1.5mm) for cabinets over 18" (457mm) high) _____ 16 gauge (1.5mm) _____ 14 gauge (1.9mm) satin coat steel with electrostatically applied powder coat prime finish. Unless otherwise indicated, cabinets will be supported at the top by a 1" (25mm) joggle strip mounted to the wall and at the bottom by support brackets on not more than 4 ft. (1.2m) centres. Enclosures to have factory gusset plates to maintain shape during shipment and installation. Enclosure cabinets shall have pencil proof louvres. Enclosure cabinets shall have self-aligning butt joint connections of a male end and a female end to insure a smooth joint between adjacent enclosure pieces.
3. Enclosure cabinet sizes and styles shall be Airtex Hydronic Systems as indicated on drawings and/or schedules.

FINNED TUBE RADIATION SCHEDULE (BASED ON AIRTEX HYDRONIC SYSTEMS)			
TYPE ON PLAN	MODEL	BTU / HR / FT (kW)	REMARKS



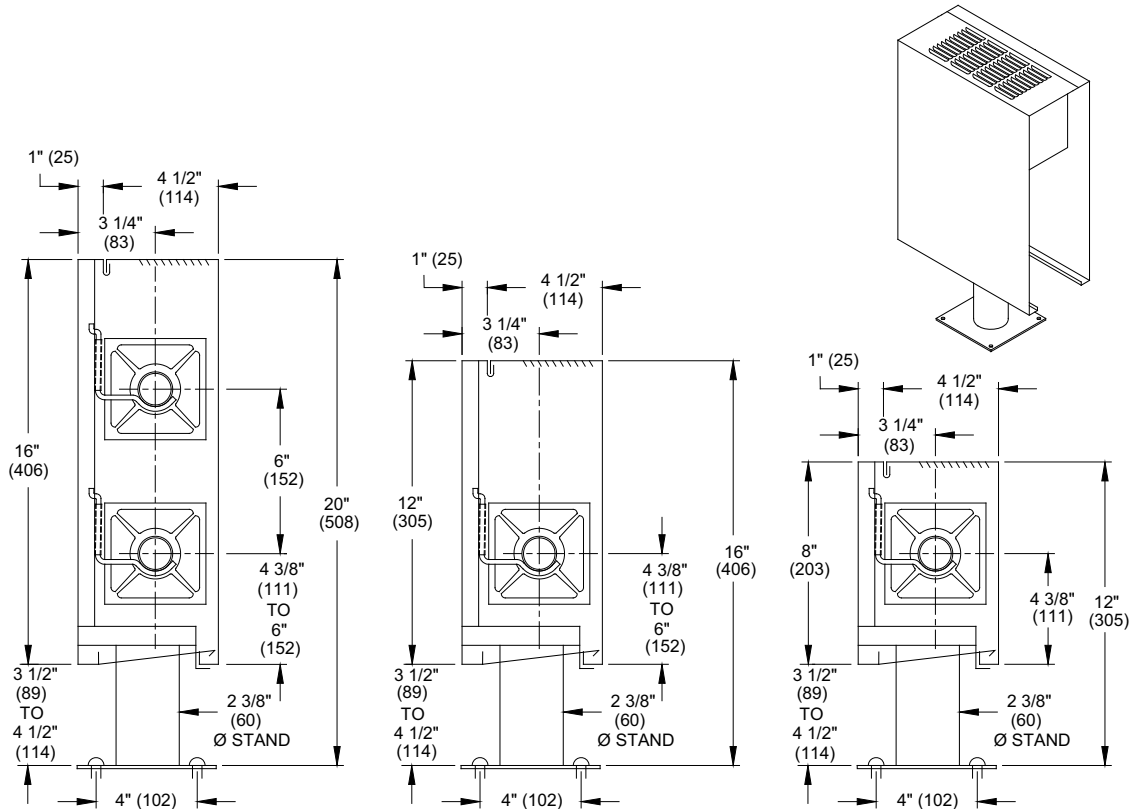
CAPACITIES OF TYPE WF-2A ENCLOSURES

	ELEMENT	ROWS	ENCLOSURE HEIGHT	STEAM CAP. / FT 1 PSI AT 65°F AIR	HOT WATER CAPACITY BTU/HR/FT AT 65°F AIR AVERAGE WATER TEMPERATURE °F					
				BTU/HR/FT	220	210	200	190	180	170
IMPERIAL	1 1/4" COPPER TUBE	1	12"	2060	2160	1960	1770	1610	1420	1260
		1	18"	2300	2420	2190	1980	1790	1590	1400
		1	24"	2470	2590	2350	2120	1930	1700	1510
	4" X 4" ALUMINUM FIN 50 FINS/FT	2 (6" CENTERS)	18"	2810	2950	2670	2420	2190	1940	1710
		2 (6" CENTERS)	24"	3070	3220	2920	2640	2390	2120	1870
		2 (12" CENTERS)	24"	3510	3690	3330	3020	2740	2420	2140
	ELEMENT	ROWS	ENCLOSURE HEIGHT	STEAM CAP. / m 6.89 kPa at 18°C AIR	HOT WATER CAPACITY kW/m at 18°C AIR AVERAGE WATER TEMPERATURE °C					
METRIC	32mm COPPER TUBE	1	305mm	1.98	104	99	93	88	82	77
		1	457mm	2.21	2.08	1.88	1.70	1.55	1.37	1.21
		1	610mm	2.37	2.33	2.11	1.90	1.72	1.53	1.35
	102mm X 102mm ALUMINUM FIN 164 FINS/M	2 (152mm CTRS)	457mm	2.70	2.49	2.26	2.04	1.86	1.63	1.45
		2 (152mm CTRS)	610mm	2.95	2.84	2.57	2.33	2.11	1.86	1.64
		2 (305mm CTRS)	610mm	3.37	3.10	2.81	2.54	2.30	2.04	1.80
					3.55	3.20	2.90	2.63	2.33	2.06

NOTES: Capacities are based on 3 fps (0.9 m/s) water velocity.
 3/4" x 4" x 4" (19mm x 102mm x 102mm) Cu/AL element has the same capacity as
 1 1/4" x 4" x 4" (32mm x 102mm x 102mm) Cu/AL element for the same flow rate (GPM (L/s)).
 For capacity correction see page 81 and page 16 for type B or C bottom.
 Refer to flow chart on page 86 for pressure drop data.

WF-2A-FS ENCLOSURE WITH ADJUSTABLE PEDESTAL

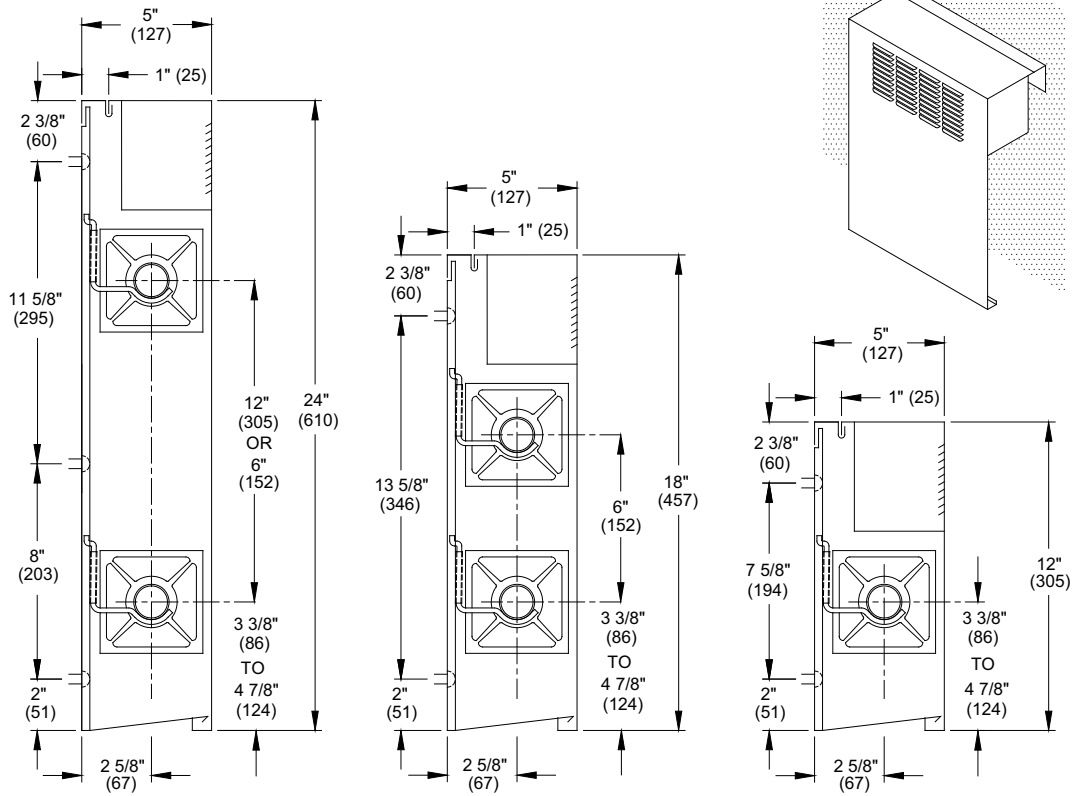
FINNED TUBE RADIATION DIMENSIONS & CAPACITIES



CAPACITIES OF TYPE WF-2A-FS ENCLOSURES

	ELEMENT	ROWS	ENCLOSURE HEIGHT	STEAM CAP. / FT 1 PSI AT 65°F AIR	HOT WATER CAPACITY BTU/HR/FT AT 65°F AIR AVERAGE WATER TEMPERATURE °F					
				BTU/HR/FT	220	210	200	190	180	170
IMPERIAL	1 1/4" COPPER TUBE 4" X 4" ALUMINUM FIN 50 FINS/FT	1	8"	1890	1985	1795	1625	1475	1305	1150
		1	12"	2060	2160	1960	1770	1605	1420	1255
		1	16"	2235	2345	2120	1920	1740	1540	1360
		2 (6" CENTERS)	16"	2725	2860	2590	2345	2125	1880	1660
	ELEMENT	ROWS	ENCLOSURE HEIGHT	STEAM CAP. / m 6.89 kPa at 18°C AIR	HOT WATER CAPACITY kW/m at 18°C AIR AVERAGE WATER TEMPERATURE °C					
				kW/m	104	99	93	88	82	77
METRIC	32mm COPPER TUBE 102mm X 102mm ALUMINUM FIN 164 FINS/M	1	203mm	1.82	1.91	1.73	1.56	1.42	1.25	1.11
		1	305mm	1.98	2.08	1.88	1.70	1.54	1.37	1.21
		1	406mm	2.15	2.25	2.04	1.85	1.67	1.48	1.31
		2 (152mm CTRS)	406mm	2.62	2.75	2.49	2.25	2.04	1.81	1.60

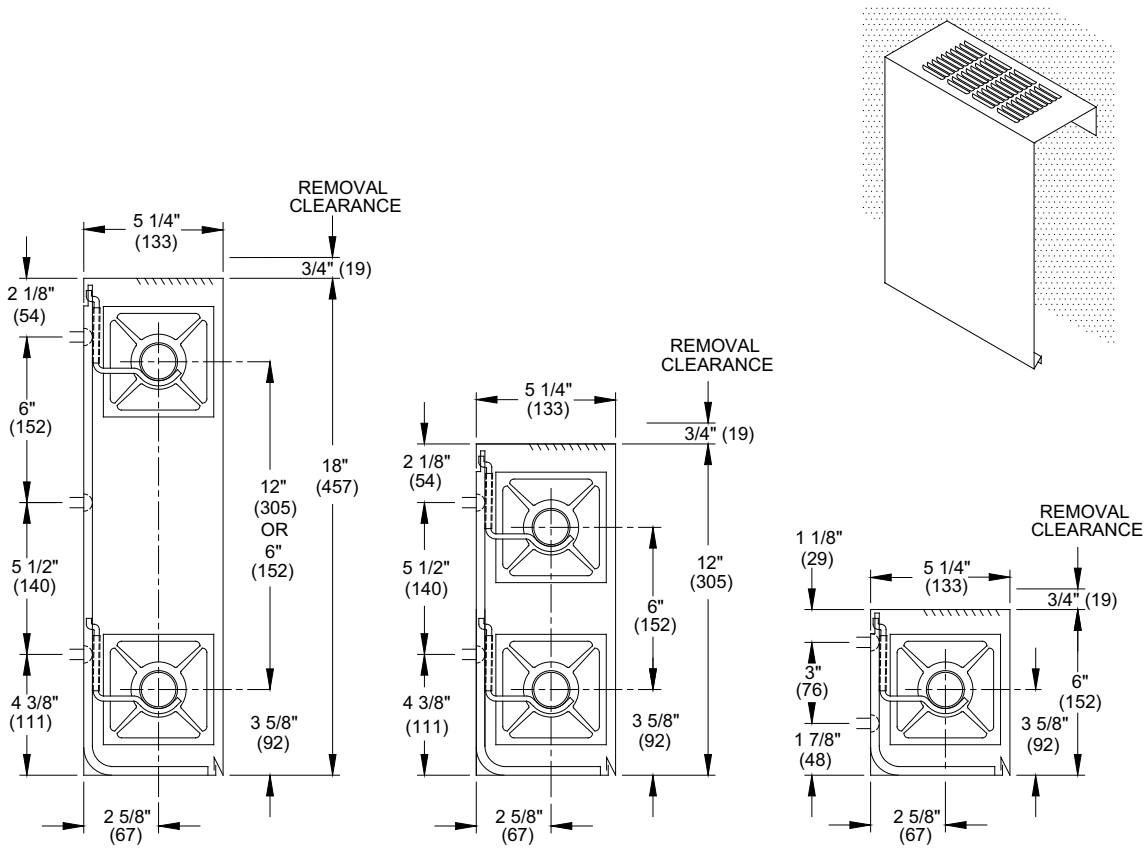
NOTES: Capacities are based on 3 fps (0.9 m/s) water velocity.
 3/4" x 4" x 4" (19mm x 102mm x 102mm) Cu/AL element has the same capacity as
 1 1/4" x 4" x 4" (32mm x 102mm x 102mm) Cu/AL element for the same flow rate (GPM (L/s)).
 For capacity correction see page 81.
 Refer to flow chart on page 86 for pressure drop data.



CAPACITIES OF TYPE WF-3A ENCLOSURES

	ELEMENT	ROWS	ENCLOSURE HEIGHT	STEAM CAP. / FT 1 PSI AT 65°F AIR	HOT WATER CAPACITY BTU/HR/FT AT 65°F AIR AVERAGE WATER TEMPERATURE °F					
				BTU/HR/FT	220	210	200	190	180	170
IMPERIAL	1 1/4" COPPER TUBE 4" X 4" ALUMINUM FIN 50 FINS/FT	1	12"	1920	2020	1820	1650	1500	1320	1170
		1	18"	2130	2240	2020	1830	1660	1470	1300
		1	24"	2270	2380	2160	1950	1770	1570	1380
		2 (6" CENTERS)	18"	2720	2860	2580	2340	2120	1880	1660
		2 (6" CENTERS)	24"	2930	3080	2780	2520	2290	2020	1790
		2 (12" CENTERS)	24"	3330	3500	3160	2860	2600	2300	2030
	ELEMENT	ROWS	ENCLOSURE HEIGHT	STEAM CAP. / m 6.89 kPa at 18°C AIR	HOT WATER CAPACITY kW/m at 18°C AIR AVERAGE WATER TEMPERATURE °C					
				kW/m	104	99	93	88	82	77
METRIC	32mm COPPER TUBE 102mm X 102mm ALUMINUM FIN 164 FINS/M	1	305mm	1.85	1.94	1.75	1.59	1.44	1.27	1.12
		1	457mm	2.05	2.15	1.94	1.76	1.60	1.41	1.25
		1	610mm	2.18	2.29	2.08	1.87	1.70	1.51	1.33
		2 (152mm CTRS)	457mm	2.61	2.75	2.48	2.25	2.04	1.81	1.60
		2 (152mm CTRS)	610mm	2.82	2.96	2.67	2.42	2.20	1.94	1.72
		2 (305mm CTRS)	610mm	3.20	3.36	3.04	2.75	2.50	2.21	1.95

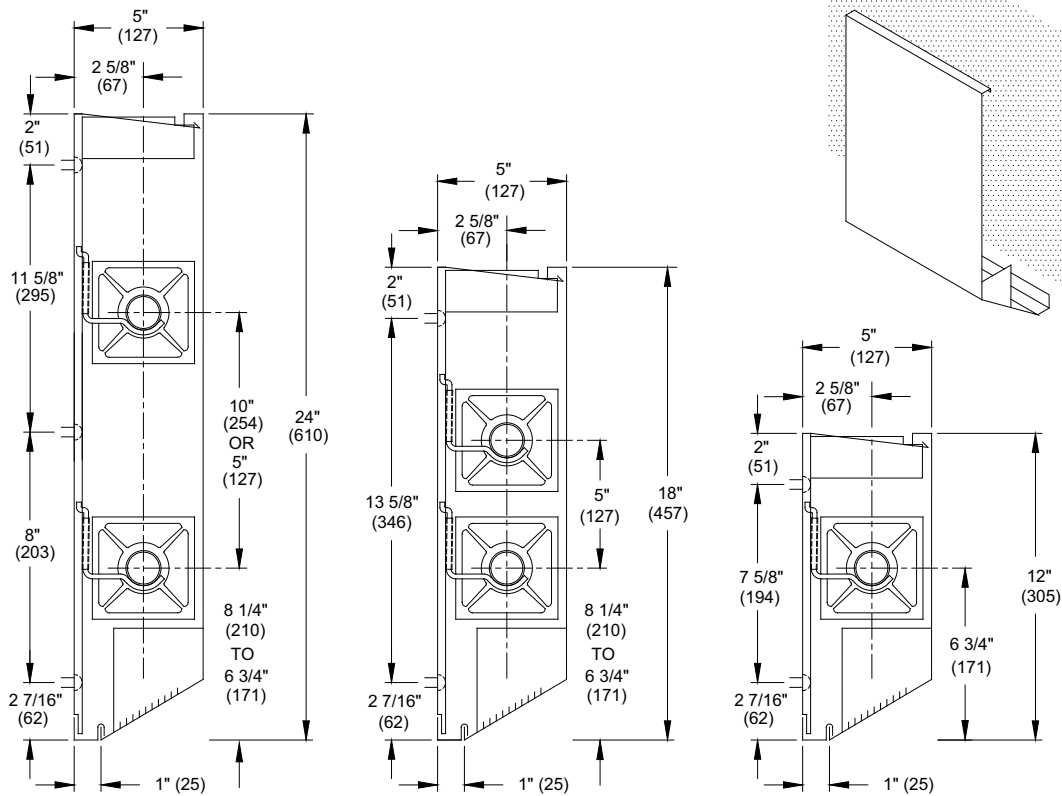
NOTES: Capacities are based on 3 fps (0.9 m/s) water velocity.
 3/4" x 4" x 4" (19mm x 102mm x 102mm) Cu/AL element has the same capacity as
 1 1/4" x 4" x 4" (32mm x 102mm x 102mm) Cu/AL element for the same flow rate (GPM (L/s)).
 For capacity correction see page 81 and page 16 for type B or C bottom.
 Refer to flow chart on page 86 for pressure drop data.



CAPACITIES OF TYPE WF-4A ENCLOSURES

	ELEMENT	ROWS	ENCLOSURE HEIGHT	STEAM CAP. / FT	HOT WATER CAPACITY BTU/HR/FT AT 65°F AIR					
				1 PSI AT 65°F AIR	AVERAGE WATER TEMPERATURE °F					
IMPERIAL	1 1/4" COPPER TUBE 4" X 4" ALUMINUM FIN 50 FINS/FT	1	6"	1570	220	210	200	190	180	170
		2 (6" CENTERS)	12"	2470	2590	2350	2120	1930	1700	1510
		2 (12" CENTERS)	18"	3020	3170	2870	2600	2360	2080	1840
		3 (6" CENTERS)	18"	3100	3260	2950	2670	2420	2140	1890
		3 (12" CENTERS)	30"	3940	4140	3740	3390	3070	2720	2400
	ELEMENT	ROWS	ENCLOSURE HEIGHT	STEAM CAP. / m	HOT WATER CAPACITY kW/m at 18°C AIR					
				6.89 kPa at 18°C AIR	AVERAGE WATER TEMPERATURE °C					
METRIC	32mm COPPER TUBE 102mm X 102mm ALUMINUM FIN 164 FINS/M	1	152mm	1.51	104	99	93	88	82	77
		2 (152mm CTRS)	305mm	2.37	1.59	1.43	1.30	1.17	1.04	0.92
		2 (305mm CTRS)	457mm	2.90	2.49	2.26	2.04	1.86	1.63	1.45
		3 (152mm CTRS)	457mm	2.98	3.05	2.76	2.50	2.27	2.00	1.77
		3 (305mm CTRS)	762mm	3.79	3.13	2.84	2.57	2.33	2.06	1.82
				3.98	3.60	3.26	2.95	2.61	2.31	

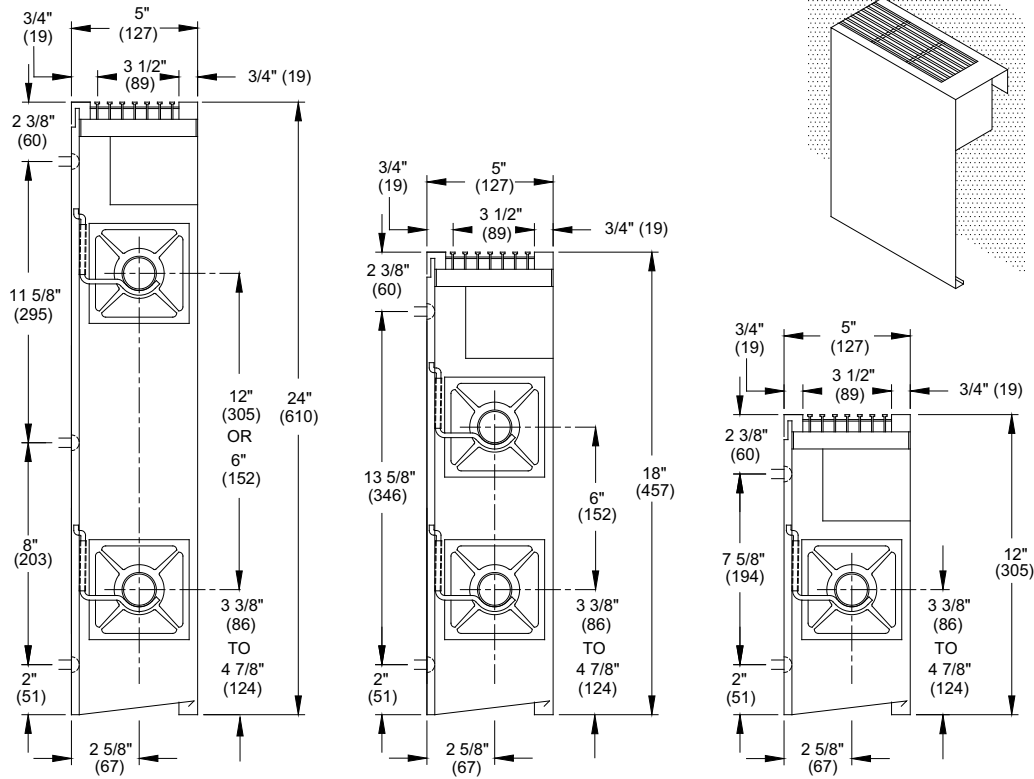
NOTES: Capacities are based on 3 fps (0.9 m/s) water velocity.
 3/4" x 4" x 4" (19mm x 102mm x 102mm) Cu/AL element has the same capacity as
 1 1/4" x 4" x 4" (32mm x 102mm x 102mm) Cu/AL element for the same flow rate (GPM (L/s)).
 For capacity correction see page 81.
 Refer to flow chart on page 86 for pressure drop data. Flat joggle recommended between brackets.



CAPACITIES OF TYPE WF-5A ENCLOSURES

	ELEMENT	ROWS	ENCLOSURE HEIGHT	STEAM CAP. / FT	HOT WATER CAPACITY BTU/HR/FT AT 65°F AIR					
				1 PSI AT 65°F AIR	AVERAGE WATER TEMPERATURE °F					
				BTU/HR/FT	220	210	200	190	180	170
IMPERIAL	1 1/4" COPPER TUBE 4" X 4" ALUMINUM FIN 50 FINS/FT	1	12"	1714	1801	1627	1470	1340	1183	1044
		1	18"	1897	1992	1801	1627	1479	1305	1157
		1	24"	1984	2079	1888	1705	1549	1366	1209
		2 (5" CENTERS)	18"	2427	2549	2306	2088	1897	1679	1479
		2 (5" CENTERS)	24"	2601	2732	2471	2236	2027	1792	1583
		2 (10" CENTERS)	24"	2958	3106	2810	2540	2306	2045	1801
	ELEMENT	ROWS	ENCLOSURE HEIGHT	STEAM CAP. / m	HOT WATER CAPACITY kW/m at 18°C AIR					
				6.89 kPa at 18°C AIR	AVERAGE WATER TEMPERATURE °C					
				kW/m	104	99	93	88	82	77
METRIC	32mm COPPER TUBE 102mm X 102mm ALUMINUM FIN 164 FINS/M	1	305mm	1.65	1.73	1.56	1.41	1.29	1.14	1.00
		1	457mm	1.82	1.91	1.73	1.56	1.42	1.25	1.11
		1	610mm	1.91	2.00	1.82	1.64	1.49	1.31	1.16
		2 (127mm CTRS)	457mm	2.33	2.45	2.22	2.01	1.82	1.61	1.42
		2 (127mm CTRS)	610mm	2.50	2.63	2.38	2.15	1.95	1.72	1.52
		2 (254mm CTRS)	610mm	2.84	2.99	2.70	2.44	2.22	1.97	1.73

NOTES: Capacities are based on 3 fps (0.9 m/s) water velocity.
 3/4" x 4" x 4" (19mm x 102mm x 102mm) Cu/AL element has the same capacity as
 1 1/4" x 4" x 4" (32mm x 102mm x 102mm) Cu/AL element for the same flow rate (GPM (L/s)).
 Capacity is derated for mounting higher than 36" above the floor. For capacity correction see page 81.
 Refer to flow chart on page 86 for pressure drop data.



CAPACITIES OF TYPE WF-6A ENCLOSURES

	ELEMENT	ROWS	ENCLOSURE HEIGHT	STEAM CAP. / FT 1 PSI AT 65°F AIR	HOT WATER CAPACITY BTU/HR/FT AT 65°F AIR AVERAGE WATER TEMPERATURE °F					
				BTU/HR/FT	220	210	200	190	180	170
IMPERIAL	1 1/4" COPPER TUBE	1	12"	2060	2160	1960	1770	1610	1420	1260
		1	18"	2300	2420	2190	1980	1790	1590	1400
		1	24"	2470	2590	2350	2120	1930	1700	1510
	4" X 4" ALUMINUM FIN 50 FINS/FT	2 (6" CENTERS)	18"	2810	2950	2670	2420	2190	1940	1710
		2 (6" CENTERS)	24"	3070	3220	2920	2640	2390	2120	1870
		2 (12" CENTERS)	24"	3510	3690	3330	3020	2740	2420	2140
	ELEMENT	ROWS	ENCLOSURE HEIGHT	STEAM CAP. / m 6.89 kPa at 18°C AIR	HOT WATER CAPACITY kW/m at 18°C AIR AVERAGE WATER TEMPERATURE °C					
				kW/m	104	99	93	88	82	77
METRIC	32mm COPPER TUBE	1	305mm	1.98	2.08	1.88	1.70	1.55	1.37	1.21
		1	457mm	2.21	2.33	2.11	1.90	1.72	1.53	1.35
		1	610mm	2.37	2.49	2.26	2.04	1.86	1.63	1.45
	102mm X 102mm ALUMINUM FIN 164 FINS/M	2 (152mm CTRS)	457mm	2.70	2.84	2.57	2.33	2.11	1.86	1.64
		2 (152mm CTRS)	610mm	2.95	3.10	2.81	2.54	2.30	2.04	1.80
		2 (305mm CTRS)	610mm	3.37	3.55	3.20	2.90	2.63	2.33	2.06

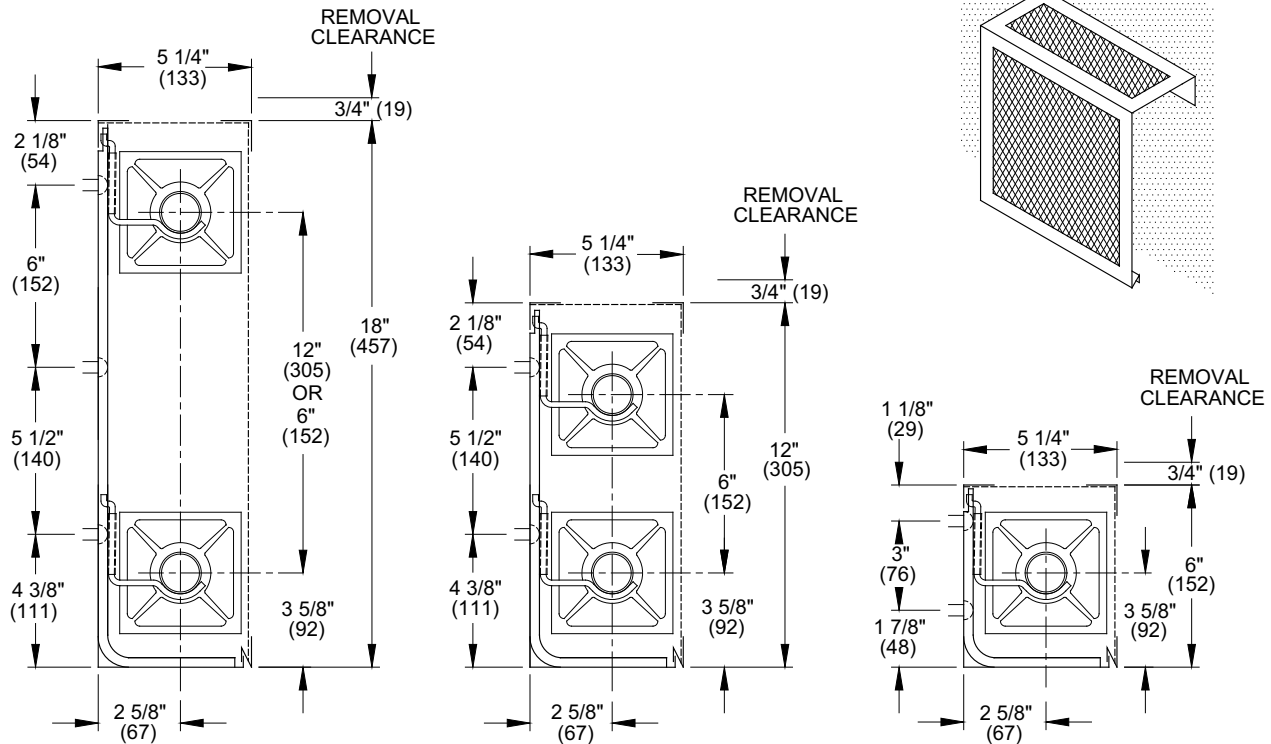
NOTES: Capacities are based on 3 fps (0.9 m/s) water velocity.

3/4" x 4" x 4" (19mm x 102mm x 102mm) Cu/AL element has the same capacity as

1 1/4" x 4" x 4" (32mm x 102mm x 102mm) Cu/AL element for the same flow rate (GPM (L/s)).

For capacity correction see page 81. Refer to flow chart on page 86 for pressure drop data and page 16 for type B or C bottom.

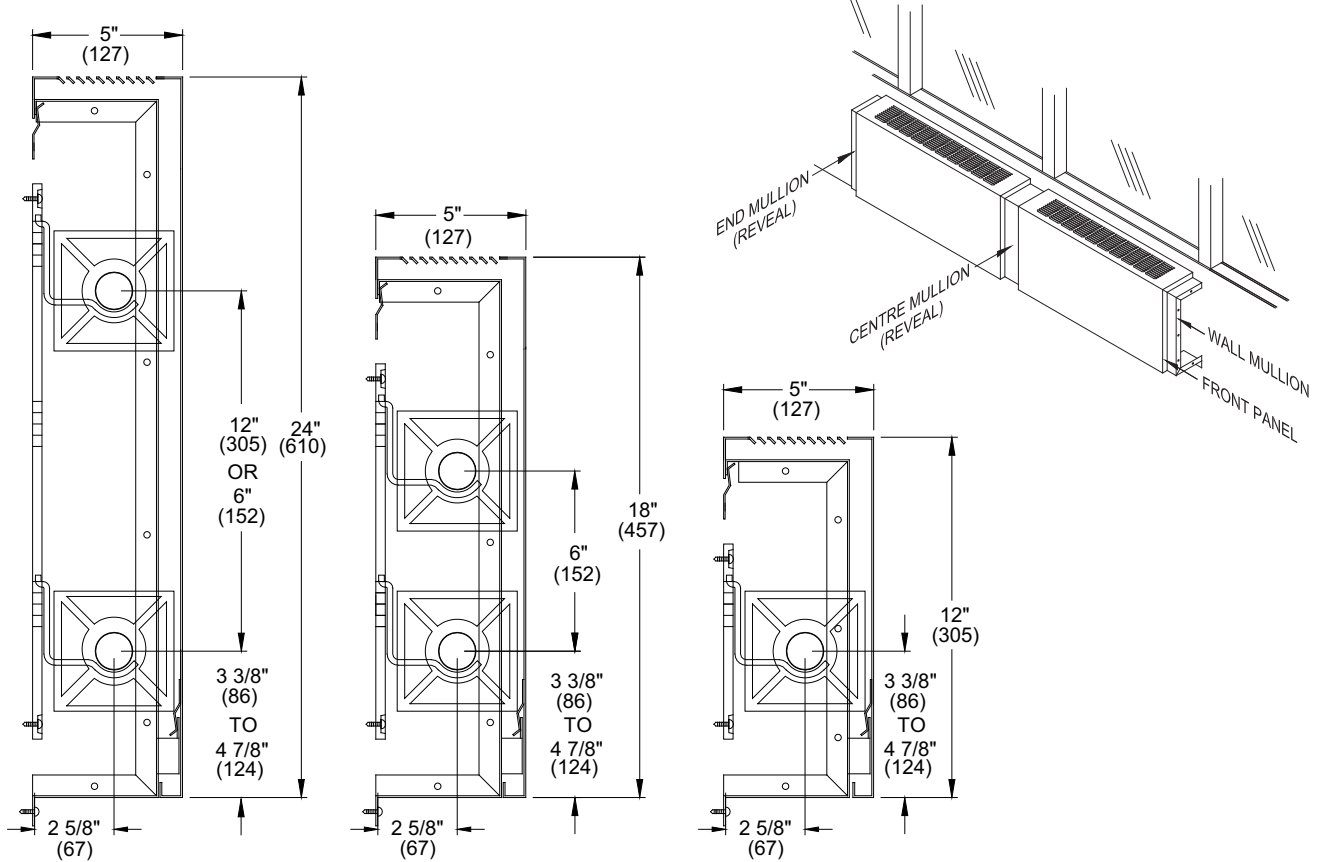
Continuous flat joggle required. See page 90 for additional bar grille information.



CAPACITIES OF TYPE WF-7A ENCLOSURES

	ELEMENT	ROWS	ENCLOSURE HEIGHT	STEAM CAP. / FT	HOT WATER CAPACITY BTU/HR/FT AT 65°F AIR					
				1 PSI AT 65°F AIR	AVERAGE WATER TEMPERATURE °F					
				BTU/HR/FT	220	210	200	190	180	170
IMPERIAL	1 1/4" COPPER TUBE 4" X 4" ALUMINUM FIN 50 FINS/FT	1	6"	1688	1775	1600	1455	1319	1164	1028
		2 (6" CENTERS)	12"	2822	2968	2677	2425	2202	1950	1727
		2 (12" CENTERS)	18"	3443	3618	3269	2959	2687	2377	2105
		3 (6" CENTERS)	18"	3764	3948	3579	3240	2939	2600	2299
	ELEMENT	ROWS	ENCLOSURE HEIGHT	STEAM CAP. / m	HOT WATER CAPACITY kW/m at 18°C AIR					
				6.89 kPa at 18°C AIR	AVERAGE WATER TEMPERATURE °C					
				kW/m	104	99	93	88	82	77
METRIC	32mm COPPER TUBE 102mm X 102mm ALUMINUM FIN 164 FINS/M	1	152mm	1.62	1.71	1.54	1.40	1.27	1.12	0.99
		2 (152mm CTRS)	305mm	2.71	2.85	2.57	2.33	2.12	1.88	1.66
		2 (305mm CTRS)	457mm	3.31	3.48	3.14	2.85	2.58	2.29	2.02
		3 (152mm CTRS)	457mm	3.62	3.80	3.44	3.12	2.83	2.50	2.21

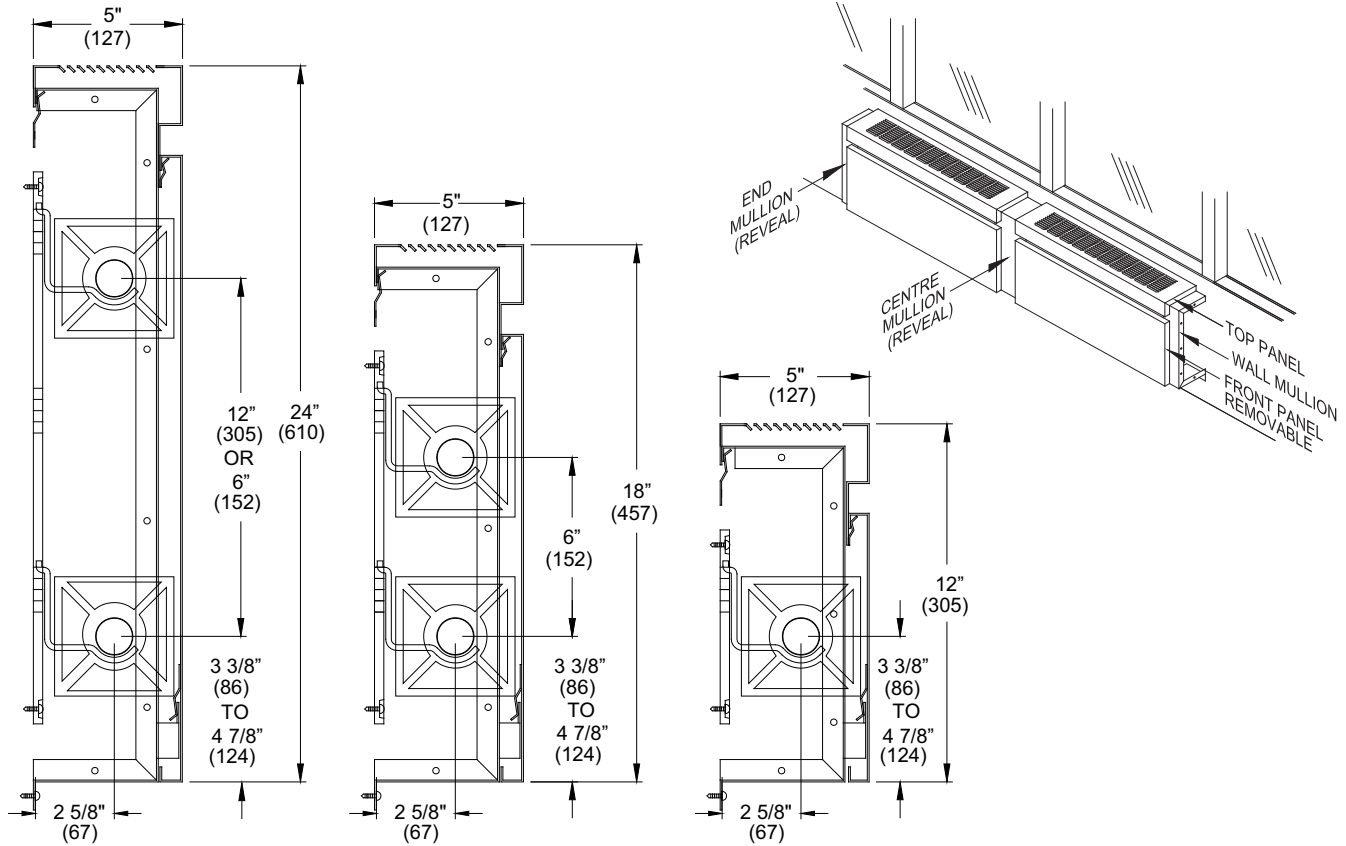
NOTES: Capacities are based on 3 fps (0.9 m/s) water velocity.
 3/4" x 4" x 4" (19mm x 102mm x 102mm) Cu/AL element has the same capacity as
 1 1/4" x 4" x 4" (32mm x 102mm x 102mm) Cu/AL element for the same flow rate (GPM (L/s)).
 For capacity correction see page 81.
 Refer to flow chart on page 86 for pressure drop data. Flat joggle recommended between brackets.



CAPACITIES OF TYPE MS-2A ENCLOSURES

	ELEMENT	ROWS	ENCLOSURE HEIGHT	STEAM CAP. / FT	HOT WATER CAPACITY BTU/HR/FT AT 65°F AIR					
				1 PSI AT 65°F AIR	AVERAGE WATER TEMPERATURE °F					
				BTU/HR/FT	220	210	200	190	180	170
IMPERIAL	1 1/4" COPPER TUBE 4" X 4" ALUMINUM FIN 50 FINS/FT	1	12"	2060	2160	1960	1770	1610	1420	1260
		1	18"	2300	2420	2190	1980	1790	1590	1400
		1	24"	2470	2590	2350	2120	1930	1700	1510
		2 (6" CENTERS)	18"	2810	2950	2670	2420	2190	1940	1710
		2 (6" CENTERS)	24"	3070	3220	2920	2640	2390	2120	1870
		2 (12" CENTERS)	24"	3510	3690	3330	3020	2740	2420	2140
	ELEMENT	ROWS	ENCLOSURE HEIGHT	STEAM CAP. / m	HOT WATER CAPACITY kW/m AT 18°C AIR					
				6.89 kPa AT 18°F AIR	AVERAGE WATER TEMPERATURE °C					
				kW/m	104	99	93	88	82	77
METRIC	32mm COPPER TUBE 102mm X 102mm ALUMINUM FIN 164 FINS/M	1	305mm	1.98	2.08	1.88	1.70	1.55	1.37	1.21
		1	457mm	2.21	2.33	2.11	1.90	1.72	1.53	1.35
		1	610mm	2.37	2.49	2.26	2.04	1.86	1.63	1.45
		2 (152mm CTRS)	457mm	2.70	2.84	2.57	2.33	2.11	1.86	1.64
		2 (152mm CTRS)	610mm	2.95	3.10	2.81	2.54	2.30	2.04	1.80
		2 (305mm CTRS)	610mm	3.37	3.55	3.20	2.90	2.63	2.33	2.06

NOTES: Capacities are based on 3 fps (0.9 m/s) water velocity.
 3/4" x 4" x 4" (19mm x 102mm x 102mm) Cu/AL element has the same capacity as
 1 1/4" x 4" x 4" (32mm x 102mm x 102mm) Cu/AL element for the same flow rate (GPM (L/s)).
 For capacity correction see page 81.
 Refer to flow chart on page 86 for pressure drop data. Flat joggle required.

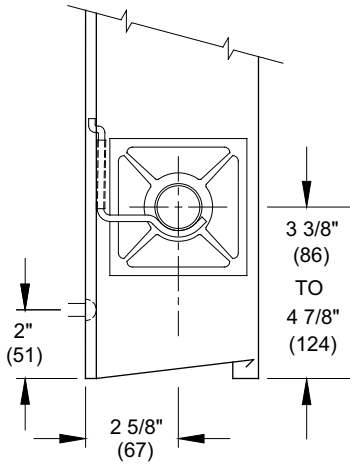


CAPACITIES OF TYPE MS-2A ENCLOSURES

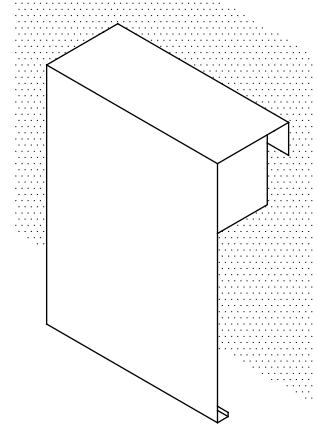
	ELEMENT	ROWS	ENCLOSURE HEIGHT	STEAM CAP./FT 1 PSI AT 65°F AIR	HOT WATER CAPACITY BTU/HR/FT AT 65°F AIR AVERAGE WATER TEMPERATURE °F					
				BTU / HR / FT	220	210	200	190	180	170
IMPERIAL	1 1/4" COPPER TUBE	1	12"	2060	2160	1960	1770	1610	1420	1260
		1	18"	2300	2420	2190	1980	1790	1590	1400
		1	24"	2470	2590	2350	2120	1930	1700	1510
	4" X 4" ALUMINUM FIN	2 (6" CENTERS)	18"	2810	2950	2670	2420	2190	1940	1710
		2 (6" CENTERS)	24"	3070	3220	2920	2640	2390	2120	1870
		2 (12" CENTERS)	24"	3510	3690	3330	3020	2740	2420	2140
	ELEMENT	ROWS	ENCLOSURE HEIGHT	STEAM CAP. / m 6.89 kPa AT 18°F AIR	HOT WATER CAPACITY kW/m AT 18°C AIR AVERAGE WATER TEMPERATURE °C					
				kW/m	104	99	93	88	82	77
METRIC	32mm COPPER TUBE	1	305mm	1.98	2.08	1.88	1.70	1.55	1.37	1.21
		1	457mm	2.21	2.33	2.11	1.90	1.72	1.53	1.35
		1	610mm	2.37	2.49	2.26	2.04	1.86	1.63	1.45
	102mm X 102mm ALUMINUM FIN	2 (152mm CTRS)	457mm	2.70	2.84	2.57	2.33	2.11	1.86	1.64
		2 (152mm CTRS)	610mm	2.95	3.10	2.81	2.54	2.30	2.04	1.80
		2 (305mm CTRS)	610mm	3.37	3.55	3.20	2.90	2.63	2.33	2.06

NOTES: Capacities are based on 3 fps (0.9 m/s) water velocity.
 3/4" x 4" x 4" (19mm x 102mm x 102mm) Cu/AL element has the same capacity as
 1 1/4" x 4" x 4" (32mm x 102mm x 102mm) Cu/AL element for the same flow rate (GPM (L/s)).
 For capacity correction see page 81.
 Refer to flow chart on page 86 for pressure drop data. Flat joggle required.

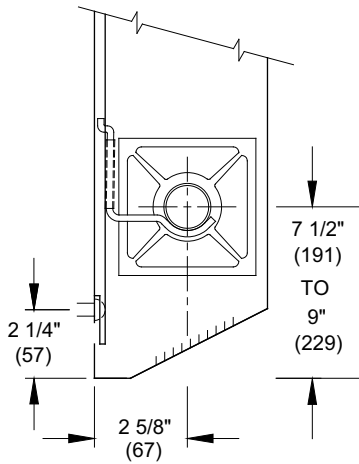
TYPE A



STANDARD ENCLOSURE HAS AN OPEN BOTTOM AND CAN BE INSTALLED DOWN TO WITHIN 4" (102mm) OF THE FLOOR.

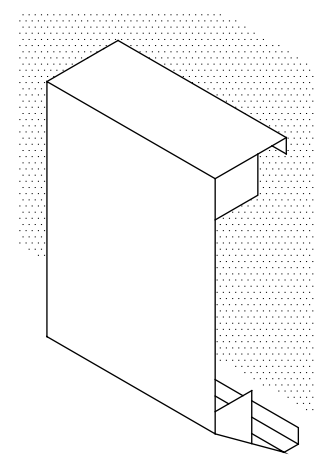


TYPE B

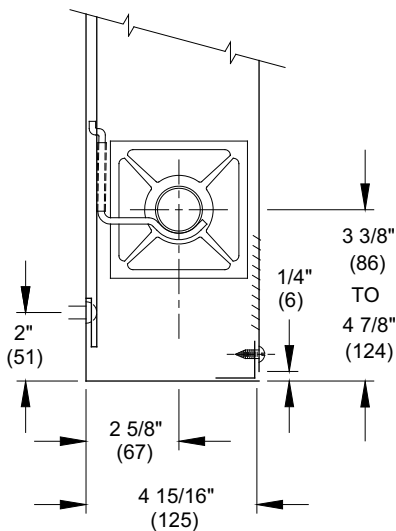


ENCLOSURE IS USED AT INSTALLED HEIGHTS GREATER THAN 36" (914mm) ABOVE THE FLOOR. TYPE B BOTTOM MAY BE OBTAINED WITH SLOPE TOP (WF-1B), FLAT TOP AND FRONT OUTLET GRILLE IN HEIGHTS OF 12" (305mm), 14" (356mm), 18" (457mm), AND 24" (610mm).

CAPACITY:
16% LESS THAN WITH TYPE A ENCLOSURE BOTTOM.

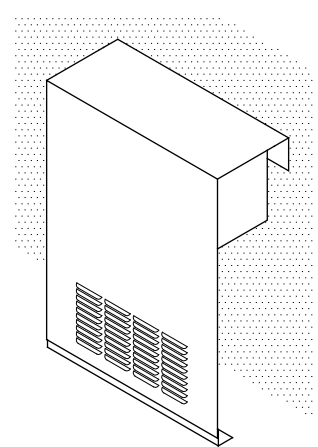


TYPE C



ENCLOSURE IS USED WHEN ENCLOSURES MUST SIT ON THE FLOOR. TYPE C BOTTOM INCLUDING FLOOR ANGLE MAY BE OBTAINED WITH SLOPE TOP, FLAT TOP AND FRONT OUTLET GRILLE IN HEIGHTS OF 12" (305mm), 18" (457mm), AND 24" (610mm).

CAPACITY:
28% LESS THAN WITH TYPE A ENCLOSURE BOTTOM.



NOTE: Additional custom designed enclosures in a variety of styles and sizes may be obtained upon request.