

CONVECTOR

Submittal

FWG-A
Front Outlet Cabinet
Recessed
4 Sided Overlap

Specification

FWG-A Louvered 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)

*Liner is Galvannealed Steel

FINISH: Prime Finish Std.
 Baked Enamel (Opt'l).
 18 Ga./20 Ga. SS STD.
 18 Ga./18 Ga. SS (Opt'l)
 16 Ga./20 Ga. SS (Opt'l)
 16 Ga./18 Ga. SS (Opt'l)
 16 Ga./16 Ga. SS (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)

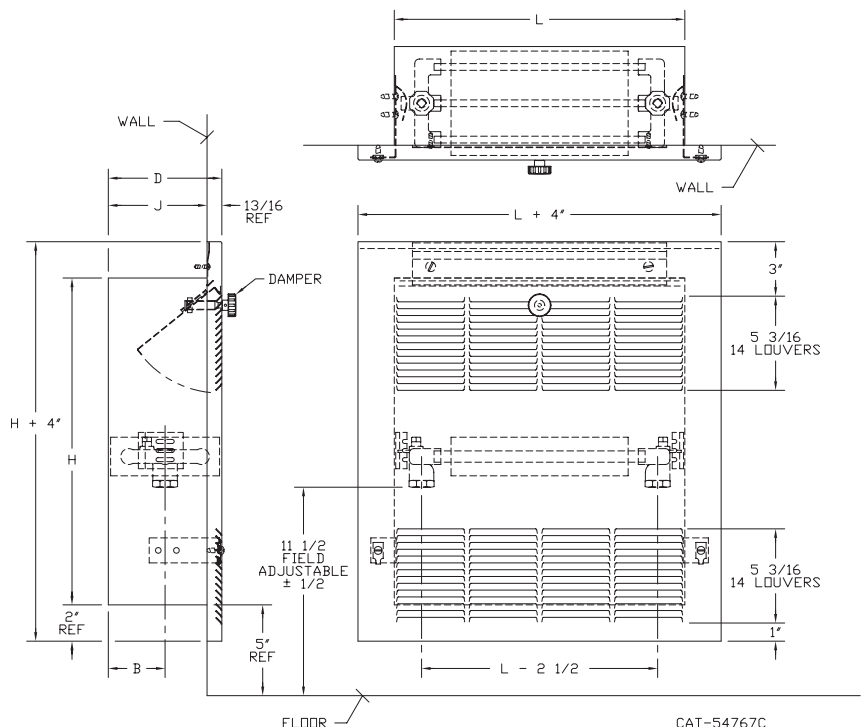
PERFORATED FRONT: Consult Factory

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

FWG-A Louvered Inlet

TYPE FWG-A

MODEL	D	L	H	B	J
4xx-18	4-13/16	20,24,28,	18	2-1/8	4
4xx-20		32,36,40,	20		
4xx-24		44,48,52,	24		
4xx-26		56,60,64,	26		
4xx-32			32		
6xx-18	6-13/16	20,24,28,	18	3-1/8	6
6xx-20		32,36,40,	20		
6xx-24		44,48,52,	24		
6xx-26		56,60,64,	26		
6xx-32			32		
8xx-18	8-13/16	20,24,28,	18	4-1/8	8
8xx-20		32,36,40,	20		
8xx-24		44,48,52,	24		
8xx-26		56,60,64,	26		
8xx-32			32		



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



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www.turbonicsinc.com

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, NOMINAL LINER HEIGHT *TYPE FWG-A				
		18"	20"	24"	26"	32"
4	20	2165	2420	2775	2870	3090
	24	2675	3050	3550	3645	3945
	28	3215	3700	4255	4375	4730
	32	3750	4355	5010	5150	5605
	36	4235	5005	5760	5905	6440
	40	4750	5635	6470	6655	7245
	44	5260	6285	7245	7410	8080
	48	5775	6890	7950	8185	8885
	52	6355	7565	8680	8890	9645
	56	6820	8195	9430	9665	10525
	60	7425	8845	10135	10395	11285
	64	7890	9500	10915	11170	12165
6	20	3045	3405	4035	4170	4750
	24	3790	4285	5105	5290	6045
	28	4555	5190	6155	6340	7220
	32	5280	6090	7230	7480	8515
	36	6045	6950	8255	8575	9735
	40	6815	7875	9325	9690	11005
	44	7580	8730	10375	10785	12230
	48	8345	9635	11425	11835	13430
	52	9160	10515	12450	12860	14605
	56	9880	11415	13520	14000	15900
	60	10715	12275	14545	15050	17075
	64	11460	13200	15620	16210	18395
8	20	3670	4130	4685	4775	5400
	24	4650	5240	5915	6115	6890
	28	5810	6335	7140	7345	8265
	32	6880	7445	8390	8660	9755
	36	7930	8540	9665	9955	11200
	40	8975	9675	10935	11225	12665
	44	10045	10765	12140	12500	14110
	48	10875	11770	13390	13770	15600
	52	12250	12950	14575	14975	16900
	56	13300	14110	15890	16340	18440
	60	14350	15155	17050	17520	19765
	64	15265	16270	18370	18905	21300

* 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

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

Table 4

CORRECTION FACTORS FOR STEAM PRESSURES OTHER THAN 1 PSI GAUGE*						
	PRESSURE PSI GAUGE					
	5	10	15	20	25	50
FACTOR	1.12	1.25	1.36	1.46	1.56	1.93

*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

CORRECTION FACTORS FOR ACCESS DOORS								
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

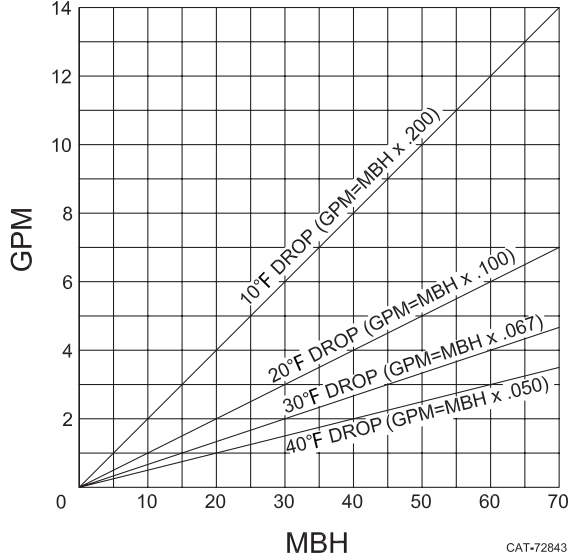
Charted figures showing pressure drop through Convectors with forced hot water. Used for determining pressure head requirement. Based on 64" length units, but applicable to shorter units, as most loss is due to headers.

ADDITIONAL CORRECTION FACTORS ON NEXT PAGE

CONVECTOR BTU CORRECTION FACTORS

GALLONS PER MINUTE OF HOT WATER REQUIRED

Table 8



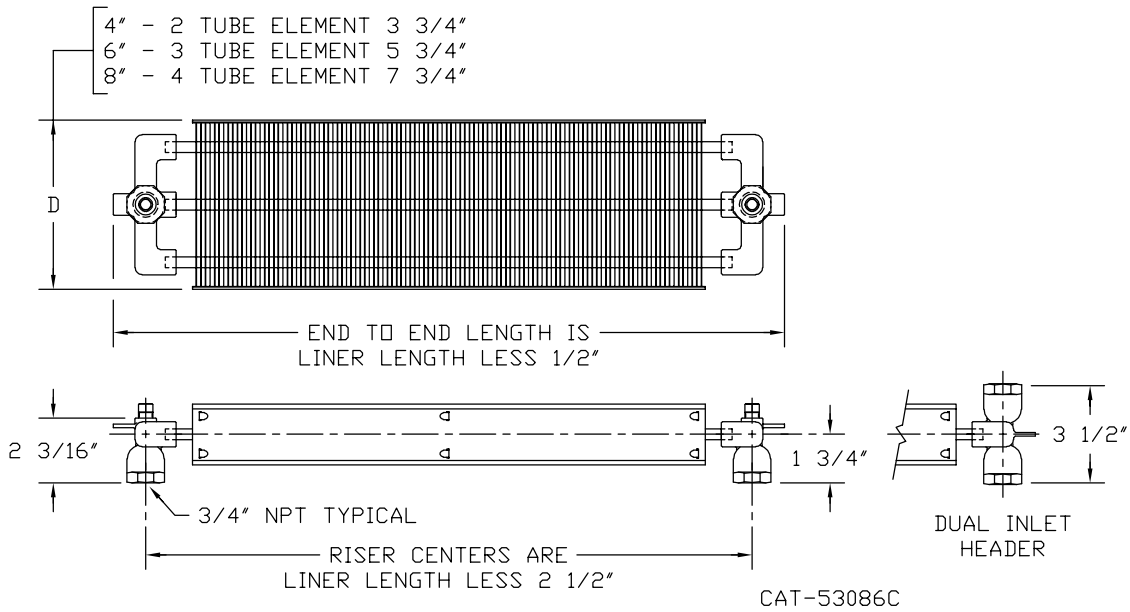
OUTPUT-FLOW RATE CORRECTIONS

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.

