BARD Interior Solution Heat Pumps 2.5 - 5 Ton Capacity I30H - I60H Models 208V - 460V 60hz

IH Series I-TEC™ Heat Pump

The I-TEC is one of the most advanced systems of its kind. It meets the most stringent sound level requirements while offering premium efficiency. Because the outdoor air portion of the unit is above the sill at window level, installing the unit is simple and it blends in seamlessly with the building's exterior. Two stage step capacity operation using ECM fan technology provides quiet and efficient operation. All these features and more make the I-TEC the ideal product for new construction and rennovation projects.

- *Complies with efficiency requirements of ASHRAE/IESNA 90.1-2019*
- *Certified to ANSI/AHRI Standard 390-2021 for SPVU (Single Package Vertical Units)*
- *Intertek ETL Listed to Standard for Safety Heating and Cooling Equipment ANSI/UL 1995, Fifth Edition/CSA 22.2 No. 236-05 Fourth Edition*
- *Commercial Product - Not intended for residential application*
- *Bard is an ISO 9001:2015 Certified Manufacturer*
- *The AHRI Certified® mark indicates Bard Manufacturing Company participation in the AHRI Certification program. For verification of individual certified products, go to www.ahridirectory.org.*

Bard SINCE 1914

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FORM NO. S3451-1123

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Climate Control Solutions

I-TEC NOMENCLATURE

I 36 H 1 D A 0Z R P 4 X X 2

Model Series

Nominal Capacity:
30 = 30,000 BTUH
36 = 36,000
42 = 42,000
48 = 48,000
60 = 60,000

System Type:
H = Heat Pump

Revision Level

(-) = Standard (Non-Dehum)
D = Dehumidification

Electrical Rating:
A = 230/208, 60-1
B = 230/208, 60-3
C = 460-60-3

Electric Heat:
0Z = No heat w/Breaker
04 = 4KW 1-Phase
05 = 5KW 1-Phase
06 = 6KW 3-Phase
09 = 9KW 3-Phase
10 = 10KW 1-Phase
15 = 15KW 1 & 3-Phase
18 = 18KW 3-Phase
20 = 20KW 1-Phase

Vent Option:
B = Blank Off Plate
M = Multi-Speed CRV
N = Multi-Speed CRV with Partial Flow Economizer Mode
Q = Modulating CRV (0-10Vdc)
R = Multi-Speed or Modulating ERV (0-10Vdc)

Filter:
P = 2 inch pleated MERV 8
M = 2 inch pleated MERV 11
N = 2 inch pleated MERV 13
A = 2 inch pleated MERV 13 with long-life UV-C LED Light.
B = 2 inch pleated MERV13 with NBPI

Color:
X = Beige, Painted Steel
1 = White, Painted Steel
4 = Gray, Painted Steel

Door Vinyl Graphics Options
X = No Graphics
A = Stacked Books (Color Code 1 - White Only)
B = Paint Brush (Color Code 1 - White Only)

Coil Treatment:
X = Std. Hydrophilic Fin Evap. & Uncoated Alum. Cond. Coil
1 = Phenolic Coated ID coil
2 = Phenolic Coated OD coil
3 = Phenolic Coated ID & OD coil

Controls:
X = 24v terminal block Only w/o Stat
1 = CompleteStat THO (Temp, Humidity & Occupancy)
2 = CompleteStat THO w/CO2
3 = CompleteStat THO w/ Ethernet
4 = CompleteStat THO w/CO2 & Ethernet

Note: CompleteStat must be field installed & wired. All units have 24V terminal block. See Selection Guide.

CONTROLS SELECTION GUIDE

BACnet ① Communication	Ethernet ② Connection	Control Code	Description	CompleteStat Part Number
Yes	No	1	Shipped with "CompleteStat THO (Temp, Humidity & Occupancy)"	CS9B-THOA
Yes	No	2	Shipped with "CompleteStat THO w/CO2"	CS9B-THOCA
Yes	Yes	3	Shipped with "CompleteStat THO w/Ethernet"	CS9BE-THOA
Yes	Yes	4	Shipped with "CompleteStat THO w/CO2 & Ethernet"	CS9BE-THOCA
NA	NA	X	Controller not shipped with unit	NA

① **BACnet is standard - all versions, shielded twisted pair.**

② **These models also have CAT 5 port for ease of networking in addition to twisted pair terminals.**

③ **Demand control for ventilation is ON/OFF based on CO2 set-point.**
If modulating mode for ERV is required, use – THO controller plus 8403-067 CO2 controller with modulating output.

④ **CompleteStats are shipped with the unit in the condenser area. Field installation required.**

1. Double wall construction, 20-ga. exterior skin, no visible fasteners.
2. Non fiberglass insulation.
3. Hinged, lockable, removable doors.
4. Removable sides and modularized construction for transporting through standard doors or in elevators allows installation on second and third floor. Suitable for any floor installations.
5. Units designed to be flush to a smooth interior wall and not require trim kits by use of adjustable wall sleeves; Trim Kits available where required.
6. Low sound levels are achieved by numerous system design innovations including special acoustical insulation.
7. Installation flexibility. Can be installed in corner applications with one side against a wall.

1. Supplimental electric heater packages available. Electric heat allows for comfortable operation during coil defrost mode and for heating during extremely low outdoor temperatures.
2. Pleated 2" filter installation with extra-large filter area for extended filter life between filter changes.
3. Evaporator coils constructed with hydrophilic fin stock. Wettable surface with low contact angle – no bead-up condensate, lower wet-coil air-side pressure drop, improved draining & reduce re-entrainment of moisture back into the air stream in continuous blower operating modes. Antimicrobial properties provide microbial resistance to fungicidal growth. Resistant to Mold and Mildew, ASTM D3273 – no growth. Seals fin surface against aluminum oxide formation.
4. Non-corrosive drain pans with no standing water.
5. Extra large full width control panel for easy access to all controls. Circuit Breakers on 230V models, and Toggle Disconnect on 460V models. 24VAC 75VA control transformer with circuit breaker. 24VAC low-voltage terminal strip for thermostat or DDC control. Electronic heat pump control board with diagnostics.
6. ECM indoor and outdoor motors. Indoor fan system provides a constant CFM up to .050" W.C. ESP. Enhanced indoor fan design reduces indoor sound levels. Outdoor fan system uses composite swept-wing blade design for quiet operation.
7. Readily accessible service ports located behind locking hinged doors.
8. 2-Stage scroll compressors with discharge muffler, double floating isolation mounting system, and sound muffling cover. High and Low Pressure switches with lockout circuit. Liquid line filter/drier. Heating and cooling thermostatic expansion valves.
9. Designed for over-the-window sill wall penetration and has 3" vertical adjustment for wall sleeve attachment. Unit ventilation section can be removed for easier multi-story installations. Multiple ventilation packages available.

/////// Unit Modes of Operation

Cooling Operation:
The Bard I-TEC Series products offer efficient two stage compressor cooling operation using R410A refrigerant. Scroll compressor technology delivers years of quiet, reliable operation.

Heating Operation:
The Bard I-TEC Series products offer efficient two stage heat pump heating and optional single or two stage heating operation using resistance heaters. Circuit breaker disconnect protection is standard in all 230V units equipped with electric heat.

Mechanical Dehumidification (Hot Gas Reheat) Operation:
Mechanical Dehumidification provides an energy efficient way to remove humidity from the indoor air stream without over cooling or overheating the indoor space.

Ventilation:
The I-TEC product provides the perfect platform to not only cool and heat an indoor area, but also provide a means of bringing outdoor air into the building. By including ventilation in the Wall-Mount, expensive costs associated with additional dedicated ventilation air systems can be avoided.

Filtration and Indoor Air Quality:
Providing the best air filtration solution is important to occupants inside a room or structure. Bard provides several filter options based on MERV filtration (up to MERV13). A long life UV-C light is also available to further enhance Indoor Air Quality (IAQ) levels.

Low Outdoor Temperature Cooling Operation:
A low ambient control (LAC) is installed in all I-TEC products to ensure cooling operation will be available even during low outdoor temperatures.

High Outdoor Temperature Cooling Operation:
The Bard I-TEC Series products are designed and tested to use efficient condenser coils with high airflow condenser fan systems. This lowers energy use and provides cooling during extremely warm outdoor weather conditions.

CAPACITY AND EFFICIENCY RATINGS

CAPACITY AND EFFICIENCY RATINGS (STAGE 2) FULL LOAD OPERATION

MODELS	I30H1	I36H1	I42H1	I48H1	I60H1
Cooling BTUH, Full Load Capacity, 95-80/67 EER ① Rated CFM	27,800 11.7 900	35,000 12.0 1150	41,500 12.0 1300	47,000 12.0 1500	54,000 11.2 1700
IPLV (Integrated Full & Part Load) ② 80-80/67	15.4	16.5	15.7	16.1	15.5
Heating BTUH, Full Load Capacity 47/43-70 COP ③ Rated CFM	26,600 3.6 900	32,800 3.7 1150	38,500 3.7 1300	44,500 3.7 1500	54,000 3.6 1700

① EER = Energy Efficiency Ratio - BTU/WATT efficiency
② IPLV = Integrated Part Load Value - BTU/WATT efficiency (combines full and part load performance)
③ COP = Coefficient of Performance - BTU/WATT efficiency

CAPACITY AND EFFICIENCY RATINGS (STAGE 1) PART LOAD OPERATION

MODELS	I30H1	I36H1	I42H1	I48H1	I60H1
Cooling BTUH, Part Load Capacity, 80-80/67 EER ① Rated CFM	20,500 11.8 650	25,500 12.7 850	30,000 12.3 950	33,500 12.0 1050	38,500 11.5 1200
Heating BTUH, Part Load Capacity 47/43-70 COP ③ Rated CFM	19,800 3.5 650	22,800 3.6 850	27,000 3.6 950	30,500 3.6 1050	36,500 3.4 1200

① EER = Energy Efficiency Ratio - BTU/WATT efficiency
② IPLV = Integrated Part Load Value - BTU/WATT efficiency (combines full and part load performance)
③ COP = Coefficient of Performance - BTU/WATT efficiency

UNIT SHIPPING WEIGHTS

MODELS	NO VENT	CRV	ERV
I30H1-A	816	908	943
I30H1-B	816	908	943
I30H1-C	851	943	978
I36H1-A	846	938	973
I36H1-B	846	938	973
I36H1-C	881	973	1008
I42H1-A	896	988	1023
I42H1-B	896	988	1023
I42H1-C	931	1023	1058
I48H1-A	884	976	1011
I48H1-B	884	976	1011
I48H1-C	919	1011	1046
I60H1-A	931	1023	1058
I60H1-B	931	1023	1058
I60H1-C	966	1058	1093

MODELS	NO VENT	CRV	ERV
I30H1DA	830	920	955
I30H1DB	830	920	955
I30H1DC	865	955	990
I36H1DA	858	950	985
I36H1DB	858	950	985
I36H1DC	893	985	1020
I42H1DA	908	1000	1035
I42H1DB	908	1000	1035
I42H1DC	943	1035	1070
I48H1DA	930	1022	1057
I48H1DB	930	1022	1057
I48H1DC	965	1057	1092
I60H1DA	943	1035	1070
I60H1DB	943	1035	1070
I60H1DC	978	1070	1105

Deduct 49# from all values for installed weight.

2½ THROUGH 3½ TON

MODELS	I30H1-A	I30H1-B	I30H1-C	I36H1-A	I36H1-B	I36H1-C	I42H1-A	I42H1-B	I42H1-C
ELECTRICAL RATING--60 HZ	230/208-1	230/208-3	460-3	230/208-1	230/208-3	460-3	230/208-1	230/208-3	460-3
Operating Voltage Range	197-253		414-506	197-253		414-506	197-253		414-506
COMPRESSOR									
Volts	230/208-1	230/208-3	460-3	230/208-1	230/208-3	460-3	230/208-1	230/208-3	460-3
Rated Load Amps (230/208)	10.0/11.5	7.4/8.4	4.2	11.1/13	8.5/9.9	4.9	13.8/15.6	11.0/12.4	5.5
Branch Circuit Selection Current	13.1	8.7	4.3	15.3	11.7	5.8	18.0	14.2	6.3
Locked Rotor Amps	73	58	28	83	73	38	96	88	44
ENERGY RECOVERY VENTILATOR									
Volts	230/208-60-1			230/208-60-1			230/208-60-1		
Full Load Amps (3-motors)	2.2			2.2			2.2		
FAN MOTOR – ECM									
Horsepower	1/3			1/3			1/3		
Volts	230/208-60-1			230/208-60-1			230/208-60-1		
Full Load Amps	1.7			2.6			2.6		
+ CFM	1950			2300			2300		
BLOWER MOTOR – ECM									
Horsepower	1/3			1/2			1/2		
Volts	230/208-60-1			230/208-60-1			230/208-60-1		
Full Load Amps	1.9			2.5			2.5		

+ CFM @ rating points, will modulate based upon O.D. ambient.

4 AND 5 TON

MODELS	I48H1-A	I48H1-B	I48H1-C	I60H1-A	I60H1-B	I60H1-C
ELECTRICAL RATING--60 HZ	230/208-1	230/208-3	460-3	230/208-1	230/208-3	460-3
Operating Voltage Range	197-253		414-506	197-253		414-506
COMPRESSOR						
Volts	230/208-1	230/208-3	460-3	230/208-1	230/208-3	460-3
Rated Load Amps (230/208)	15.6/17.5	10.4/11.6	5.4	22/23.4	13.4/14.3	6.3
Branch Circuit Selection Current	19.9	11.6	6.4	27.2	16.6	7.2
Locked Rotor Amps	104.0	83.1	41	152.9	110.0	52.0
ENERGY RECOVERY VENTILATOR						
Volts	230/208-60-1			230/208-60-1		
Full Load Amps (3-motors)	2.2			2.2		
FAN MOTOR – ECM						
Horsepower	1/2			1/2		
Volts	230/208-60-1			230/208-60-1		
Full Load Amps	3.2			3.2		
+ CFM	2600			2600		
BLOWER MOTOR – ECM						
Horsepower	1/2			3/4		
Volts	230/208-60-1			230/208-60-1		
Full Load Amps	3.2			4.4		

+ CFM @ rating points, will modulate based upon O.D. ambient.

/////// INDOOR EC MOTOR BLOWER SPEEDS AND AIRFLOW PERFORMANCE CHART

Model	Rated ESP.	Max. ESP	Continuous CFM	Rated 2nd Stage CFM	Rated 1st Stage CFM	4-10 KW CFM	15-20 KW CFM
I30H1	0.15	0.50	500	900	650	700	1050
I36H1	0.15	0.50	600	1150	850	700	1050
I42H1	0.20	0.50	650	1300	950	700	1050
I48H1	0.20	0.50	725	1500	1050	700	1400
I60H1	0.20	0.50	850	1700	1200	700	1400

① Motor will deliver consistent CFM through voltage supply range with no deterioration up to 0.50 WC ESP.

Indoor airflow is measured in Cubic Feet per Minute (CFM) will remain constant using the EC indoor motor provided with the I-TEC product.

Continuous CFM Blower and Vent Only Speed: The I-Tec series uses this speed when **fan only (G) or ventilation operation (A)** is used. Listed CFM is provided up to 0.50" WC External Static Pressure (ESP). See airflow performance chart for CFM amount.

Rated 1st Stage CFM: The I-TEC series uses this speed during **Part Load Compressor Cooling (Y1) and Heating (B)**. Listed CFM is provided up to 0.50" WC External Static Pressure (ESP). See airflow performance chart for CFM amount.

Rated 2nd Stage CFM: The I-TEC series uses this speed during **Full Load Compressor Cooling (Y1, Y2) and Heating (B)**. Listed CFM is provided up to 0.50" WC External Static Pressure (ESP). See airflow performance chart for CFM amount.

4-10 Kw CFM: The I-TEC series uses this speed during **Standard Electric Heat (W2) Operation.** Listed CFM is provided up to 0.50" WC External Static Pressure (ESP). See airflow performance chart for CFM amount. Unit will operate at Rated 1st Stage CFM if used concurrently with heat pump operation.

15-20 Kw CFM: The I-TEC series uses this speed during **Emergency Electric Heat (W3) Operation.** Listed CFM is provided up to 0.50" WC External Static Pressure (ESP). See airflow performance chart for CFM amount. Unit will not operate 15-20 Kw electric heat (Emergency Heat) concurrently with heat pump compressor operation.

/////// INDOOR AIRFLOW STATIC

The airflow amount that passes through the unit is very important when considering cooling capacity and proper unit operation. Restriction of the amount of air passing through the unit is called external static pressure (ESP). As the amount of air passing through the unit is restricted, the ESP value increases. This will have a direct impact on how heating and cooling equipment performs when used in an application. It is important to have a professional HVAC contractor, distributor, or technician complete a duct static calculation if supply or return ducts are used with the WA series unit. Unit filter static must also be calculated into the total ESP value.

Supply Duct Static: Supply duct static will include duct work connected to the unit supply opening, supply registers, filtration installed in the supply duct, or any other device in the supply airstream that will restrict airflow. All ducts must be sealed to reduce duct air leakage, and flex duct work must not include restriction due to installation. Duct static must be calculated by a HVAC professional and include all factors of the duct design.

Return Duct Static: Return duct static will include duct work connected to the unit return opening, return registers, filtration installed in the return duct, or any other device in the return airstream that will restrict airflow. All ducts must be sealed to reduce duct air leakage, and flex duct work must not include restriction due to installation.Duct static must be calculated by a HVAC professional and include all factors of the duct design.

Unit Filter Static: The I-TEC series uses a unit filter installed before the indoor blower assembly that filters both indoor air from the room and outdoor air entering through the ventilation device. When additional filtration is required (higher MERV rating), additional static will need to be added to the total external static pressure (ESP). The following chart is to be used to estimate additional static pressure for a installed clean filter.

FILTER CODE	FILTER MERV RATING	FILTER STATIC INCHES WC.	FILTRATION LEVEL
P	**MERV 8**	.00" WC	Average Filtration, 2" Thickness Pleated Disposable Media.
M	**MERV 11**	.02" WC	Above Average Filtration, 2" Thickness Pleated Disposable Media.
N, A	**MERV 13**	.05" WC	High Filtration, 2" Thickness Pleated Disposable Media.

Calculating Total External Static Pressure: Supply duct static, return duct static, unit filter static, and any other source of additional static pressure are added together. Total external static pressure must not exceed 0.50" WC.

Total External Static Pressure Calculation:

Supply Duct Static + Return Duct Static + Filter Static + Additional External Static = Total External Static Pressure (ESP)

Non-Ducted Applications: Applications that do not include supply or return ducts inside the structure, use Bard supply duct-free plenums, and do not have additional sources of external static will typically reflect rated airflow amounts shown in the Indoor Airflow CFM chart.

/////// COOLING APPLICATION DATA AT RATED AIRFLOW - FULL LOAD COOLING

Model	INDOOR D.B. / W.B.	COOLING CAPACITY (BTUH)	OUTDOOR DRY BULB TEMPERATURE													
			60°F 15.5°C	65°F 18.3°C	70°F 21.1°C	75°F 23.9°C	80°F 26.6°C	85°F 29.4°C	90°F 32.2°C	95°F 35°C	100°F 37.8°C	105°F 40.5°C	110°F 43.3°C	115°F 46.1°C	120°F 48.8°C	125°F 51.6°C
I30H1	75/62	Total Cooling	30,764	30,056	29,349	28,641	27,934	27,226	26,519	25,812	24,976	24,140	23,305	22,469	21,633	20,798
		Sensible Cooling	23,517	23,129	22,741	22,352	21,964	21,575	21,187	20,799	20,596	20,393	20,191	19,988	19,785	19,583
	80/67	Total Cooling	33,488	32,675	31,863	31,050	30,200	29,388	28,613	27,800	26,900	26,000	25,100	24,200	23,300	22,400
		Sensible Cooling	23,981	23,488	22,994	22,500	22,000	21,506	21,019	20,525	20,325	20,125	19,925	19,725	19,525	19,325
	85/72	Total Cooling	35,990	35,372	34,754	34,136	33,518	32,900	32,282	31,664	30,639	29,614	28,589	27,564	26,539	25,514
		Sensible Cooling	23,806	23,272	22,738	22,204	21,671	21,137	20,603	20,069	19,873	19,678	19,482	19,287	19,091	18,896
I36H1	75/62	Total Cooling	39,013	38,161	37,310	36,459	35,608	34,756	33,905	33,054	31,800	30,547	29,293	28,040	26,787	25,533
		Sensible Cooling	30,182	29,782	29,383	28,983	28,584	28,184	27,785	27,385	26,853	26,321	25,789	25,257	24,725	24,193
	80/67	Total Cooling	42,469	41,488	40,506	39,525	38,500	37,519	36,581	35,000	34,250	32,900	31,550	30,200	28,850	27,500
		Sensible Cooling	30,788	30,250	29,713	29,175	28,600	28,063	27,563	27,025	26,500	25,975	25,450	24,925	24,400	23,875
	85/72	Total Cooling	45,632	44,906	44,180	43,454	42,727	42,001	41,275	40,548	39,011	37,473	35,935	34,398	32,860	31,323
		Sensible Cooling	30,567	29,975	29,384	28,792	28,200	27,608	27,016	26,424	25,911	25,398	24,884	24,371	23,858	23,344
I42H1	75/62	Total Cooling	46,865	45,740	44,616	43,492	42,368	41,244	40,120	38,996	38,006	37,015	36,025	35,035	34,045	33,054
		Sensible Cooling	35,042	34,686	34,331	33,975	33,620	33,264	32,909	32,553	32,198	31,843	31,488	31,133	30,778	30,423
	80/67	Total Cooling	51,013	49,725	48,438	47,150	44,500	43,213	43,288	41,500	40,933	39,867	38,800	37,734	36,667	35,601
		Sensible Cooling	35,756	35,238	34,719	34,200	32,675	32,156	32,644	32,125	31,775	31,424	31,074	30,723	30,373	30,022
	85/72	Total Cooling	54,835	53,836	52,836	51,836	50,837	49,837	48,838	47,838	46,623	45,408	44,194	42,979	41,764	40,549
		Sensible Cooling	35,505	34,921	34,336	33,751	33,166	32,581	31,996	31,411	31,068	30,726	30,383	30,040	29,698	29,355
I48H1	75/62	Total Cooling	51,843	50,512	49,180	47,849	46,517	45,185	43,854	42,522	40,910	39,299	37,687	36,076	34,464	32,852
		Sensible Cooling	39,521	38,811	38,101	37,391	36,681	35,971	35,261	34,551	33,856	33,161	32,466	31,771	31,076	30,381
	80/67	Total Cooling	56,913	55,497	54,081	52,664	51,000	49,584	48,416	47,000	45,219	43,437	41,656	39,875	38,093	36,312
		Sensible Cooling	38,814	38,219	37,624	37,029	35,950	35,355	35,245	34,650	33,953	33,256	32,559	31,862	31,165	30,467
	85/72	Total Cooling	54,008	53,712	53,416	53,120	52,823	52,527	52,231	50,408	48,585	46,761	44,938	43,115	41,292	39,469
		Sensible Cooling	38,517	37,839	37,162	36,484	35,806	35,129	34,451	33,795	33,138	32,482	31,825	31,169	30,513	29,856
I60H1	75/62	Total Cooling	61,062	59,318	57,575	55,831	54,087	52,343	50,599	48,855	47,366	45,877	44,387	42,898	41,409	39,919
		Sensible Cooling	45,691	44,741	43,790	42,840	41,890	40,939	39,989	39,039	38,482	37,926	37,370	36,813	36,257	35,701
	80/67	Total Cooling	67,038	65,175	63,313	61,450	59,588	57,725	55,863	54,000	52,354	50,708	49,062	47,415	45,769	44,123
		Sensible Cooling	44,881	44,063	43,244	42,425	41,606	40,788	39,969	39,150	38,592	38,034	37,476	36,918	36,360	35,802
	85/72	Total Cooling	72,834	70,739	68,644	66,550	64,455	62,360	60,265	58,170	56,397	54,624	52,851	51,077	49,304	47,531
		Sensible Cooling	44,530	43,620	42,710	41,800	40,890	39,980	39,070	38,160	37,616	37,072	36,528	35,985	35,441	34,897

Notes:
- Unit compressor cooling operation below 60°F (15.5°C) uses a Low Ambient Control (LAC).
- 1000 BTUH = .29307 kW
- Outdoor air temperatures provided are an average of the condenser inlet air temperature.

/////// HEATING APPLICATION DATA AT RATED AIRFLOW - FULL LOAD HEATING

MODEL	INDOOR D.B.	HEATING CAPACITY (BTUH)	OUTDOOR DRY BULB TEMPERATURE											
			0°F -17.7°C	5°F -15°C	10°F -12.2°C	15°F -9.4°C	20°F -6.6°C	25°F -3.8°C	30°F -1.1°C	35°F 1.6°C	40°F 4.4°C	45°F 7.2°C	50°F 10°C	55°F 12.7°C	60°F 15.5°C
I30H1	70°F 21.1°C	BTUH	10,663	12,525	14,388	16,250	18,113	19,975	21,838	23,700	25,000	26,300	28,060	29,820	31,580
		WATTS	1879	1906	1927	1943	1956	1967	1976	1984	2046	2105	2182	2254	2323
		COP	1.66	1.93	2.19	2.45	2.71	2.98	3.24	3.5	3.58	3.66	3.77	3.88	3.98
I36H1		BTUH	12,819	14,788	16,756	18,725	20,694	22,663	24,631	26,600	29,400	32,200	34,200	36,200	38,200
		WATTS	1804	1939	2056	2160	2252	2334	2408	2474	2461	2451	2511	2568	2621
		COP	2.08	2.24	2.39	2.54	2.69	2.85	3.00	3.15	3.50	3.85	3.99	4.13	4.27
I42H1		BTUH	21,138	22,275	23,413	24,550	25,688	26,825	27,963	29,100	33,650	38,200	40,200	42,200	44,200
		WATTS	2664	2664	2664	2664	2664	2664	2664	2664	2777	2870	2923	2972	3019
		COP	2.33	2.45	2.58	2.70	2.83	2.95	3.08	3.2	3.55	3.90	4.03	4.16	4.29
I48H1		BTUH	19,806	22,513	25,219	27,925	30,631	33,338	36,044	38,750	41,263	43,775	46,820	49,865	52,910
		WATTS	2433	2660	2870	3064	3246	3415	3574	3723	3535	3384	3489	3586	3677
		COP	2.39	2.48	2.58	2.67	2.77	2.86	2.96	3.05	3.42	3.79	3.93	4.07	4.22
I60H1		BTUH	30,469	31,688	32,906	34,125	35,344	36,563	37,781	39,000	46,050	53,100	56,600	60,100	63,600
		WATTS	4012	3951	3896	3846	3800	3759	3721	3686	4058	4383	4506	4622	4730
		COP	2.23	2.35	2.48	2.6	2.73	2.85	2.98	3.1	3.33	3.55	3.68	3.81	3.94

Notes:
- Performance data at rated CFM. Data includes defrost operation below 45°F (7.2°C) outdoor temperatures.
- Outdoor air temperatures provided are an average of the condenser inlet air temperature.
- Supplemental heaters are recommended for applications requiring heating below a 15°F (-9.4°C) outdoor temperature.
- 1000 BTUH = .29307 kW

COOLING APPLICATION DATA AT RATED AIRFLOW - PART LOAD COOLING

Model	INDOOR D.B. / W.B.	COOLING CAPACITY (BTUH)	OUTDOOR DRY BULB TEMPERATURE													
			60°F 15.5°C	65°F 18.3°C	70°F 21.1°C	75°F 23.9°C	80°F 26.6°C	85°F 29.4°C	90°F 32.2°C	95°F 35°C	100°F 37.8°C	105°F 40.5°C	110°F 43.3°C	115°F 46.1°C	120°F 48.8°C	125°F 51.6°C
I30H1	75/62	Total Cooling	24,258	23,477	22,695	21,913	21,131	20,349	19,567	18,785	18,146	17,507	16,868	16,229	15,590	14,951
		Sensible Cooling	18,448	18,059	17,670	17,281	16,892	16,503	16,114	15,725	15,457	15,190	14,922	14,655	14,387	14,119
	80/67	Total Cooling	26,185	25,373	24,561	23,749	22,863	22,050	21,312	20,500	19,803	19,105	18,408	17,711	17,014	16,316
		Sensible Cooling	18,192	17,851	17,509	17,167	16,716	16,374	16,142	15,800	15,531	15,262	14,993	14,724	14,455	14,186
	85/72	Total Cooling	27,445	26,865	26,285	25,705	25,124	24,544	23,964	23,384	22,589	21,793	20,998	20,202	19,407	18,612
		Sensible Cooling	17,432	17,204	16,976	16,748	16,521	16,293	16,065	15,837	15,568	15,298	15,029	14,759	14,490	14,220
I36H1	75/62	Total Cooling	30,512	29,492	28,471	27,450	26,429	25,408	24,388	23,367	22,577	21,786	20,996	20,206	19,415	18,625
		Sensible Cooling	24,460	23,873	23,287	22,700	22,113	21,527	20,940	20,353	20,042	19,731	19,420	19,109	18,798	18,487
	80/67	Total Cooling	32,938	31,875	30,813	29,750	28,688	27,625	26,563	25,500	24,638	23,775	22,913	22,050	21,188	20,325
		Sensible Cooling	24,125	23,600	23,075	22,550	22,025	21,500	20,975	20,450	20,138	19,825	19,513	19,200	18,888	18,575
	85/72	Total Cooling	34,534	33,756	32,978	32,200	31,422	30,644	29,866	29,087	28,104	27,120	26,136	25,152	24,168	23,184
		Sensible Cooling	23,126	22,751	22,375	22,000	21,625	21,249	20,874	20,498	20,185	19,872	19,559	19,245	18,932	18,619
I42H1	75/62	Total Cooling	35,725	34,549	33,372	32,196	31,020	29,843	28,667	27,490	26,435	25,379	24,324	23,268	22,212	21,157
		Sensible Cooling	27,298	26,643	25,989	25,334	24,680	24,026	23,371	22,717	22,335	21,954	21,572	21,191	20,809	20,428
	80/67	Total Cooling	38,564	37,341	36,117	34,894	33,853	32,630	31,223	30,000	28,848	27,696	26,544	25,392	24,240	23,088
		Sensible Cooling	26,924	26,338	25,753	25,167	24,795	24,209	23,411	22,825	22,442	22,058	21,675	21,292	20,909	20,525
	85/72	Total Cooling	40,427	39,541	38,654	37,767	36,881	35,994	35,107	34,221	32,907	31,592	30,278	28,964	27,650	26,336
		Sensible Cooling	25,809	25,390	24,972	24,553	24,135	23,716	23,298	22,879	22,495	22,111	21,726	21,342	20,958	20,574
I48H1	75/62	Total Cooling	37,907	36,822	35,736	34,651	33,566	32,480	31,395	30,310	29,083	27,855	26,628	25,401	24,174	22,947
		Sensible Cooling	28,515	27,948	27,381	26,813	26,246	25,679	25,112	24,545	24,060	23,575	23,090	22,605	22,120	21,635
	80/67	Total Cooling	41,949	40,742	39,535	38,328	37,289	36,082	34,707	33,500	32,144	30,788	29,431	28,075	26,719	25,363
		Sensible Cooling	28,256	27,730	27,204	26,678	26,145	25,619	25,101	24,575	24,089	23,604	23,118	22,633	22,147	21,662
	85/72	Total Cooling	38,661	38,402	38,142	37,883	37,623	37,364	37,105	36,845	35,354	33,862	32,370	30,879	29,387	27,895
		Sensible Cooling	27,931	27,410	26,889	26,369	25,848	25,327	24,806	24,286	23,806	23,326	22,846	22,366	21,887	21,407
I60H1	75/62	Total Cooling	44,473	43,096	41,719	40,342	38,965	37,588	36,211	34,833	33,589	32,345	31,100	29,856	28,611	27,367
		Sensible Cooling	32,758	32,084	31,410	30,736	30,062	29,388	28,714	28,040	27,480	26,920	26,359	25,799	25,239	24,678
	80/67	Total Cooling	49,215	47,685	46,154	44,623	43,092	41,562	40,031	38,500	37,125	35,749	34,374	32,998	31,623	30,247
		Sensible Cooling	32,461	31,834	31,208	30,581	29,955	29,328	28,702	28,075	27,514	26,953	26,392	25,831	25,270	24,709
	85/72	Total Cooling	53,966	52,306	50,645	48,985	47,325	45,665	44,005	42,345	40,832	39,319	37,806	36,293	34,781	33,268
		Sensible Cooling	32,087	31,467	30,846	30,226	29,606	28,985	28,365	27,745	27,190	26,636	26,081	25,527	24,973	24,418

Notes:
- Unit compressor cooling operation below 60°F (15.5°C) uses a Low Ambient Control (LAC).
- 1000 BTUH = .29307 kW
- Outdoor air temperatures provided are an average of the condenser inlet air temperature.

HEATING APPLICATION DATA AT RATED AIRFLOW - PART LOAD HEATING

MODEL	INDOOR D.B.	HEATING CAPACITY (BTUH)	OUTDOOR DRY BULB TEMPERATURE												
			0°F -17.7°C	5°F -15°C	10°F -12.2°C	15°F -9.4°C	20°F -6.6°C	25°F -3.8°C	30°F -1.1°C	35°F 1.6°C	40°F 4.4°C	45°F 7.2°C	50°F 10°C	55°F 12.7°C	60°F 15.5°C
I30H1	70°F 21.1°C	BTUH	6,550	8,100	9,650	11,200	12,750	14,300	15,850	17,400	18,500	19,600	21,120	22,640	24,160
		WATTS	1520	1556	1582	1601	1615	1627	1637	1645	1660	1674	1717	1756	1791
		COP	1.26	1.53	1.79	2.05	2.31	2.58	2.84	3.10	3.27	3.43	3.60	3.78	3.95
I36H1		BTUH	8,981	10,313	11,644	12,975	14,306	15,638	16,969	18,300	20,300	22,300	24,060	25,820	27,580
		WATTS	1600	1669	1727	1776	1819	1855	1887	1915	1891	1872	1869	1866	1864
		COP	1.65	1.81	1.98	2.14	2.31	2.47	2.64	2.80	3.15	3.49	3.77	4.05	4.34
I42H1		BTUH	10,169	11,888	13,606	15,325	17,044	18,763	20,481	22,200	24,275	26,350	28,110	29,870	31,630
		WATTS	1985	2022	2051	2074	2093	2108	2121	2133	2172	2206	2190	2177	2165
		COP	1.50	1.72	1.94	2.17	2.39	2.61	2.83	3.05	3.28	3.5	3.76	4.02	4.28
I48H1		BTUH	12,588	14,475	16,363	18,250	20,138	22,025	23,913	25,800	27,700	29,600	32,050	34,500	36,950
		WATTS	2323	2389	2443	2487	2524	2556	2583	2607	2524	2,457	2518	2572	2621
		COP	1.59	1.78	1.96	2.15	2.34	2.53	2.71	2.9	3.22	3.53	3.73	3.93	4.13
I60H1		BTUH	12,613	15,225	17,838	20,450	23,063	25,675	28,288	30,900	33,138	35,375	38,170	40,965	43,760
		WATTS	2133	2367	2565	2736	2885	3015	3131	3233	3147	3076	3201	3317	3426
		COP	1.73	1.89	2.04	2.19	2.34	2.50	2.65	2.80	3.09	3.37	3.49	3.62	3.74

Notes:
- Performance data at rated CFM. Data includes defrost operation below 45°F (7.2°C) outdoor temperatures.
- Outdoor air temperatures provided are an average of the condenser inlet air temperature.
- Supplemental heaters are recommended for applications requiring heating below a 15°F (-9.4°C) outdoor temperature.
- 1000 BTUH = .29307 kW

ELECTRICAL SPECIFICATIONS: I30 TO I60 UNITS WITH AND WITHOUT DEHUMIDIFICATION

MODEL	Rated Volts & Phase	No. Field Power Circuits	Single Circuit				Dual Circuit							
			Minimum Circuit Ampacity	Maximum External Fuse or Ckt. Brkr.	Field Power Wire Size	Ground Wire	Minimum Circuit Ampacity		Maximum External Fuse or Ckt. Breaker		Field Power Wire Size		Ground Wire Size	
							Ckt. A	Ckt. B	Ckt. A	Ckt. B	Ckt. A	Ckt. B	Ckt. A	Ckt. B
I30H1-A0Z	230/208-1	1	22	35	8	10								
A05		1	48	50	8	10								
A10		1 or 2	74	80	4	8	48	30	50	30	8	10	10	10
I30H1-B0Z	230/208-3	1	17	25	10	10								
B06		1	35	35	8	10								
B09		1	44	45	8	10								
I30H1-C0Z	460-3	1	9	10	14	14								
C06		1	18	20	12	12								
C09		1	22	25	10	10								
I36H1-A0Z	230/208-1	1	26	40	8	10								
A05		1	52	60	6	10								
A10		1 or 2	78	80	4	8	26	52	40	60	8	6	10	10
A15		1 or 2	84	90	4	8	26	52	40	60	8	6	10	10
I36H1-B0Z	230/208-3	1	22	30	10	10								
B06		1	40	45	8	10								
B09		1	49	50	8	10								
B15		1	51	60	6	10								
I36H1-C0Z	460-3	1	11	15	14	14								
C06		1	20	20	12	12								
C09		1	24	25	10	10								
C15		1	28	30	10	10								
I42H1-A0Z	230/208-1	1	30	45	8	10								
A05		1	56	60	6	10								
A10		1 or 2	82	90	4	8	56	26	60	30	6	8	10	10
A15		1 or 2	82	90	4	8	56	52	60	60	6	6	10	10
I42H1-B0Z	230/208-3	1	25	35	10	10								
B06		1	43	50	8	10								
B09		1	52	60	6	10								
B15		1	52	60	6	10								
I42H1-C0Z	460-3	1	12	15	14	14								
C06		1	21	25	10	10								
C09		1	26	30	10	10								
C15		1	28	30	10	10								
I48H1-A0Z	230/208-1	1	34	50	8	10								
A04		1	54	60	6	10								
A05		1 or 2	59	70	6	8	35	26	45	30	8	10	10	10
A10		1 or 2	85	90	3	8	35	52	45	60	8	6	10	10
A15		1 or 2	85	90	3	8	35	52	45	60	8	6	10	10
A20		1 or 2	110	110	2	6	59	52	60	60	6	6	10	10
I48H1-B0Z	230/208-3	1	26	35	10	10								
B06		1	44	50	8	10								
B09		1	53	60	6	10								
B15		1	53	60	6	10								
B18		1	53	60	6	10								
I48H1-C0Z	460-3	1	12	15	14	14								
C06		1	21	30	10	10								
C09		1	26	30	10	10								
C15		1	26	30	10	10								
C18		1	26	30	10	10								
I60H1-A0Z	230/208-1	1	44	60	8	10								
A05		1 or 2	70	80	4	8	44	26	60	30	8	10	10	10
A10		1 or 2	96	100	3	8	44	52	60	60	8	6	10	10
A15		1 or 2	96	100	3	8	44	52	60	60	8	6	10	10
A20		1 or 2	112	120	2	6	60	52	60	60	6	6	10	10
I60H1-B0Z	230/208-3	1	31	45	8	10								
B06		1	49	60	8	10								
B09		1	58	60	6	10								
B15		1	58	60	6	10								
B18		2	–	–	–	–	31	54	45	60	8	6	10	10
I60H1-C0Z	460-3	1	15	20	12	12								
C06		1	25	30	10	10								
C09		1	29	30	10	10								
C15		1	29	30	10	10								
C18		1	29	30	10	10								

NOTE: Dash "-" replaced with a "D" in the unit model number for dehumidification units.

IMPORTANT: Based on 75°C copper wire. All wiring must conform to the National Electrical Code and all local codes. While this electrical data is presented as a guide, it is important to electrically connect properly sized fuses & conductor wires in accordance with the National Electrical Code & all local codes. The "Minimum Circuit Ampacity" values are to be used for sizing the field power conductors. Refer to the National Electrical Code (latest version), Article 310 for power conductor sizing.

ADDITIONAL ELECTRIC HEAT INFORMATION

Minimum Circuit Ampacity (MCA): MCA is the highest steady-state electrical current that the I-TEC unit should see when operating correctly. MCA is used to calculate the minimum field wire size required and is also referenced when sizing external fuses or circuit breakers. MCA is calculated using formulas provided in UL1995 4th Edition.

Maximum External Fuse or Circuit Breaker (MOCP): Maximum Over-Current Protection is a calculated value provided that determines the maximum size of the over-current protection device including time delay fuses and circuit breakers. 230VAC products will include a circuit breaker properly sized for the product. Breaker Amp load ratings will be between the MCA (minimum) and MOCP (maximum) electrical data provided. 460VAC products will ship with a toggle disconnect and will rely on an external means of over-current protection. MOCP is calculated using formulas provided in UL1995 4th Edition.

Emergency Heat: Electric heat use above 10kw for single phase and 9kw for three phase equipment is considered emergency heat and will not operate concurrently with heat pump compessor operation.

ELECTRIC HEAT TABLE - REFER TO ELECTRICAL SPECIFICATIONS FOR AVAILABILITY BY UNIT MODEL

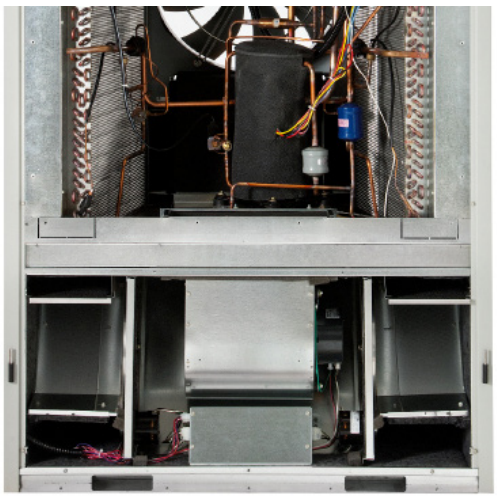
NOMINAL KW	AT 240V (1)				AT 208V (1)				AT 480V (2)			AT 460V (2)		
	KW	1-PH AMPS	3-PH AMPS	BTUH	KW	1-PH AMPS	3-PH AMPS	BTUH	KW	3-PH AMPS	BTUH	KW	3-PH AMPS	BTUH
4.0	4.0	16.7		13,652	3.00	14.4		10,239						
5.0	5.0	20.8	12.5	17,065	3.75	18.0	10.4	12,799						
6.0	6.0		14.4	20,478	4.50		12.5	15,359	6.0	7.2	20,478	5.52	6.9	18,840
8.0	8.0	33.3		27,304	6.00	28.8		20,478						
9.0	9.0		21.7	30,717	6.75		18.7	23,038	9.0	10.8	30,717	8.28	10.4	28,260
10.0	10.0	41.7		34,130	7.50	36.1		25,598						
15.0	15.0	62.5	36.1	51,195	11.25	54.1	31.2	38,396	15.0	18.0	51,195	13.80	17.3	47,099
18.0	18.0		43.3	61,434	13.50		37.5	46,076	18.0	21.7	61,434	16.56	20.8	56,519
20.0	20.0	83.3		68,260	15.00	72.1		51,195						

(1) Listed electric heaters are available for 230/208V units only.
(2) Listed electric heaters are available for 480V units only.

VENTILATION OPTION SELECTION CHART

VENT CODE	DESCRIPTION	VENT OPERATION
B	Blank-Off Plate	No ventilation air provided to the indoor area.
M	Select Speed Commercial Room Ventilator	Powered ECM outdoor intake and exhaust fans. Intake fan has 3 selectable speeds to control indoor air being exhausted from the room. 3 fixed selectable speeds for intake and exhaust fan allow for basic room pressure adjustment. Vent is capable of up to 525 cfm outdoor air intake.
N	Commercial Room Ventilator with Economizer Functionality	Powered ECM outdoor intake and exhaust fans. Intake fan has a solid-state board with user adjustable 0-10V ventilation amount to control outdoor air being brought into the room. Exhaust fan has a solid-state board with user adjustable 0-10V ventilation amount to control outdoor air being exhausted into the room. Independent selectable speeds for intake and exhaust fan control can be used to slightly adjust room pressure during test and balance procedures. Vent includes adjustable outdoor dry bulb temparature. Vent is capable of up to 525 cfm outdoor air intake.
Q	Modulating Commercial Room Ventilator	Powered ECM outdoor intake and exhaust fans. Intake fan has a solid-state board with user adjustable 0-10V ventilation amount to control outdoor air being brought into the room. Exhaust fan has a solid-state board with user adjustable 0-10V ventilation amount to control outdoor air being exhausted from the room. Independent incremental speed adjustment for intake and exhaust fan control can be used to slightly adjust room pressure during test and balance procedures. Vent is capable of up to 525 cfm outdoor air intake.
R	Modulating Energy Recovery Ventilator	Powered ECM outdoor intake and exhaust fans with dual energy recovery wheels. Intake fan has a solid-state board with user adjusted 0-10V ventilation amount to control outdoor air being brought into the room. Exhaust fan has a solid-state board with user adjustable 0-10V ventilation amount to control outdoor air being exhausted from the room. Independent selectable speeds for intake and exhaust fan control can be used to slightly adjust room pressure during test and balance procedures. Duel energy recovery wheels provide pre-conditioned air to the indoor space to save on energy and provide a more confortable indoor environment. Vent is capable of up to 450 cfm outdoor air intake.

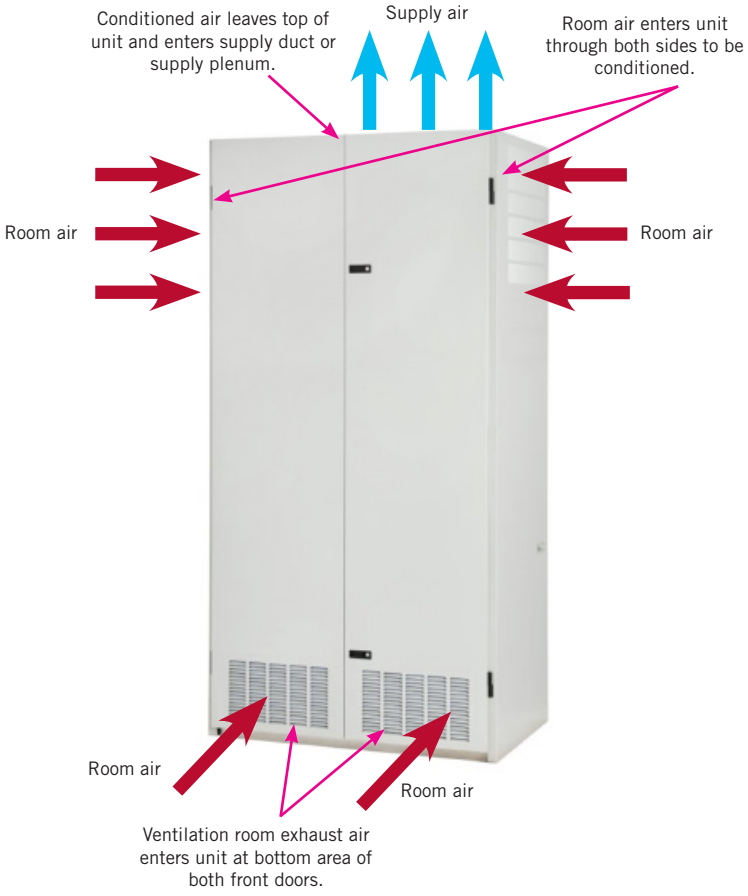
Blank-off plate



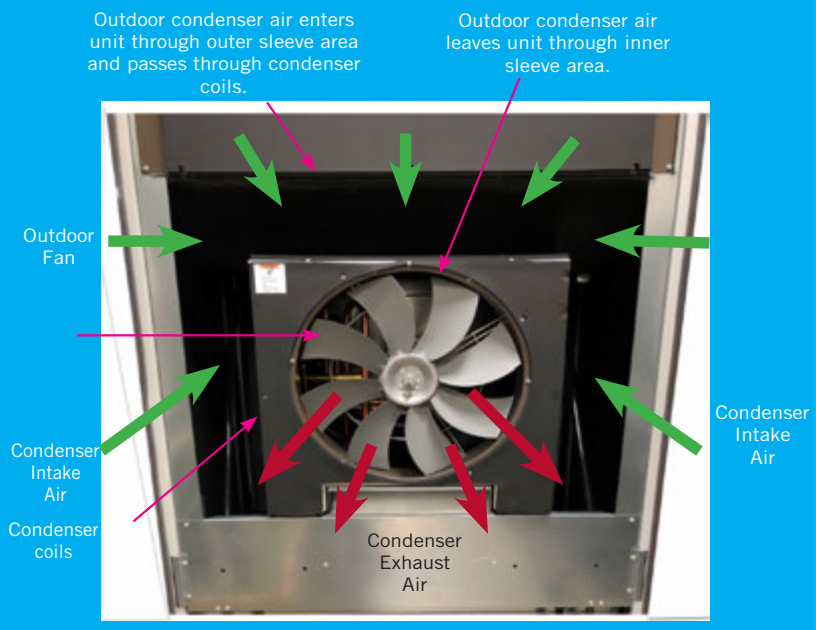
Commercial Room Ventilator-Fixed and Modulating

////// UNIT AIRFLOW PATHS

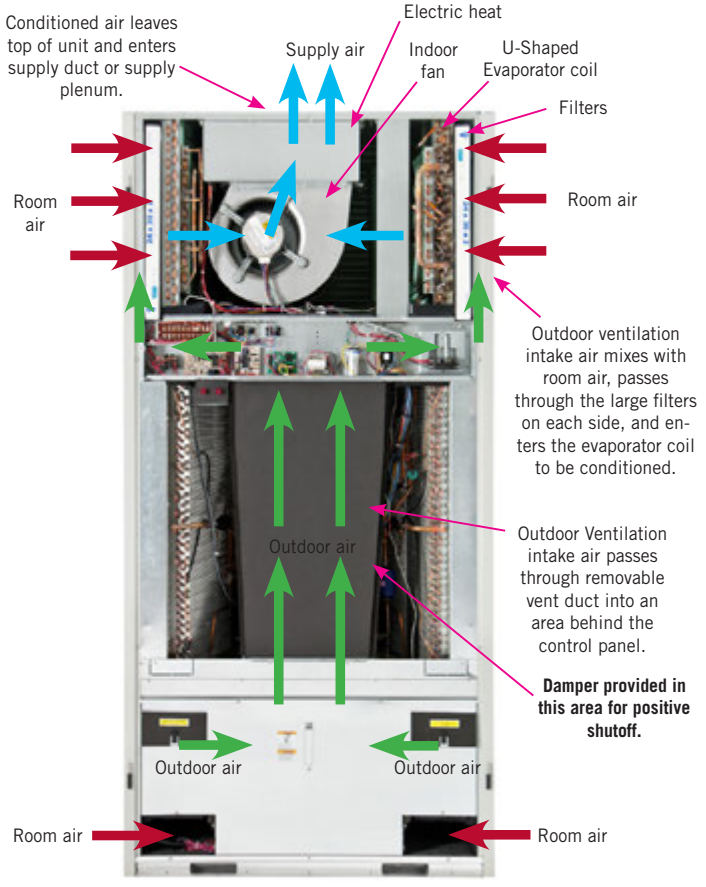
Airflow Path Inside Room



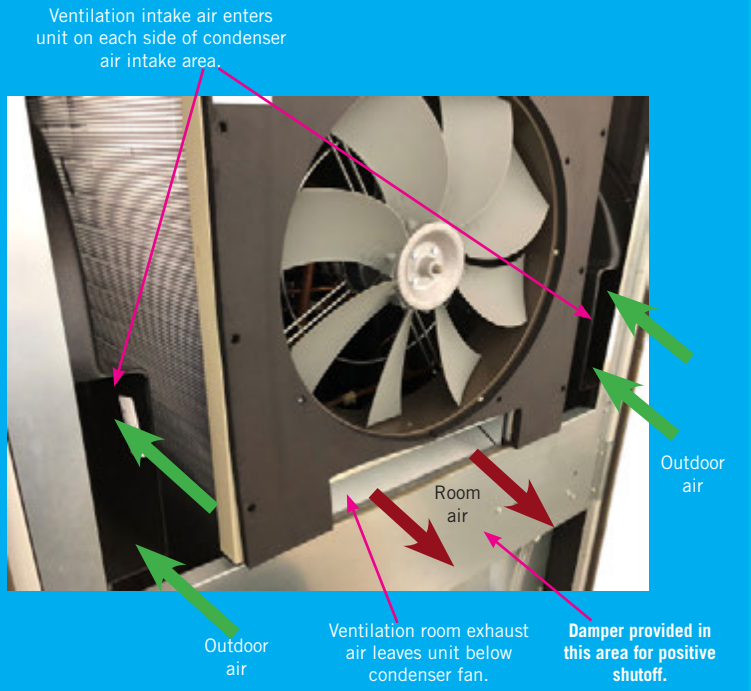
Condenser Airflow Path



Vent Airflow Path Inside Unit



Vent Airflow Path Outside Unit



SUMMER COOLING PERFORMANCE
(INDOOR DESIGN CONDITIONS 75°DB/62°WB)

Ambient O.D.		VENTILATION RATE 450 CFM 65% EFFICIENCY						VENTILATION RATE 375 CFM 66% EFFICIENCY						VENTILATION RATE 300 CFM 67% EFFICIENCY					
DB/WB	F	VLT	VLS	VLL	HRT	HRS	HRL	VLT	VLS	VLL	HRT	HRS	HRL	VLT	VLS	VLL	HRT	HRS	HRL
105	75	21465	14580	6884	13952	9477	4475	17887	12150	5737	11805	8018	3786	14310	9720	4590	9587	6512	3075
	70	14580	14580	0	9477	9477	0	12150	12150	0	8018	8018	0	9720	9720	0	6512	6512	0
	65	14580	14580	0	9477	9477	0	12150	12150	0	8018	8018	0	9720	9720	0	6512	6512	0
100	80	31590	12150	19440	20533	7897	12635	26325	10125	16200	17374	6682	10692	21060	8100	12960	14110	5427	8683
	75	21465	12150	9314	13952	7897	6054	17887	10125	7762	11805	6682	5123	14310	8100	6210	9587	5427	4160
	70	12352	12150	202	8029	7897	131	10293	10125	168	6793	6682	111	8235	8100	135	5517	5427	90
	65	12150	12150	0	7897	7897	0	10125	10125	0	6682	6682	0	8100	8100	0	5427	5427	0
	60	12150	12150	0	7897	7897	0	10125	10125	0	6682	6682	0	8100	8100	0	5427	5427	0
95	80	31590	9720	21870	20533	6318	14215	26325	8100	18225	17374	5345	12028	21060	6480	14580	14110	4341	9768
	75	21465	9720	11744	13952	6318	7634	17887	8100	9787	11805	5345	6459	14310	6480	7830	9587	4341	5246
	70	12352	9720	2632	8029	6318	1711	10293	8100	2193	6793	5345	1447	8235	6480	1755	5517	4341	1175
	65	9720	9720	0	6318	6318	0	8100	8100	0	5345	5345	0	6480	6480	0	4341	4341	0
	60	9720	9720	0	6318	6318	0	8100	8100	0	5345	5345	0	6480	6480	0	4341	4341	0
90	80	31590	7290	24300	20533	4738	15794	26325	6075	20250	17374	4009	13365	21060	4860	16200	14110	3256	10854
	75	21465	7290	14175	13952	4738	9213	17887	6075	11812	11805	4009	7796	14310	4860	9450	9587	3256	6331
	70	12352	7290	5062	8029	4738	3290	10293	6075	4218	6793	4009	2784	8235	4860	3375	5517	3256	2261
	65	7290	7290	0	4738	4738	0	6075	6075	0	4009	4009	0	4860	4860	0	3256	3256	0
	60	7290	7290	0	4738	4738	0	6075	6075	0	4009	4009	0	4860	4860	0	3256	3256	0
85	80	31590	4860	26730	20533	3159	17374	26325	4050	22275	17374	2672	14701	21060	3240	17820	14110	2170	11939
	75	21465	4860	16605	13952	3159	10793	17887	4050	13837	11805	2672	9132	14310	3240	11070	9587	2170	7416
	70	12352	4860	7492	8029	3159	4870	10293	4050	6243	6793	2672	4120	8235	3240	4995	5517	2170	3346
	65	4860	4860	0	3159	3159	0	4050	4050	0	2672	2672	0	3240	3240	0	2170	2170	0
	60	4860	4860	0	3159	3159	0	4050	4050	0	2672	2672	0	3240	3240	0	2170	2170	0
80	75	21465	2430	19035	13952	1579	12372	17887	2025	15862	11805	1336	10469	14310	1620	12690	9587	1085	8502
	70	12352	2430	9922	8029	1579	6449	10293	2025	8268	6793	1336	5457	8235	1620	6615	5517	1085	4432
	65	4252	2430	1822	2764	1579	1184	3543	2025	1518	2338	1336	1002	2835	1620	1215	1899	1085	814
	60	2430	2430	0	1579	1579	0	2025	2025	0	1336	1336	0	1620	1620	0	1085	1085	0
75	70	12352	0	12352	8029	0	8029	10293	0	10293	6793	0	6793	8235	0	8235	5517	0	5517
	65	4252	0	4252	2764	0	2764	3543	0	3543	2338	0	2338	2835	0	2835	1899	0	1899
	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

WINTER HEATING PERFORMANCE
(INDOOR DESIGN CONDITIONS 70°F DB)

Ambient O.D.	VENTILATION RATE					
	450 CFM 80% EFFICIENCY		375 CFM 81% EFFICIENCY		300 CFM 82% EFFICIENCY	
DB/°F	WVL	WHR	WVL	WHR	WVL	WHR
65	2430	1944	2025	1640	1620	1328
60	4860	3888	4050	3280	3240	2656
55	7290	5832	6075	4920	4860	3985
50	9720	7776	8100	6561	6480	5313
45	12150	9720	10125	8201	8100	6642
40	14580	11664	12150	9841	9720	7970
35	17010	13608	14175	11481	11340	9298
30	19440	15552	16200	13122	12960	10627
25	21870	17496	18225	14762	14580	11955
20	24300	19440	20250	16402	16200	13284
15	26730	21384	22275	18042	17820	14612

NOTE: Sensible performance only is shown for winter application.

LEGEND:

VLT = Ventilation Load - Total
VLS = Ventilation Load - Sensible
VLL = Ventilation Load - Latent
HRT = Heat Recovery - Total
HRS = Heat Recovery - Sensible
HRL = Heat Recovery - Latent
WVL = Winter Ventilation Load
WHR = Winter Heat Recovery

UNIT FILTER OPTIONS

Unit filter options for the Bard interior solutions provide multiple solutions for air filtration and indoor air quality improvement. Filter options allow for both room air passing through the unit and outdoor air provided by ventilation options to be cleaned before entering the indoor environment. Various filter types are available between MERV2 and MERV13 ratings. It is important to review application requirements, state and local codes, and ASHRAE recommendations to provide a clean, safe indoor area for occupants or heat generating equipment. Filter cleaning or replacement is an important part of ensuring that your Bard equipment is operating at optimal performance and indoor sound levels. A routine filter maintenance program based on room conditions is important, and higher MERV rated filters will normally require frequent filter changes. Filter trays are built into the unit with low filter bypass. Filter switch options are available that will help indicate when filter replacement or cleaning is necessary when used with a thermostat option to indicate filter change maintenance is needed.

"P" Filter Code Option – 2" Disposable MERV8 Filter
The 2" disposable pleated MERV8 filter is an optional feature on all models, and is normally used for moderate dust level areas where standard filtration is required. Media material is fiber based, provides high performance with an extended surface area that offers low-pressure drop. When maintenance is required, the filter is replaced. This option offers standard filtration, minimal air resistance, and average maintenance costs.

"M" Filter Code Option – 2" Disposable MERV11 Filter
The 2" disposable pleated MERV11 filter is an optional feature on all models, and is normally used for moderate to high filtration requirements. Media material is fiber based, provides high performance with an extended surface area that offers low-pressure drop. When maintenance is required, the filter is replaced. This option offers higher filtration, minimal air resistance, and average maintenance costs.

"N" Filter Code Option – 2" Disposable MERV13 Filter
The 2" disposable pleated MERV13 filter is an optional feature on all models, and is normally used for high filtration requirements. MERV13 filters are typically used where filtration of small particulates is required to offer a high level of indoor air quality. Often these filters are used in occupied areas including classrooms, gymnasiums, cafeterias, and other areas where filtration is at a high importance level. Media material is fiber based, provides high performance with an extended surface area that offers low-pressure drop. Filter replacement in 3-month or less intervals is recommended for the best filter and unit performance.

"A" Filter Code Option – 2" Disposable MERV13 Filter with UVC-LED Light
The 2" disposable pleated MERV13 filter is included with this option, and also a UVC-LED light used for disinfection. UVC-LED Light is a type of ultraviolet germicidal irradiation (UVGI) that disinfects the air through shortwavelength ultraviolet light. See UVC-LED Light specifications for further details.

FILTER REPLACEMENT PART NUMBER CHART

UNIT MODEL	FILTER CODE	FILTER MERV RATING	NUMBER OF FILTERS USED	BARD PART NUMBER	FILTER SIZE	FILTRATION LEVEL
ALL UNITS	**P**	**MERV 8**	1	7004-025	24 x 30 x 2	Average Filtration, 2" Thickness Pleated Disposable Media.
	M	**MERV 11**	1	7004-059	24 x 30 x 2	Above Average Filtration, 2" Thickness Pleated Disposable Media.
	N, A	**MERV 13**	1	7004-061	24 x 30 x 2	High Filtration, 2" Thickness Pleated Disposable Media.

CABINET FINISHES, DOOR VINYL GRAPHICS AND CONSTRUCTION

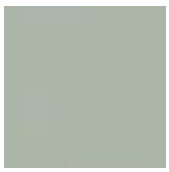
Unit cabinet finish options provide a way to have the Bard I-Tec blend in with existing building colors, provide additional corrosion protection, or reduce unit product weight. Unit construction is comprised of a 20 gauge cabinet with 16 gauge structural components. Cabinet components are insulated with a non-fiberglass formaldehyde free insulation that has a high "R" value, is easy to clean with a FSK foil backing, and resists delamination.

Painted Steel Finish
This cabinet option uses zinc coated steel panels that are cleaned, rinsed, sealed and dried before a polyurethane primer is applied. The cabinet paint coating is comprised of a baked on textured enamel. The resulting finish is designed to withstand over 1000 hours of salt spray tests per ASTM B117-03.

The following painted steel colors are available:
"X" Cabinet Finish Option – Beige
"1" Cabinet Finish Option – White
"4" Cabinet Finish Option – Gray


X–*Beige*

1–*White*


4–*Buckeye Gray*

Door Vinyl Graphics Options
Unit cabinet graphics options provide a way to enhance the appearance of the unit.

The following vinyl graphics are available:
"X" No Graphics Option
"1" Vinyl Graphics Option – Books
"2" Vinyl Graphics Option – Paint Brush

1–*Books*


2–*Paint Brush*

/////// EVAPORATOR COIL AND CONDENSER COIL COATINGS RESISTANCE LIST

The Technicoat AA coil coating provides a robust corrosion protection solution designed for indoor evaporator and outdoor condenser coils. Both field and lab testing results show no deterioration in harsh environments including refineries, mining operations, paper/pulp processing plants, and wastewater treatment facilities. ASTM B-117 testing includes over 10,000 hours with over 3,000 hours of SWAAT test time.

Chemical resistance includes the following:

- Alkalines including Ammonaic solution, Potassium Hydroxide, Calcium Hydroxide, and Magnesium Hydroxide.
- Alcohols including Isopropanol, Butanol, Amyl Alcohol, Benzyl Alcohol, Diaceton Alcohol, Glycerine, Propanol, and Pentanol
- Aliphatic Hydrocarbons including White Spirit, Shellsol, Bitumen, Isopar G, and Paraffin.
- Amines including Triethanolamine, Aniline Sulphate, Hexamethylenetetraamine, Phenyldiamine, Triethylamine, and Methylamine.
- Inorganic Compounds including Hydrogen Carbonate, Hydrogen Sulfide, Nitrous Acid, Sulphuric Acid, and Selenic Acid.
- Aromatic Hydrocarbons including Xylene, Toluene, Asphalt, Anthracene, Benzapherene, Gumlac, Benzine, and Naphtha.
- Fuels and Oils including Diesel, Fuel Oil, Petrol, Super Petrol, Lubricating Oils, Kerosene, Spheric Oils, LPG, and Mineral Oil.
- Ethers including Enthric Oils, Vegetable Oils, Butane, Acetylene, and Methane.
- Halogenated Hydrocarbons including Amyl Acetate, Propyl Acetate, Ethyl Oxalate, Butyl Acetate, and Butyl Propionate.
- Softeners including Palatinol C, Chloraparaffine 5XX, Dioctylphosphate, Desavin, Mesamol, and Dibutylphosphate.
- Organic Compounds including Benzoic Acid, Lactic Acid, Phenols, Fatty Acids, Malic Acid, and Picric Acid.
- Salts and water solutions including Sodium, Potassium, Calcium, Aluminum, Ammonium, Barium, Copper, Lead, and Lithium.
- Many other agents including Phosphor, Zinc, Glucose Syrup, Sulfur, Urea, Menthol, Antimony, Hydrogen, Rubber, and Shellac.

Special Properties:

- Anti-Odor
- Hydrophilic / Hydrophobic
- Anti-Corrosive

EXPOSURE CONDITIONS INCLUDE: Food Processing & Storage, Airports, Office Buildings, Hotels, Schools, Warehouses, Water Treatment, Breweries, Paper Mills, Refineries, Power Plants, Meat Processing Industries, Automotive Industries and other locations near shorelines, salt water and coastal applications.

Contact your local Bard distributor or representative for a list of all chemicals and additional chemical resistance information.

/////// EVAPORATOR COIL, CONDENSER COIL, AND CABINET COATINGS

Unit condenser and evaporator coils are designed, manufactured, and tested by Bard. A rifled copper hairpin design provides enhanced unit performance when used with a stamped aluminum fin for excellent heat transfer. End plate design includes extruded collars for hairpin tube protection. All coils are pressure tested before use and leak tested after unit construction. A copper tube and aluminum fin design coil is easy to clean and maintain through the life of the unit.

"X" Code Option – Standard Evaporator and Condenser Coils

Standard products include a green protective coating applied to the aluminum fin stock used for the evaporator coil. The evaporator coil coating is hydrophilic (attracts water) and allows for proper condensate drainage along with mild corrosion protection. Resistance to corrosive agents include ammonia, sodium hydroxide, sodium chloride, acidic solutions and solvents. Condenser coil construction is a copper hairpin with aluminum fin design that is easy to clean and maintain.

Unit coating options are also available that offer additional corrosion protection to the unit cabinet. Applications where external or internal cabinet components will be exposed to extremely harsh environments require additional protection to copper, steel, and other materials.

"1" Code Option – Corrosion Resistance Coated Evaporator and Standard Condenser Coil

Option includes a Technicoat AA protective coating applied to the entire evaporator coil. This provides the best resistance to corrosive agents, and the coating process ensures the core of the aluminum fin pack is covered. Dehumidification units also include a coated hot gas reheat coil. Standard condenser coil construction is a copper hairpin with aluminum fin design that is easy to clean and maintain. This option provides the best indoor coil protection when harmful chemicals or agents may be present in the indoor airstream. The exterior and interior unit cabinet is not coated with this option.

"2" Code Option – Standard Evaporator and Corrosion Resistance Coated Condenser Coil

Option includes a green protective coating applied to the aluminum fin stock used for the evaporator coil. The evaporator coil coating is hydrophilic (attracts water) and allows for proper condensate drainage along with mild corrosion protection. Resistance to corrosive agents include ammonia, sodium hydroxide, sodium chloride, acidic solutions and solvents. A Technicoat AA protective coating is applied to the entire condenser coil. This provides the best resistance to corrosive agents, and the coating process ensures the core of the aluminum fin pack is covered. This option provides the best outdoor coil protection when harmful chemicals or agents may be present in the outdoor airstream. Also provides a level of protection when units are installed in applications near salt water. The exterior and interior unit cabinet is not coated with this option.

"3" Code Option – Corrosion Resistance Coated Evaporator and Corrosion Resistance Coated Condenser Coil

Option includes a Technicoat AA protective coating applied to the entire evaporator coil. This provides the best resistance to corrosive agents, and the coating process ensures the core of the aluminum fin pack is covered. Dehumidification units also include a coated hot gas reheat coil. A Technicoat AA protective coating is applied to the entire condenser coil. This provides the best coil resistance to corrosive agents, and the coating process ensures the core of the aluminum fin pack is covered. The exterior and interior unit cabinet is not coated with this option.

WALL SLEEVES (REQUIRED OPTION - SELECT ONE)

Sleeve Model #	Unit Compatability	Sleeve Height x Width	Wall Flange	4" Wall Adapter	Wall Depth with 1" Louver	Wall Depth with 2" Louver	Wall Depth with 4" Louver	Wall Depth with 8" Louver	Installation Instructions
IWS-A	I30-I60	47.75 x 42.06	Out	No	5.5" - 8.5"	6.5" - 8.5"	NA	NA	2100-562
IWS-B	I30-I60	47.75 x 42.06	Out	No	8.0" to 13.5"	9.0" to 13.5"	NA	NA	2100-562
IWS-C	I30-I60	47.75 x 42.06	Out	No	13.0" - 23.5"	14.0" - 23.5"	NA	NA	2100-562
IWS-A23	I30-I42	46.65 x 36.18	Out	Yes	5.5" - 8.5"	6.5" - 8.5"	NA	NA	2100-686
IWS-B23	I30-I42	46.65 x 36.18	Out	Yes	8.0" to 13.5"	9.0" to 13.5"	NA	NA	2100-686
IWS-C23	I30-I42	46.65 x 36.18	Out	Yes	13.0" - 23.5"	14.0" - 23.5"	NA	NA	2100-686
IWSR-A23	I30-I42	46.65 x 36.18	In	Yes	5.5" - 8.5"	6.5" - 8.5"	NA	NA	2100-756
IWSR-B23	I30-I42	46.65 x 36.18	In	Yes	8.0" to 13.5"	9.0" to 13.5"	NA	NA	2100-756
IWSR-C23	I30-I42	46.65 x 36.18	In	Yes	13.0" - 23.5"	14.0" - 23.5"	NA	NA	2100-756
IWS-A8H	I30-I60	48.06 x 42.31	Out	No	NA	NA	8.0" - 12.0"	NA	2100-626
IWS-B8H	I30-I60	48.06 x 42.31	Out	No	NA	NA	12.0" - 20.0"	12.0" - 15.0"	2100-626
IWS-C8H	I30-I60	48.06 x 42.31	Out	No	NA	NA	NA	15.0" - 20.5"	2100-626

① Above table based on I-TEC unit being installed flush to inside of wall.
② 8" Depth Storm Louvers are field supplied

OUTDOOR LOUVER GRILLES (REQUIRED OPTION - SELECT ONE)

Louver Model #	** Louver Colors (See chart for details)	Louver Insert Depth	Louver Height x Width	Louver Flange	Blade Spacing	Blade Angle	Bird Screen	Specifications
ILS1-**	All Colors	1"	47.25" x 41.75"	2.18"	1"	45°	.5" Mesh	F1972
ILA2-**	All Colors	2"	47.25" x 41.75"	2.38"	1"	45°	.5" Mesh	F1971
ILST4-**	All Colors	3.68"	47.25" x 41.75"	2.68"	4"	MULTI	.5" Mesh	F1970
ISSG1-**	-10 Anodized Alum.	1"	46.19" 35.75"	2.18"	1"	45°	.5" Mesh	NA
ISSG2-**	-10 Anodized Alum.	2"	46.19" 35.75"	2.38"	1"	45°	.5" Mesh	NA
ISRG1-**	-10 Anodized Alum.	1"	43.22" x 32.75"	2.18"	1"	45°	.5" Mesh	NA
ISRG2-**	-10 Anodized Alum.	2"	43.22" x 32.75"	2.38"	1"	45°	.5" Mesh	NA

ADDITIONAL LOUVER COLORS AVAILABLE — APPLIES TO ILS, ILA AND ILST LOUVERS

-**Color Code	Material	Color	Finish	Louver Availability						
				ILS1	ILA2	ILST4	ISSG1	ISSG2	ISRG1	ISRG2
-10	Aluminum	Aluminum	Anodized	X	X	X	X	X	X	X
-20	Aluminum	Medium Bronze	Powder Coat	X	X	X				
-30	Aluminum	Dark Bronze	Powder Coat	X	X	X				
-12	Aluminum	Arctic White	Powder Coat	X	X	X				
-14	Aluminum	Storm White	Powder Coat	X	X	X				
-18	Aluminum	Milano Beige	Powder Coat	X	X	X				
-32	Aluminum	Jet Black	Powder Coat	X	X	X				
-36	Aluminum	Graphite Gray	Powder Coat	X	X	X				
-40	Aluminum	School Bus Yellow	Powder Coat	X	X	X				
-42	Aluminum	Florida Orange	Powder Coat	X	X	X				
-44	Aluminum	School House Red	Powder Coat	X	X	X				
-46	Aluminum	Chili Red	Powder Coat	X	X	X				
-50	Aluminum	Deep Sea Blue	Powder Coat	X	X	X				
-52	Aluminum	Bahama Blue	Powder Coat	X	X	X				
-54	Aluminum	Ivy Green	Powder Coat	X	X	X				
-56	Aluminum	Sage Green	Powder Coat	X	X	X				
-**	Aluminum	Custom	Powder Coat	Per job basis and extended lead time. Contact Bard sales representative for details.						

② Available Special Order and requires additional lead-time. Reference Form S3508 for additional details.
- Custom Finishes are quoted on a project-by-project basis and pricing is determined by quantity, finish option and size.
- Custom Finishes are ordered/shipped directly from the louver supplier.
- Purchaser of Custom Finishes assumes liability for quantity, finish match and size.
- Contact your Bard Sales Representative for custom louver contact information.

DUCT FREE PLENUM BOX OPTIONS

Plenum Model #	Plenum Finish	Plenum Height	Supply Grille Color	Supply Air Grille Style	Supply Grille Locations	Hot Water Heating Coil	Installation Instructions
IPBDF8-*	Painted (-X,-1,-4)	8”	Aluminum	4-Way Adjustable	Front and Sides	No	7960-650
IPBDF12-*	Painted (-X,-1,-4)	12”	Aluminum	4-Way Adjustable	Front and Sides	No	7960-650
IPBDF18-*	Painted (-X,-1,-4)	18”	Aluminum	4-Way Adjustable	Front and Sides	No	7960-650
IPBDFH12-*	Painted (-X,-1,-4)	12”	Black	Fixed Linear Pattern, Sides w/Shutoff Dampers	Front and Sides	No	7960-650
IPBDFH18-*	Painted (-X,-1,-4)	18”	Black	Fixed Linear Pattern, Sides w/Shutoff Dampers	Front and Sides	No	7960-650
IPBDF10HW-*	Painted (-X,-1,-4)	10”	Aluminum	4-Way Adjustable	Front and Sides	Yes	7960-651
IPBDF12HW-*	Painted (-X,-1,-4)	12”	Aluminum	4-Way Adjustable	Front and Sides	Yes	7960-651

DUCTED PLENUM BOX OPTIONS

Plenum Model #	Plenum Finish	Plenum Height	Duct Shape	Duct Size	Duct Location (Facing Unit Front)	Hot Water Heating Coil	Installation Instructions
IPBDFH16HWS1-*	Painted (-X,-1,-4)	16”	Rectangular	9.88” x 42”	Front	Yes	7960-651
IPB16R22HW-*	Painted (-X,-1,-4)	22”	Round	16” O.D.	Right Side	Yes	7960-651
IPB16L22HW-*	Painted (-X,-1,-4)	22”	Round	16” O.D.	Left Side	Yes	7960-651
IHWC	Unfinished Insulated Galvanized Steel	11”	Rectangular	9.88” x 29.88”	Top	Yes	7960-651

RISER PLATFORMS TO LIFT UNIT AND INCREASE SILL HEIGHT FOR WALL SLEEVE

Riser Model #	Riser Finish	Riser Height	Riser Construction	Sleeve to Floor Sill Height	Unit with Riser Height	Installation Instructions
IRP-3-*	Galvanized riser with painted trim (-X,-1,-4)	3”	Base platform with rails. Dimples and brackets locate unit on riser. Not stackable.	34” - 37”	97”	7960-645
IRP-6-*	Galvanized riser with painted trim (-X,-1,-4)	6”	Base platform with rails. Dimples and brackets locate unit on riser. Not stackable.	37” - 40”	100”	7960-645
IRP-9-*	Galvanized riser with painted trim (-X,-1,-4)	9”	Heavy supporting frame. Dimples and brackets locate unit on riser. Not stackable.	40” - 43”	103”	7960-715
IRP-11-*	Galvanized riser with painted trim (-X,-1,-4)	11”	Heavy supporting frame. Dimples and brackets locate unit on riser. Not stackable.	43” - 46”	105”	7960-715
IRP-14-*	Galvanized riser with painted trim (-X,-1,-4)	14”	Heavy supporting frame. Dimples and brackets locate unit on riser. Not stackable.	46” - 49”	108”	7960-715

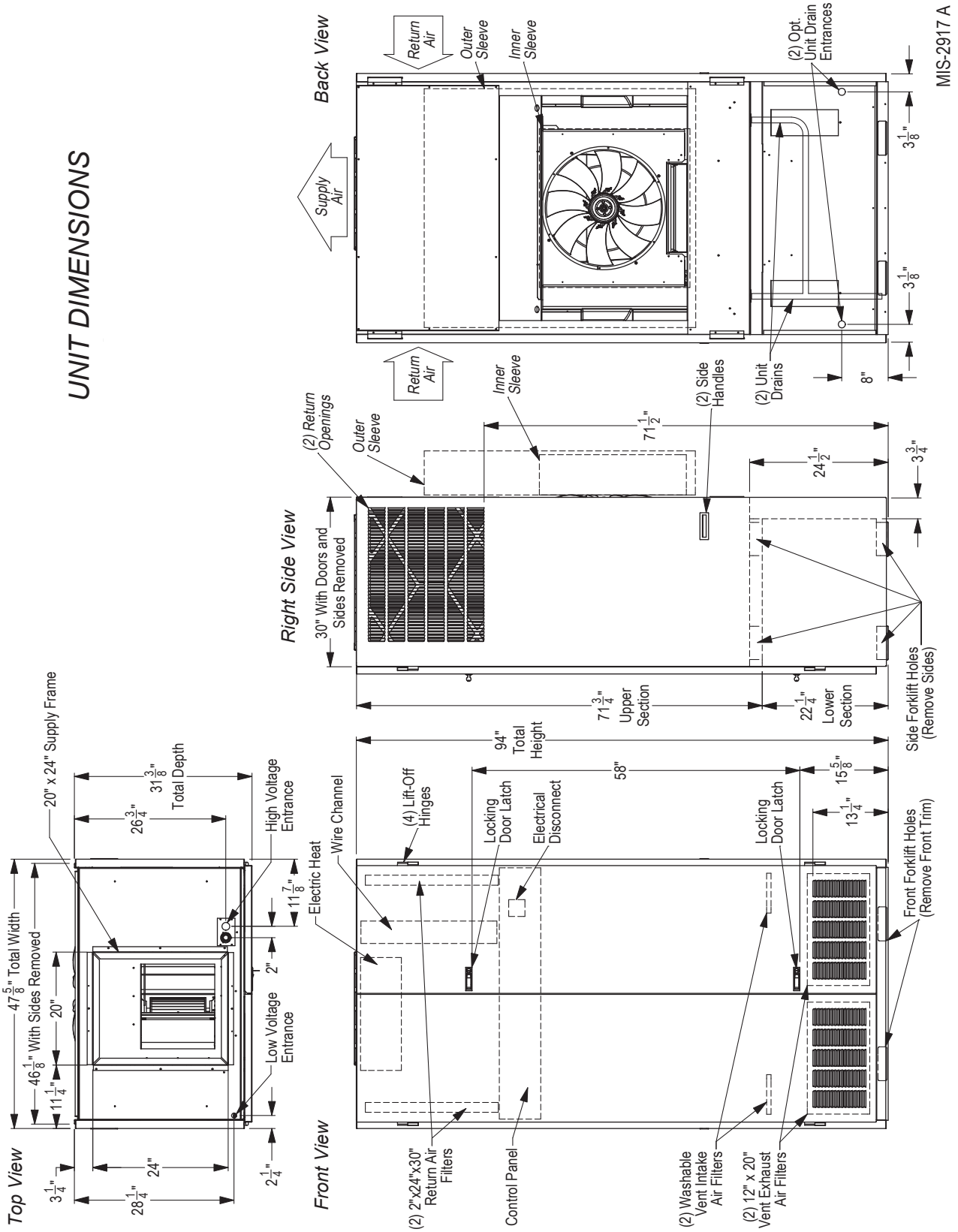
FINISH TRIM KITS FOR TOP AND SIDES OF UNIT

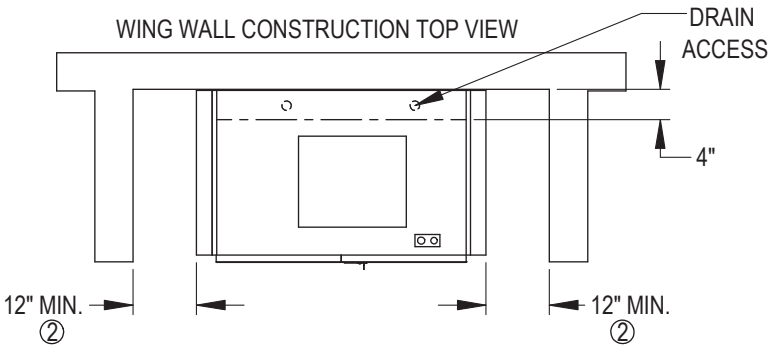
Trim Kit Model #	Kit Finish	Trim Install Location	Trim Height	Trim Depth	Installation Instructions
ICX28-*	Painted (-X,-1,-4)	Unit or Plenum Box Top to ceiling	Up to 28" for 10'-2" maximum ceiling height.	Front surface of unit to back of unit.	7960-655
IST4-*	Painted (-X,-1,-4)	Back of unit to indoor wall	floor level to 12' maximum ceiling height.	4" to 4.3" between wall and unit side.	7960-678
IST6-*	Painted (-X,-1,-4)	Back of unit to indoor wall	floor level to 12' maximum ceiling height.	6" to 6.3" between wall and unit side.	7960-678
IST8-*	Painted (-X,-1,-4)	Back of unit to indoor wall	floor level to 12' maximum ceiling height.	8" to 8.3" between wall and unit side.	7960-678
IST10-*	Painted (-X,-1,-4)	Back of unit to indoor wall	floor level to 12' maximum ceiling height.	10" to 10.3" between wall and unit side.	7960-678
IST14-*	Painted (-X,-1,-4)	Back of unit to indoor wall	floor level to 12' maximum ceiling height.	14" to 14.3" between wall and unit side.	7960-678
IST4L-*	Painted (-X,-1,-4)	Back of unit to indoor wall	floor level to 12'-10" maximum ceiling height.	4" to 4.3" between wall and unit side.	7960-678

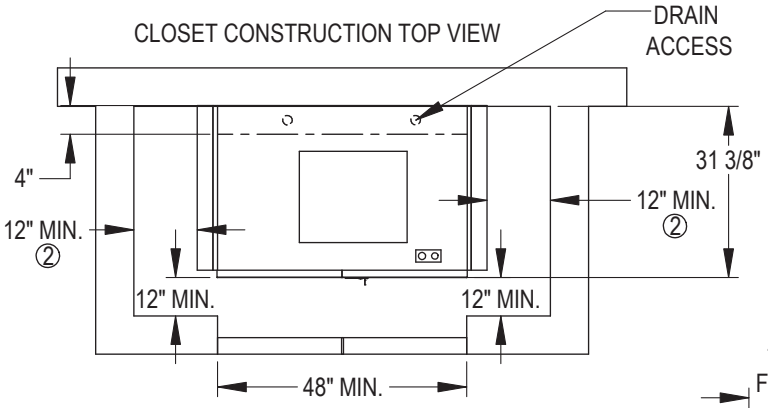
MISCELLANEOUS ACCESSORIES

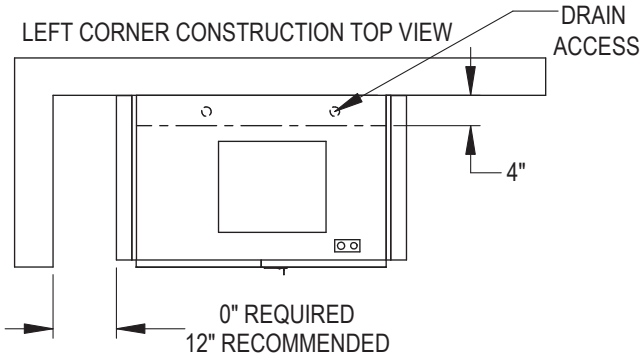
Model or Part #	Use	Description	Manual
ICURB740	Indoor wall curb	Raises outdoor condenser wall sleeve to a 40" sill height. Works with IWS-A, IWS-B, and IWS-C wall curbs. Requires drain.	2100-625
921-0041	Exhaust Sleeve	Exhaust sleeve assembly used for IWS-A wall sleeve. This may be used when installation requires a field fabricated outer intake sleeve.	NA
921-0042	Exhaust Sleeve	Exhaust sleeve assembly used for IWS-B wall sleeve. This may be used when installation requires a field fabricated outer intake sleeve.	NA
921-0043	Exhaust Sleeve	Exhaust sleeve assembly used for IWS-C wall sleeve. This may be used when installation requires a field fabricated outer intake sleeve.	NA
8620-344	UV Light Kit	Kit to add UV light to indoor airstream. Includes light, wires required, and installation instructions.	7960-913
IDMCK	Door mounted thermostat kit.	Kit to mount a thermostat to the right side door. Includes wire harness for easy disconnection when removing door and installation instructions.	7960-806
AHCK-2A	Anti-Huffing Locking Caps	Kit to install locking anti-huffing caps on the refrigerant line service ports. Service ports are located behind unit front doors.	7960-716
SK111	Hard Start Kit 230V-1PH	Hard start kit for 230 Volt Single Phase units. Kit includes start relay, start capacitor, wires, wiring diagram, and installation instructions.	7960-573
SK118	Hard Start Kit 230V-3PH	Hard start kit for 230 Volt Three Phase units. Kit includes start relay, start capacitor, wires, wiring diagram, and installation instructions.	7960-573
5650-035	Water Valve	ON/OFF water valve for use with hot water plenums. 3-Way 3/4" threaded connection with 24VAC/common input to operate valve.	NA
5650-040	Water Valve	Modulating proportional water valve for use with hot water plenums. 3-Way 3/4" threaded connection. Proportional 0-10 Vdc, 0-5 Vdc, 5-10 Vdc or 4-20 mA, Jumper Selectable. 24VAC supply voltage.	NA

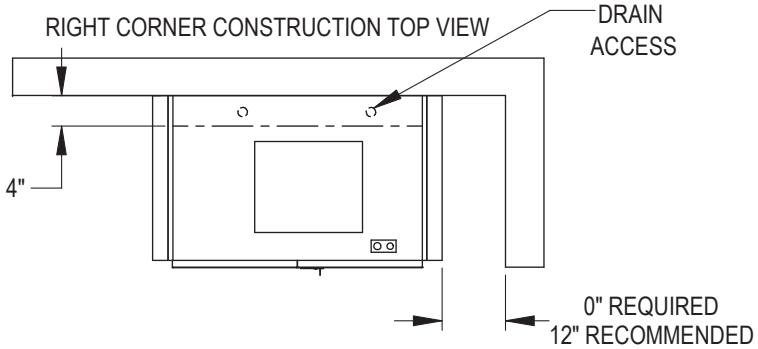
UNIT DIMENSIONS

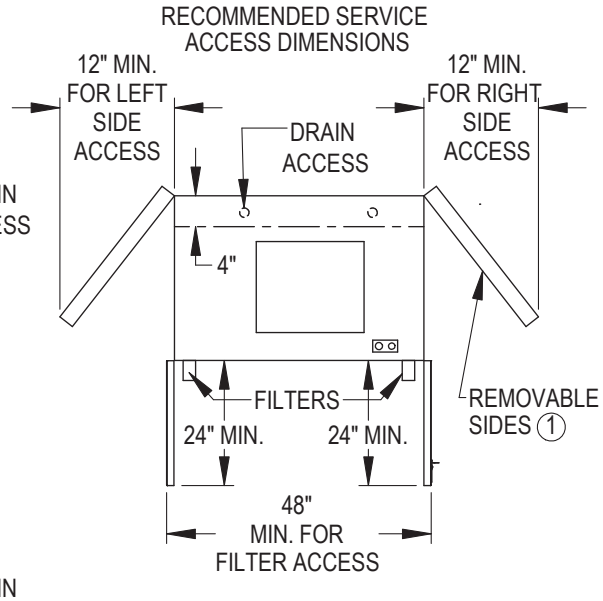












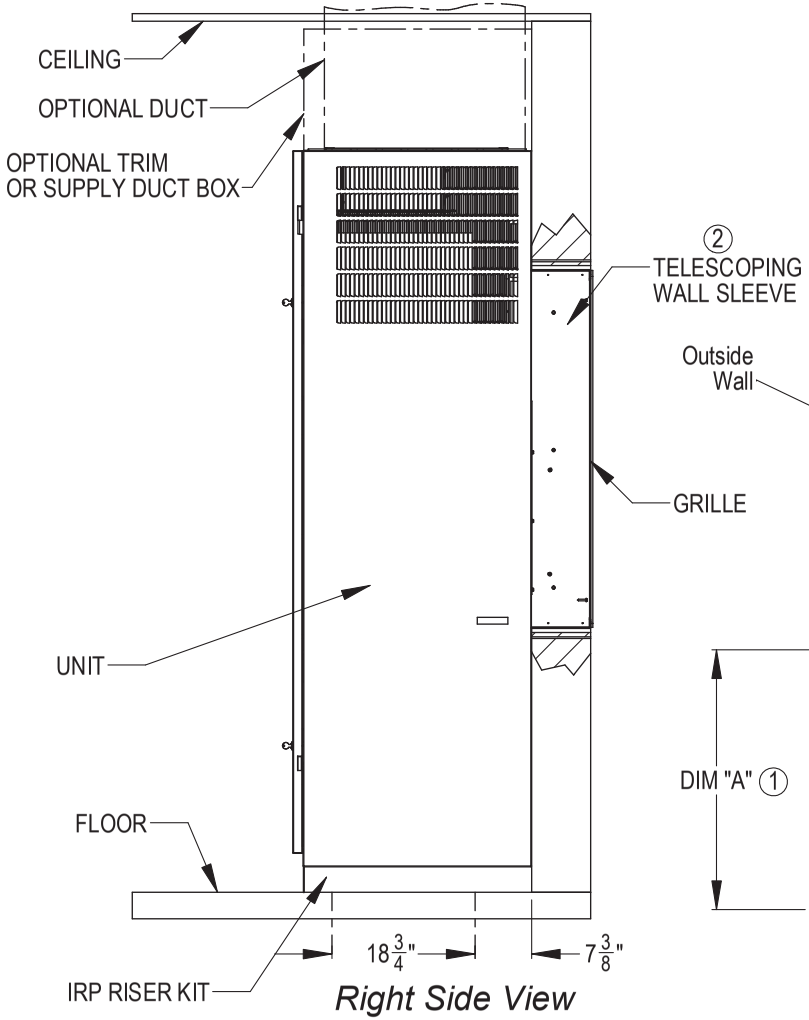
① ALL FILTER AND COMPONENT ACCESS IS FROM THE FRONT. COILS CAN BE CLEANED FROM THE FRONT, BUT SIDES ARE EASILY REMOVED FOR ENHANCED ACCESS.

② 12" MINIMUM DIMENSIONS ARE REQUIRED FOR UNIT OPERATION. IT IS STRONGLY RECOMMENDED TO USE 20" MINIMUM DISTANCES IF POSSIBLE FOR EASE OF UNIT SERVICEABILITY

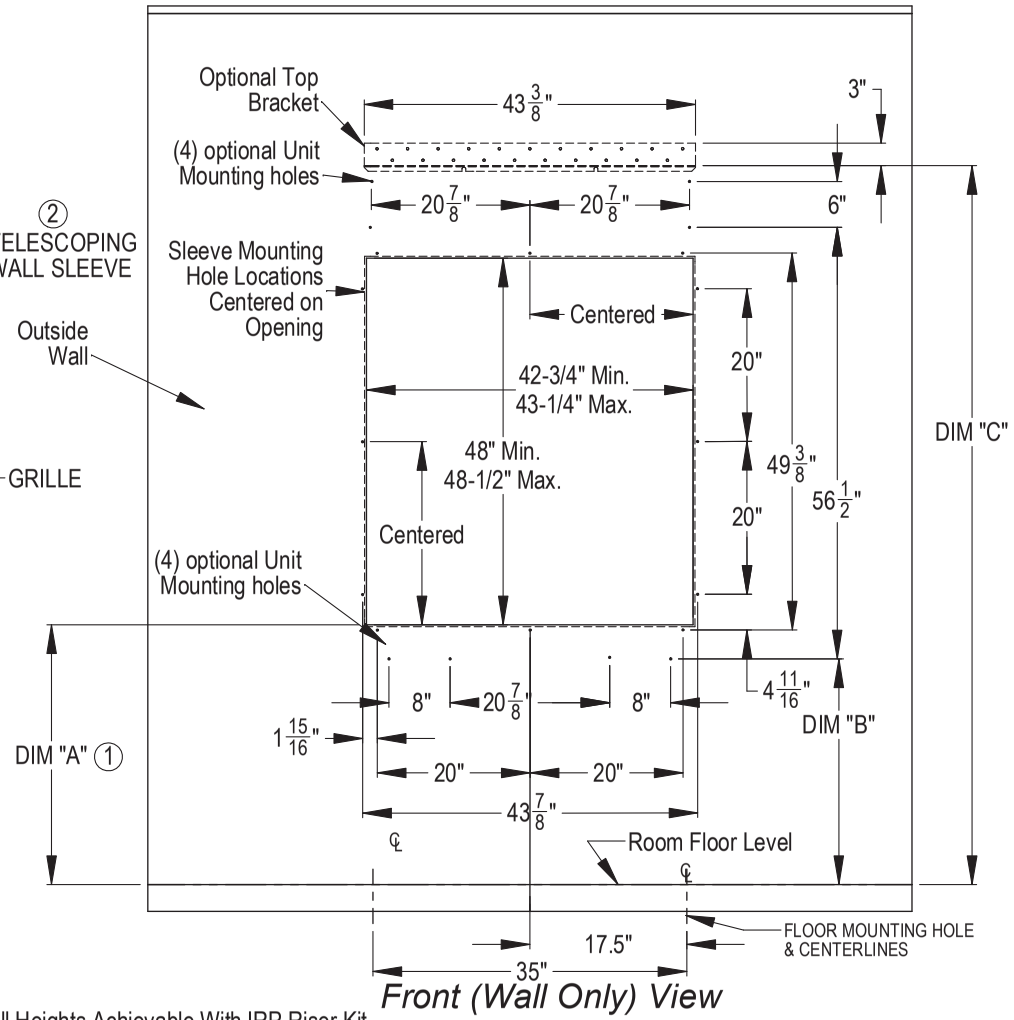
MIS-3273 A

IRP RISER KIT	DIM A	DIM B	DIM C
NONE	31"-34"	29 17/32"	94 1/8"
IRP-3 (3")	34"-37" MAX	32 17/32"	97 1/8"
IRP-6 (6")	37"-40" MAX	35 17/32"	100 1/8"
IRP-9 (9")	40"-43" MAX	38 1732"	103 1/8"
IRP-11 (11")	42"-44" MAX	40 17/32"	105 1/8"

Wall Section View



Right Side View



Front (Wall Only) View

① Higher Sill Heights Achievable With IRP Riser Kit.
② Separate telescoping sleeves available for different wall thicknesses.

MIS-3306 A

FACTORY BUILT-IN ELECTRIC HEAT TABLE

Model	Voltage	Phase	KW		Amps		BTUH	
			240	208	240	208	240	208
-A04	240/208	1	4	3	16.7	14.4	13,652	10,239
-A05	240/208	1	5.00	3.75	20.8	18.0	17,065	12,799
-A10	240/208	1	10.00	7.50	41.7	36.1	34,130	25,598
-A15	240/208	1	15.00	11.25	62.5	54.1	51,195	38,396
-A20	240/208	1	20.00	15.00	83.3	72.1	68,260	51,195
-B06	240/208	3	6.00	4.50	14.4	12.5	20,478	15,359
-B09	240/208	3	9.00	6.75	21.7	18.7	30,717	23,038
-B15	240/208	3	15.00	11.25	36.1	31.2	51,195	38,396
-B18	240/208	3	18.00	13.50	43.3	37.5	61,434	46,076

Model	Voltage	Phase	KW		Amps		BTUH	
			480V	460V	480V	460V	480V	460V
-C06	480	3	6.00	5.52	7.2	6.9	20,478	18,840
-C09	480	3	9.00	8.28	10.8	10.4	30,717	28,260
-C15	480	3	15.00	13.80	18.0	17.3	51,195	47,099
-C18	480	3	18.00	16.56	21.7	20.8	61,434	56,519

NOTE: Not all KW's available in all models. See Minimum Circuit Ampacity and Maximum Overcurrent Protection table on following page.

HOT WATER COIL PERFORMANCE

GPM	CFM									
	800	900	1000	1100	1200	1300	1400	1500	1600	1700
1.5	32,000	32,667	33,333	34,000	34,500	35,000	35,500	36,000	36,400	36,750
2	42,000	43,200	44,400	45,600	46,400	47,200	48,000	48,500	49,000	49,500
3	49,000	51,667	53,750	57,000	59,400	61,750	64,000	65,200	66,000	67,000
4	56,000	59,000	62,000	65,000	69,000	73,000	77,000	79,500	82,000	84,000
5	59,000	62,583	66,167	69,750	72,833	75,917	79,000	81,000	83,000	85,000
6	62,000	66,167	70,333	74,500	77,000	79,500	82,000	83,500	85,000	86,500
7	63,500	67,708	71,917	76,125	78,917	81,708	84,500	86,500	88,000	89,200
8	65,000	69,250	73,500	77,750	80,833	83,917	87,000	88,900	90,500	91,750
9	66,000	70,525	75,050	79,575	82,883	86,192	89,500	91,500	93,000	94,500
10	67,000	71,800	76,600	81,400	84,933	88,467	92,000	94,500	96,000	97,500

HOT WATER COIL CORRECTION FACTORS

Entering Air Temp (F)	Entering Water Temperature (F)										
	100	110	120	130	140	150	160	170	180	190	200
50	0.455	0.545	0.636	0.727	0.818	0.909	1.000	1.091	1.182	1.273	1.364
55	0.409	0.500	0.591	0.682	0.773	0.864	0.955	1.045	1.136	1.227	1.318
60	0.363	0.455	0.545	0.636	0.727	0.818	0.909	1.000	1.091	1.182	1.273
65	0.318	0.409	0.500	0.591	0.682	0.773	0.864	0.955	1.045	1.136	1.227
70	0.272	0.363	0.455	0.545	0.636	0.727	0.818	0.909	1.000	1.091	1.182
75	0.227	0.318	0.409	0.500	0.591	0.682	0.773	0.864	0.955	1.045	1.136
80	0.182	0.272	0.363	0.455	0.545	0.636	0.727	0.818	0.909	1.000	1.091

I30H-I60H INDOOR SOUND DATA AT 10 FEET

1. dBA @ 10 feet, Values recorded in Bard Manufacturing Company, Inc. Sound Lab Facility.
2. Actual field results may vary with classroom design and construction.
3. Integrated values calculated per ANSI/ASA S12.60-2009 / Part 2, Section 5.2.2.1, Table 2 Triple Mode Type 3 HVAC System Duty Cycles: Ventilation 58%, Part Load 25%, Full Load 17%
4. Integrated Sound Values are also applicable for use in learning spaces for CHPS and LEED Schools: EQ Prerequisite 3 - Minimum Acoustical Performance, OPTION 1. Using methods prescribed in ANSI S12.60, classrooms must achieve a maximum background noise level of 45 dBA.

Vent: ERV		IPBDFH-12 Duct Free 12" Plenum Box				Ducted			
Model	Operation	ERV Off	ERV @ 150	ERV @ 375	ERV @ 450	ERV Off	ERV @ 150	ERV @ 375	ERV @ 450
I30H	Integrated	33.7	34.0	39.3	40.0	33.6	34.0	39.0	40.1
I36H	Integrated	37.7	38.0	40.7	41.7	36.5	37.1	41.7	42.7
I42H	Integrated	38.6	40.7	41.3	41.9	39.4	39.3	41.8	42.4
I48H	Integrated	39.0	39.0	39.7	39.8	39.8	39.8	40.3	40.6
I60H	Integrated	41.4	41.3	41.6	41.6	41.3	41.3	41.8	41.9

FACTORY SETTING(S) SHADED IN BLUE

Vent: CRV		IPBDFH-12 Duct Free 12" Plenum Box					Ducted				
Model	Operation	CRV Off	CRV @ 300	CRV @ 375	CRV @ 450	CRV @ 525	CRV Off	CRV @ 300	CRV @ 375	CRV @ 450	CRV @ 525
I30H	Integrated	34.4	36.0	38.2	40.6	42.1	34.6	36.6	38.1	40.6	42.0
I36H	Integrated	37.0	38.5	40.3	42.4	43.9	37.2	40.2	39.2	42.2	44.0
I42H	Integrated	39.2	39.8	41.0	42.5	43.5	39.9	40.4	41.1	42.8	43.5
I48H	Integrated	40.2	40.7	41.5	43.0	44.2	41.0	40.7	42.2	43.4	44.1
I60H	Integrated	44.0	44.3	44.6	45.4	45.9	43.5	43.7	44.1	44.8	45.5

OUTDOOR SOUND DATA AT 10 FEET

Model	I30H	I36H	I42H	I48H	I60H
	63.7	66.6	67.3	67.9	67.8