



## General Specifications: Bard Wall – Mount™ TxxH-Series 11 EER “Quiet–Climate” 43-50dbA Heat Pumps, With CRV Intake & Exhaust and White Rodgers 1F95-1277 Thermostat

### FURNISH and INSTALL

A one-piece wall-mounted, factory-assembled, precharged, prewired, tested and ready-to-operate heat pump unit. The unit shall be approved and listed by Intertek ETL Listed (ETL US/C) for installation on combustible surfaces for zero clearance between the unit and wall. The first three feet the supply duct must be approved for 1/4" clearance to combustible material. Unit performance shall be certified in accordance with Air Conditioning, Heating and Refrigeration Institute, (AHRI). The Bard manufactured model No. **T48H\*A04VP4** heat pump with the integrated CRV (Classroom Ventilator) Intake and Exhaust, or equal, operated by a properly programmed White Rodgers 1F95-1277 thermostat and installed correctly to meet the Section 121-B ventilation requirements of California Title 24 Code.

The HVAC unit shall have outside air make-up for ventilation mixed with return air, filtered through the same filter, prior to passing through the indoor coil, and shall have a factory or field installable, integral Classroom Ventilator (CRV) capable of providing and exhausting 15 cfm per the anticipated 32 occupants, (480cfm) via separate Ventilation Only Mode. Outside ventilation air shall not bypass the indoor coil or the filter. The CRV shall be a 2 position open, spring loaded close, and meet ANSI/ASHRAE 62.1 ventilation standards.

### VENTILATION OPTIONS – Select One (Some vent devices may require additional building exhaust)

#### CLASSROOM ROOM VENTILATOR (CHCRV)- Standard

The built-in commercial room ventilator is internally mounted and allows outside ventilation air, up to 50% of the total air flow rating of the unit, to be introduced through the air inlet openings. It includes a built-in pressure relief exhaust air damper. The CRV can be controlled by indoor blower operation or field controlled based on room occupancy using CO2 controller. Unit complies with ANSI/ASHRAE Standard 62.1 Ventilation for Acceptable Air Quality.

#### ECONOMIZER – Enthalpy (ECONWMS) - OPTIONAL

The Economizer is internally mounted and allows outside air to be used for free-cooling when temperature and humidity conditions are favorable. The amount of exhaust air varies in response to the system controls and settings defined by the user. It includes a built-in pressure relief exhaust air damper. The economizer is designed to provide free-cooling when outside conditions are cool and dry enough to satisfy cooling requirements without operating the compressor, providing lower operating costs while extending the life of the compressor.

#### ENERGY RECOVERY VENTILATOR (ERV) - OPTIONAL

The Energy Recovery Ventilator (ERV) shall consist of rotary wheels in an insulated cassette, frame with seals, drive motor and belt. The ERV assembly shall also include intake and exhaust blowers. The ERV thermal performance shall be certified by the manufacturer in accordance with ASHRAE Standard 84, Method of Testing Air-to Air Heat Exchangers and ARI Standard 1060, Rating for Air-to-Air Energy Recovery Ventilation Equipment Cassettes, and shall be listed in the ARI Certified Products. The ERV can be controlled by indoor blower operation or field controlled based on room occupancy using CO2 controller. Unit complies with ANSI/ASHRAE Standard 62.1 Ventilation for Acceptable Air Quality. ERV off loads ventilation energy before passing through coil for conditioning, saving 20-25% operational cost.

### PERFORMANCE

The HVAC system will have an indoor operating sound level that will not exceed **50 dbA** measured 10 feet directly in front of the return air grille at 5' above the floor. Other optional accessories are available to approach **43 dbA @ 10 feet**.

The HVAC system shall be designed to maintain a minimum indoor temperature of 72 Deg F. in the heating season and a maximum of 78 Deg. F. in the cooling season. HVAC unit shall be sized to provide a maximum total air in circulation equal to a 6 minute air change during heating and/or cooling cycles (compressor operation) and not more than a 18 minute air change of outside air.

Energy efficiency rating shall be minimum **11.0** E.E.R. (Energy Efficiency Ratio) and 3.4 C.O.P. (coefficient of performance) by AHRI as meeting Standard 390-2003 for Single Package Vertical Units. (SPVU)

## **BLOWERS and FANS**

To provide a quiet comfortable environment, the twin indoor blowers shall have a centrifugal forward curved direct drive blower. Indoor blowers shall discharge horizontally into a ducted supply with a maximum internal velocity of 1000 fpm. Maximum air velocity at the supply registers is not to exceed 500 fpm. The ECM indoor blower motor shall be variable speed providing super-high efficiency, low sound levels, and soft-start capabilities. The indoor blower motor shall be self adjusting to provide the proper airflow rate for the airflow operation without user adjustment or wiring changes.

Propeller type outdoor fan shall be direct driven by a 1-speed motor, separate from the indoor blower motor.

## **STANDARD FEATURES**

Plug in CO2 sensor ready ventilation control.

Two-inch pleated filter (MERV 8 Minimum) Optional MERV 13 or MERV 16 Capable.

Environmentally Safe R410A refrigerant.

Circuit breaker or toggle disconnect.

All three (3) phase units to have a built-in phase monitor to prevent reverse rotation of scroll compressor motor.

High and Low pressure controls plus 24 volt transformer with built-in circuit breaker.

Bi-Flow Filter Drier

A separate Filter Service Door for easy 1" or 2" filter replacement.

Coremark Full Flow Service Ports

## **CONTROLS**

Ventilation and temperature control shall consist of a wall-mounted 5/1/1-day, 3 stage heat, 2 stage cool programmable thermostat White Rodgers 1F95-1277. The thermostat shall be equipped with key-pad lockout, ventilation control programming, and a standard locking thermostat guard. Thermostat to be pre-programmed to bring on continuous ventilation one hour prior to and during anticipated occupancy as per the California Title 24, Section 120.1-(c) 2 ventilation requirements.

## **BARD 8403-096 CO2 Sensor (Optional)**

Furnish and install a Bard 8403-096 CO2 Sensor to control the amount of fresh outdoor air supplied to maintain acceptable levels of CO2 in the space according to Section 120.1 California Title 24 ventilation standards. The CO2 sensor shall have non dispersion-infrared (NDIR) technology used to measure carbon dioxide gas, provide voltage or current output based on CO2 levels, provide SPST relay output, and Automatic Background Calibration (ABC) algorithm. The CO2 Sensor shall wire easily to the TxxH ventilation board, and provide modulating classroom ventilator (CRV) damper control of outside air between 700 – 1500 ppm CO2 when a "C" option modulating CRV is used. Geary Pacific wiring diagram # 11-0383.

## **Filtration**

Furnish and install Pure Aire Technologies 2" MERV 13 filters to capture >80% of 1 micron particles @ .23 esp.

## **UV Purification**

Furnish and install APCO UV purification options with a UVBARDKIT to provide proper installation in the Bard unit for air purification and coil cleaning. 18,000 hour bulb life, and lifetime power pack warranty. Door shut off safety switch required.

Choose one:

1. Good: 1 bulb 24v one pass 39% Corona Virus kill rate, 6 pass 95% Corona Virus kill rate.
2. Better: 2 bulb 24v one pass 56% Corona Virus kill rate, 6 pass 99% Corona Virus kill rate.
3. Best: 1 bulb 110-277v one pass 99% Corona Virus kill rate, 6 pass 99% Corona Virus kill rate.

## **Acoustical Accessories (For operating sound levels below 42dbA)**

1. For approximate 4-6 dbA sound reduction furnish and install Vibration Isolation Curb, Bard model WMSC5-4 (Grey)
2. For approximate 4-7 dbA sound reduction furnish and install Return Air Acoustical Plenum, Bard model WAPR11-X (Beige)
3. For approximate 1-2 dbA sound reduction furnish and install Supply Air Acoustical Plenum, Bard model WAPS51-G.

## Additional Accessories


1. Outdoor Coil Grille Guards, "**Bard Gard**". Protects outdoor coil from damage. Excellent when unit is located near a playground. All units shall have a heavy duty BARD GARD outdoor coil guard. The BARD GARD shall have a 14 gauge frame and 13 gauge expanded metal mesh. The entire BARD GARD shall be powder coated the same color as the wall mount unit.


*Note: All applications are different so actual sound reductions may vary from the values listed above. Contact us if your particular application requires the HVAC system to operate at or near 43 dbA.*


*This document is available in MS Word format from:*  
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# EQUIPMENT & MATERIAL SCHEDULE

- 3.5 Ton\* Heat Pump, Bard, R410a, "Quiet Climate", Wallmount, T42H-A05VP4 5 KW  
 39,500 Nom Btu Cooling Capacity - 11.00 EER  
 39,000 Nom Btu Heating Capacity From Compressor- 3.30 CDP  
 Additional 17,065 Nom Btu Heating Capacity From Heat Strip @ 240V.  
 MCA 57, MDCP 60, Min. Wire Size #6  
 1250 CFM @ .15 Esp, Unit Weight 630 lbs.  
 230 Volt, 60 Cycle, Single Phase


- 4.0 Ton\* Heat Pump, Bard, R410a, "Quiet Climate", Wallmount, T48H-A04VP4 4 KW  
 46,500 Nom Btu Cooling Capacity - 11.00 EER  
 43,000 Nom Btu Heating Capacity From Compressor- 3.40 CDP  
 Additional 13,652 Nom Btu Heating Capacity From Heat Strip @ 240V.  
 MCA 58, MDCP 60, Min. Wire Size #6  
 1550 CFM @ .2 Esp, Unit Weight 640 lbs.  
 230 Volt, 60 Cycle, Single Phase


- 5.0 Ton\* Heat Pump, Bard, R410a, "Quiet Climate", Wallmount, T60H-A05VP4 5 KW  
 60,500 Nom Btu Cooling Capacity - 11.00 EER  
 56,000 Nom Btu Heating Capacity From Compressor- 3.30 CDP  
 Additional 17,065 Nom Btu Heating Capacity From Heat Strip @ 240V.  
 MCA 69, MDCP 80, Min. Wire Size #4  
 1650 CFM @ .2 Esp, Unit Weight 650 lbs.  
 230 Volt, 60 Cycle, Single Phase


- 5.0 Ton\* Heat Pump, Bard, R410a, "Quiet Climate", Wallmount, T60H-A05SP4XXE 5 KW  
 60,500 Nom Btu Cooling Capacity - 11.00 EER  
 56,000 Nom Btu Heating Capacity From Compressor- 3.30 CDP  
 Additional 17,065 Nom Btu Heating Capacity From Heat Strip @ 240V.  
 MCA 69, MDCP 80, Min. Wire Size #4  
 1650 CFM @ .2 Esp, Unit Weight 650 lbs.  
 230 Volt, 60 Cycle, Single Phase







**NOTE:**

\* Unit certified for 1 or 2 Electrical Circuits, Consult SxxH Specifications Sheet, Form #S3436 (Current Revision) for more detailed information.  
 MCA: Minimum Circuit Ampacity  
 MDCP: Maximum Overcurrent Protection








INTERIOR DUCTWORK- FLEX DUCT - R6  
 INSULATION- CLASS I U.L.-181  
 FLAME SPREAD - 15  
 SMOKE DEVELOPED - 25

**LEGEND**

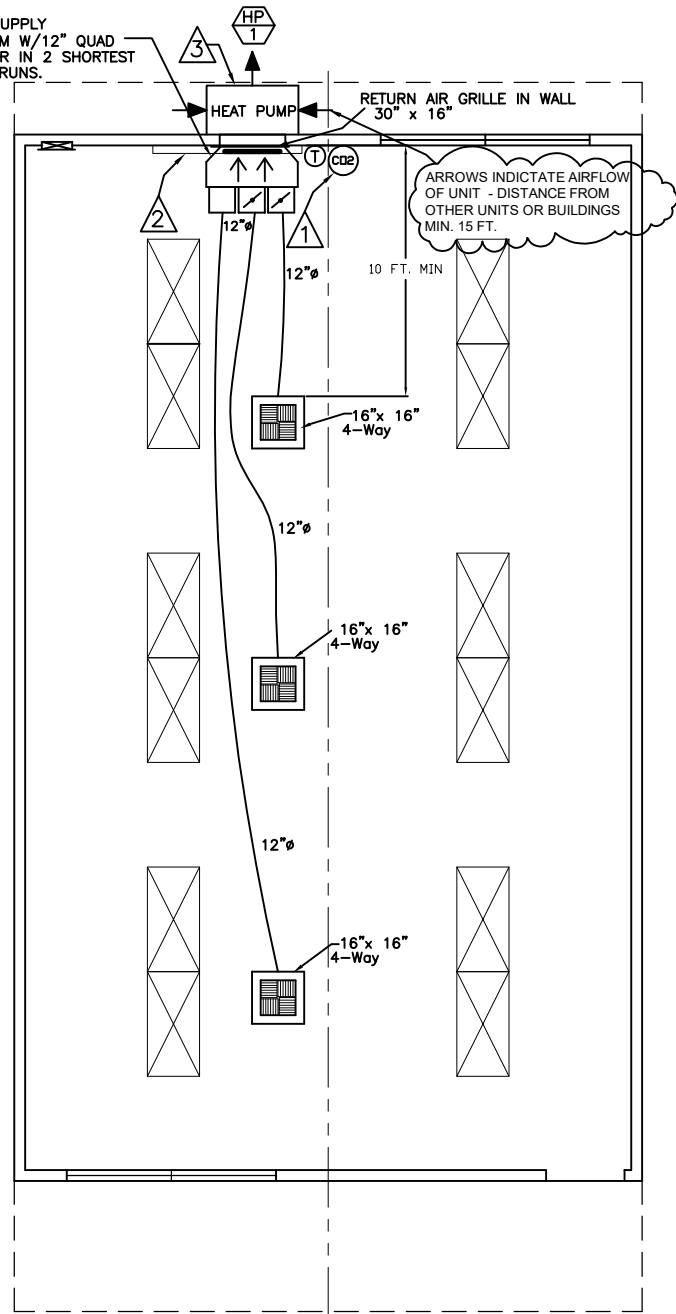
-  THERMOSTAT - WHITE RODGERS 1F95-1277  
 MOUNT AT +48" A.F.F.  
 GP WIRING DIAGRAM # 11-0236
-  CO2 SENSOR - BARD PT #8403-096
-  SHOEMAKER 104, T-BAR, 4 WAY  
 16" X 16", T-BAR, SUPPLY AIR DIFFUSER  
 WITH MIN. 26 GA. LINED SIDE OUTLET BOX
-  RETURN GRILLE WALL, TRU-AIRE 270 30 X 16

**OPTIONS:**

**CHECK:**

-  CO2 SENSOR - BARD PT #8403-096  
 MOUNT AT 48" A.F.F. (OPTIONAL)
-  BARD RETURN AIR DUCT SILENCER  
 PT#WAPR11-X, Beige (OPTIONAL)
-  BARD GARD  
 VANDALISM PROTECTION FOR OUTDOOR COIL  
 (OPTIONAL)
-  BARD WALL SOUND CURB  
 WMSC5-X BEIGE (OPTIONAL)
-  MERV. 13 FILTERS  
 (OPTIONAL)
-  MERV. 16 FILTERS  
 (OPTIONAL)
-  UV LIGHT FOR INDOOR COIL  
 (OPTIONAL)

S/M SUPPLY  
 PLENUM W/12" QUAD  
 DAMPER IN 2 SHORTEST  
 DUCT RUNS.



**MECHANICAL PLAN**

**MECHANICAL NOTES**

FLEXIBLE DUCT SHALL BE MODULAR METAL FABRICATORS SERIES  
 FDMA R6.0 WITH INSULATION, A SILVER POLY JACKET, AND A WIRE  
 ENCAPSULATED NON-PERFORATED CORE THAT COMPLIES  
 WITH ASTM C-518, 1991. FLEXIBLE DUCTING SHALL BE  
 UL LISTED CLASS 1 AIR DUCT WITH A FLAME SPREAD  
 RATING NOT TO EXCEED 25, AND A SMOKE-DEVELOPED RATING NOT TO  
 EXCEED 50 IN ACCORDANCE WITH NFPA 90A & 90B.

THERMOSTAT PROGRAMMING TO BE PERFORMED AND BATTERY PROVIDED BY OTHERS ON SITE.

TEST AND BALANCE OF HVAC SYSTEM, CRV, OR ECONOMIZER TO BE PROVIDED AND PERFORMED  
 BY OTHERS ON SITE.

ALL HVAC EQUIPMENT LEAVES FACTORY WIRED FOR 240V OPERATION. THE ACCEPTABLE OPERATING  
 RANGE FOR THE 240 & 208 TAPS ARE:

TAP	RANGE
240V	253-216
208V	220-198 1 PH 220-187 3 PH

SAVE AS: 06-0051.DWG

**GEARY  
 PACIFIC  
 SUPPLY**  
 www.gearypacific.com

DWG NAME BARD "TxxH" "QUIET CLIMATE" R410a, WALLMOUNT HEAT PUMP WITH 3 EA. SUPPLY DUCTS		JOB NO	
SIZE A	CUSTOMER NAME		REV#
DATE	REV. DATE 5/27/21	APR	DRAWN BY MDC
SHEET 1 OF 1		Dwg # 06-0051	