Alpha Aire
Dedicated Outdoor Air System, VAV, Air-Source Heat Pump with Energy Recovery
Engineering Guide
Effective September 2017
CONTENTS

PRODUCT FEATURES ........................................... 2
OPTIONS ..................................................... 2
Psychrometric Chart ......................................... 2
Physical Data - Alpha Aire ................................. 4
Corner Weights ............................................... 4

Alpha Aire Performance Data ............................... 5
Typical Design Conditions ................................. 5
Alpha Aire Drawing .......................................... 6
Alpha Aire .................................................... 7
Basic Model Designation ................................. 7

PRODUCT FEATURES

United CoolAir uses high-density 2" thermal/acoustic insulation Solid Double Wall along with low airflow to greatly reduce noise for near occupant operation. Critical components are isolated out of the air stream for longer life. Single point electrical power and 8" flex duct make for a low cost installation. The sheet metal is G90 galvanized steel with optional wet paint finish for durability and long life.

• Single Cabinet Design
• 2" Solid Double Wall
• Variable Air Volume Capable (Through BMS)
• Up to 1" of ESP
• Air Source Heat Pump
• ECM Fans
• BMS Capable
• Auxiliary Reheat Coil
• Stainless Steel Drain Pan
• 2" MERV 8 Pleated Throwaway Filters
• Dual Energy Recovery Devices
• FieldConvertible Supply and Exhaust/Return Ducts
• Filter Drier (Suction Line)
• Isolated Electrical/Control Box
• 8" Duct Collar Connections
• Built In Pressure Transducers for Airflow Measurement
• Quick Compressor Change Out
• No brazing or Hot Work permit required for compressor changeout
• 100–500 CFM

OPTIONS

• Painted Cabinet (Wet paint)
• Non-Fused Disconnect
• Coated Coils
• Buck Boost Transformer
• External Condensate Pump
• Multiple 2"/4" MERV 8,11 or 13 filters
• CO₂ Switch
• VOC Switch
• Occupancy Switch
• Compressor Acoustic Cover
• Smoke Detector
• Floor Stand
Physical Data - Alpha Aire

<table>
<thead>
<tr>
<th>Physical Data</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaporator Supply Air</td>
<td>CFM Range</td>
</tr>
<tr>
<td>Evaporator Fans</td>
<td>Type</td>
</tr>
<tr>
<td></td>
<td>Qty</td>
</tr>
<tr>
<td>COIL MATERIALS:</td>
<td></td>
</tr>
<tr>
<td>Indoor Coil Rows / FPI</td>
<td></td>
</tr>
<tr>
<td>Indoor Coil Face Area</td>
<td>Ft2</td>
</tr>
<tr>
<td>Outdoor Coil Rows / FPI</td>
<td></td>
</tr>
<tr>
<td>Outdoor Coil Face Area</td>
<td>Ft2</td>
</tr>
<tr>
<td>Reheat Coil Rows / FPI</td>
<td></td>
</tr>
<tr>
<td>Reheat Coil Face Area</td>
<td>Ft2</td>
</tr>
<tr>
<td>Wheel Type</td>
<td></td>
</tr>
<tr>
<td>Wheel Diameter</td>
<td>In</td>
</tr>
<tr>
<td>Plate Type</td>
<td></td>
</tr>
<tr>
<td>ELECTRICAL DATA:</td>
<td></td>
</tr>
<tr>
<td>Motor Power / FLA</td>
<td>kW / Amps</td>
</tr>
<tr>
<td>Motor Qty</td>
<td></td>
</tr>
<tr>
<td>Compressor Qty / Type</td>
<td></td>
</tr>
<tr>
<td>Compressor LRA / RLA</td>
<td>Amps / Amps</td>
</tr>
<tr>
<td>Unit MCA</td>
<td>Amps</td>
</tr>
<tr>
<td>Unit MOP</td>
<td>Amps</td>
</tr>
<tr>
<td>AIR FILTERS:</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>Pleated Throwaway</td>
</tr>
<tr>
<td>Qty / Size</td>
<td>2 / 12 x 24 x 2</td>
</tr>
<tr>
<td>Efficiency</td>
<td>MERV 8</td>
</tr>
<tr>
<td>Weight (Net Operating)</td>
<td>600 lbs*</td>
</tr>
</tbody>
</table>

*Approximate net operating weight of standard unit, additional options may change overall weight

Corner Weights

*note, there is a closet (vertical model) with similar footprint coming very soon, 75" tall, ~28x28
# Alpha Aire Performance Data

## Typical Design Conditions

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CFM</th>
<th>SCFM</th>
<th>Out. Air Temp. DB / WB / RH / DP °F / °F / % / °F</th>
<th>Return Air Temp. DB / WB / RH / DP °F / °F / % / °F</th>
<th>Supply Air Temp. DB / WB / RH / DP °F / °F / % / °F</th>
<th>Total Cooling Capacity (less motor heat) BTUH</th>
<th>Sensible Cooling Capacity (less motor heat) BTUH</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEHUMIDIFICATION</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>37,400</td>
<td>10,700</td>
</tr>
<tr>
<td>HEATING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>45,600</td>
<td>32,300</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>33,700</td>
<td>11,100</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>44,000</td>
<td>30,200</td>
</tr>
</tbody>
</table>
Alpha Aire Drawing

Subject to change without notice.
Alpha Aire

Basic Model Designation

- **Series**
  - Alpha Aire

- **Configuration**
  - Horizontal - H
  - Vertical - V

- **Series 100**

- **Voltage**
  - G1 - 208/230-1-60

- **Special Configuration**

- **Refrigerant Type**
  - A - R-410A

- **Cabinet Series**
  - T - Traditional Cabinet

- **Quantity of Refrigerant Circuits**
  - AS - Single Circuit

---

**Diagram**

- **Outside Air**
- **Exhaust Air**
- **Exhaust/Return Air**
- **Supply Air**
unique solutions for all-indoor HVAC projects

VertiCool Classic
Vertical, 3 - 30 Ton

VertiCool Aurora
Vertical, 3 - 35 Tons

VariCool®
VAV, 9 - 70 Tons

VariCool® EZ-Fit
VAV, 12 - 90 Tons

Alpha Aire
100 – 500 CFM

Portable Cooling and Heating Units
3-30 Tons

C13-Series Horizontal
2 - 10 Tons

C-Series Horizontal
1 - 15 Tons

Special Configuration
Engineered to Order

OmegaAir Horizontal and Vertical
100% Outside Air
150 – 3000 CFM

Authorized Distributor:

limited warranty
United CoolAir Units are backed by a 1 year limited warranty on parts and a 5 year limited warranty on the compressor (labor not included). Maintenance items such as filters and belts are excluded under this limited warranty.

factory tested
All units are functionally run tested before shipment to ensure a trouble-free start-up and unit commissioning. Industry proven components are used throughout to enhance system reliability and peace of mind.

491 East Princess Street, York, PA 17403 Phone: 717-843-4311 Fax: 717-854-4462 email: uca@unitedcoolair.com web: www.unitedcoolair.com

Copyright © by United CoolAir Corporation 2017. All rights reserved. Manufacturer reserves the right to make changes without notice.