

VRF SPLIT SYSTEM SCHEDULE

INDOOR UNIT SYMBOL	SERVICE	MANUFACTURER	MODEL	SUPPLY FAN (CFM)	OUTSIDE AIR (CFM)	EXTERNAL STATIC PRESSURE	ELECTRIC DATA				VRF COOLING DATA				VRF HEATING DATA				ELECTRICAL				NOTES									
							VOLTY	PHASE	MCA	MOCP	NOMINAL (MBH)	TOTAL SENSIBLE (MBH)	COOL. EAT. (MBH)	COOL. LAT. (MBH)	TOTAL (MBH)	COOL. EAT. (MBH)	COOL. LAT. (MBH)	APPROX. OPER. WEIGHT (LBS.)	DOOR UNIT SYMBOL	DOOR UNIT MODEL	NOMINAL COOLING CAPACITY (MBH)	SENSIBLE COOLING (MBH)		NOMINAL HEATING CAPACITY (MBH)	TOTAL HEATING (MBH)	VOLTY	PHASE	MCA	MOCP	SEER	COEFF. OF PERFORM.	APPROX. OPER. WEIGHT (LBS.)
FCU1	STORAGE LOBBY	DAIKIN	FMQ2MVJU	2,050	410	0.80	208V	3	15	72.0	72.0/58.5	8367	4548	81	81	55	91	332	CU-1(A)	RXV140XA1JA	288	267	288	264	2393	561	50.0	3.27	655	527	1,2,3,4,5,6,7,8	
FCU2	STORAGE	DAIKIN	FMQ2MVJU	2,050	461	0.80	208V	3	15	72.0	72.0/58.5	8367	4548	81	81	55	91	332	CU-1(B)	RXV140XA1JA	(SHARED)	(SHARED)	(SHARED)	(SHARED)	2393	561	50.0	-7.93	3.27	655		527
FCU3	STORAGE	DAIKIN	FMQ2MVJU	2,050	461	0.80	208V	3	15	72.0	72.0/58.5	8367	4548	81	81	55	91	332	CU-2(A)	RXV140XA1JA	(SHARED)	(SHARED)	(SHARED)	(SHARED)	2393	561	50.0	-7.93	3.27	655	527	1,2,3,4,5,6,7,8
FCU4	STORAGE	DAIKIN	FMQ2MVJU	2,050	461	0.80	208V	3	15	72.0	72.0/58.5	8367	4548	81	81	55	91	332	CU-2(B)	RXV140XA1JA	(SHARED)	(SHARED)	(SHARED)	(SHARED)	2393	561	50.0	-7.93	3.27	655	527	
FCU5	STORAGE	DAIKIN	FMQ2MVJU	2,050	461	0.80	208V	3	15	72.0	72.0/58.5	8367	4548	81	81	55	91	332														
FCU6	STORAGE	DAIKIN	FMQ2MVJU	2,050	461	0.80	208V	3	15	72.0	72.0/58.5	8367	4548	81	81	55	91	332														
FCU7	STORAGE	DAIKIN	FMQ2MVJU	2,050	461	0.80	208V	3	15	72.0	72.0/58.5	8367	4548	81	81	55	91	332														
FCU8	STORAGE	DAIKIN	FMQ2MVJU	2,050	399	0.80	208V	3	15	72.0	72.0/58.5	8367	4548	81	81	55	91	332														

- NOTES:
- REMOTE SENSORS REQUIRED FOR ALL FAN COOL UNITS.
  - EXTERNAL STATIC PRESSURE DOES NOT INCLUDE LOSSES FOR UNIT CASING, FILTERS, OR COILS.
  - COOLING COIL CAPACITY BASED ON ENTERING AIR TEMPERATURE OF 80F AND 80F WET BULB AT CONDENSER.
  - PROVIDE WITH DUCT SMOKE DETECTORS MOUNTED IN RETURN AND SUPPLY AIR DUCTS. MECHANICAL CONTRACTOR SHALL PROVIDE INSTALLATION, ELECTRICAL CONTRACTOR SHALL PROVIDE DUCT SMOKE DETECTOR AND WIRING TO FACP.
  - HVAC EQUIPMENT MANUFACTURER SHALL SIZE ALL REFRIGERANT LINES FOR PROPER CAPACITY, OIL RETURN AND LENGTH OF PIPING. UNIT SHALL BE RATED FOR LONG LINE APPLICATION.
  - CONTRACTOR SHALL INSTALL REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS FOR COOLING AND OPERATIONAL HEATING AND COOLING SYSTEM.
  - ANY PIPING LENGTHS SHOWN ARE ESTIMATES ONLY. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR MEASURING PIPING LENGTHS.
  - DURING SYSTEM STARTUP, ENABLE SYSTEM SETTING TO ALLOW DEHUMIDIFICATION EVEN AFTER FAN COIL HAS REACHED TEMPERATURE SETPOINT. SET DEHUMIDIFICATION TO 5%/RH. PROVIDE ALL REQUIRED SENSORS AND CONTROLS FOR DEHUMIDIFICATION.

- SPECIFICATIONS:
- FANS: DIRECT DRIVE CENTRIFUGAL TYPE.
  - COMPRESSORS SHALL INCLUDE FUSIBLE RELAY DEVICE BUILT-IN THERMAL OVERLOAD AND LOW VOLTAGE PROTECTION. PROVIDE ALL COMPRESSOR UNITS WITH SEPARATE AND INDEPENDENT REFRIGERANT AND CONTROL CIRCUITS. REFRIGERATION CONTROLS: COMPRESSOR CONTACTORS, CONDENSER AND EVAPORATOR FAN CONTACTORS, 24 VOLT TRANSFORMERS, HIGH AND LOW PRESSURE CUT OUTS, SOLENOID VALVES FOR FULL PUMP DOWN. RESET RELAY TO PREVENT UNIT CHANGING ON OVERLOAD. ANTISUCK BACK CYCLE TRIP, REFRIGERANT PIPING SHALL INCLUDE SERVICE VALVES, FILTER/DRYER, AND OPERATING CHARGE OF REFRIGERANT.
  - ALL REFRIGERANT PIPING MUST BE INSULATED. INDOOR AND OUTDOOR INSULATION THICKNESS SHALL COMPLY WITH LOCAL CODES.
  - VRF CONDENSING UNITS SHALL BE EQUIPPED WITH MANUFACTURER'S STANDARD AUTO REFRIGERANT CHANGE FEATURE TO ENSURE PROPER REFRIGERANT CHARGING AND AVOID COMPRESSOR ISSUES. CONTRACTOR TO AVOID REFRIGERANT AS RECOMMENDED BY MANUFACTURER FOR LONGER REFRIGERANT RUNS.
  - VRF SYSTEM SHALL BE PROVIDED WITH ONE (1) INTELLIGENT TOUCH-MANAGER CENTRALIZED CONTROL PANEL. TOUCH MANAGER SHALL HAVE WEB ENABLED CAPABILITY. E.G. SHALL PROVIDE 24V AND ETHERNET LINE TO THE DEVICE. FINAL CONTROLLER LOCATION SHALL BE COORDINATED WITH OWNER. ALL UNITS SERVING STORAGE SHALL HAVE TEMPERATURE SENSORS WITH SETPOINT CONTROLLED REMOTELY BY CENTRAL INTELLIGENT TOUCH-MANAGER. NO THERMOSTAT CONTROL FOR LOCAL USER OF STORAGE TEMPERATURE SENSORS FOR EACH INDIVIDUAL FAN COIL UNIT SHALL BE LOCATED AT THE AIR FLOW OF THE RETURN AIR DUCT.
  - PROVIDE FILTER BOX AT EACH UNIT (AFU). FILTER BOX SHALL BE BIODIGESTIVE AIR CLEANING SYSTEM - MERV 13. PROVIDE ALARM PACKAGE WITH DIRTY FILTER ALARM.
  - PROVIDE EACH FCU WITH REMOTE CONTROL BOARD TO CONTROL OUTDOOR AIR DAMPER.
  - ALARM PACKAGE SHALL CONSIST OF ONE (1) DIGITAL INPUT CONTROLLER BOARD, LOCATED AT A FAN COIL UNIT. THE RESPECTIVE AIR CLEANER WILL HAVE AN AIR PRESSURE SWITCH INSTALLED AND WILL BE FIELD WIRED TO THE DIGITAL INPUT BOARD. THE BOARDS FROM ALL FLOORS WILL BE TIED INTO THE COMM LINK CONNECTION ON THE CONDENSING UNITS ON THE ROOF, THEN TO THE CENTRAL INTELLIGENT TOUCH-MANAGER. IF ONE AIR CLEANER IS DIRTY, ALL AIR CLEANER MEDIA ON THAT FLOOR SHALL BE CHANGED. THE ALARM PACKAGE SHALL PROVIDE A VISUAL INDICATOR AT THE DISPLAY.

- SEQUENCE OF OPERATION:
- SMOKE DETECTORS LOCATED IN THE RETURN & SUPPLY AIR DUCTS AT THE UNIT SHALL STOP THE SUPPLY FAN IF THEY SENSE SMOKE. COORDINATE WITH FIRE ALARM CONTRACTORS. IN TIE-LOCK WITH FIRE ALARM SYSTEM.
  - HEATING UNOCCUPIED CYCLE: THE UNIT FAN SHALL RUN CONTINUOUSLY ON DEMAND FOR HEATING. THE OUTDOOR AIR DAMPER SHALL BE IN THE MINIMUM POSITION AND THE COMPRESSORS SHALL CYCLE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE AT THE THERMOSTAT SETPOINT.
  - COOLING UNOCCUPIED CYCLE: THE UNIT FAN SHALL RUN CONTINUOUSLY ON DEMAND FOR COOLING. THE OUTSIDE AIR DAMPER SHALL OPEN TO THE MINIMUM POSITION AND THE COMPRESSORS SHALL CYCLE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE AT THE THERMOSTAT SETPOINT.
  - HEATING UNOCCUPIED CYCLE: UPON A DROP IN SPACE TEMPERATURE BELOW THE SETPOINT, THE OUTDOOR AIR DAMPER SHALL BE CLOSED, THE SUPPLY FAN AND THE COMPRESSORS SHALL CYCLE TO MAINTAIN SPACE TEMPERATURE. WHEN THE THERMOSTAT IS SATISFIED, THE UNIT SHALL SHUT DOWN.
  - COOLING UNOCCUPIED CYCLE: UPON A RISE IN SPACE TEMPERATURE ABOVE THE SETPOINT, THE OUTDOOR AIR DAMPER SHALL BE CLOSED, THE SUPPLY FAN AND THE COMPRESSORS SHALL CYCLE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE. WHEN THE THERMOSTAT IS SATISFIED, THE UNIT SHALL SHUT DOWN.
  - TEMPERATURE SETPOINTS: HEATING OCCUPIED + 65F, HEATING UNOCCUPIED + 55F, COOLING UNOCCUPIED + 55F, COOLING OCCUPIED + 60F.

RELIEF/INTAKE HOOD SCHEDULE

SYMBOL	MANUFACTURER	MODEL	SERVICE	DAMPER TYPE	CRM	S.P. DROP (W.C.)	THROAT VBL. (PPH)	THROAT AREA (SF)	THROAT WIDTH (N)	LENGTH (N)	WIDTH (N)	HEIGHT (N)	APPROX. OPER. WT. (LBS)	NOTES	
RH-1	GREENHECK	FGI	FCU INTAKE	NONE	410	0.08	923	0.44	8	8	22	27	14	37	1,2,3,4
RH-2	GREENHECK	FGI	FCU INTAKE	NONE	461	0.08	892	0.67	8	12	22	27	14	37	1,2,3,4
RH-3	GREENHECK	FGI	FCU INTAKE	NONE	399	0.08	828	0.8	8	8	22	27	14	37	1,2,3,4
RH-4	GREENHECK	FGI	RELEF BACKDRAFT	3,117	0.08	779	4.00	24	24	38	39	19	69	1,2,3,4	

NOTES:

- ACCEPTABLE MANUFACTURERS: ACME, BREDETT, CARNES, COOK, JENNAIR, PENN, OR APPROVED EQUAL.
- PROVIDE WITH 12" HIGH ROOF MOUNTING CURB.
- DIMENSIONS DO NOT INCLUDE ROOF CURB.
- WIND RATED PER SECTION 31.15, RAIN, R. 1.017.

SPECIFICATIONS:

- ALUMINUM HOUSING, FULLY WEATHERTIGHT, HURRICANE RESISTANT. HOOD SHALL BE COMPLETE WITH BUSHSCREEN.

FAN SCHEDULE

SYMBOL	SERVICE	MODEL	FAN TYPE	CONTROL TYPE	CRM	S.P. DROP (W.C.)	ELECTRIC DATA	RPM	WATTS	DRIVE TYPE	DAMPER TYPE	WEIGHT (LBS)	NOTES
EF-1	RESTROOMS, JAN. CLO.	CEP-A30-00	INLINE INT. MOTOR	CONTINUOUS	200	0.5	120V/1	1350	141.8	DIRECT	BACKDRAFT	23	1,2

NOTES:

- EQUIPMENT SCHEDULE BASED ON GREENHECK. ACCEPTABLE MANUFACTURERS INCLUDE: ACME, CARNES, COOK, PENN, SOLEIR & PALAU, AND TWIN CITY.
- PROVIDE FAN WITH E.C. MOTOR.

SPECIFICATIONS:

- ADJUSTABLY INSULATED STEEL HOUSING, CENTRIFUGAL TYPE FAN WHEEL, MOUNT FAN WHEEL AND MOTOR ASSEMBLY ON VIBRATION ISOLATORS, TOTALLY REMOVABLE FROM FAN HOUSING.

SEQUENCE OF OPERATION:

- FAN TO RUN CONTINUOUSLY.

AIR DEVICE SCHEDULE

SYMBOL	TYPE	DESCRIPTION	SIZE	MATERIAL	NOTES
SR-1	SUPPLY REGISTER	LOWERED SUPPLY GRILLE	520	STEEL	PER PLAN, 1,2,3,4,5
RG-1	RETURN GRILLE	DOUBLE BALANCE SECTION	520	STEEL	PER PLAN, 1,2,3,4
EG-1	EXHAUST GRILLE	DOUBLE BALANCE SECTION	520	STEEL	12"X12", 1,2,3,4,5

NOTES:

- EQUIPMENT SCHEDULE BASED ON GREENHECK. ACCEPTABLE MANUFACTURERS INCLUDE: KRUGER, METAL-AIRE, AND TITUS.
- FINISH AND RATING TO BE DETERMINED BY FRAME AND TRIM FOR CEILING APPLICATION.
- PROVIDE WHITE POWDER COAT.
- PROVIDE WITH INTEGRAL BALANCING DAMPER.

MECHANICAL/ELECTRICAL COORDINATION SCHEDULE

SYMBOL	DESCRIPTION	LOAD	V	PH	FEDEROR BRANCH CIRCUIT	PANEL OR CIRCUIT	FURNISHED BY	TYPE	RATING (AMPS)	ENCL.	REMARKS
FCU1	INDOOR UNIT	9.0 MCA	208	1	(2P1-2P2)120/208	LR-1,2,4	EOEC	SS	20	N1	1
FCU2	INDOOR UNIT	9.0 MCA	208	1	(2P1-2P2)120/208	LR-1,2,4	EOEC	SS	20	N1	1
FCU3	INDOOR UNIT	9.0 MCA	208	1	(2P1-2P2)120/208	LR-1,10,12	EOEC	SS	20	N1	1
FCU4	INDOOR UNIT	9.0 MCA	208	1	(2P1-2P2)120/208	LR-1,14,16	EOEC	SS	20	N1	1
FCU5	INDOOR UNIT	9.0 MCA	208	1	(2P1-2P2)120/208	LR-1,18,20	EOEC	SS	20	N1	1
FCU6	INDOOR UNIT	9.0 MCA	208	1	(2P1-2P2)120/208	LR-1,22,24	EOEC	SS	20	N1	1
FCU7	INDOOR UNIT	9.0 MCA	208	1	(2P1-2P2)120/208	LR-1,26,28	EOEC	SS	20	N1	1
FCU8	INDOOR UNIT	9.0 MCA	208	1	(2P1-2P2)120/208	LR-1,30,32	EOEC	SS	20	N1	1
AF-1	AIR FILTER	0.95 PLA	208	1	(2P1-2P2)120/208	LR-1,2,4	EOEC	SS	20	N1	1
AF-2	AIR FILTER	0.95 PLA	208	1	(2P1-2P2)120/208	LR-1,6,8	EOEC	SS	20	N1	1
AF-3	AIR FILTER	0.95 PLA	208	1	(2P1-2P2)120/208	LR-1,10,12	EOEC	SS	20	N1	1
AF-4	AIR FILTER	0.95 PLA	208	1	(2P1-2P2)120/208	LR-1,14,16	EOEC	SS	20	N1	1
AF-5	AIR FILTER	0.95 PLA	208	1	(2P1-2P2)120/208	LR-1,18,20	EOEC	SS	20	N1	1
AF-6	AIR FILTER	0.95 PLA	208	1	(2P1-2P2)120/208	LR-1,22,24	EOEC	SS	20	N1	1
AF-7	AIR FILTER	0.95 PLA	208	1	(2P1-2P2)120/208	LR-1,26,28	EOEC	SS	20	N1	1
AF-8	AIR FILTER	0.95 PLA	208	1	(2P1-2P2)120/208	LR-1,30,32	EOEC	SS	20	N1	1
CU-1(A)	OUTDOOR UNIT	46.1 MCA	208	3	(3P8-3P9)347/208	LR-1,34,36,38	EOEC	SS	60	N3R	1
CU-1(B)	OUTDOOR UNIT	46.1 MCA	208	3	(3P8-3P9)347/208	LR-1,40,42,44	EOEC	SS	60	N3R	1
CU-2(A)	OUTDOOR UNIT	38.3 MCA	208	3	(3P8-3P9)347/208	LR-1,46,48	EOEC	SS	60	N3R	1
CU-2(B)	OUTDOOR UNIT	38.3 MCA	208	3	(3P8-3P9)347/208	LR-1,48,49	EOEC	SS	60	N3R	1
EF-1	EXHAUST FAN	141.8 W	120	1	(2P1-2P2)120/208	LR-1,16	EOEC	S	20	N1	1
EW-1	ELECTRIC WATER HEATER	4.6 KW	120	1	(2P1-2P2)120/208	LR-1,50	EOEC	S	20	N1	1
EW-2	TANKLESS WATER HEATER	4.1 KW	120	1	(2P1-2P2)120/208	LR-1,52,54	EOEC	SS	30	N1	1
CP-1	CONDENSATE PUMP	93 W	120	1	(2P1-2P2)120/208	LR-1,56	EOEC	S	20	N1	1
CP-2	CONDENSATE PUMP	93 W	120	1	(2P1-2P2)120/208	LR-1,58	EOEC	S	20	N1	1
CP-3	CONDENSATE PUMP	93 W	120	1	(2P1-2P2)120/208	LR-1,58	EOEC	S	20	N1	1
CP-4	CONDENSATE PUMP	93 W	120	1	(2P1-2P2)120/208	LR-1,58	EOEC	S	20	N1	1
CP-5	CONDENSATE PUMP	93 W	120	1	(2P1-2P2)120/208	LR-1,58	EOEC	S	20	N1	1
CP-6	CONDENSATE PUMP	93 W	120	1	(2P1-2P2)120/208	LR-1,58	EOEC	S	20	N1	1
CP-7	CONDENSATE PUMP	93 W	120	1	(2P1-2P2)120/208	LR-1,58	EOEC	S	20	N1	1
CP-8	CONDENSATE PUMP	93 W	120	1	(2P1-2P2)120/208	LR-1,58	EOEC	S	20	N1	1

GENERAL NOTES:

- VERIFY COORDINATE RATINGS FOR EQUIPMENT SUPPLIED BY THE SELECTED MANUFACTURER. WHERE RATINGS ARE OTHER THAN AS REQUIRED FOR SPECIFIED UNIT DISCONNECTS, OVERCURRENT PROTECTION SHALL BE PROVIDED ACCORDING TO THE CONTRACTOR THAT FURNISHES EQUIPMENT.
- FRACTIONAL HORSEPOWER SINGLE PHASE MOTORS SHALL BE PROVIDED WITH INTEGRAL OVERLOAD PROTECTION.
- DISCONNECTS SHALL BE FUSIBLE UNLESS NOTED OTHERWISE.
- ELECTRICAL CONTRACTOR SHALL PROVIDE CIRCUIT TO EQUIPMENT AS INDICATED.
- WHERE DISCONNECT IS NOT INDICATED ON PLANS, LOCATE AT EQUIPMENT PER NEC.

REMARKS:

- FURNISH DUCT DETECTORS IN SUPPLY AND RETURN DUCTWORK.

VENTILATION SCHEDULE - FCU-1

ROOM NUMBER	ROOM NAME	OCCUPANCY CLASSIFICATION	AREA OF OCCUPANCY (SQ. FT.)	OCCUPANT DENSITY (PER 100 SQ. FT.)	# OF PEOPLE	OUTDOOR AIR PER OCC. (CFM/PERSON)	OUTDOOR AIR PER SQ. FT. (CFM)	EXHAUST RATE (CFM)	ZONE AIR DIST. EFFECT. E2	ZONE OUTDOOR AIRFLOW RATE (CFM)	PRIMARY AIRFLOW (CFM)	PRIMARY OUTDOOR AIR FRACTION, Zp
LS-101	LOBBY	PUBLIC SPACES	2,918	0.03	94	15	1,410	0.06	0.8	312	1,720	0.18
US-101	WATER ROOM	WAREHOUSE	97	---	---	---	---	---	---	---	---	---
US-102	ELECTRICAL ROOM	WAREHOUSE	97	---	---	---	---	---	---	---	---	---
US-103	STORAGE	WAREHOUSE	4,160	---	---	---	---	---	---	---	---	---

NOTES:

- CALCULATIONS REPRESENT ONLY AREAS WHERE WORK IS EXPECTED.
- OCCUPANT DIVERSITY ASSUMED TO BE NEGLECTABLE (D=1).
- O.A. REQUIRED IS THE SUM OF THE CALCULATED OUTDOOR AIR DIVIDED BY THE VENT. EFFICIENCY, E2.

SUMMARY:

- O.A. REQUIRED (V0): 338 CFM
- S.A. PROVIDED: 2,950 CFM
- O.A. PERCENTAGE: 20.3 %
- O.A. PROVIDED: 410 CFM
- TOTAL AREA: 4,737 (SQ. FT.)

THE AMOUNT OF OUTSIDE AIR PROVIDED EXCEEDS THE CODE REQUIRED MINIMUM.

VENTILATION SCHEDULE - FCU-2

ROOM NUMBER	ROOM NAME	OCCUPANCY CLASSIFICATION	AREA OF OCCUPANCY (SQ. FT.)	OCCUPANT DENSITY (PER 100 SQ. FT.)	# OF PEOPLE	OUTDOOR AIR PER OCC. (CFM/PERSON)	OUTDOOR AIR PER SQ. FT. (CFM)	EXHAUST RATE (CFM)	ZONE AIR DIST. EFFECT. E2	ZONE OUTDOOR AIRFLOW RATE (CFM)	PRIMARY AIRFLOW (CFM)	PRIMARY OUTDOOR AIR FRACTION, Zp
US-101	STORAGE	WAREHOUSE	4,160	---	---	---	---	---	---	---	---	---
US-102	STORAGE	WAREHOUSE	4,160	---	---	---	---	---	---	---	---	---
US-103	STORAGE	WAREHOUSE	4,160	---	---	---	---	---	---	---	---	---

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