# HPX™ HEAT PUMP

HPX 3
HPX 5


SUSTAINABILITY STANDOUT™

*This product meets a stringent set of our company's internally defined sustainability standards*

QUIET COMFORT

UP TO 4 C.O.P. COEFFICIENT OF PERFORMANCE

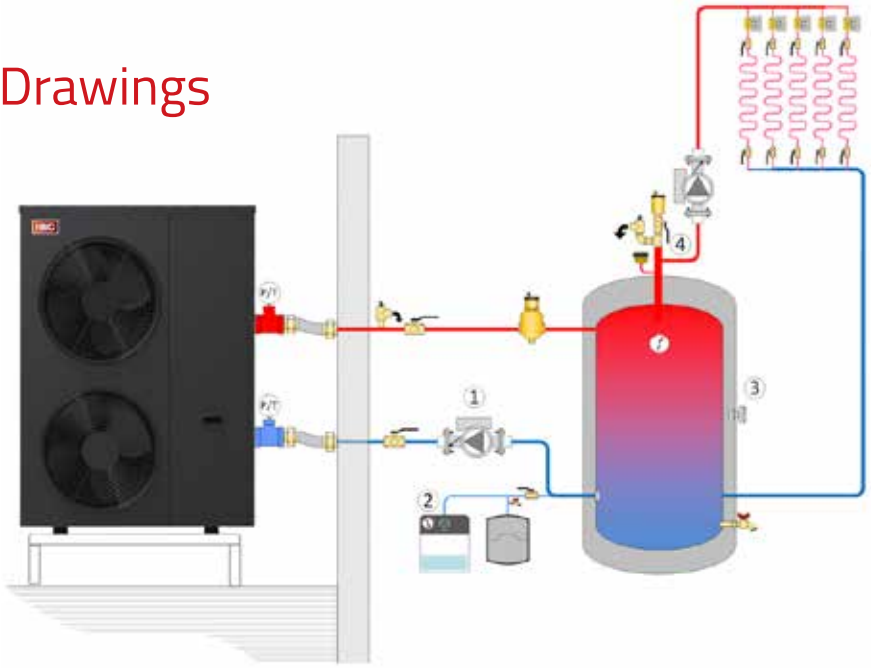
## HIGH-EFFICIENCY MONOBLOC HEAT PUMP

2 YEAR RESIDENTIAL PARTS WARRANTY

5 YEAR RESIDENTIAL COMPRESSOR WARRANTY

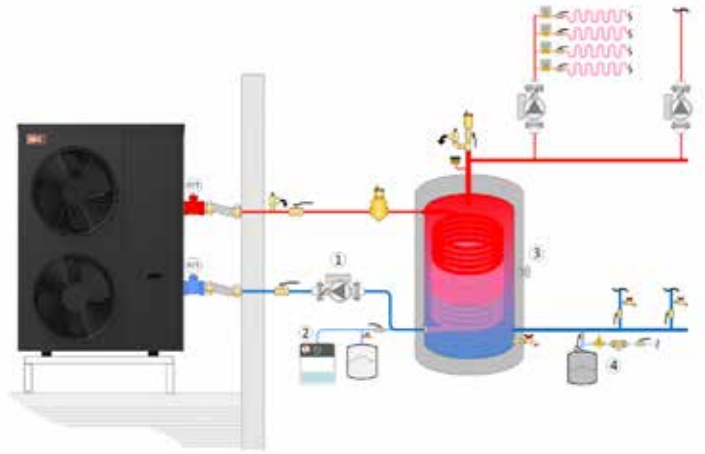
IBC®

# Application Drawings



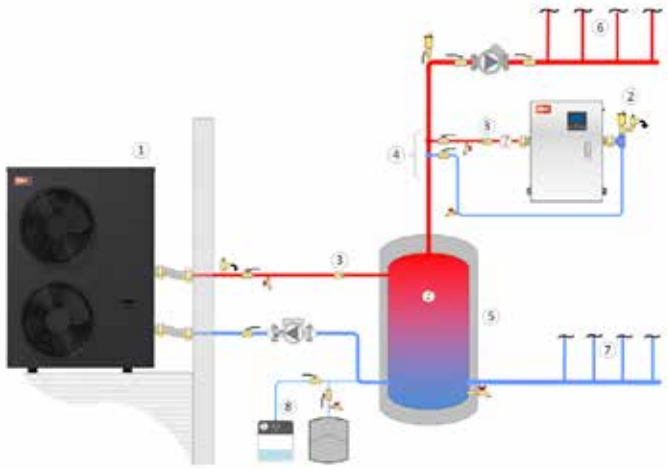
## Buffer Tank Piping

| | |
|---|---|
| 1 | Hydronic heat pump circulator with integral check valve |
| 2 | Glycol fill tank: 25%-50% propylene glycol throughout system. Alternatively, a flat plate heat exchanger or heat pump indirect tank can isolate glycol from distribution water. |
| 3 | Buffer tank |
| 4 | Buffer tank hydraulically separates HPX from load piping; load pump(s) sized for head loss of building side of tank only. Buffer tank needs vacuum breaker for cooling mode. |



## Glycol Isolation with Indirect / Buffer Tank

| | |
|---|---|
| 1 | Hydronic heat pump circulator with integral check valve |
| 2 | Glycol fill tank |
| 3 | Extended-coil indirect water heater for glycol isolation. NOTE extra surface area of specialty heat pump indirect tank for efficient heat transfer: domestic model of indirect tank would likely cause short-cycling. Buffer tank needs vacuum breaker for cooling mode. |
| 4 | Fill valve and expansion tank to maintain system pressure |



## Multiple Heat Sources with Buffer Tank

| | |
|---|---|
| 1 | Hydronic heat pump; system fluid circulates outdoors so typically requires glycol treatment. |
| 2 | High-efficiency hydronic gas boiler or electric boiler staged (by IBC Sky 35 Controller) to supplement heat pump below system balance point. |
| 3 | Check valves |
| 4 | Closely-spaced tees: max. four pipe diameters apart; min. eight pipe diameters straight piping upstream and four downstream |
| 5 | Buffer tank. Buffer tank needs vacuum breaker for cooling mode. |
| 6 | Supply to heating system |
| 7 | Return from heating system |
| 8 | Glycol fill tank |


HPX™

The easy-to-install
**Decarb Solution**
for year-round comfort.

Backed by IBC's industry-leading hydronic technology, the HPX™ Air-to-Water Heat Pump is the perfect eco-friendly solution for year-round comfort without the need for fossil fuels. Catering to residential and light commercial applications, the HPX™ offers exceptional performance in a variety of climates. The first to be produced by a boiler manufacturer, HPX™ boasts a self-contained, refrigerant-based monobloc unit that is easy to install and service without the need for refrigeration licenses.

**Whisper quiet operation can be compared to the hum of a residential refrigerator.**

**The perfect decarb solution for year-round comfort with zero $CO_2$ emissions.**

**Refrigerant stays outside the home for easy installation with no refrigerant license required.**

## HIGH ENERGY EFFICIENCY

- High Energy Efficiency: Up to a 400% efficiency (COP up to 4) significantly reduces energy bills compared to traditional systems.
- The HPX has an advanced temperature control capability to vary its output ensuring a consistent indoor temperature with less temperature fluctuations.
- Outdoor reset function automatically varies the outlet water temperature to further enhance comfort and efficiency.
- Enhanced Vapor Injection (EVI) design increases efficiency, lowers ambient temperature operating range to as low as -22°F/-30°C, and increases maximum supply water temperature.

## REFRIGERATOR QUIET OPERATION

- Compared to traditional heating and cooling systems, the HPX™ operates so quietly it can be likened to the sound emitted by a residential refrigerator. 38-53 dB operational sound level.

## ENVIRONMENTALLY FRIENDLY

- Air-to-water heat pumps use renewable energy from the air to heat a home. This means that they produce fewer greenhouse gas emissions than traditional heating systems.
- Enhanced Air Quality: No consumption of fossil fuels means no $CO_2$ emissions.

## EASY TO INSTALL AND SERVICE

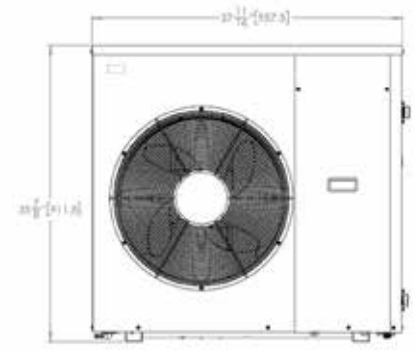
- Contractor-Friendly Monobloc Design: Refrigeration licenses not required for installation.
- Easily connect to North American thermostats with 24V AC interface.
- Increased Reliability: With fewer moving parts than traditional heating systems, the HPX™ requires little maintenance and is less likely to break down.
- Flow-proving and high limit safeties built-in.

# Dimensions & Requirements

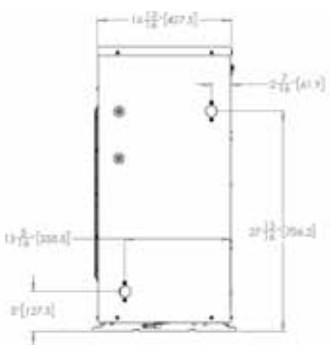
## PIPING CONNECTIONS

| | HPX 3 | HPX 5 |
|---|---|---|
| Return Water Inlet | 1″ NPT-M | 1 ¼″ NPT-M |
| Supply Water Outlet | 1″ NPT-M | 1 ¼″ NPT-M |
| Supply Power Knock-Out | Dual ¾″ and 1″ | Dual ¾″ and 1″ |
| Control Wiring Knock-Out | ½″ | ½″ |

## HPX 3



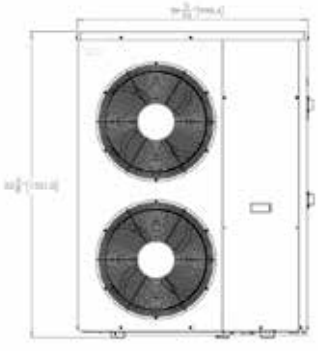
HPX 3 - FRONT



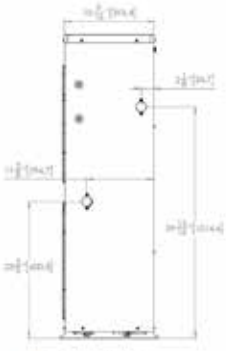
HPX 3 - SIDE

HPX 3 - TOP

## HPX 5



HPX 5 - FRONT



HPX 5 - SIDE

HPX 5 - TOP

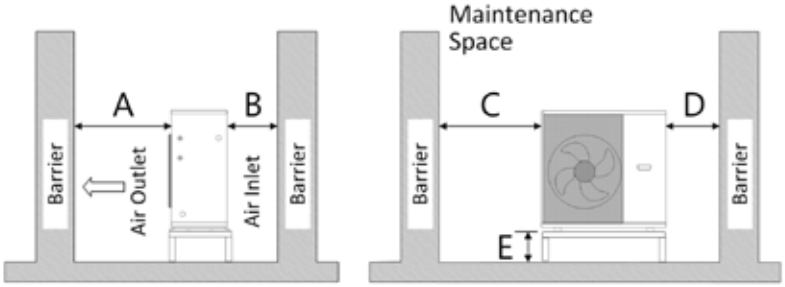
## HEAT PUMP FLOW REQUIREMENT

| | HPX 3 | HPX 5 |
|---|---|---|
| Rated Water Flow* | 6.6 gpm (1.5 $m^3/h$) | 7.5 gpm (1.7 $m^3/h$) |
| Water Pressure Drop (Head Loss) | 7 ft. / 2.1 m | 9 ft. / 2.7 m |
| Min. Heat Pump Flow Rate (Variable Speed Pump) | 3.1 USgpm (0.7 $m^3/h$) | 4.0 USgpm (0.9 $m^3/h$) |
| Max. Heat Pump Flow Rate (Variable Speed Pump) | 10.1 USgpm (2.3 $m^3/h$) | 12.0 USgpm (2.7 $m^3/h$) |
| Recommended Heat Pump Flow Rate | 7.0 US gpm (1.6 $m^3/h$) | 10.0 USgpm (2.3 $m^3/h$) |

**"Rated" indicated the flow rate at which the heat pump's heating output, pressure drop, and noise was measured.*

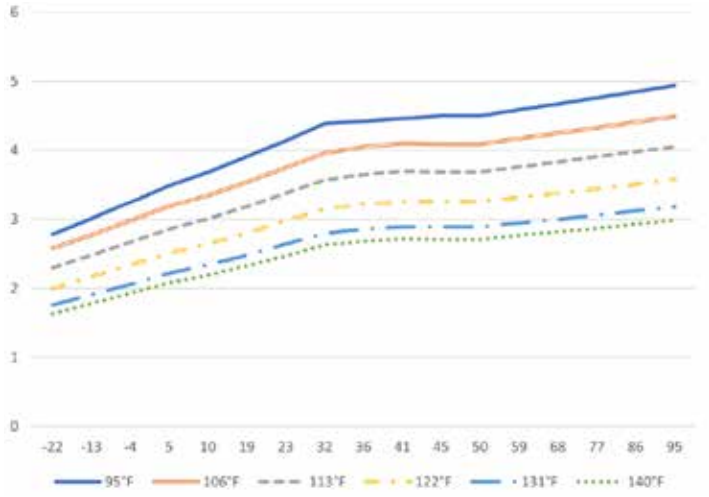
## CLEARANCE FOR MOUNTING SITES

| | Min. Distance From Combustible Surfaces |
|---|---|
| A | 4′ 11″ (1.5m) minimum |
| B | 1′ 8″ (0.5m) minimum |
| C | 3′ 3.5″ (1.0m) minimum |
| D | 1′ 8″ (0.5m) minimum |
| E | 1′ (0.3m) minimum above snow level |



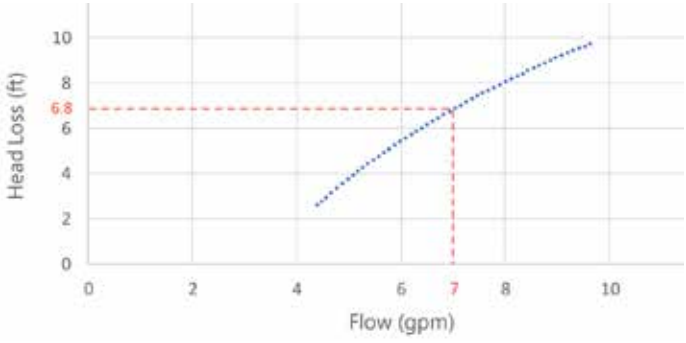
# Performance

## COP by Supply Water Temp. and Outdoor Temp. (F*)



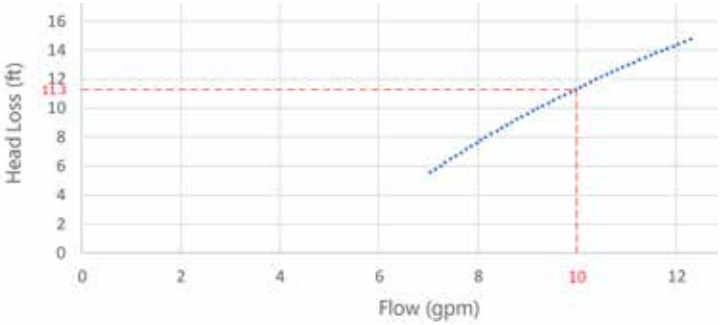

## HPX 3 Heat Exchanger Head Loss

*Requires correction if glycol is used.*




## HPX 5 Heat Exchanger Head Loss

*Requires correction if glycol is used.*




# Technical Information

*Install at least 12" above highest anticipated snow line.*

| SPECIFICATIONS | HPX 3 (3 Ton) | HPX 5 (5 Ton) |
|---|---|---|
| Rated Voltage / Frequency / Phase | 208/230V 60Hz 1Ph | 208/230V 60Hz 1Ph |
| Heating Capacity Range * | 9.6 - 44.2 MBH | 14.4 - 56.6 MBH |
| Heating Capacity Range * | 2.8 - 12.9 kW | 4.2 - 16.6 kW |
| Cooling Capacity Range ** | 15.5 - 34.5 MBH | 21.4 - 47.6 MBH |
| Cooling Capacity Range ** | 4.55 - 10.1 kW | 6.3 - 14.0 kW |
| Total Load (@240V) | 20.3 A | 26.6 A |
| Noise measured at 1 meter | 38 - 52 dB (A) | 42 - 53 dB (A) |
| Weight (empty) | 220 lb / 100 kg | 320 lb / 145 kg |
| Compressor Rating Load | 19.5 A | 25 A |
| Fan Motor Rating Load | 0.8 A | 2 x 0.8 A |
| Minimum Circuit Ampacity | 25.2 A | 33 A |
| Max Fuse Size | 40 A | 50 A |
| Rated Water Flow | 6.6 gpm / 1.5 m3/h | 7.5 gpm / 1.7 m3/h |
| Water Pressure Drop (Head Loss) | 7 feet / 2.1 m | 9 feet / 2.7 m |
| Maximum Outlet Water Temp. (electronic hi-limit) | 140°F/ 60°C | 140°F/ 60°C |
| Design Water Pressure | 30 psig / 207 kPa | 30 psig / 207 kPa |
| Maximum Water Pressure | 145 psig / 1,000 kPa | 145 psig / 1,000 kPa |
| Minimum Water Pressure | 8 psig / 55 kPa | 8 psig / 55 kPa |
| Minimum Ambient Temperature | -22°F / -30°C | -22°F / -30°C |
| Maximum Refrigerant Pressure (low side) | 305 psig / 2.1 MPa | 305 psig / 2.1 MPa |
| Maximum Refrigerant Pressure (high side) | 638 psig / 4.4 MPa | 638 psig / 4.4 MPa |
| Maximum Allowable Refrigerant Pressure | 696 psig / 4.8 MPa | 725 psig / 5.0 MPa |
| Refrigerant Type and Charge | R410a / 2.2 kg | R410a / 2.5 kg |
| Refrigerant Safety Group Classification | A1 | A1 |
| Moisture Resistance | IPX4 | IPX4 |
| Model Number | HPX 3, IHEXXF1-003T | HPX 5, IHEXXF1-005T |
| Part Number | 016-101 A1 | 016-106 A1 |

**for conditions Ambient Temp = 45°F (7°C), Outlet Water Temp = 106°F (41°C)*

***for conditions Ambient Temp = 95°F (35°C), Outlet Water Temp = 54°F (12°C)*

## WARRANTY

**Residential Applications**

2-year parts

5-year compressor limited warranty against defects in materials or workmanship.

**Commercial Applications**

2-year parts

2-year compressor limited warranty against defects in materials or workmanship.

## $CO_2$ Impact Score

Choosing this product instead of a minimum efficiency alternative offsets $CO_2$ emissions equivalent to planting this number of trees over the product's lifetime. The $CO_2$ Impact Score is internally calculated using a proprietary point system based on a typical product lifetime and does not denote a third party certification/seal. *See website for further information.*

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