



**General Specifications:
Bard Wall – Mount™ CxxH-Series 15.0 IPLV
“Quiet-Climate Flex” 36-42 dbA Heat Pumps,
With CRV Intake & Exhaust,
White Rodgers 1F95-1277 Thermostat**

FURNISH and INSTALL

A one-piece wall-mounted, factory-assembled, precharged, prewired, tested and ready-to-operate, multi capacity two stage 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 of the supply duct must be approved for ¼” clearance to combustible material. Unit performance shall be certified in accordance with Air Conditioning, Heating and Refrigeration Institute, (AHRI). The Bard manufactured model No. C48H*A04VP4XXX heat pump with the integral Classroom Ventilator (CRV) operated by a properly programmed White Rodgers 1F95-1277 thermostat and installed correctly to meet the Section 120.1 ventilation requirements of California Title 24 Code. See specification sheet S3459 (current version) for complete unit specifications. CxxH, Quiet Climate Flex, requires the use of one of three curbs, TCURBT4860, TCURBF4860, or WMICF5 based on varied site applications and specifications.

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 a separate ventilation only mode. Outside ventilation air shall not bypass the indoor coil or the filter. The CRV shall be a 3 position open, spring loaded close, and meet ANSI/ASHRAE 62.1 ventilation standards. Fresh air intake openings shall not be on the same plane as the outdoor coil discharge air to prevent recirculation of the hot outdoor coil discharge air into the classroom.

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 (ECONCHS) - 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 (CHERV) - 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 load 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 **42 dbA** measured 10 feet directly in front of the return air grille at 5' above the floor. Other optional accessories are available to approach **35 dbA**.

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 not to exceed 11 air changes per hour (every 5.44 minutes) during 2nd stage heating and/or cooling cycles, and not more than 8.0 air changes per hour, (every 7.41 minutes) during 1st stage heating and/or cooling cycles, and not more than 6.25 air changes per hour, (every 9.60 minutes), during the ventilation only cycle. Minimum outside air (480 cfm/occupant) must remain constant and not less than the equivalent of 3.5 air changes per hour or once every 17 minutes.

Energy efficiency rating of the C48H shall be minimum 15.0 IPLV (Integrated Part Load Value) – 3.4 COP (coefficient of performance) certified 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 3 stage airflow operation without user adjustment or wiring changes.

Propeller type outdoor fan shall be a draw through coil and discharge horizontally along the plane of the building and be direct driven by a 1-speed motor, separate from the indoor blower motor. The outdoor motor and shroud shall slide out for easy access and maintenance.

STANDARD FEATURES

Plug in CO2 sensor ready ventilation control.

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

Copeland step capacity (2 stage) scroll compressor. 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.

Built-in outdoor coil winter condensate drain pan.

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) 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 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 an Automatic Background Calibration (ABC) algorithm. The CO2 Sensor shall wire easily to the CxxH ventilation board, and provide modulating classroom ventilator (CRV) damper control of outside air between 700 – 1500 ppm CO2.

Filtration

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

Furnish and install Pure Aire Technologies 2" MERV 16 filters to capture >95% of .003 micron particles @ .35 esp.

UV Purification – Select One

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 TCURBT4860. (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 WAPFB51-FF.

Note: All applications are different, actual sound reductions may vary from the values listed above. The C48H has been tested and documented as meeting the ANSI S12.60-2002 (35dbA) Acoustical Standard. Contact us if your specific application requires the HVAC system to operate at or near 35 dbA.

Additional Accessories






1. Outdoor Coil Grille Guards, "**Bard Gards**". 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.
2. See Bard Specification Sheet S3459 for additional information.

This document is available in MS Word format from:

GEARY PACIFIC CORP. 1360 N. Hancock St., Anaheim, CA 92807. (714) 279-2950

Or gearypacific@gearypacific.com

EQUIPMENT & MATERIAL SCHEDULE

- 3.0 Ton +  Heat Pump, Bard, R410a, Step Capacity Wallmount, C36H-A05VP4XXX 5 KW
35,000 Nom Btu Cooling Capacity - 14.5 IPLV
31,000 Nom Btu Heating Capacity From Compressor.
Additional 17,065 Nom Btu Heating Capacity From Heat Strips @ 240V.
MCA 53, MDCP 60, Min. Wire Size #6
1100 CFM @ 0-5 Esp, Unit Weight 600 lbs.
230 Volt, 60 Cycle, Single Phase
REQUIRES USE OF DNE DF 6 BARD WALL CURBS
CRV SET BY BARD TO 450 CFM
- 3.5 Ton +  Heat Pump, Bard, R410a, Step Capacity Wallmount, C42H-A05VP4XXX 5 KW
40,000 Nom Btu Cooling Capacity - 14.5 IPLV
38,500 Nom Btu Heating Capacity From Compressor.
Additional 17,065 Nom Btu Heating Capacity From Heat Strips @ 240V.
MCA 53, MDCP 60, Min. Wire Size #6
1250 CFM @ 0-5 Esp, Unit Weight 600 lbs.
230 Volt, 60 Cycle, Single Phase
REQUIRES USE OF DNE DF 6 BARD WALL CURBS
CRV SET BY BARD TO 450 CFM
- 4.0 Ton +  Heat Pump, Bard, R410a, Step Capacity Wallmount, C48H-A04VP4XXX 4 KW
45,500 Nom Btu Cooling Capacity - 15.0 IPLV
41,500 Nom Btu Heating Capacity From Compressor.
Additional 13,562 Nom Btu Heating Capacity From Heat Strips @ 240V.
MCA 57, MDCP 60, Min. Wire Size #6
1500 CFM @ 0-5 Esp, Unit Weight 660 lbs.
230 Volt, 60 Cycle, Single Phase
REQUIRES USE OF DNE DF 3 BARD WALL CURBS
CRV SET BY BARD TO 450 CFM
- 5.0 Ton +  Heat Pump, Bard, R410a, Step Capacity Wallmount, C60H-A05VP4XXX 5 KW
55,500 Nom Btu Cooling Capacity - 14.8 IPLV
51,000 Nom Btu Heating Capacity From Compressor.
Additional 17,065 Nom Btu Heating Capacity From Heat Strips @ 240V.
Circuit A: MCA 45, MDCP 50, Min. Wire Size #8
Circuit B: MCA 26, MDCP 30, Min. Wire Size #10
1650 CFM @ 0-5 Esp, Unit Weight 710 lbs.
230 Volt, 60 Cycle, Single Phase
REQUIRES USE OF DNE DF 3 BARD WALL CURBS
CRV SET BY BARD TO 450 CFM
- 5.0 Ton +  Heat Pump, Bard, R410a, Step Capacity Wallmount, C60H-A05SP4XXE 5 KW
55,500 Nom Btu Cooling Capacity - 14.8 IPLV
51,000 Nom Btu Heating Capacity From Compressor.
Additional 17,065 Nom Btu Heating Capacity From Heat Strips @ 240V.
Circuit A: MCA 45, MDCP 50, Min. Wire Size #8
Circuit B: MCA 26, MDCP 30, Min. Wire Size #10
1650 CFM @ 0-5 Esp, Unit Weight 710 lbs.
230 Volt, 60 Cycle, Single Phase
REQUIRES USE OF DNE DF 3 BARD WALL CURBS
CRV SET BY BARD TO 450 CFM

NOTE:

- Unit certified for 1 or 2 Electrical Circuits, Consult CxxH Specifications Sheet, Form #S3459 for more detailed information.
- MCA: Minimum Circuit Ampacity
- MDCP: Maximum Overcurrent Protection

INTERIOR DUCTWORK - FLEX DUCT - R6
INSULATION - CLASS 1 U.L.-181
FLAME SPREAD - 15
SMOKE DEVELOPED - 25

LEGEND



THERMOSTAT - WHITE RODGERS - 1F95-1277
MOUNT AT +48" A.F.F.
GP WIRING DIAGRAM # 11-0207



SHOEMAKER 104, T-BAR, 4 WAY
16" X 16" SUPPLY AIR DIFFUSER
WITH MIN. 26 GA. LINED SIDE OUTLET BOX



RETURN GRILLE WALL, TRU-AIRE 270, 30 X 16, WHITE
(NOT REQUIRED WHEN OPTION 3 BELOW IS SELECTED)

CHECK ONE: REQUIRED OPTIONS:

UNIT MODEL: C36H-C42H

C48H-C60H



TCURBT3642



TCURBT4860



TCURBF3642



TCURBF4860



TFCT53



TFCF53



WMRSC3S

CHECK: OPTIONS:

AND/OR



C02 SENSOR - BARD #8403-096
AT 60" A.F.F. (OPTIONAL)



BARD RETURN AIR DUCT SILENCER
PT#WAPR11-X, Beige (OPTIONAL)



BARD GARD
VANDALISM PROTECTION FOR OUTDOOR COIL



MERV. 13 FILTERS
(OPTIONAL)



MERV. 16 FILTERS
(OPTIONAL)

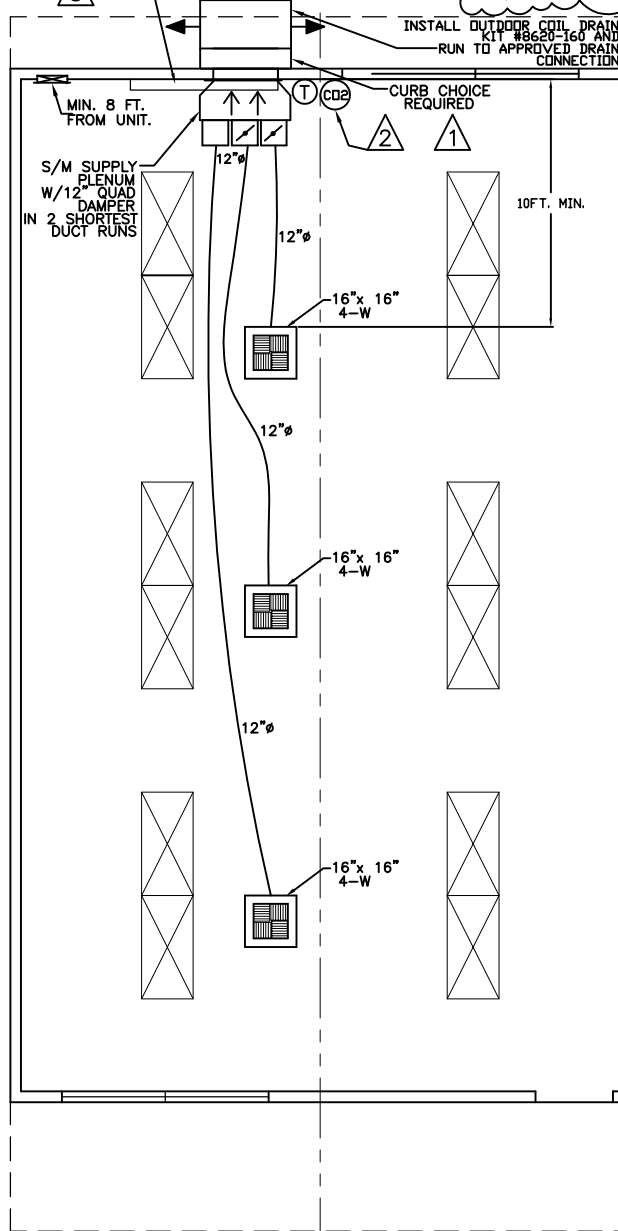


UV LIGHT FOR INDOOR COIL
(OPTIONAL)

RETURN AIR DUCT SILENCER,
HORIZONTAL MOUNT.



ARROWS INDICATE AIRFLOW
OF UNIT - DISTANCE FROM
OTHER UNITS OR BUILDINGS
MIN. 15 FT.



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: 06-0045.DWG

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DWG NAME BARD "CxxH" R410a, "QUIET CLIMATE FLEX" WALLMOUNT HEAT PUMP WITH
3 EA. SUPPLY DUCTS WHITE RODGERS 1F95-1277

SIZE
A

CUSTOMER NAME

JOB NO

DATE

REV. DATE

REV#

APR

DRAWN BY

SHEET

Dwg #

5/27/21

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MDC

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