

| UNIT SYMBOL | | RTU 1 (NEW) | RTU 2 (NEW) |
|---|------------------------|--|--|
| LOCATION | | ROOF | ROOF |
| BLOWER | CFM | 3,400 (8.5-TON) | 3,400 (8.5-TON) |
| | OUTSIDE AIR (CFM) | 820 | 820 |
| COOLING | TSP (IN W.G.) | 0.7" | 0.7" |
| | BHP/HP | 1.77/2.0 | 1.77/2.0 |
| | TOTAL (BTU/HR) | 103,940 | 103,940 |
| | SENSIBLE (BTU/HR) | 81,860 | 81,860 |
| | AMBIENT (F) | 95.0 | 95.0 |
| | COIL ENTERING | 80.6 DB/67.2 WB | 80.6 DB/67.2 WB |
| | COIL LEAVING | 58.2 DB/57.6 WB | 58.2 DB/57.6 WB |
| HEATING | CAPACITY (BTU/HR) | 180,000 (INPUT) / 148,000 (OUTPUT) | 180,000 (INPUT) / 148,000 (OUTPUT) |
| | EAT/LAT | 56.7/97.1 | 56.7/97.1 |
| ELECTRICAL | POWER SUPPLY | 208V/3PH/60HZ | 208V/3PH/60HZ |
| | COMPRESSOR (RLA) | 13.7/13.7 | 13.7/13.7 |
| | CONDENSER MOTOR (FLA) | (2) 1.5 | (2) 1.5 |
| | EVAPORATOR MOTOR (FLA) | 6.9 | 6.9 |
| | | | |
| | MIN. CIRCUIT AMPACITY | 41, HACR = 50 | 41, HACR = 50 |
| PRICING ORDERING AND DELIVERY CONTACT: THERESA DAWSON PHONE: 949-309-9815 E-MAIL: Theresa.Dawson@camier.utc.com | | BY CARRIER 48HCDD09B2AS DOWN DISCHARGE COMPLETE WITH 14" ROOF MOUNT CURB, ELECTRONIC PROGRAMMABLE THERMOSTAT, ENTHALPY ECONOMIZER WITH BAROMETRIC RELIEF. COMB. FAN MOTOR 0.48 AMPS (DOES NOT OPERATE WITH COMPRESSOR). OPER. WT. : 1274 LBS APPROX. SEER=NA EER=12.0, AFUE=82% | BY CARRIER 48HCDD09B2AS DOWN DISCHARGE COMPLETE WITH 14" ROOF MOUNT CURB, ELECTRONIC PROGRAMMABLE THERMOSTAT, ENTHALPY ECONOMIZER WITH BAROMETRIC RELIEF. COMB. FAN MOTOR 0.48 AMPS (DOES NOT OPERATE WITH COMPRESSOR). OPER. WT. : 1274 LBS APPROX. SEER=NA EER=12.0, AFUE=82% |

| MARK | MFR/ MODEL | LOCATION | SERVICE AREA | GAS HEAT | TYPE | MIN CFM | CFM | ESP | MOTOR | REMARKS |
|------|------------------------|----------|-------------------------|---|---------------------------------------|---------|-------|-------|-----------------------|---|
| MAU1 | CAPTIVEAIRE EA3-G14 | ROOF-TOP | KITCHEN HOOD #1 & #2 | INPUT: 518,789 BTHU OUTPUT: 477.286 | FIRE GAS HEATED, DOWN DISCHARGE | 3500 | 4,760 | 0.75" | 3 HP 208V/3PH/60HZ | GAS FIRED MAKEUP AIR UNIT. REFER TO SHEET M-402 FOR INFORMATION. 4-WEEK LEAD TIME. SHIPPING INCLUDED IN PRICE. SHIPS FROM TYLER, TX. SHIPS SEPARATE, FREIGHT INCLUDED. NOTE: FACTORY OPTIONS SHALL INCLUDE NONCORROSIVE COATING AND HAIL GUARD PROTECTION. REQUIRED INPUT GAS PRESSURE 7" WC TO 14" WC. |

| DESIGNATION | MANUFACTURER | MODEL NO | TYPE | COLOR | NOM NECK SIZE | NOM FACE SIZE | FRAME TYPE | NC MAX | REMARKS |
|-------------|--------------|----------|-------------------------|-----------------|---------------|---------------|--------------|--------|---|
| A | TITUS | PMC3 | PERFORATED MODULAR CORE | 26 WHITE | 14" x 14" | 24" x 24" | LAY-IN T-BAR | < 30 | INSULATION BLANKET FOR BACKPAN, CONTRACTOR FURNISHED ROUND NECK ADAPTER |
| B | TITUS | PMC-1C | PERFORATED MODULAR CORE | 26 WHITE | 12" x 12" | 19" x 19" | SURFACE | < 30 | AG95 OBD, (CONTRACTOR TO INSTALL INSULATED CEILING BOX 16"X16" ID) |
| C | TITUS | PMC-1C | PERFORATED MODULAR CORE | 26 WHITE | 8" x 8" | 15" x 15" | SURFACE | < 30 | AG95 OBD, (CONTRACTOR TO INSTALL INSULATED CEILING BOX 12"X12" ID) |
| D | TITUS | PAR-3 | PERFORATED RETURN | 26 WHITE | 22" x 22" | 24" x 24" | LAY-IN T-BAR | < 35 | CONTRACTOR FURNISHED INSULATE RETURN BOX FOR CONNECTING FLEX DUCT |
| E | TITUS | PMR-1C | PERFORATED EXHAUST | 26 WHITE | 12" x 12" | 15" x 15" | SURFACE | | AG95 OBD, (CONTRACTOR TO INSTALL INSULATED CEILING BOX 12"X12" ID) |
| F | TITUS | PAR-3 | PERFORATED RETURN | PANDA BRONZE | 22" x 22" | 24" x 24" | LAY-IN T-BAR | < 35 | CONTRACTOR FURNISHED INSULATE RETURN BOX FOR CONNECTING FLEX DUCT |
| H | TITUS | PMC-3 | PERFORATED MODULAR CORE | PANDA BRONZE | 14" x 14" | 24" x 24" | LAY-IN T-BAR | < 30 | AG95 OBD, INSULATION BLANKET FOR BACKPAN, CONTRACTOR FURNISHED ROUND NECK ADAPTER |
| J | TITUS | PMC-3 | PERFORATED MODULAR CORE | 26 WHITE | 8" x 8" | 24" x 24" | LAY-IN T-BAR | < 30 | AG95 OBD, INSULATION BLANKET FOR BACKPAN, CONTRACTOR FURNISHED ROUND NECK ADAPTER |

NOTE: PROVIDE FACTORY INSTALLED BACK PAN INSULATION ON AIR DEVICES.
 HVAC CONTRACTOR IS TO PURCHASE ALL AIR DEVICES FROM PANDA APPROVED NATIONAL ACCOUNT VENDOR THERMAIR SYSTEMS INC.
 PLEASE CONTACT RON CUMPTON AT 602-705-5010 OR EMAIL ronc@thermairsystems.com

| ITEM | SUPPLY AIR | RETURN AIR | MAKE-UP AIR | EXHAUST |
|--------------|----------------|----------------|-------------|------------|
| MAU1 | 0 | 0 | +4,760 | 0 |
| EF-1, EF-2 | 0 | 0 | 0 | -2,975 x 2 |
| RTU-1, RTU-2 | +3,400, +3,400 | -2,580, -2,580 | 2@820 EA | 0 |
| EF-3 | - | - | - | -450 |
| TOTAL | +6,800 | -5,160 | +6,400 | -6,400 |

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| FAN NO. | | EF 1 | EF 2 | EF 3 |
|---------------------|------------------------|---|---|--|
| LOCATION | | ROOF | ROOF | ROOF |
| AREA SERVED | | KITCHEN GREASE EXHAUST HOOD #1 | KITCHEN GREASE EXHAUST HOOD #2 | RESTROOMS |
| FAN DUTY | | AIR EXHAUST | AIR EXHAUST | AIR EXHAUST |
| FAN TYPE | | CENTRIFUGAL BELT-DRIVEN | CENTRIFUGAL BELT-DRIVEN | CENTRIFUGAL BELT-DRIVEN |
| FAN ARRANGEMENT | | UPBLAST | UPBLAST | DOWNBLAST |
| MIN. WHEEL DIAMETER | | - | - | - |
| PERFORMANCE | C.F.M. | 2,975 | 2,975 | 450 |
| | T.S.P. | 1.25" | 1.25" | 0.25" |
| | B.H.P. | 1.18 | 1.18 | 0.085 |
| | FAN R.P.M. | 1156 | 1156 | 1128 |
| MOTOR | MOTOR H.P. | 2.0 | 2.0 | 0.25 |
| | ELEC. CHARACTERISTICS | 208V/3PH/60HZ | 208V/3PH/60HZ | 115V/1PH/60HZ |
| | MOTOR R.P.M. | 1725 | 1725 | - |
| | MOTOR SPECIAL FEATURES | OPEN DRIP-PROOF | OPEN DRIP-PROOF | OPEN DRIP-PROOF |
| ACCESSORIES | | 1. VENTED ROOF CURB 2. HINGED AND CHAINED FAN INSTALLATION FOR DUCT ACCESS | 1. VENTED ROOF CURB 2. HINGED AND CHAINED FAN INSTALLATION FOR DUCT ACCESS | 1. ROOF CURB 2. BACKDRAFT DAMPER |
| MANUFACTURER | | CAPTIVEAIRE MODEL: EABDU18 WT. 222 LBS | CAPTIVEAIRE MODEL: EABDU18 WT. 222 LBS | CAPTIVEAIRE MODEL: EABDCR7 WT. 108 LBS |

1. KITCHEN EXHAUST FANS SHALL BE ELECTRICALLY INTERLOCKED WITH MAKE-UP AIR UNIT AND ROOFTOP UNITS.
2. FOR WIRING DIAGRAM SEE 5/M-501

EACH HVAC UNIT SHALL BE PROVIDED WITH CONTROLS AS FOLLOWS:

THERMOSTAT: CARRIER COMMERCIAL PROGRAMMABLE THERMOSTAT WITH REMOTE TEMPERATURE SENSOR. SEE SHEET M-100 FOR THERMOSTAT AND SENSOR LOCATIONS.

ALL THERMOSTATS SHALL HAVE MANUAL OVERRIDE.

EACH UNIT CONTROL SHALL BE SET UP INITIALLY AS FOLLOWS:

CONTRACTOR SHALL DETERMINE OCCUPIED PERIOD FROM OWNER.

FAN OPERATION SHALL BE CONTINUOUS DURING OCCUPIED PERIOD AND CYCLE WITH COOLING/HEATING DURING UNOCCUPIED PERIOD.

PROGRAMMED SETPOINTS (FOR EACH THERMOSTAT):

| | |
|---------------------|-------|
| COOLING OCCUPIED: | 75°F. |
| COOLING UNOCCUPIED: | 85°F. |
| HEATING OCCUPIED: | 68°F. |
| HEATING UNOCCUPIED: | 50°F. |

NOTE: DEVIATIONS FROM THE ABOVE MAY RESULT IN UNACCEPTABLE AIR QUALITY, COMFORT AND/OR ENERGY CONSUMPTION.

EACH UNIT CONTROL SHALL BE SET UP INITIALLY AS FOLLOWS:

FAN OPERATION SHALL BE CONTINUOUS DURING COOKING OPERATION
INTERLOCK WITH KITCHEN EXHAUST FANS. REFER TO HOOD DRAWINGS.

PROGRAMMED SETPOINTS:

| | |
|-----------|-------|
| COOLING : | 85°F. |
| HEATING : | 55°F. |

1. WORK INCLUDES INSTALLATION OF HVAC SYSTEMS, INCLUDING GREASE EXHAUST FANS AND MAKE-UP AIR UNIT FOR KITCHEN HOODS, SPACE HEATING/AIR CONDITIONING SYSTEMS, SUPPLY, RETURN, EXHAUST, AND GREASE EXHAUST DUCTWORK, GRILLES, REGISTERS, DIFFUSERS, COMPLETE CONTROLS SYSTEM, INTERLOCK WIRING FOR OPERATION OF KITCHEN HOODS, EXHAUST FANS, AND MAKE-UP AIR UNIT, DUCT INSULATION, AND RELATED ITEMS NECESSARY FOR A COMPLETE FUNCTIONING SYSTEM AS INDICATED ON THE PLANS. FURNISH ALL NEW MATERIALS AND EQUIPMENT UNLESS NOTED OTHERWISE (U.N.O.).
2. DRAWINGS FOR HVAC WORK ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, LAYOUT AND REQUIRED EQUIPMENT. DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENTS. AS REQUIRED, REFER TO ARCHITECTURAL AND MANUFACTURER'S STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS. FURNISH AND INSTALL DUCTWORK, CONNECTIONS, ACCESSORIES, OFFSETS, AND MATERIALS NECESSARY TO FACILITATE SYSTEM'S FUNCTIONING AS INDICATED BY THE DESIGN AND EQUIPMENT SHOWN ON PLANS.
3. CODE COMPLIANCE: ALL WORK COVERED BY THIS SECTION SHALL BE IN ACCORDANCE WITH ALL LOCAL CODES AND ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION.
4. COORDINATE WORK WITH OTHER TRADES, EQUIPMENT FURNISHED BY OTHERS AND OWNER REQUIREMENTS. PROVIDE DUCT RISES AND DROPS AS REQUIRED FOR INSTALLATION AND/OR TRADE COORDINATION. NOTIFY ARCHITECT OF ANY DISCREPANCIES BEFORE STARTING WORK. WORK SHALL BE PERFORMED BY EXPERIENCED TRADESMEN AND THEIR WORK SHALL BE OF HIGH STANDARD ACCEPTABLE TO THE OWNER.
5. DUCTWORK: DUCT SYSTEMS SHALL BE CONSTRUCTED, INSTALLED, SEALED AND INSULATED AS PROVIDED IN THE INT'L ENERGY AND MECHANICAL CODES. SHEET METAL SHALL BE IN ACCORDANCE WITH ASHRAE AND SMACNA STANDARDS. SHEET METAL SHALL BE GALVANIZED OF LOCK-FORMING QUALITY, ASTM A-525. UNLESS OTHERWISE NOTED, DUCT DIMENSIONS ON DRAWINGS ARE NET INSIDE CLEAR DIMENSIONS ON LINED DUCTS OR SHEET METAL. DIMENSIONS ON UNLINED DUCTS: ALL ANGLE IRON USED FOR SUPPORT SHALL BE GALVANIZED. ROUND RIGID DUCTWORK SHALL CONFORM TO SMACNA TABLE 3-2.
6. INSTALL DUCT HIGH AS POSSIBLE WITHIN JOIST SPACE. CONSULT ARCHITECT AND ENGINEER FOR ALTERNATE ROUTING IF CONFLICT OCCURS.
7. SEAL ALL TRANSVERSE AND LONGITUDINAL DUCT SEAMS AIR-TIGHT. PROVIDE TURNING VANES AT ALL ELBOWS OR OFFSETS EXCEEDING 30 DEGREES.
8. GREASE EXHAUST SYSTEM: ALL GREASE EXHAUST DUCTS SHALL BE FABRICATED BY WELDED JOINT CONSTRUCTION OF 16 GAUGE WELDED STEEL OR 18 GAUGE STAINLESS STEEL. PROVIDE RATED ACCESS DOORS AT ALL ELBOWS AND OFFSETS NECESSARY FOR COMPLETE CLEANING OF GREASE DUCT. PROVIDE MINIMUM 30"x30" UNOBSTRUCTED ACCESS OR ROUTE FROM THE CEILING TO EACH ACCESS DOOR. DO NOT BLOCK ACCESS WITH PLUMBING, ELECTRICAL OR HVAC OBSTRUCTIONS. ALL ELBOWS SHALL BE LONG RADIUS. GREASE DUCT SHALL BE INSTALLED EITHER IN A RATED ENCLOSURE PROVIDED BY THE GENERAL CONTRACTOR OR WRAPPED WITH FIREMASTER GREASE DUCT WRAP.
9. DUCT INSULATION: PROVIDE DUCT WRAP FOR ALL DUCTS ABOVE CEILING, INCLUDING VERTICAL, HORIZONTAL, RIGID AND FLEXIBLE DUCTS, EXCLUDING PREFABRICATED PREINSULATED DUCTS AND GREASE DUCTS. DUCT WRAP SHALL BE JOHNS MANVILLE MICROLITE OR EQUAL WITH FOIL/SCRIMP/KRAFFT, 1" IN THICKNESS, 15 POUNDS/FT³ DENSITY. DUCT WRAP SHALL BE BONDED GLASS FIBERS IN THERMOSETTING RESIN MEETING NFPA 90A, WITH K VALUE NOT TO EXCEED 0.23 AT 75 DEGREES F. FLAME SPREAD AND SMOKE DEVELOPED RATINGS SHALL NOT EXCEED 25/50. APPLY 100% ADHESIVE COVERAGE TO SHEET METAL DUCTWORK. PROVIDE ADDITIONAL MECHANICAL FASTENERS ON DUCTS OVER 12" WIDE OR 16" HIGH. MECHANICAL FASTENERS SHALL BE "GRIPNAIL" OR WELDED PIN AND SPEED CLIPS SPACED PER SMACNA STANDARDS.
10. FLEX DUCT: PROVIDE FACTORY ASSEMBLED CLASS 1 AIR DUCT (UL 181) WITH FIBERGLASS INSULATION AND REINFORCED OUTER PROTECTIVE COVER/VAPOR BARRIER. FLEX DUCT SHALL MEET NFPA 90A WITH FLAME SPREAD UNDER 25, SMOKE DEVELOPED UNDER 50 AND SHALL BE RATED FOR 2" W.C. PRESSURE AND 0 TO 250 DEGREE TEMPERATURE. FLEX DUCT MAXIMUM ALLOWED LENGTH TO BE PER LOCAL CODE.
11. PROVIDE INSULATION APPLIED TO COMPLETE BACKPAN OF AIR DEVICES.
12. ACCESS DOOR: PROVIDE HINGED ACCESS PANELS IN DUCTWORK WHERE SHOWN AND AS REQUIRED FOR ACCESS TO DAMPERS OR EQUIPMENT. PROVIDE INSULATED ACCESS DOORS IN INSULATED DUCTWORK.
13. AUTOMATIC TEMPERATURE CONTROL: CONTRACTOR TO PROVIDE AND INSTALL 24/7 PROGRAMMABLE THERMOSTATS AND REMOTE SENSORS.
14. KITCHEN HOOD EQUIPMENT INTERLOCK: PROVIDE ALL INTERLOCK AND CONTROL WIRING FOR KITCHEN HOOD SYSTEMS, WHICH INCLUDES EF1, EF2, MAU1 AND ANSUL SYSTEM SHUT DOWN INTERLOCK TO MAKE-UP AIR FAN. UPON ACTIVATION OF ANSUL SYSTEM, MAKE-UP AIR FAN SHALL BE DEACTIVATED. PROVIDE ALL NECESSARY CONTROLS AND WIRING FOR A COMPLETE AND OPERABLE SYSTEM. INTERLOCK GREASE EXHAUST FANS AND MAKE-UP AIR UNIT TO START SIMULTANEOUSLY FROM SWITCH PROVIDED AT HOOD.
15. TEST AND ADJUST EACH PIECE OF EQUIPMENT AND EACH SYSTEM AS REQUIRED TO ASSURE PROPER AIR BALANCE AND OPERATION. PROVIDE A CERTIFIED AIR BALANCE REPORT TO OWNER SHOWING DESIGN AND MEASURED AIR VOLUMES, STATIC PRESSURES, FAN RPMs, ETC. AIR BALANCE CONTRACTOR SHALL ADJUST SYSTEMS TO MINIMIZE NOISE AND VIBRATION, AND TO ASSURE PROPER FUNCTION OF CONTROLS, MAINTENANCE OF TEMPERATURE AND OPERATION. GENERAL CONTRACTOR TO OBTAIN ALL INSPECTIONS REQUIRED BY LOCAL CODE AND GUARANTEE WORK AND INSTALLATION FOR ONE YEAR AFTER ACCEPTANCE BY OWNER. GENERAL CONTRACTOR TO FURNISH OWNER WITH TWO COMPLETE SETS OF AS-BUILT DRAWINGS INDICATING ALL INSTALLED WORK, INCLUDING ALL CONTROL WIRING DIAGRAMS AND INTERLOCK FOR SYSTEM OPERATION.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION OF ECONOMIZERS INCLUDING INSTALLATION OF ALL NECESSARY SENSORS AND CONNECTIONS TO THERMOSTAT. PROVIDE SUPPORT OF ECONOMIZERS PER MANUFACTURER'S REQUIREMENTS AND TEST FOR PROPER OPERATION PRIOR TO FINAL TEST AND BALANCE.



| SYMBOL | ABBREVIATION | DESCRIPTION |
|---|--------------|---|
| | ABV | ABOVE |
| | AFF | ABOVE FINISHED FLOOR |
| | CLG | CEILING |
| | DN | DOWN |
|  | | DUCT SECTIONS (SUPPLY, EXHAUST, RETURN) |
|  | | FLEXIBLE DUCT |
|  | MVD | MANUAL VOLUME DAMPER |
| | OBD | OPPOSED BLADE DAMPER |
| | MFR | MANUFACTURER |
| | MIN | MINIMUM |
| | OSA | OUTSIDE AIR |
|  | | ROUND RIGID DUCTWORK |
| | TSP | TOTAL STATIC PRESSURE |
|  | | TURNING VANES |
|  | | CONSTRUCTION NOTES |
|  | | MECHANICAL EQUIPMENT DESIGNATION |
|  | | SMOKE DETECTOR |
|  | | THERMOSTAT / UNIT |
|  | | REMOTE SENSOR / UNIT |