

VARIABLE REFRIGERANT VOLUME - AIR-COOLED CONDENSING UNIT SCHEDULE

| TAG: ROOM | DESCRIPTION | COOLING CAPACITY | | HEATING CAPACITY | | CONNECTION RATIO (%) | ELECTRICAL | | | EFFICIENCY (NonDucted/Ducted) | | | | | NOMINAL TONNAGE | BASIS OF DESIGN (DAIKIN) |
|-----------|-------------|------------------|------------------------|------------------|-----------------------------|----------------------|---------------|------------------------|----------------------------------|-------------------------------|------|--------|-------|-----|-----------------|--------------------------|
| | | Btu/hr | AMBIENT DESIGN (°F DB) | Btu/hr | AMBIENT DESIGN (°F DB / WB) | | VOLTAGE PHASE | MIN CIRCUIT AMPS (MCA) | MAX OVERCURRENT PROTECTION (MOP) | EER | IEER | COP 47 | COP17 | SCH | | |
| CU1 | HP-AC | 134,349 | 90 | 114,708 | 32.0 / 27.0 | 103 | 208/3 | 55.1 | 60 | 24.1 | | | | | 12 | RXYQ144TTJU |
| CU2 | HP-AC | 147,040 | 90 | 115,253 | 32.0 / 27.0 | 117 | 208/3 | 55.1 | 60 | 24.1 | | | | 12 | RXYQ144TTJU | |
| CU3 | HP-AC | 119,857 | 90 | 101,164 | 32.0 / 27.0 | 112 | 208/3 | 36.3 | 45 | 23.5 | | | | 10 | RXYQ120TTJU | |
| CU4 | HP-AC | 123,452 | 90 | 101,319 | 32.0 / 27.0 | 118 | 208/3 | 36.3 | 45 | 23.5 | | | | 10 | RXYQ120TTJU | |

Schedule Notes:

Manufacturer must be certified, listed, and labeled per AHRI 1230.

System rating data based on design ambient conditions for cooling and for heating.

Manufacturer must certify and submit system performance at extreme conditions of 120 degrees F ambient in cooling mode and -4 degrees F in heating mode.

Submitted performance data must be fully de-rated for all components and accessories, including but not limited to, line length, vertical separation, connection ratio, design conditions, condenser coil coating.

System must provide continuous heating during defrost and oil return. Systems without this capability must be de-rated to account for heating lost during defrost cycle and unit size increased accordingly.

Manufacturer must have published continuous performance rating data at least 120F and -4F to ensure performance during extreme conditions.

Condensing units must have fully modulating INVERTER compressors.

Non-VFD compressors (including digital scroll compressors and compressors with hot gas bypass) will not be permitted.

Condensing units must have auto changeover functions

Demand limiting relay contact must be provided.

Condensing units must have a minimum of 3 minutes of non-volatile operational memory for use in diagnostics.

All Mode Changeover Devices and FCU refrigerant controls shall be via Electronic Expansion Valves (EEVs) with 2000:1 throttling range.

EEV actuators must be removable from valve body without disturbing the refrigerant system.

Systems using solenoid control valves must include full port isolation valves before and after refrigerant control box and acoustic treatment to provide no greater than NC20 in the occupied mode.

Solenoid control valves and full port isolation valves must be rated for 2.5 times the maximum working pressure in the system and be rated for a minimum L10 life of 500,000 hours

VRF systems using solenoid control valves must provide acoustic treatment to attenuate valve noise below NC20 in all occupied modes.

Condensing units must be furnished with protective coil coating to withstand ASTM B117 salt spray test for a minimum of 2500 hours. Performance of system must be de-rated for coil coating.

Condensing units must have published performance data with 200% indoor connected capacity.

FCU thermostats must provide +/- 1 degree dead-band set-point and control capability.

Air handling units shall be provided with condensate pump if required. Coordinate with plumbing contractor.

System shall be provided with i-Touch Manager controller with WEB based software for displaying up to 8 DIII-Net systems with 128 indoor units per system. PC by others.

Manufacturers submittal must include refrigerant piping diagram with pipe diameters, lengths, and refrigerant volume.

Substitute manufacturer shall be responsible for additional piping and refrigerant.

Contractor to verify piping dimensions.

System shall utilize REFLOK mechanical piping system with AL tubing to eliminate contaminants introduced in the brazing process.

Installing contractor must have successfully completed manufacturers certified installation class within past 36 months.

Contractor to furnish and install insulation on refrigerant piping.

Manufacturers Representative must have local stock of parts and factory certified technician on staff.

Manufacturers Representative shall provide proof of ongoing installation training at their local facility for at least the past 5 years.

Manufacturers Representative shall provide proof of continuous sales and support of their products for at least 15 years.

Mechanical contractor shall be responsible for all direct costs and operating costs increases for 20 years associated with any deviations resulting from changes in design.

Condensing unit shall provide auto charging and indoor unit auto addressing capability.

Manufacturer must provide 10 years parts warranty on all FCUs, Condensing Units, Mode Changeover Devices and Zone Controls. Warranty conditions must be clarified during submittal phase.

100 % OUTDOOR AIR UNIT (DAIKIN AS BASIS OF DESIGN)

| TAG | Qty | Model | Unit | | | | | | | | | | | |
|--------------|-----|---------|------------|---------|-----------|----------------|-----------------|---------------|--------------------------|--------------------------|---------------|-----------------|------------------------------|------------|
| | | | Electrical | | | Efficiency | | Supply Fan | | | | Filters | | |
| | | | Voltage | MCA (A) | MROPD (A) | EER (AHRI 360) | IEER (AHRI 360) | Airflow (CFM) | ESP (inH ₂ O) | TSP (inH ₂ O) | Altitude (ft) | Motor Size (HP) | Face Area (ft ²) | Efficiency |
| OAU-1 (East) | 1 | DPS012A | 208/60/3 | 144.7 | 150 | 11.4 | 17.8 | 3500 | 1.5 | 2.95 | 0 | 4 | 18'2" | MERV 8 |
| OAU-2 (Core) | 1 | DPS010A | 208/60/3 | 144.7 | 150 | 12.2 | 19.1 | 2500 | 1.5 | 2.45 | 0 | 4 | 18'2" | MERV 8 |
| OAU-3 (West) | 1 | DPS012A | 208/60/3 | 144.7 | 150 | 11.4 | 17.8 | 3600 | 1.5 | 3.01 | 0 | 4 | 18'2" | MERV 8 |

| TAG | Energy Recovery | | | | | | | | |
|--------------|--------------------|------------------|---------------|--------------|--------------------------|------------------|---------------------|------------------|---------------------|
| | Recovered Capacity | | Mixed Air LAT | | Effectiveness | | | | |
| | Cooling (Btu/hr) | Heating (Btu/hr) | Cooling (°F) | Heating (°F) | APD (inH ₂ O) | Total Cooling () | Sensible Cooling () | Total Heating () | Sensible Heating () |
| OAU-1 (East) | 134268 | 76126 | 80.7 | 63.5 | 0.78 | 0.62 | 0.66 | 0.66 | 0.66 |
| OAU-2 (Core) | 105129 | 59910 | 79.6 | 65.7 | 0.56 | 0.7 | 0.74 | 0.74 | 0.75 |
| OAU-3 (West) | 136662 | 77438 | 80.8 | 63.3 | 0.8 | 0.62 | 0.65 | 0.65 | 0.65 |

| TAG | Cooling | | | | | | | | | | Electric Heating | | | | | |
|--------------|----------|----------|----------|----------|-------------------|-------------|-----------------|-----|-----------------------|-------------|------------------|------|-------------|-------------------------|----------|----------|
| | EAT | | LAT | | Total Capacity | | Ambient DB (°F) | Qty | Compressor | | Type | Size | Stages | Total Capacity (Btu/hr) | EDB (°F) | LDB (°F) |
| | EDB (°F) | EWB (°F) | LDB (°F) | LWB (°F) | Sensible Capacity | Refrigerant | | | Compressor Power (kW) | Refrigerant | | | | | | |
| OAU-1 (East) | 78.9 | 67.6 | 54 | 54 | 147605 | 95473 | 95 | 2 | 9.5 | R410A | Electric | 36 | SCR control | 122868 | 60 | 92.4 |
| OAU-2 (Core) | 79.6 | 68.2 | 53.4 | 53.1 | 117295 | 71616 | 95 | 2 | 8.1 | R410A | Electric | 36 | SCR control | 122868 | 60 | 105.3 |
| OAU-3 (West) | 78.9 | 67.6 | 54.4 | 54.3 | 148383 | 96809 | 95 | 2 | 9.5 | R410A | Electric | 36 | SCR control | 122868 | 60 | 91.5 |

EQUIPMENT NOTES CONTINUED:

16. FAN SHALL BE PREMIUM EFFICIENCY, SPRING ISOLATED AND AIRFLOW TYPE.

17. FACTORY MOUNTED VFD

18. MINIMUM OF SIX ROW COOLING COIL.

19. ALL ACCESS DOORS MUST BE HINGED.

20. PROVIDE FACTORY MOUNTED NON-FUSED DISCONNECT SWITCH WITH FIELD POWERED 115V GFI OUTLET.

21. 5 YEAR COMPRESSOR WARRANTY

22. PROVIDE COMPRESSOR ISOLATION VALVES.

23. PROVIDE PHASE FAILURE MONITOR

24. PROVIDE RTU WITH WALL MOUNTED HUMIDITY SENSOR.

25. PROVIDE 24" ROOF CURB.

26. UNITS MUST HAVE INTEGRAL ERWS.

27. SCHEDULED IEER RATINGS MUST BE MET OR EXCEEDED.

28. BASIS OF DESIGN SHALL BE DAIKIN. CALL SIMON DIEZ FOR PRICING AT 561.512.2506 OR SIMON.DIEZ@DAIKINAPPLIED.COM

AIR DEVICE SCHEDULE

| UNIT TAG | MFR & MODEL | CFM RANGE | FACE SIZE /MODULE | NECK | FRAME | DAMPER TYPE | THROW | REMARKS |
|----------|--------------|-----------|-------------------|-----------|--------|-------------|-------|---------|
| SA | TITUS TMS-AA | - | 24x24 | SEE PLANS | LAY-IN | - | - | - |
| SB | TITUS TMS-AA | 0-50 | 12x12 | 6"ø | LAY-IN | - | - | - |
| SC | TITUS 300FL | 0-100 | 8x6 | SEE PLANS | LAY-IN | - | - | - |
| RA | TITUS 50F | 0-2000 | 24x24 | SEE PLANS | LAY-IN | - | - | - |
| RB | TITUS 50F | 0-1000 | 12x12 | SEE PLANS | LAY-IN | - | - | - |

AIR TERMINAL NOTES:

1) AIR DEVICE SIZES SCHEDULED UNLESS OTHERWISE NOTED ON HVAC FLOOR PLANS.

2) AIRFLOW SHALL BE AS NOTED ON PLANS.

3) ALL AIR DEVICES INSTALLED IN INACCESSIBLE AND/OR DRYWALL CEILING SHALL BE PROVIDED WITH MANUAL OPPOSED BLADE DAMPERS.

4) ALL AIR DEVICES INSTALLED IN LAY-IN CEILING SHALL HAVE MANUAL VOLUME DAMPER INSTALLED IN THE BRANCH TAKE-OFF.

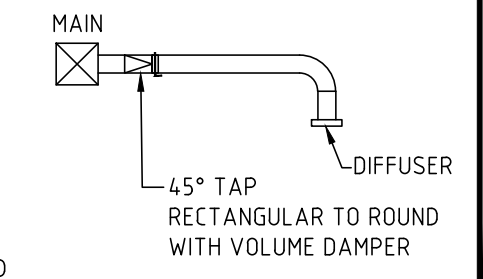
5) MAXIMUM PRESSURE DROP FOR ALL AIR DEVICES SHALL NOT EXCEED 0.10 IN. W.C.

6) ALL AIR DEVICES SHALL BE WHITE UNLESS OTHERWISE NOTICED. COORDINATE WITH ARCHITECT.

7) MAXIMUM NC FOR ALL DEVICES SHALL NOT EXCEED 25.

8) ALL AIR DEVICES SHALL BE ALUMINUM CONSTRUCTION UNLESS OTHERWISE NOTICED.

9) UNLESS INDICATED OTHERWISE, LAY-IN TYPE REGISTERS & DIFFUSERS INSTALLED IN GYPSUM BOARD CEILINGS SHALL BE PROVIDED WITH RAPID MOUNT FRAME, MODEL TITUS TRM OR EQUAL.



Single Duct Terminal Unit Schedule - No Heat

| Tag | Qty | Model | Size | | | Design Airflow | | Unit Control Config | Pressures | | NC Levels | | |
|---------|-----------|--------|--------------|-------|--------|----------------|-----------|---------------------|--------------------------|---------------------------|-----------|-----|---------------------------------|
| | | | Case Type | Inlet | Outlet | Max (CFM) | Min (CFM) | | Max (inH ₂ O) | Unit (inH ₂ O) | Rad | Dis | Op Ps Drop (inH ₂ O) |
| VAV-1-X | SEE PLANS | MQTHIS | 6'6 in Round | 12x8 | 12x8 | 375 | 65 | Right Hand | 1 | 0.096 | 19 | 14 | 0.5 |
| VAV-2-X | SEE PLANS | MQTHIS | 6'6 in Round | 12x8 | 12x8 | 450 | 65 | Right Hand | 1 | 0.125 | 21 | 16 | 0.5 |
| VAV-3-X | SEE PLANS | MQTHIS | 8'8 in Round | 12x10 | 12x10 | 575 | 105 | Right Hand | 1 | 0.06 | 14 | 18 | 0.5 |
| VAV-4-X | SEE PLANS | MQTHIS | 8'8 in Round | 12x10 | 12x10 | 630 | 115 | Right Hand | 1 | 0.072 | 16 | 19 | 0.5 |

Notes:

1. All sound power levels referenced to 1 x 10 watts.

2. Room NC levels based on sound pressure levels calculated from adjustments to sound levels using attenuation credits given in ARI 885-2008.

3. Room NC levels calculated at the Operating Ps Drop.

4. Sound data obtained from tests conducted in accordance with ARI Standard 880-2008.

5. Legend:

a. Min Ps = minimum static pressure loss through ATU

b. Unit (Pressures) = Min Ps + PD

1. TYPICAL VAV ARE TAGGED AS FOLLOWS: VAV-X-X
 VAV IDENTIFIER (UNIQUE)
 SIZE/AIRFLOW

2. VAV BOXES SHOWN ON PLAN DIAGRAMMATICALLY. CONTRACTOR SHALL CONFIRM AND COORDINATE WITH ALL MANUFACTURER CLEARANCE REQUIREMENTS.

TOTAL BUILDING AIR BALANCE SCHEDULE

| | O/A (-) | MAKEUP AIR (-) | E/A (-) | PRESSURE/CFM |
|-------------------|-----------|----------------|----------------|--------------|
| OAU's | (+) 9,600 | - | - | (+) 9,600 |
| KITCHEN HOOD | - | (-) 2,400 | (-) 3,000 | (-) 600 |
| DISHWASHER HOOD | - | - | (-) 750 | (-) 750 |
| BATHROOMS EXHAUST | - | - | (-) 1,250 | (-) 1,250 |
| CLASSROOM PURGE | - | - | (-) 8,145 x 60 | (-) 4,887 |
| TOTAL | | | | (-) 2,113 |

NOTES:

1. CLASSROOM PURGE EXHAUST CALCULATED FOR 60% OF PURGE SYSTEMS TO BE IN OPERATION.

2. SUPPLY AND EXHAUST FANS IN EACH OAU SHALL BE VARIABLE SPEED AND MAINTAIN BUILDING POSITIVE PRESSURIZATION.

KITCHEN AIR BALANCE SCHEDULE

| | O/A (-) FROM UNIT | MAKEUP AIR (-) FROM MUA FAN | E/A (-) | PRESSURE/CFM |
|----------------------------|-------------------|-----------------------------|-----------|--------------|
| KITCHEN HOOD | - | (+) 2,400 | (-) 3,000 | (-) 600 |
| DISHWASHER HOOD | - | - | (-) 750 | (-) 750 |
| TRANSFER AIR FROM CORRIDOR | (+) 1350 | - | - | (-) 1350 |
| TOTAL | | | | 0 |

NOTES:

1. KITCHEN SHALL BE MAINTAINED AT NEGATIVE PRESSURIZATION RELATIVE TO SURROUNDING SPACES. WHEN HOOD(S) EXHAUST ARE NOT IN OPERATION GENERAL EXHAUST SHALL BE PROVIDED AS SHOWN.

2. MAKEUP AIR SHALL BE TEMPERED BEFORE ENTERING KITCHEN IN ACCORDANCE WITH SECTION 508.1.1 OF THE 2014 FLORIDA MECHANICAL CODE.

PERMIT / BID SET: 09/07/16

FAC CONSULTING

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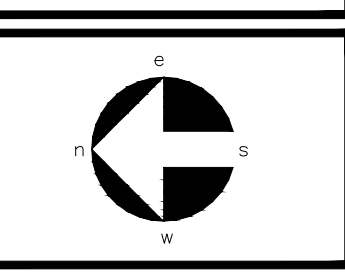


New Building For:
OPPORTUNITY INC.
 EARLY LEARNING CENTER
 4171 Westgate Avenue
 Palm Beach County, Florida

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Revisions:

Project no: 15435
 Date: 09.09.16
 Drawn by: RB/SK/JS
 Project Architect: BJ



M0.2

MECHANICAL SCHEDULES

09.09.16 BID/PERMIT

PRIOR TO SUBMITTING THE BID, THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND INFORM THE ARCHITECT AND THE ENGINEER OF ANY DISCREPANCY BETWEEN THESE DOCUMENTS AND THE EXISTING CONDITIONS AND SHALL INCLUDE IN THE BID TO CORRECT THE SAME AS DIRECTED. THE ENGINEER AND THE ARCHITECT, ARE NOT RESPONSIBLE FOR ANY ADDITIONAL COSTS RESULTING FROM VERIFIABLE EXISTING CONDITIONS DISCOVERED AFTER CONTRACT HAS BEEN AWARDED. NO CHANGES SHALL BE MADE TO THESE PLANS WITHOUT PRIOR APPROVAL FROM THE ENGINEER OF RECORD. ALL CHANGES SHALL BE SUBMITTED FOR REVIEW PRIOR TO INSTALLATION. NOT FOR BID UNTIL PERMIT HAS BEEN ISSUED.