

HORIZONTAL WATER SOURCE HEAT PUMP (HHPW) CERTIFIED DRAWING

DWG. NO. SUBMITTAL TEMPLATE HHPW REV. -

PROJECT	PROJECT	DATE			BY		REVISIONS	
PURCHASER	PURCHASER	P.O. #		QTY	DATE	BY	DESCRIPTION	
ARCHITECT	ARQUITECT	SHIPPING DATES						
ENGINEER	ENGINEER							
HVAC CONTR.	HVAC CONTRACTOR							
GEN. CONTR.	GEN CONTRACTOR							

DESIGNATION	MODEL NUMBER	QTY
TOTAL		

- OPTIONAL
 1: STAINLESS STEEL HOSE KITS
 2: MOTORIZED TWO-WAY CONTROL VALVE
 3: BALL VALVES
 4: DOUBLE DEFLECTION SUPPLY GRILLS
 5: UNIT-MOUNTED FLOW CONTROL VALVE

CUSTOM NOTES
1:

GENERAL NOTES

- 1: PROVIDE UNITS WITH R410A GREEN REFRIGERANT
- 2: PROVIDE 1/2" WASHABLE FILTERS
- 3: PROVIDE OVERFLOW CONDENSATE SWITCH
- 4: PROVIDE STANDARD UNIT-MOUNTED DIGITAL CONTROL BOARD
- 5: PROVIDE PAINTED ACOUSTICAL ACCESS DOOR FRONT PANEL
- 6: PROVIDE INTEGRAL TRAPPED CONDENSATE LINE RUN OUT

UNIT SPECIFICATIONS+

PERFORMANCE DATA

MODEL	5HHPW07	5HHPW09	5HHPW12	8HHPW12	8HHPW15	8HHPW19	8HHPW24	8HHPW30	8HHPW36	8HHPW42	8HHPW48	8HHPW60	8HHPW70
COOLING CAPACITY*	6,800	8,500	11,700	11,700	17,100	19,700	25,500	33,300	37,800	42,500	47,000	58,000	71,500
COOLING EER	12.7	12.2	12.3	12.3	14.2	13.4	12.8	13.5	13.5	12.2	13.2	13.2	12.5
HEATING CAPACITY**	9,000	11,200	15,200	15,200	20,400	24,500	31,300	39,700	46,100	51,900	55,300	70,200	83,300
HEATING COP	4.7	4.3	4.2	4.2	4.6	4.6	4.4	4.5	4.6	4.2	4.5	4.9	4.3
TYPICAL CFM	230	300	400	400	500	630	800	1000	1200	1400	1600	2000	2400

* BTUH @ 80.6°F DB, 66.2°F WB EAT; 86°F EWT

** BTUH @ 68°F DB, 59°F WB EAT; 68°F EWT

PHYSICAL DATA

MODEL	5HHPW07	5HHPW09	5HHPW12	8HHPW12	8HHPW15	8HHPW19	8HHPW24	8HHPW30	8HHPW36	8HHPW42	8HHPW48	8HHPW60	8HHPW70
COMPRESSOR TYPE (1 EA)	ROTARY	ROTARY	ROTARY	ROTARY	ROTARY	ROTARY	ROTARY	ROTARY	ROTARY	SCROLL	SCROLL	SCROLL	SCROLL
REFRIGERANT	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
REFRIGERANT FACTORY CHARGE (oz)	16	18	20	20	25	32	37	42	43	47	54	64	71
FAN MOTOR (W)	35	35	35	35	150	150	200	200					
BLOWER WHEEL SIZE (DIAMETERXWIDTH) (IN)	6X6	6X6	7X7	7X7	7X7	8X8	8X8	9X7	9X7	9X7	10X10	10X10	10X10
HOSES (IN)	1/2	1/2	1/2	1/2	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
AIR COIL FACE AREA (SQ.FT)	1.4	1.4	1.4	1.4	2.7	2.7	2.7	3.4	3.4	3.4	4.4	4.4	6.1
STANDARD FILTER-1/2"	10X20	10X20	10X20	10X20	18X24	18X24	18X24	19X27	19X27	19X27	16X22	22X22	22X22
AC CHASSIS WEIGHT (LB)	97	99	102	102	150	200	230	240	260	280	300	320	330
CABINET WEIGHT (LB)	130	130	130	130	180	220	280	300	310	320	330	350	360

FOR OVERALL UNIT DIMENSIONS PLEASE REFER TO DRAWING APA-9088

TYPICAL WATER SIDE DATA

MODEL	5HHPW07	5HHPW09	5HHPW12	8HHPW12	8HHPW15	8HHPW19	8HHPW24	8HHPW30	8HHPW36	8HHPW42	8HHPW48	8HHPW60	8HHPW70
FLOW RATE (GPM)	1.4	2.2	3.1	3.1	4.3	5.1	6.5	8.5	9.8	11.0	11.8	14.7	18.0
WATER CONNECTION SIZE (IN)	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	3/4	3/4	3/4	3/4	3/4
CONDENSATE CONNECTION SIZE (IN)	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4

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DWG. NO.
SUBMITTAL TEMPLATE HHPW
REV. -

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ENGINEER	ENGINEER							
HVAC CONTR.	HVAC CONTRACTOR							
GEN. CONTR.	GEN CONTRACTOR							

UNIT SPECIFICATIONS+

ELECTRICAL DATA

TABLE 4

MODEL	VOLTAGE/HZ-PHASE	COMPRESSOR RLA	COMPRESSOR LRA	FAN MOTOR FLA	TOTAL UNIT FLA	MINIMUM CIRCUIT AMPS	MAX FUSE /HACR
5HHPW07	115/60-1	3.3	18	0.5	4.4	5.4	15
5HHPW09	115/60-1	5.6	25	0.7	5.9	7.2	15
5HHPW12	115/60-2	5.1	30	1.0	6.8	8.3	15
8HHPW12	208/230/60-1	5.1	32.5	1.0	6.8	7.2	15
8HHPW15	208/230/60-1	7.7	32	1.2	8.9	10.8	20
8HHPW19	208-230/60-1	13.5	58	1.8	15.3	18.7	30
8HHPW24	208/230/60-1	14.3	64	2.2	16.5	20.1	30
8HHPW30	208/230/60-1	14.1	73.0	3.0	17.1	20.6	30
8HHPW36	208/230/60-1	16.7	79.0	1.8	18.5	22.7	35
8HHPW42	208/230/60-1	17.9	112.0	3.0	20.9	25.4	40
8HHPW48	208/230/60-1	13.7	83.1	3.4	17.1	20.5	30
8HHPW60	208/230/60-1	15.6	110.0	4.9	20.5	24.4	40
8HHPW70	208-230/60-1	15.7	77	2.5	18.2	22.1	35

AIR FLOW CORRECTION TABLE

TABLE 5

	% OF RATED AIR FLOW	70%	75%	80%	85%	90%	95%	100%	105%
COOLING FACTORS	TOTAL CAPACITY	0.92	0.93	0.95	0.96	0.97	0.99	1.00	1.02
	SENSIBLE CAPACITY	0.80	0.83	0.87	0.90	0.93	0.97	1.00	1.04
	POWER	0.97	0.97	0.98	0.99	0.99	1.00	1.00	1.01
	HEAT REJECTION	0.94	0.95	0.96	0.97	0.98	0.99	1.00	1.01
HEATING FACTORS	HEATING CAPACITY	0.94	0.95	0.96	0.97	0.98	0.99	1.00	1.01
	POWER	1.08	1.06	1.05	1.04	1.02	1.01	1.00	0.99
	HEAT EXTRACTION	0.93	0.95	0.96	0.97	0.98	0.99	1.00	1.01

AIR TEMPERATURE CORRECTION TABLE

TABLE 6

HEATING								
EAT DB (°F)	45	50	55	60	65	70	75	80
HEATING CAPACITY FACTOR	1.11	1.09	1.06	1.04	1.02	1.00	0.98	0.95
POWER FACTOR	0.77	0.81	0.86	0.91	0.95	1.00	1.05	1.10
HEAT EXTRACTION FACTOR	1.18	1.14	1.11	1.07	1.04	1.00	0.96	0.92

TABLE 7

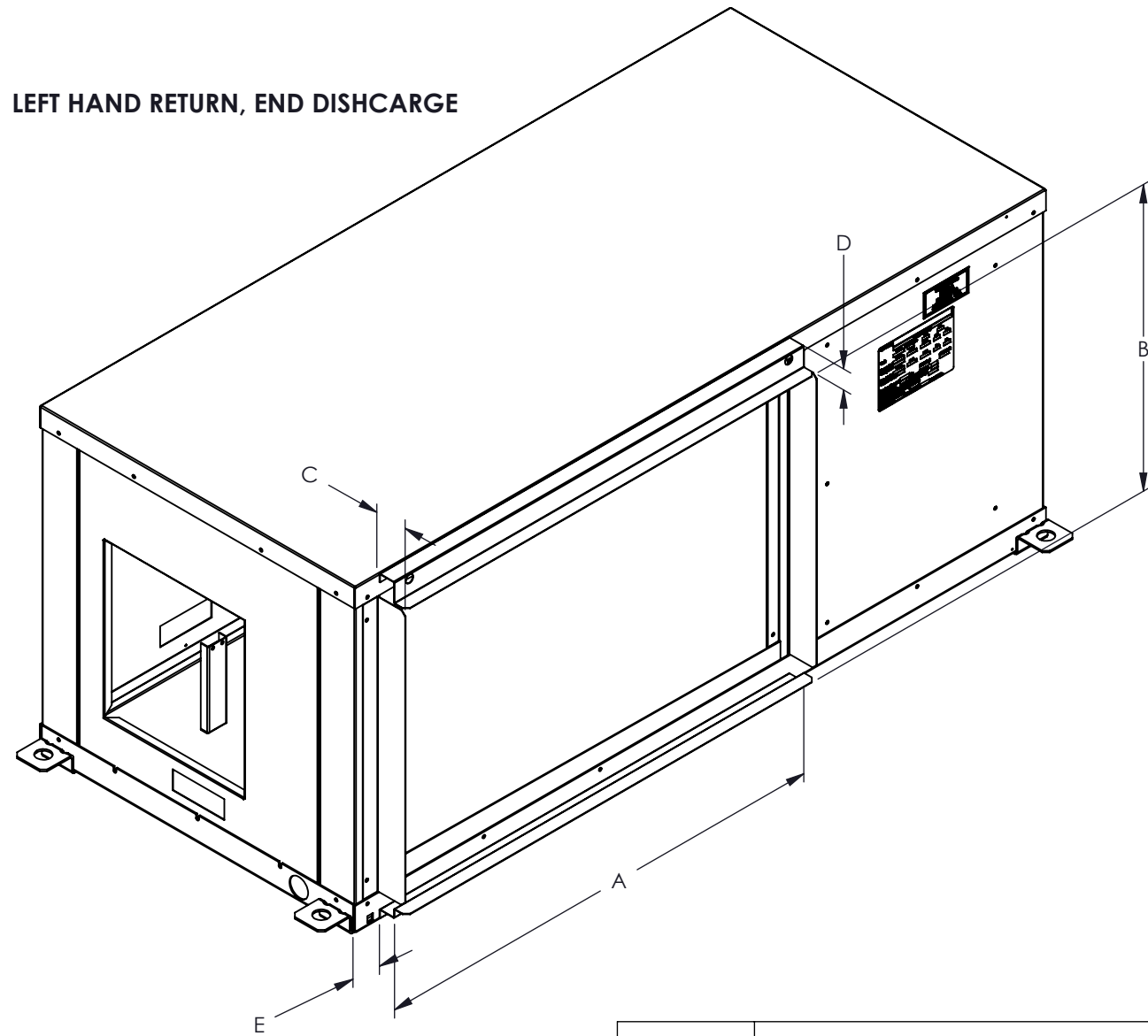
COOLING						
EAT WB (°F)		60	65	67	70	75
TOTAL CAPACITY FACTOR		0.85	0.96	1.00	1.06	1.17
SENSIBLE CAPACITY FACTOR EAT DB	70	0.85	0.62	0.52	-	-
	75	1.09	0.86	0.76	0.62	-
	80	1.33	1.09	1.00	0.86	0.63
	85	*	1.33	1.23	1.09	0.85
	90	*	*	1.48	1.34	1.10
POWER FACTOR		1.00	1.00	1.00	1.00	1.01
HEAT REJECTION FACTOR		0.90	0.97	1.00	1.05	1.12

DB - DRY BULB AIR TEMPERATURE
WB - WET BULB AIR TEMPERATURE
EAT - ENTERING AIR TEMPERATURE
ALL TEMPERATURES ARE IN °F

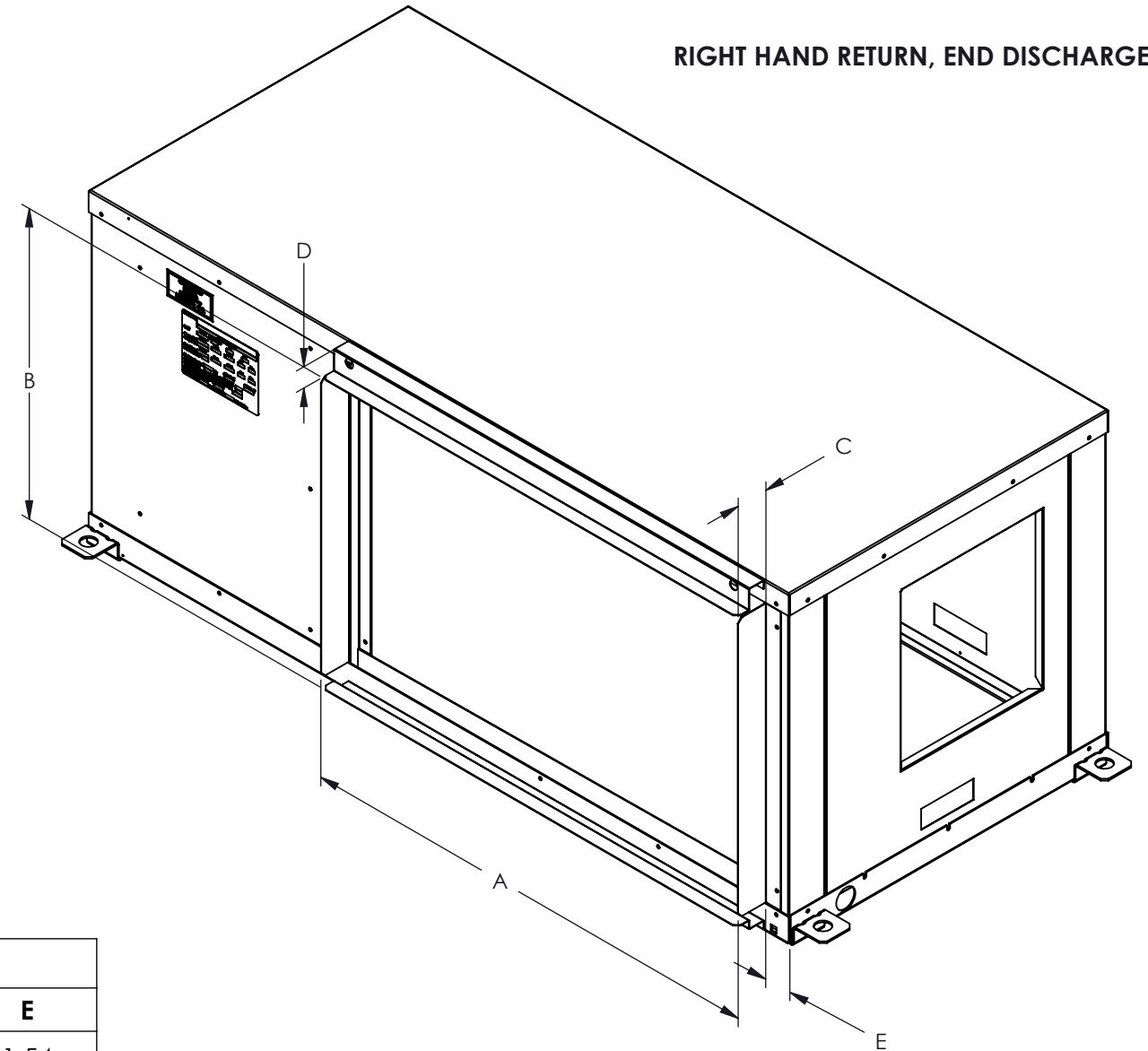
* = SENSIBLE CAPACITY EQUALS TOTAL CAPACITY

REVISIONS			
REV.	DESCRIPTION	BY	DATE
01			9/14/2010
02			6/22/2011
A			1/4/2013

LEFT HAND RETURN, END DISCHARGE



RIGHT HAND RETURN, END DISCHARGE

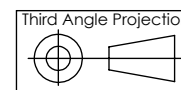


UNIT SIZE	DIMENSIONS (INCHES)				
	A	B	C	D	E
09,12	21.41	9.12	1.83	1.20	1.54
15,19	25.42	16.68	1.83	1.20	1.54
24, 30	25.42	16.68	1.83	1.20	1.54
36, 42	27.42	17.68	1.83	1.20	1.54
48,60,70	44.408	20.68	1.83	1.20	1.54

NOTE.
FILTER RACK/RETURN AIR DUCT COLLAR.

MATERIAL:	ICE-AIR LLC. 80 HARTFORD AVENUE MOUNT VERNON, NY 10553			
WEIGHT (LBS): 163.91				
FINISH: N/A	TITLE: HORIZONTAL WATER SOURCE HEAT PUMP (HHPW)	MODEL BY: VP	DATE: 07/15/10	DWG. NO.
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/32 ANGULAR: MACH ± ° BEND ± 1° TWO PLACE DECIMAL ± .03 THREE PLACE DECIMAL ± .015	DRAWING BY:	DATE:	Submittal Template HHPW	
	SIZE B	SCALE: NONE DO NOT SCALE DRAWING	SHEET 4 OF 7	REV 0

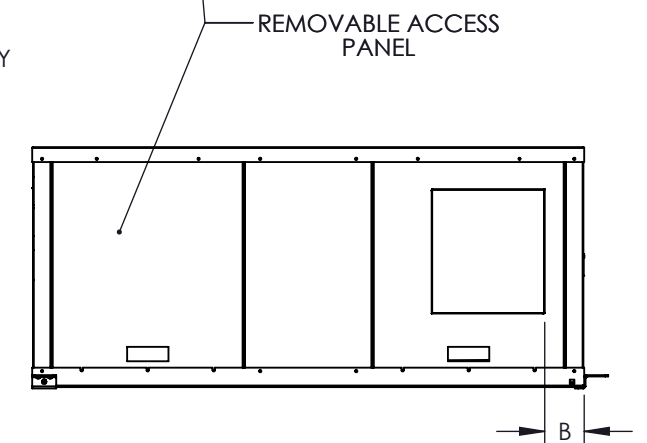
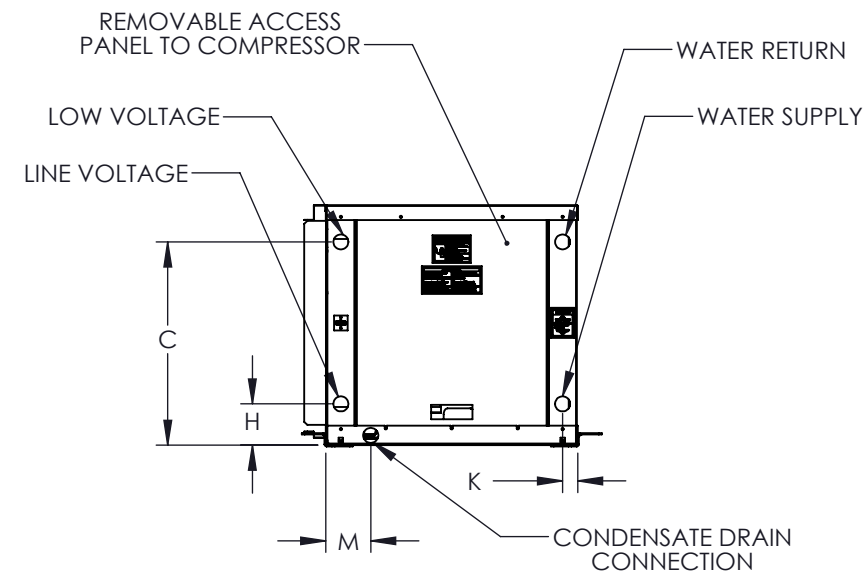
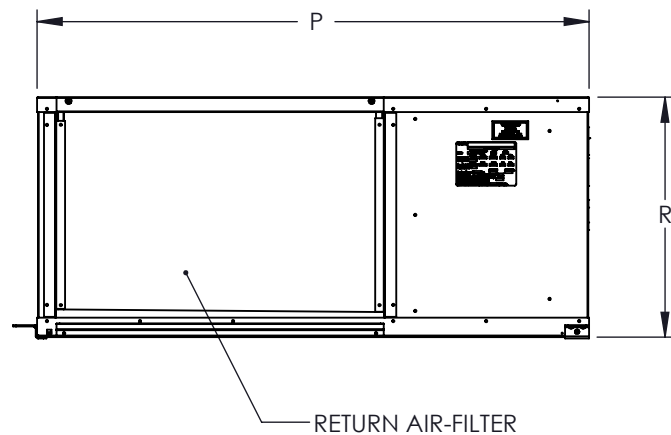
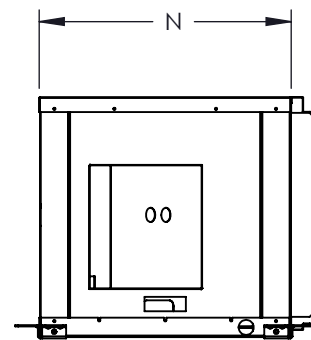
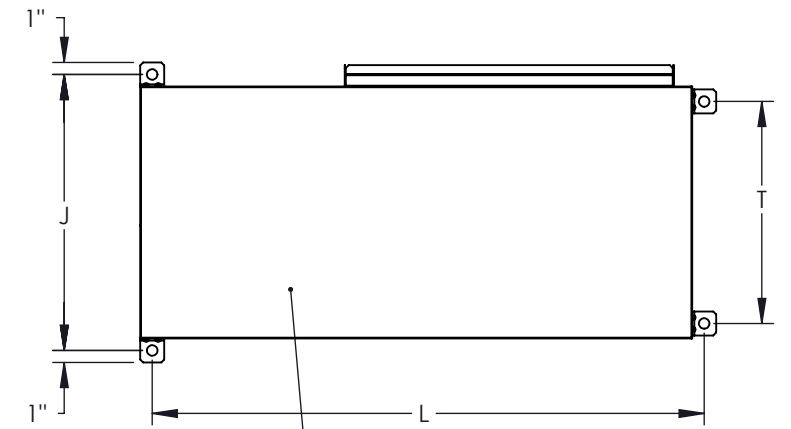
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DIMENSIONAL DATA: END AND STRAIGHT DISCHARGE

PHYSICAL DATE

UNIT SIZE	09,12	15,19	24, 30	36, 42	48,60,70
OVERALL UNIT DIMENSIONS	20"Wx34"Lx11.50"H	20"Wx42"Lx17"H	20"Wx42"Lx18 1/4"H	21"Wx46"Lx20"H	28"Wx52"Lx23"H
WATER CONNECTIONS, FPT	1/2	1/2	3/4	3/4	3/4
CONDENSATE CONNECTION, FPT	3/4	3/4	3/4	3/4	3/4



STRAIGHT DISCHARGE VIEW

END DISCHARGE VIEW

DIMENSIONAL DATA (IN INCHES)

UNIT SIZE	DIMENSIONS															
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T
09,12	9.6	2.9	8.5	3.7	4.8	1.8	5.0	3.5	22	1.3	34	3.8	20	34	11.5	17.5
15,19	9.3	3.0	14.0	3.3	7.0	7.0	2.0	3.5	22	1.3	42	3.8	20	42	17	17.5
24,30	9.3	3.0	15.2	4.0	7.0	8.9	2.3	3.5	22	1.3	42	3.8	20	42	18.25	17.5
36,42	9.3	3.3	17.0	4.3	10.3	6.2	4.0	3.5	23	1.3	46	3.8	21	46	21	18.5
48,60,70	14.7	4.9	20.0	5.8	13.5	8.0	2.0	3.5	30	1.3	52	3.8	28	52	23	25.5

- NOTE.
1. RIGHT AND LEFT HAND RETURN DETERMINED BY FACING THE WATER CONNECTION SIDE OF THE UNIT.
 2. BLOWER HOUSING ASSEMBLY CONVERTS FROM STRAIGHT DISCHARGE TO END DISCHARGE.
 3. DIMENSIONS ARE APPROXIMATE.
 4. LEFT HAND RETURN SHOWN. RIGHT HAND RETURN OPTIONAL.

MATERIAL:

WEIGHT (LBS):
163.91

FINISH:
N/A

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL ± 1/32
ANGULAR: MACH ± ° BEND ± 1°
TWO PLACE DECIMAL ± .03
THREE PLACE DECIMAL ± .015

ICE-AIR LLC.
80 HARTFORD AVENUE
MOUNT VERNON, NY 10553

TITLE: HORIZONTAL WATER SOURCE HEAT PUMP (HHPW)

MODEL BY: VP DATE: 07/15/10 DWG. NO.
DRAWING BY: DATE: Submittal Template HHPW

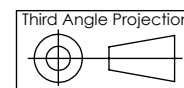
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SCALE: NONE
DO NOT SCALE DRAWING

SHEET 5 OF 7

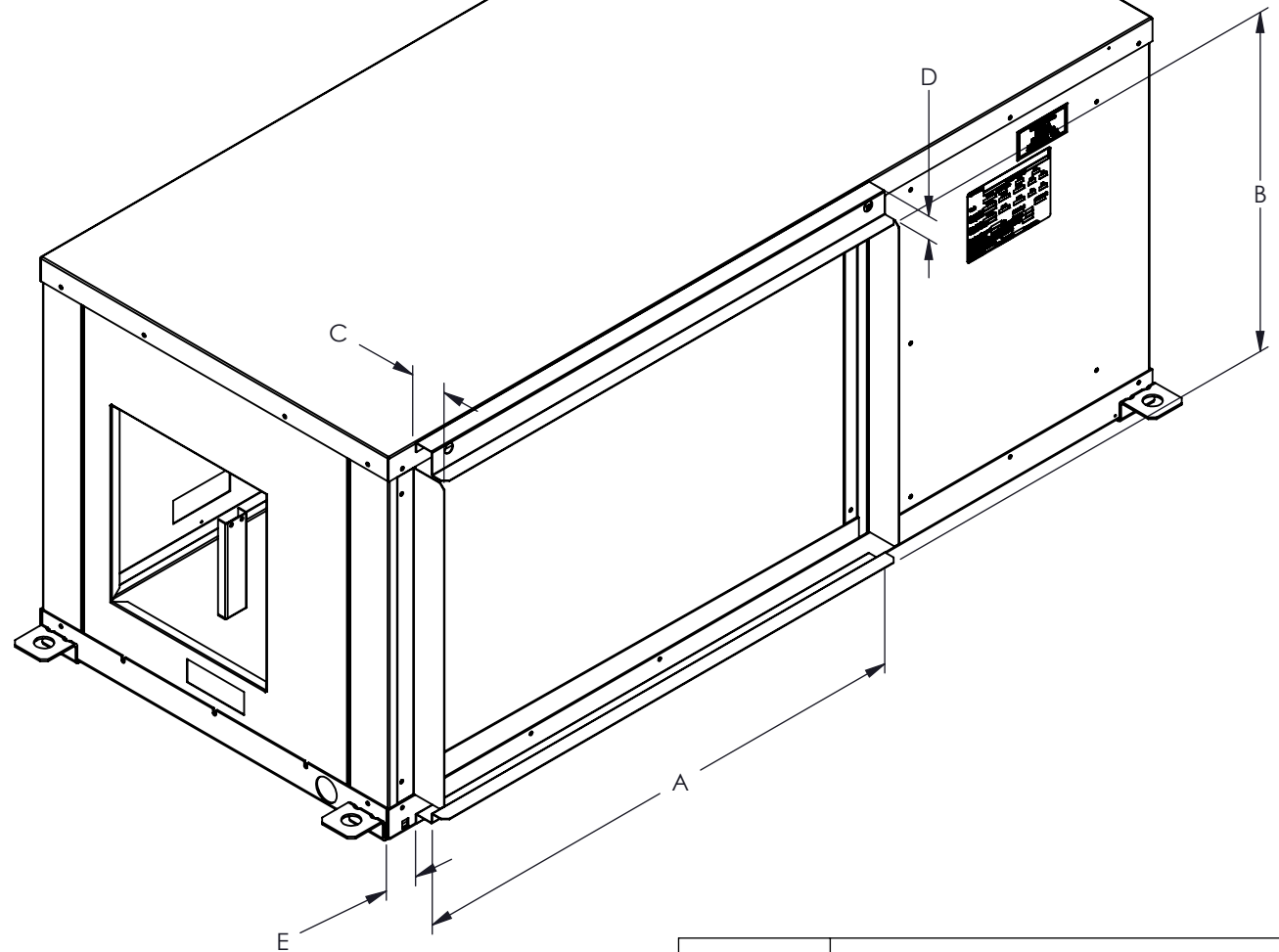
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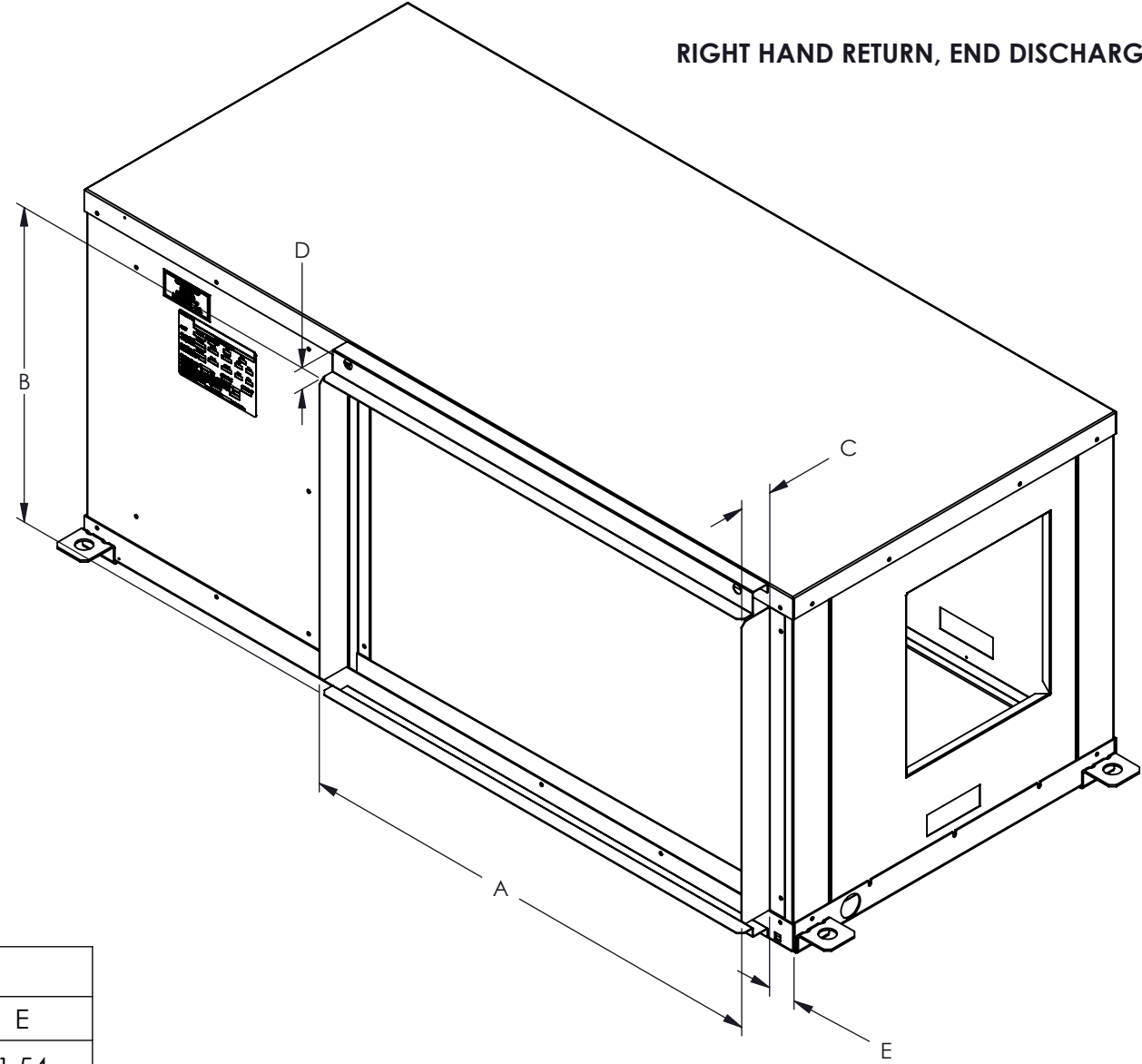


REVISIONS			
REV.	DESCRIPTION	BY	DATE
A			2/6/2013

LEFT HAND RETURN, END DISCHARGE



RIGHT HAND RETURN, END DISCHARGE

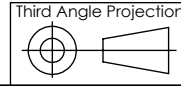


UNIT SIZE	DIMENSIONS (INCHES)				
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36, 42	27.42	17.68	1.83	1.20	1.54
48,60,70	44.408	20.68	1.83	1.20	1.54

NOTE:
FILTER RACK/RETURN AIR DUCT COLLAR.

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	SIZE B	SCALE: NONE DO NOT SCALE DRAWING	SHEET 6 OF 7	REV 0

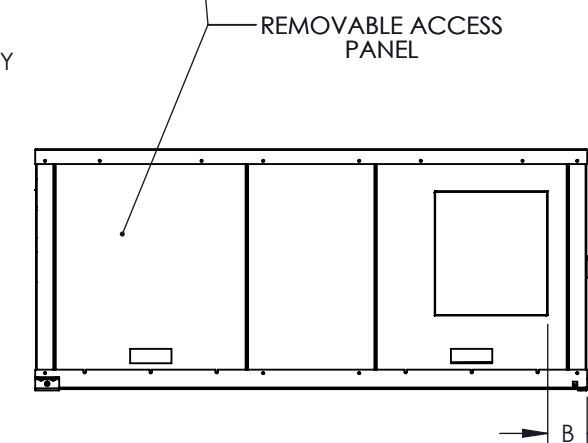
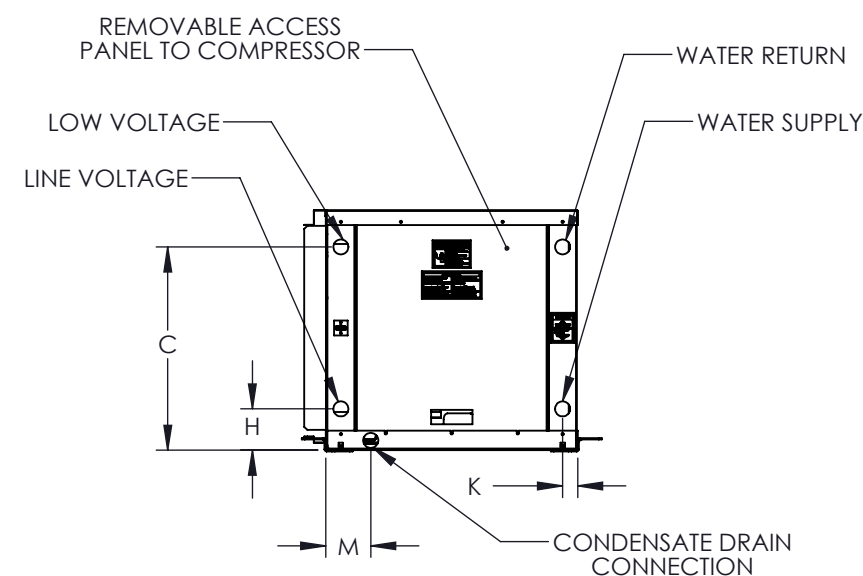
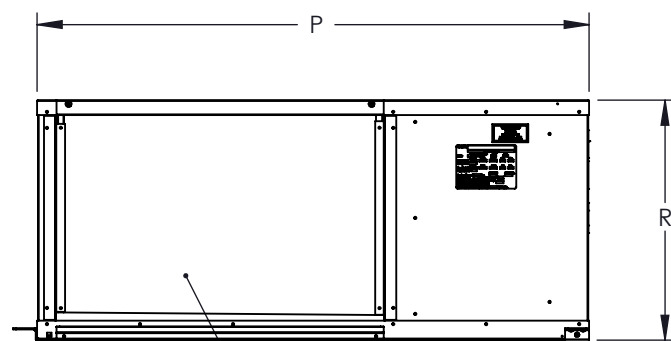
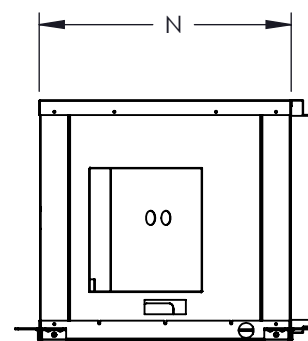
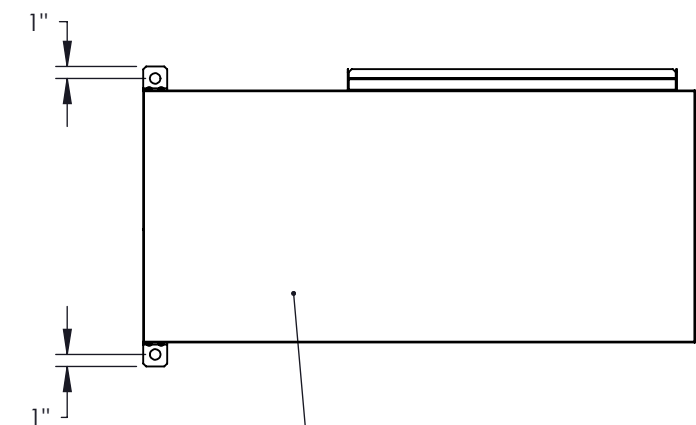
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PHYSICAL DATE

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WATER CONNECTIONS, FPT	1/2	1/2	3/4	3/4	3/4
CONDENSATE CONNECTION, FPT	3/4	3/4	3/4	3/4	3/4



END DISCHARGE VIEW

STRAIGHT DISCHARGE VIEW

DIMENSIONAL DATA (IN INCHES)

UNIT SIZE	DIMENSIONS															
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T
07,09,12	9.6	2.9	11.0	3.7	4.8	1.8	5.0	3.5	22	1.3	34	3.8	20	34	14.0	17.5
15,18	9.3	3.0	14.0	4.0	7.0	7.9	2.0	3.5	22	1.3	42	3.8	20	42	17	17.5
24,30	9.3	3.0	15.2	4.0	7.0	8.9	2.3	3.5	22	1.3	42	3.8	20	42	18.25	17.5
36,42	9.3	3.3	17.0	4.3	10.3	6.2	4.0	3.5	23	1.3	46	3.8	21	46	21	18.5
48,60,70	14.7	4.9	20.0	5.8	13.5	8.0	2.0	3.5	30	1.3	52	3.8	28	52	23	25.5

NOTE.

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3. DIMENSIONS ARE APPROXIMATE.
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WEIGHT (LBS):
163.91

FINISH:
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FRACTIONAL ± 1/32
ANGULAR: MACH ± ° BEND ± 1°
TWO PLACE DECIMAL ± .03
THREE PLACE DECIMAL ± .015

ICE-AIR LLC.
80 HARTFORD AVENUE
MOUNT VERNON, NY 10553

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MODEL BY: VP
DRAWING BY:

DATE: 07/15/10
DATE:

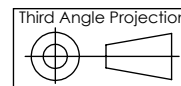
DWG. NO.
Submittal Template HHPW

SIZE
B

SCALE: NONE
DO NOT SCALE DRAWING

SHEET 7 OF 7

REV
0



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