THERMOTAR MANUFACTURING GROUP

Commercial Manual

FCD-DWH SERIES

Horizontal Chilled Water Air Handling Unit

5 TON - 60 TON



AHRI CERTIFIED® www.ahridirectory.org Air-Cooling and Air-Heating Coils AHRI Standard 410

CERTIFICADO ISO 14001:2015 + ISO 45001:2018 + ISO 9001:2015 BUREAU VERITAS

UL CERTIFIED COMPONENTS

Table of Contents

3 Precautions
4 General Features
5 Nomenclature
6 Technical Specifications
17 Blower Performance Data
23 Equipment Sizing
25 Safety Clearance Distance
26 Equipment Handling Recommendations
27 Electrical Diagram
31 Installation Guidelines
32 Startup Guidelines
33 Maintenance Recommendations
34 Notes

Precautions

In this document, you will find a series of key recommendations to ensure proper start-up, efficient operation, and adequate maintenance of your equipment. Preventive care will not only guarantee the optimal functioning of the equipment, but it will also extend its useful life, optimize its performance, and help you save time and money in the long run.

By following these simple maintenance and operation steps, you can keep your HVAC system in the best operating conditions possible, maximizing its energy efficiency and avoiding unnecessary and costly breakdowns. Remember, regular maintenance not only improves comfort in your space, but also contributes to the well-being in general and the safety of everyone who uses it.

DANGER

Incorrect mounting, lifting, or movement may cause damage to the unit, property damage, serious personal injuries, or even death. Consult the weight and center of gravity data indicated in the project documentation to know the weights and center of gravity of the unit.

WARNING

An installation, adjustment, alteration, service, or incorrect maintenance may result in personal injury, death, or property damage. Therefore, all services or maintenance must be performed by a licensed professional contractor or an authorized service agency.

WARNING



Disconnect power source(s) before performing maintenance. Service must be performed by qualified personnel.
Risk of electric shock! May cause injury or death!

WARNING

The installation of the system and all components, parts, and associated accessories that form part of the installation must be carried out in accordance with the regulations of ALL pertinent authorities and MUST comply with all applicable codes. It is the responsibility of the contractor/installer to determine and comply with ALL applicable regulations and codes.

WARNING

This device is not designed to be used by persons (including children) with physical, sensory, or mental limitations, or with lack of experience and knowledge, unless they have received supervision or instruction regarding the use of the device by a person responsible for their safety.

WARNING

The lifting angle must not exceed 30 degrees from the vertical, as the unit may become unstable, which could result in unit damage, property damage, serious personal injuries, or death.

WARNING

Drain pans must be cleaned periodically. Accumulated material such as dirt may cause illnesses or death. Cleaning must be performed by qualified personnel.

WARNING

Keep in mind that the center of gravity is not necessarily located in the geometric center of the unit. Additional lifting elements must not be attached or secured to the unit, as this may affect the center of gravity and cause personal injuries or death, as well as damage to property or the unit. Qualified personnel must determine and verify, according to weight data, the lifting center of the unit, the location of the center of gravity, and lifting details according to the unit configuration.

WARNING

Children must NOT play with the equipment without supervision.

CAUTION

Lifting mechanisms must not come into contact with the unit beyond the lifting points. Care must always be taken when lifting the unit to avoid damaging control panels, unit housings, tubing, and unit structure.

CAUTION

Do not store or install the units in corrosive environments or in places exposed to extreme temperatures or humidity. Corrosive conditions, high temperatures, or humidity can significantly affect performance, reliability, and service life. Always move and store units in a vertical position. Tilting units may cause damage to the equipment.

CAUTION

RISK OF CUT – Failure to follow this precaution may cause personal injury. Metal parts may have sharp edges or burrs. Be careful and use proper protective clothing, safety glasses, and gloves when handling parts and performing unit maintenance to avoid injuries.

CAUTION

To extend equipment life, do not use these units as a heat source during the drying process of construction. Mechanical components and filters may become clogged quickly with dust and construction debris, which may damage the system and void the product warranty.

NOTICE

Maintenance must be carried out in accordance with the manufacturer's recommendations.

NOTICE

Only install in places not accessible to the general public.

Improper handling due to lack of knowledge of instructions or recommendations contained in this document may cause damage to equipment, reduced performance, and shortened service life. We are not responsible for damage caused by incorrect handling, unauthorized modifications, or consequences arising from using unauthorized modifications that alter the correct operation of the equipment. To guarantee safe and efficient operation, it is essential to follow all recommendations in this manual and use only original spare parts. The manufacturer reserves the right to make technical changes or add updates to improve HVAC system operation.

General Features

The following information refers to the FCD-DW series. The supplied units may have varying characteristics according to customer requirements. For more detailed information about the unit purchased, refer to the technical specifications and the unit's nameplate.

Construction

FCD-DW chilled water air handling units are designed for heavy-duty operation. Their construction ensures a fully stable structure, capable of withstanding and evenly distributing both static and dynamic loads of internal components.

- Manufactured from heavy-gauge galvanized steel sheet, providing high corrosion resistance.
- Single-wall galvanized steel panels with expanded polyethylene insulation.
- Fully insulated fan-evaporator compartment with easy-access panels through doors with recessed handles.
- Structural base in galvanized steel sheet, providing ease and safety during transport and installation.
- Electrostatic powder coating system: a professional, long-lasting finish ideal for aggressive environments.
- Condensate drain pan made of heavy-gauge steel sheet with electrostatic paint coating.
- Motor-fan assembly mounted on a galvanized steel structure with anti-vibration supports.
- Modular design that facilitates maintenance and allows for future expansions or adaptations.

Fans and Motors

FCD-DW air handling units offer a wide variety of fan and motor selection options across different ranges and capacities, ensuring optimal operation according to the user's requirements.

Motors

- Capacities based on design criteria and customer requirements.
- Three-phase electric motor, 220V / 440V
- Protection rating IP54 / IP55
- Optional: suitable for classified areas, explosion-proof applications, or harsh environments
- High-efficiency motors (IE3 / IE4) available to reduce energy consumption

Components

- 24 V control terminal block
- Replaceable air filters, flat or bag type (depending on configuration), with front access
- Evaporator Fan
  - Centrifugal type (conventional or Plug Fan)
  - Direct drive or belt-driven
  - Forward- or backward-curved blades

Air Cooling

The FCD-DW series is equipped with a copper tube and aluminum fin heat exchanger. Available in different sizes, it provides the appropriate heat transfer area.

- Coils with up to 8 rows for direct expansion and/or chilled water
- Fully removable coil
- Available in Copper/Aluminum and Copper/Copper
- Galvanized steel support structure
- Drain pan available in stainless steel
- Optional: anti-corrosion coating for applications in marine or industrial environments

Control and Operation

- Digital thermostat with programmable scheduling functions
- Optional control system with touchscreen HMI for local monitoring and configuration
- Automatic protections against overcurrent, overpressure, and incorrect phase sequence

Maintenance and Safety

- Front access to all components for inspection and maintenance tasks
- Filters, fans, motors, and coils accessible without the need for special tools
- Warning labels and clear identification of electrical connections and critical components
- Installation and maintenance manual included

FCD - 240 DW H - TP - 3 -

Category

FCD	Standard Air Handling Unit
MINIPK	MINIPACK Air Handling Unit
FCAPK	AIRPACK Air Handling Unit

Nominal Capacity

072	6 Ton	**240**	20 Ton
090	7.5 Ton	**300**	25 Ton
102	8.5 Ton	**360**	30 Ton
120	10 Ton	**480**	40 Ton
150	12.5 Ton	**600**	50 Ton
180	15 Ton	**720**	60 Ton
210	17.5 Ton		

Expansion

DW	Chilled Water

Unit Configuration / Cabinet Orientation

V	Vertical
H	Horizontal
D	Dual
L	L-shaped configuration
C	C-shaped configuration

Fan Drive Type

TD	Direct Drive
TP	Belt Drive
PF	Plug Fan (Plenum Fan)

Power Supply

1	220V / 60Hz / 1PH
2	110V / 60Hz / 1PH
3	220V / 60Hz / 3PH
4	440V / 60Hz / 3PH
5	380V / 50Hz / 3PH
7	380V / 60Hz / 3PH
8	220V / 50Hz / 3PH
9	440V / 50Hz / 3PH

Revision / Additional Options

	(Blank) No Additional Revisions - Standard Equipment
A	(Letter A - Z) Design Version - Specified on the Drawing / Order / Data Sheet

	FCD-060DWH-TP-1	FCD-060DWH-TP-4
GENERAL DATA		
Cooling Capacity (BTU/h)	60,000	60,000
Tons of Refrigeration	5	5
Sound Level (dB)	72	72
EVAPORATOR FAN		
Fan Drive Type	Belt Drive	Belt Drive
Type	Centrifugal	Centrifugal
Number of Fans	1	1
Nominal Airflow[1] (CFM)	2000	2000
Fan(DxW)	10 x 10	10 x 10
Number of Motors	1	1
Current (A)	2.8	1.4
Power (HP)	1.0	1.0
RPM	1750	1750
EVAPORATOR COIL		
Type (Tube / Fin)	Copper / Aluminum	Copper / Aluminum
Configuraction	Slant	Slant
Area (ft^2)	4.2	4.2
Rows / Fins per Inch	4 / 13	4 / 13
Inlet Pipe Diameter (in.)	1" NPT	1" NPT
Outlet Pipe Diameter (in.)	1" NPT	1" NPT
ELECTRICAL DATA		
V / Ph / Hz	(208-230 / 1 / 60)	(440 / 1 / 60)
Operating Current[1] (A)	2.8	1.4
Total Unit Amperage[1] (A)	2.8	1.4
Minimum Circuit Ampacity (A)	3.5	1.8
Max. Overcurrent Protection (A)	6.5	3.2
NET WEIGHT (kg)	115	115
GROSS WEIGHT (kg)	117	117

Notes: [1] Data corresponding to a specific operating condition, based on AHRI Standard 210/240 or 360. [2] The information provided in the table is subject to change without prior notice.

	FCD-090DWH-TP-3	FCD-090DWH-TP-4
GENERAL DATA		
Cooling Capacity (BTU/h)	90,000	90,000
Tons of Refrigeration	7.5	7.5
Sound Level (dB)	72	72
EVAPORATOR FAN		
Fan Drive Type	Belt Drive	Belt Drive
Type	Centrifugal	Centrifugal
Number of Fans	1	1
Nominal Airflow[1] (CFM)	3000	3000
Fan(DxW)	15 x 15	15 x 15
Number of Motors	1	1
Current (A)	4.2	1.5
Power (HP)	1.5	1.5
RPM	1800	1800
EVAPORATOR COIL		
Type (Tube / Fin)	Copper / Aluminum	Copper / Aluminum
Configuraction	Slant	Slant
Area (ft^2)	8.0	8.0
Rows / Fins per Inch	4 / 14	4 / 14
Inlet Pipe Diameter (in.)	1-1/2" NPT	1-1/2" NPT
Outlet Pipe Diameter (in.)	1-1/2" NPT	1-1/2" NPT
ELECTRICAL DATA		
V / Ph / Hz	(208-230 / 3 / 60)	(440 / 3 / 60)
Operating Current[1] (A)	4.2	1.5
Total Unit Amperage[1] (A)	4.2	1.5
Minimum Circuit Ampacity (A)	5.3	1.9
Max. Overcurrent Protection (A)	9.5	3.4
NET WEIGHT (kg)	220	220
GROSS WEIGHT (kg)	225	225

Notes: [1] Data corresponding to a specific operating condition, based on AHRI Standard 210/240 or 360. [2] The information provided in the table is subject to change without prior notice.

	FCD-120DWH-TP-3	FCD-120DWH-TP-4
GENERAL DATA		
Cooling Capacity (BTU/h)	120,000	120,000
Tons of Refrigeration	10	10
Sound Level (dB)	72	72
EVAPORATOR FAN		
Fan Drive Type	Belt Drive	Belt Drive
Type	Centrifugal	Centrifugal
Number of Fans	1	1
Nominal Airflow[1] (CFM)	4000	4000
Fan(DxW)	15 x 15	15 x 15
Number of Motors	1	1
Current (A)	5.2	1.6
Power (HP)	2	2
RPM	1800	1800
EVAPORATOR COIL		
Type (Tube / Fin)	Copper / Aluminum	Copper / Aluminum
Configuraction	Slant	Slant
Area (ft^2)	11.1	11.1
Rows / Fins per Inch	4 / 14	4 / 14
Inlet Pipe Diameter (in.)	1-1/2" NPT	1-1/2" NPT
Outlet Pipe Diameter (in.)	1-1/2" NPT	1-1/2" NPT
ELECTRICAL DATA		
V / Ph / Hz	(208-230 / 3 / 60)	(440 / 3 / 60)
Operating Current[1] (A)	5.2	1.6
Total Unit Amperage[1] (A)	5.2	1.6
Minimum Circuit Ampacity (A)	6.5	2
Max. Overcurrent Protection (A)	11.7	3.6
NET WEIGHT (kg)	250	250
GROSS WEIGHT (kg)	255	255

Notes: [1] Data corresponding to a specific operating condition, based on AHRI Standard 210/240 or 360. [2] The information provided in the table is subject to change without prior notice.

	FCD-150DWH-TP-3	FCD-150DWH-TP-4
GENERAL DATA		
Cooling Capacity (BTU/h)	150,000	150,000
Tons of Refrigeration	12.5	12.5
Sound Level (dB)	72	72
EVAPORATOR FAN		
Fan Drive Type	Belt Drive	Belt Drive
Type	Centrifugal	Centrifugal
Number of Fans	1	1
Nominal Airflow[1] (CFM)	5000	5000
Fan(DxW)	15 x 15	15 x 15
Number of Motors	1	1
Current (A)	8.4	4.2
Power (HP)	3	3
RPM	1800	1800
EVAPORATOR COIL		
Type (Tube / Fin)	Copper / Aluminum	Copper / Aluminum
Configuraction	Slant	Slant
Area (ft^2)	11.1	11.1
Rows / Fins per Inch	4 / 14	4 / 14
Inlet Pipe Diameter (in.)	1-1/2" NPT	1-1/2" NPT
Outlet Pipe Diameter (in.)	1-1/2" NPT	1-1/2" NPT
ELECTRICAL DATA		
V / Ph / Hz	(208-230 / 3 / 60)	(440 / 3 / 60)
Operating Current[1] (A)	8.4	4.2
Total Unit Amperage[1] (A)	8.4	4.2
Minimum Circuit Ampacity (A)	10.5	5.3
Max. Overcurrent Protection (A)	18.9	9.5
NET WEIGHT (kg)	270	270
GROSS WEIGHT (kg)	275	275

Notes: [1] Data corresponding to a specific operating condition, based on AHRI Standard 210/240 or 360. [2] The information provided in the table is subject to change without prior notice.

	FCD-180DWH-TP-3	FCD-180DWH-TP-4
GENERAL DATA		
Cooling Capacity (BTU/h)	180,000	180,000
Tons of Refrigeration	15	15
Sound Level (dB)	72	72
EVAPORATOR FAN		
Fan Drive Type	Belt Drive	Belt Drive
Type	Centrifugal	Centrifugal
Number of Fans	1	1
Nominal Airflow[1] (CFM)	6000	6000
Fan(DxW)	15 x 15	15 x 15
Number of Motors	1	1
Current (A)	8.4	4.2
Power (HP)	3	3
RPM	1800	1800
EVAPORATOR COIL		
Type (Tube / Fin)	Copper / Aluminum	Copper / Aluminum
Configuraction	Slant	Slant
Area (ft^2)	14.9	14.9
Rows / Fins per Inch	4 / 13	4 / 13
Inlet Pipe Diameter (in.)	1-1/2" NPT	1-1/2" NPT
Outlet Pipe Diameter (in.)	1-1/2" NPT	1-1/2" NPT
ELECTRICAL DATA		
V / Ph / Hz	(208-230 / 3 / 60)	(440 / 3 / 60)
Operating Current[1] (A)	8.4	4.2
Total Unit Amperage[1] (A)	8.4	4.2
Minimum Circuit Ampacity (A)	10.5	5.3
Max. Overcurrent Protection (A)	18.9	9.5
NET WEIGHT (kg)	340	340
GROSS WEIGHT (kg)	345	345

Notes: [1] Data corresponding to a specific operating condition, based on AHRI Standard 210/240 or 360. [2] The information provided in the table is subject to change without prior notice.

	FCD-240DWH-TP-3	FCD-240DWH-TP-4
GENERAL DATA		
Cooling Capacity (BTU/h)	240,000	240,000
Tons of Refrigeration	20	20
Sound Level (dB)	72	72
EVAPORATOR FAN		
Fan Drive Type	Belt Drive	Belt Drive
Type	Centrifugal	Centrifugal
Number of Fans	1	1
Nominal Airflow[1] (CFM)	8000	8000
Fan(DxW)	15 x 15	15 x 15
Number of Motors	1	1
Current (A)	13.4	6.7
Power (HP)	5	5
RPM	1800	1800
EVAPORATOR COIL		
Type (Tube / Fin)	Copper / Aluminum	Copper / Aluminum
Configuraction	Slant	Slant
Area (ft^2)	18.4	18.4
Rows / Fins per Inch	4 / 13	4 / 13
Inlet Pipe Diameter (in.)	2" NPT	2" NPT
Outlet Pipe Diameter (in.)	2" NPT	2" NPT
ELECTRICAL DATA		
V / Ph / Hz	(208-230 / 3 / 60)	(440 / 3 / 60)
Operating Current[1] (A)	13.4	6.7
Total Unit Amperage[1] (A)	13.4	6.7
Minimum Circuit Ampacity (A)	16.8	8.4
Max. Overcurrent Protection (A)	30.2	15.1
NET WEIGHT (kg)	365	365
GROSS WEIGHT (kg)	370	370

Notes: [1] Data corresponding to a specific operating condition, based on AHRI Standard 210/240 or 360. [2] The information provided in the table is subject to change without prior notice.

	FCD-300DWH-TP-3	FCD-300DWH-TP-4
GENERAL DATA		
Cooling Capacity (BTU/h)	300,000	300,000
Tons of Refrigeration	25	25
Sound Level (dB)	72	72
EVAPORATOR FAN		
Fan Drive Type	Belt Drive	Belt Drive
Type	Centrifugal	Centrifugal
Number of Fans	1	1
Nominal Airflow[1] (CFM)	10000	10000
Fan(DxW)	18 x 18	18 x 18
Number of Motors	1	1
Current (A)	13.4	6.7
Power (HP)	5	5
RPM	1800	1800
EVAPORATOR COIL		
Type (Tube / Fin)	Copper / Aluminum	Copper / Aluminum
Configuraction	Slant	Slant
Area (ft^2)	27.5	27.5
Rows / Fins per Inch	4 / 13	4 / 13
Inlet Pipe Diameter (in.)	2" NPT	2" NPT
Outlet Pipe Diameter (in.)	2" NPT	2" NPT
ELECTRICAL DATA		
V / Ph / Hz	(208-230 / 3 / 60)	(440 / 3 / 60)
Operating Current[1] (A)	13.4	6.7
Total Unit Amperage[1] (A)	13.4	6.7
Minimum Circuit Ampacity (A)	16.8	8.4
Max. Overcurrent Protection (A)	30.2	15.1
NET WEIGHT (kg)	475	475
GROSS WEIGHT (kg)	485	485

Notes: [1] Data corresponding to a specific operating condition, based on AHRI Standard 210/240 or 360. [2] The information provided in the table is subject to change without prior notice.

	FCD-360DWH-TP-3	FCD-360DWH-TP-4
GENERAL DATA		
Cooling Capacity (BTU/h)	360,000	360,000
Tons of Refrigeration	30	30
Sound Level (dB)	72	72
EVAPORATOR FAN		
Fan Drive Type	Belt Drive	Belt Drive
Type	Centrifugal	Centrifugal
Number of Fans	1	1
Nominal Airflow[1] (CFM)	12000	12000
Fan(DxW)	18 x 18	18 x 18
Number of Motors	1	1
Current (A)	19.0	9.6
Power (HP)	7.5	7.5
RPM	1800	1800
EVAPORATOR COIL		
Type (Tube / Fin)	Copper / Aluminum	Copper / Aluminum
Configuraction	Slant	Slant
Area (ft^2)	27.5	27.5
Rows / Fins per Inch	4 / 12	4 / 12
Inlet Pipe Diameter (in.)	2" NPT	2" NPT
Outlet Pipe Diameter (in.)	2" NPT	2" NPT
ELECTRICAL DATA		
V / Ph / Hz	(208-230 / 3 / 60)	(440 / 3 / 60)
Operating Current[1] (A)	19.0	9.6
Total Unit Amperage[1] (A)	19.0	9.6
Minimum Circuit Ampacity (A)	23.8	12.0
Max. Overcurrent Protection (A)	42.8	21.6
NET WEIGHT (kg)	500	500
GROSS WEIGHT (kg)	510	510

Notes: [1] Data corresponding to a specific operating condition, based on AHRI Standard 210/240 or 360. [2] The information provided in the table is subject to change without prior notice.

	FCD-480DWH-TP-3	FCD-480DWH-TP-4
GENERAL DATA		
Cooling Capacity (BTU/h)	480,000	480,000
Tons of Refrigeration	40	40
Sound Level (dB)	72	72
EVAPORATOR FAN		
Fan Drive Type	Belt Drive	Belt Drive
Type	Centrifugal	Centrifugal
Number of Fans	1	1
Nominal Airflow[1] (CFM)	16000	16000
Fan(DxW)	20 x 20	20 x 20
Number of Motors	1	1
Current (A)	25.0	12.5
Power (HP)	10	10
RPM	1800	1800
EVAPORATOR COIL		
Type (Tube / Fin)	Copper / Aluminum	Copper / Aluminum
Configuraction	Slant	Slant
Area (ft^2)	32.5	32.5
Rows / Fins per Inch	4 / 13	4 / 13
Inlet Pipe Diameter (in.)	2-1/2" NPT	2-1/2" NPT
Outlet Pipe Diameter (in.)	2-1/2" NPT	2-1/2" NPT
ELECTRICAL DATA		
V / Ph / Hz	(208-230 / 3 / 60)	(440 / 3 / 60)
Operating Current[1] (A)	25.0	12.5
Total Unit Amperage[1] (A)	25.0	12.5
Minimum Circuit Ampacity (A)	31.2	15.6
Max. Overcurrent Protection (A)	56.2	28.1
NET WEIGHT (kg)	610	610
GROSS WEIGHT (kg)	620	620

Notes: [1] Data corresponding to a specific operating condition, based on AHRI Standard 210/240 or 360. [2] The information provided in the table is subject to change without prior notice.

	FCD-600DWH-TP-3	FCD-600DWH-TP-4
GENERAL DATA		
Cooling Capacity (BTU/h)	600,000	600,000
Tons of Refrigeration	50	50
Sound Level (dB)	74	74
EVAPORATOR FAN		
Fan Drive Type	Belt Drive	Belt Drive
Type	Centrifugal	Centrifugal
Number of Fans	1	1
Nominal Airflow[1] (CFM)	20000	20000
Fan(DxW)	20 x 20	20 x 20
Number of Motors	1	1
Current (A)	37.5	18.8
Power (HP)	15	15
RPM	1800	1800
EVAPORATOR COIL		
Type (Tube / Fin)	Copper / Aluminum	Copper / Aluminum
Configuraction	Slant	Slant
Area (ft^2)	34	34
Rows / Fins per Inch	4 / 11	4 / 11
Inlet Pipe Diameter (in.)	3" NPT	3" NPT
Outlet Pipe Diameter (in.)	3" NPT	3" NPT
ELECTRICAL DATA		
V / Ph / Hz	(208-230 / 3 / 60)	(440 / 3 / 60)
Operating Current[1] (A)	25.0	12.5
Total Unit Amperage[1] (A)	25.0	12.5
Minimum Circuit Ampacity (A)	31.2	15.6
Max. Overcurrent Protection (A)	56.2	28.1
NET WEIGHT (kg)	635	635
GROSS WEIGHT (kg)	640	640

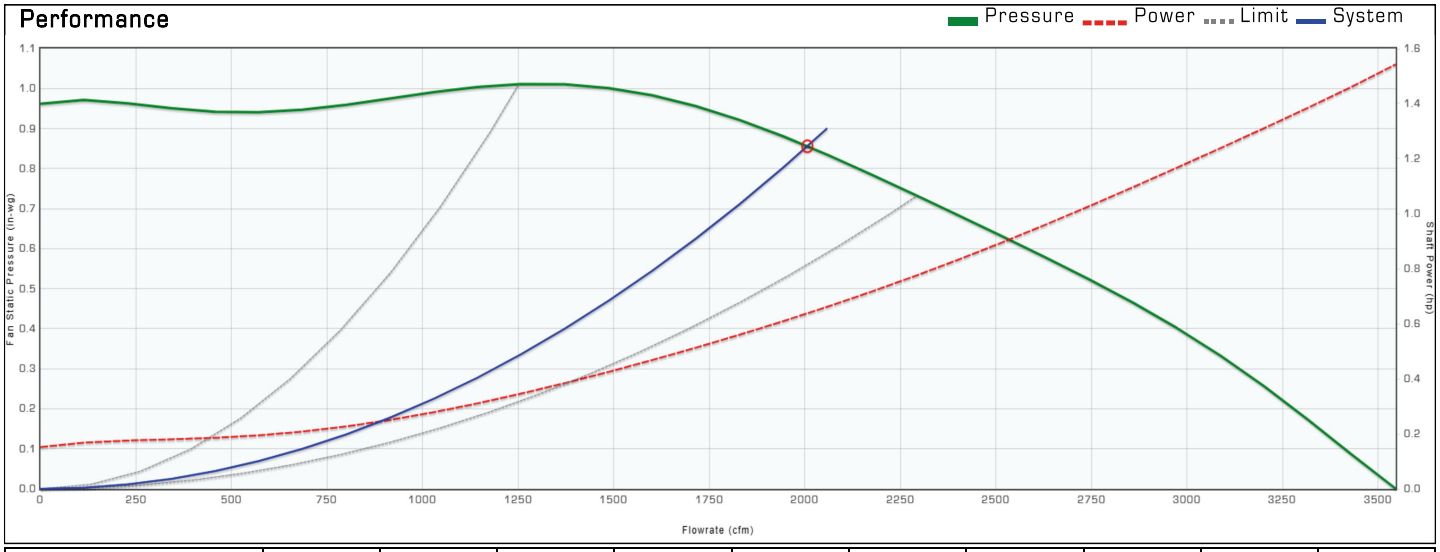
Notes: [1] Data corresponding to a specific operating condition, based on AHRI Standard 210/240 or 360. [2] The information provided in the table is subject to change without prior notice.

	FCD-720DWH-TP-3	FCD-720DWH-TP-4
GENERAL DATA		
Cooling Capacity (BTU/h)	720,000	720,000
Tons of Refrigeration	60	60
Sound Level (dB)	74	74
EVAPORATOR FAN		
Fan Drive Type	Belt Drive	Belt Drive
Type	Centrifugal	Centrifugal
Number of Fans	1	1
Nominal Airflow[1] (CFM)	24000	24000
Fan(DxW)	20 x 20	20 x 20
Number of Motors	1	1
Current (A)	37.5	18.8
Power (HP)	15	15
RPM	1800	1800
EVAPORATOR COIL		
Type (Tube / Fin)	Copper / Aluminum	Copper / Aluminum
Configuraction	Slant	Slant
Area (ft^2)	38.9	38.9
Rows / Fins per Inch	4 / 11	4 / 11
Inlet Pipe Diameter (in.)	3-1/2" NPT	3-1/2" NPT
Outlet Pipe Diameter (in.)	3-1/2" NPT	3-1/2" NPT
ELECTRICAL DATA		
V / Ph / Hz	(208-230 / 3 / 60)	(440 / 3 / 60)
Operating Current[1] (A)	25.0	12.5
Total Unit Amperage[1] (A)	25.0	12.5
Minimum Circuit Ampacity (A)	31.2	15.6
Max. Overcurrent Protection (A)	56.2	28.1
NET WEIGHT (kg)	655	655
GROSS WEIGHT (kg)	660	660

Notes: [1] Data corresponding to a specific operating condition, based on AHRI Standard 210/240 or 360. [2] The information provided in the table is subject to change without prior notice.

5 TON

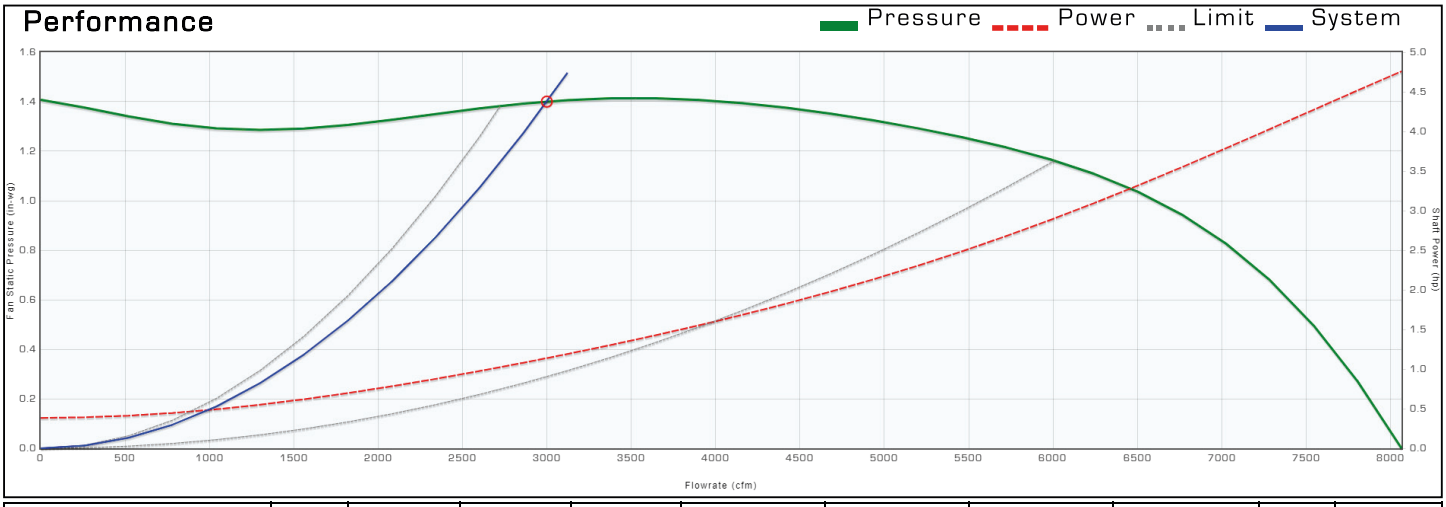
Model DD10-10A	Flow 2006 cfm	Pressure 0.86 in-wg	Temperature 70 °F	Altitude 0 ft	Density 0.075 lb/ft^3	Q Derate 0 cfm	P Derate 0.00 in-wg	Vav Set Point 0.00 in-wg
Fan Tag	Flow 2006 cfm	Pressure 0.86 in-wg	Power 0.64 hp	Static Efficiency 42.5 %	Total Efficiency 54.4 %	Speed 990 rpm	Outlet Velocity 1967 fpm	FEI 1.37
	Impeller Dia 10.0 in	Outlet Area 1.02 ft^2	Max. Speed 2000 rpm	AMCA Class 0	Drive Direct Drives	Blades 48	P Volume 2.19 ft^3	TurnDown 100 %



Sound(Lwi/Lwo)	63	125	250	500	1000	2000	4000	8000	Lw	LwA
	74/79	74/75	72/75	71/69	72/67	69/65	67/62	64/57	80/82	76/73

7.5 TON

Model A15-15A	Flow 3000 cfm	Pressure 1.40 in-wg	Temperature 70 °F	Altitude 0 ft	Density 0.075 lb/ft^3	Q Derate 0 cfm	P Derate 0.00 in-wg	Vav Set Point 0.00 in-wg
Fan Tag	Flow 3000 cfm	Pressure 1.40 in-wg	Power 1.14 hp	Static Efficiency 58.2 %	Total Efficiency 64.0 %	Speed 791 rpm	Outlet Velocity 1493 fpm	Efficiency Rating FEG71
	Impeller Dia 15.0 in	Outlet Area 2.01 ft^2	Max. Speed 1600 rpm	AMCA Class 0	Drive Belt Drive	Blades 51	P Volume 7.32 ft^3	TurnDown 100 %

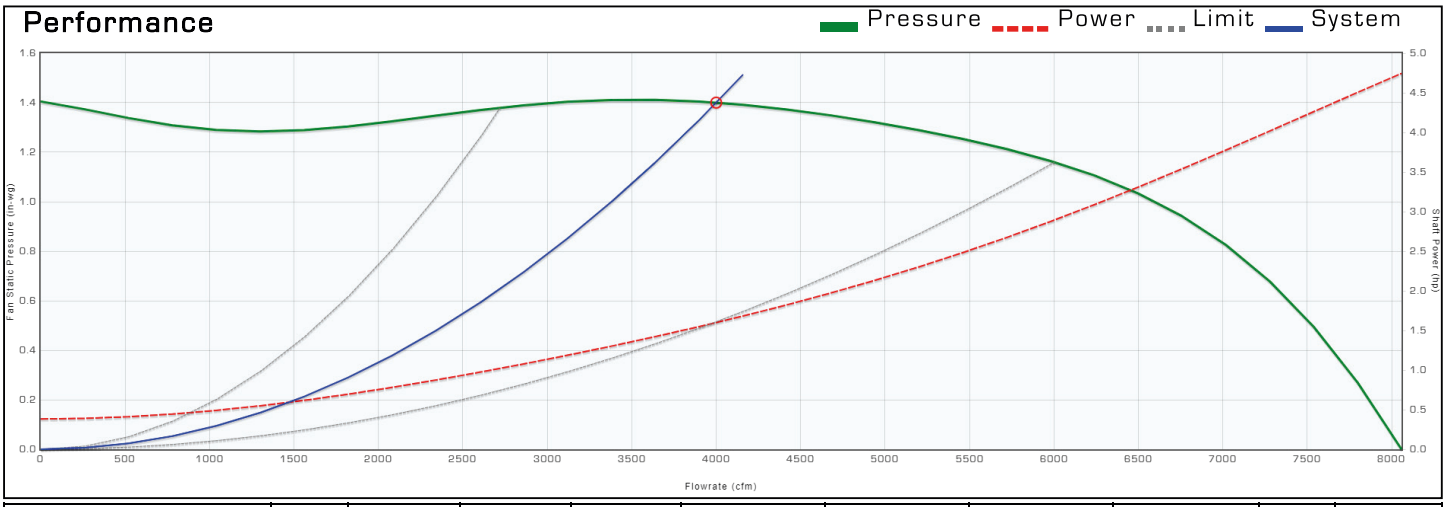


Sound(Lwi)	63	125	250	500	1000	2000	4000	8000	Lw	LwA
	83	82	77	76	74	73	71	69	87	80

Notes: Airflow performance data are obtained in accordance with AMCA 210-07. Installed performance will vary depending on the extent of the cabinet geometry. Sound data are estimated based on industry experience for the selected product type. These data are intended for comparative purposes only and do not represent installed values.

10 TON

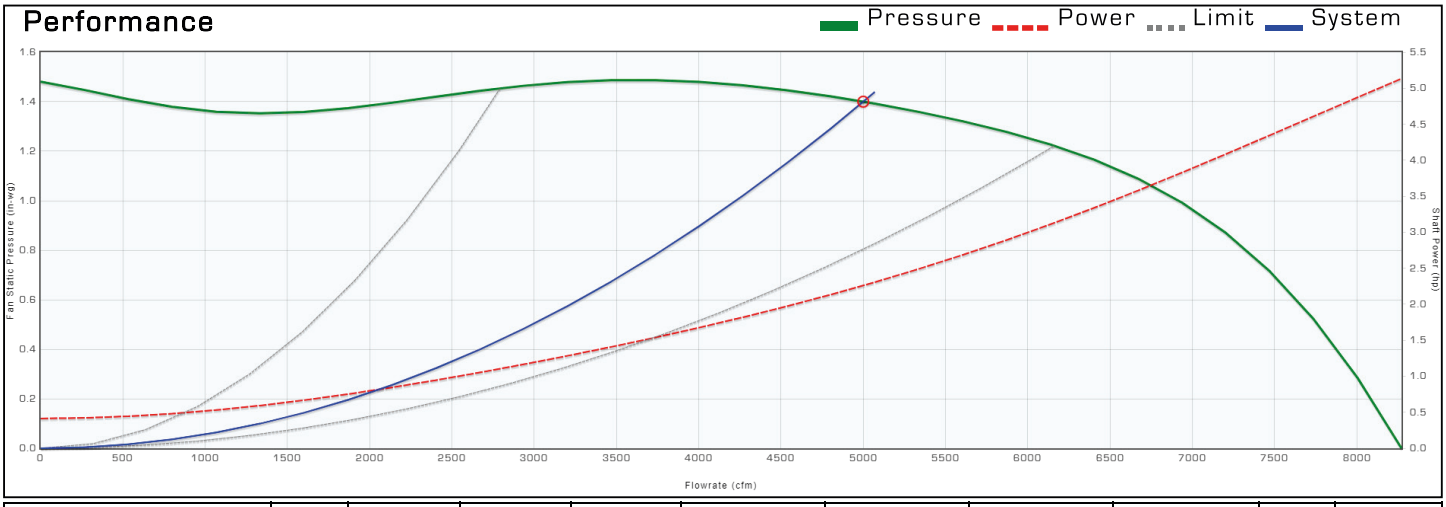
Model A15-15A	Flow 4000 cfm	Pressure 1.40 in-wg	Temperature 70 °F	Altitude 0 ft	Density 0.075 lb/ft^3	Q Derate 0 cfm	P Derate 0.00 in-wg	Vav Set Point 0.00 in-wg
Fan Tag	Flow 4000 cfm	Pressure 1.40 in-wg	Power 1.60 hp	Static Efficiency 55.2 %	Total Efficiency 64.9 %	Speed 791 rpm	Outlet Velocity 1990 fpm	Efficiency Rating FEG71
	Impeller Dia 15.0 in	Outlet Area 2.01 ft^2	Max. Speed 1600 rpm	AMCA Class 0	Drive Belt Drive	Blades 51	P Volume 7.32 ft^3	TurnDown 100 %



Sound(Lwi)	63	125	250	500	1000	2000	4000	8000	Lw	LwA
	84	83	79	78	76	74	73	71	89	82

12.5 TON

Model A15-15A	Flow 5000 cfm	Pressure 1.40 in-wg	Temperature 70 °F	Altitude 0 ft	Density 0.075 lb/ft^3	Q Derate 0 cfm	P Derate 0.00 in-wg	Vav Set Point 0.00 in-wg
Fan Tag	Flow 5000 cfm	Pressure 1.40 in-wg	Power 2.26 hp	Static Efficiency 48.8 %	Total Efficiency 62.3 %	Speed 812 rpm	Outlet Velocity 2488 fpm	Efficiency Rating FEG71
	Impeller Dia 15.0 in	Outlet Area 2.01 ft^2	Max. Speed 1600 rpm	AMCA Class 0	Drive Belt Drive	Blades 51	P Volume 7.32 ft^3	TurnDown 100 %

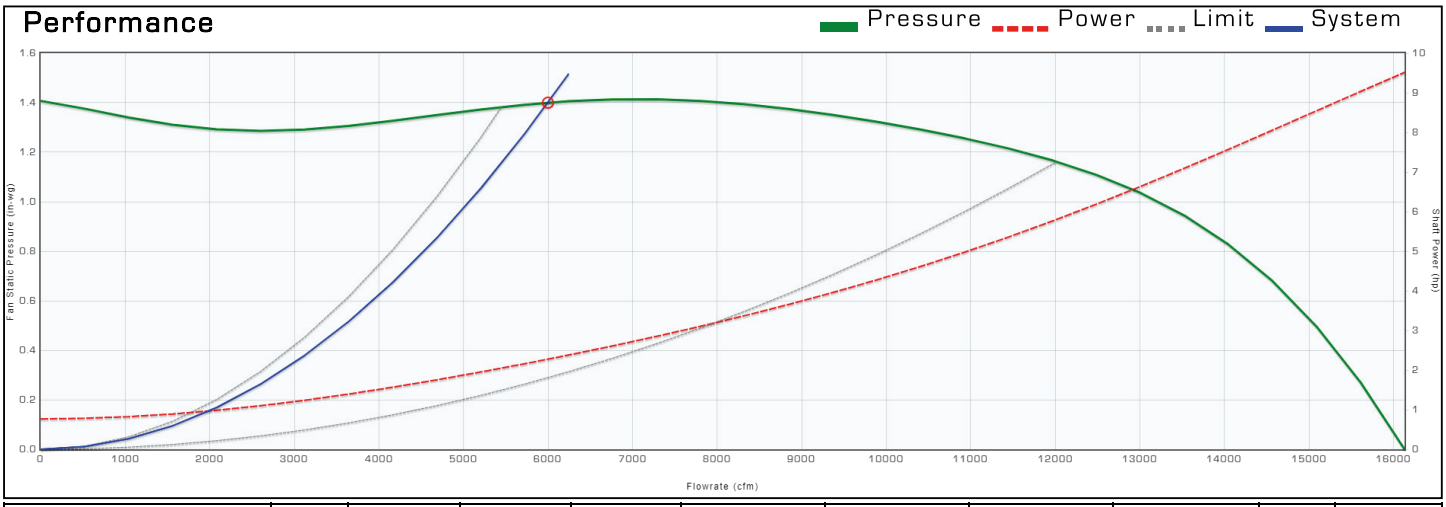


Sound(Lwi)	63	125	250	500	1000	2000	4000	8000	Lw	LwA
	87	86	82	80	79	77	75	73	91	84

Notes: Airflow performance data are obtained in accordance with AMCA 210-07. Installed performance will vary depending on the extent of the cabinet geometry. Sound data are estimated based on industry experience for the selected product type. These data are intended for comparative purposes only and do not represent installed values.

15 TON

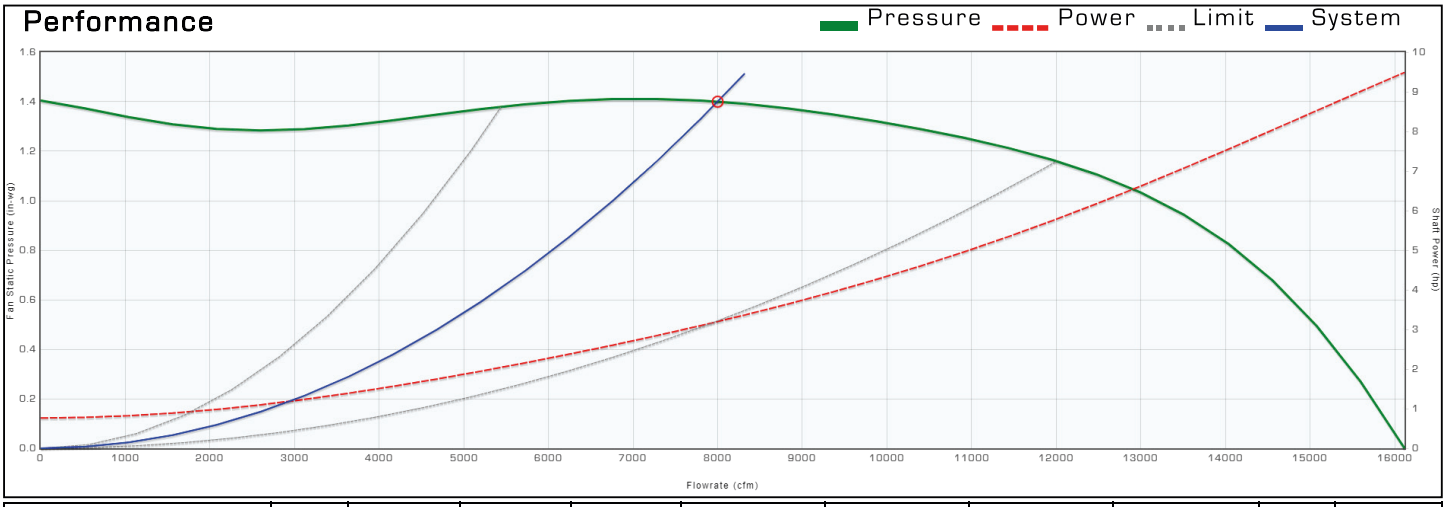
Model 2A15-15A	Flow 6000 cfm	Pressure 1.40 in-wg	Temperature 70 °F	Altitude 0 ft	Density 0.075 lb/ft^3	Q Derate 0 cfm	P Derate 0.00 in-wg	Vav Set Point 0.00 in-wg
Fan Tag	Flow 6000 cfm	Pressure 1.40 in-wg	Power 2.27 hp	Static Efficiency 58.2 %	Total Efficiency 64.0 %	Speed 791 rpm	Outlet Velocity 1493 fpm	Efficiency Rating FEG71
	Impeller Dia 15.0 in	Outlet Area 4.02 ft^2	Max. Speed 1730 rpm	AMCA Class 0	Drive Belt Drive	Blades 51	P Volume 22.72 ft^3	TurnDown 100 %



Sound(Lwi)	63	125	250	500	1000	2000	4000	8000	Lw	LwA
	87	85	79	78	79	76	74	72	90	83

20 TON

Model 2A15-15A	Flow 8000 cfm	Pressure 1.40 in-wg	Temperature 70 °F	Altitude 0 ft	Density 0.075 lb/ft^3	Q Derate 0 cfm	P Derate 0.00 in-wg	Vav Set Point 0.00 in-wg
Fan Tag	Flow 8000 cfm	Pressure 1.40 in-wg	Power 3.20 hp	Static Efficiency 55.2 %	Total Efficiency 64.9 %	Speed 791 rpm	Outlet Velocity 1990 fpm	Efficiency Rating FEG71
	Impeller Dia 15.0 in	Outlet Area 4.02 ft^2	Max. Speed 1730 rpm	AMCA Class 0	Drive Belt Drive	Blades 51	P Volume 22.72 ft^3	TurnDown 100 %

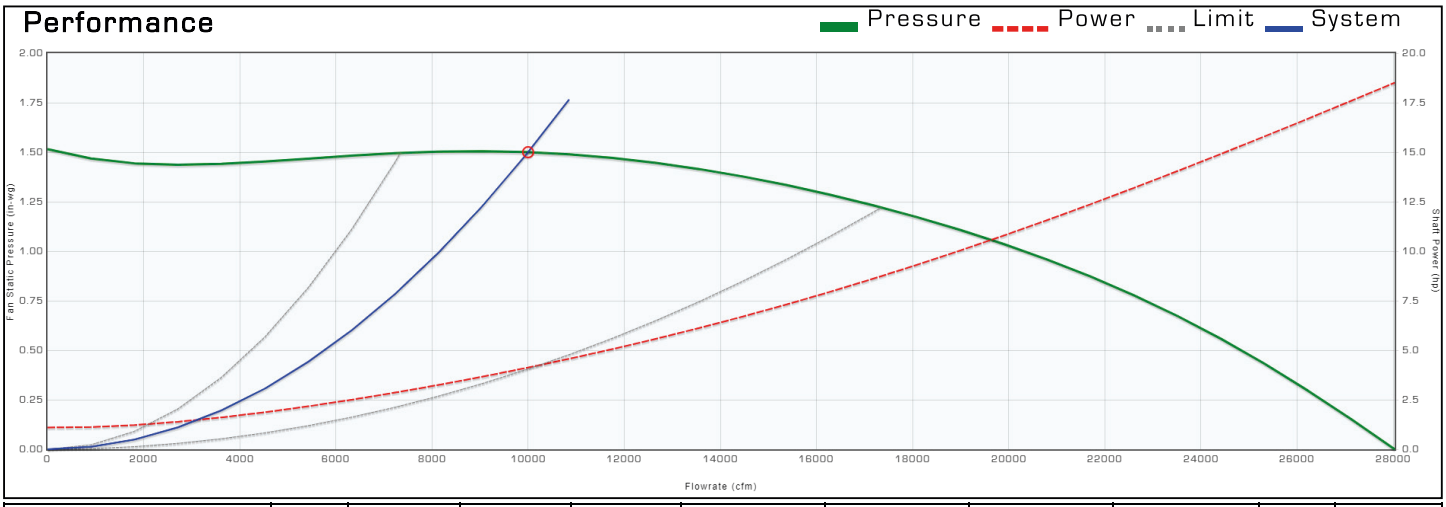


Sound(Lwi)	63	125	250	500	1000	2000	4000	8000	Lw	LwA
	88	87	81	80	80	77	76	74	92	85

Notes: Airflow performance data are obtained in accordance with AMCA 210-07. Installed performance will vary depending on the extent of the cabinet geometry. Sound data are estimated based on industry experience for the selected product type. These data are intended for comparative purposes only and do not represent installed values.

25 TON

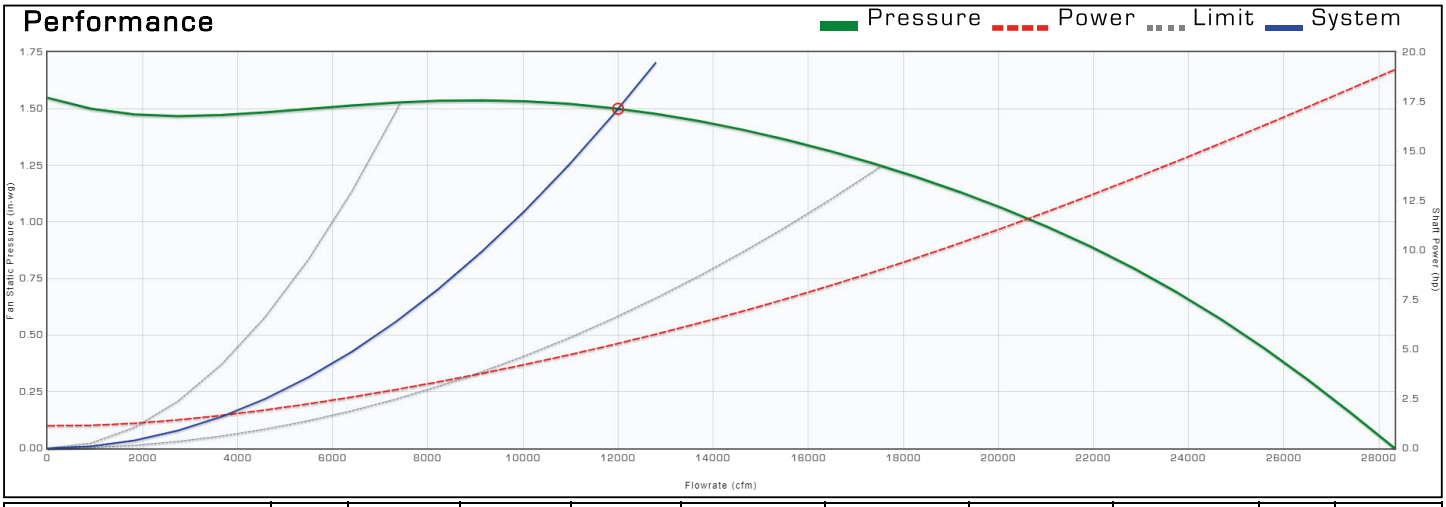
Model 2A18-18A	Flow 10000 cfm	Pressure 1.50 in-wg	Temperature 70 °F	Altitude 0 ft	Density 0.075 lb/ft^3	Q Derate 0 cfm	P Derate 0.00 in-wg	Vav Set Point 0.00 in-wg
Fan Tag	Flow 10000 cfm	Pressure 1.50 in-wg	Power 4.13 hp	Static Efficiency 57.3 %	Total Efficiency 64.5 %	Speed 708 rpm	Outlet Velocity 1742 fpm	Efficiency Rating FEG71
	Impeller Dia 18.0 in	Outlet Area 5.74 ft^2	Max. Speed 1500 rpm	AMCA Class 0	Drive Belt Drive	Blades 48	P Volume 37.75 ft^3	TurnDown 100 %



Sound(Lwi)	63	125	250	500	1000	2000	4000	8000	Lw	LwA
	80	79	78	80	76	74	71	66	86	81

30 TON

Model 2A18-18A	Flow 12000 cfm	Pressure 1.50 in-wg	Temperature 70 °F	Altitude 0 ft	Density 0.075 lb/ft^3	Q Derate 0 cfm	P Derate 0.00 in-wg	Vav Set Point 0.00 in-wg
Fan Tag	Flow 12000 cfm	Pressure 1.50 in-wg	Power 5.29 hp	Static Efficiency 53.6 %	Total Efficiency 63.4 %	Speed 715 rpm	Outlet Velocity 2091 fpm	Efficiency Rating FEG71
	Impeller Dia 18.0 in	Outlet Area 5.74 ft^2	Max. Speed 1500 rpm	AMCA Class 0	Drive Belt Drive	Blades 48	P Volume 37.75 ft^3	TurnDown 100 %

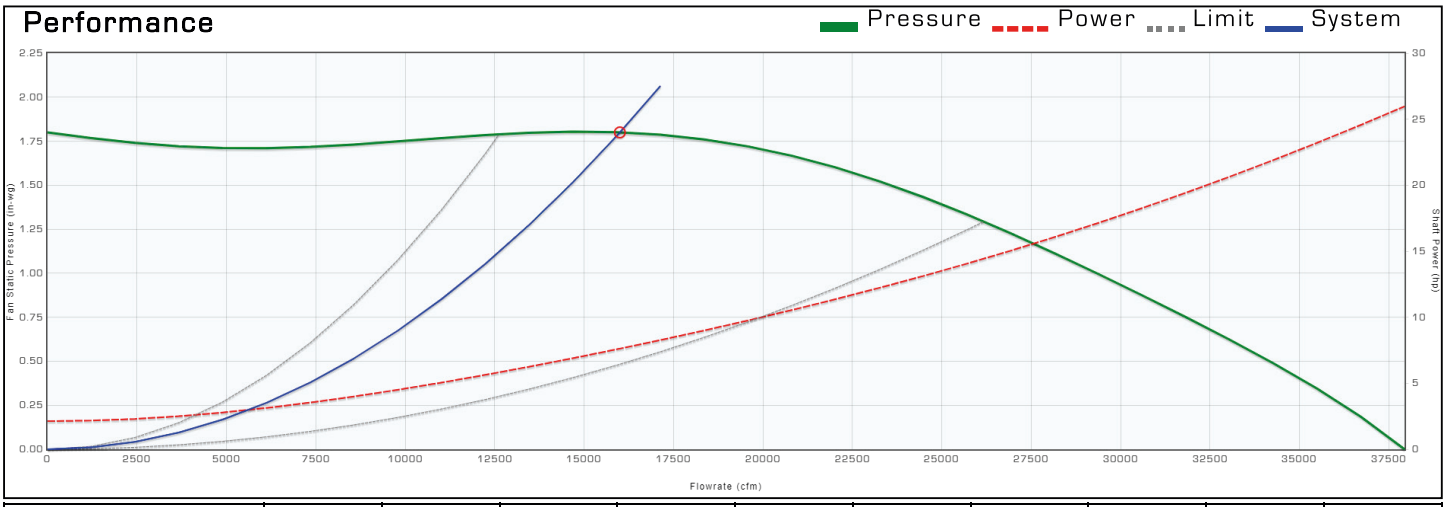


Sound(Lwi)	63	125	250	500	1000	2000	4000	8000	Lw	LwA
	81	81	79	81	77	75	72	67	88	83

Notes: Airflow performance data are obtained in accordance with AMCA 210-07. Installed performance will vary depending on the extent of the cabinet geometry. Sound data are estimated based on industry experience for the selected product type. These data are intended for comparative purposes only and do not represent installed values.

40 TON

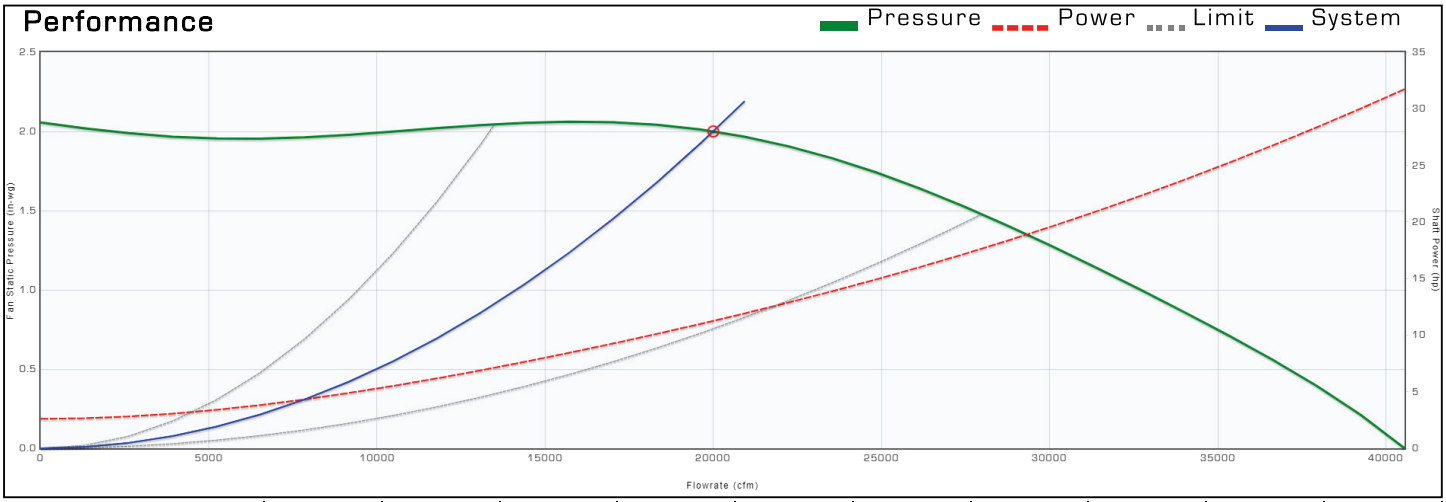
Model 2A20-20H	Flow 16000 cfm	Pressure 1.80 in-wg	Temperature 70 °F	Altitude 0 ft	Density 0.075 lb/ft^3	Q Derate 0 cfm	P Derate 0.00 in-wg	Vav Set Point 0.00 in-wg
Fan Tag	Flow 16000 cfm	Pressure 1.80 in-wg	Power 7.62 hp	Static Efficiency 59.6 %	Total Efficiency 67.0 %	Speed 662 rpm	Outlet Velocity 1905 fpm	Efficiency Rating FEG71
	Impeller Dia 20.0 in	Outlet Area 8.40 ft^2	Max. Speed 1280 rpm	AMCA Class 0	Drive Belt Drive	Blades 37	P Volume 58.50 ft^3	TurnDown 100 %



Sound(Lwi/Lwo)	63	125	250	500	1000	2000	4000	8000	Lw	LwA
	87/88	89/89	85/88	87/89	85/86	87/86	83/81	75/73	95/96	92/92

50 TON

Model 2A20-20H	Flow 20000 cfm	Pressure 2.00 in-wg	Temperature 70 °F	Altitude 0 ft	Density 0.075 lb/ft^3	Q Derate 0 cfm	P Derate 0.00 in-wg	Vav Set Point 0.00 in-wg
Fan Tag	Flow 20000 cfm	Pressure 2.00 in-wg	Power 11.26 hp	Static Efficiency 56.0 %	Total Efficiency 65.9 %	Speed 708 rpm	Outlet Velocity 2381 fpm	Efficiency Rating FEG71
	Impeller Dia 20.0 in	Outlet Area 8.40 ft^2	Max. Speed 1280 rpm	AMCA Class 0	Drive Belt Drive	Blades 37	P Volume 58.50 ft^3	TurnDown 100 %

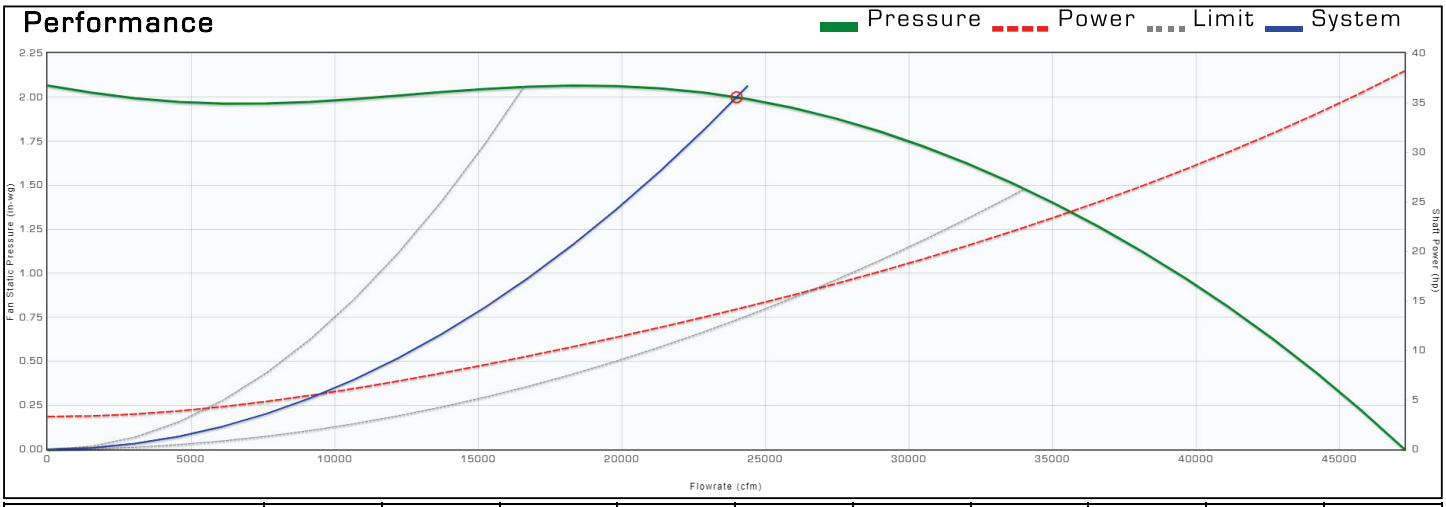


Sound(Lwi/Lwo)	63	125	250	500	1000	2000	4000	8000	Lw	LwA
	88/88	90/90	87/89	89/91	87/87	88/87	85/83	78/75	97/97	93/94

Notes: Airflow performance data are obtained in accordance with AMCA 210-07. Installed performance will vary depending on the extent of the cabinet geometry. Sound data are estimated based on industry experience for the selected product type. These data are intended for comparative purposes only and do not represent installed values.

60 TON

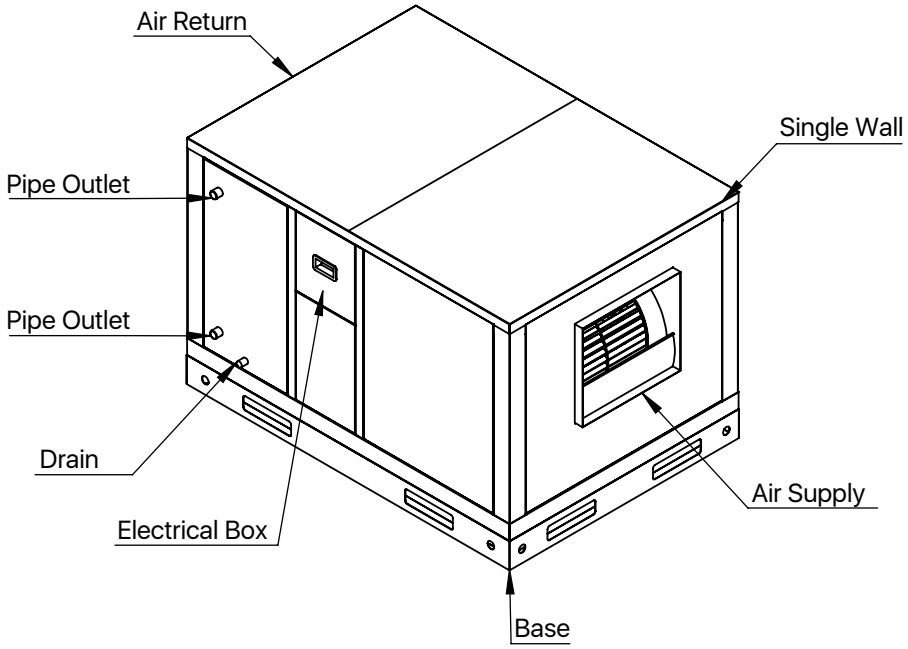
Model 2A22-22H	Flow 24000 cfm	Pressure 2.00 in-wg	Temperature 70 °F	Altitude 0 ft	Density 0.075 lb/ft^3	Q Derate 0 cfm	P Derate 0.00 in-wg	Vav Set Point 0.00 in-wg
Fan Tag	Flow 24000 cfm	Pressure 2.00 in-wg	Power 14.15 hp	Static Efficiency 53.5 %	Total Efficiency 62.7 %	Speed 655 rpm	Outlet Velocity 2353 fpm	Efficiency Rating FEG67
	Impeller Dia 22.0 in	Outlet Area 10.20 ft^2	Max. Speed 1180 rpm	AMCA Class 0	Drive Belt Drive	Blades 37	P Volume 75.75 ft^3	TurnDown 100 %



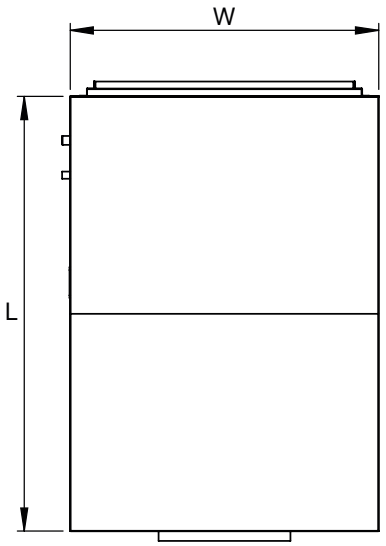
Sound(Lwi/Lwo)	63	125	250	500	1000	2000	4000	8000	Lw	LwA
	89/87	91/89	89/88	90/87	87/83	87/83	85/78	80/71	97/95	93/90

Notes: Airflow performance data are obtained in accordance with AMCA 210-07. Installed performance will vary depending on the extent of the cabinet geometry. Sound data are estimated based on industry experience for the selected product type. These data are intended for comparative purposes only and do not represent installed values.

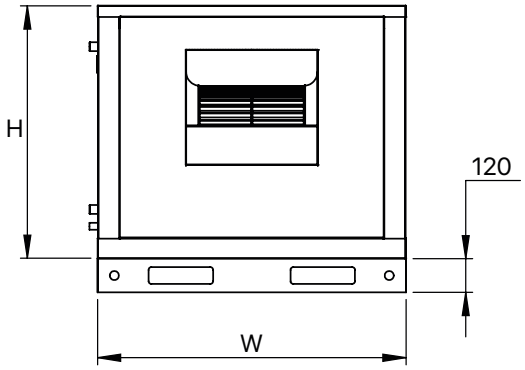
5 TON - 12.5 TON



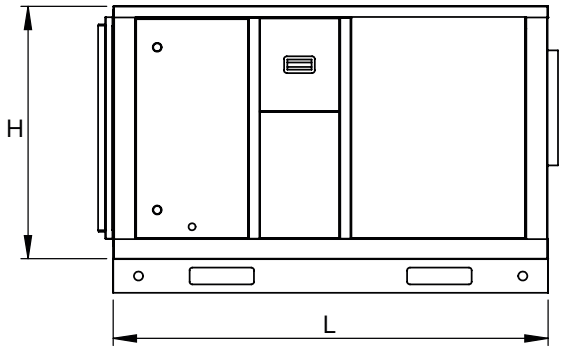
Top View



Front View



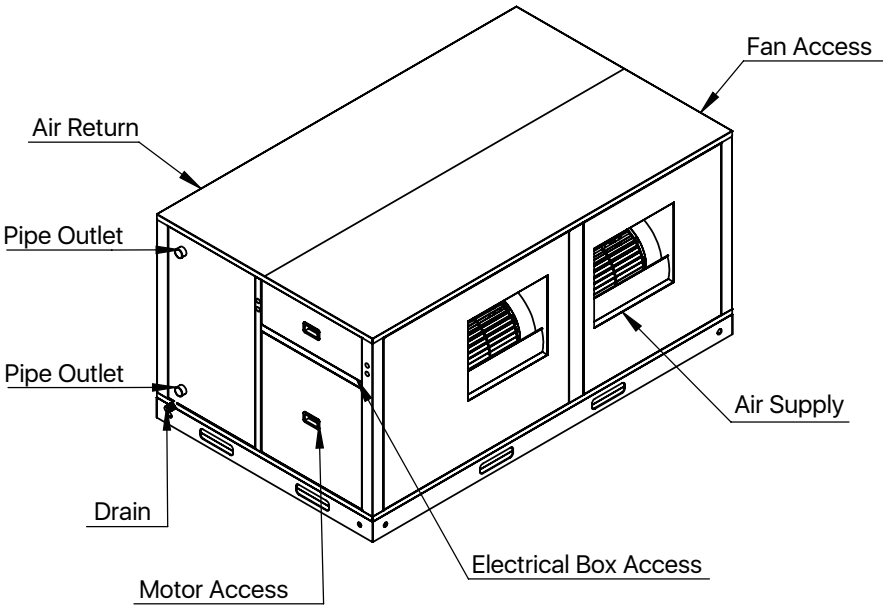
Side View



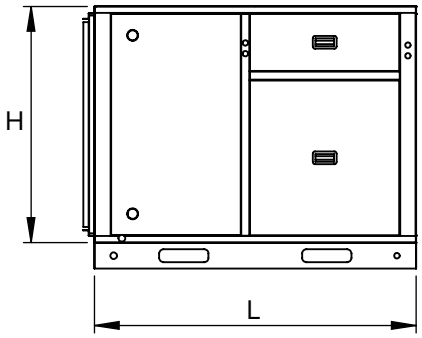
	5 TON	7.5 TON	10 TON	12.5 TON
H	720	900	950	950
W	750	1100	1350	1350
L	1380	1550	1550	1550

Note: All measurements are in millimeters (mm).

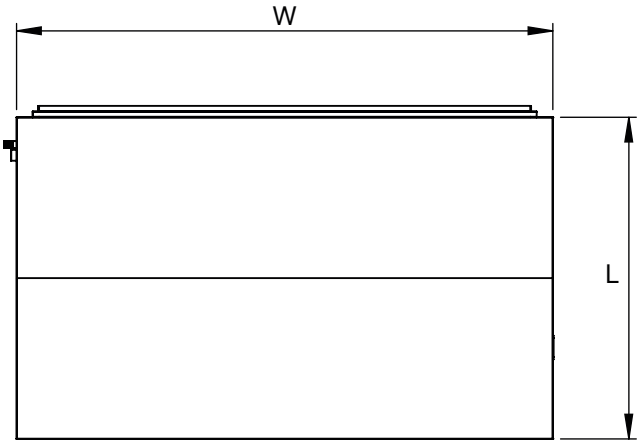
15 TON - 60 TON



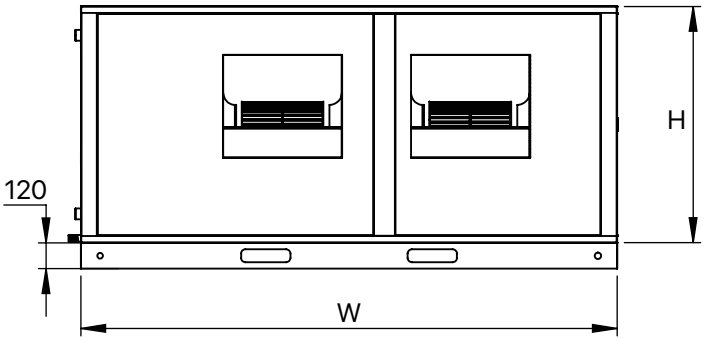
Side View



Top View



Front View



Note: All measurements are in millimeters (mm).

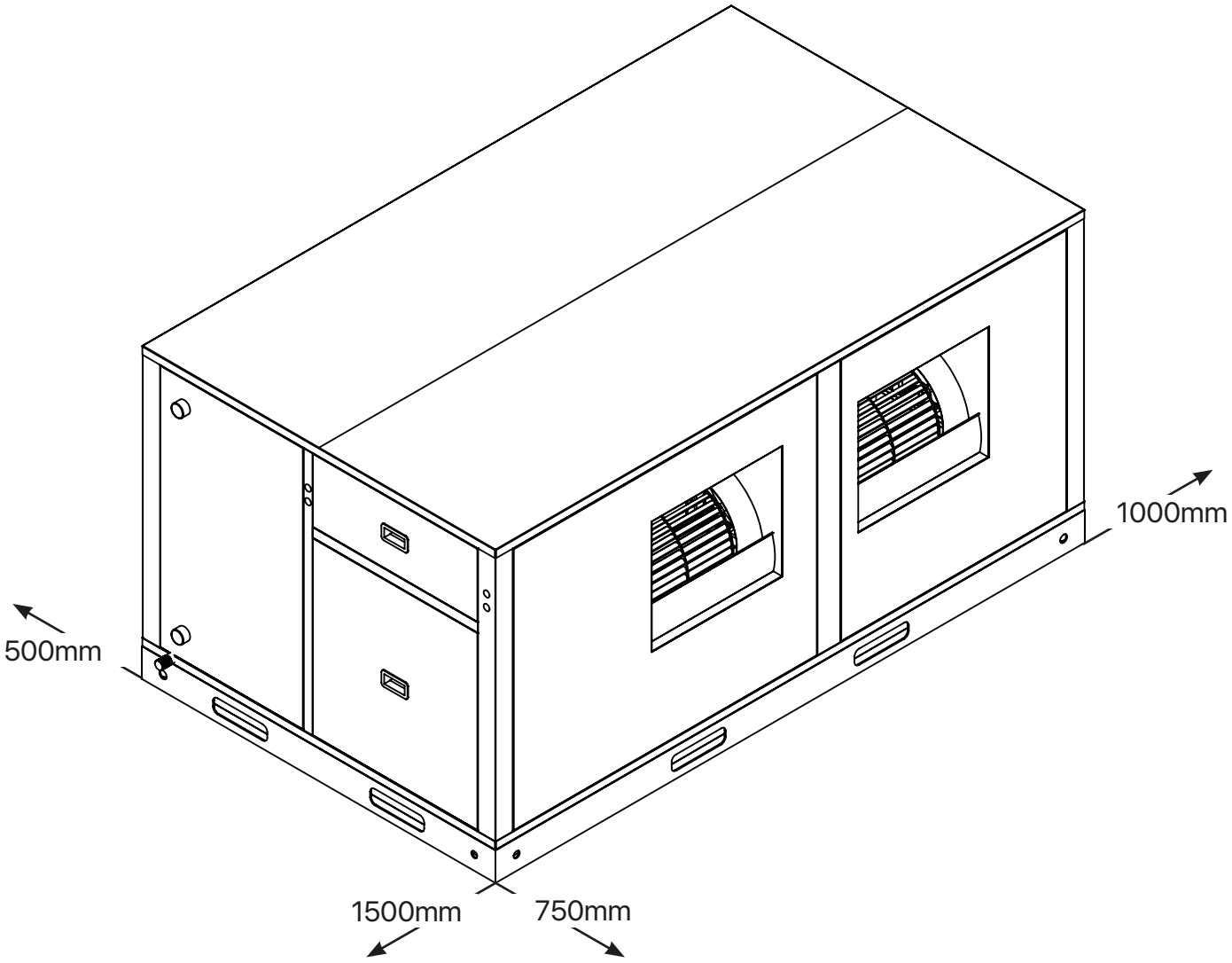
	15 TON	20 TON	25 TON	30 TON	40 TON	50 TON	60 TON
H	1000	1000	1100	1100	1400	1400	1400
W	2250	2250	2500	2500	2800	2900	3000
L	1300	1300	1500	1500	1650	1650	1650

Safety Clearance Distance

The following minimum clearance recommendations for ventilation are provided. The installer must evaluate each application and ensure adequate ventilation. Failure to do so may result in improper unit operation. Reasons for providing clearance:

1. Door opening – All hinged access doors require sufficient space to fully open and allow standard maintenance operations, such as filter replacement.
2. Component removal – In the event of a component failure, such as an energy recovery wheel, adequate side clearance is required to allow complete removal of the component.
3. Air recirculation – Whether from building exhaust outlets or a gas burner flue, a minimum separation distance is required to prevent unwanted air streams from entering the outdoor air intake.
4. Applicable codes – Electrical and other local codes often require minimum clearances around electrical or motorized equipment.

The following minimum clearances must be observed to ensure proper unit performance and serviceability. It is critical that air discharge outlets are not connected into a common duct prior to a minimum distance of 1.5 meters (5 ft), and preferably not less than 2 meters (6.5 ft).



DANGER

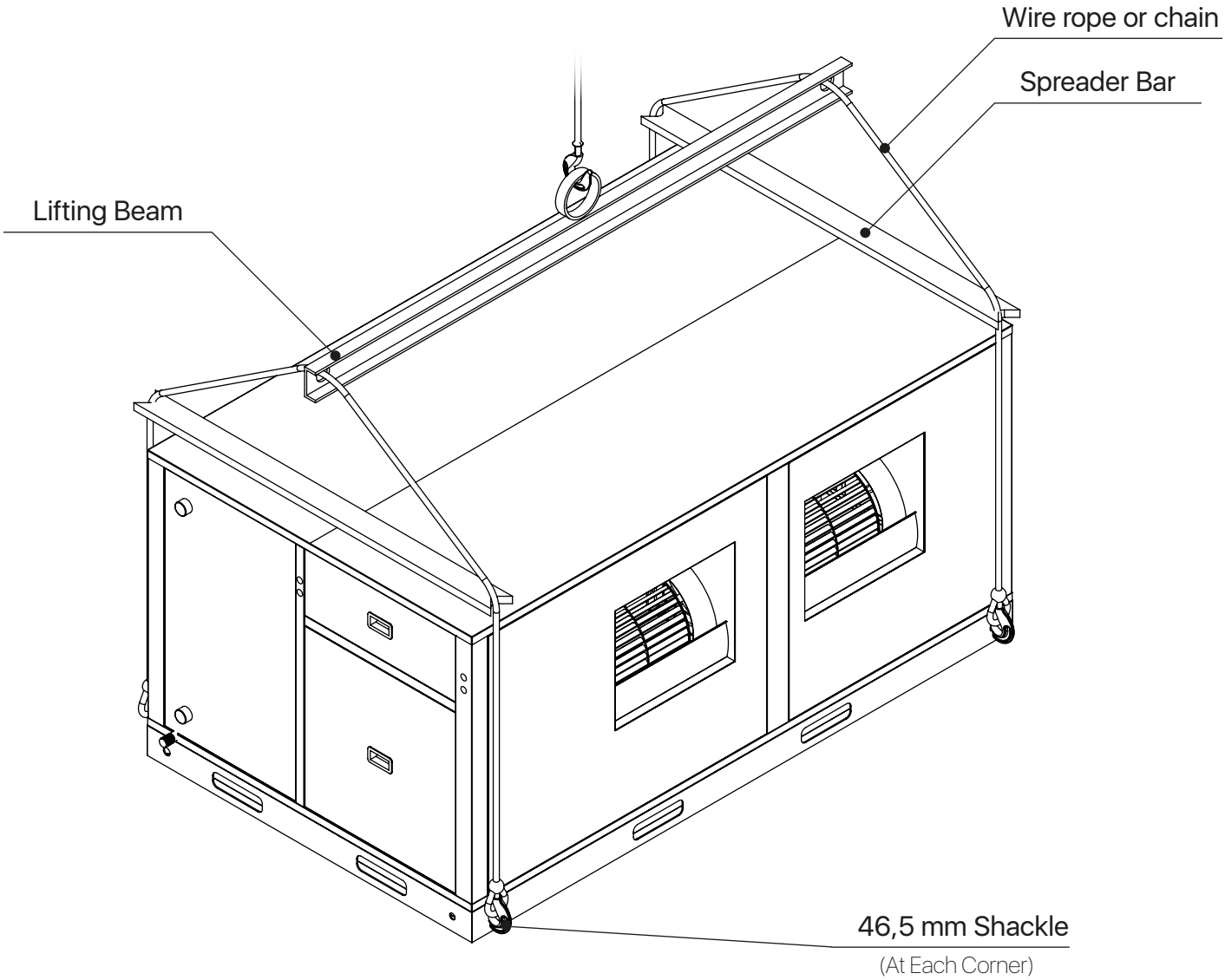
Improper mounting, lifting, or relocation of a unit may result in equipment damage, property damage, serious personal injury, or even death. Refer to the certified dimensioned drawings included in the project documentation for unit weights and center of gravity information.

WARNING

The lifting angle shall not exceed 30 degrees from the vertical, as the unit may become unstable, which could result in equipment damage, property damage, serious personal injury, or even death.

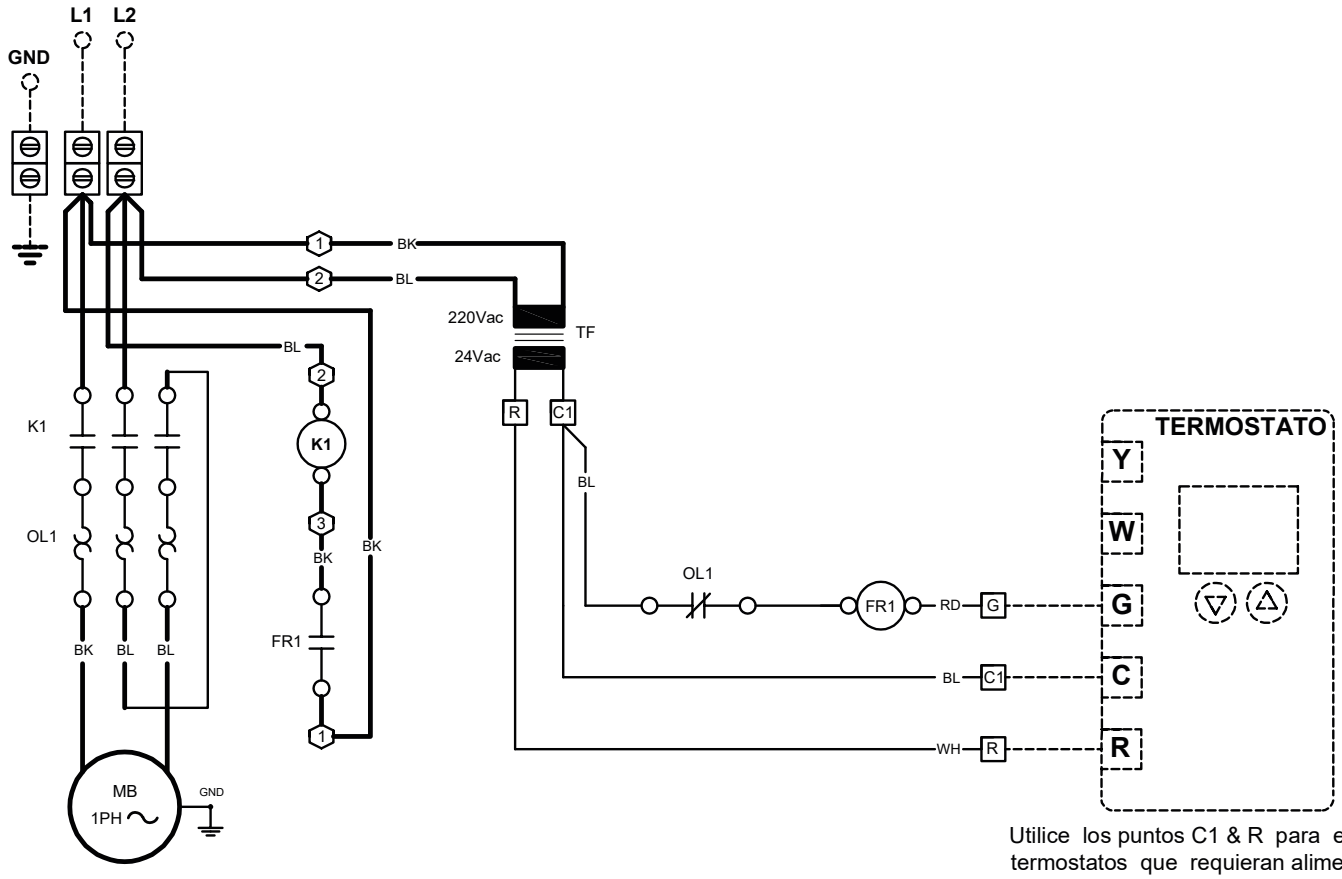
The equipment is designed to withstand the loads associated with lifting and handling operations in accordance with ASME P30.1 – Planning for Load Handling Activities, or its equivalent. Lifting instructions are intended for the installation of newly delivered equipment. If a previously installed unit is to be moved for relocation or disposal, the condition of the equipment must be evaluated. Additionally, the unit must be properly drained, as the weight and center of gravity values do not account for the presence of water during lifting.

Installation shall be performed only by qualified personnel familiar with applicable local codes and regulations, and experienced with this type of equipment. The lifting equipment and rigging methods must be determined by the Lift Director in accordance with the current edition of ASME P30.1, or its equivalent, and must be suitable for the required load capacity. It is the customer's responsibility to consult a certified rigging contractor to properly and safely lift, hoist, and move components and subcomponents as required.



While performing the electrical installation, the authorized technician must verify that the electrical circuit of the equipment shown below is in compliance:

220V / 1PH / 60Hz



Utilice los puntos C1 & R para energizar termostatos que requieran alimentación externa a 24Vac.

WARNING

High Voltage: Disconnect the power source(s) before performing maintenance. Service must be performed by qualified personnel. Risk of electric shock! May cause injury or death!

Elementos:

MB:	Motor Blower
TF:	Control Transformer
L:	AC Power Supply Line
FR:	Auxiliary Relay
G:	Fan Control Signal
Y:	Condenser Control Signal
R:	24 Vac Common
C:	24 VAC auxiliary line
GND:	Equipment Ground
C1:	Contactor
OL:	Thermal Overload Relay

Colors Code:

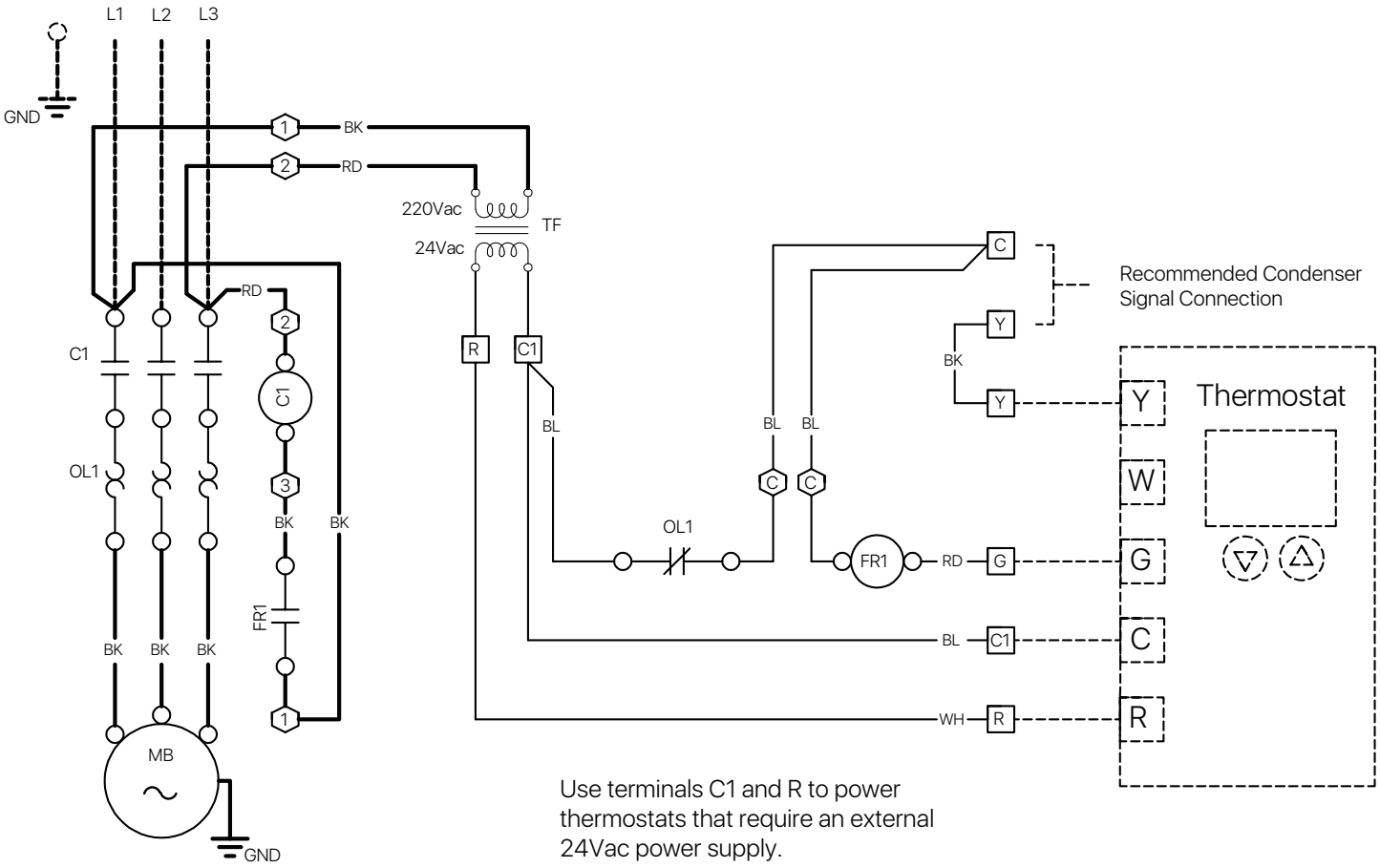
BK:	Black
BL:	Blue
BR:	Brown
OR:	Orange
RD:	Red
WH:	White
YL:	Yellow
GR:	Green

Factory Wiring:
——— High Voltage
——— Low Voltage

Field Wiring:
– – – High Voltage
- - - - - - Low Voltage

While performing the electrical installation, the authorized technician must verify that the electrical circuit of the equipment shown below is in compliance:

220V / 3PH / 60Hz



WARNING

High Voltage: Disconnect the power source(s) before performing maintenance. Service must be performed by qualified personnel. Risk of electric shock! May cause injury or death!

Elementos:

MB:	Motor Blower
TF:	Control Transformer
L:	AC Power Supply Line
FR:	Auxiliary Relay
G:	Fan Control Signal
Y:	Condenser Control Signal
R:	24 Vac Common
C:	24 VAC auxiliary line
GND:	Equipment Ground
C1:	Contactor
OL:	Thermal Overload Relay

Colors Code:

BK:	Black
BL:	Blue
BR:	Brown
OR:	Orange
RD:	Red
WH:	White
YL:	Yellow
GR:	Green

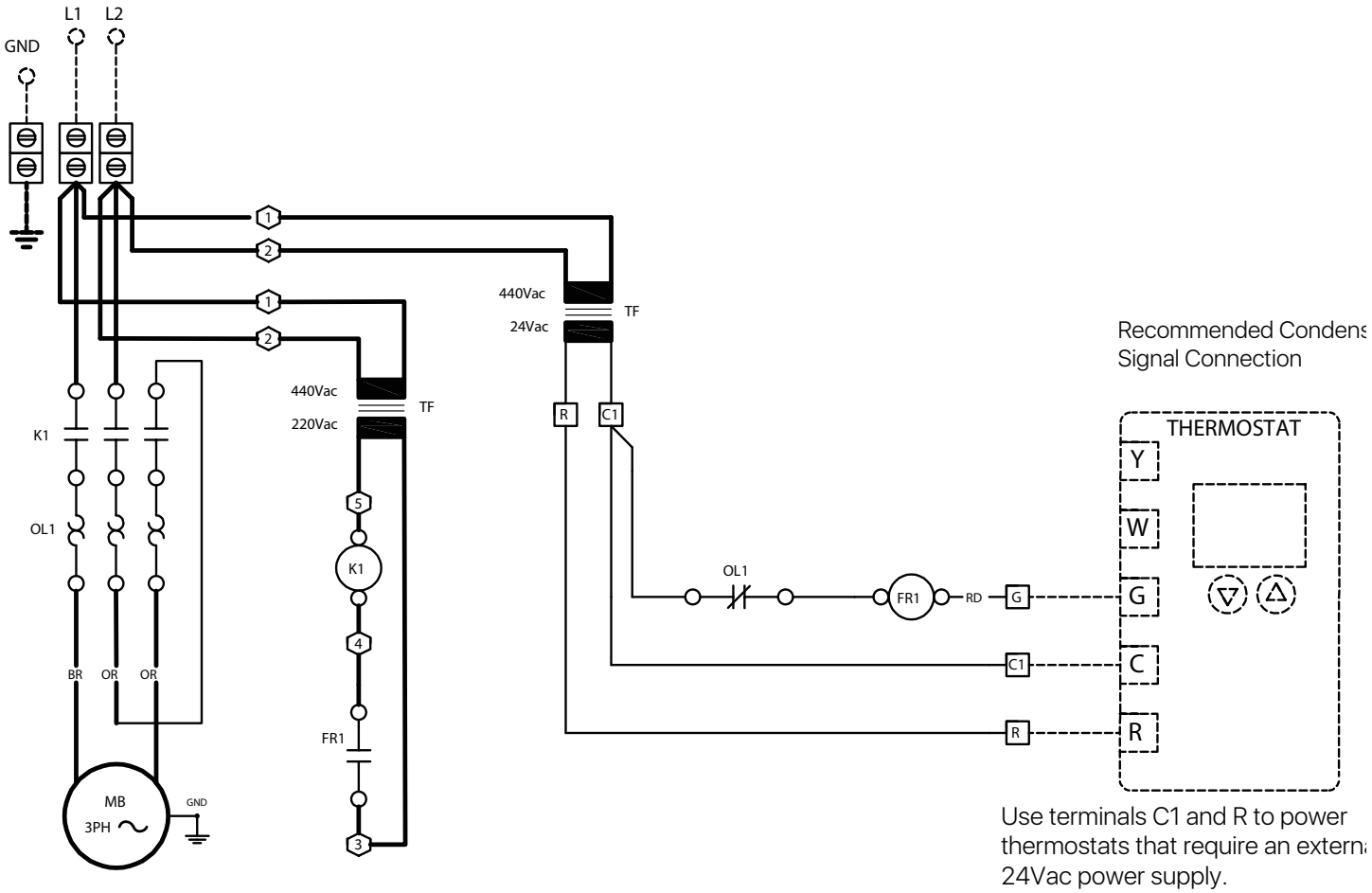
Factory Wiring:
High Voltage
Low Voltage

Field Wiring:
High Voltage
Low Voltage

Electrical Diagram

While performing the electrical installation, the authorized technician must verify that the electrical circuit of the equipment shown below is in compliance:

440V / 1PH / 60Hz



WARNING

High Voltage: Disconnect the power source(s) before performing maintenance. Service must be performed by qualified personnel. Risk of electric shock! May cause injury or death!

Elementos:

MB:	Motor Blower
TF:	Control Transformer
L:	AC Power Supply Line
FR:	Auxiliary Relay
G:	Fan Control Signal
Y:	Condenser Control Signal
R:	24 Vac Common
C:	24 VAC auxiliary line
GND:	Equipment Ground
C1:	Contactor
OL:	Thermal Overload Relay

Colors Code:

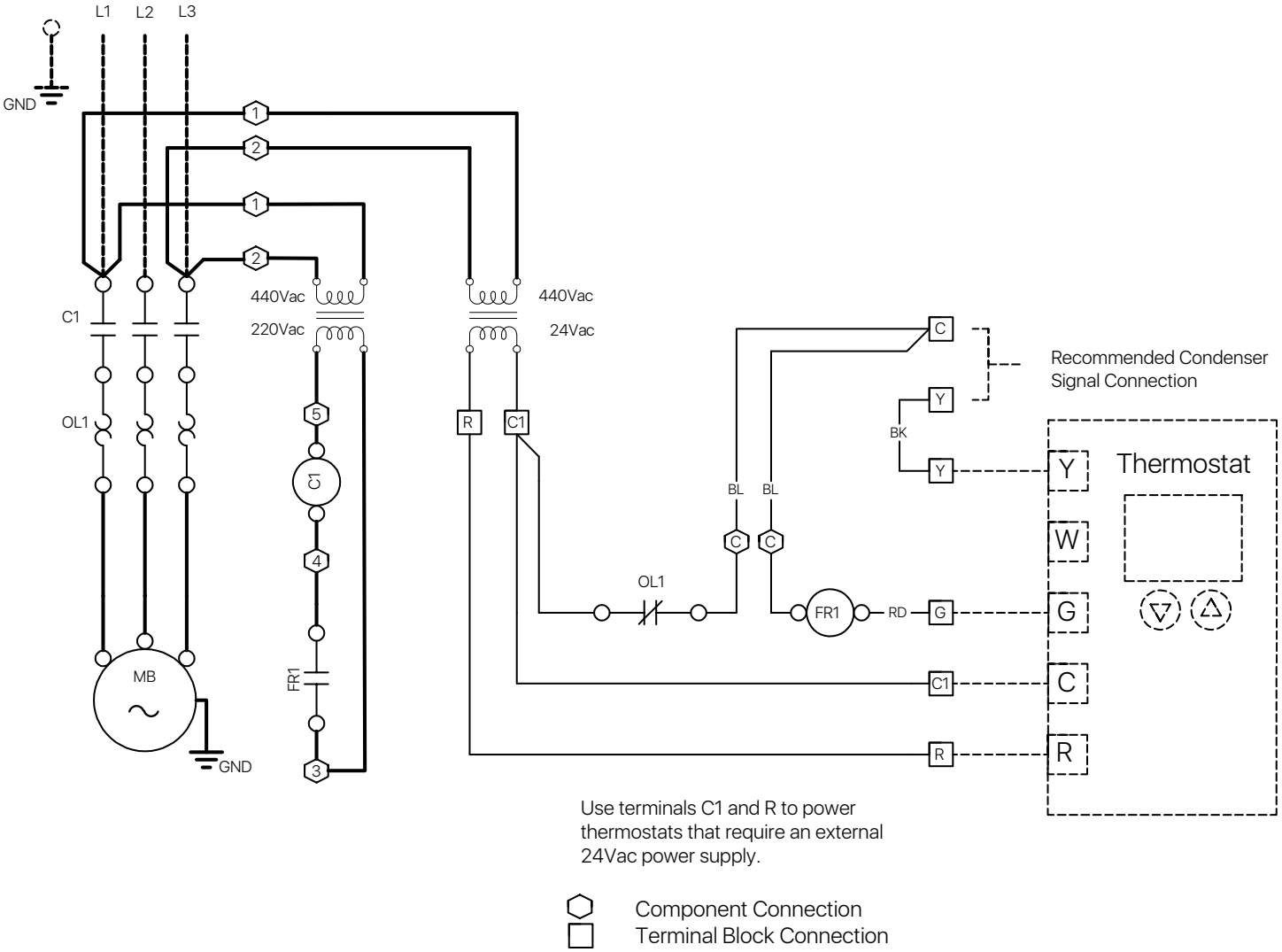
BK:	Black
BL:	Blue
BR:	Brown
OR:	Orange
RD:	Red
WH:	White
YL:	Yellow
GR:	Green

Factory Wiring:
——— High Voltage
——— Low Voltage

Field Wiring:
– – – High Voltage
- - - - - - Low Voltage

While performing the electrical installation, the authorized technician must verify that the electrical circuit of the equipment shown below is in compliance:

440V / 3PH / 60Hz



WARNING

High Voltage: Disconnect the power source(s) before performing maintenance. Service must be performed by qualified personnel. Risk of electric shock! May cause injury or death!

Elementos:

MB:	Motor Blower
TF:	Control Transformer
L:	AC Power Supply Line
FR:	Auxiliary Relay
G:	Fan Control Signal
Y:	Condenser Control Signal
R:	24 Vac Common
C:	24 VAC auxiliary line
GND:	Equipment Ground
C1:	Contactor
OL:	Thermal Overload Relay

Colors Code:

BK:	Black
BL:	Blue
BR:	Brown
OR:	Orange
RD:	Red
WH:	White
YL:	Yellow
GR:	Green

Factory Wiring:
——— High Voltage
——— Low Voltage

Field Wiring:
– – – High Voltage
------ Low Voltage

The general conditions that must be considered before installing the equipment:

WARNING

Work on the equipment must be carried out exclusively by professionals. Do not connect the power supply until all work has been completed.

CAUTION

RISK OF CUT – Failure to follow this precaution may result in personal injury. Metal parts may have sharp edges or burrs. Be careful and use proper protective clothing, safety glasses, and gloves when handling parts and performing maintenance on the air conditioning units.

NOTICE

For installation only in areas not accessible to the general public, such as mechanical rooms or rooftops.

IMPORTANT CONSIDERATIONS

1. Electrical installation: All wiring shall be performed by qualified personnel in accordance with applicable local and national codes.
2. Grounding: Follow NEC requirements or applicable local regulations for grounding to ensure safety and protection against faults.
3. Power supply: Verify that the electrical supply complies with the manufacturer's specifications, including voltage stability and adequate current capacity.
4. Surge protection: Install surge protection devices to prevent damage from lightning strikes or electrical fluctuations.
5. Outdoor electrical connections: Use weatherproof enclosures and sealing methods for outdoor electrical connections to prevent corrosion or failure.
6. Safe environment: Select a location away from gases, flammable vapors, or combustible materials that could pose risks during operation or maintenance.
7. Structural support: Ensure the supporting structure is capable of withstanding the total unit weight, including vibration and long-term structural stress.
8. Seismic restraints (if applicable): In seismic zones, secure the unit with anchors or restraint systems compliant with local codes
9. Unit leveling: Install the unit level to ensure proper performance, efficient drainage, and to prevent operational issues or vibration-related wear.
10. Vibration isolation: Install vibration isolators between the unit and its base to minimize noise transmission and structural vibration.
11. Drain location: Select a location that allows easy connection to the drainage system. Install a trap to prevent backflow or odors.
12. Negative pressure condensate: For air handling units operating under negative pressure, install a deep-seal trap to prevent odor suction.
13. Fan rotation verification: Confirm that the motor rotation direction is correct prior to unit start-up.
14. Equipment verification: Confirm that model number, options, and voltage match the unit nameplate to avoid compatibility or warranty issues.
15. External visual inspection: Inspect the exterior — top panel, access panels, and hardware — for shipping or handling damage.
16. Internal inspection: Perform a visual inspection of internal components for bent fins, loose wiring, or misaligned fans.
17. Airflow verification: Confirm proper fan and duct airflow before sealing connections to avoid rework.
18. Unrestricted airflow: Ensure there are no obstructions in the supply and return air paths to maintain proper circulation and temperature control.
19. Air leakage verification: Ensure inspection doors, panels, and duct connections are properly sealed to prevent air leakage
20. Duct connections: Use airtight flexible duct connectors to prevent transmission of noise, vibration, or thermal stress.
21. Air discharge separation: For direct-drive units, do not combine discharge outlets into a common duct before a minimum distance of 1.5 meters (2 meters recommended).
22. Pipe insulation: Insulate refrigerant lines and drain piping to prevent condensation, energy loss, and thermal degradation.
23. Maintenance clearance: Maintain the minimum recommended clearances for service access, filter replacement, and maintenance operations.
24. Filter access: Verify that the installation location allows easy filter removal for cleaning or replacement without structural interference.
25. Pest protection: Seal cable entries, piping penetrations, and duct openings to prevent the ingress of rodents or insects.
26. Labeling and documentation: Label all wiring and piping. Keep wiring diagrams and manuals accessible near the unit.

The following is a brief description of the steps for system startup and commissioning (to be carried out only by an authorized technician):

WARNING

Never perform work on the equipment without the assistance of qualified professionals. Before making any connection, make sure that the power supply lines are completely disconnected and without energy until all work is fully completed..

STEPS FOR SYSTEM STARTUP:

1. Verify grounding connection: Confirm that the grounding connection is reliable and that the conductor is properly connected to the building's grounding system. Never connect the grounding conductor to gas piping, water piping, telephone lines, or other non-dedicated systems, as this may compromise equipment safety.
2. Ensure adequate electrical capacity: Verify that sufficient electrical capacity is available for proper equipment operation. Confirm that the conductor size complies with the specified current consumption indicated in the technical specifications.
3. Provide power from the breaker panel: Connect the electrical supply to the unit from the main breaker panel. Ensure that the circuit breaker rating is adequate to protect the equipment and prevent overload or internal component damage.
4. Connect power supply lines: Connect the supply conductors to the corresponding terminals. For single-phase units, use terminals labeled L1 and L2. For three-phase units, ensure that phases L1, L2, and L3 are correctly connected within the electrical panel.
5. Tighten all electrical terminals: During transportation or over time, terminals may loosen. Retighten all terminal screws to prevent arcing or electrical faults.
6. Inspect for visible damage or debris: Examine the unit for physical damage, loose panels, or foreign objects inside the cabinet before energizing. Remove any obstruction that may interfere with moving parts or airflow.
7. Inspect drain lines: Ensure that the condensate drain line is free of obstructions and properly routed to prevent overflow or water damage to the unit or building.
8. Connect control wiring: From the unit, connect the control conductors (R, G, Y, and O*, if applicable) as indicated in the electrical panel to the corresponding thermostat terminals to ensure proper system control.
9. Verify all electrical connections: Confirm that all electrical connections are properly made and secured in accordance with the wiring diagrams supplied with the equipment to ensure safe and reliable operation.
10. Verify fan rotation (three-phase units): For three-phase equipment, confirm that the fan or blower motor rotates in the correct direction. If incorrect, interchange any two phases (e.g., L1 and L2) to correct rotation.
11. Inspect air filters and ductwork prior to start-up: Ensure filters are clean and properly installed. Inspect ductwork for blockages, leaks, or disconnections that could affect airflow and system efficiency.
12. Energize the unit: After completing all connections, switch on the field-installed disconnects or breakers to energize the unit. Verify correct connections before proceeding.
13. Verify refrigerant levels: Before operating the unit, confirm that refrigerant levels are within the manufacturer's recommended range. Low refrigerant levels may affect performance, efficiency, and compressor reliability. If levels are incorrect, contact a certified technician.
14. Measure voltage and current at start-up: After energizing, measure supply voltage and operating current to confirm they are within acceptable limits according to the unit nameplate. This helps identify issues such as undervoltage or overcurrent conditions.
15. Test system operation: Once all connections are verified and the unit is energized, test system operation. Set the thermostat to the desired temperature and confirm that the unit cools properly without unusual noise or vibration.
16. Operate unit under observation: Allow the system to operate for at least 15–20 minutes while monitoring pressures, temperatures, and overall performance to detect any early signs of malfunction.
17. Thermostat adjustment: System operation is controlled by the indoor thermostat. Ensure it is set to the desired temperature to maintain indoor comfort conditions.
18. Program thermostat (if applicable): If a programmable thermostat is used, ensure it is properly configured with operating schedules, cooling setpoints, and fan settings.

With proper maintenance and care, your air conditioning unit will operate efficiently and cost-effectively. Before performing any maintenance task, consider the following essential safety precautions:

WARNING

To avoid equipment damage and prevent personal injury or even death, make sure to completely disconnect the power supply before performing any maintenance task. This includes disconnecting power from both indoor and outdoor units. **NOTE:** There may be multiple electrical disconnect switches. Verify and deactivate all of them to ensure your safety.

WARNING

Although special attention has been given to minimizing sharp edges during equipment manufacturing, we recommend handling parts very carefully and avoiding placing hands inside the unit without proper precautions.

MAINTENANCE RECOMMENDATIONS

1. Electrical Power Supply Inspection: Periodically check the unit's power supply to ensure proper operation. Monitor the current of the main components according to the equipment's nameplate.
2. Tighten Electrical Connections: Inspect and tighten all terminals and electrical connections to prevent arcing, voltage drops, or overheating due to loose or corroded connections.
3. Inspection and Testing of Capacitors and Contactors: Check capacitors for bulging or leakage and test contactors to ensure proper operation. Faulty components may cause start-up failures.
4. Inspection of Safety Controls and Sensors: Test the operation of safety switches, pressure sensors, and other automatic shutdown systems to ensure proper functioning under emergency or overload conditions.
5. Operating Pressure Inspection: Periodically check the system's operating pressures (high and low). Make sure they do not exceed the established ranges for normal operation.
6. Inspection of Hydraulic Lines: Ensure there are no blockages in the water supply and return lines to prevent overpressure or stagnation that could damage piping or heat exchangers.
7. Fan Motor Lubrication (if applicable): Lubricate fan motors and bearings (for models with serviceable components) according to manufacturer recommendations to prevent overheating or failures.
8. Air filter cleaning: Clean the air filter to prevent airflow restriction, which may reduce unit efficiency and shorten its service life.
9. Evaporator coil inspection: Verify the condition of the evaporator coil to ensure it is free of obstructions, allowing unrestricted airflow and proper heat transfer.
10. Coil Cleaning: If necessary, clean the coil with a mild detergent solution and rinse with water. This process may require coil removal. Be careful not to damage the fins.
11. Inspection of Refrigerant Line Insulation Wear: Check whether refrigerant line insulation is deteriorated, which may cause energy loss or reduced cooling performance.
12. Blower inspection: Regularly inspect the blower to prevent dirt accumulation or friction between the blades, which could negatively impact system performance.
13. Avoid Debris Accumulation: Do not allow debris to accumulate around or on top of the unit, as this may reduce cooling capacity.
14. Check for Unusual Noises or Vibrations: Listen for abnormal noises (knocking, humming, squealing) that may indicate loose components or imminent failures.
15. Controller Calibration: Periodically check and calibrate the controller to ensure accuracy in water return temperature and achieve optimal comfort.
16. Exhaust Air Grille Cleaning: Remove dust and debris from the exhaust air grilles or replace them if damaged.
17. System Shutdown and Restart Test: Verify that the system shuts down and restarts correctly after a power outage, sensor activation, or controller adjustment.
18. Annual comprehensive maintenance: After one year of operation, perform a complete maintenance inspection of the unit, including verification of the motor, bearings, and shaft condition.

Notes

Notes

THERMOTAR
MANUFACTURING GROUP

AHRI CERTIFIED®
www.ahridirectory.org
Air-Cooling and Air-Heating Coils
AHRI Standard 410

CERTIFICADO
ISO 14001:2015 + ISO 45001:2018 + ISO 9001:2015
BUREAU VERITAS

UL® CERTIFIED COMPONENTS

In accordance with its policy of continuous progress and product improvement, Thermotar reserves the right to make changes without prior notice. ©2026 THERMOTAR LTDA.