

# CONVECTOR

## Submittal

W-A  
Flat Top Cabinet  
Wall Mounted

### Specification

W-A Bottom Inlet

**FRONT and LINER:**

STYLE: Front Outlet  
OUTLET: Stamped Louvers  
Pencil Proof

LENGTHS: 20" thru 64" in 4" Increments

MAT'L: Cabinet Front and Liner  
 18 Ga./20 Ga. CRS STD.  
 18 Ga./18 Ga. CRS (Opt'l)  
 16 Ga./20 Ga. CRS (Opt'l)  
 16 Ga./18 Ga. CRS (Opt'l)  
 16 Ga./16 Ga. CRS (Opt'l)  
 14 Ga./20 Ga. CRS (Opt'l)  
 14 Ga./18 Ga. CRS (Opt'l)  
 14 Ga./16 Ga. CRS (Opt'l)  
 14 Ga./14 Ga. CRS (Opt'l)

FINISH:  Prime Finish Std.  
 Baked Enamel (Opt'l)

**ELEMENT:**

COIL: Bronze Header 3/4" NPT  
w/Copper Tube/Alum Fins  
(Mechanically Expanded).

**HEADER CONNECTIONS:**

Single Header Both Ends Std.  
 Single Inlet 1 End / Dual Inlet  
1 End (Opt'l)  
 Dual Inlet Both Ends (Opt'l)

**OPTIONAL ACCESSORIES:**

DAMPER: Damper Blades Factory Installed  
 Knob Damper (Opt'l)  
 Tamper Resistant (Opt'l)

**ACCESS DOORS:**

(Opt'l)

**INSULATION:**

Back Only (Opt'l)  
 Back, Sides, Top (Opt'l)

**PIPING KNOCKOUT:**

(Opt'l)

**4" END POCKETS:**

LH (Opt'l)  
 RH (Opt'l)  
 Both Ends (Opt'l)

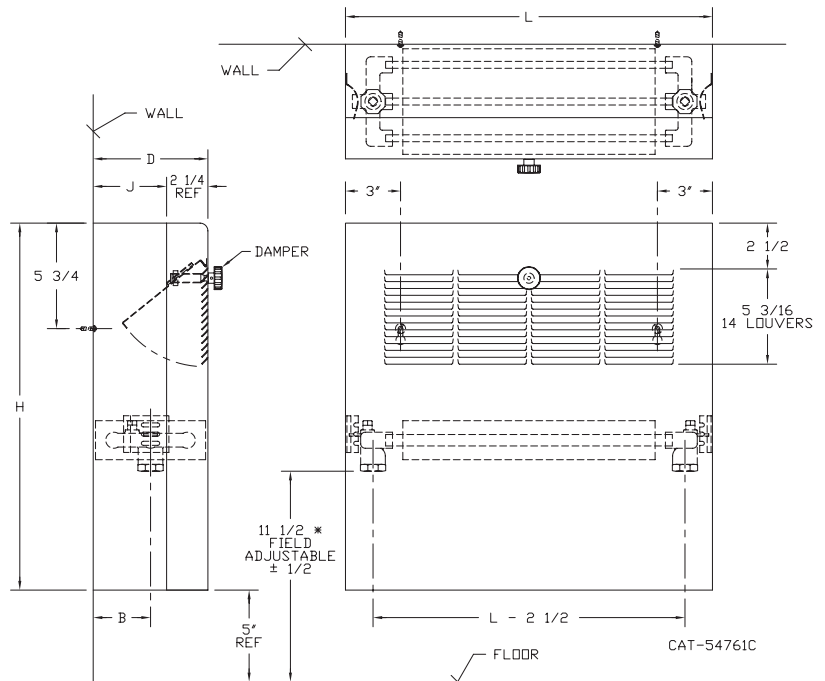
**PERFORATED FRONT: Consult Factory**

16 Ga. (Opt'l)  
 14 Ga. (Opt'l)

W-A Bottom Inlet

**TYPE W-A**

MODEL	D	L	H	B	J
4xx-14	4-1/4	20,24,28,	14	2-1/8	2
4xx-18		32,36,40,	18		
4xx-20		44,48,52,	20		
4xx-26		56,60,64,	26		
4xx-32			32		
6xx-14	6-1/4	20,24,28,	14	3-1/8	4
6xx-18		32,36,40,	18		
6xx-20		44,48,52,	20		
6xx-26		56,60,64,	26		
6xx-32			32		
8xx-14	8-1/4	20,24,28,	14	4-1/8	6
8xx-18		32,36,40,	18		
8xx-20		44,48,52,	20		
8xx-26		56,60,64,	26		
8xx-32			32		



**NOTE: When adding end pockets, liner and front length increase.**



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PROJECT: \_\_\_\_\_ DATE: \_\_\_\_\_  
 LOCATION: \_\_\_\_\_  
 ARCHITECT: \_\_\_\_\_  
 ENGINEER: \_\_\_\_\_  
 CONTRACTOR: \_\_\_\_\_  
 PO NUMBER: \_\_\_\_\_

## STEAM RATINGS IN BTU/H (215°F at 65°F EAT)

DEPTH IN INCHES	LENGTH IN INCHES	FRONT OUTLET, WALL MOUNTED, NOMINAL HEIGHT TYPE W-A				
		14"	18"	20"	26"	32"
<b>4</b>	20	2495	2830	2930	3120	3265
	24	3145	3625	3720	3985	4150
	28	3815	4345	4465	4775	5040
	32	4490	5110	5255	5665	5950
	36	5160	5880	6025	6505	6865
	40	5810	6600	6790	7320	7730
	44	6480	7390	7560	8160	8640
	48	7105	8110	8350	8975	9530
	52	7800	8855	9070	9745	10345
	56	8450	9625	9865	10630	11305
	60	9120	10345	10610	11400	12120
64	9790	11135	11400	12290	13080	
		<b>14"</b>	<b>18"</b>	<b>20"</b>	<b>26"</b>	<b>32"</b>
<b>6</b>	20	3625	4250	4390	4850	5040
	24	4560	5375	5570	6170	6410
	28	5520	6480	6670	7370	7655
	32	6480	7610	7870	8690	9025
	36	7390	8690	9025	9935	10345
	40	8375	9815	10200	11230	11665
	44	9290	10920	11350	12480	12985
	48	10250	12025	12455	13705	14305
	52	11185	13105	13535	14905	15505
	56	12145	14230	14735	16225	16920
	60	13055	15310	15840	17425	18145
64	14040	16440	17065	18770	19585	
		<b>14"</b>	<b>18"</b>	<b>20"</b>	<b>26"</b>	<b>32"</b>
<b>8</b>	20	4535	5040	5135	5570	5810
	24	5760	6360	6575	7105	7465
	28	6960	7680	7895	8520	8930
	32	8185	9025	9310	10055	10560
	36	9385	10390	10705	11545	12120
	40	10630	11760	12070	13055	13655
	44	11830	13055	13440	14545	15190
	48	12935	14400	14810	16080	16800
	52	14230	15670	16105	17425	18145
	56	15505	17090	17570	19010	19850
	60	16655	18335	18840	20375	21215
64	17880	19750	20330	21960	22895	

Correction factors for BTU performance at different Average Water Temperatures, use correction factors from Table 3 of the Correction Factors page.

For other applicable correction factors see the Correction Factors page.

# CONVECTOR BTU CORRECTION FACTORS

**Table 3**

<b>CONVECTOR CORRECTION FACTORS</b> Based on Section 35.4 ASHRAE HVAC Systems and Equipment					
AVERAGE WATER TEMPERATURE (°F)	ENTERING AIR TEMPERATURE (°F)				
	(STD)				
	55°	60°	65°	70°	75°
100°	0.17	0.14	0.12	0.09	0.07
110°	0.23	0.20	0.17	0.14	0.12
120°	0.29	0.26	0.23	0.20	0.17
130°	0.35	0.32	0.29	0.26	0.23
140°	0.43	0.39	0.35	0.32	0.29
150°	0.50	0.46	0.43	0.39	0.35
160°	0.58	0.54	0.51	0.47	0.43
170°	0.67	0.63	0.58	0.54	0.51
180°	0.76	0.71	0.67	0.63	0.58
190°	0.85	0.81	0.76	0.71	0.67
200°	0.95	0.90	0.85	0.81	0.76
210°	1.05	1.00	0.95	0.90	0.85
215° (STD)	1.10	1.05	1.00	0.95	0.90
220°	1.15	1.10	1.05	1.00	0.95
230°	1.26	1.20	1.15	1.10	1.05
240°	1.37	1.32	1.26	1.21	1.15
250°	1.47	1.43	1.37	1.32	1.27

**Table 4**

<b>CORRECTION FACTORS FOR STEAM PRESSURES OTHER THAN 1 PSI GAUGE*</b>						
	PRESSURE PSI GAUGE					
	5	10	15	20	25	50
<b>FACTOR</b>	1.12	1.25	1.36	1.46	1.56	1.93
<b>BTU PER SQ. FT.</b>	269	301	327	351	374	463

\*Apply factors shown above to the ratings shown on the 215°F ratings page.

Note: Max Recommended operating pressure 150 PSIG, (365.9°F).  
For conversion from steam to hot water, use correction factors shown in table 3.

**Table 5**

<b>CORRECTION FACTORS FOR ACCESS DOORS</b>								
Length	Free Standing, Non-Recessed Non-Standard Access Door Locations				Semi-Recessed or Fully Recessed Non-Standard Access Door Locations			
	3 or 4	3 & 4	5 or 6	5 & 6	3 or 4	3 & 4	5 or 6	5 & 6
	20"	0.940	0.880	0.820	0.650	0.975	0.950	0.925
24"	0.950	0.910	0.860	0.720	0.980	0.960	0.940	0.880
28"	0.960	0.920	0.890	0.770	0.982	0.968	0.948	0.902
32"	0.970	0.940	0.890	0.800	0.985	0.972	0.955	0.918
36"	0.970	0.940	0.920	0.830	0.988	0.975	0.962	0.925
40"	0.970	0.950	0.920	0.850	0.990	0.978	0.970	0.932
44"	0.980	0.950	0.930	0.860	0.990	0.980	0.970	0.940
48"	0.980	0.960	0.940	0.880	0.990	0.982	0.970	0.948
52"	0.980	0.960	0.950	0.890	0.992	0.985	0.978	0.955
56"	0.980	0.960	0.950	0.890	0.992	0.985	0.978	0.955
60"	0.980	0.970	0.950	0.900	0.992	0.985	0.978	0.955
64"	0.980	0.970	0.950	0.910	0.992	0.988	0.978	0.962

Note: Derating factors do not apply to units with end pockets.

**Table 6**

WATER FLOW IN GPM	PRESSURE LOSS IN FEET OF WATER		
	4 INCH MODELS	6 INCH MODELS	8 INCH MODELS
.25	0.044	—	—
.50	0.160	0.070	0.046
1	0.597	0.270	0.167
2	2.220	1.047	0.616
3	—	2.260	1.367
4	—	3.793	2.380
5	—	—	3.673

Charted figures showing pressure drop through Convectors with forced hot water. Used for determining pressure head requirement. Based on 64" length units, but applicable to shorter units, as most loss is due to headers.

**Table 7**

<b>CORRECTION FACTORS FOR INLET GRILLES</b> TYPES: FSG-A, SRG-A, RFG-A, FWG-A, PWG-A, SFG-A			
DEPTH	HEIGHT		
	16", 18", 20"	22", 24", 26"	28", 30", 32"
4"	0.97	0.98	0.99
6"	0.94	0.95	0.98
8"	0.91	0.93	0.97

Due to the restriction to air flow, the percentages should be subtracted from the BTU output when inlet grilles are specified.

**ADDITIONAL CORRECTION FACTORS ON NEXT PAGE**

# CONVECTOR BTU CORRECTION FACTORS

## GALLONS PER MINUTE OF HOT WATER REQUIRED

Table 8



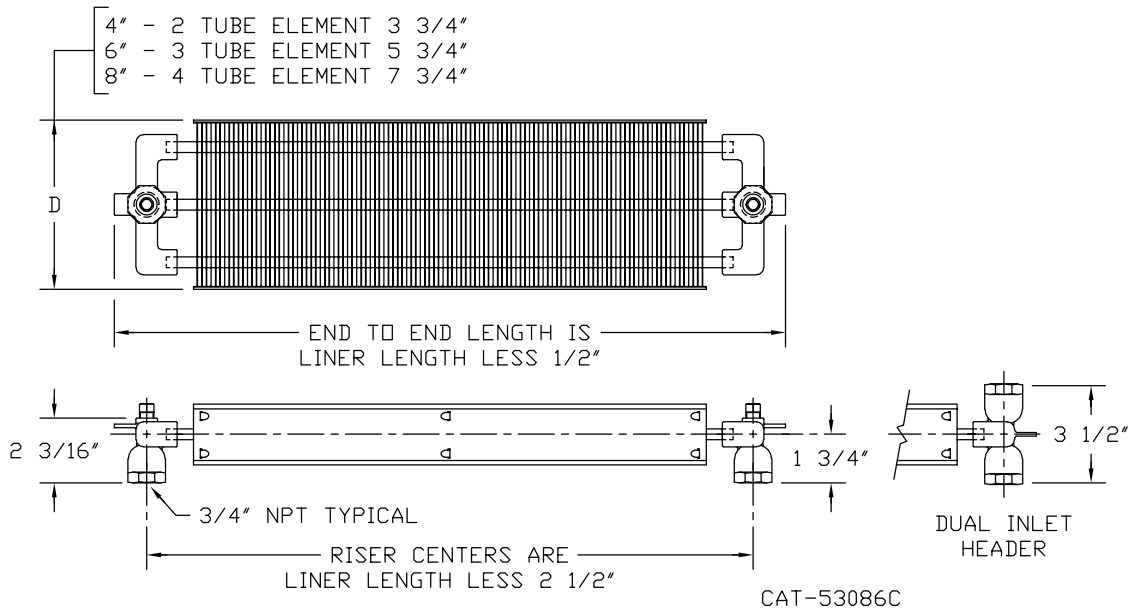
## OUTPUT-FLOW RATE CORRECTIONS

Table 9

Convactor Depth	Tubes per Element	Min. Flow Rate (0.25 Ft./Sec.) GPM	MBH Based on T.D. & Min. Flow Rate			
			10TD	20TD	30TD	40TD
4"	2	.15	0.750	1,500	2,250	3,000
6"	3	.225	1.125	2,250	3,375	4,500
8"	4	.30	1.500	3,000	4,500	6,000

NOTE: Table 9 shows MBH which result at specific water temperature drops and minimum water flow rates which are required to maintain turbulent flow within element tubes.

## CONVECTOR COIL



NOTE: When ordering convectors with end pockets always refer to the standard unit length. The overall physical length will increase by 4" for each end pocket. The coil length will remain the standard size. Coil fins are 2-1/2" high by width shown above and are mechanically bonded to copper tube at 6 fins per inch.

