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To:	Rafat General Contractor Inc. 8850 George Bolton Parkway Caledon, ON L7E 2Y4	Submittal No:	136
		Project No:	201014
		File No:	4-6-1-23
Attention:	Pino Antelope, Bashar Mikha	Date:	January-14-25

Project: Chris Gibson Recreation Centre

The Architect's review is for the sole purpose of ascertaining conformance with the general design concept and for general arrangement. This review shall not mean approval of the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor and such review shall not relieve the Contractor of his responsibility for errors or omissions in the shop drawings or of his responsibility for meeting all requirements of the Contract Documents. The Contractor is responsible for all dimensions to be confirmed and correlated at the job site, for information that pertains solely to the fabrication processes, quantities or to techniques of construction and installation and for co-ordination with related work.

Contractor Package #	Spec Section	Description	Reviewed by	Status
136	23 00 00	ACU EVP-3 SD	Introba, DSA	RN

Status Legend: **R** – Reviewed **RN** – Reviewed As Noted **RR** – Revise and Resubmit **N** – Not Reviewed

Comments: See Introba comments on following SD review.

Per: Patrick Johnson



RAFAT

8850 GEORGE BOLTON PARKWAY, CALEDON, ONTARIO L7E 2Y4

Shop Drawings Transmittal No:	136
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Project Name:	Renovation of Chris Gibson Recreation Centre Drive	Project No.	T2023-125
		DATE:	19-Dec-2024
		Submittal Required Return Date:	5 Jan 2024
Submittal No:	136		

Title:	ACU EVP-3 SD - 23-00-00 - REF SD-12
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To:	Patrick Johnson Contract Administrator 384 Adelaide Street West, Suite 100 Toronto, Ontario, Canada M5V 1R7 PJohnson@dsai.ca
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Checked by:	Ashish Singla (Rafat General Contractor Inc/Corebuild)	To Be Reviewed By the Following Consultants	1. .DSA 2. Introba
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Submitted for:	REVIEW
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Consultants Response	
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RAFAT NOTE:

This is a re-submission only for EVP-3 , which was earlier reviewed under SD#12 . SD#12 remains same for all other equipment



SUBMITTAL REVIEW

For general compliance with the design concept and contract documents. Subcontractor is solely responsible for jobsite correlation and correctness of all ratings, sizings, type, style, dimensions, finish, quantities and satisfactory fitting to other work and equipment. This review does not change the intent of the contract document.

☒ Reviewed

☐ Make Corrections

☐ Resubmit

☐ Rejected

Per:
Ashish Singla

Date:
19 Dec 2024



54 Audia Court, Unit 2
Concord, ON L4K 3N5
(905)-738-1400

Submittal 23-214-004

PROJECT NAME	PROJECT ADDRESS	DATE SUBMITTED
CHRIS GIBSON REC CENTRE 23-214	125 McLaughlin Rd N, Brampton, ON, L6X 1N9	Dec 2, 2024

TO	FROM
Ashish Singla	INZAMAN KHAN
COMPANY	COMPANY
RAFAT GENERAL CONTRACTOR INC.	Consult Mechanical Inc.
EMAIL	EMAIL
asingla@corebuildconstruction.com	inzaman@consultmechanical.com
ADDRESS	ADDRESS
8850 GEORGE BOLTON PKWY BOLTON, ON L7E 2Y4	54 Audia Court, Unit 2 Concord, ON L4K 3N5

Title

EVP-3/CND-2 R1

Description

The specified unit is based on the refrigerant 410A. This new regulation of using the alternate refrigerant is being enforced 'suddenly' within about 6 months time. Canada had once decided not to follow the US to change the new refrigerant as of January 1 2025, and this decision was reversed within recent few months. At the time of tendering the manufacturer did not have information for the new model yet. The supplier provided the pricing of the unit during tender and assumed the unit would be purchased by September this year but that was not the case so alternate is being proposed with no cost impact.

Package Items

SPEC	SUBSECTION	ITEM	TYPE
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Submittal # 83627

**RECORD PURPOSE - APPROVAL
NOT REQUIRED**

Project 22006063-MECH-4- Chris Gibson Recreation Centre
Leader Nevin Wong
Job Site 125 McLaughlin Rd N, Brampton, Ontario
Submission Date 2024-12-02
Sold To CONSULT MECH
Submitted By Rohan Syal

Contacts

Role	Customer	Our Rep
Mechanical Contractor	Con-Sult Mechanical Inc.*	Nevin Wong
Mechanical Contractor	Con-Sult Mechanical Inc.*	Nevin Wong
Designer	Integral Group	Graham Coote

Deliverables

Track #	243771		
Tag	EVP-3/CND-2		
Description	Daikin Split System		
Quantity	1		
Manufacturer	Daikin Commercial		
Model #	FTXV12AVJU9-RXT12AVJU9		
Revision #	1		

Attention:

NOTE: THIS IS FOR RECORD PURPOSES ONLY. EQUIPMENT HAS BEEN RELEASED FOR PRODUCTION, AND ANY CHANGES THAT ARE NOW RECEIVED WILL RESULT IN PRODUCTION DELAYS AND INCREASED COSTS.

Approval Stamps

SUBMITTAL REVIEW

INTROBA
380 Wellington Street West
Toronto, ON
M5V 1E3



- ☐ REVIEWED
- ☒ REVIEWED AS NOTED
- ☐ REJECTED - REVISE AND RESUBMIT
- ☐ NOT REVIEWED

CHECKED BY: ILITTLE

DISCIPLINE: M&E

DATE: 12/20/2024

REVIEWED FOR GENERAL DESIGN AND COMPLIANCE WITH CONTRACT DOCUMENTS. DIMENSIONS AND SUITABILITY FOR SITE CONDITIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR. THIS REVIEW OF THE DRAWING SHALL NOT RELIEVE THE CONTRACTOR FROM COMPLYING WITH THE CONDITIONS OF THE CONTRACT DOCUMENTS.

IRB Comments

Mechanical:

- Provide Heated Drain Pan as per schedule.
- Final location of indoor unit and thermostat to be coordinated with architect on site.

Electrical:

- As per shop drawing, EVP-3 is controlled by the outdoor unit, coordinate with electrical contractor.



Schedule Compliance



Schedule Compliance



Model numbers updated per latest Daikin generational update

R-410A splits are no longer available due to refrigerant transition

AIR COOLED CONDENSING UNIT SCHEDULE															
MARK	MANUFACTURER	MODEL	TYPE	LOCATION	SERVICE	COOLING CAPACITY (MBH)	HEATING CAPACITY (MBH)	SEER	REFRIGERANT	ELECTRICAL				WEIGHT (LBS)	NOTES
										COMP KW	MCA	MOCp	V/Ph/Hz		
CND-1	DAIKIN		HEAT PUMP	EXISTING CHANGEROOM ROOF	EVP-1 & EVP-2	31	-	18	R-410a	3.13	16.5	20	208/1/60	200	1, 3, 4, 5
R-410A CND-2 ✓	DAIKIN ✓	RXT12AVJU9 RXT12AVJU9	HEAT PUMP ✓	ROOF ✓	EVP-3 ✓	10 ✓	13.6 ✓	20 ✓	R-410a R-32	1.5 ✓	14.6 14.6	15 ✓	208/1/60 ✓	200 72	1, 2, 4, 5, 6

1. R-410A OR R-410A REFRIGERANT ONLY.

2. HIGH EFFICIENCY, VARIABLE REFRIGERANT (VRV) UNIT ONLY. ✓

3. PROVIDE ALL REQUIRED OPTIONS TO MOUNT ON WALL, UNIT TO BE MOUNTED ON WALL 2m ABOVE ROOF LEVEL ✓

4. CONTRACTOR SHALL PROVIDE OPTIONAL BACNET GATEWAY INTERFACE UNIT TO ALLOW COMMUNICATIONS BETWEEN VRV AND BMS THROUGH BACNET COMMUNICATIONS ✓

5. RATED FOR OUTDOOR CONDITIONS OF 95F DB. ✓

6. PROVIDE COMPLETE WITH HEATED DRAIN PAN ✓

SPLIT SYSTEM FAN COIL UNIT SCHEDULE																	
MARK	MFR	MODEL	TYPE	LOCATION	SERVICE	FAN		HEATING	DX COIL				REFRIGERANT	ELECTRICAL		OPER. WEIGHT (LBS)	NOTES
						CFM	HP (W)	CAPACITY...	SC (MBH)	TC (MBH)	EAT DB (°F)	LAT DB (°F)		V/Ph/Hz	FAN MCA		
EVP-1	DAIKIN	FXAQ12PVJU	WALL HUNG	FOOD	FOOD	290	40	-	8.9	12	80	52	R-410a	208/1/60	0.4	125	1, 2, 3, 4
EVP-2	DAIKIN	FXAQ12PVJU	WALL HUNG	FOOD STORAGE	FOOD STORAGE	290	40	-	8.9	12	80	52	R-410a	208/1/60	0.4	125	1, 2, 3, 4
EVP-3 ✓	DAIKIN ✓	FTXV12AVJU9 FTXV12AVJU9	WALL HUNG ✓	SOUTHWEST STORAGE ✓	SOUTHWEST STORAGE ✓	290 ✓	40 ✓		8.9 ✓	12 ✓	80 ✓	52 ✓	R-410a R-32	208/1/60 ✓	0.4	125 19	1, 2, 3, 4

1. UNIT SELECTED FOR MAX 50dbA AT 5FT BELOW DUCTED UNIT. ✓

2. R-410A OR R-410A REFRIGERANT ONLY.

3. HIGH EFFICIENCY, MODULATING VRV UNIT. ✓

4. TO CONNECT TO CND-1

Indoor unit is powered by outdoor unit



Wiring and Piping Diagrams

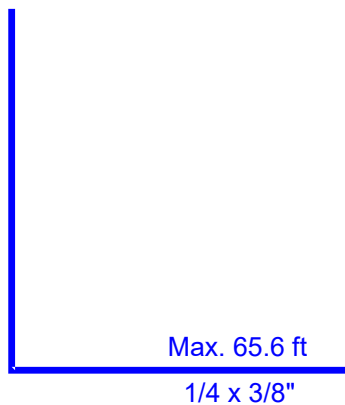


Split Piping Diagrams

Piping CND-2

NOTE: PIPING LENGTHS ARE ESTIMATES BASED ON TENDER DRAWINGS, LENGTHS AND DIAMETERS MAY CHANGE DUE TO SITE CONDITIONS

CND-2
RXT12AVJU9



EVP-3
FTXV12AVJU9

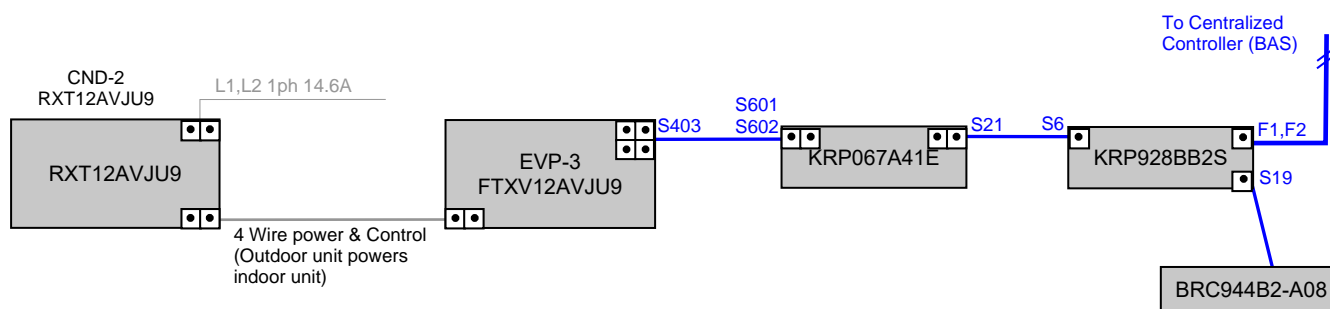
All piping to be as per TSSA. Contractor to provide TSSA refrigerant piping certificate B31.5 prior to commissioning by VRV manufacturer.
All systems shall display appropriate ODP tags prior to commissioning by VRV manufacturer.
Exposed outdoor insulation shall be protected by aluminum, sheet metal, painted canvas, plastic cover, or painted with an approved UV coating.
Isolation valves (if shown below) shall be bi-flow self seating valves rated for R-410A with operating pressures up to 650 PSI. Brass shroud connections shall be located on valve body.
Contractor to use clamps, expansion joints and installation practices which allows the pipes to expand and contract freely.
All pipe lengths and sizes below are estimates. Contractor to contact VRV manufacturer prior to purchase and install of refrigerant piping to confirm actual piping lengths and sizes.

Insulation:

- For indoor piping : 1/2" wall diameter Armaflex
- For outdoor piping : 3/4" wall diameter Armaflex

Wiring Diagrams

Wiring CND-2



Div 15 : Low Voltage control wiring 18 AWG 2-conductor stranded non-shielded (unless otherwise noted)

Div 16 : Electrical power wiring

Notes:

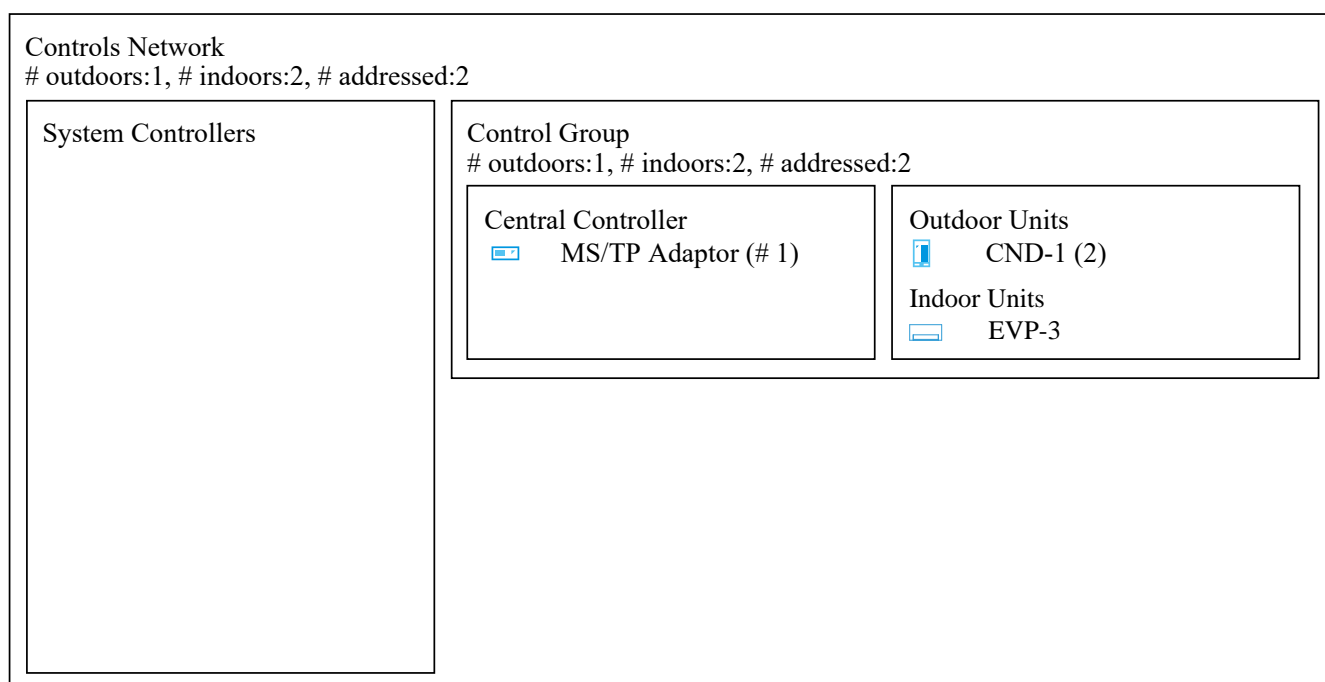
- Individual disconnects are required for each piece of equipment
- Disconnect switches to be supplied and installed by others



Centralized Controls

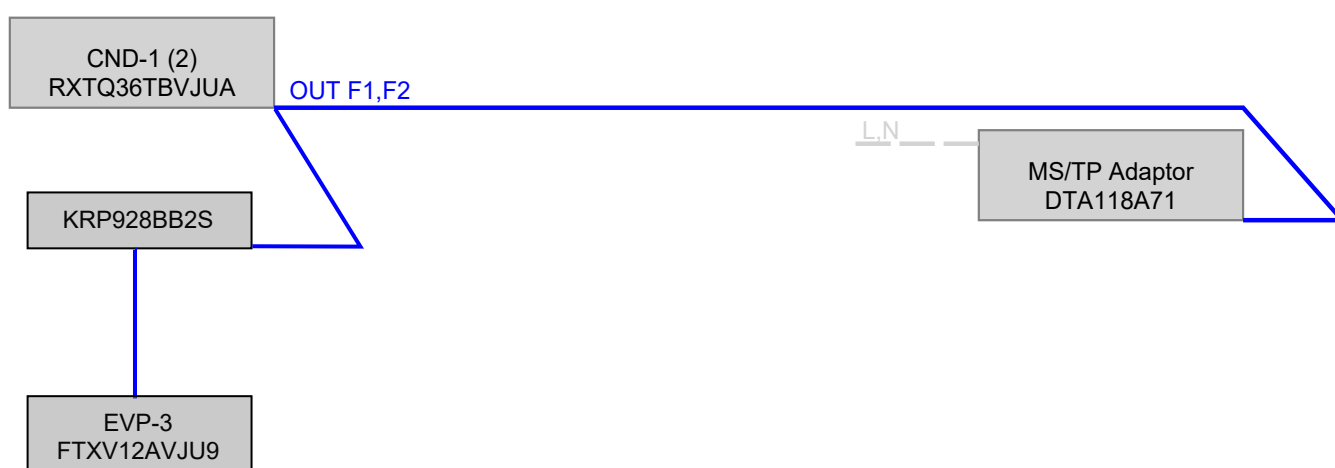
Centralized controllers

Concept



Controller wiring diagrams

Control Group





Split System Technical Details



Daikin Split System

Mini Splits

EVP - 3/CND-2

FTXV12AVJU9 / RXT12AVJU9 (1)



Submittal Data Sheet

Daikin AURORA R-32 1.0-Ton Wall Mounted Unit
FTXV12AVJU9-RXT12AVJU9

FEATURES

- Hot start technology
- Auto-restart (after power failure)
- IR controller included

INDOOR UNIT



BENEFITS

- Quiet operation
- Low ambient cooling operation down to -4°F (-20°C) with field setting and air adjustment grille
- Operating Range - Cooling (50°F - 114.8°F)
- Operating Range - Heating (-13°F - 64.4°F)
- 12 year limited parts and compressor warranty with online registration
- 5 year limited parts warranty for commercial applications

OUTDOOR UNIT





Submittal Data Sheet

Daikin AURORA R-32 1.0-Ton Wall Mounted Unit
FTXV12AVJU9-RXT12AVJU9

SYSTEM PERFORMANCE

Indoor Unit Model No.	FTXV12AVJU9	Indoor Unit Name:	1 Ton Wall Mount R-32
Outdoor Unit Model No.	RXT12AVJU9	Outdoor Unit Name:	20.0 SEER2, Heat Pump, Ductless ODU, 1.0 Ton, Daikin AURORA R-32
Rated Cooling Capacity (Btu/hr):	10,600	Rated Cooling Conditions:	Indoor (°F DB/WB): 80 / 67 Ambient (°F DB/WB): 95 / 75
Sensible Capacity (Btu/hr):		Rated Piping Length(ft):	25
Max/Min Cooling Capacity (Btu/hr):	14,600 / 4,400	Rated Height Difference (ft):	0.00
Cooling Input Power (kW):			
SEER2 (Non-Ducted/Ducted):	20.00 /	HSPF2 (Non-Ducted/Ducted):	10.2 /
EER2 (Non-Ducted/Ducted):	12.00 /		
Rated Heating Capacity (Btu/hr):	13,500	Rated Heating Conditions:	Indoor (°F DB/WB): 70 / 60 Ambient (°F DB/WB): 47 / 43
Max/Min Heating Capacity (Btu/hr):	18,800 / 4,400		

SYSTEM DETAILS

Refrigerant Type:	R-32	Cooling Operation Range (°F DB):	50 - 115
Holding Refrigerant Charge (lbs):	1.74 lbs	Heating Operation Range (°F WB):	-13 - 60
Additional Charge (oz/ft):	0.22	Max. Pipe Length (Vertical) (ft):	49
Pre-charge Piping (Length) (ft):	49	Cooling Range w/Baffle (°F DB):	-4 -
Max. Pipe Length (Total) (ft):	66		
Max Height Separation (Ind to Ind ft):	0		

Submittal Data Sheet

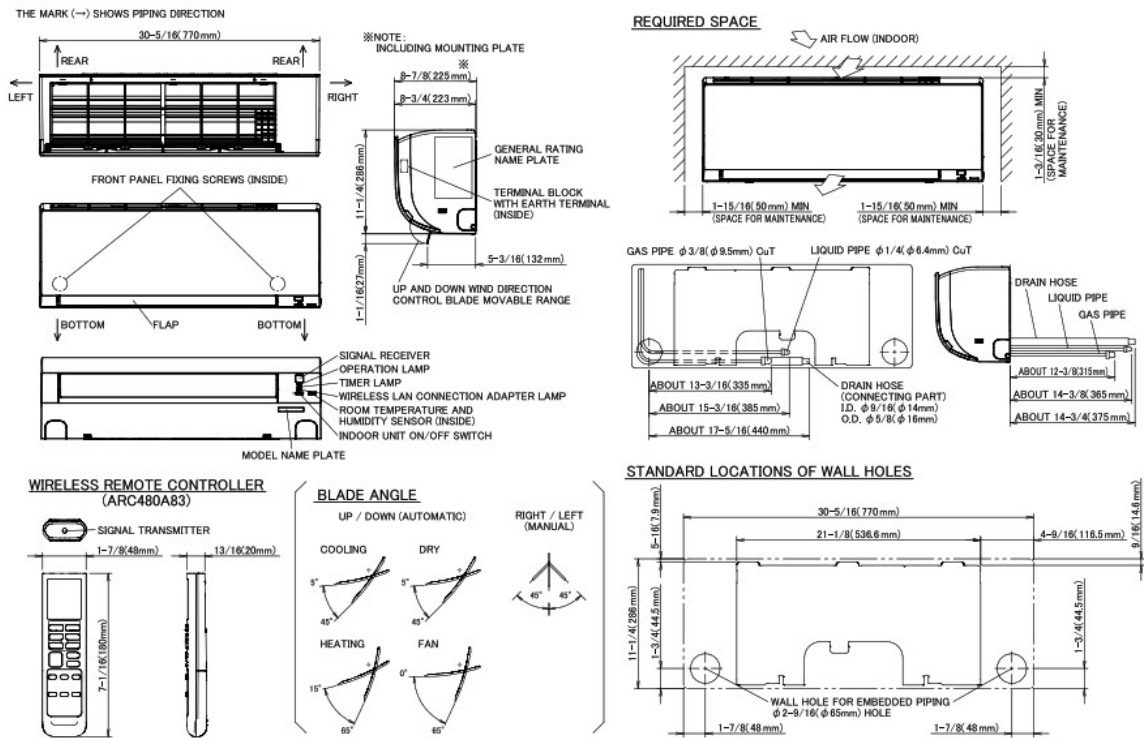
Daikin AURORA R-32 1.0-Ton Wall Mounted Unit
FTXV12AVJU9-RXT12AVJU9

INDOOR UNIT DETAILS

Power Supply (V/Hz/Ph):	//	Airflow Rate (H/M/L/SL) (CFM):	392/293/226/166
Power Supply Connections:	L1, L2, L3, G	Moisture Removal (Gal/hr):	
Min. Circuit Amps MCA (A):		Gas Pipe Connection (inch):	3/8
Max Overcurrent Protection (MOP) (A):		Liquid Pipe Connection (inch):	1/4
Dimensions (HxWxD) (in):	11-1/4 x 30-5/16 x 8-3/4	Condensate Connection (inch):	5/8
Net Weight (lb):	19	Sound Pressure (H/M/L/SL) (dBA):	45/37/31/24
Ext. Static Pressure (Rated/Max) (inWg):	/	Sound Power Level (dBA):	

DIMENSIONAL DRAWING - INDOOR UNIT

CTXV07AVJU9, FTXV09/12AVJU9



3D150958A

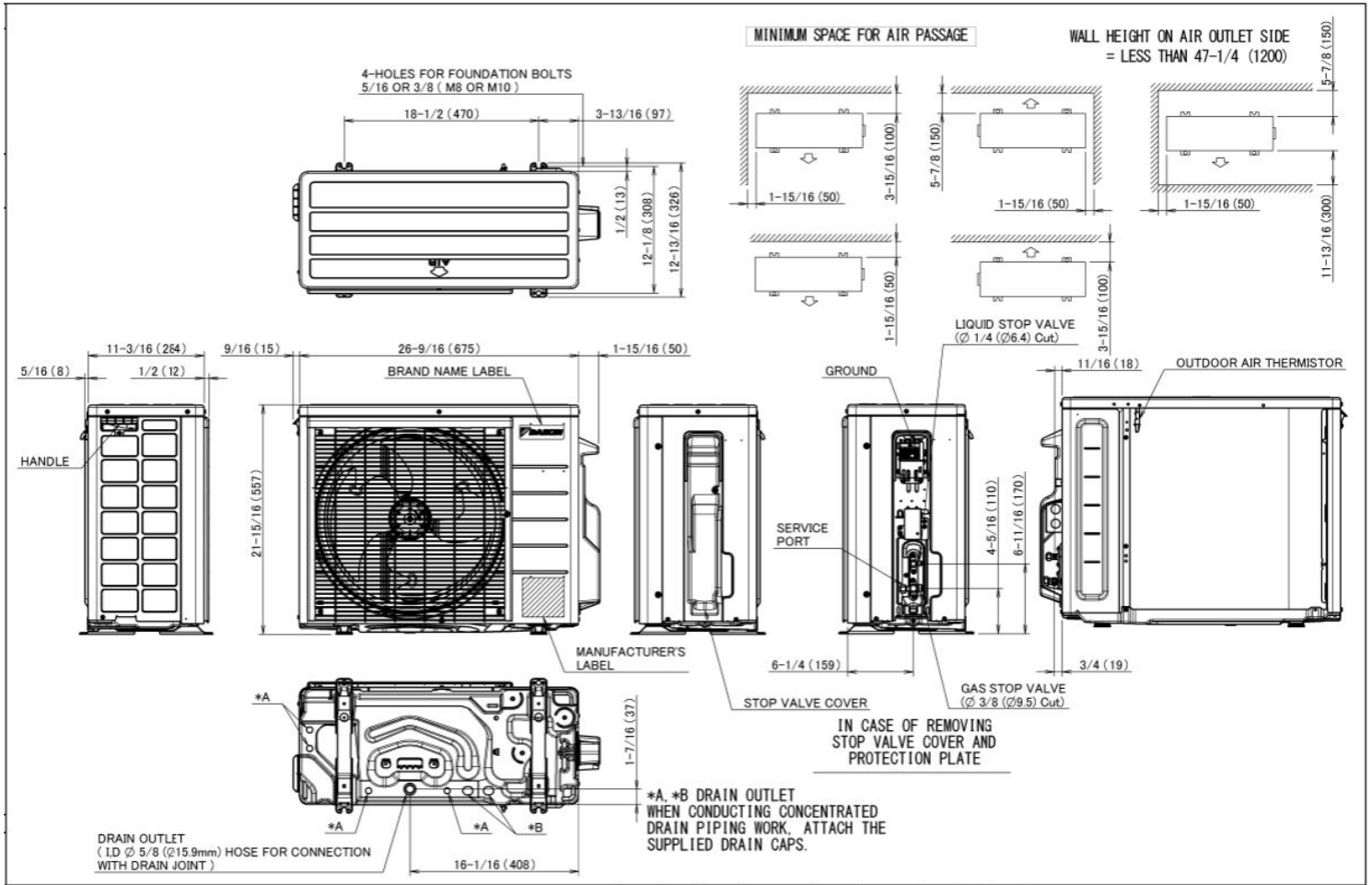
Submittal Data Sheet

Daikin AURORA R-32 1.0-Ton Wall Mounted Unit
FTXV12AVJU9-RXT12AVJU9

OUTDOOR UNIT DETAILS

Power Supply (V/Hz/Ph):	208-230 / 60 / 1	Compressor Stage:	Inverter
Power Supply Connections:	L1, L2, L3, G	Capacity Control Range (%):	-
Min. Circuit Amps MCA (A):	14.6	Airflow Rate (H) (CFM):	1088
Max Overcurrent Protection (MOP) (A):	15	Gas Pipe Connection (inch):	3/8
Max Starting Current MSC(A):		Liquid Pipe Connection (inch):	1/4
Rated Load Amps RLA(A):		Sound Pressure (H) (dBA):	50
Dimensions (HxWxD) (in):	21-15/16 x 26-6/16 x 11-3/16	Sound Power Level (dBA):	
Net Weight (lb):	72		

DIMENSIONAL DRAWING - OUTDOOR UNIT





Submittal Data Sheet
Daikin AURORA R-32 1.0-Ton Wall Mounted Unit
FTXV12AVJU9-RXT12AVJU9

INDOOR ACCESSORIES

PART NUMBER	DESCRIPTION	INCLUDED
AZAI6WSCDKB	DKN Residential Cloud Wi-Fi Adaptor for Single- and Multi-Zone System (S21)	No
AZAI6WSPDKC	DKN Plus Interface	No
BRCW901A03	BRC944B2 CONTROL CABLE, 10FT	No
BRCW901A08	Wired Remote Controller Cord - 8m/26ft	No
DACA-CP1-1	Mini Aqua Condensate Pump	No
DTST-LTE-LA-A	Daikin One Lite (with Translation Adaptor for S21 only)	No
DTST-ONE-ADA-A	Daikin One+ Smart Thermostat for VRV, SkyAir, Single- and Multi-Zone System	No
DTST-TOU-ADA-A	Daikin One Touch Smart Thermostat (with Translation Adaptor for S21 and P1P2)	No
KAF970A46	Titanium apatite photocatalytic air-purifying filter WITHOUT frame	No
KRP067A41	Adaptor for wired controller	No
KRP928BB2S	RA Interface Adaptor for DIII-Net -	No

OUTDOOR ACCESSORIES

PART NUMBER	DESCRIPTION	INCLUDED
DACA-WB-3	Powder-Coated Wall-Mounted Bracket	No
KKG067A41	Back protection wire net (09 & 12)	No
KPS067A41	Snow hood (intake side plate) (09 & 12)	No
KPS067A42	Snow hood (intake rear plate) (09 & 12)	No
KPS067A44	Snow hood (outlet) (09 & 12)	No
KPW937F4	Air direction adjustment grille (09 & 12)	No