

ROOFTOP UNIT SCHEDULE (REFRIGERANT R-410 HEAT PUMP)

| SYMBOL | AREA SERVED | CFM | NOMINAL TONNAGE | | O.A. SUP. FAN | | COOLING CAPACITY | | | EFFICIENCY | | | HEATING CAPACITY | | ELECTRIC HEAT | | COMPRESSOR (EA) | | CFM | | POWER EXHAUST | | POWER SUPPLY | | OPERATING | | MANUFACTURER |
|--------|--------------|--------|-----------------|------------|---------------|--------|------------------|------------|------|------------|------|--------|------------------|------|---------------|--------|--------------------|-----|------|------|---------------|-----|--------------|-----|-----------|-----------|--------------|
| | | | IC (BTUH) | SHC (BTUH) | E.S.P. | E.S.P. | IC (BTUH) | SHC (BTUH) | EER | SEER | IEER | (BTUH) | COP | HSPF | KW | STAGES | NO. | RLA | LRA | NO. | FLA | FLA | FLA | LRA | MCA | MOCP | |
| RTU-2 | SECOND FLOOR | 20,000 | 55 | 3600 | 2.25" | 0.75" | 664,290 | 507,210 | 10.3 | N/A | N/A | 10.3 | --- | --- | 110 | 3 | SEE NOTE 'A' BELOW | 1 | 10.8 | 36.6 | 12.6 | --- | 197.55 | 225 | 460V-3Ø | 9,252 LBS | SEHL554 |
| RTU-3 | THIRD FLOOR | 20,000 | 55 | 3600 | 2.25" | 0.75" | 664,290 | 507,210 | 10.3 | N/A | N/A | 10.3 | --- | --- | 110 | 3 | SEE NOTE 'A' BELOW | 1 | 10.8 | 36.6 | 12.6 | --- | 197.55 | 225 | 460V-3Ø | 9,252 LBS | SEHL554 |
| RTU-4 | FOURTH FLOOR | 20,000 | 55 | 3600 | 2.25" | 0.75" | 664,290 | 507,210 | 10.3 | N/A | N/A | 10.3 | --- | --- | 110 | 3 | SEE NOTE 'A' BELOW | 1 | 10.8 | 36.6 | 12.6 | --- | 197.55 | 225 | 460V-3Ø | 9,252 LBS | SEHL554 |

COMPRESSOR NOTES:
A. CIRCUIT 1: RLA=20.2A; CIRCUIT 2: RLA=22.2A; CIRCUIT 3: RLA=32.6A;
NOTES:
1. FURNISH UNITS WITH: MANUFACTURER'S ROOF CURB, DOUBLE-WALL CONSTRUCTION, DUAL PLENUM SUPPLY FANS WITH VARIABLE SPEED DRIVE, INTEGRATED ECONOMIZER (SOLID STATE ENTHALPY CONTROL) WITH 100% MODULATING RELIEF AIR FAN, CRANKCASE HEATER, VAV CONTROLLER (COMPATIBLE WITH FRONT-END BAS CONTROLS), MOTORIZED DA DAMPER, MOTORIZED RELIEF DAMPER, MOTORIZED RELIEF BACKDRAFT DAMPER, OUTSIDE AIR AND RELIEF HOODS, SUPPLY AND RELIEF FAN MOTOR SPRING-TYPE VIBRATION ISOLATORS, POWER EXHAUST CONTROLLER WITH INTERIOR SPACE PRESSURE SENSOR, CONDENSER HAIL GUARD, NEMA PREMIUM EFFICIENCY FAN MOTORS, CARTRIDGE FILTERS (MERV 13) & PRE-FILTER (MERV 7), PITCHED STAINLESS STEEL DRAIN PAN, RESETTABLE CIRCUIT BREAKERS, CONTROL PANEL WITH DISPLAY, SUCTION AND DISCHARGE SERVICE VALVES, BAS CONTROLS INTERFACE MODULE. ALL ACCESS DOORS SHALL BE HINGED DOORS WITH "TOOL-LESS" ENTRY.
2. PROVIDE EACH UNIT WITH A IONIZATION TYPE SMOKE DETECTOR, INSTALLED IN THE RETURN DUCT WIRING TO SHUT DOWN THE UNIT UPON ACTIVATION. SMOKE DETECTOR SHALL BE SUPPLIED, WIRING TO INTERFACE WITH FIRE ALARM SYSTEM AND UNIT SHUTDOWN BY THE ELECTRICAL CONTRACTOR. SMOKE DETECTOR SHALL BE INSTALLED IN THE RETURN DUCT BY THE MECHANICAL CONTRACTOR.
3. COOLING CAPACITIES BASED ON 95° AMBIENT, 80/67 ENTERING AIR.
4. ALL UNITS SHALL BE U.L. LABELED.

FAN SCHEDULE

| SYMBOL | LOCATION | TYPE | CFM | APPROX. S.P. | DRIVE | FAN RPM | ELECTRICAL DATA | | | MANUFACTURER | ACCESSORIES | CONTROLS |
|--------|----------|---------|------|--------------|-------|---------|-----------------|------|---------|------------------|-------------|----------|
| | | | | | | | OP. PWR | H.P. | VOLTAGE | | | |
| EF-1 | ROOF | EXHAUST | 2575 | 0.5" | BELT | 1092 | 0.56 BHP | 3/4 | 277-1Ø | GREENHECK GB-161 | A,C,D,E | 5 |

ACCESSORIES:
A: DISCONNECT SWITCH
B: GRAVITY BACKDRAFT DAMPER
C: MOTORIZED BACKDRAFT DAMPER
D: PREFAB. ROOF CURB
E: BIROSCREEN
F: ACOUSTICAL LINING
G: HANGING BRACKETS WITH VIBRATION ISOLATION
H: W.L. WALL LOUVER DISCHARGE
J: RCC OR GRS ROOF CAP (FLAT ROOF) OR RJ ROOF CAP (PITCHED ROOF)
K: WALL MOUNTING COLLAR
L: INLET GUARD
M: 2" WASHABLE ALUMINUM FILTERS
N: MOTORSIDE FAN GUARD
O: EXHAUST GRILLE
P: U.L. 782
Q: VENTED ROOF CURB EXTENSION
R: COMBINATION KITCHEN HOOD FAN CURB
S: INTERLOCK WITH FUME HOOD
T: PROVIDE DRAIN PLUG ACCESSORY

CONTROLS:
1: WALL MOUNTED THERMOSTAT (REVERSE ACTING, SET FOR 80°)
2: INTERLOCK WITH ROOM LIGHT SWITCH (FAN SHALL OPERATE WHEN LIGHT IS ON IN ANY ROOM SERVED BY FAN)
3: WALL MOUNTED ON/OFF SWITCH WITH IDENTIFICATION LABEL
4: WALL MOUNTED MUSHROOM PUSH BUTTON SWITCH/STARTER WITH IDENTIFICATION LABEL
5: CONTROLLED BY BUILDING AUTOMATION SYSTEM
6: CONTINUOUS OPERATION
7: INTERLOCK WITH KITCHEN HOOD CONTROLS
8: INTERLOCK WITH DISHWASHER
9: INTERLOCK WITH FUME HOOD

NOTES:
1. ALL FANS SHALL BE U.L. LISTED AND LABELED AND SHALL BE AMCA CERTIFIED FOR SOUND AND AIR FLOW. ALL FANS INSTALLED INSIDE, ABOVE, OR ADJACENT TO OCCUPIED SPACES SHALL HAVE A MAXIMUM 9.0 INLET SONE LEVEL.
2. ALL FANS SHALL BE SUPPLIED BY ONE MANUFACTURER UNLESS NOTED OTHERWISE.

EQUIVALENT MANUFACTURERS LISTING

LISTING OF MANUFACTURER'S NAME DOES NOT GUARANTEE APPROVAL. ALL EQUIPMENT MUST MEET OR EXCEED QUALITY AND CAPACITIES OF SPECIFIED EQUIPMENT. FINAL APPROVAL WILL BE BASED ON EQUIPMENT SUBMITTALS. ANY MANUFACTURER NOT LISTED BUT WISHING TO BID THIS PROJECT SHALL SUBMIT A WRITTEN REQUEST A MINIMUM OF 7 DAYS PRIOR TO BID DATE OR AS INDICATED IN THE SPECIFICATIONS. PRIOR APPROVAL IS REQUIRED FOR ALL MANUFACTURERS NOT LISTED.

(ALPHABETICAL ORDER)

AIR DISTRIBUTION: CARNES, NAILOR, PRICE, TITUS, TUTTLE & BAILEY, KRUEGER
DDC CONTROLS: SIEMENS, TRANE, JCI
DUCTLESS SPLIT SYSTEMS: DAIKIN, MITSUBISHI, TRANE
ELECTRIC WALL/UNIT HEATERS: MARKEL, MODINE, RAYWALL, REZDOR
FANS: COOK, GREENHECK, PENN
PACKAGED ROOFTOP UNITS: CARRIER, DAIKIN, TRANE, YORK/JOHNSON
VAV TERMINAL UNITS: CARRIER, ENVIRO-TEC, NAILOR, PRICE, TITUS, TRANE, KRUEGER

NOTE:
ALL COST ASSOCIATED WITH SUBSTITUTED EQUIPMENT TO COMPLY WITH BASIS OF DESIGN, INCLUDING PROVIDING MAINTENANCE ACCESS, CLEARANCE, PIPING, SHEET METAL, ELECTRICAL, REPLACEMENT OF OTHER SYSTEM COMPONENTS, BUILDING ALTERATIONS, ETC. SHALL BE INCLUDED IN THE ORIGINAL BASE BID. NO ADDITIONAL COST ASSOCIATED WITH SUBSTITUTED EQUIPMENT WILL BE APPROVED DURING CONSTRUCTION AND ALL COST WILL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.

VAV BOX SCHEDULE (ELECTRIC HEAT)

| SYMBOL | PRIMARY CFM | | ELECTRICAL DATA | | LAT (°F) | RUNOUT SIZE | ENVIRO-TEC SDR-EH UNIT SIZE |
|---------|-------------|---------|-----------------|---------|----------|-------------|-----------------------------|
| | MAXIMUM | MINIMUM | ELEC. KW | VOLTAGE | | | |
| VAV-2-1 | 900 | 230 | 3.5 KW | 277V-1Ø | 90.7 | 12"Ø | 10 |
| VAV-3-1 | 900 | 230 | 3.5 KW | 277V-1Ø | 90.7 | 12"Ø | 10 |
| VAV-4-1 | 900 | 230 | 3.5 KW | 277V-1Ø | 90.7 | 12"Ø | 10 |

NOTE:
MAXIMUM PRESSURE DROP THROUGH TERMINAL UNITS SHALL BE 0.25" S.P.
FURNISH TERMINAL UNITS WITH: ELECTRONIC CONTROLS, THERMOSTAT, CONTROL VOLTAGE TRANSFORMER.
3. ELECTRICAL CONTRACTOR SHALL EXTEND CONTROL POWER WIRING (120 V) FROM J-BOX TO VAV BOX. 120 V J-BOX BY ELECTRICAL CONTRACTOR, WIRING FROM J-BOX AND FINAL CONNECTION TO UNIT BY MECHANICAL CONTRACTOR. COORDINATE LOCATION OF 120 V J-BOXES WITH ELECTRICAL CONTRACTOR.
4. DDC CONTROLS SHALL BE FURNISHED TO THE BOX MANUFACTURER BY THE CONTROLS VENDOR (ALL CONTROLS AND THERMOSTATS TO MATCH BASE-BUILDING STANDARD). BOX MANUFACTURER SHALL FACTORY MOUNT AND WIRE CONTROLS. INSTALLATION OF CONTROLS SHALL INCLUDE CONTROLS TRANSFORMER, CONTROL COVER, AND ALL WIRING AND LABOR FOR A COMPLETE AND OPERATIONAL SYSTEM.

GRILLE AND DIFFUSER SCHEDULE

| SYMBOL | SERIES | CFM RANGE | | FACE | GRID SIZE | TYPE | OBD | PRICE |
|-----------|-----------|------------------------|-------|------------|---------------|------|------|-------|
| | | MIN | MAX | | | | | |
| A | SUPPLY | 0 - 100 | 12x12 | 6"Ø | LOUVERED FACE | NO | AMD | |
| B | SUPPLY | 0 - 100 | 24x24 | 8"Ø | LOUVERED FACE | NO | AMD | |
| C | SUPPLY | 0 - 175 | 24x24 | 8"Ø | LOUVERED FACE | NO | AMD | |
| D | SUPPLY | 0 - 270 | 24x24 | 10"Ø | LOUVERED FACE | NO | AMD | |
| E | SUPPLY | 270 - 390 | 24x24 | 12"Ø | LOUVERED FACE | NO | AMD | |
| F | SUPPLY | 390 - 500 | 24x24 | 14"Ø | LOUVERED FACE | NO | AMD | |
| G | SUPPLY | (2) 1" SLOTS, 48" LONG | | | LINEAR SLOT | NO | SDS | |
| H | SUPPLY | (2) 1" SLOTS, 48" LONG | | | LINEAR SLOT | NO | SDS | |
| EXHAUST | | | | | FIXED BLADE | NO | 635 | |
| RIN, EXH. | 0 - 100 | | 12x12 | 6"Ø | PERF. | NO | PDDR | |
| RIN, EXH. | 105 - 250 | | 24x24 | 8"Ø | PERF. | NO | PDDR | |
| N | RETURN | 255-500 | 24x24 | 12x12 | PERF. | NO | PDDR | |
| P | RETURN | 505 - 885 | 24x24 | 16x16 | PERF. | NO | PDDR | |
| R | RETURN | 0 - 1800 | 24x24 | NON-DUCTED | PERF. | NO | PFRF | |
| S | RETURN | (2) 1" SLOTS, 48" LONG | | | LINEAR SLOT | NO | SDS | |

NOTES:
1. ALL CEILING AND WALL MOUNTED DEVICES SHALL MATCH CEILING TILE RUNNER (T-BAR) FINISH. PROVIDE GRILLE FINISH SELECTION CHART TO ARCHITECT FOR REVIEW AS A SEPARATE EQUIPMENT SUBMITTAL FOR REVIEW/APPROVAL.
2. ALL DEVICES SHALL BE FURNISHED WITH FRAMES SUITABLE FOR TYPE OF INSTALLATION REQUIRED.
3. ALL LINEAR DIFFUSERS IN LAY-IN CEILINGS SHALL BE FURNISHED WITH END CAPS, ALL LINEAR DIFFUSERS IN HARD CEILINGS SHALL BE FURNISHED WITH END BORDERS.
4. ALL LINEAR DIFFUSERS SHALL BE PROVIDED WITH INTERNAL AIR DIRECTION ADJUSTMENT BARS FOR VERTICAL/HORIZONTAL AIR THROW ADJUSTMENT.
5. ALL LINEAR SUPPLY DIFFUSERS SHALL BE PROVIDED WITH FACTORY PLENUMS. PLENUMS TO BE FIELD INSULATED WITH 2" DUCT WRAP.
6. ALL DOUBLE DEFLECTION SUPPLY GRILLES SHALL HAVE DAMPER BLADES ADJUSTED TO PROVIDE AIRFLOW PATTERN INDICATED BY FLOW ARROWS ON PLANS. DAMPERS SHALL BE ADJUSTED TO A 30 DEGREE POSITION UNLESS NOTED OTHERWISE ON PLANS.
7. ALL SUPPLY DIFFUSER LOCATED IN KITCHEN AND DISHWASHING AREAS TO BE ALUMINUM CONSTRUCTION (AMD) TYPE DIFFUSERS.

DUCTLESS SPLIT SYSTEMS

| INDOOR UNIT | | | | | | | | | | OUTDOOR UNIT | | | | | | | | | | | | | | |
|-------------|-----|------------------|------------|-------------------------|-----------------|-----|---------|--------------|--------|--------------|------------------|-----------|-----------------|-------------------------|---------|-----------|------------|-----|-----|-----------------|--------|------------|-----------|--------------|
| SYMBOL | CFM | COOLING CAPACITY | | HEATING CAPACITY (BTUH) | ELECTRICAL DATA | | | MANUFACTURER | SYMBOL | CFM | COOLING CAPACITY | | EFF. | HEATING CAPACITY (BTUH) | AMBIENT | COMPELLER | FAN | | | ELECTRICAL DATA | | | OPERATING | MANUFACTURER |
| | | IC (BTUH) | SHC (BTUH) | | EA | FLA | MCA | | | | VOLTAGE | IC (BTUH) | | | | | SHC (BTUH) | EER | LRB | RLA | FLA | MCA | | |
| A/C-1 | 425 | 12,000 | 9,720 | N/A - COOL ONLY | 0.33 | 1.0 | 208V-1Ø | PKA-A12HA | ODU-1 | 12,000 | 9,720 | 15.2 | N/A - COOL ONLY | 95° F | 14 | 12 | 0.35 | 13 | 15 | 208V-1Ø | 90 LBS | PUY-A12NHA | | |
| A/C-2 | 390 | 15,000 | 10,200 | 10,000 | 0.28 | 1.0 | 208V-1Ø | SLZ-KA15NA | ODU-2 | 15,000 | 10,200 | 15.3 | 10,200 | 95° F | 14 | 12 | 0.35 | 12 | 15 | 208V-1Ø | 80 LBS | SUZ-KA15NA | | |
| A/C-3 | 425 | 12,000 | 9,720 | N/A - COOL ONLY | 0.33 | 1.0 | 208V-1Ø | PKA-A12HA | ODU-3 | 12,000 | 9,720 | 15.2 | N/A - COOL ONLY | 95° F | 14 | 12 | 0.35 | 13 | 15 | 208V-1Ø | 90 LBS | PUY-A12NHA | | |

NOTES:
1. ALL UNITS SHALL BE U.L. LISTED AND LABELED WITH A MINIMUM SEER OF 13.
2. COOLING CAPACITIES ARE BASED ON 95° AMBIENT, 80° ENTERING AIR DRY BULB, 67° ENTERING AIR WET BULB. AIRFLOWS INDICATED ARE AT 'HIGH' SPEED.
3. MOUNT GRAB-UP MOUNT UNITS ON CONCRETE PAD. MOUNT UNITS ON ROOF ON EQUIPMENT SUPPORT RAILS AS MFG. BY ROOF PRODUCTS AND SERVICE CORP. (OR EQUAL).
4. PROVIDE MANUFACTURER'S SUGGESTED CLEARANCES AROUND UNIT.
5. PROVIDE UNITS WITH MANUFACTURER'S WIND BAFFLES OR LOW AMBIENT CONTROLS FOR OPERATION DOWN TO 0° F, CONDENSATE PUMP WHERE NOTED ON PLANS (EQUAL TO LITTLE GIANT VCM-15ULS @ 120V-1Ø), INVERTER COMPRESSOR, HARD WIRE WALL-MOUNTED CONTROLLER (EQUAL TO PAR-21MAU), INTEGRAL NON-LOCKING DISCONNECT FOR INDOR UNIT, AND PRIMARY COOLING COIL DRAIN PAN FLAT SWITCH.
6. PROVIDE OUTDOOR UNITS WITH 6 YEAR EXTENDED COMPRESSOR WARRANTY.
7. SEE MANUFACTURER'S RECOMMENDATIONS FOR REQUIRED ADDITIONAL REFRIGERANT CHARGE AND RECOMMENDED LINE-SET LENGTHS.
8. POWER SUPPLY TO CONDENSING UNIT IS A SINGLE POINT ELECTRICAL CONNECTION FOR THE SYSTEM (A/C UNIT AND CONDENSING UNIT). THE ELECTRICAL CONTRACTOR SHALL PROVIDE POWER TO THE CONDENSING UNIT AND FROM THE CONDENSING UNIT TO THE A/C UNIT INCLUDING CODE REQUIRED DISCONNECT SWITCHES.
9. REFRIGERANT PIPING AND WIRING FOR WALL-MOUNTED INDOR UNITS SHALL BE ROUTED IN WALL WHERE POSSIBLE. ANY EXPOSED PIPING SHALL BE PAINTED TO MATCH WALL-FINISH.
10. PRIMARY COOLING COIL DRAIN PAN SHALL BE PROVIDED WITH A FLOAT SWITCH BY UNIT MFR; ACTIVATION OF THE FLOAT SWITCH SHALL SHUT DOWN UNIT AND SEND AN ALARM TO THE CENTRAL BAS.

ELECTRIC UNIT HEATER SCHEDULE

| SYMBOL | LOCATION | CFM | BTUH | KW | MOTOR | | | MANUFACTURER | | ACCESSORIES |
|--------|----------|-----|--------|-----|--------|------|---------|--------------|----------|-------------|
| | | | | | R.P.M. | H.P. | VOLTAGE | MARKEL | G1G5103N | |
| EUH-1 | MULTIPLE | 400 | 11,200 | 3.3 | 1550 | 1/15 | 277V-1Ø | G1G5103N | A,B,D,F | |
| EUH-2 | 107 | 400 | 17,100 | 5.0 | 1550 | 1/15 | 277V-1Ø | G1G5105N | A,C,E,F | |

NOTES:
1. HORIZONTAL HEATERS SHALL BE PROVIDED WITH ADJUSTABLE DISCHARGE LOUVERS.
2. SEE PLANS FOR TYPE OF THERMOSTAT REQUIRED (WALL MOUNTED OR UNIT MOUNTED) UNIT HEATERS SHOWN WITHOUT THERMOSTAT INDICATED SHALL BE PROVIDED WITH A UNIT MOUNTED THERMOSTAT.

ACCESSORIES:
A: DISCONNECT SWITCH
B: BUILT-IN THERMOSTAT
C: WALL MOUNTED THERMOSTAT
D: WALL MOUNTING BRACKETS
E: WALL MOUNTED SUPPORT STRUTS
F: ADJUSTABLE DISCHARGE LOUVERS

Order Plans @