



Product Catalog

Horizon™ Outdoor Air Unit For 100% Outdoor Air Applications

Models: OABD, OABE, OADD, OADE, OAGD,
OAGE, OAKD, OAKE, OAND, OANE



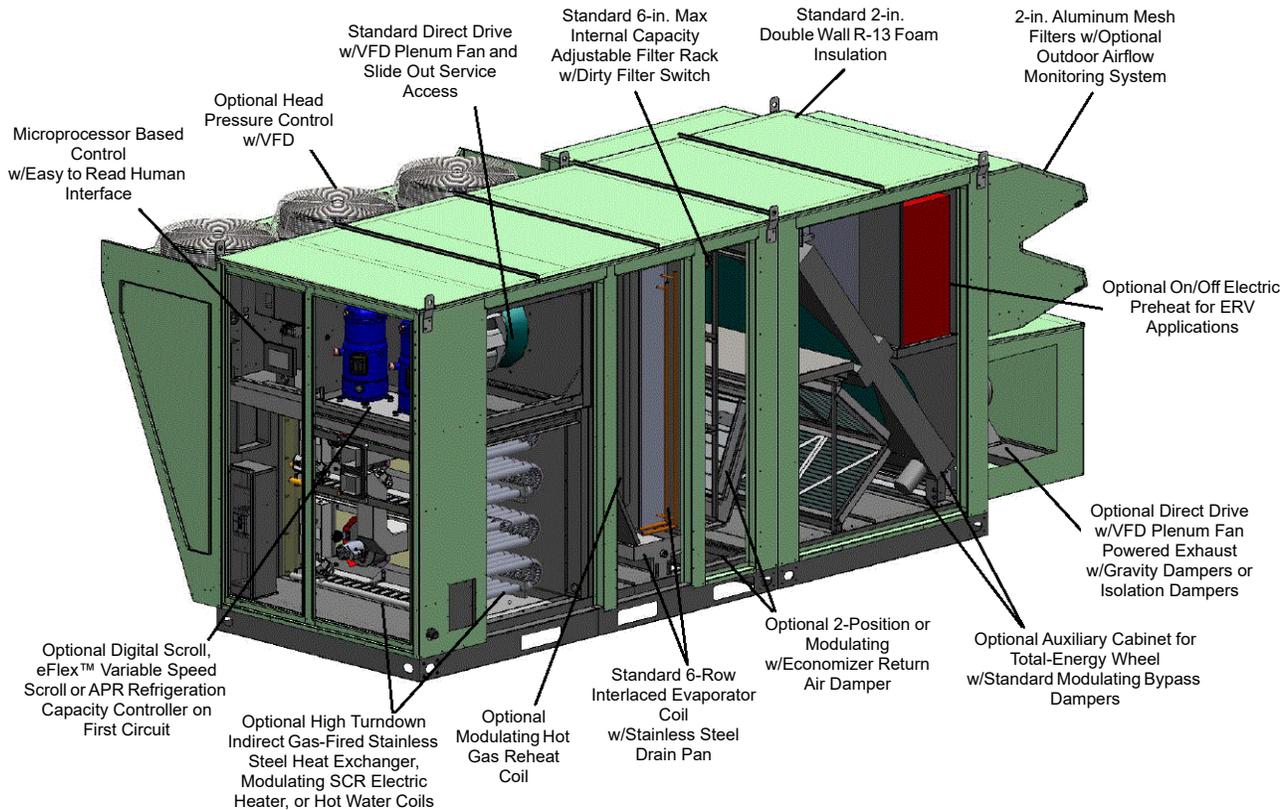


Introduction

The Horizon Outdoor Air Unit

The Trane DX Horizon™ Outdoor Air Unit for 100 percent outdoor air or dew point design applications leads the industry in:

- Indoor Air Quality (IAQ) Features
- Moisture Management
- High Quality and Durability
- Advanced Controls



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Model Number Descriptions

Horizon Outdoor Air Unit

Models: OABD, OAGD

Digit 1, 2 — Unit Type

OA = Outdoor Air

Digit 3 — Cabinet Size

B = 500 cfm–3000 cfm
G = 1250 cfm–7500 cfm

Digit 4 — Major Design Sequence

D = Revision 1
E = Heat Pump

Digit 5, 6, 7 — Normal Gross Cooling Capacity (MBh)

000 = No Cooling
036 = 3 Tons High Efficiency
048 = 4 Tons High Efficiency
060 = 5 Tons High Efficiency
072 = 6 Tons High Efficiency
084 = 7 Tons High Efficiency
096 = 8 Tons High Efficiency
108 = 9 Tons High Efficiency
120 = 10 Tons High Efficiency
144 = 12 Tons High Efficiency
180 = 15 Tons High Efficiency
210 = 17 Tons High Efficiency
240 = 20 Tons High Efficiency
264 = 22 Tons High Efficiency
300 = 25 Tons High Efficiency
360 = 30 Tons High Efficiency

Digit 8 — Minor Design Sequence

A = Vertical Discharge/Vertical Return
B = Vertical Discharge/Horizontal Return
C = Horizontal Discharge/Vertical Return
D = Horizontal Discharge/Horizontal Return
E = Vertical Discharge/No Return
F = Horizontal Discharge/No Return

Digit 9 — Voltage Selection

3 = 208-230/60/3
4 = 460/60/3
5 = 575/60/3

Digit 10 — Reserved for Future Use

Digit 11 — Evaporator Type

0 = No Cooling
C = DX 4-Row Interlaced
D = DX 6-Row Interlaced
F = Glycol/Chilled Water

Digit 12 — Hot Gas Reheat

0 = No HGRH
1 = Fin and Tube Modulating
2 = Fin and Tube On/Off
3 = Microchannel Modulating
4 = Microchannel On/Off

Digit 13 — Compressor

0 = No Compressors
A = Scroll Compressors
B = Digital Scroll (1st Circuit Only)

C = Digital Scroll (1st and 2nd Circuit)
D = Variable Speed Scroll (1st Circuit Only)
E = Variable Speed Scroll (1st and 2nd Circuit)
F = Scroll Compressors w/Sound Attenuation Package
G = Digital Scroll (1st Circuit Only) w/Sound Attenuation Package
H = Digital Scroll (1st and 2nd Circuit) w/Sound Attenuation Package
J = Variable Speed Scroll (1st Circuit Only) w/Sound Attenuation Package
K = Variable Speed Scroll (1st and 2nd Circuit) w/Sound Attenuation Package

Digit 14 — Condenser

0 = No Condenser
1 = Air-Cooled Fin and Tube
2 = Air-Cooled Fin and Tube w/Head Pressure On/Off Control
3 = Water-Cooled DX Condenser Copper/Steel
4 = Air-Cooled Fin and Tube w/Head Pressure Variable Speed
5 = Air-Cooled Microchannel
6 = Air-Cooled Microchannel w/Head Pressure On/Off Control
7 = Air-Cooled Microchannel Variable Speed
8 = Water-Cooled DX Condenser Copper/Nickel

Digit 15 — Refrigerant Capacity Control

0 = No RCC Valve
A = RCC Valve on 1st Circuit
B = RCC Valve on 1st and 2nd Circuit
C = ERCC Valve on 1st Circuit
D = ERCC Valve on 1st and 2nd Circuit
E = HGBP Valve on 1st Circuit
F = HGBP Valve on 1st and 2nd Circuit

Digit 16 — Indoor Fan Motor (IFM)

0 = ECM w/Backward Curved Plenum Fan
2 = Belt Drive
3 = Belt Drive w/VFD
4 = Special Motor Option

Digit 17 — Indoor Fan Wheel

A = 355
B = 450 X 2
C = 12/9 (Single Belt Drive)
D = 12/9 BT (Dual Belt Drive)

Digit 18 — Indoor Fan Motor (hp)

| | ECM | Belt Drive |
|-----|------------|-------------------|
| A = | 1 kW | 2 hp |
| B = | 2 kW | 3 hp |
| C = | 3 kW | 5 hp |
| D = | 4 kW | 7.5 hp |
| E = | | 10 hp |
| F = | | 15 hp |

Digit 19 — Reserved for Future Use

Digit 20 — Heater Type (PRI/SEC)

0 = No Heat
A = Indirect-Fired (IF)
B = Direct-Fired (DF)
C = Electric—4-Stage
D = Electric—SCR Modulating
E = Dual Fuel (PRI-IF/SEC-DF)
F = Dual Fuel (PRI-ELEC/SEC-DF)
G = Dual Fuel (PRI-IF/SEC-ELEC)
H = Dual Fuel (PRI-ELEC/SEC-ELEC)
J = Hot Water
K = Steam
L = No Primary Heat, Secondary ELEC
M = Dual Fuel (PRI-ELEC-STAGED/SEC-DF)
N = Dual Fuel (PRI-ELEC-STAGED/SEC-ELEC)
P = Dual Fuel (PRI-HW/SEC-DF)
Q = Dual Fuel (PRI-HW/SEC-ELEC-SCR)
R = Dual Fuel (PRI-STEAM/SEC-DF)
S = Dual Fuel (PRI-STEAM/SEC-ELEC-SCR)

Digit 21 — Primary Fuel Type

0 = No Heat
1 = Natural Gas
2 = Propane
3 = Electric—Open Coil
4 = Electric—Sheathed Coil
5 = Hot Water
6 = Steam

Model Number Descriptions

Digit 22 — Heater Capacity—Primary Heat Source

| | <u>IF</u> | <u>ELEC</u> | <u>HOT WATER</u> |
|---|-----------|-----------------------|------------------|
| 0 | = No Heat | No Heat | No Heat |
| A | = 50 MBh | 5 kW | 1 Row/10 FPI |
| B | = 75 MBh | 10 kW | 1 Row/12 FPI |
| C | = 100 MBh | 15 kW | 1 Row/14 FPI |
| D | = 125 MBh | 20 kW | 2 Row/10 FPI |
| E | = 150 MBh | 24 kW | 2 Row/12 FPI |
| F | = 200 MBh | 28 kW | 2 Row/14 FPI |
| G | = 250 MBh | 32 kW | 3 Row/10 FPI |
| H | = 300 MBh | 40 kW | 3 Row/12 FPI |
| J | = 350 MBh | 48 kW | 3 Row/14 FPI |
| K | = 400 MBh | 60 kW | |
| L | = 500 MBh | 68 kW | |
| M | = 600 MBh | 79 kW | |
| N | = | 99 kW | |
| O | = | 111 kW | |
| P | = | 119 kW | |
| X | = | Special Heater Option | |

Digit 23 — Heat Capacity—Secondary Heat Source

| | <u>ELEC</u> | <u>DF</u> |
|---|-----------------------------|-----------------------------|
| 0 | = No Heat/No Secondary Heat | |
| A | = 5 kW | 6 in. Burner—Up to 330 MBh |
| B | = 10 kW | 12 in. Burner—Up to 400 MBh |
| C | = 15 kW | 12 in. Burner—Up to 600 MBh |
| D | = 20 kW | 18 in. Burner—Up to 400 MBh |
| E | = 24 kW | 18 in. Burner—Up to 900 MBh |
| F | = 28 kW | |
| G | = 32 kW | |
| H | = 40 kW | |
| J | = 48 kW | |

Digit 24 — Corrosive Environment Package

| | |
|---|---|
| 0 | = No Corrosive Package |
| 1 | = S/S Interior, S/S Evap Coil Casing |
| 2 | = S/S Interior, Eco-Coated Coils |
| 3 | = S/S Interior, Copper/Copper Evap Coil |
| 4 | = S/S Coil Casing |
| 5 | = S/S Interior |
| 6 | = Eco-Coated Coils |
| 7 | = S/S Coil Casing with Eco-Coated Coils |
| 8 | = Copper/Copper Evap, HGRH Coils |
| 9 | = Corrosion Resistant Package |

Digit 25, 26 — Unit Controls

| | |
|----|---|
| 00 | = Non DDC—Electromechanical |
| AA | = Trane—Discharge Air Control w/LON Read-Write w/Display |
| AB | = Trane—Space Control w/LON Read-Write w/Display |
| AC | = Trane—Discharge Air Control w/BACnet® (No Display) |
| AD | = Trane—Space Control w/BACnet (No Display) |
| AF | = Trane—Discharge Air Control w/BACnet w/Display |
| AG | = Trane—Space Control w/BACnet w/Display |
| AI | = Trane—Discharge Air Control w/LON Read-Write (No Display) |
| AJ | = Trane—Space Control w/LON Read-Write (No Display) |
| AK | = Trane—Multi-Zone VAV Control w/LON Read-Write w/Display |
| AL | = Trane—Multi-Zone VAV Control w/BACnet w/Display |
| AM | = Trane—Multi-Zone VAV Control w/LON Read-Write (No Display) |
| AN | = Trane—Multi-Zone VAV Control w/BACnet (No Display) |
| AO | = Trane—Single-Zone VAV Control w/LON Read-Write w/Display |
| AP | = Trane—Single-Zone VAV Control w/BACnet w/Display |
| AQ | = Trane—Single-Zone VAV Control w/LON Read-Write (No Display) |
| AR | = Trane—Single-Zone VAV Control w/BACnet (No Display) |
| XX | = Special |

Digit 27 — Powered Exhaust Fan Motor (PFM) and Exhaust Dampers

| | |
|---|---|
| 0 | = No Powered Exhaust |
| 3 | = Belt Drive |
| 4 | = Belt Drive w/VFD |
| 5 | = Special Motor Option |
| 6 | = ECM w/Backward Curved Plenum Fan |
| 7 | = ECM w/Backward Curved Plenum Fan and Barometric Relief Damper |
| 8 | = ECM w/Backward Curved Plenum Fan and Isolation Dampers w/End Switch |
| 9 | = Barometric Relief Dampers (No PFM) |

Digit 28 — Powered Exhaust Fan Wheel

| | |
|---|-----------------------------------|
| 0 | = No Powered Exhaust |
| A | = 355 |
| B | = 450 |
| C | = 450 X 2 |
| D | = 12/9 BT (single fan-belt drive) |
| E | = 12/9 BT (dual fan-belt drive) |

Digit 29 — Powered Exhaust Fan Motor (hp)

| | <u>ECM</u> | <u>Belt Drive</u> |
|---|----------------------|-------------------|
| 0 | = No Powered Exhaust | |
| A | = 1 kW | 2 hp |
| B | = 2 kW | 3 hp |
| C | = 3 kW | 5 hp |
| D | = 4 kW | 7.5 hp |
| E | = | 10 hp |
| F | = | 15 hp |

DIGIT 30 — Reserved for Future Use

Digit 31 — ERV (Requires Powered Exhaust)

| | |
|---|--|
| 0 | = No ERV |
| A | = ERV—Composite Construction w/Bypass |
| B | = ERV—Composite Construction with Frost Protection w/VFD |
| C | = ERV—Aluminum Construction w/Bypass |
| D | = ERV—Aluminum Construction with Frost Protection w/VFD |

Digit 32 — ERV Size

| | |
|---|----------|
| 0 | = No ERV |
| 1 | = 3014 |
| 2 | = 3622 |
| 3 | = 4136 |
| 4 | = 4634 |
| 5 | = 5856 |

Digit 33 — Damper Options

| | |
|---|--|
| 0 | = 100% OA 2-Position Damper |
| 1 | = 100% OA 2-Position Damper w/RA 2-Position Damper |
| 2 | = Modulating OA and RA Dampers w/Economizer |

Digit 34 — Filtration Options

| | |
|---|------------------------------------|
| A | = No Filters |
| B | = MERV-8, 30% |
| C | = MERV-13, 80% |
| D | = MERV-14, 95% |
| E | = MERV-8 30%, MERV-13 80% |
| F | = MERV-8 30%, MERV-14 95% |
| G | = MERV-8, 30%, with UVC |
| H | = MERV-13, 80%, with UVC |
| J | = MERV-14, 95%, with UVC |
| K | = MERV-8 30%, MERV-13 80%, and UVC |
| L | = MERV-8 30%, MERV-14 95%, and UVC |
| X | = Special Filter Options |

Digit 35 — Smoke Detector—Factory Installed

| | |
|---|-------------------------------------|
| 0 | = No Smoke Detector |
| 1 | = Supply Smoke Detector |
| 2 | = Return Smoke Detector |
| 3 | = Supply and Return Smoke Detectors |



Model Number Descriptions

Digit 36 — Electrical Options

- 0 = Terminal Block
- A = Non-Fused Disconnect
- B = Fused Disconnect Switch
- C = Non-Fused Disconnect w/Convenience Outlet
- D = Fused Disconnect Switch w/Convenience Outlet
- E = Dual Point Power
- F = Dual Point Power w/Convenience Outlet
- G = 65 SCCR Electrical Rating w/Non-Fused Disconnect
- H = 65 SCCR Electrical Rating w/Fused Disconnect
- J = 65 KAIC Electrical Rating w/Non-Fused Disconnect
- K = 65 KAIC Electrical Rating w/Fused Disconnect
- L = 65 KAIC Non-Fused w/Convenience Outlet
- M = 65 KAIC Fused w/Convenience Outlet
- N = 65 SCCR Non-Fused w/Convenience Outlet

Digit 37 — Air Flow Monitoring

- 0 = No Airflow Monitoring
- 1 = Airflow Monitoring—IFM Piezo Ring
- 2 = Airflow Monitoring—PE Piezo Ring
- 3 = Airflow Monitoring—Outdoor Air with Display and IFM w/Piezo Ring
- 4 = Airflow Monitoring—IFM Piezo Ring and PE Piezo Ring
- 5 = Airflow Monitoring—Outdoor Air Monitoring w/Display Supply Air and Exhaust Air w/Piezo Rings

Digit 38 — Accessories

- 0 = No Options
- A = Hailguards
- B = Hailguards and LED Service Light in Supply Fan Section
- D = Hailguards & LED Service Light in Exhaust Fan Section
- E = Hailguards & LED Service Light in Supply and Exhaust Fan Section

Digit 39 — Altitude

- 0 = Sea Level to 1,000 feet
- 1 = 1,001 to 2,000 feet
- 2 = 2,001 to 3,000 feet
- 3 = 3,001 to 4,000 feet
- 4 = 4,001 to 5,000 feet
- 5 = 5,001 to 6,000 feet
- 6 = 6,001 to 7,000 feet
- 7 = Above 7,000 feet

Model Number Descriptions

Models: OADD, OADE, OAKD, OAKE, OAND, OANE

Digit 1, 2 — Unit Type

OA = Outdoor Air

Digit 3 — Cabinet Size

D = 625 cfm–4,000 cfm
K = 1,500 cfm–9,000 cfm
N = 3,750 cfm–13,500 cfm

Digit 4 — Major Design Sequence

D = Revision 5
E = Heat Pump

Digit 5, 6, 7 — Normal Gross Cooling Capacity (MBh)

000 = No Cooling
060 = 5 Tons High Efficiency
072 = 6 Tons High Efficiency
084 = 7 Tons High Efficiency
096 = 8 Tons High Efficiency
120 = 10 Tons High Efficiency
144 = 12 Tons High Efficiency
180 = 15 Tons High Efficiency
210 = 17 Tons High Efficiency
240 = 20 Tons High Efficiency
264 = 22 Tons High Efficiency
300 = 25 Tons High Efficiency
360 = 30 Tons High Efficiency
420 = 35 Tons High Efficiency
480 = 40 Tons High Efficiency
540 = 45 Tons High Efficiency
600 = 50 Tons High Efficiency
648 = 54 Tons High Efficiency

Digit 8 — Minor Design Sequence

A = Vertical Discharge/Vertical Return
B = Vertical Discharge/
Horizontal Return
C = Horizontal Discharge/
Vertical Return
D = Horizontal Discharge/
Horizontal Return
E = Vertical Discharge/No Return

Digit 9 — Voltage Selection

3 = 208-230/60/3
4 = 460/60/3
5 = 575/60/3

Digit 10 — Reserved for Future Use

Digit 11 — Evaporator Type

0 = No Cooling
C = DX 4-Row Interlaced
D = DX 6-Row Interlaced
F = Glycol/Chilled Water Coil

Digit 12 — Hot Gas Reheat

0 = No HGRH
1 = Fin and Tube Modulating
2 = Fin and Tube On/Off
3 = Microchannel Modulating
4 = Microchannel On/Off

Digit 13 — Compressor

0 = No Compressors
A = Scroll Compressors
B = Digital Scroll (1st Circuit Only)

C = Digital Scroll (1st and 2nd Circuit)
D = Variable Speed Scroll (1st Circuit Only)
E = Variable Speed Scroll (1st and 2nd Circuit)
F = Scroll Compressors w/Sound Attenuation Package
G = Digital Scroll (1st Circuit Only) w/Sound Attenuation Package
H = Digital Scroll (1st and 2nd Circuit) w/Sound Attenuation Package
J = Variable Speed Scroll (1st Circuit Only) w/Sound Attenuation Package
K = Variable Speed Scroll (1st and 2nd Circuit w/Sound Attenuation Package)

Digit 14 — Condenser

0 = No Condenser
1 = Air-Cooled Fin and Tube
2 = Air-Cooled Fin and Tube w/Head Pressure On/Off Control
3 = Water-Cooled DX Condenser Copper/Steel
4 = Air-Cooled Fin and Tube w/Head Pressure Variable Speed
5 = Air-Cooled Microchannel
6 = Air-Cooled Microchannel w/Head Pressure On/Off Control
7 = Air-Cooled Microchannel Variable Speed
8 = Water-Cooled DX Condenser Copper/Nickel

Digit 15 — Refrigerant Capacity Control

0 = No RCC Valve
A = RCC Valve on 1st Circuit
B = RCC Valve on 1st and 2nd Circuit
C = ERCC Valve on 1st Circuit
D = ERCC Valve on 1st and 2nd Circuit
E = HGBP Valve on 1st Circuit
F = HGBP Valve on 1st and 2nd Circuit

Digit 16 — Indoor Fan Motor (IFM)

0 = Direct Drive w/VFD
1 = Direct Drive (VFD by Others)
2 = Belt Drive
3 = Belt Drive w/VFD
4 = Direct Drive w/Shaft Grounding Ring w/VFD
5 = Special Motor Option

Digit 17 — Indoor Fan Wheel

A = 120
B = 120.6
C = 140
D = 140.6
E = 160
F = 160.6
G = 180
H = 180.6
J = 200
K = 200.6
L = 180 X 2
M = 180.6 X 2

Digit 18 — Indoor Fan Motor HP

A = 1/2 hp—1800 rpm
B = 1/2 hp—3600 rpm
C = 3/4 hp—1800 rpm
D = 3/4 hp—3600 rpm
E = 1 hp—1800 rpm
F = 1 hp—3600 rpm
G = 1.5 hp—1800 rpm
H = 1.5 hp—3600 rpm
J = 2 hp—1800 rpm
K = 2 hp—3600 rpm
L = 3 hp—1800 rpm
M = 3 hp—3600 rpm
N = 5 hp—1800 rpm
P = 5 hp—3600 rpm
R = 7.5 hp—1800 rpm
S = 7.5 hp—3600 rpm
T = 10 hp—1800 rpm
U = 10 hp—3600 rpm
V = 15 hp—1800 rpm
W = 15 hp—3600 rpm

Digit 19 — Reserved for Future Use

Digit 20 — Heat Type (PRI/SEC)

0 = No Heat
A = Indirect-Fired (IF)
B = Direct-Fired (DF)
C = Electric—4-Stage
D = Electric—SCR Modulating
E = Dual Fuel (PRI-IF/SEC-DF)
F = Dual Fuel (PRI-ELEC/SEC-DF)
G = Dual Fuel (PRI-IF/SEC-ELEC)
H = Dual Fuel (PRI-ELEC/SEC-ELEC)
J = Hot Water
K = Steam
L = No Primary Heat, Secondary ELEC
M = Dual Fuel (PRI-ELEC-STAGED/SEC-DF)
N = Dual Fuel (PRI-ELEC-STAGED/SEC-ELEC)
P = Dual Fuel (PRI-HW/SEC-DF)
Q = Dual Fuel (PRI-HW/SEC-ELEC-SCR)
R = Dual Fuel (PRI-STEAM/SEC-DF)
S = Dual Fuel (PRI-STEAM/SEC-ELEC-SCR)

Digit 21 — Primary Fuel Type

0 = No Heat
1 = Natural Gas
2 = Propane
3 = Electric—Open Coil
4 = Electric—Sheathed Coil
5 = Hot Water
6 = Steam



Model Number Descriptions

Digit 22 — Heat Capacity—Primary Heat Source

| | IF | ELEC | HOT WATER |
|---|------------|-----------------------|--------------|
| 0 | = No Heat | No Heat | No Heat |
| A | = 50 MBh | 10 kW | 1 Row/10 FPI |
| B | = 75 MBh | 20 kW | 1 Row/12 FPI |
| C | = 100 MBh | 24 kW | 1 Row/14 FPI |
| D | = 125 MBh | 28 kW | 2 Row/10 FPI |
| E | = 150 MBh | 32 kW | 2 Row/12 FPI |
| F | = 200 MBh | 40 kW | 2 Row/14 FPI |
| G | = 250 MBh | 48 kW | 3 Row/10 FPI |
| H | = 300 MBh | 60 kW | 3 Row/12 FPI |
| J | = 350 MBh | 68 kW | 3 Row/14 FPI |
| K | = 400 MBh | 79 kW | |
| L | = 500 MBh | 99 kW | |
| M | = 600 MBh | 111 kW | |
| N | = 700 MBh | 119 kW | |
| P | = 800 MBh | 139 kW | |
| R | = 1000 MBh | 159 kW | |
| S | = | 179 kW | |
| T | = | 199 kW | |
| U | = | 215 kW | |
| X | = | Special Heater Option | |

Digit 23 — Heat Capacity—Secondary Heat Source

| | IF | ELEC | DF |
|---|-----------------------------|--------|-----------------------------|
| 0 | = No Heat/No Secondary Heat | | |
| A | = 50 MBh | 10 kW | 6 in. Burner—Up to 330 MBh |
| B | = 75 MBh | 20 kW | 12 in. Burner—Up to 400 MBh |
| C | = 100 MBh | 24 kW | 12 in. Burner—Up to 600 MBh |
| D | = 125 MBh | 28 kW | 18 in. Burner—Up to 400 MBh |
| E | = 150 MBh | 32 kW | 18 in. Burner—Up to 900 MBh |
| F | = 200 MBh | 40 kW | |
| G | = 250 MBh | 48 kW | |
| H | = 300 MBh | 60 kW | |
| J | = 350 MBh | 68 kW | |
| K | = 400 MBh | 79 kW | |
| L | = 500 MBh | 99 kW | |
| M | = 600 MBh | 111 kW | |
| N | = 700 MBh | 119 kW | |
| P | = 800 MBh | 139 kW | |
| R | = 1000 MBh | 159 kW | |
| S | = | 179 kW | |
| T | = | 199 kW | |
| U | = | 215 kW | |

Digit 24 — Corrosive Environment Package

| | |
|---|---|
| 0 | = No Corrosive Package |
| 1 | = S/S Interior, S/S Evap Coil Casing |
| 2 | = S/S Interior, Eco-Coated Coils |
| 3 | = S/S Interior, Copper/Copper Evap Coil |
| 4 | = S/S Coil Casing |
| 5 | = S/S Interior |
| 6 | = Eco-Coated Coils |
| 7 | = S/S Coil Casing with Eco-Coated Coils |
| 8 | = Copper/Copper Evap, HGRH Coils |
| 9 | = Corrosion Resistant Package |

Digit 25, 26 — Unit Controls

| | |
|----|--|
| 00 | = Non DDC—Electromechanical |
| AA | = Trane—Discharge Air Control w/LON Read-Write w/Display |
| AB | = Trane—Space Control w/LON Read-Write w/Display |
| AC | = Trane—Discharge Air Control w/BACnet® (No Display) |
| AD | = Trane—Space Control w/BACnet (No Display) |

| | |
|----|---|
| AF | = Trane—Discharge Air Control w/BACnet w/Display |
| AG | = Trane—Space Control w/BACnet w/Display |
| AI | = Trane—Discharge Air Control w/LON Read-Write (No Display) |
| AJ | = Trane—Space Control w/LON Read-Write (No Display) |
| AK | = Trane—Multi-Zone VAV Control w/LON Read-Write w/ Display |
| AL | = Trane—Multi-Zone VAV Control w/BACnet w/Display |
| AM | = Trane—Multi-Zone VAV Control w/LON Read-Write (No Display) |
| AN | = Trane—Multi-Zone VAV Control w/BACnet (No Display) |
| AO | = Trane—Single-Zone VAV Control w/Lon Read-Write w/Display |
| AP | = Trane—Single-Zone VAV Control w/BACnet w/Display |
| AQ | = Trane—Single-Zone VAV Control w/LON Read-Write (No Display) |
| AR | = Trane—Single-Zone VAV Control w/BACnet (No Display) |

Digit 27 — Powered Exhaust Fan Motor (PFM) and Exhaust Dampers

| | |
|---|---|
| 0 | = No Powered Exhaust |
| 1 | = Direct Drive w/VFD and Gravity Dampers |
| 2 | = Direct Drive (VFD by Others) |
| 3 | = Belt Drive |
| 4 | = Belt Drive w/VFD |
| 5 | = Special Motor Option |
| 6 | = Direct Drive w/VFD and Barometric Relief Damper |
| 7 | = Direct Drive w/VFD and Isolation Dampers w/End Switch |
| 8 | = Barometric Relief Dampers (No PFM) |

Digit 28 — Powered Exhaust Fan Wheel

| | |
|---|----------------------|
| 0 | = No Powered Exhaust |
| A | = 120 |
| B | = 120.6 |
| C | = 140 |
| D | = 140.6 |
| E | = 160 |
| F | = 160.6 |
| G | = 180 |
| H | = 180.6 |
| J | = 200 |
| K | = 200.6 |
| L | = 180 X 2 |
| M | = 180.6 X 2 |

Digit 29 — Powered Exhaust Fan Motor (hp)

| | |
|---|----------------------|
| 0 | = No Powered Exhaust |
| A | = 1/2 hp—1800 rpm |
| B | = 1/2 hp—3600 rpm |
| C | = 3/4 hp—1800 rpm |
| D | = 3/4 hp—3600 rpm |
| E | = 1 hp—1800 rpm |
| F | = 1 hp—3600 rpm |
| G | = 1.5 hp—1800 rpm |
| H | = 1.5 hp—3600 rpm |

Model Number Descriptions

- J = 2 hp—1800 rpm
- K = 2 hp—3600 rpm
- L = 3 hp—1800 rpm
- M = 3 hp—3600 rpm
- N = 5 hp—1800 rpm
- P = 5 hp—3600 rpm
- R = 7.5 hp—1800 rpm
- S = 7.5 hp—3600 rpm
- T = 10 hp—1800 rpm
- U = 10 hp—3600 rpm
- V = 15 hp—1800 rpm
- W = 15 hp—3600 rpm

Digit 30 — Reserved for Future Use

Digit 31 — ERV (Requires Powered Exhaust)

- 0 = No ERV
- A = ERV—Composite Construction
- B = ERV—Composite Construction with Frost Protection w/VFD
- C = ERV—Composite Construction with Bypass
- D = ERV—Composite Construction with Frost Protection and Bypass
- E = ERV—Aluminum Construction
- F = ERV—Aluminum Construction with Frost Protection w/VFD
- G = ERV—Aluminum Construction with Bypass
- H = ERV—Aluminum Construction with Frost Protection and Bypass

Digit 32 — ERV Size

- 0 = No ERV
- 1 = 3014
- 2 = 3622
- 3 = 4136
- 4 = 4634
- 5 = 5856
- 6 = 6488
- 7 = 6876
- 8 = 74122

Digit 33 — Damper Options

- 0 = 100% OA 2-Position Damper
- 1 = 100% OA 2-Position Damper w/RA 2-Position Damper
- 2 = Modulating OA and RA Dampers w/Economizer

Digit 34 — Filtration Options

- A = Aluminum Mesh Intake Filters (ALM)
- B = MERV-8,30%, and ALM
- C = MERV-13, 80%, and ALM
- D = MERV-14, 95%, and ALM
- E = MERV-8 30%, MERV-13 80%, and ALM
- F = MERV-8 30%, MERV-14 95%, and ALM
- G = MERV-8, 30%, and ALM, with UVC
- H = MERV-13, 80%, and ALM, with UVC
- J = MERV-14, 95%, and ALM, with UVC
- K = MERV-8 30%, MERV-13 80%, ALM, and UVC

- L = MERV-8 30%, MERV-14 95%, ALM, and UVC
- X = Special Filter Options

Digit 35 — Smoke Detector—Factory Installed

- 0 = No Smoke Detector
- 1 = Supply Smoke Detector
- 2 = Return Smoke Detector
- 3 = Supply and Return Smoke Detector

Digit 36 — Electrical Options

- 0 = Non-Fused Disconnect
- A = Fused Disconnect Switch
- B = Non-Fused Disconnect w/Convenience Outlet
- C = Fused Disconnect Switch w/Convenience Outlet
- D = Dual Point Power w/Convenience Outlet
- F = 65 SCCR Electrical Rating w/Non-Fused Disconnect
- G = 65 SCCR Electrical Rating w/Fused Disconnect
- H = 65 KAIC Electrical Rating w/Non-Fused Disconnect
- J = 65 KAIC Electrical Rating w/Fused Disconnect
- L = 65 KAIC Non-Fused w/Convenience Outlet
- = 65 KAIC Fused w/Convenience Outlet
- N = 65 SCCR Non-Fused w/Convenience Outlet

Digit 37 — Airflow Monitoring

- 0 = No Airflow Monitoring
- 1 = Airflow Monitoring—IFM Piezo Ring
- 2 = Airflow Monitoring—PE Piezo Ring
- 3 = Airflow Monitoring—Outdoor Air with Display and IFM w/Piezo Ring
- 4 = Airflow Monitoring—IFM Piezo Ring and PE Piezo Ring
- 5 = Airflow Monitoring—Outdoor Air Monitoring w/ Display Supply Air and Exhaust Air w/Piezo Rings

Digit 38 — Accessories

- 0 = No Options
- A = Hailguards
- B = LED Service Light in Supply Fan Section
- C = Hailguards and LED Service Light in Supply Fan Section
- D = Hailguards and LED Service Light in Exhaust Fan Section
- E = Hailguards and LED Service Light in Supply and Exhaust Fan Section
- F = LED Service Light in Exhaust Fan Section
- G = LED Service Light in Supply and Exhaust Fan Section

Digit 39 — Altitude

- 0 = Sea Level to 1,000 feet
- 1 = 1,001 to 2,000 feet
- 2 = 2,001 to 3,000 feet
- 3 = 3,001 to 4,000 feet
- 4 = 4,001 to 5,000 feet
- 5 = 5,001 to 6,000 feet
- 6 = 6,001 to 7,000 feet
- 7 = Above 7,000 feet



Features and Benefits

We designed the Horizon™ Outdoor Air Unit based on customer requirements from across the country. Thorough analysis of the performance requirements resulted in a robust design with the ability to effectively operate over an expansive performance envelope required for the year-round treatment of outdoor air.

Also, we took into account today's HVAC market issues, such as indoor air quality (IAQ). We equipped the Horizon Outdoor Air Unit to meet your ventilation needs—in direct response to the ventilation and humidity control requirements of ASHRAE standard 62.1.

Trane's Horizon Outdoor Air Unit leads the industry in the key areas of:

- indoor air quality (IAQ)
- energy efficiency
- high quality and durability
- advanced, integrated controls
- flexibility (including indoor installation)
- enhanced serviceability

Indoor Air Quality (IAQ) Features

- Stainless steel drain pan sloped in two directions to ensure proper drainage and reduce the potential for microbial growth
- Double-wall foamed panel construction throughout the indoor section of unit to provide, non-porous, cleanable interior surfaces
- Inlet hood with moisture eliminators
- High efficiency throwaway filter option with standard 2-, 4-, or 6-inch adjustable filter rack
- Piezometer airflow measurement option
- Easy filter access encourages frequent changing
- Refrigerant hot gas reheat for low dewpoint supply air for superior humidity control
- Capable of providing low dew point supply air for superior humidity control

Energy Efficiency

- Total energy wheel option for recovered energy from centralized building exhaust
- Optional modulating recovered refrigerant reheat for unit supply air

High Quality and Durability

- Robust unit construction with 2-inch double wall panels with foam insulation for an R-value of 13
- Reversible, hinged access doors
- High quality, long-lasting latches and hinges for all access doors
- Protective standard prepainted finish on cabinet exterior with optional corrosion inhibiting coatings available for the unit exterior, interior and coils

Advanced Controls

- All controls are factory-engineered, mounted, configured and tested to minimize field startup time
- UC600 microprocessor control
- Human interface with touch-pad screen for monitoring, setting, editing and controlling
- Capable of supply-air control or zone control of both temperature and relative humidity
- Occupied and unoccupied control sequences
- Optional remote human interface for ease of control access without going outdoors
- Optional LonTalk® communications interface communication link with a Tracer Summit™ building management system or other control systems that support LonTalk

Flexibility

- Numerous heater options and temperature rise capabilities available
- Multiple roof curb options (1- or 2-inch vibration isolation, horizontal discharge, multiple heights) and seismic certification
- Dual fuel (indirect/electric) option
- Custom colors

Figure 1. Condenser side view of the Trane Horizon™ Outdoor Air Unit



Enhanced Serviceability

- Hinged access doors for ease of maintenance and service
- Easy-open door latches
- Slide out access direct-drive plenum fan
- Optional slide out, self-cleaning total-energy wheel
- Sight glass for each refrigeration circuit
- Optional control display
- High voltage cover

Standard Unit Features

- Multiple cabinet sizes with airflow range from 500 to 13,500 cfm
- Two-inch double-wall, R-13 construction with heavy gauge galvanized metal skin
- Outdoor air inlet hood
- Prepainted exterior finish
- Air-cooled DX refrigeration system
- Completely factory-piped and leak-tested refrigeration system
- Stainless steel drain pans sloped in two planes
- Scroll compressors—standard 5-year parts warranty (25-ton and under)
- Single-point power connections for units with optional total-energy wheel, powered exhaust, and electric heat
- Filter rack adjustable for 2-, 4-, or 6-inch filters
- Factory-assembled inlet hood with 2-inch mist eliminators (OAD, OAG, OAK, OAN)
- Non-fused disconnect switch
- Type 439 stainless steel heat exchanger—standard 25-year parts warranty
- Low leak parallel blade outdoor air damper with edge seals
- High-efficiency fan motors
- Variable frequency drive (VFD) on the OAD, OAK, and OAN cabinets



Features and Benefits

- EC motors on the OAB and OAG cabinets
- Neoprene vibration isolation under supply and exhaust fan base (OAD, OAK, OAN)
- Low ambient operation down to 40°F

Standard Control Features

- Fully integrated, factory-installed and commissioned microelectronic controls
- Supply airflow proving
- Emergency stop
- Mechanical refrigeration capacity control (RCC)
- Occupied/unoccupied control modes
- High turn-down (up to 20:1) modulating indirect gas-fired heat
- Clogged filter switch

Optional Features

- Modulating electric heat
- Hot water coils
- Steam heat (future)
- Indirect-fired (all cabinet sizes) and direct-fired (OAB and OAG cabinets) gas heat.
- Low leak parallel blade return air damper with edge seals
- Modulating damper control systems
- Low ambient/head pressure control down to 0°F
- Pleated media filters (2-inch MERV-8, 2-inch MERV-13, 4-inch MERV-14, or a combination 2-inch/4-inch filter)
- 120 V UVC downstream of evaporator coil
- Adjustable powered exhaust
- Exhaust dampers (gravity, barometric relief, and 2-position isolation)
- Fused disconnect switch
- Factory-installed smoke detectors (supply and/or return)
- Stainless steel inner liner
- Integral total-energy wheel
- Protective coatings for the coils
- Factory or field-wired convenience outlet
- Air source heat pump
- Hailguards
- LED service lights
- Direct drive BI airfoil plenum fan
- Digital scroll compressors on 1st and 2nd circuits
- Variable speed compressors with eFlex™ technology
- Unit mounted human interface panel
- Horizontal supply/return through the unit casing for units with indirect fired gas heat or no heat option
- Sound attenuation package to reduce radiated sound
- Chilled water coils with optional Cooney Freeze Block



Application Considerations

Overview

Outdoor Air Unit Functions

The Horizon™ Outdoor Air Unit (OAU) provides conditioned outdoor air suitable for mechanical ventilation or make-up air. The OAU conditions outdoor air as necessary to meet system performance requirements by ventilation with filtration, cooling, dehumidification, and/or heating. The OAU may deliver ventilation air in a number of ways. Refer to “System Configurations,” p. 15 and [Figure 5, p. 17](#), [Figure 6, p. 17](#), and [Figure 8, p. 18](#) for more information.

- Ventilation with Filtration
- Cooling
- Dehumidification
- Heating

System Configurations

Dedicated outdoor air systems can deliver conditioned outdoor air in one of the following ways:

1. Conditioned outdoor air supplied directly to each occupied space, with the local terminal unit controlling the space dry-bulb temperature. Refer to [Figure 2, p. 15](#).
2. Conditioned outdoor air supplied directly to local terminal units, or return ducts of local RTUs, which deliver a mixture of the conditioned outdoor air and (conditioned) recirculated air to the space. Refer to [Figure 3, p. 16](#).
3. Conditioned outdoor air supplied directly to a single space to control the space temperature and humidity. For example, this application will provide temperature and humidity control of ventilated spaces, such as commercial kitchens or laboratories.

Figure 2. Direct discharge to conditioned space

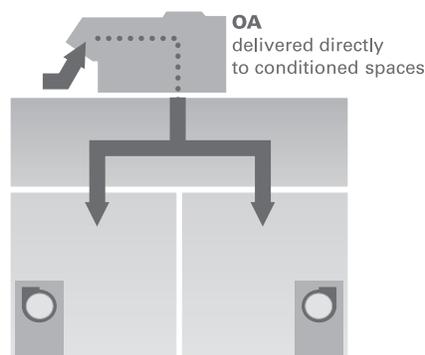
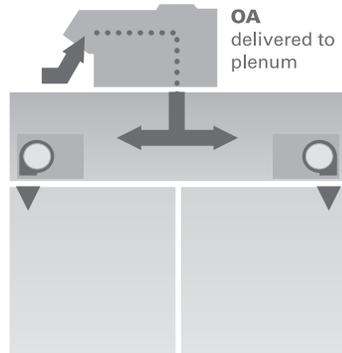


Figure 3. Indirect discharge to fan-coil units



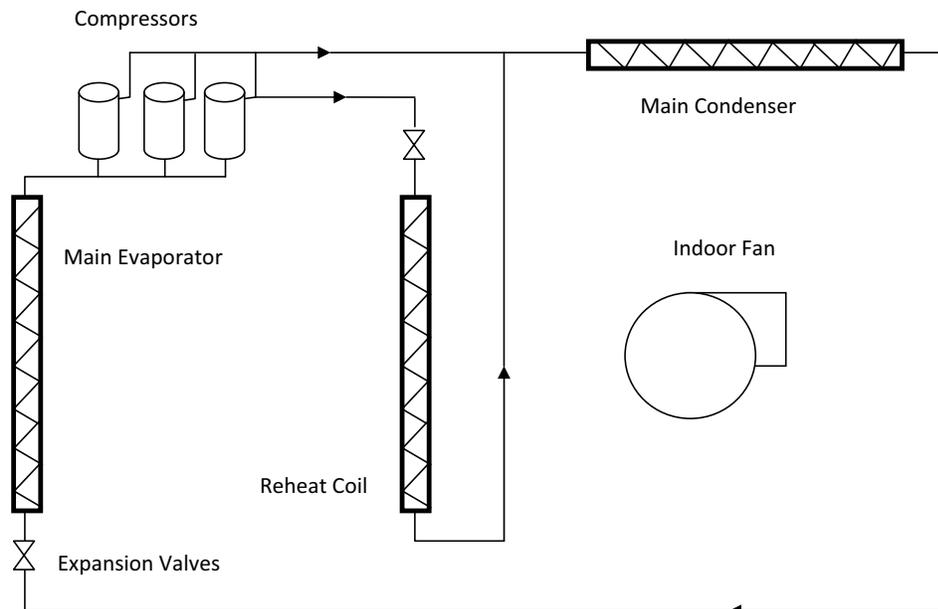
Horizon OAU Operation

The Horizon™ OAU can use either DX cooling, condenser reheat, electric or gas heat to condition outdoor air. The unit controls modulate cooling and heating capacity, reducing the supply air temperature swings associated with staged heating and cooling.

OAU with Reheat

Figure 4, p. 16 shows the OAU system with a DX refrigerant circuit design using reheat.

Figure 4. Refrigeration system diagram with reheat



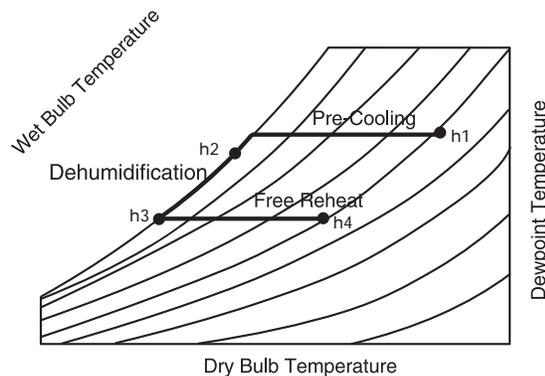
Dehumidification

Consider Figure 5, p. 17. If the outdoor air dew point is above the dehumidification setpoint (or in the case of zone control, the zone RH is above the RH setpoint), the OAU will:

- cool the outdoor air to remove required moisture and
- reheat to meet the discharge temperature setpoint.

At h1, 100 percent outdoor air enters the OAU. The OAU filters, cools, and dehumidifies the air as it moves through the evaporator coil. Air leaves the evaporator coil saturated at the preset dew point condition (h3) and is reheated by the reheat coil to the pre-set reheat temperature setpoint (h4). The reheat coil transfers energy to the airstream. A liquid solenoid valve effectively modulates the reheat capacity. The outdoor condenser rejects surplus heat. The reheat circuit is first on and last off, so reheat energy is available at full and part load conditions. Since both the dew point setpoint and discharge temperature setpoint are fully adjustable, the desired supply air conditions are maintained at all load conditions.

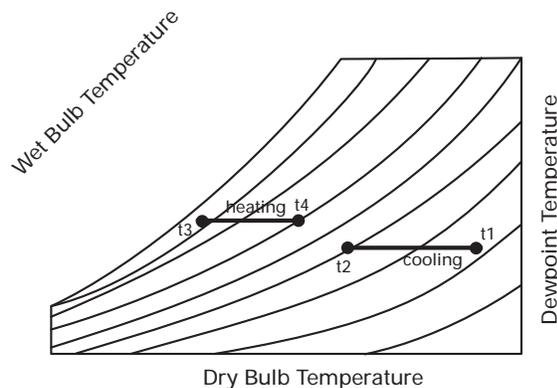
Figure 5. Psychrometric chart with dehumidification and reheat



Cooling or Heating

Consider [Figure 6, p. 17](#). If the outdoor air dew point or zone RH is equal to or below the dehumidification setpoint, the OAU will heat or cool the outdoor air to separate cooling or heating setpoints. At t1 or t3, 100 percent outdoor air enters the OAU. The OAU filters, and cools or heats the air as it is drawn through the evaporator and heating section. The air leaves the OAU at the cooling or heating discharge setpoint (t2 or t4).

Figure 6. Psychrometric chart with cooling or heating only

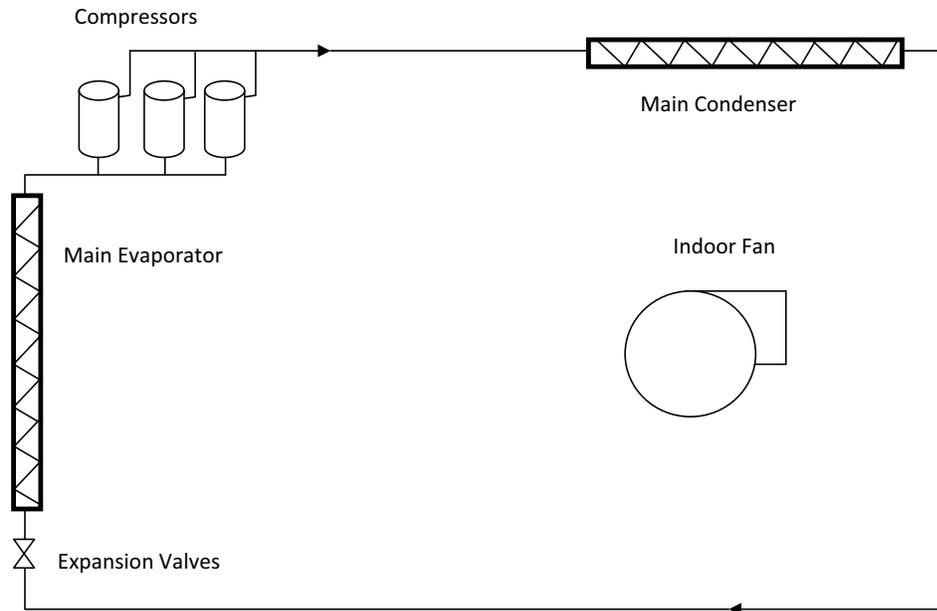


OAU Outdoor Air Control without Reheat

[Figure 7, p. 18](#) shows the Horizon™ OAU DX system, using a refrigerant circuit design without reheat.

Note: Space control not available without reheat.

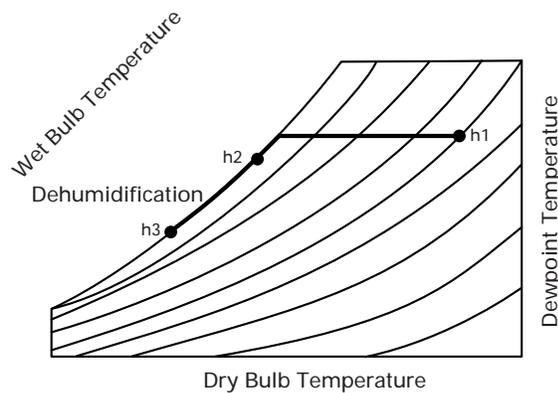
Figure 7. Refrigeration system diagram without reheat



Dehumidification

Consider [Figure 8, p. 18](#). If the outdoor air dew point is above the dehumidification setpoint, the OAU will dehumidify the outdoor air. 100 percent outdoor air enters the OAU (h_1). The unit filters, cools and dehumidifies the air as it is drawn through the evaporator coils. Air leaves the evaporator coils saturated at a preset dew point setpoint (h_3). Since the dew point setpoint is fully adjustable, the desired dew point condition is maintained at all load conditions.

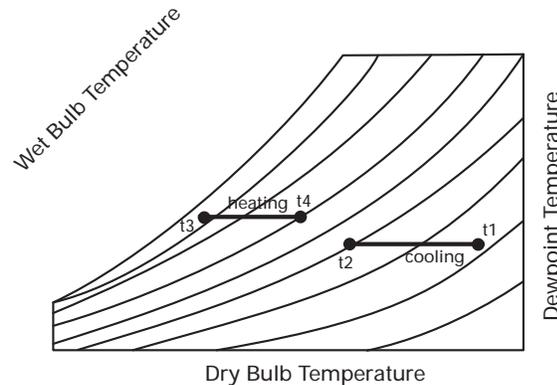
Figure 8. Psychrometric chart with dehumidification, no reheat



Cooling or Heating

Consider [Figure 9, p. 19](#). If the outdoor air dew point is below the dehumidification setpoint, the OAU will heat or cool the outdoor air to separate cooling or heating setpoints. 100 percent outdoor air enters the OAU (t_1 or t_3). The unit filters and cools or heats the air as it is drawn through the evaporators and heating section. The air leaves the OAU at the cooling or heating setpoint.

Figure 9. Psychrometric chart with cooling and heating only



Establishing Capacity Requirements

Determining the OAU capacity requirements requires careful thought. Light Commercial equipment is typically selected based on design **sensible** conditions. Since **latent** loads drive the need for the OAU, base the selection on design **latent** conditions.

Cooling & Dehumidification Selection Criteria

Evaporator Design Entering Conditions

For many climates the peak outdoor air enthalpy occurs at a time when the outdoor dry-bulb temperature is not the highest. Refer to the chapter on climatic design information in the ASHRAE Handbook of Fundamentals. The cooling and dehumidification design condition data is provided three ways:

1. Design dry-bulb temperature with mean coincident wet bulb temperature
2. Design wet-bulb temperature with mean coincident dry-bulb temperature
3. Design dew point temperature with mean coincident dry-bulb temperature

The design wet-bulb condition typically represents a significantly higher outdoor air enthalpy than the design dry-bulb condition. Use the condition that represents the highest enthalpy as the entering evaporator selection condition.

Evaporator Design Leaving Conditions

Due to the uncertainty of the local terminal unit's latent capacity at part load, it is usually most straightforward to size the OAU to handle the entire latent load on the system, both indoor and outdoor. With this design approach, the terminal units may do some latent cooling (dehumidification) during periods of higher sensible load. At these times, the space will run slightly drier than the design RH limit. This is why it makes sense to select the OAU to limit the space RH to a maximum allowable level for those conditions when the terminal units are providing no space latent cooling, such as 60 percent RH. Using lower humidity limits may result in an unnecessary increase in system operating energy use.

Use [Table 1, p. 20](#), [Table 2, p. 20](#), and [Table 3, p. 21](#) to identify the appropriate supply air dew point for specific design conditions. For a more detailed discussion on determining the selection criteria of a OAU, refer to SYS-APG001-EN (*Application Guide: Designing Dedicated Outdoor-Air Systems*) or SYS-APM004-EN (*Applications Engineering Manual: Dehumidification in HVAC Systems*).



Application Considerations

Reheat

Table 1. Supply air dew point temperature, 75°F at 60 percent RH space limit

| Latent Load Btu/h per Person | cfm per person | | | | | | | | | | |
|---------------------------------|----------------|------|------|------|------|------|------|------|------|------|------|
| | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
| 100 | 54.6 | 56.6 | 57.5 | 58.1 | 58.4 | 58.7 | 58.9 | 59.0 | 59.2 | 59.2 | 59.3 |
| 120 | 53.3 | 55.8 | 57.0 | 57.6 | 58.1 | 58.4 | 58.6 | 58.8 | 58.9 | 59.1 | 59.2 |
| 140 | 52.0 | 55.0 | 56.4 | 57.2 | 57.7 | 58.1 | 58.3 | 58.6 | 58.7 | 58.9 | 59.0 |
| 160 | 50.6 | 54.2 | 55.8 | 56.7 | 57.3 | 57.8 | 58.1 | 58.3 | 58.5 | 58.7 | 58.8 |
| 180 | 49.2 | 53.3 | 55.2 | 56.3 | 57.0 | 57.4 | 57.8 | 58.1 | 58.3 | 58.5 | 58.6 |
| 200 | 47.7 | 52.5 | 54.6 | 55.8 | 56.6 | 57.1 | 57.5 | 57.8 | 58.1 | 58.3 | 58.4 |
| 220 | 46.1 | 51.6 | 54.0 | 55.3 | 56.2 | 56.8 | 57.2 | 57.6 | 57.9 | 58.1 | 58.3 |
| 240 | — | 50.6 | 53.3 | 54.8 | 55.8 | 56.5 | 57.0 | 57.3 | 57.6 | 57.9 | 58.1 |
| 260 | — | 49.7 | 52.7 | 54.3 | 55.4 | 56.1 | 56.7 | 57.1 | 57.4 | 57.7 | 57.9 |
| 280 | — | 48.7 | 52.0 | 53.8 | 55.0 | 55.8 | 56.4 | 56.8 | 57.2 | 57.5 | 57.7 |
| 300 | — | 47.7 | 51.3 | 53.3 | 54.6 | 55.5 | 56.1 | 56.6 | 57.0 | 57.3 | 57.5 |
| 320 | — | 46.6 | 50.6 | 52.8 | 54.2 | 55.1 | 55.8 | 56.3 | 56.7 | 57.1 | 57.3 |
| 340 | — | 45.5 | 49.9 | 52.3 | 53.8 | 54.8 | 55.5 | 56.1 | 56.5 | 56.8 | 57.1 |
| 360 | — | — | 49.2 | 51.7 | 53.3 | 54.4 | 55.2 | 55.8 | 56.3 | 56.6 | 57.0 |
| 380 | — | — | 48.5 | 51.2 | 52.9 | 54.1 | 54.9 | 55.5 | 56.0 | 56.4 | 56.8 |
| 400 | — | — | 47.7 | 50.6 | 52.5 | 53.7 | 54.6 | 55.3 | 55.8 | 56.2 | 56.6 |
| 420 | — | — | 46.9 | 50.1 | 52.0 | 53.3 | 54.3 | 55.0 | 55.6 | 56.0 | 56.4 |
| 440 | — | — | 46.1 | 49.5 | 51.6 | 53.0 | 54.0 | 54.7 | 55.3 | 55.8 | 56.2 |
| 460 | — | — | 45.3 | 48.9 | 51.1 | 52.6 | 53.6 | 54.4 | 55.1 | 55.6 | 56.0 |
| 480 | — | — | — | 48.3 | 50.6 | 52.2 | 53.3 | 54.2 | 54.8 | 55.4 | 55.8 |
| 500 | — | — | — | 47.7 | 50.2 | 51.8 | 53.0 | 53.9 | 54.6 | 55.1 | 55.6 |

Note: Minimum dew point selectable is 45°F.

Table 2. Supply air dew point temperature, 75°F at 55 percent RH space limit

| Latent Load Btu/h per Person | cfm per person | | | | | | | | | | |
|---------------------------------|----------------|------|------|------|------|------|------|------|------|------|------|
| | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
| 100 | 51.6 | 53.8 | 54.9 | 55.5 | 55.9 | 56.1 | 56.3 | 56.5 | 56.6 | 56.7 | 56.8 |
| 120 | 50.2 | 53.0 | 54.2 | 55.0 | 55.5 | 55.8 | 56.1 | 56.2 | 56.4 | 56.5 | 56.6 |
| 140 | 48.8 | 52.1 | 53.6 | 54.5 | 55.1 | 55.5 | 55.8 | 56.0 | 56.2 | 56.3 | 56.4 |
| 160 | 47.2 | 51.2 | 53.0 | 54.0 | 54.6 | 55.1 | 55.5 | 55.7 | 55.9 | 56.1 | 56.2 |
| 180 | 45.6 | 50.2 | 52.3 | 53.5 | 54.2 | 54.8 | 55.2 | 55.5 | 55.7 | 55.9 | 56.1 |
| 200 | — | 49.3 | 51.6 | 53.0 | 53.8 | 54.4 | 54.9 | 55.2 | 55.5 | 55.7 | 55.9 |
| 220 | — | 48.3 | 50.9 | 52.4 | 53.4 | 54.1 | 54.5 | 54.9 | 55.2 | 55.5 | 55.7 |
| 240 | — | 47.2 | 50.2 | 51.9 | 53.0 | 53.7 | 54.2 | 54.6 | 55.0 | 55.2 | 55.5 |
| 260 | — | 46.2 | 49.5 | 51.4 | 52.5 | 53.3 | 53.9 | 54.4 | 54.7 | 55.0 | 55.3 |
| 280 | — | 45.1 | 48.8 | 50.8 | 52.1 | 53.0 | 53.6 | 54.1 | 54.5 | 54.8 | 55.1 |
| 300 | — | — | 48.0 | 50.2 | 51.6 | 52.6 | 53.3 | 53.8 | 54.2 | 54.6 | 54.9 |
| 320 | — | — | 47.2 | 49.7 | 51.2 | 52.2 | 53.0 | 53.5 | 54.0 | 54.3 | 54.6 |
| 340 | — | — | 46.4 | 49.1 | 50.7 | 51.8 | 52.6 | 53.3 | 53.7 | 54.1 | 54.4 |
| 360 | — | — | 45.6 | 48.5 | 50.2 | 51.4 | 52.3 | 53.0 | 53.5 | 53.9 | 54.2 |
| 380 | — | — | — | 47.9 | 49.8 | 51.0 | 52.0 | 52.7 | 53.2 | 53.7 | 54.0 |
| 400 | — | — | — | 47.2 | 49.3 | 50.6 | 51.6 | 52.4 | 53.0 | 53.4 | 53.8 |
| 420 | — | — | — | 46.6 | 48.8 | 50.2 | 51.3 | 52.1 | 52.7 | 53.2 | 53.6 |
| 440 | — | — | — | 46.0 | 48.3 | 49.8 | 50.9 | 51.8 | 52.4 | 53.0 | 53.4 |
| 460 | — | — | — | 45.3 | 47.8 | 49.4 | 50.6 | 51.5 | 52.2 | 52.7 | 53.2 |
| 480 | — | — | — | — | 47.2 | 49.0 | 50.2 | 51.2 | 51.9 | 52.5 | 53.0 |
| 500 | — | — | — | — | 46.7 | 48.6 | 49.9 | 50.9 | 51.6 | 52.2 | 52.7 |

Note: Minimum dew point selectable is 45°F.

Table 3. Supply air dew point temperature, 75°F at 50 percent RH space limit

| Latent Load Btu/h per Person | cfm per person | | | | | | | | | | |
|---------------------------------|----------------|------|------|------|------|------|------|------|------|------|------|
| | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
| 100 | 48.4 | 50.8 | 51.9 | 52.6 | 53 | 53.3 | 53.6 | 53.8 | 53.9 | 54 | 54.1 |
| 120 | 46.8 | 49.8 | 51.3 | 52.1 | 52.6 | 53 | 53.3 | 53.5 | 53.6 | 53.8 | 53.9 |
| 140 | 45.2 | 48.9 | 50.6 | 51.5 | 52.2 | 52.6 | 52.9 | 53.2 | 53.4 | 53.5 | 53.7 |
| 160 | — | 47.9 | 49.8 | 51 | 51.7 | 52.2 | 52.6 | 52.9 | 53.1 | 53.3 | 53.5 |
| 180 | — | 46.8 | 49.1 | 50.4 | 51.3 | 51.8 | 52.3 | 52.6 | 52.9 | 53.1 | 53.3 |
| 200 | — | 45.7 | 48.4 | 49.8 | 50.8 | 51.5 | 51.9 | 52.3 | 52.6 | 52.8 | 53.0 |
| 220 | — | — | 47.6 | 49.3 | 50.3 | 51.1 | 51.6 | 52 | 52.3 | 52.6 | 52.8 |
| 240 | — | — | 46.8 | 48.7 | 49.8 | 50.7 | 51.3 | 51.7 | 52.1 | 52.4 | 52.6 |
| 260 | — | — | 46 | 48.1 | 49.4 | 50.3 | 50.9 | 51.4 | 51.8 | 52.1 | 52.4 |
| 280 | — | — | 45.2 | 47.4 | 48.9 | 49.8 | 50.6 | 51.1 | 51.5 | 51.9 | 52.2 |
| 300 | — | — | — | 46.8 | 48.4 | 49.4 | 50.2 | 50.8 | 51.3 | 51.6 | 51.9 |
| 320 | — | — | — | 46.2 | 47.9 | 49 | 49.8 | 50.5 | 51 | 51.4 | 51.7 |
| 340 | — | — | — | 45.5 | 47.3 | 48.6 | 49.5 | 50.2 | 50.7 | 51.1 | 51.5 |
| 360 | — | — | — | — | 46.8 | 48.2 | 49.1 | 49.8 | 50.4 | 50.9 | 51.3 |
| 380 | — | — | — | — | 46.3 | 47.7 | 48.7 | 49.5 | 50.1 | 50.6 | 51 |
| 400 | — | — | — | — | 45.7 | 47.3 | 48.4 | 49.2 | 49.8 | 50.4 | 50.8 |
| 420 | — | — | — | — | 45.2 | 46.8 | 48 | 48.9 | 49.6 | 50.1 | 50.6 |
| 440 | — | — | — | — | — | 46.3 | 47.6 | 48.5 | 49.3 | 49.8 | 50.3 |
| 460 | — | — | — | — | — | 45.9 | 47.2 | 48.2 | 49 | 49.6 | 50.1 |
| 480 | — | — | — | — | — | 45.4 | 46.8 | 47.9 | 48.7 | 49.3 | 49.8 |
| 500 | — | — | — | — | — | — | 46.4 | 47.5 | 48.4 | 49.1 | 49.6 |

Note: Minimum dew point selectable is 45°F.

The Trane OAU utilizes recovered energy from the cooling process to reheat the air leaving the evaporator coil as required to meet the discharge air setpoint. The reheat refrigeration circuit is adequate to deliver enough reheat to supply neutral-temperature air (e.g., 75°F dry-bulb) under most operating conditions. On very low load days, the reheat circuit may not contain enough energy to meet the desired reheat setpoint.

Heating

The OAU has electric, heat pump, hot water, or gas heat options. The electric heat option is available in 0°F–80°F temperature rise offerings with SCR modulation. This means that the lowest temperature rise provided depends only on heater size and unit airflow. Calculate the temperature rise to confirm that it provides acceptable control. The electric heat will modulate to maintain heating setpoint.

When using hot water heat, the unit controller will modulate a field-provided coil control valve. Provide an ethylene glycol and water mixture or other means of freeze protection for the hot water coil if the OAU will be subject to sub-freezing temperatures.

Capacity Control

The capacity control system on the Horizon™ Outdoor Air Unit is flexible enough to accommodate a variety of system applications. These applications include:

- treating outdoor air to supply a single space or multiple spaces or
- simultaneously meet building make-up air needs while controlling the temperature and relative humidity of a single space.

Each of these applications requires careful consideration to achieve the desired results.

Discharge Air Control

For many multiple space, dedicated outdoor air systems, the OAU will continuously supply outdoor air at a dry-bulb setpoint and a dew point that does not exceed its dew point setpoint. This control approach is simple because it allows the OAU to function independent of local terminal unit operation or actual space conditions. If the unit selection criteria is determined using the method suggested in [“Establishing Capacity Requirements,” p. 19](#), the Outdoor Air Unit will limit the space relative humidity to the target level.

Many dedicated outdoor air systems supply reheated air directly to terminal units or to spaces that have terminal units performing local sensible cooling. This results in the local terminal units re-cooling the previously re-heated outdoor air. Resetting the supply air dry-bulb temperature of the Outdoor Air Unit

Application Considerations

offers the opportunity to minimize the amount of time re-cooling occurs. Refer to “[Cooling Setpoint](#),” p. 22 for more information.

Cooling Setpoint

Because the Trane OAU dehumidifies the outdoor air by cooling it, this cool outdoor air can reduce the sensible cooling load on the local terminal unit. At low space sensible loads, the cool outdoor air may sub-cool the space, causing the local terminal unit to add heat (new energy heat). Therefore, reset occupied Space Cooling Setpoint (SPCS—Space Control Sequence) or Evaporator Cooling Setpoint (ECS—Outdoor Air Control Sequence) of the OAU to minimize space sensible re-cooling so the terminal unit with the lowest sensible load is almost at zero cooling capacity (within the limit of the dew point setpoint). To take full advantage of space demand based dry-bulb reset, you may need to size some of the local terminal units based on neutral outdoor air temperature. This strategy will more effectively manage occupant comfort during seasonal changeover for two-pipe terminal unit systems. Because the OAU is not connected to the chiller or boiler plant, accomplish this by resetting the Outdoor Air Unit SPCS or ECS to keep the critical zone at zero heating capacity when the boiler is off and zero cooling capacity when the chiller is off. A Trane Integrated Comfort™ system can provide this control capability.

Unoccupied Space Humidity Control

The Horizon™ OAU provides conditioned outdoor air for the ventilation and/or make-up air needs of a building during occupied hours. It can also limit building relative humidity during unoccupied hours. To do this, provide a return air path to the OAU and place a relative humidity sensor in the space served by the OAU or in a common relief air path (like a return corridor) if the OAU serves multiple spaces. The unit will cycle as required to limit the space humidity to the unoccupied Dewpoint Setpoint (NSDS) setpoint. Reheat and return air damper options are required for this operation. For dedicated outdoor air systems ducted to terminal units, these units must cycle with the operation of the Horizon OAU. A Trane Integrated Comfort™ system can provide this control capability.

Space Control

For single space applications, the Horizon OAU can control space temperature and limit space relative humidity. To do this, size the airflow to meet whichever is the highest: the space loads and ventilation and/or make-up air needs of the application. Install a temperature sensor in the space to provide temperature control and reset the supply air temperature. If reset of the supply air dew point is desired, install a space relative humidity sensor in the space to provide relative humidity limit control.

Outdoor Airflow Balancing

Establish final unit airflow through a field air balancing procedure. Change the fan speed through replacement or fan sheave adjustment (belt drive indoor fan motor) or VFD Setpoint via the UC600 controller (direct drive fan motor).

Air to Air Energy Recovery

Energy recovery can significantly reduce HVAC system first-cost and operating energy costs. You can use recovered energy for two purposes:

1. to temper or reheat supply air for independent control of sensible and latent capacity, or
2. to precondition outdoor air as it enters the building for ventilation.

The Horizon™ OAU offers refrigerant heat recovery for reheating the supply air. To precondition the outdoor air, use the optional total-energy wheel to recover energy from building exhaust.

Controlling the Total-Energy Wheel

One way to control an energy recovery device is to turn it on and off with the OAU system exhaust fan. In this case, the total energy wheel enables when the unit is in occupied mode and

the exhaust fan is running. While this control method is certainly simple and effective in some applications, it may not provide the expected energy saving benefit, particularly when cold air (vs. neutral air) is supplied to the building.

Another more effective approach is to use the outdoor air dry-bulb to determine when to energize or de-energize the energy recovery device. See [Figure 11, p. 23](#) for an example of this simplified control. In addition to being more effective from a control standpoint, it's also a very simple control method because the wheel is enabled when all of the following are true:

- unit is in occupied mode,
- exhaust fan is enabled,
- Unit Main Control Module (MCM) calls for unit to operate in dehumidification, cooling, or heating modes, and
- outside air temperature is above the frost protection setpoint (default setpoint 12°F).

If using the OAU to deliver cold, dry conditioned air to the building (outdoor air is cooled to a low dew point but not reheated), use the cooling setpoint control strategy (see ["Cooling Setpoint," p. 22](#)).

Figure 10. Dry-bulb control in a cold DB/dry DP application

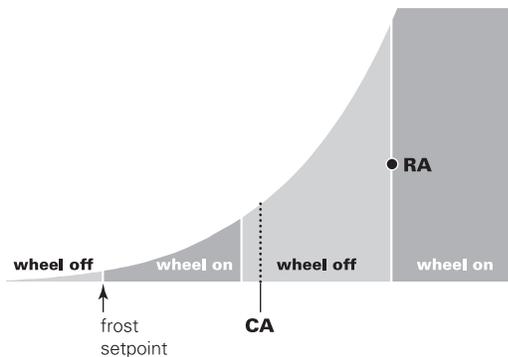
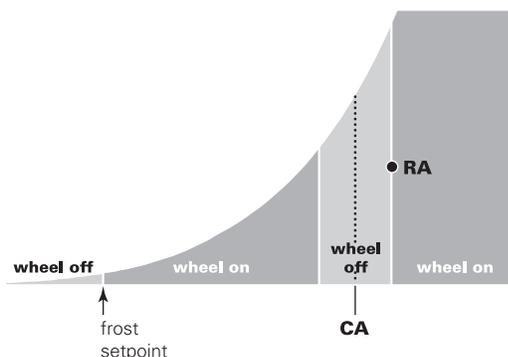


Figure 11. Dry-bulb control in a neutral DB/dry DP application



Cross Leakage

All energy wheels have some cross leakage. Therefore, do not use energy wheels in applications involving toxic or hazardous air streams. The percentage of cross leakage depends on the pressure differentials across the wheel section. With Trane Horizon™ OAU energy wheels, the exhaust air transfer ratios are typically low (less than 4 percent).

Condensate Drain Configuration

OAU units are selected based on dehumidification capability. As such, condensate can form at a high rate. Therefore, the OAU drain pan and condensate line are sized and designed accordingly. However, an often-overlooked element of proper condensate drainage is proper P-Trap and drain line sizing and installation. An incorrectly-designed and -installed P-Trap can restrict condensate flow or cause water in the condensate drain pan to “spit” or “geyser” which may cause condensate overflow. Carefully install and trap the drain pan to ensure adequate condensate removal under all conditions.

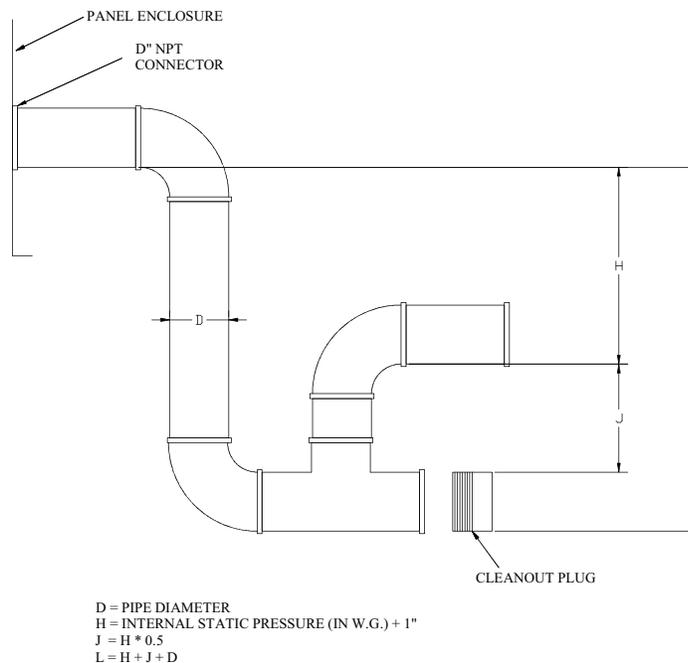
An evaporator condensate drain connection is provided on each unit. For more information, to the *Installation, Operation, and Maintenance* for your specific product:

- OAU-SVX01*-EN (*Installation, Operation, and Maintenance: Horizon™ Outdoor Air Unit - Indirect Gas-Fired/Electric Heat/Air Source Heat Pump - Models: OADD, OADE, OAKD, OAKE, OAND, OANE*)
- OAU-SVX02*-EN (*Installation, Operation, and Maintenance: Horizon™ Outdoor Air Unit - Indirect Fired Gas/Electric Heat and Air Source Heat Pump - Models: OABD, OABE, OAGD*)
- OAU-SVX005*-EN (*Installation, Operation, and Maintenance: Horizon™ Outdoor Air Unit - Direct Gas-Fired - Model: OAB, OAG*)

A condensate trap must be installed at the unit due to the drain connection being on the “negative pressure” side of the fan. Install the P-Trap using the guidelines in [Figure 12](#).

Pitch drain lines connected to P-Trap at least 1/2 inch for every 10 feet of horizontal run to assure proper condensate flow. Do not allow the horizontal run to sag causing a possible double-trap condition which could result in condensate backup due to “air lock”.

Figure 12. Condensate trap installation



NOTES: 1. PITCH DRAIN AT LEAST 1/2" PER 10' HORIZONTAL RUN
2. CONDENSATE DRAIN PAN WILL NOT DRAIN PROPERLY IF P-TRAP IS NOT PRIMED & OF ADEQUATE HEIGHT TO ALLOW FOR CABINET OPERATING NEGATIVE PRESSURE

Acoustical Considerations

Proper unit placement is critical to reducing transmitted sound levels from the OAU to the building. Therefore, consider acoustic concerns during the design phase and place the unit accordingly. The most economical means of avoiding an acoustical problem is to place the unit(s) away from acoustically critical areas. If possible, do not locate units directly above areas such as: offices, conference rooms, executive office areas, and classrooms. Instead, ideal locations to consider are: over corridors, utility rooms, toilets, or other areas where higher sound levels directly below the unit(s) are acceptable.

Follow these basic guidelines for unit placement to minimize sound transmission through the building structure.

1. Never cantilever the compressor side of the unit. A structural cross member or full perimeter roof curb, supported by roof structural members, must support this side of the unit.
2. Locate the unit's center of gravity close to or over column or main support beam.
3. If the roof structure is very light, replace roof joists by a structural shape in the critical areas described above.
4. If several units are to be placed on one span, stagger them to reduce deflection over that span.

It is impossible to totally quantify the building structure effect on sound transmission because it is dependent on how the roof and building members respond to the OAU's sound and vibration. However, following the guidelines listed above will help reduce sound transmissions.

Clearance Requirements

Follow the recommended unit clearances to assure adequate serviceability, maximum capacity, and peak operating efficiency. Reducing unit clearances may result in condenser coil starvation or warm condenser air recirculation. If the recommended clearances are not possible on a particular job, consider the following:

- Do the clearances available allow for major service work, such as changing compressors or coils?
- Do the clearances available allow for proper outside air intake, exhaust air removal, and condenser airflow?
- If screening around the unit is used, is there a possibility of air recirculation from the exhaust to the outside air intake or from condenser exhaust to condenser intake.

Review any actual clearances that appear inadequate with your local Trane sales engineer.

When two or more units are placed side by side, increase the distance between the units to twice the recommended single unit clearance. Stagger the units for these two reasons:

1. To reduce span deflection if more than one unit is placed on a single span. Reducing deflection discourages sound transmission.
2. To assure proper exhaust air diffusion before contact with the adjacent unit's outside air intake.

Duct Design

It is important to note that the rated capacities of the OAU can be met only if the unit is properly installed. A well-designed duct system is essential to meet these capacities.

Satisfactory air distribution throughout the system requires an unrestricted and uniform airflow from the OAU discharge duct.

However, when job conditions dictate installation of elbows near the OAU outlet, using guide vanes may reduce capacity loss and static pressure loss.



Application Considerations

Controls Sequence

For sequence of operation, please refer to the *Installation, Operation, and Maintenance* for your specific product:

- OAU-SVX01*-EN (*Installation, Operation, and Maintenance: Horizon™ Outdoor Air Unit - Indirect Gas-Fired/Electric Heat/Air Source Heat Pump - Models: OADD, OADE, OAKD, OAKE, OAND, OANE*)
- OAU-SVX02*-EN (*Installation, Operation, and Maintenance: Horizon™ Outdoor Air Unit - Indirect Fired Gas/Electric Heat and Air Source Heat Pump - Models: OABD, OABE, OAGD*)
- OAU-SVX005*-EN (*Installation, Operation, and Maintenance: Horizon™ Outdoor Air Unit - Direct Gas-Fired - Model: OAB, OAG*)



Selection Procedure

Horizon OAU Selection Procedure

The Horizon™ Outdoor Air Unit (OAU) is designed to efficiently dehumidify outdoor air. As such, the selection of an OAU is somewhat more complex than a standard recirculation rooftop. To make it easier, there is an online selection tool provided. Before launching the program, the following information about the specific project will be required:

1. Entering Air Temperature (DB/WB)
 - a. Summer
 - b. Winter
2. CFM
 - a. Total CFM
 - b. Outdoor Air CFM
3. External Static Pressure
4. Altitude
5. Electrical Voltage/Phase/Hertz
6. Heat Type

After initial entry, the tool will search all possible options, and display those which may be acceptable. If a certain tonnage is not available given the project specifics, there is an option to view the reason for that unit's rejection. Of the units available, select the one that is most suited to the project, based on CFM, motor speed, or leaving air conditions. Leaving air conditions off the coil as well as unit leaving air temperature are displayed. For distributors, a price is displayed. The unit selected will be saved as its current configuration. If circumstances change after the unit is saved, the program will require a reconfiguration, at which time the price will be adjusted as well.



General Data

Table 4. OABD general data—cooling 3 to 5 tons high efficiency

| | 3 Tons | 4 Tons | 5 Tons |
|--|---------------------|---------------------|---------------------|
| | OABD036A | OABD048A | OABD060A |
| Cooling Performance | | | |
| Gross Cooling Capacity, Btu (kW) | 41,462 (12.15) | 55,709 (16.33) | 66,870 (19.60) |
| Nominal cfm (m ³ /h) | 500–2000 (850–3398) | 500–2000 (850–3398) | 500–2000 (850–3398) |
| Compressor | | | |
| Number | 1 | 1 | 1 |
| Type | Scroll | Scroll | Scroll |
| Outdoor Coil | | | |
| Type | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 3/8 (9.5) | 3/8 (9.5) | 3/8 (9.5) |
| Face Area, ft ² (m ²) | 11 (1.02) | 11 (1.02) | 11 (1.02) |
| Rows | 2 | 2 | 2 |
| FPI | 14 | 14 | 14 |
| Indoor Coil | | | |
| Type | Propeller | Propeller | Propeller |
| Tube Size—OD, in. (mm) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) |
| Face Area, ft ² (m ²) | 4.17 (0.39) | 4.17 (0.39) | 4.17 (0.39) |
| Rows | 4 | 4 | 4 |
| FPI | 12 | 12 | 12 |
| Refrigerant Control | TXV | TXV | TXV |
| Drain Connection Size, in. (mm) | 3/4 (20) | 3/4 (20) | 3/4 (20) |
| Outdoor Fan | | | |
| Type | Propeller | Propeller | Propeller |
| Number Used | 1 | 1 | 1 |
| Diameter, in. (mm) | 27 | 27 | 27 |
| Drive Type | Direct | Direct | Direct |
| No. Speeds | 1 | 1 | 1 |
| CFM (m ³ /h) | 7,000 (11,893) | 7,000 (11,893) | 7,000 (11,893) |
| Number Motors | 1 | 1 | 1 |
| Motor HP (kW), per motor | 1.0 (0.75) | 1.0 (0.75) | 1.0 (0.75) |
| Motor RPM | 1140 | 1140 | 1140 |
| Indoor Fan | | | |
| Type | Backward Curved | Backward Curved | Backward Curved |
| Number Used | 1 | 1 | 1 |
| Diameter | Varies | Varies | Varies |
| Drive Type | Direct Drive | Direct Drive | Direct Drive |
| Number Motors | 1 | 1 | 1 |
| Motor HP (kW), Standard–Oversized | 2.68–4.0 (2–3) | 2.68–4.0 (2–3) | 2.68–4.0 (2–3) |
| Motor RPM | Varies | Varies | Varies |
| Filters | | | |
| Type Furnished | Varies | Varies | Varies |
| Evap Size, in. (Qty) | 20 x 24 x 2 (2) | 20 x 24 x 2 (2) | 20 x 24 x 2 (2) |
| Type Furnished | MERV-8 | MERV-8 | MERV-8 |
| ERV Size, in. (Qty) | 20 x 24 x 2 (4) | 20 x 24 x 2 (4) | 20 x 24 x 2 (4) |
| Refrigerant Charge, lb of R-410A | | | |
| | See Nameplate | See Nameplate | See Nameplate |

Table 5. OABD general data—cooling 6 to 9 tons high efficiency

| | 6 Tons | 7 Tons | 8 Tons | 9 Tons |
|--|-----------------------|-----------------------|-----------------------|-----------------------|
| | OABD072A | OABD084A | OABD096A | OABD108A |
| Cooling Performance | | | | |
| Gross Cooling Capacity, Btu (kW) | 78,600 (23.04) | 88,768 (26.02) | 99,099 (29.04) | 108,214 (31.71) |
| Nominal cfm (m ³ /h) | 625–3000 (1061–5097) | 625–3000 (1061–5097) | 625–3000 (1061–5097) | 625–3000 (1061–5097) |
| Compressor | | | | |
| Number | 1 | 1 | 1 | 1 |
| Type | Scroll | Scroll | Scroll | Scroll |
| Outdoor Coil | | | | |
| Type | High Performance | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 3/8 (9.5) | 3/8 (9.5) | 3/8 (9.5) | 3/8 (9.5) |
| Face Area, ft ² (m ²) | 11 (1.02) | 11 (1.02) | 11 (1.02) | 11 (1.02) |
| Rows | 2 | 2 | 2 | 2 |
| FPI | 14 | 14 | 14 | 14 |
| Indoor Coil | | | | |
| Type | High Performance | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 3/8 (12.7) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) |
| Face Area, ft ² (m ²) | 6.56 (167) 5.69 (145) | 6.56 (167) 5.69 (145) | 6.56 (167) 5.69 (145) | 6.56 (167) 5.69 (145) |
| Rows | 4 6 | 4 6 | 4 6 | 4 6 |
| FPI | 12 | 12 | 12 | 12 |
| Refrigerant Control | TXV | TXV | TXV | TXV |
| Drain Connection Size, in. (mm) | 3/4 (20) | 3/4 (20) | 3/4 (20) | 3/4 (20) |
| Outdoor Fan | | | | |
| Type | Propeller | Propeller | Propeller | Propeller |
| Number Used | 1 | 1 | 1 | 1 |
| Diameter, in. (mm) | 27 | 27 | 27 | 27 |
| Drive Type | Direct | Direct | Direct | Direct |
| No. Speeds | 1 | 1 | 1 | 1 |
| CFM (m ³ /h) | 7,000 (11,893) | 7,000 (11,893) | 7,000 (11,893) | 7,000 (11,893) |
| Number Motors | 1 | 1 | 1 | 1 |
| Motor HP (kW), per motor | 1.0 (0.75) | 1.0 (0.75) | 1.0 (0.75) | 1.0 (0.75) |
| Motor RPM | 1140 | 1140 | 1140 | 1140 |
| Indoor Fan | | | | |
| Type | Backward Curved | Backward Curved | Backward Curved | Backward Curved |
| Number Used | 1 | 1 | 1 | 1 |
| Diameter | Varies | Varies | Varies | Varies |
| Drive Type | Direct Drive | Direct Drive | Direct Drive | Direct Drive |
| Number Motors | 1 | 1 | 1 | 1 |
| Motor HP (kW), Standard–Oversized | 2.68–4.0 (2–3) | 2.68–4.0 (2–3) | 2.68–4.0 (2–3) | 2.68–4.0 (2–3) |
| Motor RPM | Varies | Varies | Varies | Varies |
| Filters | | | | |
| Type Furnished | Varies | Varies | Varies | Varies |
| Evap Size, in. (Qty) | 20 x 24 x 2 (2) | 20 x 24 x 2 (2) | 20 x 24 x 2 (2) | 20 x 24 x 2 (2) |
| Type Furnished | MERV-8 | MERV-8 | MERV-8 | MERV-8 |
| ERV Size, in. (Qty) | 20 x 24 x 2 (4) | 20 x 24 x 2 (4) | 20 x 24 x 2 (4) | 20 x 24 x 2 (4) |
| Refrigerant Charge, lb of R-410A | See Nameplate | See Nameplate | See Nameplate | See Nameplate |



General Data

Table 6. OADD general data—cooling 5 to 8 tons high efficiency

| | 5 Tons Downflow | 6 Tons Downflow | 7 Tons Downflow | 8 Tons Downflow |
|--|--|--|--|--|
| | OADD060A | OADD072A | OADD084 | OADD096 |
| Cooling Performance | | | | |
| Gross Cooling Capacity, Btu (kW) | 61,464 (18.01) | 73,757 (21.62) | 86,050 (25.22) | 98,342 (28.82) |
| Nominal cfm (m ³ /h) | 625–1250 (1062–2124) | 750–1500 (1274–2549) | 875–1750 (1487–2973) | 1000–2000 (1699–3398) |
| Compressor | | | | |
| Number | 1 | 1 | 1 | 2 |
| Type | Scroll | Scroll | Scroll | Scroll |
| Outdoor Coil | | | | |
| Type | High Performance | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 3/8 (9.5) | 3/8 (9.5) | 3/8 (9.5) | 3/8 (9.5) |
| Face Area, ft ² (m ²) | 13 (1.21) | 13 (1.21) | 13 (1.21) | 24 (2.23) |
| Rows | 2 | 2 | 2 | 2 |
| FPI | 12 | 12 | 12 | 12 |
| Indoor Coil | | | | |
| Type | High Performance | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) |
| Face Area, ft ² (m ²) | 6 (0.56) | 6 (0.56) | 6 (0.56) | 9 (0.84) |
| Rows | 6 | 6 | 6 | 6 |
| FPI | 12 | 12 | 12 | 12 |
| Refrigerant Control | TXV | TXV | TXV | TXV |
| Drain Connection Size, in. (mm) | 3/4 (20) | 3/4 (20) | 3/4 (20) | 3/4 (20) |
| Outdoor Fan | | | | |
| Type | Propeller | Propeller | Propeller | Propeller |
| Number Used | 1 | 1 | 1 | 2 |
| Diameter, in. (mm) | 24 (609.6) | 24 (609.6) | 24 (609.6) | 24 (609.6) |
| Drive Type | Direct | Direct | Direct | Direct |
| No. Speeds | 1 | 1 | 1 | 1 |
| CFM (m ³ /h) | 6,500 (11,044) | 6,500 (11,044) | 6,500 (11,044) | 13,000 (22,087) |
| Number Motors | 1 | 1 | 1 | 2 |
| Motor HP (kW), per motor | 1.0 (0.75) | 1.0 (0.75) | 1.0 (0.75) | 1.0 (0.75) |
| Motor RPM | 1140 | 1140 | 1140 | 1140 |
| Indoor Fan | | | | |
| Type | Backward Inclined | Backward Inclined | Backward Inclined | Backward Inclined |
| Number Used | 1 | 1 | 1 | 1 |
| Diameter | Varies | Varies | Varies | Varies |
| Drive Type | Direct Drive | Direct Drive | Direct Drive | Direct Drive |
| Number Motors | 1 | 1 | 1 | 1 |
| Motor HP (kW), Standard–Oversized | 1.0–3.0 (0.75–2.24) | 1.0–3.0 (0.75–2.24) | 1.0–3.0 (0.75–2.24) | 1.0–5.0 (0.75–3.73) |
| Motor RPM, Standard–Oversized | 1750–3500 | 1750–3500 | 1750–3500 | 1750–3500 |
| Motor Frame Size, Standard–Oversized | Varies | Varies | Varies | Varies |
| Filters | | | | |
| Type Furnished | Refer to "OAU Filter Guide" in "Appendix," p. 99 | Refer to "OAU Filter Guide" in "Appendix," p. 99 | Refer to "OAU Filter Guide" in "Appendix," p. 99 | Refer to "OAU Filter Guide" in "Appendix," p. 99 |
| Number Size Recommended | | | | |
| Refrigerant Charge, lb of R-410A | | | | |
| Downflow | See Nameplate | See Nameplate | See Nameplate | See Nameplate |

Table 7. OADD general data—cooling 10 to 15 tons high efficiency

| | 10 Tons Downflow | 12 Tons Downflow | 15 Tons Downflow |
|--|--|--|--|
| | OADD120A | OADD144A | OADD180A |
| Cooling Performance | | | |
| Gross Cooling Capacity, Btu (kW) | 121,904 (35.73) | 147,514 (43.23) | 184,392 (54.04) |
| Nominal cfm (m ³ /h) | 1250–2500 (2124–4248) | 1500–3000 (2549–5097) | 1875–3750 (3186–6371) |
| Compressor | | | |
| Number | 2 | 2 | 2 |
| Type | Scroll | Scroll | Scroll |
| Outdoor Coil | | | |
| Type | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 3/8 (9.5) | 3/8 (9.5) | 3/8 (9.5) |
| Face Area, ft ² (m ²) | 24 (2.23) | 24 (2.23) | 24 (2.23) |
| Rows | 2 | 2 | 2 |
| FPI | 12 | 12 | 12 |
| Indoor Coil | | | |
| Type | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) |
| Face Area, ft ² (m ²) | 9 (0.84) | 9 (0.84) | 9 (0.84) |
| Rows | 6 | 6 | 6 |
| FPI | 12 | 12 | 12 |
| Refrigerant Control | TXV | TXV | TXV |
| Drain Connection Size, in. (mm) | 3/4 (20) | 3/4 (20) | 3/4 (20) |
| Outdoor Fan | | | |
| Type | Propeller | Propeller | Propeller |
| Number Used | 2 | 2 | 2 |
| Diameter, in. (mm) | 24 | 24 | 24 |
| Drive Type | Direct | Direct | Direct |
| No. Speeds | 1 | 1 | 1 |
| CFM (m ³ /h) | 13,500 (22,937) | 13,500 (22,937) | 13,500 (22,937) |
| Number Motors | 2 | 2 | 2 |
| Motor HP (kW), per motor | 1.0 (0.75) | 1.0 (0.75) | 1.0 (0.75) |
| Motor RPM | 1140 | 1140 | 1140 |
| Indoor Fan | | | |
| Type | Backward Inclined | Backward Inclined | Backward Inclined |
| Number Used | 1 | 1 | 1 |
| Diameter | Varies | Varies | Varies |
| Drive Type | Direct Drive | Direct Drive | Direct Drive |
| Number Motors | 1 | 1 | 1 |
| Motor HP (kW), Standard–Oversized | 1.0–5.0 (0.75–3.73) | 1.0–5.0 (0.75–3.73) | 1.0–5.0 (0.75–3.73) |
| Motor RPM, Standard–Oversized | 1750–3500 | 1750–3500 | 1750–3500 |
| Motor Frame Size, Standard–Oversized | Varies | Varies | Varies |
| Filters | | | |
| Type Furnished | Refer to "OAU Filter Guide" in "Appendix," p. 99 | Refer to "OAU Filter Guide" in "Appendix," p. 99 | Refer to "OAU Filter Guide" in "Appendix," p. 99 |
| Number Size Recommended | | | |
| Refrigerant Charge, lb of R-410A | | | |
| Downflow | See Nameplate | See Nameplate | See Nameplate |



General Data

Table 8. OADE general data—cooling 5 to 8 tons high efficiency

| | 5 Tons Downflow | 6 Tons Downflow | 7 Tons Downflow | 8 Tons Downflow |
|--|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| | OADE060A | OADE072A | OADE084 | OADE096 |
| Cooling Performance | | | | |
| Gross Cooling Capacity, Btu (kW) | 68,946 (20.21) | 76,360 (22.38) | 85,869 (25.17) | 110,390 (32.35) |
| Heating Performance | | | | |
| Gross Heating Capacity, Btu (kW) | 58,350 (17.10) | 72,248 (21.17) | 82,750 (24.25) | 98,826 (28.96) |
| CFM | | | | |
| Nominal cfm/AHRI rated cfm (m ³ /h) | 625–1250 (1062–2124) | 750–1500 (1274–2549) | 875–1750 (1487–2973) | 1000–2000 (1699–3398) |
| Compressor | | | | |
| Number | 1 | 1 | 1 | 2 |
| Type | Scroll | Scroll | Scroll | Scroll |
| Outdoor Coil | | | | |
| Type | High Performance | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 3/8 (9.5) | 3/8 (9.5) | 3/8 (9.5) | 3/8 (9.5) |
| Face Area, ft ² (m ²) | 12 (1.11) | 12 (1.11) | 12 (1.11) | 24 (2.23) |
| Rows | 2 | 2 | 2 | 2 |
| FPI | 12 | 12 | 12 | 12 |
| Indoor Coil | | | | |
| Type | High Performance | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) |
| Face Area, ft ² (m ²) | 6 (0.56) | 6 (0.56) | 6 (0.56) | 9 (0.84) |
| Rows | 4 | 4 | 4 | 4 |
| FPI | 12 | 12 | 12 | 12 |
| Refrigerant Control | TXV | TXV | TXV | TXV |
| Drain Connection Size, in. (mm) | 3/4 (19.1) | 3/4 (19.1) | 3/4 (19.1) | 3/4 (19.1) |
| Outdoor Fan | | | | |
| Type | Propeller | Propeller | Propeller | Propeller |
| Number Used | 1 | 1 | 1 | 2 |
| Diameter, in. (mm) | 24 (609.6) | 24 (609.6) | 24 (609.6) | 24 (609.6) |
| Drive Type | Direct Drive | Direct Drive | Direct Drive | Direct Drive |
| No. Speeds | 1 | 1 | 1 | 1 |
| CFM (m ³ /h) | 6,500 (11,043) | 6,500 (11,043) | 6,500 (11,043) | 13,000 (22,087) |
| Number Motors | 1 | 1 | 1 | 2 |
| Motor HP (kW), per motor | 1.0 (0.75) | 1.0 (0.75) | 1.0 (0.75) | 1.0 (0.75) |
| Motor RPM | 1,140 | 1,140 | 1,140 | 1,140 |
| Indoor Fan | | | | |
| Type | Backward Inclined | Backward Inclined | Backward Inclined | Backward Inclined |
| Number Used | 1 | 1 | 1 | 1 |
| Diameter | Varies | Varies | Varies | Varies |
| Drive Type | Direct Drive | Direct Drive | Direct Drive | Direct Drive |
| Number Motors | 1 | 1 | 1 | 1 |
| Motor HP (kW), Standard–Oversized | 1.0–3.0 (0.75–2.24) | 1.0–3.0 (0.75–2.24) | 1.0–3.0 (0.75–2.24) | 1.0–5.0 (0.75–3.73) |
| Motor RPM, Standard–Oversized | 1750–3500 | 1750–3500 | 1750–3500 | 1750–3500 |
| Motor Frame Size, Standard–Oversized | Varies | Varies | Varies | Varies |
| Filters | | | | |
| Type Furnished | Refer to "OAU Filter Guide" in | Refer to "OAU Filter Guide" in | Refer to "OAU Filter Guide" in | Refer to "OAU Filter Guide" in |
| Number Size Recommended | "Appendix," p. 99 | "Appendix," p. 99 | "Appendix," p. 99 | "Appendix," p. 99 |
| Refrigerant Charge, lb of R-410A | | | | |
| Downflow | See Nameplate | See Nameplate | See Nameplate | See Nameplate |

Table 9. OADE general data—cooling 10 to 15 tons high efficiency

| | 10 Tons Downflow | 12 Tons Downflow | 15 Tons Downflow |
|--|--------------------------------|--------------------------------|--------------------------------|
| | OADE120A | OADE144A | OADE180A |
| Cooling Performance | | | |
| Gross Cooling Capacity, Btu (kW) | 134,862 (39.52) | 151,166 (44.30) | 182,794 (53.57) |
| Heating Performance | | | |
| Gross Heating Capacity, Btu (kW) | 122,036 (35.77) | 140,332 (41.13) | 174,098 (51.02) |
| CFM | | | |
| Nominal cfm/AHRI rated cfm (m ³ /h) | 1250–2500 (2124–4248) | 1500–3000 (2549–5097) | 1500–3000 (2549–5097) |
| Compressor | | | |
| Number | 2 | 2 | 2 |
| Type | Scroll | Scroll | Scroll |
| Outdoor Coil | | | |
| Type | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 3/8 (9.5) | 3/8 (9.5) | 3/8 (9.5) |
| Face Area, ft ² (m ²) | 24 (2.23) | 24 (2.23) | 24 (2.23) |
| Rows | 2 | 2 | 2 |
| FPI | 12 | 12 | 12 |
| Indoor Coil | | | |
| Type | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) |
| Face Area, ft ² (m ²) | 9 (0.84) | 9 (0.84) | 9 (0.84) |
| Rows | 4 | 4 | 4 |
| FPI | 12 | 12 | 12 |
| Refrigerant Control | TXV | TXV | TXV |
| Drain Connection Size, in. (mm) | 3/4 (19.1) | 3/4 (19.1) | 3/4 (19.1) |
| Outdoor Fan | | | |
| Type | Propeller | Propeller | Propeller |
| Number Used | 2 | 2 | 2 |
| Diameter, in. (mm) | 24 (609.6) | 24 (609.6) | 24 (609.6) |
| Drive Type | Direct Drive | Direct Drive | Direct Drive |
| No. Speeds | 1 | 1 | 1 |
| CFM (m ³ /h) | 13,500 (22,937) | 13,500 (22,937) | 13,500 (22,937) |
| Number Motors | 2 | 2 | 2 |
| Motor HP (kW), per motor | 1.0 (0.75) | 1.0 (0.75) | 1.0 (0.75) |
| Motor RPM | 1,140 | 1,140 | 1,140 |
| Indoor Fan | | | |
| Type | Backward Inclined | Backward Inclined | Backward Inclined |
| Number Used | 1 | 1 | 1 |
| Diameter | Varies | Varies | Varies |
| Drive Type | Direct Drive | Direct Drive | Direct Drive |
| Number Motors | 1 | 1 | 1 |
| Motor HP (kW), Standard–Oversized | 1.0–5.0 (0.75–3.73) | 1.0–5.0 (0.75–3.73) | 1.0–5.0 (0.75–3.73) |
| Motor RPM, Standard–Oversized | 1750–3500 | 1750–3500 | 1750–3500 |
| Motor Frame Size, Standard–Oversized | Varies | Varies | Varies |
| Filters | | | |
| Type Furnished | Refer to "OAU Filter Guide" in | Refer to "OAU Filter Guide" in | Refer to "OAU Filter Guide" in |
| Number Size Recommended | "Appendix," p. 99 | "Appendix," p. 99 | "Appendix," p. 99 |
| Refrigerant Charge, lb of R-410A | | | |
| Downflow | See Nameplate | See Nameplate | See Nameplate |



General Data

Table 10. OAGD general data—cooling 10 to 17 tons high efficiency

| | 10 Tons | 12 Tons | 15 Tons | 17 Tons |
|--|--|--|--|--|
| | OAGD120A | OAGD144A | OAGD180A | OAGD210A |
| Cooling Performance | | | | |
| Gross Cooling Capacity, Btu (kW) | 150,692 (44.16) | 165,990 (48.65) | 206,544 (60.53) | 230,212 (67.47) |
| CFM | | | | |
| Nominal cfm (m ³ /h) | 1250–2500 (2124–4248) | 1500–3000 (2549–5097) | 1875–3750 (3186–6371) | 2125–4250 (3610–7221) |
| Compressor | | | | |
| Number | 2 | 2 | 2 | 2 |
| Type | Scroll | Scroll | Scroll | Scroll |
| Outdoor Coil | | | | |
| Type | High Performance | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 3/8 (9.5) | 3/8 (9.5) | 3/8 (9.5) | 3/8 (9.5) |
| Face Area, ft ² (m ²) | 25 (2.32) | 25 (2.32) | 25 (2.32) | 37 (3.44) |
| Rows | 2 | 2 | 2 | 2 |
| FPI | 14 | 14 | 14 | 14 |
| Indoor Coil | | | | |
| Type | High Performance | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) |
| Face Area, ft ² (m ²) | 10.0 (0.93) | 10.0 (0.93) | 10.0 (0.93) | 12.0 (1.11) |
| Rows | 4 6 | 4 6 | 4 6 | 4 6 |
| FPI | 12 | 12 | 12 | 12 |
| Refrigerant Control | TXV | TXV | TXV | TXV |
| Drain Connection Size, in. (mm) | 3/4 (19.1) | 3/4 (19.1) | 3/4 (19.1) | 3/4 (19.1) |
| Outdoor Fan | | | | |
| Type | Propeller | Propeller | Propeller | Propeller |
| Number Used | 2 | 2 | 2 | 3 |
| Diameter, in. (mm) | 27 (685.8) | 27 (685.8) | 27 (685.8) | 27 (685.8) |
| Drive Type | Direct | Direct | Direct | Direct |
| No. Speeds | 1 | 1 | 1 | 1 |
| CFM (m ³ /h) | 14,000 (23,786) | 14,000 (23,786) | 14,000 (23,786) | 21,000 (35,679) |
| Number Motors | 2 | 2 | 2 | 3 |
| Motor HP (kW), per motor | 1 (0.75) | 1 (0.75) | 1 (0.75) | 1 (0.75) |
| Motor RPM | 1,140 | 1,140 | 1,140 | 1,140 |
| Indoor Fan | | | | |
| Type | Backward Curved | Backward Curved | Backward Curved | Backward Curved |
| Number Used | 1–2 | 1–2 | 1–2 | 1–2 |
| Diameter | Varies | Varies | Varies | Varies |
| Drive Type | Direct or Belt Drive | Direct or Belt Drive | Direct or Belt Drive | Direct or Belt Drive |
| Number Motors | 1–2 | 1–2 | 1–2 | 1–2 |
| Motor HP (kW), Standard–Oversized | 2–12 (1.49–8.95) | 2–12 (1.49–8.95) | 2–12 (1.49–8.95) | 2–12 (1.49–8.95) |
| Motor RPM, Standard–Oversized | Varies | Varies | Varies | Varies |
| Filters | | | | |
| Type Furnished | Refer to "OAU Filter Guide" in "Appendix," p. 99 | Refer to "OAU Filter Guide" in "Appendix," p. 99 | Refer to "OAU Filter Guide" in "Appendix," p. 99 | Refer to "OAU Filter Guide" in "Appendix," p. 99 |
| Number Size Recommended | | | | |
| Refrigerant Charge, lb of R-410A | See Nameplate | See Nameplate | See Nameplate | See Nameplate |

Table 11. OAGD general data—cooling 20 to 30 tons high efficiency

| | 20 Tons | 22 Tons | 25 Tons | 30 Tons |
|--|--|--|--|--|
| | OAGD240A | OAGD264A | OAGD300A | OAGD360A |
| Cooling Performance | | | | |
| Gross Cooling Capacity, Btu (kW) | 286,302 (83.91) | 319,026 (93.50) | 368,012 (107.85) | 395,596 (115.94) |
| CFM | | | | |
| Nominal cfm (m ³ /h) | 2500–5000 (4248–8495) | 2750–5500 (4672–9345) | 3125–6250 (5309–10619) | 3750–7500 (6371–12743) |
| Compressor | | | | |
| Number | 2 | 2 | 2 | 2 |
| Type | Scroll | Scroll | Scroll | Scroll |
| Outdoor Coil | | | | |
| Type | High Performance | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 3/8 (9.5) | 3/8 (9.5) | 3/8 (9.5) | 3/8 (9.5) |
| Face Area, ft ² (m ²) | 37 (3.44) | 37 (3.44) | 37 (3.44) | 37 (3.44) |
| Rows | 2 | 2 | 2 | 2 |
| FPI | 14 | 14 | 14 | 14 |
| Indoor Coil | | | | |
| Type | High Performance | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) |
| Face Area, ft ² (m ²) | 12.0 (1.11) | 12.0 (1.11) | 15.0 (1.39) | 15.0 (1.39) |
| Rows | 4 6 | 4 6 | 4 6 | 4 6 |
| FPI | 12 | 12 | 12 | 12 |
| Refrigerant Control | TXV | TXV | TXV | TXV |
| Drain Connection Size, in. (mm) | 3/4 (19.1) | 3/4 (19.1) | 3/4 (19.1) | 3/4 (19.1) |
| Outdoor Fan | | | | |
| Type | Propeller | Propeller | Propeller | Propeller |
| Number Used | 3 | 3 | 3 | 3 |
| Diameter, in. (mm) | 27 (685.8) | 27 (685.8) | 27 (685.8) | 27 (685.8) |
| Drive Type | Direct | Direct | Direct | Direct |
| No. Speeds | 1 | 1 | 1 | 1 |
| CFM (m ³ /h) | 21,000 (35,679) | 21,000 (35,679) | 21,000 (35,679) | 21,000 (35,679) |
| Number Motors | 3 | 3 | 3 | 3 |
| Motor HP (kW), per motor | 1 (0.75) | 1 (0.75) | 1 (0.75) | 1 (0.75) |
| Motor RPM | 1,140 | 1,140 | 1,140 | 1,140 |
| Indoor Fan | | | | |
| Type | Backward Curved | Backward Curved | Backward Curved | Backward Curved |
| Number Used | 1–2 | 1–2 | 1–2 | 1–2 |
| Diameter | Varies | Varies | Varies | Varies |
| Drive Type | Direct or Belt Drive | Direct or Belt Drive | Direct or Belt Drive | Direct or Belt Drive |
| Number Motors | 1–2 | 1–2 | 1–2 | 1–2 |
| Motor HP (kW), Standard–Oversized | 2–12 (1.49–8.95) | 2–12 (1.49–8.95) | 2–12 (1.49–8.95) | 2–12 (1.49–8.95) |
| Motor RPM, Standard–Oversized | Varies | Varies | Varies | Varies |
| Filters | | | | |
| Type Furnished | Refer to "OAU Filter Guide" in "Appendix," p. 99 | Refer to "OAU Filter Guide" in "Appendix," p. 99 | Refer to "OAU Filter Guide" in "Appendix," p. 99 | Refer to "OAU Filter Guide" in "Appendix," p. 99 |
| Number Size Recommended | | | | |
| Refrigerant Charge, lb of R-410A | See Nameplate | See Nameplate | See Nameplate | See Nameplate |



General Data

Table 12. OAKD general data—cooling 12 to 20 tons high efficiency

| | 12 Tons Downflow | 15 Tons Downflow | 17 Tons Downflow | 20 Tons Downflow |
|--|--|--|--|--|
| | OAKD144A | OAKD180A | OAKD210A | OAKD240A |
| Cooling Performance | | | | |
| Gross Cooling Capacity, Btu (kW) | 147,514 (43.23) | 184,392 (54.04) | 208,973 (61.24) | 245,856 (72.05) |
| Nominal cfm (m ³ /h) | 1500–3000 (2549–5097) | 1875–3750 (3186–6371) | 2125–4250 (3610–7221) | 2500–5000 (4248–8495) |
| Compressor | | | | |
| Number | 2 | 2 | 2 | 2 |
| Type | Scroll | Scroll | Scroll | Scroll |
| Outdoor Coil | | | | |
| Type | High Performance | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 3/8 (9.5) | 3/8 (9.5) | 3/8 (9.5) | 3/8 (9.5) |
| Face Area, ft ² (m ²) | 24 (2.23) | 30 (2.79) | 38 (3.53) | 38 (3.53) |
| Rows | 2 | 3 | 3 | 3 |
| FPI | 12 | 12 | 12 | 12 |
| Indoor Coil | | | | |
| Type | High Performance | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) |
| Face Area, ft ² (m ²) | 9 (0.84) | 10 (0.93) | 15 (1.39) | 15 (1.39) |
| Rows | 6 | 6 | 6 | 6 |
| FPI | 12 | 12 | 12 | 12 |
| Refrigerant Control | TXV | TXV | TXV | TXV |
| Drain Connection Size, in. (mm) | 1 (25) | 1 (25) | 1 (25) | 1 (25) |
| Outdoor Fan | | | | |
| Type | Propeller | Propeller | Propeller | Propeller |
| Number Used | 2 | 3 | 3 | 3 |
| Diameter, in. (mm) | 24 (609.6) | 24 (609.6) | 24 (609.6) | 24 (609.6) |
| Drive Type | Direct | Direct | Direct | Direct |
| No. Speeds | 1 | 1 | 1 | 1 |
| CFM (m ³ /h) | 19,500 (33,131) | 19,500 (33,131) | 19,500 (33,131) | 19,500 (33,131) |
| Number Motors | 3 | 3 | 3 | 3 |
| Motor HP (kW), per motor | 1.0 (0.75) | 1.0 (0.75) | 1.0 (0.75) | 1.0 (0.75) |
| Motor RPM | 1140 | 1140 | 1140 | 1140 |
| Indoor Fan | | | | |
| Type | Backward Inclined | Backward Inclined | Backward Inclined | Backward Inclined |
| Number Used | 1 | 1 | 1 | 1 |
| Diameter | Varies | Varies | Varies | Varies |
| Drive Type | Direct Drive | Direct Drive | Direct Drive | Direct Drive |
| Number Motors | 1 | 1 | 1 | 1 |
| Motor HP (kW), Standard–Oversized | 1.0–5.0 (0.75–3.73) | 1.0–5.0 (0.75–3.73) | 1.0–7.5 (0.75–5.6) | 1.0–7.5 (0.75–5.6) |
| Motor RPM, Standard–Oversized | 1750–3500 | 1750–3500 | 1750–3500 | 1750–3500 |
| Motor Frame Size, Standard–Oversized | Varies | Varies | Varies | Varies |
| Filters | | | | |
| Type Furnished | Refer to "OAU Filter Guide" in "Appendix," p. 99 | Refer to "OAU Filter Guide" in "Appendix," p. 99 | Refer to "OAU Filter Guide" in "Appendix," p. 99 | Refer to "OAU Filter Guide" in "Appendix," p. 99 |
| Number Size Recommended | | | | |
| Refrigerant Charge, lb of R-410A | | | | |
| Downflow | See Nameplate | See Nameplate | See Nameplate | See Nameplate |

Table 13. OAKD general data—cooling 22 to 30 tons high efficiency

| | 22 Tons Downflow | 25 Tons Downflow | 30 Tons Downflow |
|--|--------------------------------|--------------------------------|--------------------------------|
| | OAKD264A | OAKD300A | OAKD360A |
| Cooling Performance | | | |
| Gross Cooling Capacity, Btu (kW) | 270,442 (79.26) | 307,320 (90.07) | 368,784 (108.08) |
| Nominal cfm (m ³ /h) | 2750–5500 (4692–9345) | 3125–6250 (5309–10619) | 3750–7500 (6371–12743) |
| Compressor | | | |
| Number | 2 | 2 | 2 |
| Type | Scroll | Scroll | Scroll |
| Outdoor Coil | | | |
| Type | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 3/8 (9.5) | 3/8 (9.5) | 3/8 (9.5) |
| Face Area, ft ² (m ²) | 38 (3.53) | 38 (3.53) | 38 (3.53) |
| Rows | 3 | 3 | 3 |
| FPI | 12 | 12 | 12 |
| Indoor Coil | | | |
| Type | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) |
| Face Area, ft ² (m ²) | 15 (1.39) | 20 (1.86) | 20 (1.86) |
| Rows | 6 | 6 | 6 |
| FPI | 12 | 12 | 12 |
| Refrigerant Control | TXV | TXV | TXV |
| Drain Connection Size, in. (mm) | 1 (25) | 1 (25) | 1 (25) |
| Outdoor Fan | | | |
| Type | Propeller | Propeller | Propeller |
| Number Used | 3 | 3 | 3 |
| Diameter, in. (mm) | 24 (609.6) | 24 (609.6) | 24 (609.6) |
| Drive Type | Direct | Direct | Direct |
| No. Speeds | 1 | 1 | 1 |
| CFM (m ³ /h) | 19,500 (33,131) | 19,500 (33,131) | 19,500 (33,131) |
| Number Motors | 3 | | |
| Motor HP (kW), per motor | 1.0 (0.75) | 1.0 (0.75) | 1.0 (0.75) |
| Motor RPM | 1140 | 1140 | 1140 |
| Indoor Fan | | | |
| Type | Backward Inclined | Backward Inclined | Backward Inclined |
| Number Used | 1 | 1 | 1 |
| Diameter | Varies | Varies | Varies |
| Drive Type | Direct Drive | Direct Drive | Direct Drive |
| Number Motors | 1 | 1 | 1 |
| Motor HP (kW), Standard–Oversized | 1.0–7.5 (0.75–5.6) | 1.0–15.0 (0.75–11.19) | 1.0–15.0 (0.75–11.19) |
| Motor RPM, Standard–Oversized | 1750–3500 | 1750–3500 | 1750–3500 |
| Motor Frame Size, Standard–Oversized | Varies | Varies | Varies |
| Filters | | | |
| Type Furnished | Refer to "OAU Filter Guide" in | Refer to "OAU Filter Guide" in | Refer to "OAU Filter Guide" in |
| Number Size Recommended | "Appendix," p. 99 | "Appendix," p. 99 | "Appendix," p. 99 |
| Refrigerant Charge, lb of R-410A | | | |
| Downflow | See Nameplate | See Nameplate | See Nameplate |



General Data

Table 14. OAKE general data—cooling 12 to 20 tons high efficiency

| | 12 Tons Downflow | 15 Tons Downflow | 17 Tons Downflow | 20 Tons Downflow |
|--|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| | OAKE144A | OAKE180A | OAKE210A | OAKE240A |
| Cooling Performance | | | | |
| Gross Cooling Capacity, Btu (kW) | 160,024 (46.90) | 189,076 (55.41) | 225,948 (66.22) | 258,766 (75.84) |
| Heating Performance | | | | |
| Gross Heating Capacity, Btu (kW) | 143,650 (42.10) | 185,800 (54.45) | 208,973 (61.24) | 244,186 (71.56) |
| CFM | | | | |
| Nominal cfm/AHRI rated cfm (m ³ /h) | 1500–3000 (2549–5097) | 1875–3750 (3186–6371) | 2125–4250 (3610–7221) | 2500–5000 (4248–8495) |
| Compressor | | | | |
| Number | 2 | 2 | 2 | 2 |
| Type | Scroll | Scroll | Scroll | Scroll |
| Outdoor Coil | | | | |
| Type | High Performance | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 3/8 (9.5) | 3/8 (9.5) | 1/2 (12.7) | 1/2 (12.7) |
| Face Area, ft ² (m ²) | 30 (2.79) | 30 (2.79) | 31 (2.88) | 31 (2.88) |
| Rows | 2 | 2 | 2 | 2 |
| FPI | 12 | 12 | 12 | 12 |
| Indoor Coil | | | | |
| Type | High Performance | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) |
| Face Area, ft ² (m ²) | 9 (0.84) | 10 (0.93) | 16 (1.49) | 16 (1.49) |
| Rows | 4 | 4 | 4 | 4 |
| FPI | 12 | 12 | 12 | 12 |
| Refrigerant Control | TXV | TXV | TXV | TXV |
| Drain Connection Size, in. (mm) | 1 (25.4) | 1 (25.4) | 1 (25.4) | 1 (25.4) |
| Outdoor Fan | | | | |
| Type | Propeller | Propeller | Propeller | Propeller |
| Number Used | 2 | 3 | 3 | 3 |
| Diameter, in. (mm) | 24 (609.6) | 24 (609.6) | 24 (609.6) | 24 (609.6) |
| Drive Type | Direct Drive | Direct Drive | Direct Drive | Direct Drive |
| No. Speeds | 1 | 1 | 1 | 1 |
| CFM (m ³ /h) | 19,500 (33,131) | 19,500 (33,131) | 19,500 (33,131) | 19,500 (33,131) |
| Number Motors | 3 | 3 | 3 | 3 |
| Motor HP (kW), per motor | 1.0 (0.75) | 1.0 (0.75) | 1.0 (0.75) | 1.0 (0.75) |
| Motor RPM | 1,140 | 1,140 | 1,140 | 1,140 |
| Indoor Fan | | | | |
| Type | Backward Inclined | Backward Inclined | Backward Inclined | Backward Inclined |
| Number Used | 1 | 1 | 1 | 1 |
| Diameter | Varies | Varies | Varies | Varies |
| Drive Type | Direct Drive | Direct Drive | Direct Drive | Direct Drive |
| Number Motors | 1 | 1 | 1 | 1 |
| Motor HP (kW), Standard–Oversized | 1–5.0 (0.75–3.73) | 1–5.0 (0.75–3.76) | 1–7.5 (0.75–5.59) | 1–7.5 (0.75–5.59) |
| Motor RPM, Standard–Oversized | 1750–3500 | 1750–3500 | 1750–3500 | 1750–3500 |
| Motor Frame Size, Standard–Oversized | Varies | Varies | Varies | Varies |
| Filters | | | | |
| Type Furnished | Refer to "OAU Filter Guide" in | Refer to "OAU Filter Guide" in | Refer to "OAU Filter Guide" in | Refer to "OAU Filter Guide" in |
| Number Size Recommended | "Appendix," p. 99 | "Appendix," p. 99 | "Appendix," p. 99 | "Appendix," p. 99 |
| Refrigerant Charge, lb of R-410A | | | | |
| Downflow | See Nameplate | See Nameplate | See Nameplate | See Nameplate |

Table 15. OAKE general data—cooling 22 to 30 tons high efficiency

| | 22 Tons Downflow | 25 Tons Downflow | 30 Tons Downflow |
|--|--------------------------------|--------------------------------|--------------------------------|
| | OAKE264A | OAKE300A | OAKE360A |
| Cooling Performance | | | |
| Gross Cooling Capacity, Btu (kW) | 285,822 (83.77) | 328,552 (96.29) | 360,016 (105.51) |
| Heating Performance | | | |
| Gross Heating Capacity, Btu (kW) | 259,134 (75.94) | 294,874 (86.42) | 321,576 (94.24) |
| CFM | | | |
| Nominal cfm/AHRI rated cfm (m ³ /h) | 2750–5500 (4672–9345) | 3125–6250 (5309–10619) | 3750–7500 (6371–12743) |
| Compressor | | | |
| Number | 2 | 2 | 2 |
| Type | Scroll | Scroll | Scroll |
| Outdoor Coil | | | |
| Type | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) |
| Face Area, ft ² (m ²) | 31 (2.88) | 38 (3.53) | 38 (3.53) |
| Rows | 2 | 2 | 2 |
| FPI | 12 | 12 | 12 |
| Indoor Coil | | | |
| Type | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) |
| Face Area, ft ² (m ²) | 16 (1.49) | 20 (1.86) | 20 (1.86) |
| Rows | 4 | 4 | 4 |
| FPI | 12 | 12 | 12 |
| Refrigerant Control | TXV | TXV | TXV |
| Drain Connection Size, in. (mm) | 1 (25.4) | 1 (25.4) | 1 (25.4) |
| Outdoor Fan | | | |
| Type | Propeller | Propeller | Propeller |
| Number Used | 3 | 3 | 3 |
| Diameter, in. (mm) | 24 (609.6) | 24 (609.6) | 24 (609.6) |
| Drive Type | Direct Drive | Direct Drive | Direct Drive |
| No. Speeds | 1 | 1 | 1 |
| CFM (m ³ /h) | 19,500 (33,131) | 19,500 (33,131) | 19,500 (33,131) |
| Number Motors | 3 | 3 | 3 |
| Motor HP (kW), per motor | 1.0 (0.75) | 1.0 (0.75) | 1.0 (0.75) |
| Motor RPM | 1,140 | 1,140 | 1,140 |
| Indoor Fan | | | |
| Type | Backward Inclined | Backward Inclined | Backward Inclined |
| Number Used | 1 | 1 | 1 |
| Diameter | Varies | Varies | Varies |
| Drive Type | Direct Drive | Direct Drive | Direct Drive |
| Number Motors | 1 | 1 | 1 |
| Motor HP (kW), Standard–Oversized | 1–7.5 (0.75–5.59) | 1.0–15.0 (0.75–11.19) | 1.0–15.0 (0.75–11.19) |
| Motor RPM, Standard–Oversized | 1750–3500 | 1750–3500 | 1750–3500 |
| Motor Frame Size, Standard–Oversized | Varies | Varies | Varies |
| Filters | | | |
| Type Furnished | Refer to "OAU Filter Guide" in | Refer to "OAU Filter Guide" in | Refer to "OAU Filter Guide" in |
| Number Size Recommended | "Appendix," p. 99 | "Appendix," p. 99 | "Appendix," p. 99 |
| Refrigerant Charge, lb of R-410A | | | |
| Downflow | See Nameplate | See Nameplate | See Nameplate |



General Data

Table 16. OAND general data—cooling 30 to 40 tons high efficiency

| | 30 Tons Downflow | 35 Tons Downflow | 40 Tons Downflow |
|--|--------------------------------|--------------------------------|--------------------------------|
| | OAND360A | OAND420A | OAND480A |
| Cooling Performance | | | |
| Gross Cooling Capacity, Btu (kW) | 368,784 (108.08) | 430,248 (126.09) | 491,712 (144.11) |
| Nominal cfm (m ³ /h) | 3750–7500 (6371–12743) | 4375–8750 (7433–14866) | 5000–10000 (8495–16990) |
| Compressor | | | |
| Number | 2 | 3 | 3 |
| Type | Scroll | Scroll | Scroll |
| Outdoor Coil | | | |
| Type | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 3/8 (9.5) | 3/8 (9.5) | 3/8 (9.5) |
| Face Area, ft ² (m ²) | 48 (4.46) | 53 (4.92) | 63 (5.85) |
| Rows | 2 | 3 | 3 |
| FPI | 12 | 12 | 12 |
| Indoor Coil | | | |
| Type | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) |
| Face Area, ft ² (m ²) | 23 (2.14) | 23 (2.14) | 29 (2.69) |
| Rows | 6 | 6 | 6 |
| FPI | 12 | 12 | 12 |
| Refrigerant Control | TXV | TXV | TXV |
| Drain Connection Size, in. (mm) | 1-1/4 (32) | 1-1/4 (32) | 1-1/4 (32) |
| Outdoor Fan | | | |
| Type | Propeller | Propeller | Propeller |
| Number Used | 4 | 4 | 4 |
| Diameter, in. (mm) | 24 | 24 | 24 |
| Drive Type | Direct Drive | Direct Drive | Direct Drive |
| No. Speeds | 1 | 1 | 1 |
| CFM (m ³ /h) | 26,000 (44,174) | 26,000 (44,174) | 26,000 (44,174) |
| Number Motors | 4 | 4 | 4 |
| Motor HP (kW), per motor | 1.0 (0.75) | 1.0 (0.75) | 1.0 (0.75) |
| Motor RPM | 1140 | 1140 | 1140 |
| Indoor Fan | | | |
| Type | Backward Inclined | Backward Inclined | Backward Inclined |
| Number Used | 1 | 1 | 1 or 2 |
| Diameter | Varies | Varies | Varies |
| Drive Type | Direct Drive | Direct Drive | Direct Drive |
| Number Motors | 1 | 1 | 1 or 2 |
| Motor HP (kW), Standard–Oversized | 1.5–15 (1.12–11.19) | 1.5–15 (1.12–11.19) | 2.0–15 (1.49–11.19) |
| Motor RPM, Standard–Oversized | 1750–3500 | 1750–3500 | 1750–3500 |
| Motor Frame Size, Standard–Oversized | Varies | Varies | Varies |
| Filters | | | |
| Type Furnished | Refer to "OAU Filter Guide" in | Refer to "OAU Filter Guide" in | Refer to "OAU Filter Guide" in |
| Number Size Recommended | "Appendix," p. 99 | "Appendix," p. 99 | "Appendix," p. 99 |
| Refrigerant Charge, lb of R-410A | | | |
| Downflow | See Nameplate | See Nameplate | See Nameplate |

Table 17. OAND general data—cooling 45 to 54 tons high efficiency

| | 45 Tons Downflow | 50 Tons Downflow | 54 Tons Downflow |
|--|--------------------------------|--------------------------------|--------------------------------|
| | OAND540A | OAND600A | OAND648A |
| Cooling Performance | | | |
| Gross Cooling Capacity, Btu (kW) | 553,176 (162.12) | 614,640 (180.13) | 663,811 (194.54) |
| Nominal cfm (m ³ /h) | 5625–11250 (9557–19114) | 6250–12500 (10619–21238) | 6750–13500 (11468–22937) |
| Compressor | | | |
| Number | 3 | 4 | 4 |
| Type | Scroll | Scroll | Scroll |
| Outdoor Coil | | | |
| Type | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 3/8 (9.5) | 3/8 (9.5) | 3/8 (9.5) |
| Face Area, ft ² (m ²) | 63 (5.85) | 63 (5.85) | 63 (5.85) |
| Rows | 4 | 4 | 4 |
| FPI | 12 | 12 | 12 |
| Indoor Coil | | | |
| Type | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) |
| Face Area, ft ² (m ²) | 29 (2.69) | 29 (2.69) | 29 (2.69) |
| Rows | 6 | 6 | 6 |
| FPI | 12 | 12 | 12 |
| Refrigerant Control | TXV | TXV | TXV |
| Drain Connection Size, in. (mm) | 1-1/4 (32) | 1-1/4 (32) | 1-1/4 (32) |
| Outdoor Fan | | | |
| Type | Propeller | Propeller | Propeller |
| Number Used | 4 | 4 | 4 |
| Diameter, in. (mm) | 24 (609.6) | 24 (609.6) | 24 (609.6) |
| Drive Type | Direct | Direct | Direct |
| No. Speeds | 1 | 1 | 1 |
| CFM (m ³ /h) | 26,000 (44,174) | 26,000 (44,174) | 26,000 (44,174) |
| Number Motors | 4 | 4 | 4 |
| Motor HP (kW), per motor | 1.0 (0.75) | 1.0 (0.75) | 1.0 (0.75) |
| Motor RPM | 1140 | 1140 | 1140 |
| Indoor Fan | | | |
| Type | Backward Inclined | Backward Inclined | Backward Inclined |
| Number Used | 1 or 2 | 1 or 2 | 1 or 2 |
| Diameter | Varies | Varies | Varies |
| Drive Type | Direct Drive | Direct Drive | Direct Drive |
| Number Motors | 1 or 2 | 1 or 2 | 1 or 2 |
| Motor HP (kW), Standard–Oversized | 2.0–15 (1.49–11.19) | 3.0–15 (2.24–11.19) | 3.0–15 (2.24–11.19) |
| Motor RPM, Standard–Oversized | 1750–3500 | 1750–3500 | 1750–3500 |
| Motor Frame Size, Standard–Oversized | Varies | Varies | Varies |
| Filters | | | |
| Type Furnished | Refer to "OAU Filter Guide" in | Refer to "OAU Filter Guide" in | Refer to "OAU Filter Guide" in |
| Number Size Recommended | "Appendix," p. 99 | "Appendix," p. 99 | "Appendix," p. 99 |
| Refrigerant Charge, lb of R-410A | | | |
| Downflow | See Nameplate | See Nameplate | See Nameplate |



General Data

Table 18. OANE general data—cooling 30 to 40 tons high efficiency

| | 30 Tons Downflow | 35 Tons Downflow | 40 Tons Downflow |
|--|--------------------------------|--------------------------------|--------------------------------|
| | OANE360A | OANE420A | OANE480A |
| Cooling Performance | | | |
| Gross Cooling Capacity, Btu (kW) | 379,546 (111.23) | 451,733 (132.39) | 491,044 (143.91) |
| Heating Performance | | | |
| Gross Heating Capacity, Btu (kW) | 361,914 (106.07) | 406,655 (119.18) | 450,153 (131.93) |
| CFM | | | |
| Nominal cfm/AHRI rated cfm (m ³ /h) | 3750–7500 (6371–12743) | 4375–8750 (7433–14866) | 5000–10000 (8495–16990) |
| Compressor | | | |
| Number | 2 | 3 | 3 |
| Type | Scroll | Scroll | Scroll |
| Outdoor Coil | | | |
| Type | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) |
| Face Area, ft ² (m ²) | 50 (4.65) | 62 (5.76) | 62 (5.76) |
| Rows | 2 | 2 | 2 |
| FPI | 12 | 12 | 12 |
| Indoor Coil | | | |
| Type | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) |
| Face Area, ft ² (m ²) | 22 (2.04) | 28 (2.60) | 28 (2.60) |
| Rows | 4 | 4 | 4 |
| FPI | 12 | 12 | 12 |
| Refrigerant Control | TXV | TXV | TXV |
| Drain Connection Size, in. (mm) | 1-1/4 (31.8) | 1-1/4 (31.8) | 1-1/4 (31.8) |
| Outdoor Fan | | | |
| Type | Propeller | Propeller | Propeller |
| Number Used | 4 | 4 | 4 |
| Diameter, in. (mm) | 24 (609.6) | 24 (609.6) | 24 (609.6) |
| Drive Type | Direct Drive | Direct Drive | Direct Drive |
| No. Speeds | 1 | 1 | 1 |
| CFM (m ³ /h) | 26,000 (44,174) | 26,000 (44,174) | 26,000 (44,174) |
| Number Motors | 4 | 4 | 4 |
| Motor HP (kW), per motor | 1.0 (0.75) | 1.0 (0.75) | 1.0 (0.75) |
| Motor RPM | 1,140 | 1,140 | 1,140 |
| Indoor Fan | | | |
| Type | Backward Inclined | Backward Inclined | Backward Inclined |
| Number Used | 1 | 1 | 1 or 2 |
| Diameter | Varies | Varies | Varies |
| Drive Type | Direct Drive | Direct Drive | Direct Drive |
| Number Motors | 1 | 1 | 1 or 2 |
| Motor HP (kW), Standard–Oversized | 1.5–15 (1.12–11.19) | 1.5–15 (1.12–11.19) | 2.0–15 (1.49–11.19) |
| Motor RPM, Standard–Oversized | 1750–3500 | 1750–3500 | 1750–3500 |
| Motor Frame Size, Standard–Oversized | Varies | Varies | Varies |
| Filters | | | |
| Type Furnished | Refer to "OAU Filter Guide" in | Refer to "OAU Filter Guide" in | Refer to "OAU Filter Guide" in |
| Number Size Recommended | "Appendix," p. 99 | "Appendix," p. 99 | "Appendix," p. 99 |
| Refrigerant Charge, lb of R-410A | | | |
| Downflow | See Nameplate | See Nameplate | See Nameplate |

Table 19. OANE general data—cooling 45 to 54 tons high efficiency

| | 45 Tons Downflow | 50 Tons Downflow | 55 Tons Downflow |
|--|--------------------------------|--------------------------------|--------------------------------|
| | OANE540A | OANE600A | OANE648A |
| Cooling Performance | | | |
| Gross Cooling Capacity, Btu (kW) | 543,223 (159.20) | 611,624 (179.25) | 663,300 (194.39) |
| Heating Performance | | | |
| Gross Heating Capacity, Btu (kW) | 489,302 (143.40) | 555,346 (162.76) | 598,432 (175.38) |
| CFM | | | |
| Nominal cfm/AHRI rated cfm (m ³ /h) | 5625–11250 (9557–19114) | 6250–12500 (10619–21238) | 6750–13500 (11468–22937) |
| Compressor | | | |
| Number | 3 | 4 | 4 |
| Type | Scroll | Scroll | Scroll |
| Outdoor Coil | | | |
| Type | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) |
| Face Area, ft ² (m ²) | 62 (5.76) | 63 (5.85) | 63 (5.85) |
| Rows | 2 | 2 | 2 |
| FPI | 12 | 12 | 12 |
| Indoor Coil | | | |
| Type | High Performance | High Performance | High Performance |
| Tube Size—OD, in. (mm) | 1/2 (12.7) | 1/2 (12.7) | 1/2 (12.7) |
| Face Area, ft ² (m ²) | 28 (2.60) | 28 (2.60) | 28 (2.60) |
| Rows | 4 | 4 | 4 |
| FPI | 12 | 12 | 12 |
| Refrigerant Control | TXV | TXV | TXV |
| Drain Connection Size, in. (mm) | 1-1/4 (31.8) | 1-1/4 (31.8) | 1-1/4 (31.8) |
| Outdoor Fan | | | |
| Type | Propeller | Propeller | Propeller |
| Number Used | 4 | 4 | 4 |
| Diameter, in. (mm) | 24 (609.6) | 24 (609.6) | 24 (609.6) |
| Drive Type | Direct Drive | Direct Drive | Direct Drive |
| No. Speeds | 1 | 1 | 1 |
| CFM (m ³ /h) | 26,000 (44,174) | 26,000 (44,174) | 26,000 (44,174) |
| Number Motors | 4 | 4 | 4 |
| Motor HP (kW), per motor | 1.0 (0.75) | 1.0 (0.75) | 1.0 (0.75) |
| Motor RPM | 1,140 | 1,140 | 1,140 |
| Indoor Fan | | | |
| Type | Backward Inclined | Backward Inclined | Backward Inclined |
| Number Used | 1 or 2 | 1 or 2 | 1 or 2 |
| Diameter | Varies | Varies | Varies |
| Drive Type | Direct Drive | Direct Drive | Direct Drive |
| Number Motors | 1 or 2 | 1 or 2 | 1 or 2 |
| Motor HP (kW), Standard–Oversized | 2.0–15 (1.49–11.19) | 3.0–15 (2.24–11.19) | 3.0–15 (2.24–11.19) |
| Motor RPM, Standard–Oversized | 1750–3500 | 1750–3500 | 1750–3500 |
| Motor Frame Size, Standard–Oversized | Varies | Varies | Varies |
| Filters | | | |
| Type Furnished | Refer to "OAU Filter Guide" in | Refer to "OAU Filter Guide" in | Refer to "OAU Filter Guide" in |
| Number Size Recommended | "Appendix," p. 99 | "Appendix," p. 99 | "Appendix," p. 99 |
| Refrigerant Charge, lb of R-410A | | | |
| Downflow | See Nameplate | See Nameplate | See Nameplate |

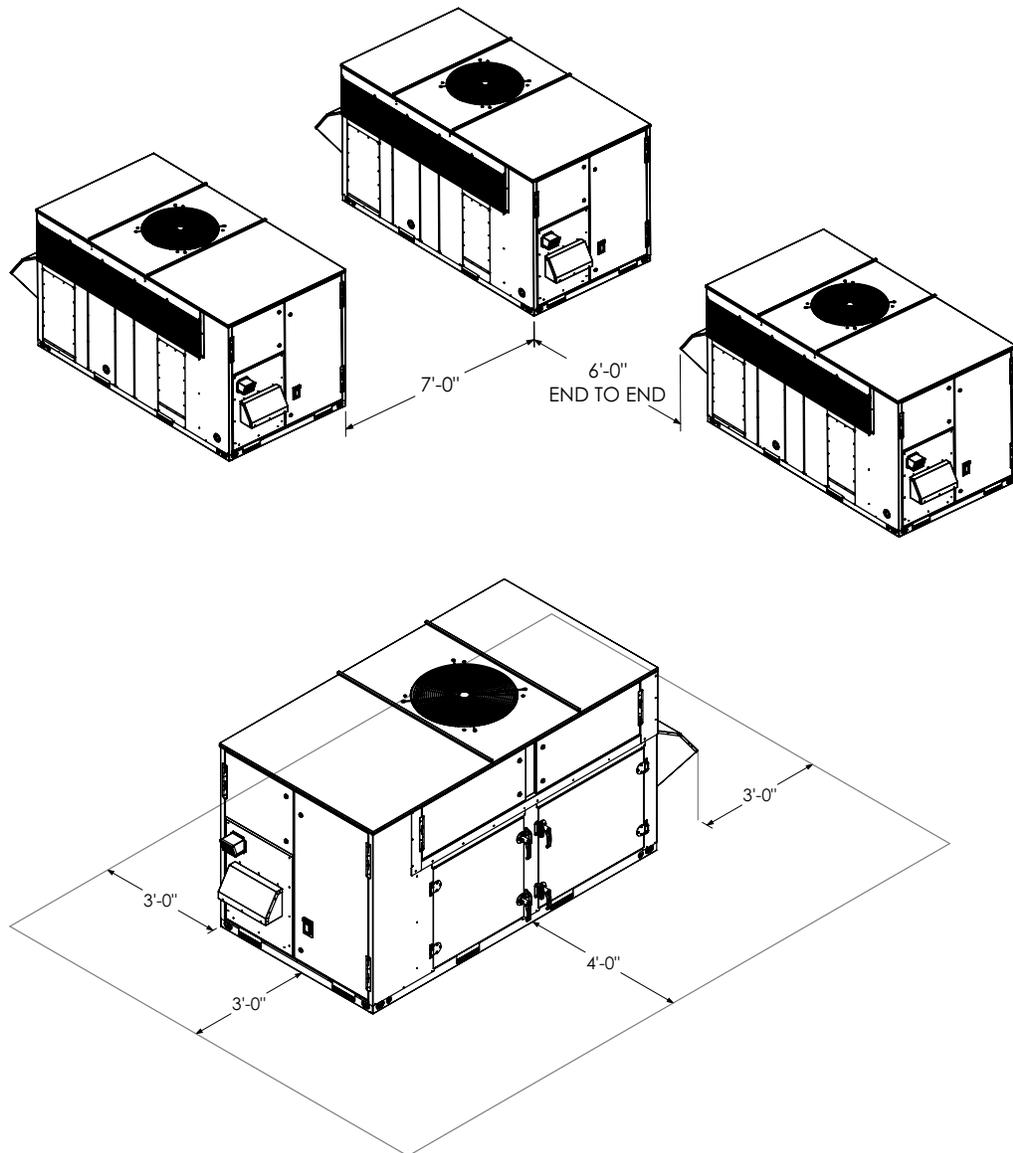


Unit Clearances, Curb Dimensions, and Dimensional Data

Indirect-fired OAB Units

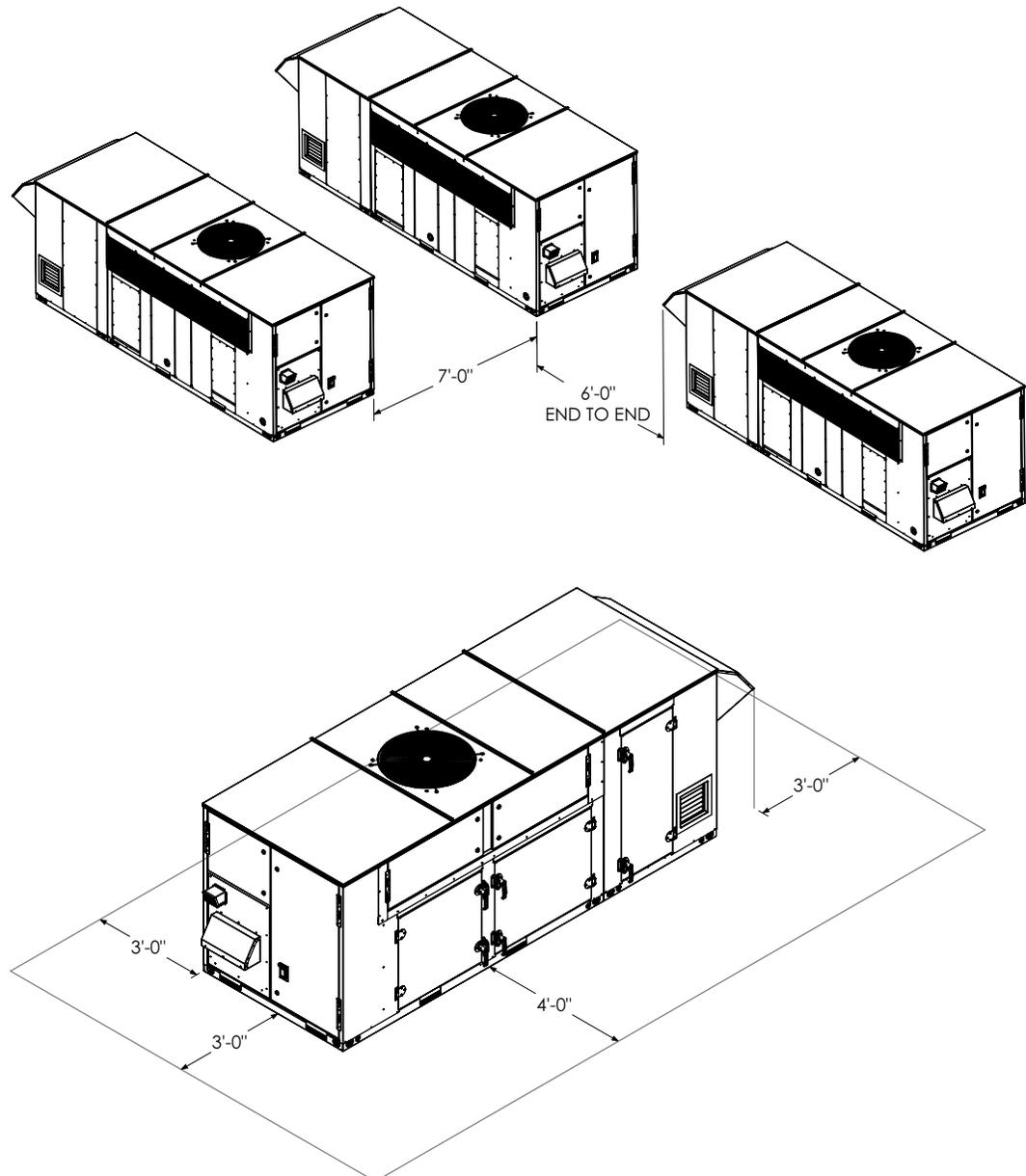
Unit Clearances

Figure 13. Typical installation clearances for indirect-fired OAB unit

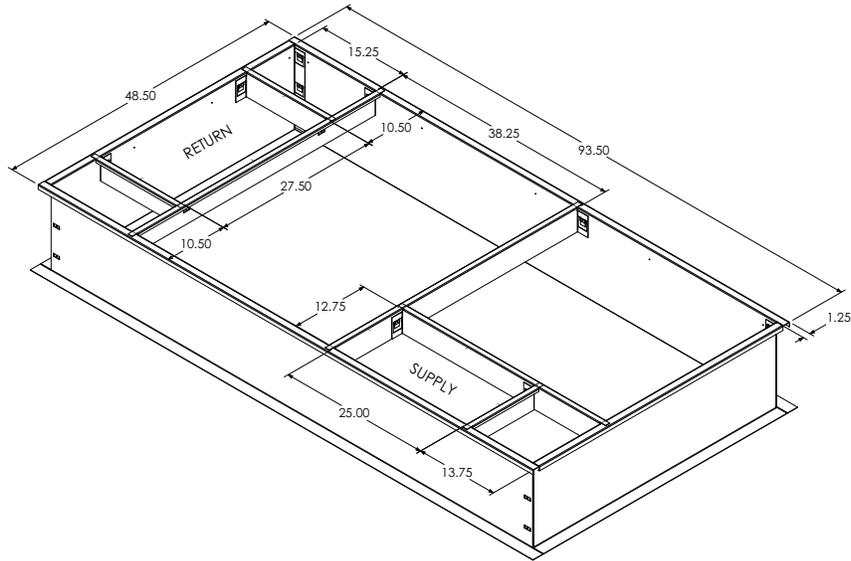
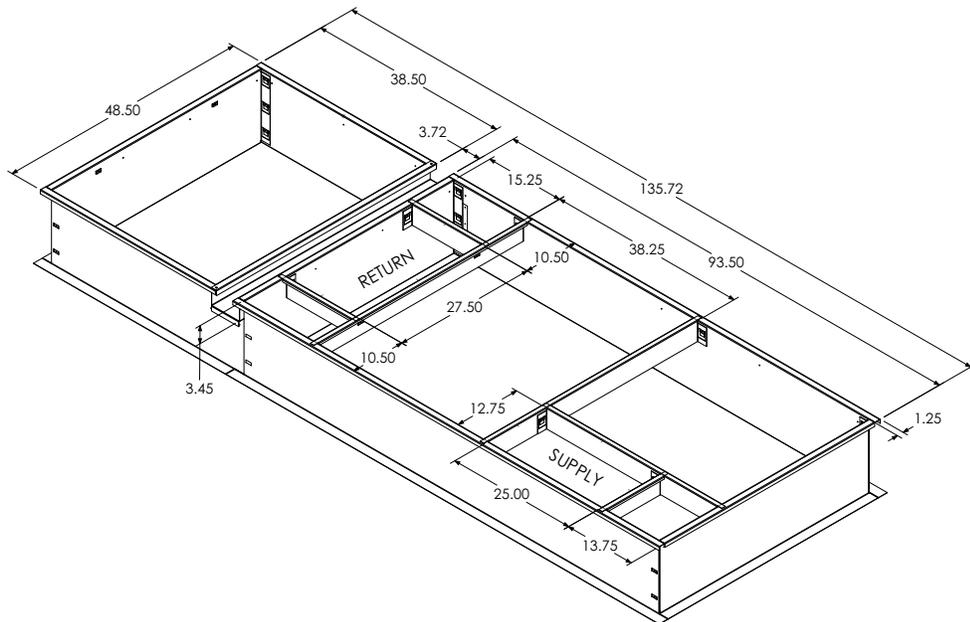


Unit Clearances, Curb Dimensions, and Dimensional Data

Figure 14. Typical installation clearances for indirect-fired OAB unit with auxiliary cabinet



Note: Certain options require auxiliary cabinet. Refer to project-specific unit submittals.

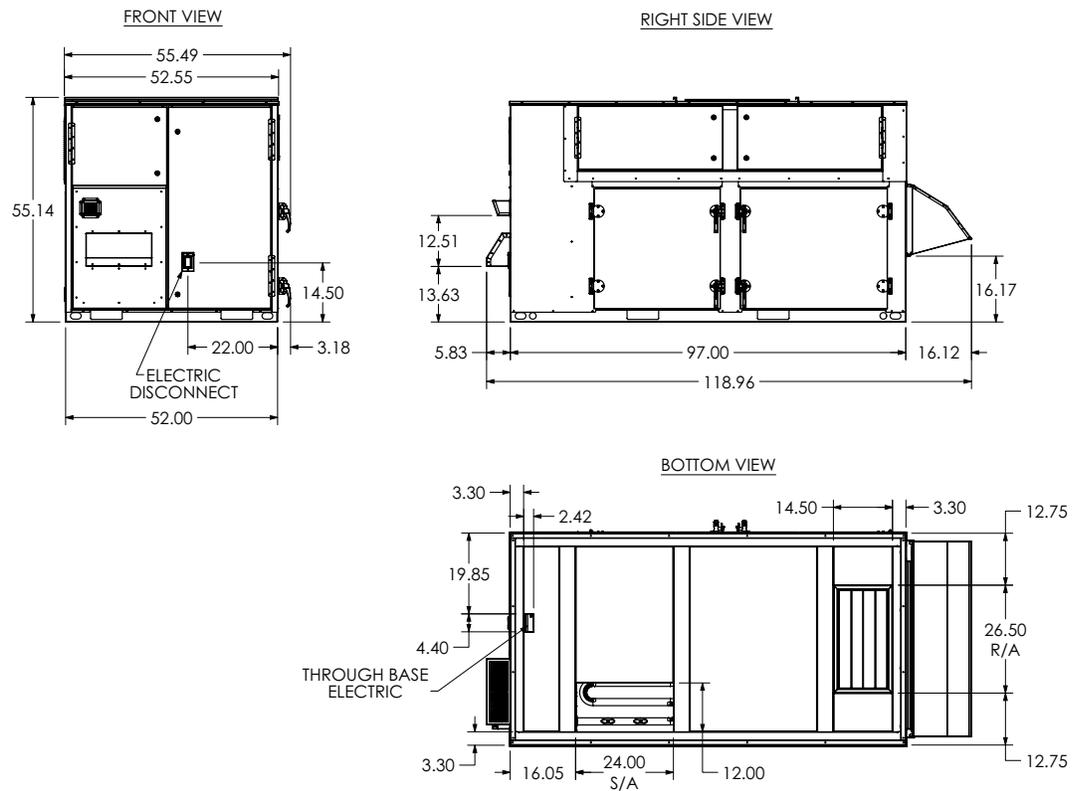
Curb Dimensions
Figure 15. Unit curb data for indirect-fired OAB 3–9 tons

Figure 16. Unit curb data for indirect-fired OAB 3–9 tons with auxiliary cabinet


Note: Certain options require auxiliary cabinet. Refer to project-specific unit submittals.

Unit Clearances, Curb Dimensions, and Dimensional Data

Dimensional Data

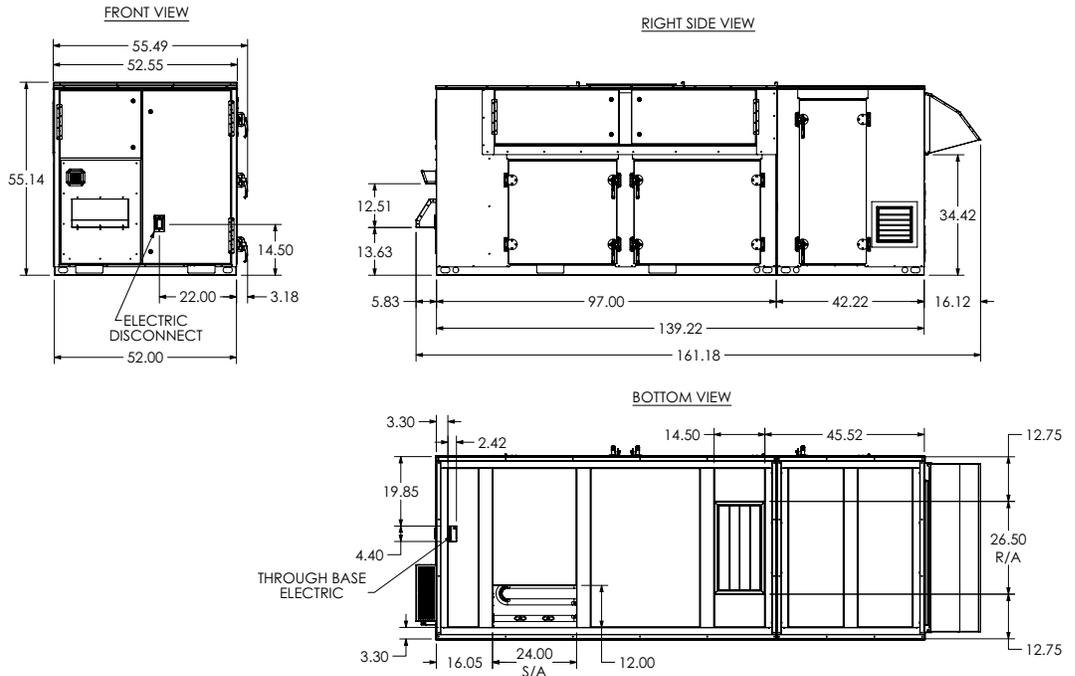
Figure 17. Unit dimensional data for indirect-fired OAB 3–9 tons (in.)



Note: Sound attenuation package will add 17.76 in. to the height of the condenser fan section. Refer to project-specific unit submittals.

Unit Clearances, Curb Dimensions, and Dimensional Data

Figure 18. Unit dimensional data for indirect-fired OAB 3–9 tons with auxiliary cabinet (in.)



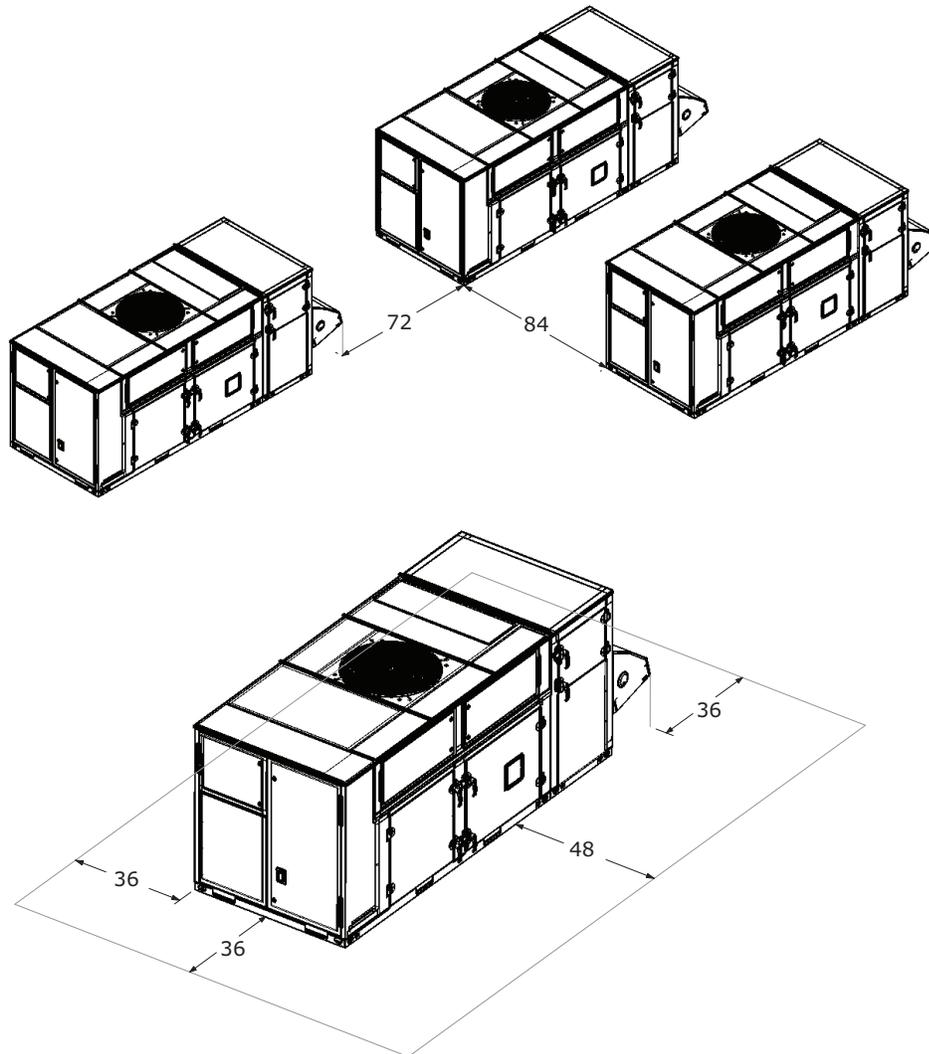
Notes:

- Certain options require auxiliary cabinet. Refer to project-specific unit submittals.
- Horizontal supply/return option does not change overall unit dimensions for the OAB cabinet.
- Sound attenuation package will add 17.76 in. to the height of the condenser fan section. Refer to project-specific unit submittals.

Direct-fired OAB Units

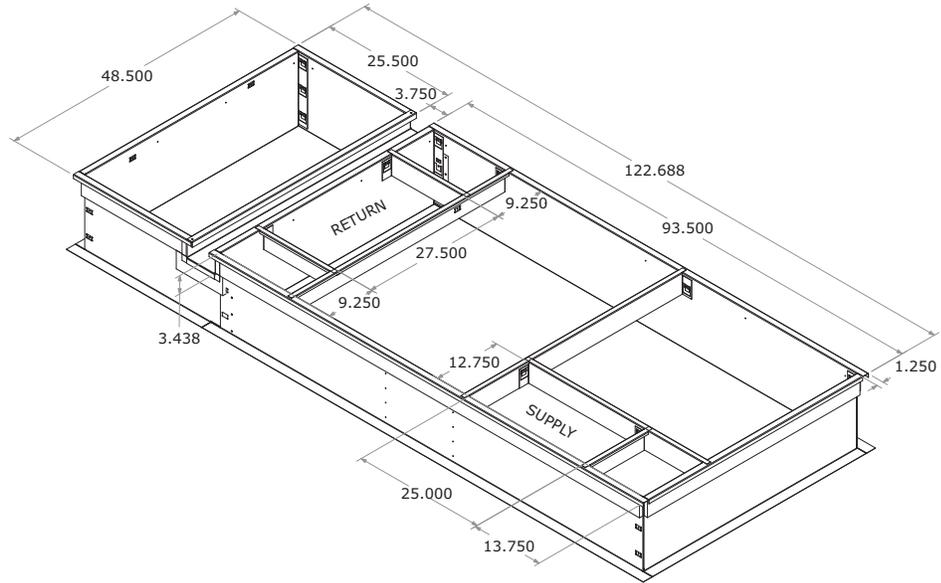
Unit Clearances

Figure 19. Typical installation clearances for direct-fired OAB unit (in.)



Curb Dimensions

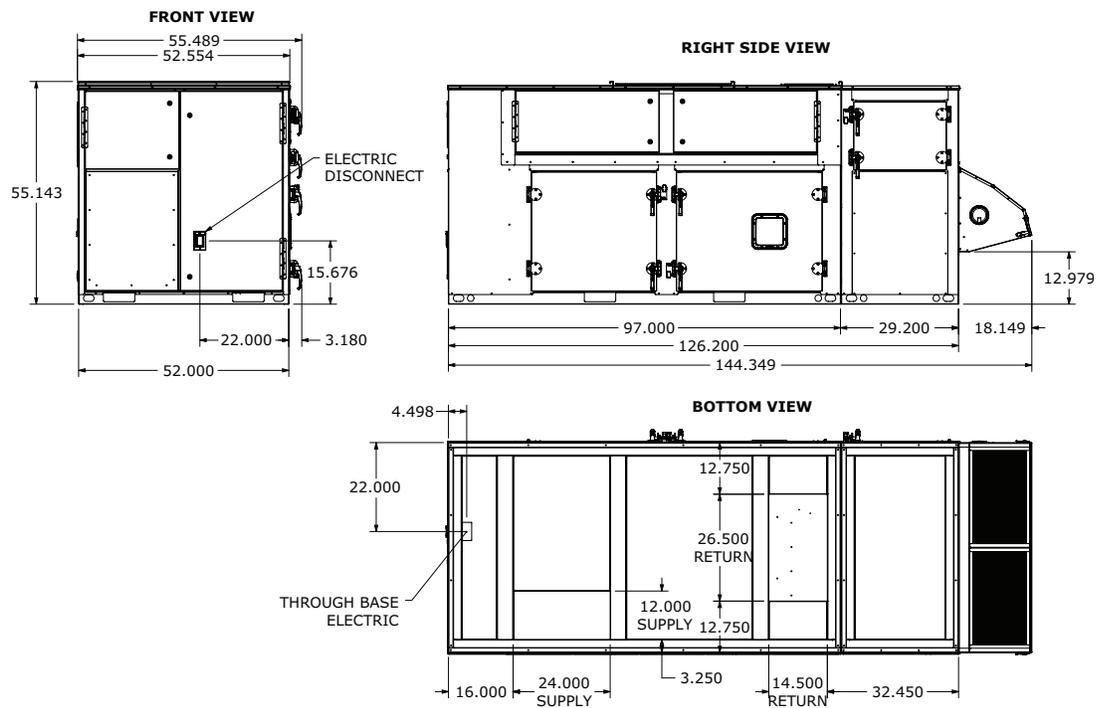
Figure 20. Unit curb data for direct-fired OAB 3-9 tons (in.)



Unit Clearances, Curb Dimensions, and Dimensional Data

Dimensional Data

Figure 21. Unit dimensional data for direct-fired OAB 3–9 tons (in.)

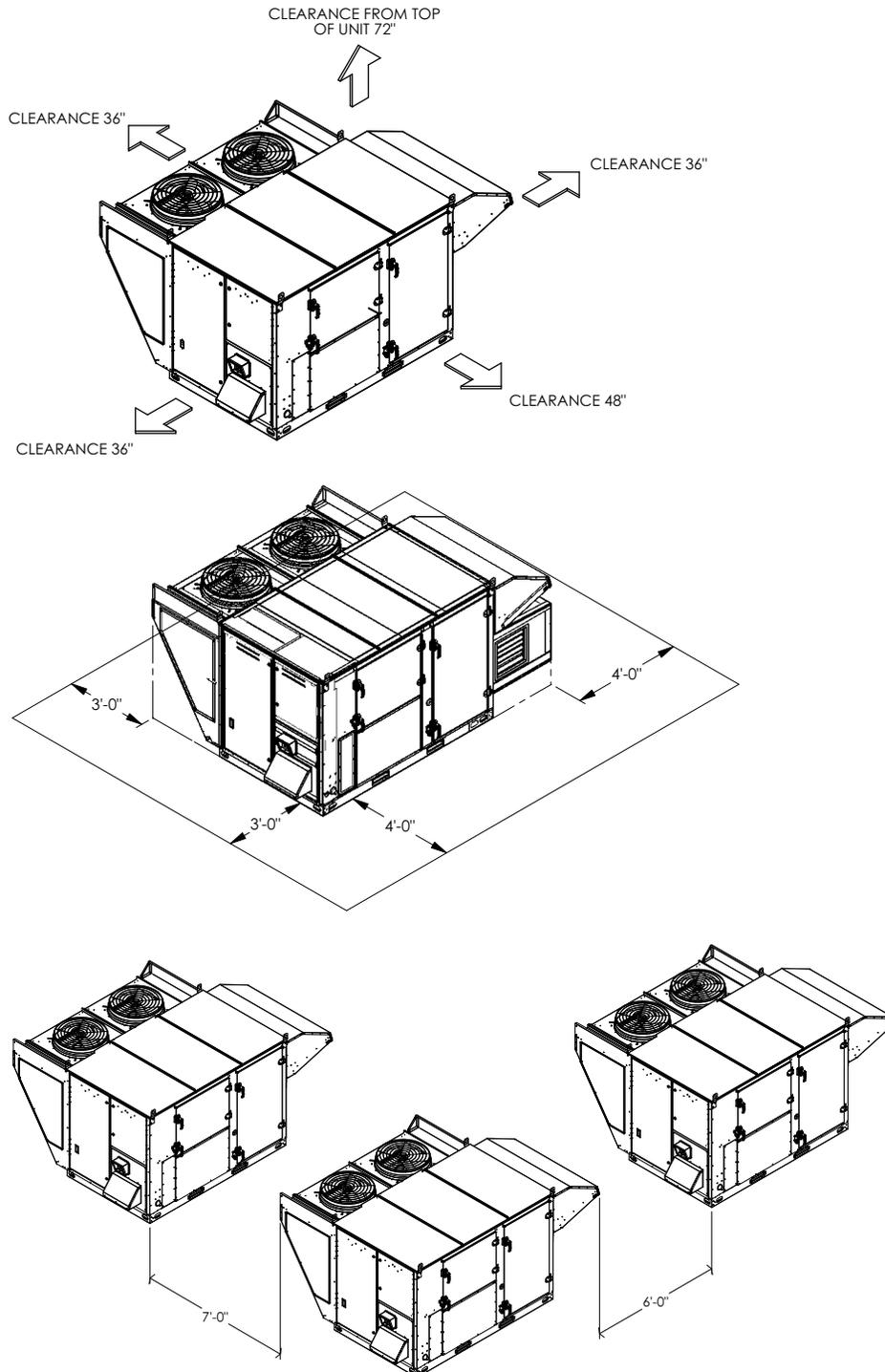


Note: Sound attenuation package will add 17.76 in. to the height of the condenser fan section. Refer to project-specific unit submittals.

OAD Units

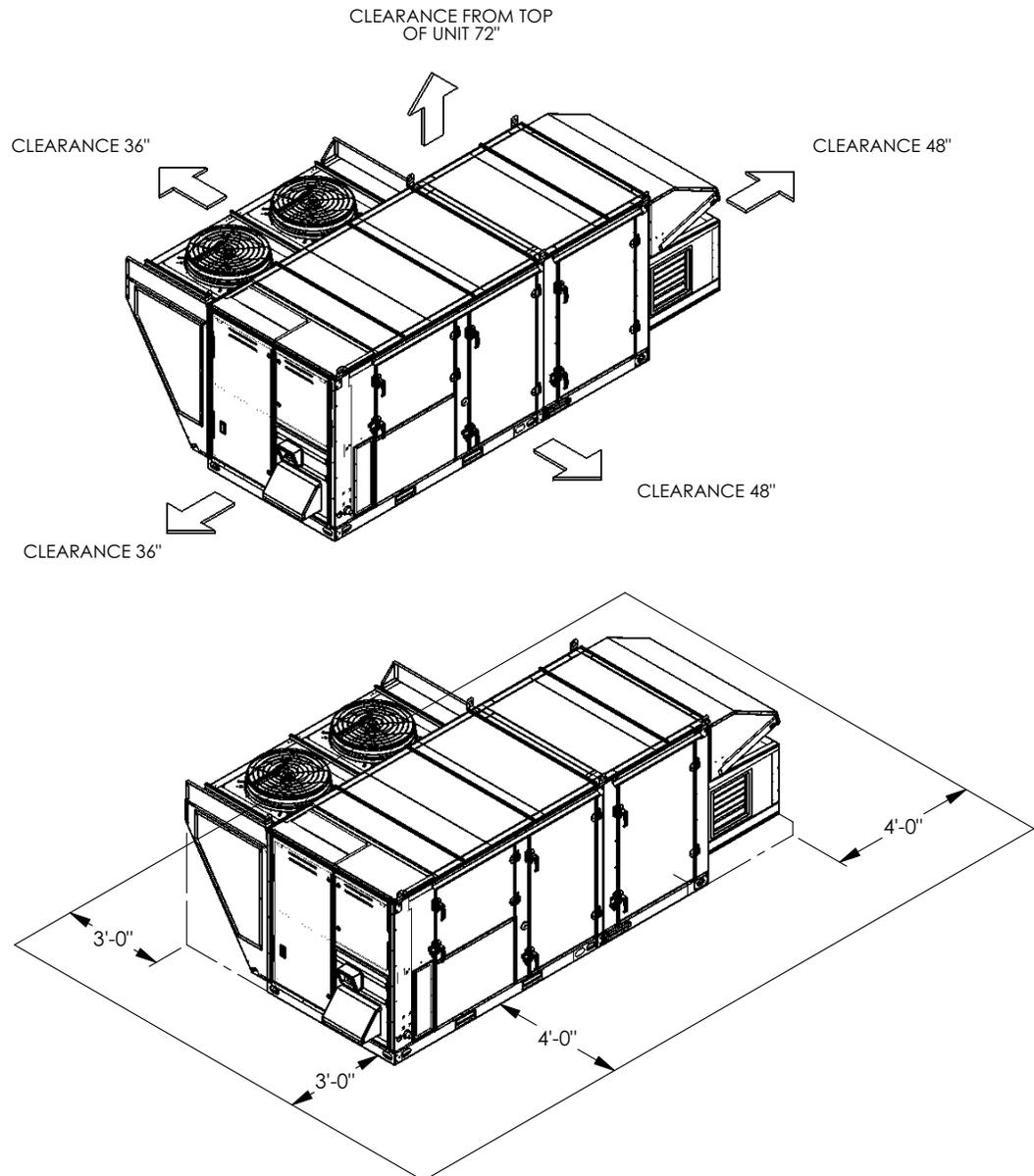
Unit Clearances

Figure 22. Typical installation clearances for OAD unit



Unit Clearances, Curb Dimensions, and Dimensional Data

Figure 23. Typical installation clearances for OAD unit with auxiliary cabinet



Note: Certain options require auxiliary cabinet. Refer to project-specific unit submittals.

Curb Dimensions

Figure 24. Unit curb data for OAD 5–15 tons

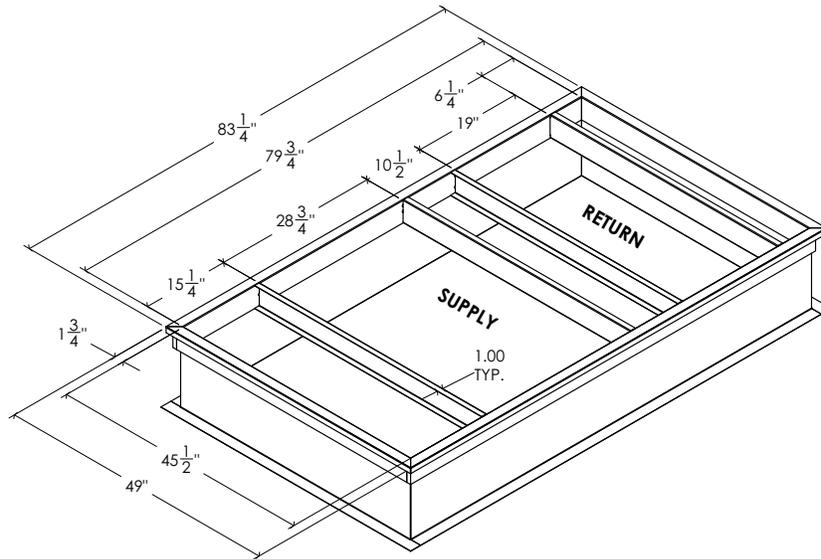
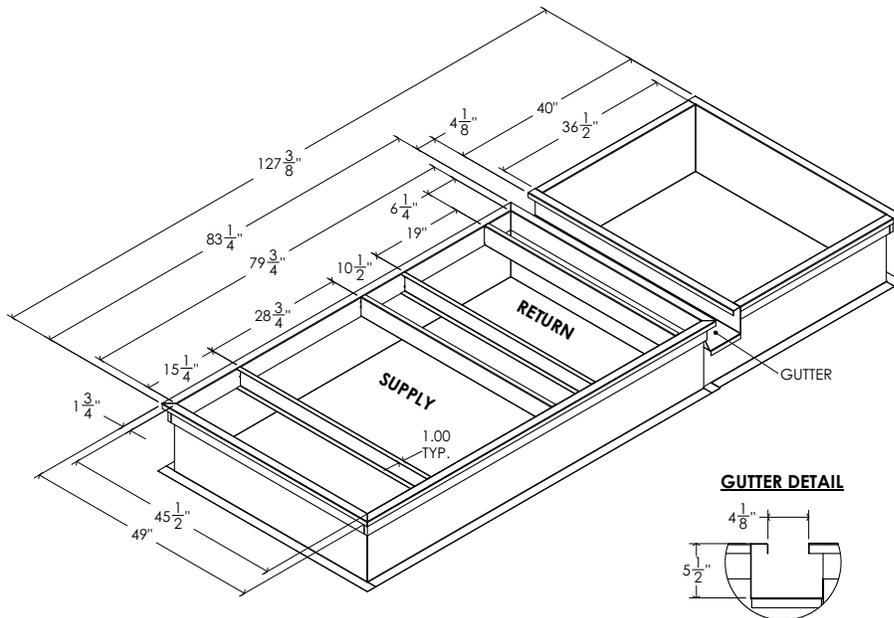


Figure 25. Unit curb data for OAD 5–15 tons with auxiliary cabinet



Note: Certain options require auxiliary cabinet. Refer to project-specific unit submittals.

Dimensional Data

Figure 26. Unit dimensional data for OAD 5–15 tons, vertical supply and vertical/no return without ERV (in.)

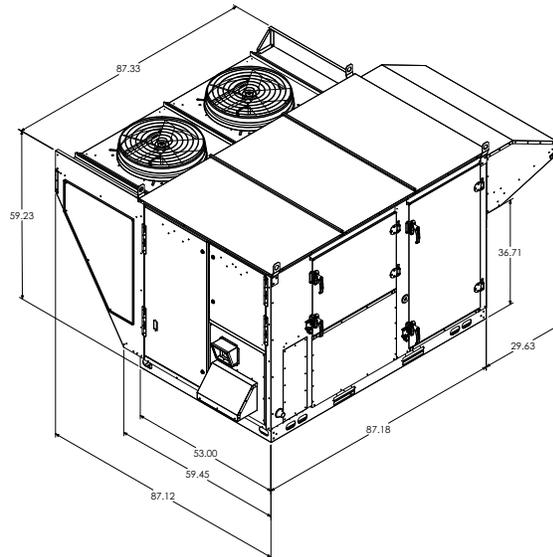
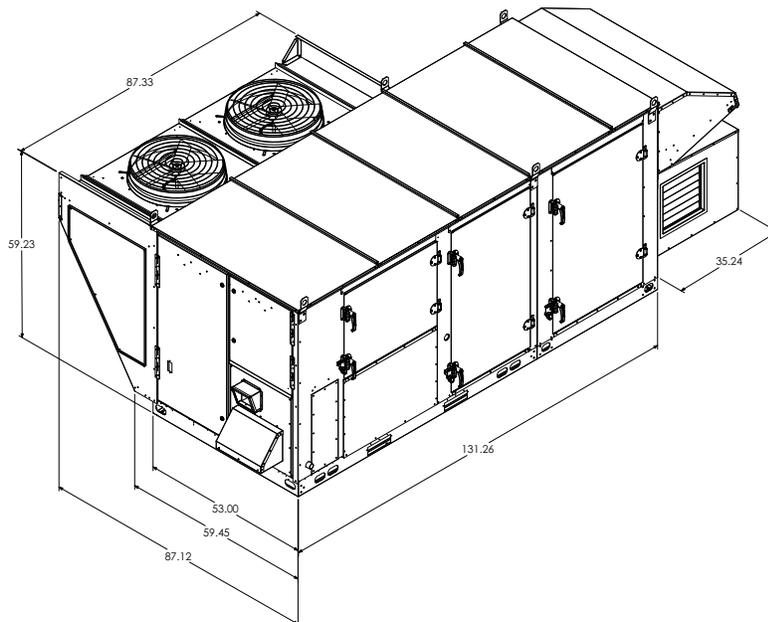


Figure 27. Unit dimensional data for OAD 5–15 tons with auxiliary cabinet, vertical supply and vertical return with ERV (in.)

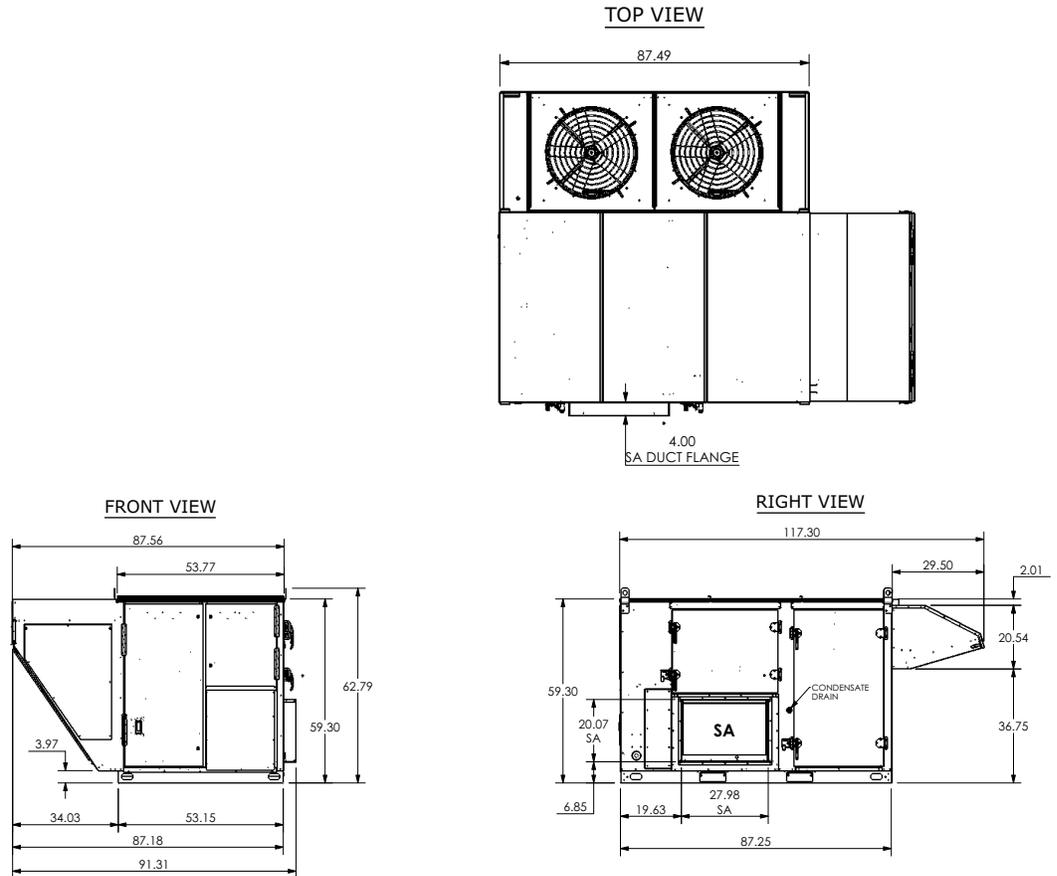


Notes:

- Certain options require auxiliary cabinet. Refer to project-specific unit submittals.
- Sound attenuation package will add 10.79 in. to the height of the condenser fan section. Refer to project-specific unit submittals.

Unit Clearances, Curb Dimensions, and Dimensional Data

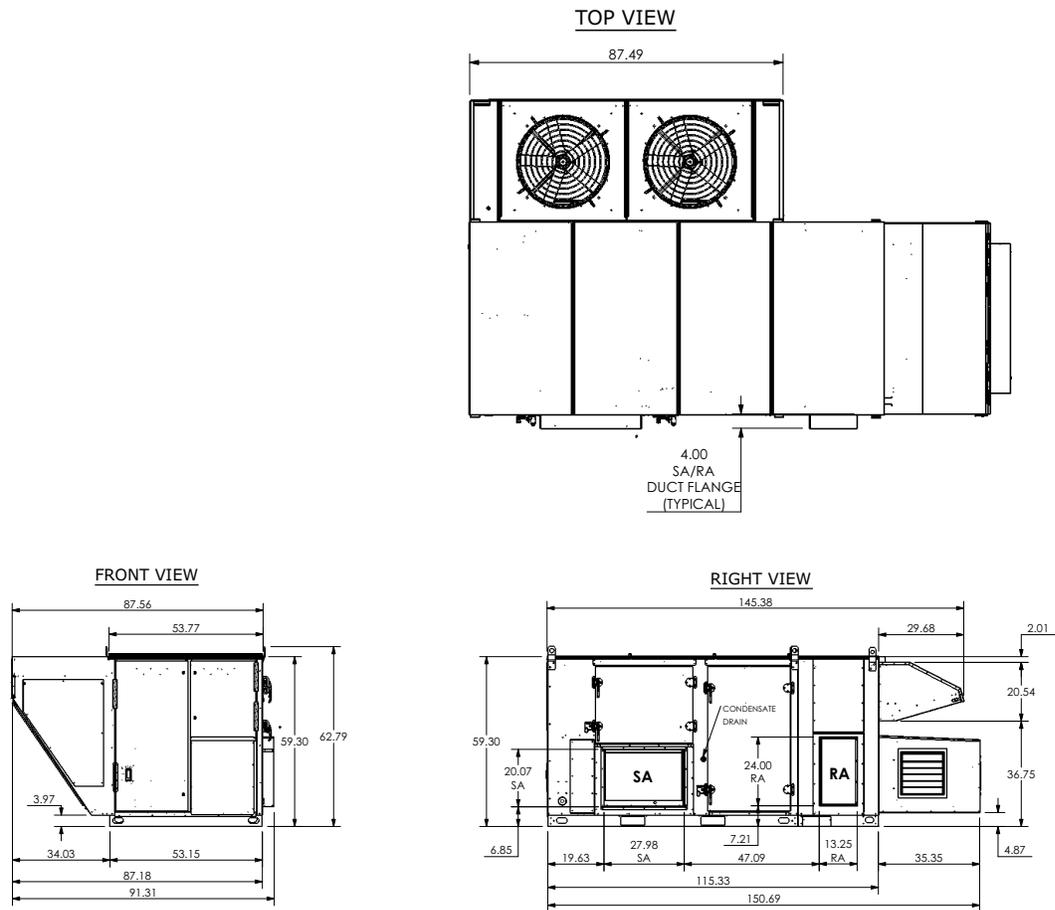
Figure 28. Unit dimensional data for OAD 5–15 tons, horizontal supply and vertical/no return (in.)



Note: Sound attenuation package will add 10.79 in. to the height of the condenser fan section. Refer to project-specific unit submittals.

Unit Clearances, Curb Dimensions, and Dimensional Data

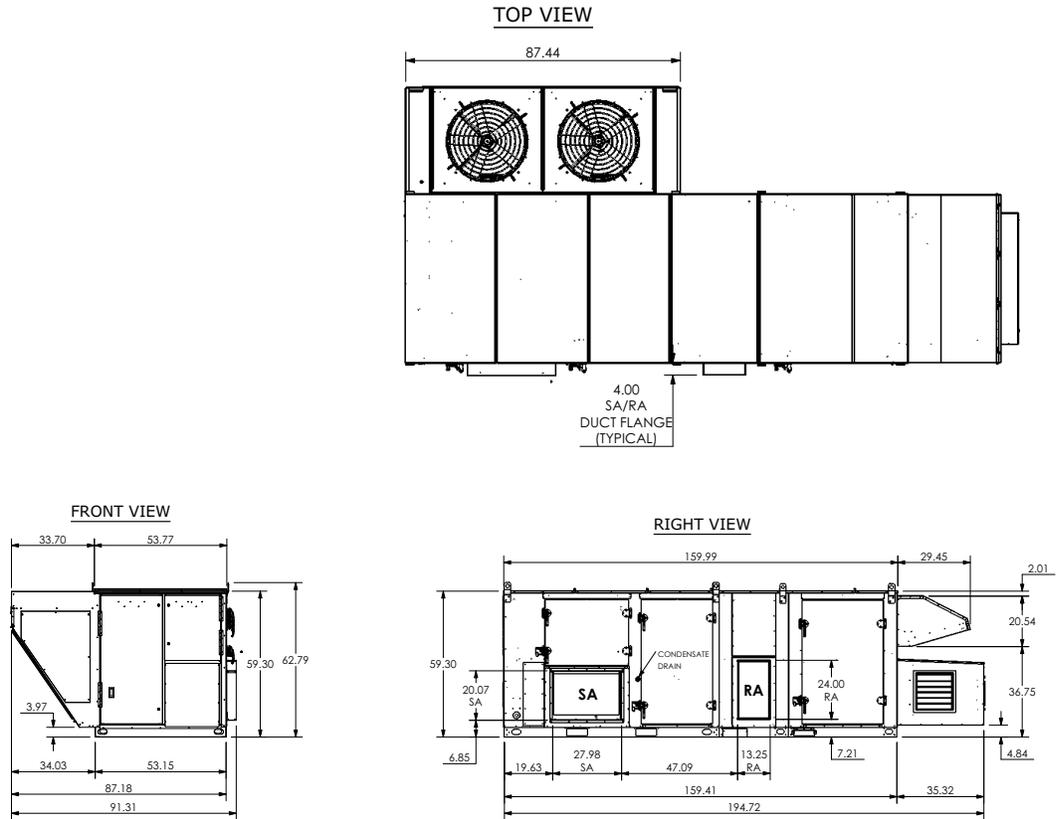
Figure 29. Unit dimensional data for OAD 5–15 tons, horizontal supply and horizontal return with optional exhaust fan (in.)



Note: Sound attenuation package will add 10.79 in. to the height of the condenser fan section. Refer to project-specific unit submittals.

Unit Clearances, Curb Dimensions, and Dimensional Data

Figure 30. Unit dimensional data for OAD 5–15 tons, horizontal supply and horizontal return with ERV (in.)

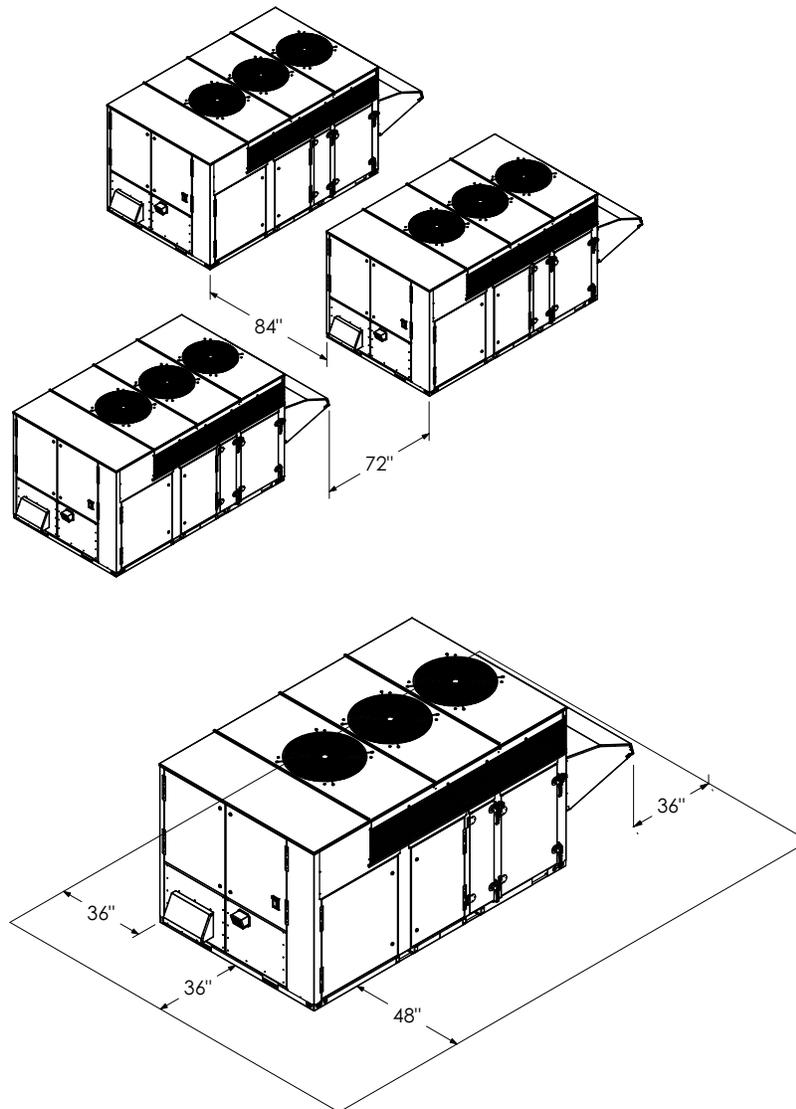


Note: Sound attenuation package will add 10.79 in. to the height of the condenser fan section. Refer to project-specific unit submittals.

Indirect-Fired OAG Units

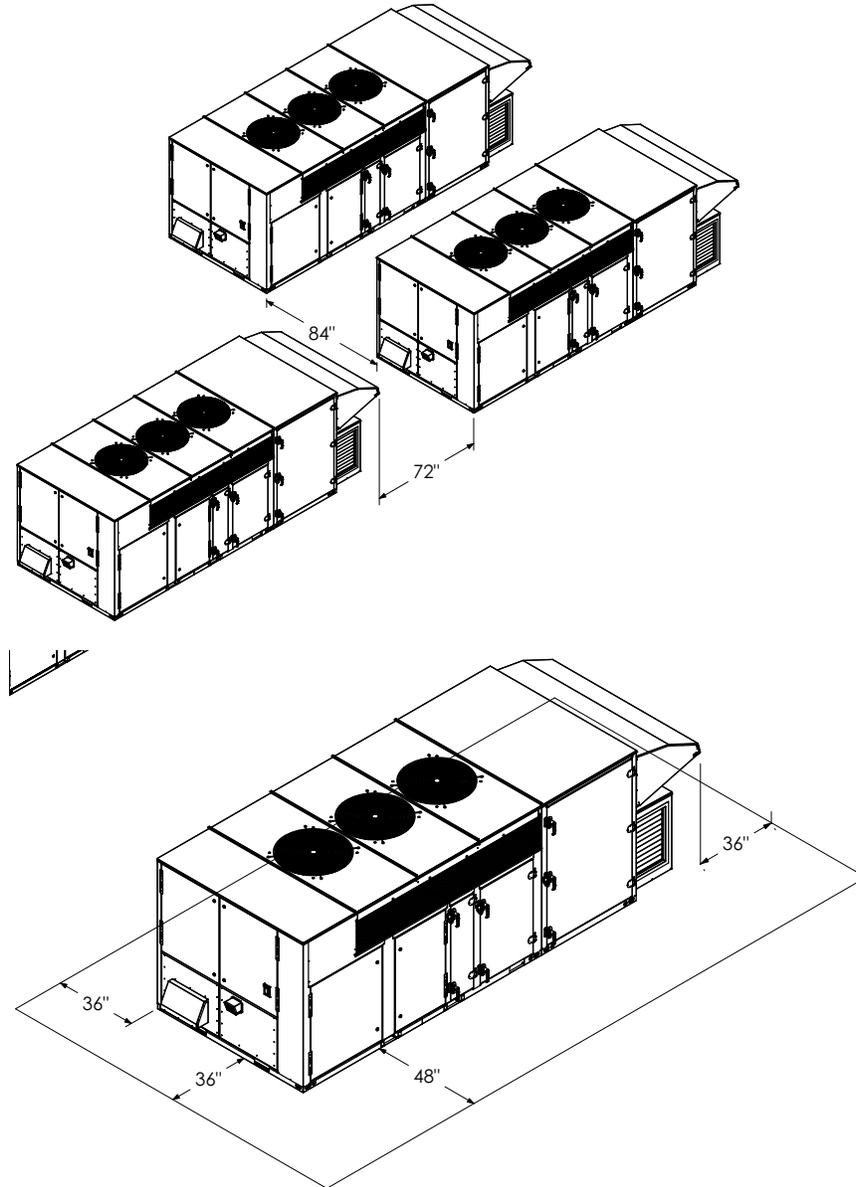
Unit Clearances

Figure 31. Typical installation clearances for indirect-fired OAG unit



Unit Clearances, Curb Dimensions, and Dimensional Data

Figure 32. Typical installation clearances for indirect-fired OAG unit with auxiliary cabinet



Note: Certain options require auxiliary cabinet. Refer to project-specific unit submittals.

Curb Dimensions

Figure 33. Unit curb data for indirect-fired OAG (in.)

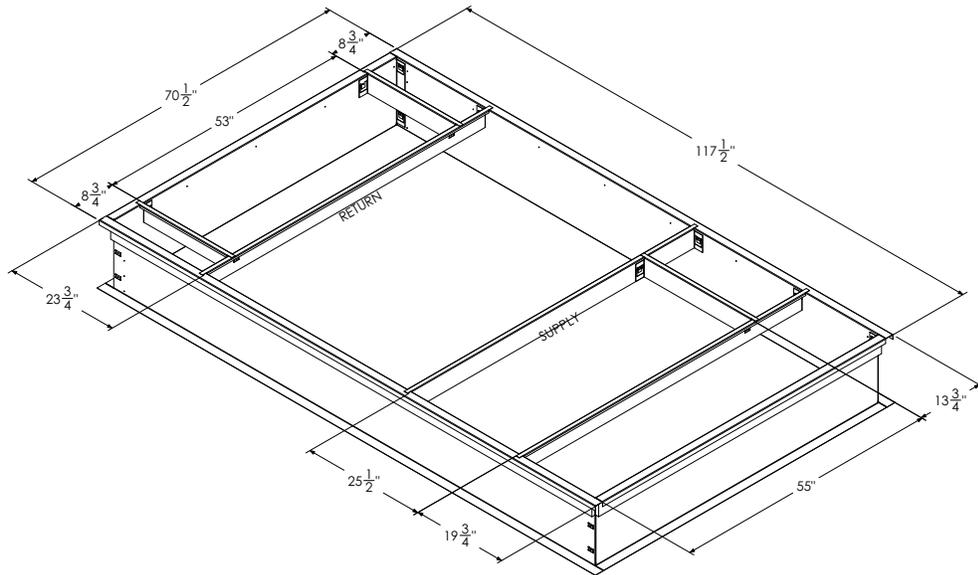
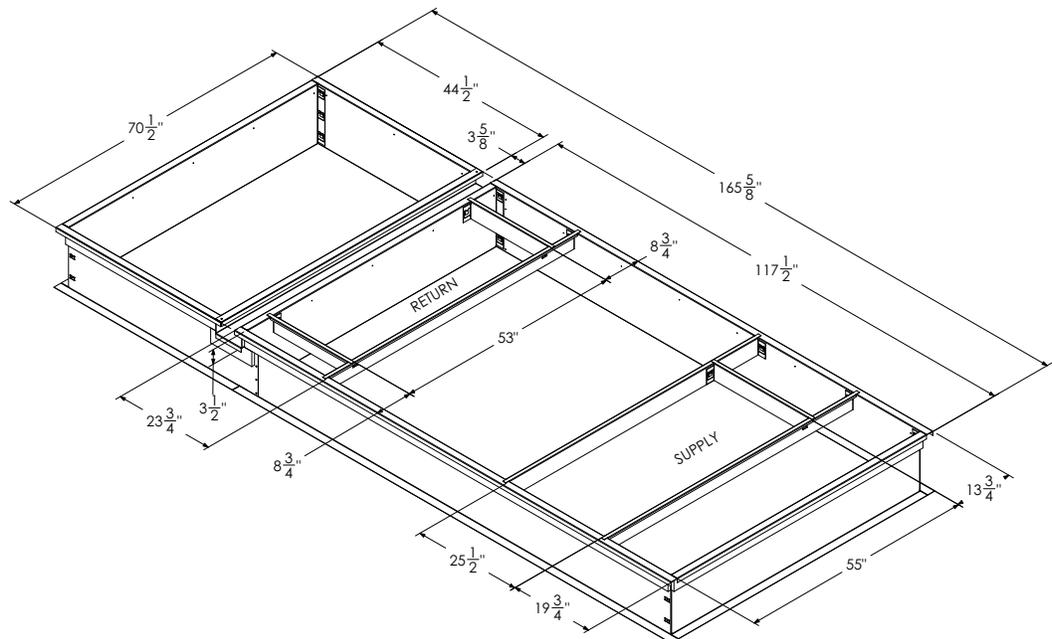


Figure 34. Unit curb data for indirect-fired OAG with auxiliary cabinet (in.)



Note: Certain options require auxiliary cabinet. Refer to project-specific unit submittals.

Dimensional Data

Figure 35. Unit dimensional data for indirect-fired OAG

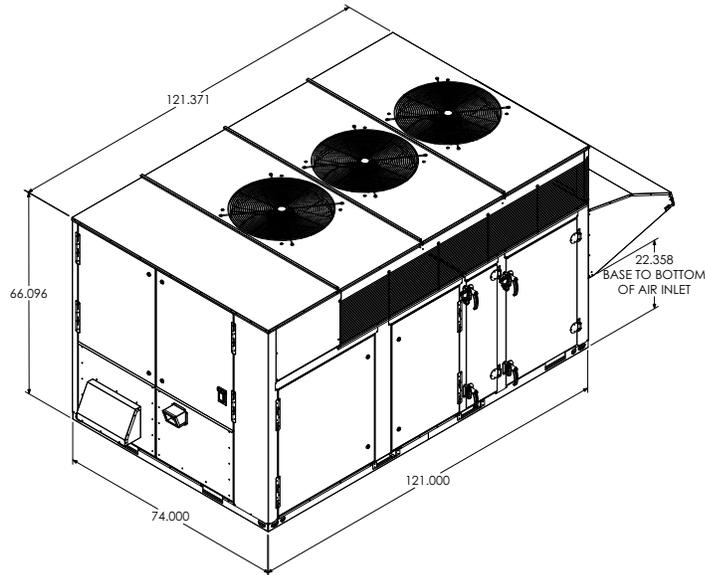
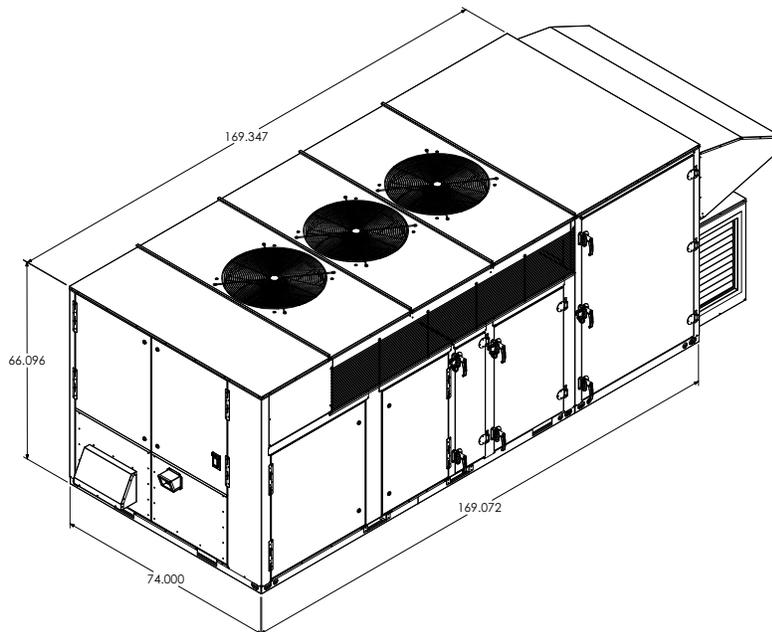


Figure 36. Unit dimensional data for indirect-fired OAG with auxiliary cabinet



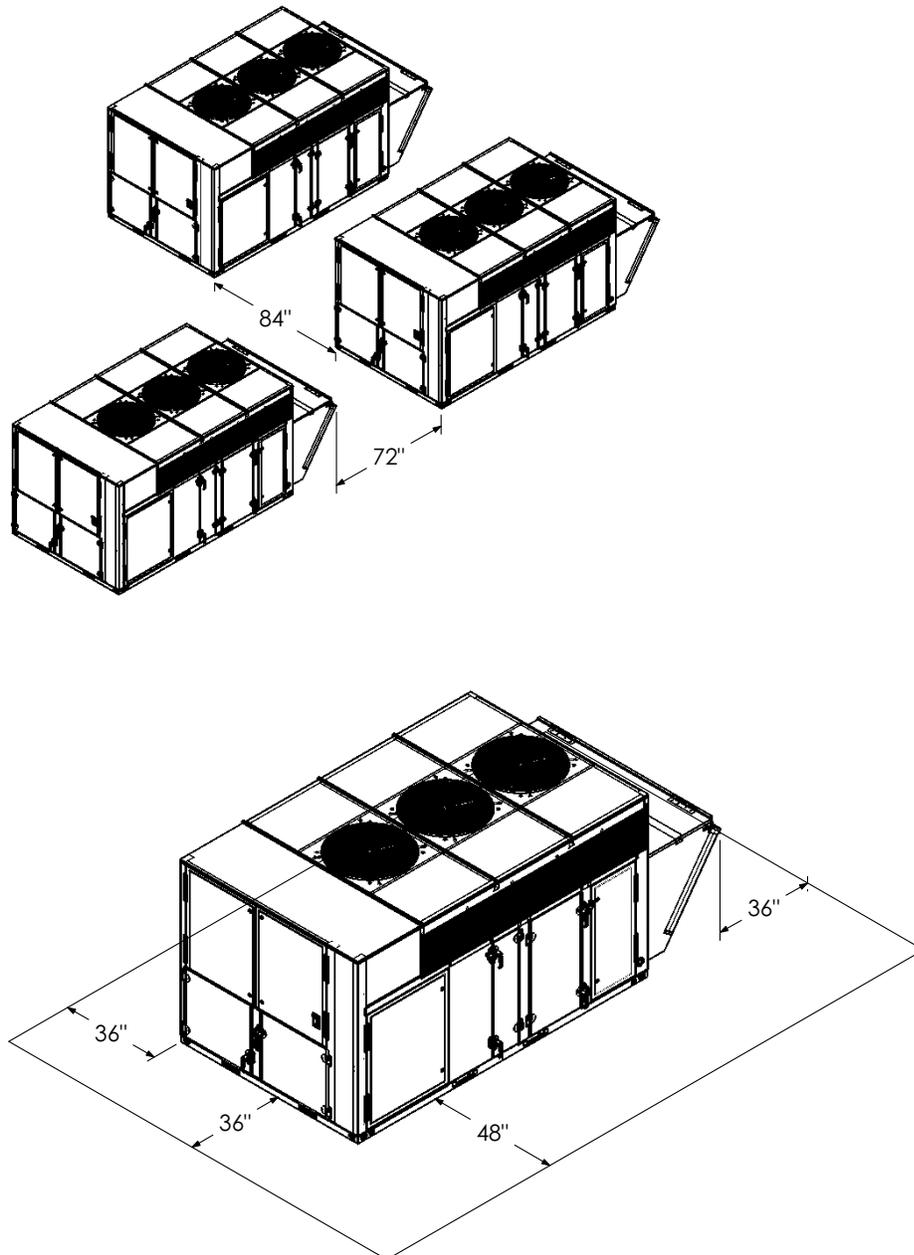
Notes:

- Certain options require auxiliary cabinet. Refer to project-specific unit submittals.
- Horizontal supply/return option does not change overall unit dimensions for the OAG cabinet.
- Sound attenuation package will add 18.7 in. to the height of the condenser fan section. Refer to project-specific unit submittals.

Direct-Fired OAG Units

Unit Clearances

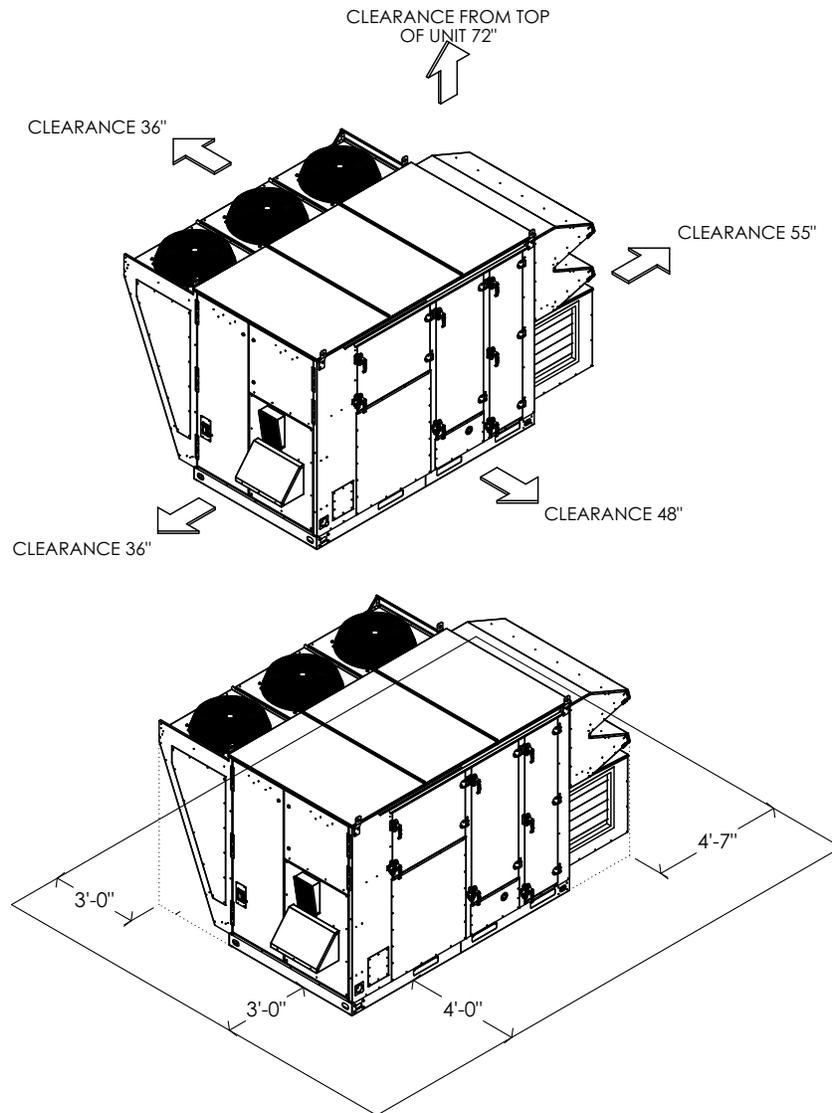
Figure 37. Typical installation clearances for direct-fired OAG unit



OAK Units

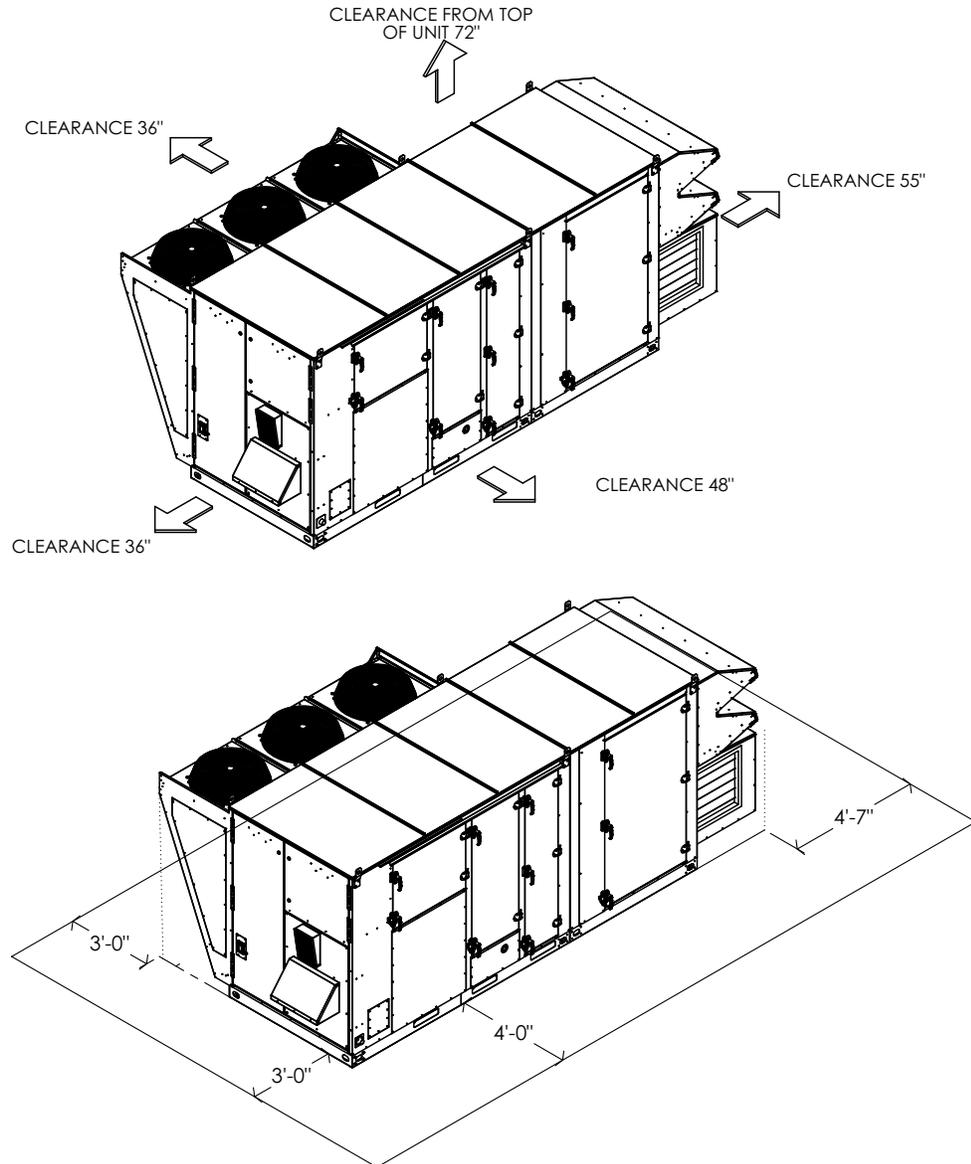
Unit Clearances

Figure 40. Typical installation clearances for OAK unit



Unit Clearances, Curb Dimensions, and Dimensional Data

Figure 41. Typical installation clearances for OAK unit with auxiliary cabinet



Note: Certain options require auxiliary cabinet. Refer to project-specific unit submittals.

Unit Clearances, Curb Dimensions, and Dimensional Data

Figure 42. Typical installation clearances for OAK unit

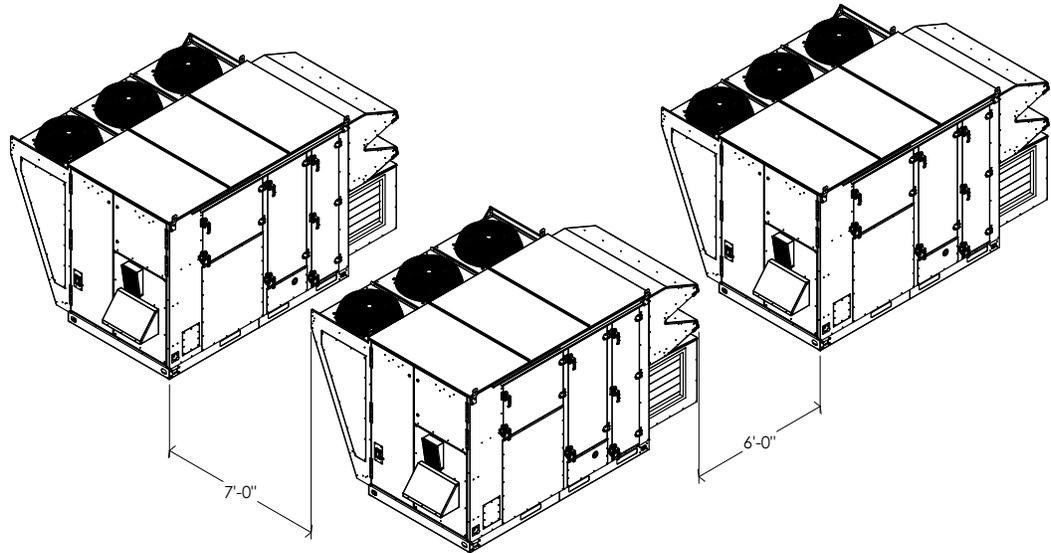
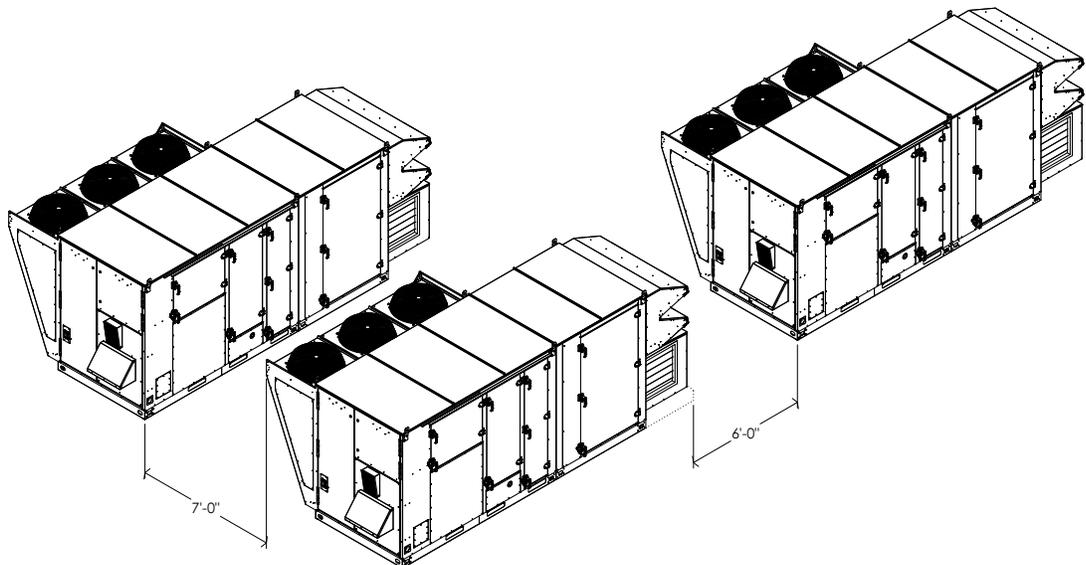


Figure 43. Typical installation clearances for OAK unit with auxiliary cabinet



Note: Certain options require auxiliary cabinet. Refer to project-specific unit submittals.

Curb Dimensions

Figure 44. Unit curb data for OAK 12–30 tons (in.)

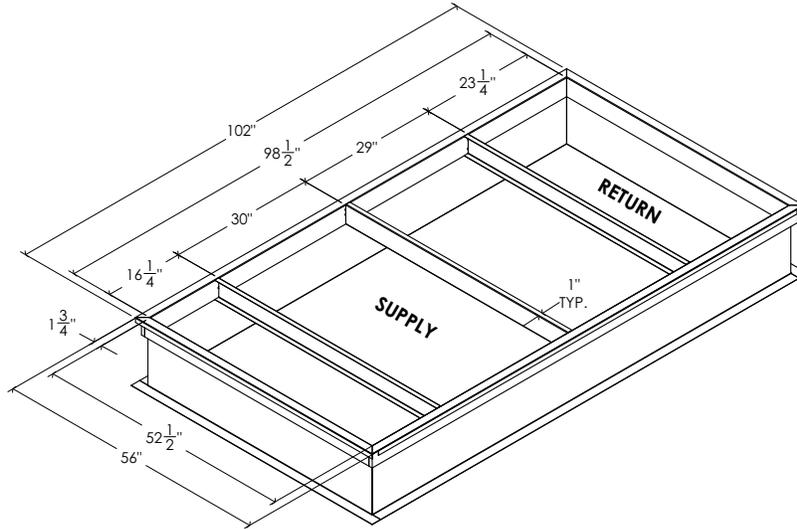
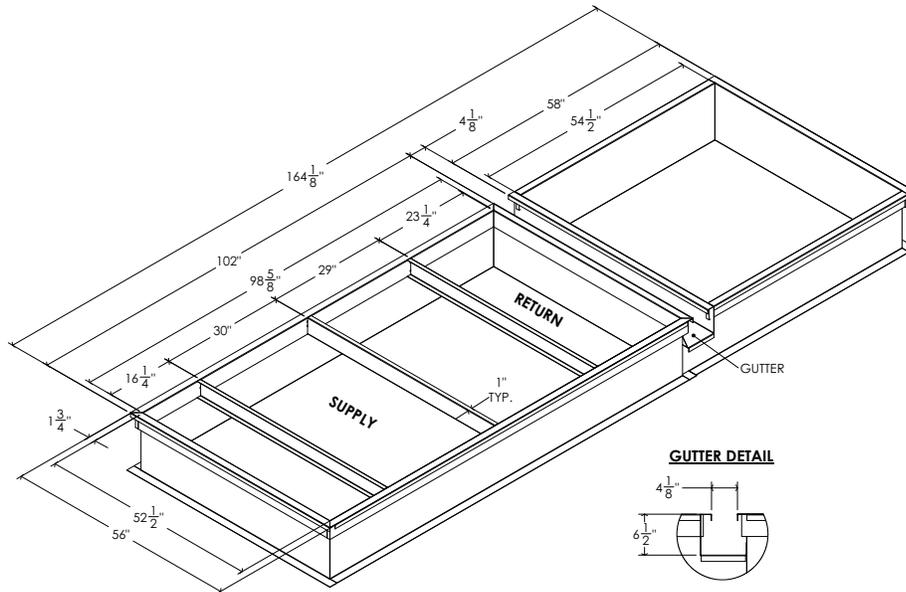


Figure 45. Unit curb data for OAK 12–30 tons with auxiliary cabinet (in.)



Note: Certain options require auxiliary cabinet. Refer to project-specific unit submittals.

Dimensional Data

Figure 46. Unit dimensional data for OAK 12–30 tons

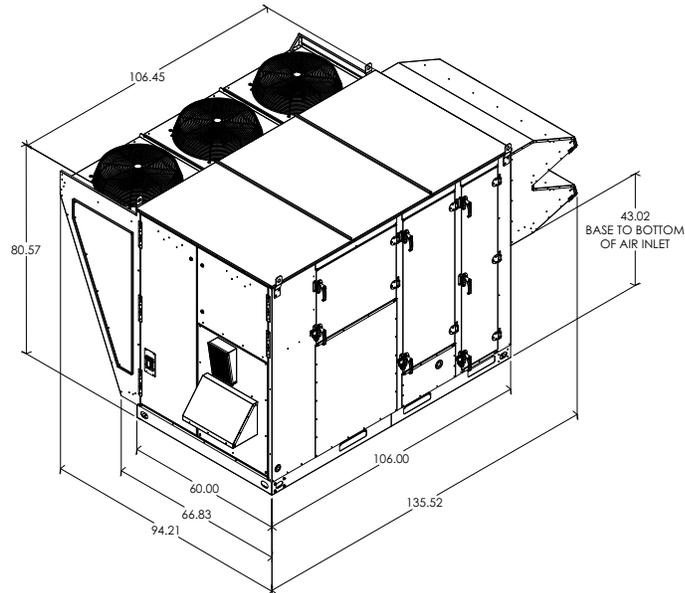
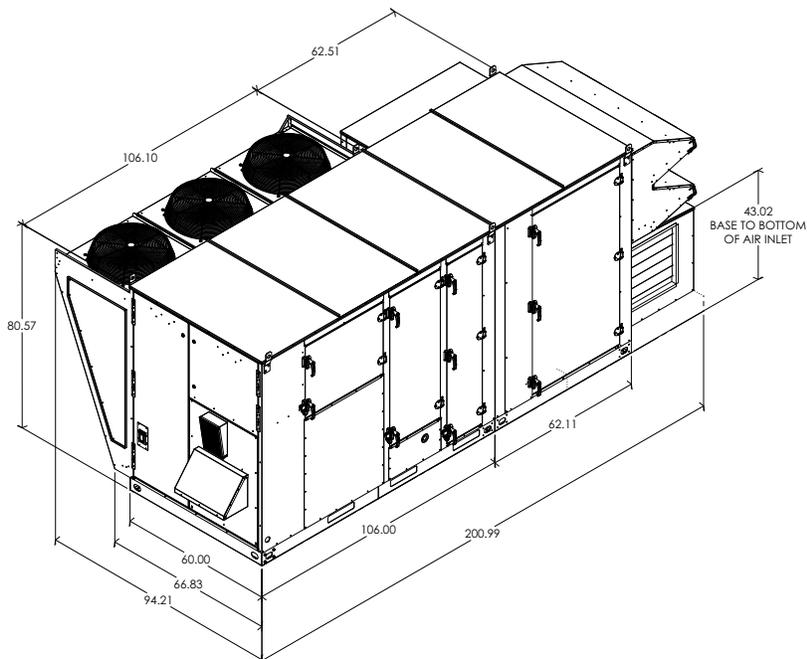


Figure 47. Unit dimensional data for OAK 12–30 tons with auxiliary cabinet

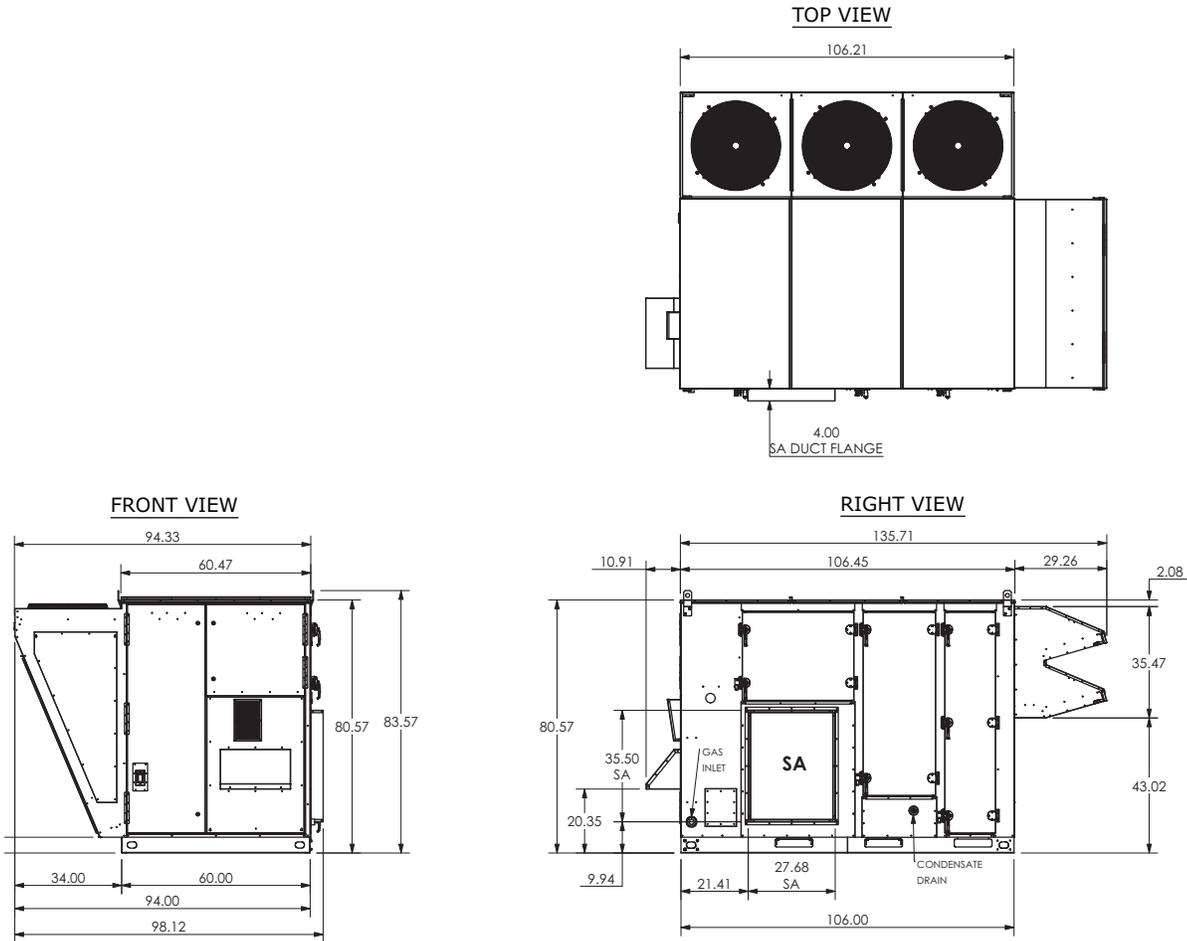


Notes:

- Certain options require auxiliary cabinet. Refer to project-specific unit submittals.
- Sound attenuation package will add 10.01 in. to the height of the condenser fan section. Refer to project-specific unit submittals.

Unit Clearances, Curb Dimensions, and Dimensional Data

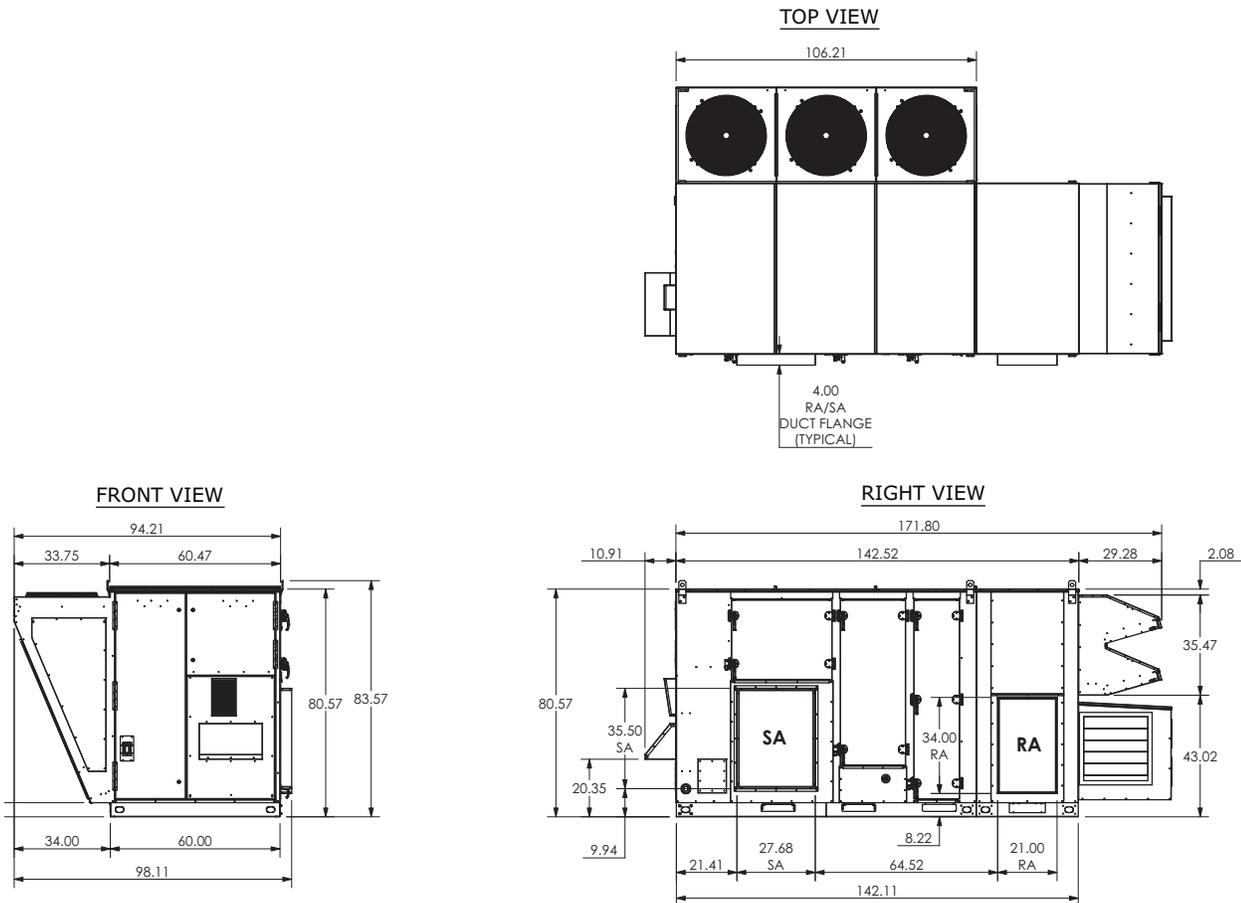
Figure 48. Unit dimensional data for OAK 12–30 tons, horizontal supply and vertical/no return (in.)



Note: Sound attenuation package will add 10.01 in. to the height of the condenser fan section. Refer to project-specific unit submittals.

Unit Clearances, Curb Dimensions, and Dimensional Data

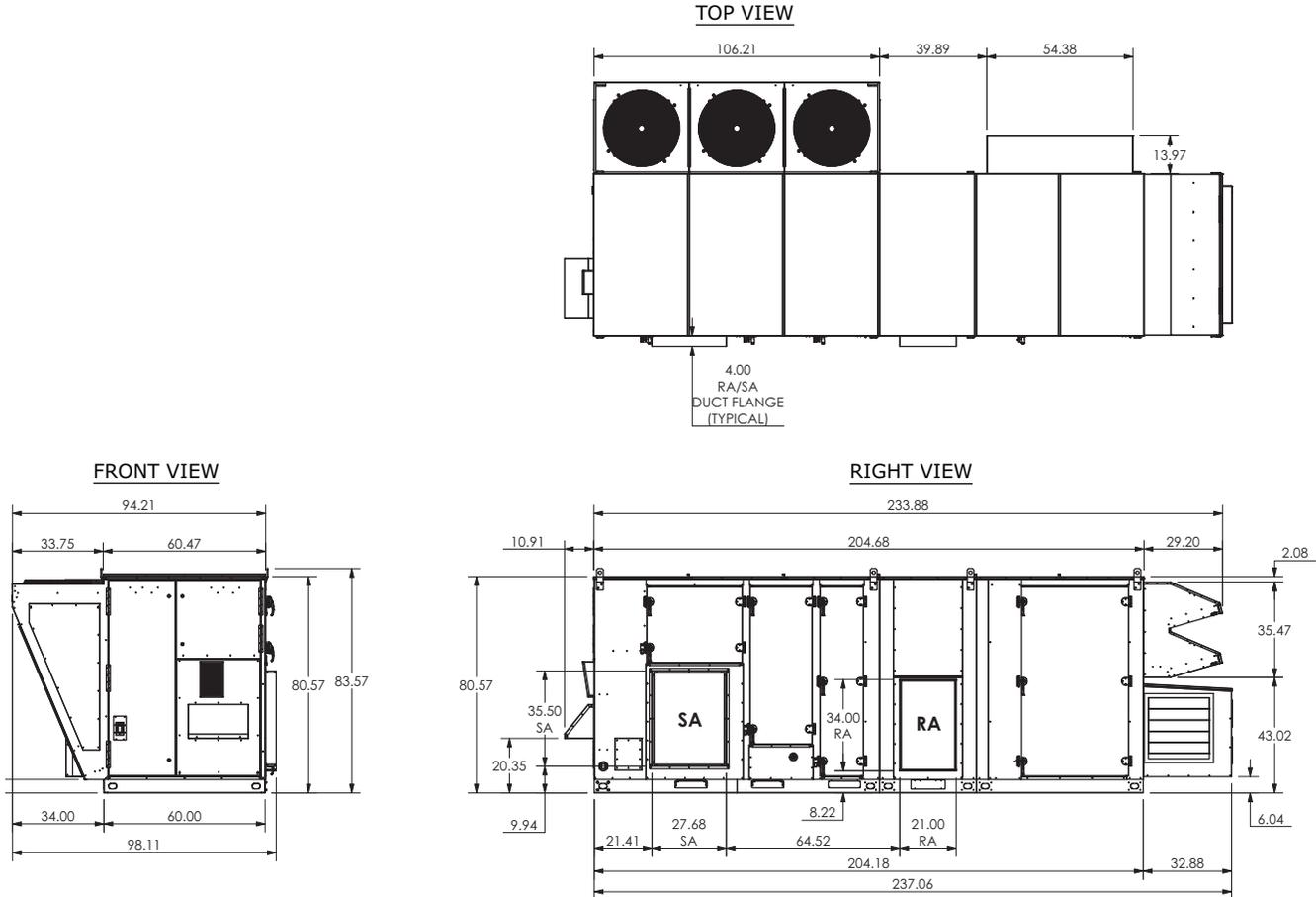
Figure 49. Unit dimensional data for OAK 12–30 tons, horizontal supply and horizontal return with optional exhaust fan (in.)



Note: Sound attenuation package will add 10.01 in. to the height of the condenser fan section. Refer to project-specific unit submittals.

Unit Clearances, Curb Dimensions, and Dimensional Data

Figure 50. Unit dimensional data for OAK 12–30 tons, horizontal supply and horizontal return with ERV (in.)

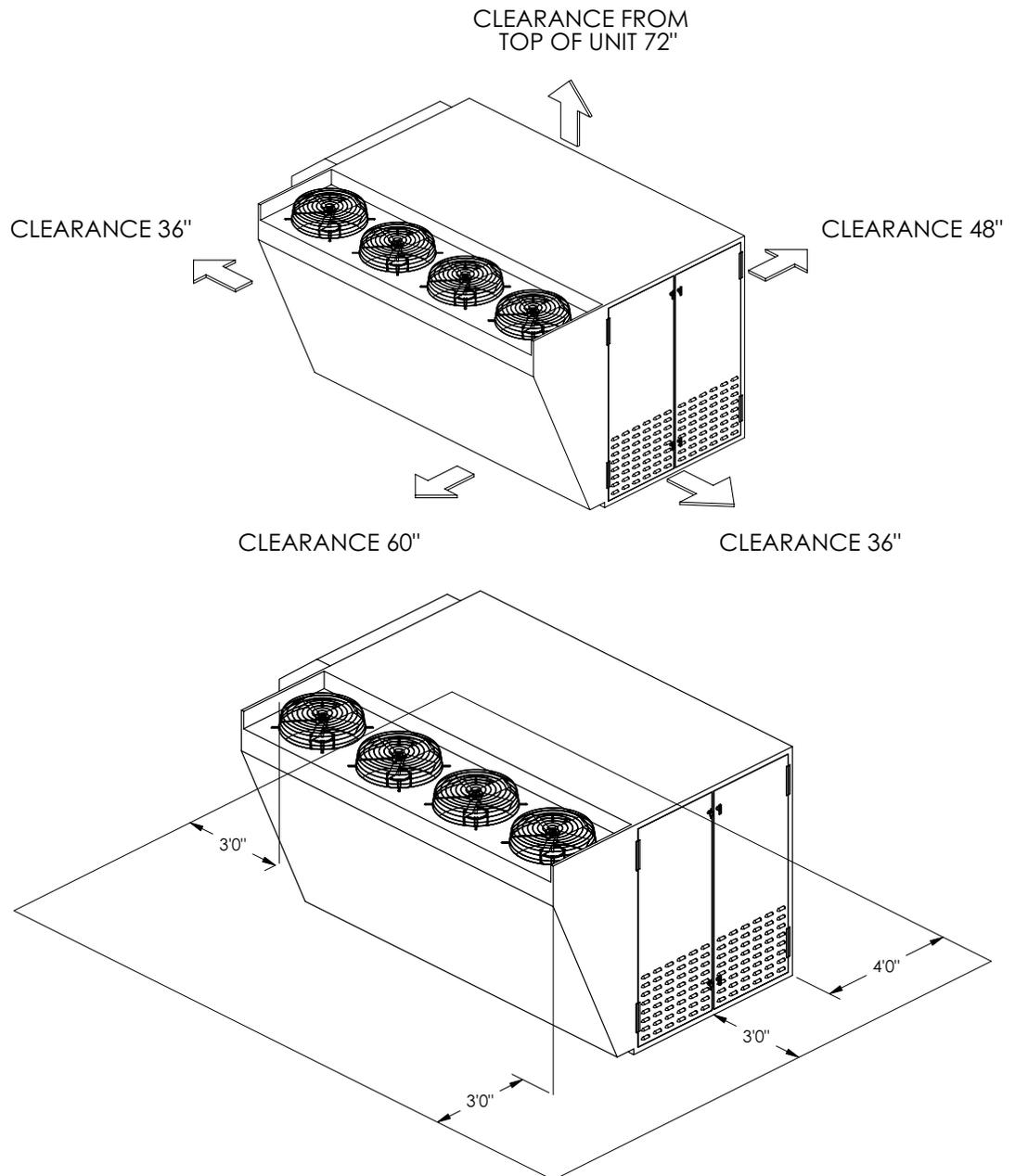


Note: Sound attenuation package will add 10.01 in. to the height of the condenser fan section. Refer to project-specific unit submittals.

OAN Units

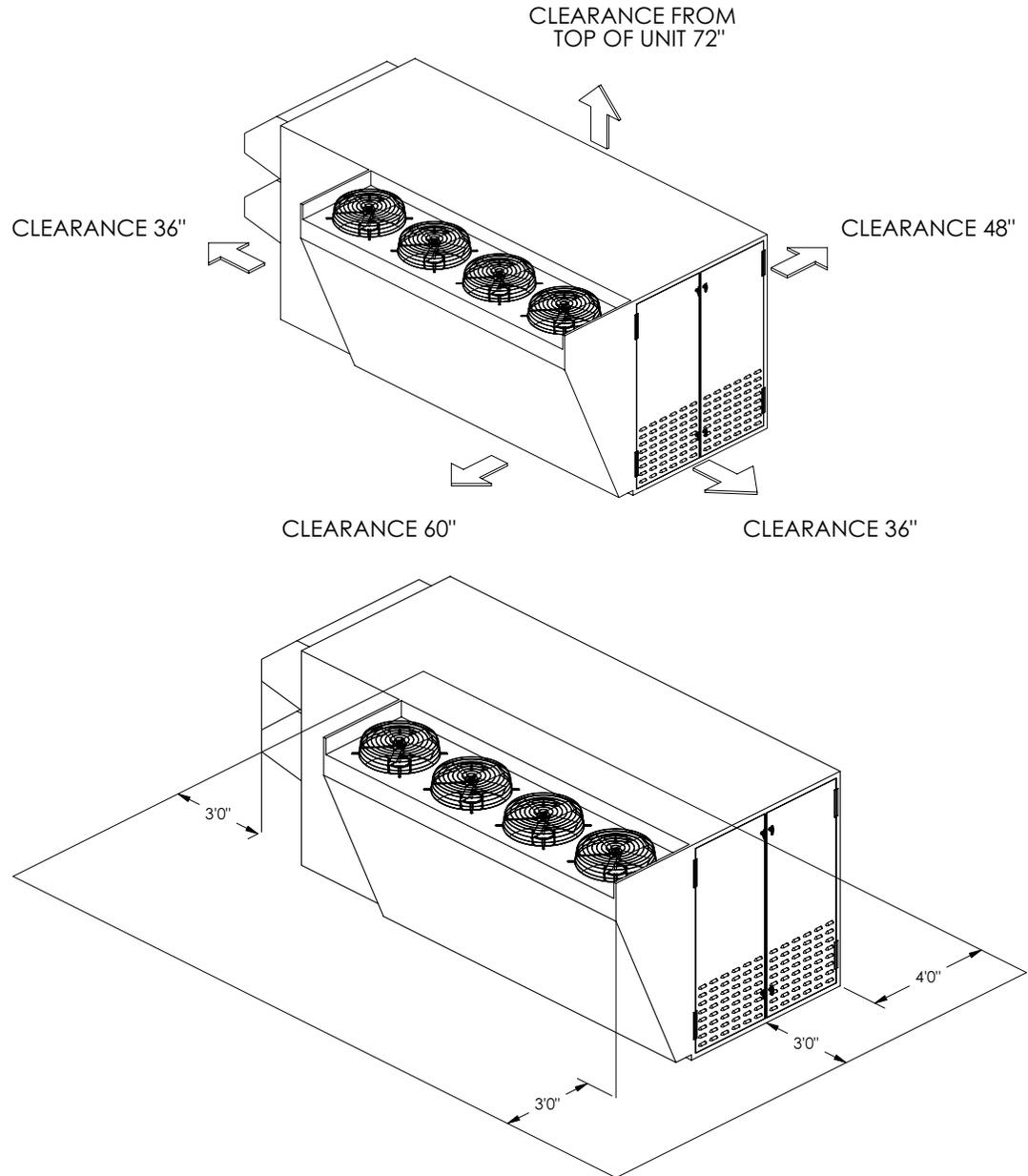
Unit Clearances

Figure 51. Typical installation clearances for OAN unit



Unit Clearances, Curb Dimensions, and Dimensional Data

Figure 52. Typical installation clearances for OAN unit with auxiliary cabinet



Note: Certain options require auxiliary cabinet. Refer to project-specific unit submittals.

Unit Clearances, Curb Dimensions, and Dimensional Data

Figure 53. Typical installation clearances for OAN unit

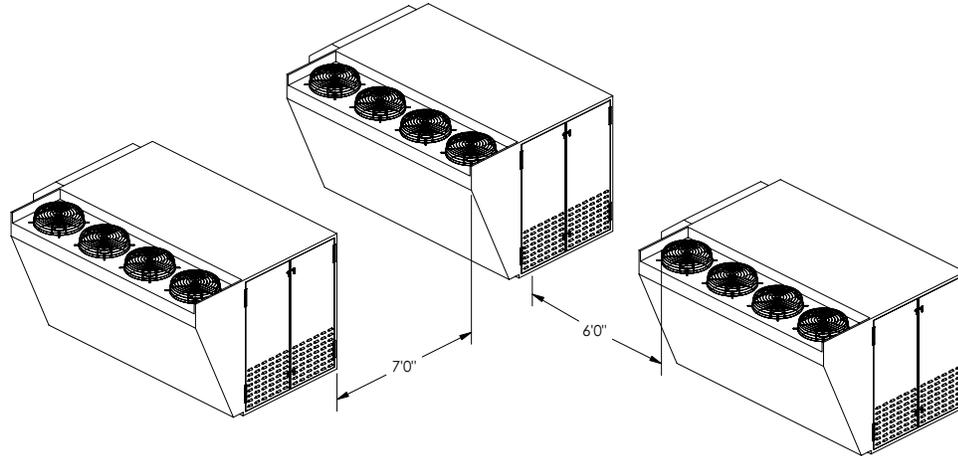
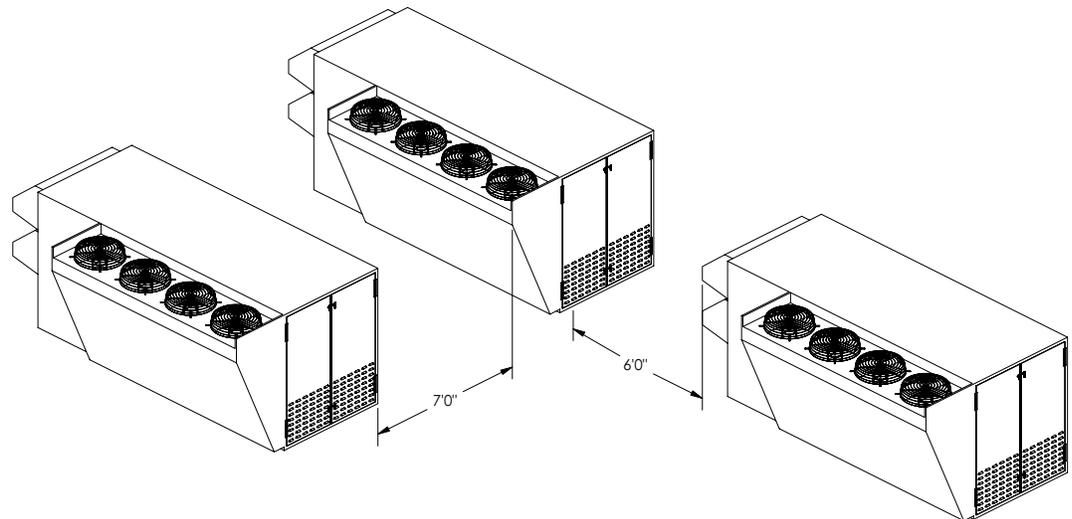


Figure 54. Typical installation clearances for OAN unit with auxiliary cabinet



Note: Certain options require auxiliary cabinet. Refer to project-specific unit submittals.

Unit Clearances, Curb Dimensions, and Dimensional Data

Curb Dimensions

Figure 55. Unit curb data for OAN 30–54 tons

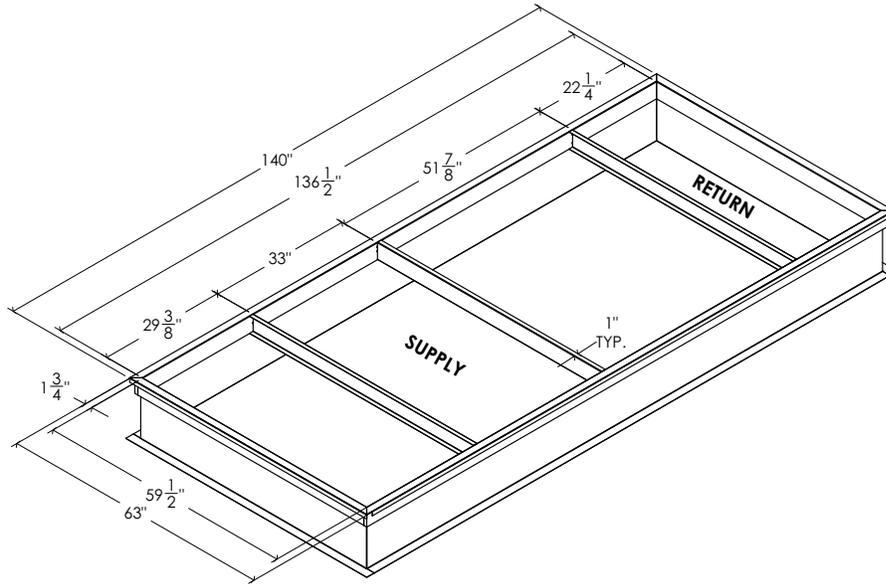
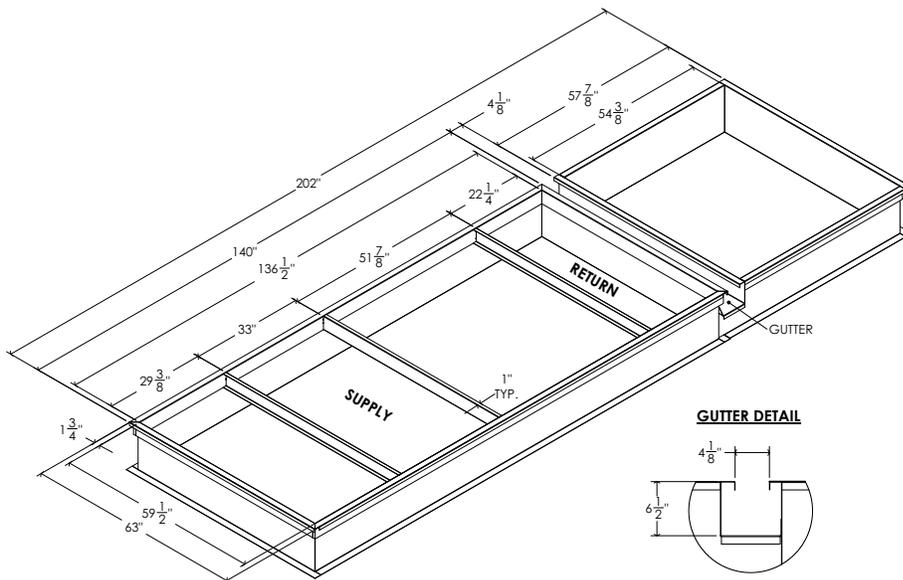


Figure 56. Unit curb data for OAN 30–54 tons with auxiliary cabinet



Note: Certain options require auxiliary cabinet. Refer to project-specific unit submittals.

Dimensional Data

Figure 57. Unit dimensional data for OAN 30–54 tons

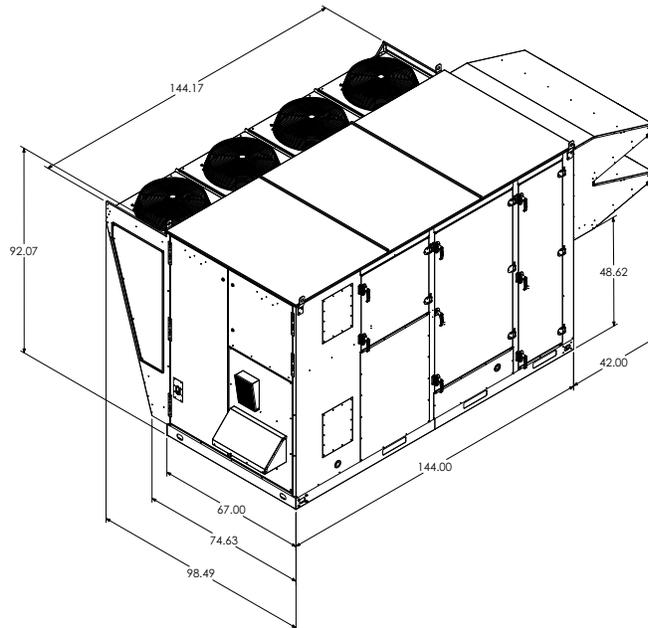
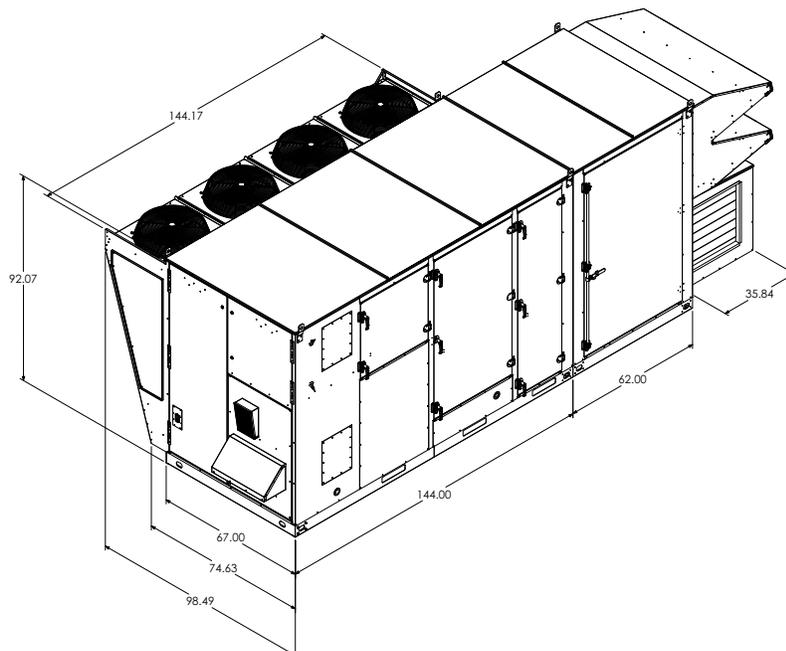


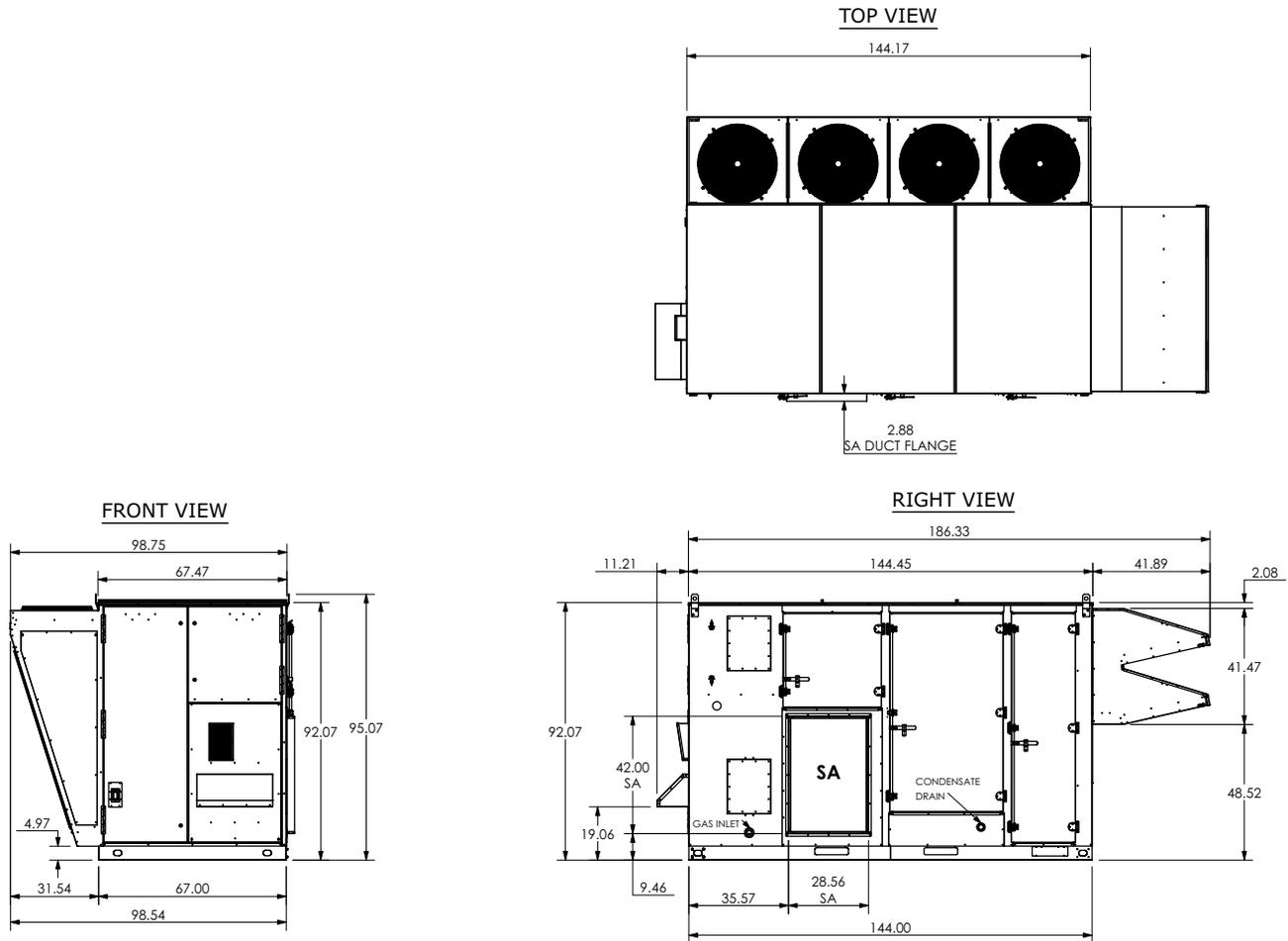
Figure 58. Unit dimensional data for OAN 30–54 tons with auxiliary cabinet



Note: Certain options require auxiliary cabinet. Refer to project-specific unit submittals.

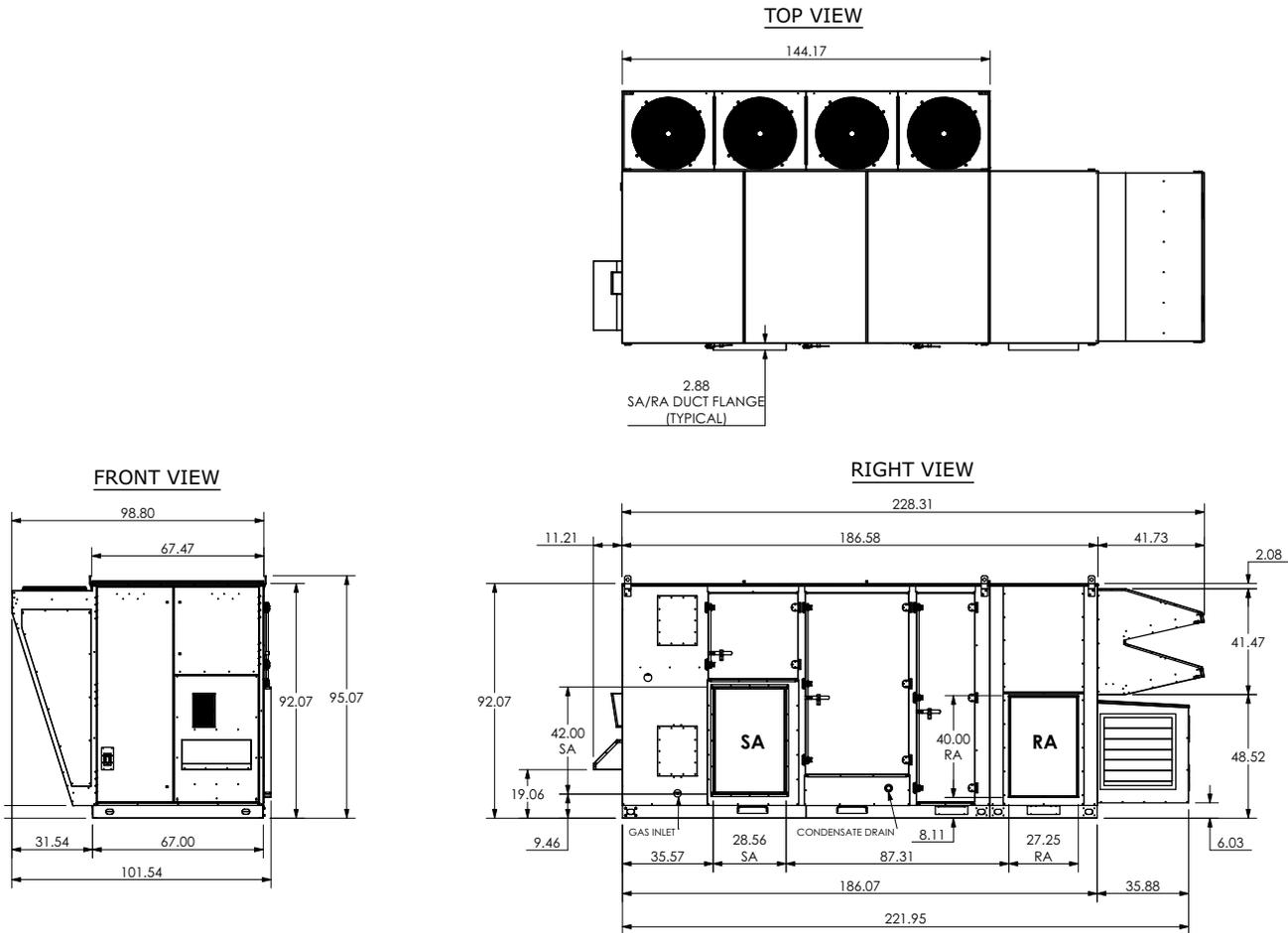
Unit Clearances, Curb Dimensions, and Dimensional Data

Figure 59. Unit dimensional data for OAN 30–54 tons, horizontal supply and vertical/no return (in.)



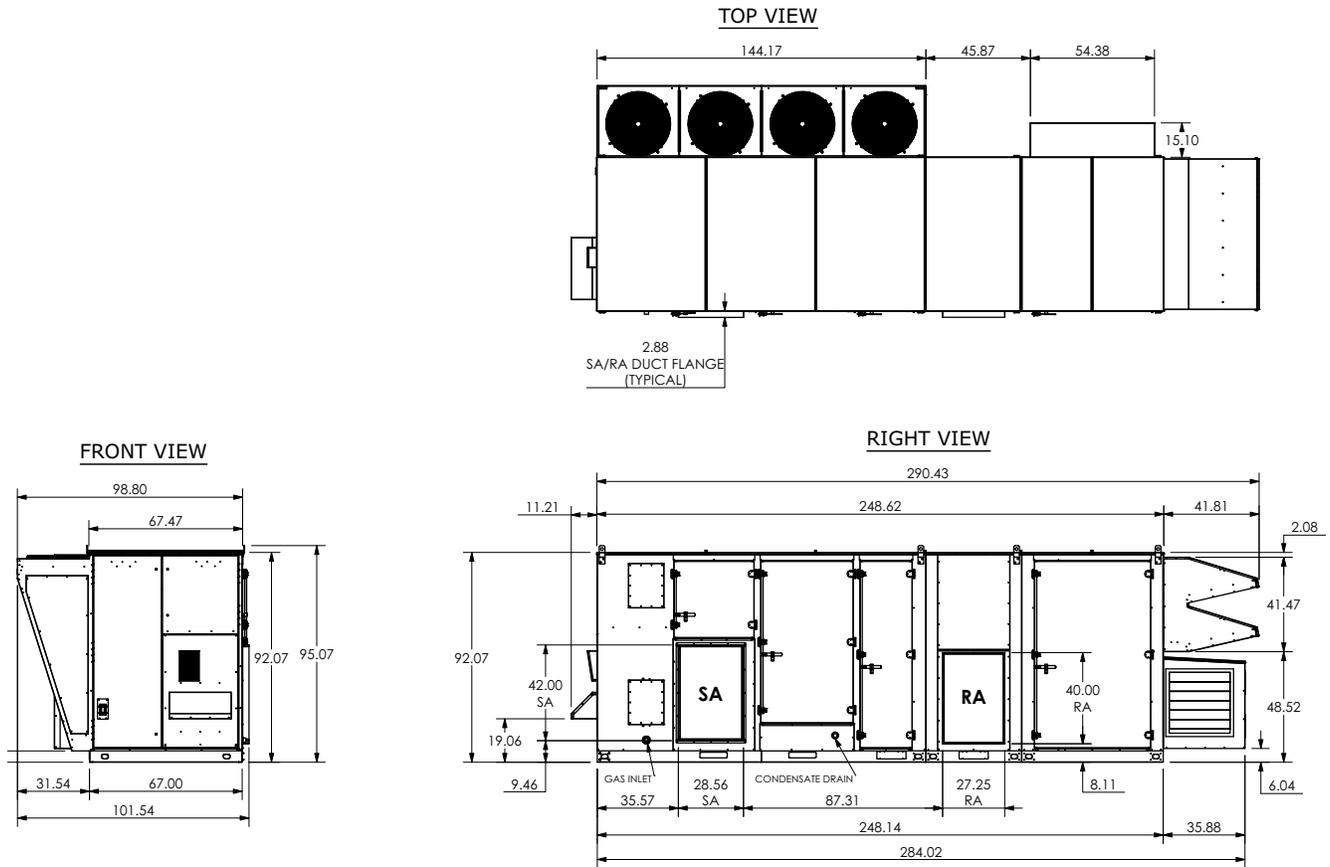
Unit Clearances, Curb Dimensions, and Dimensional Data

Figure 60. Unit dimensional data for OAN 30–54 tons, horizontal supply and horizontal return with optional exhaust fan (in.)



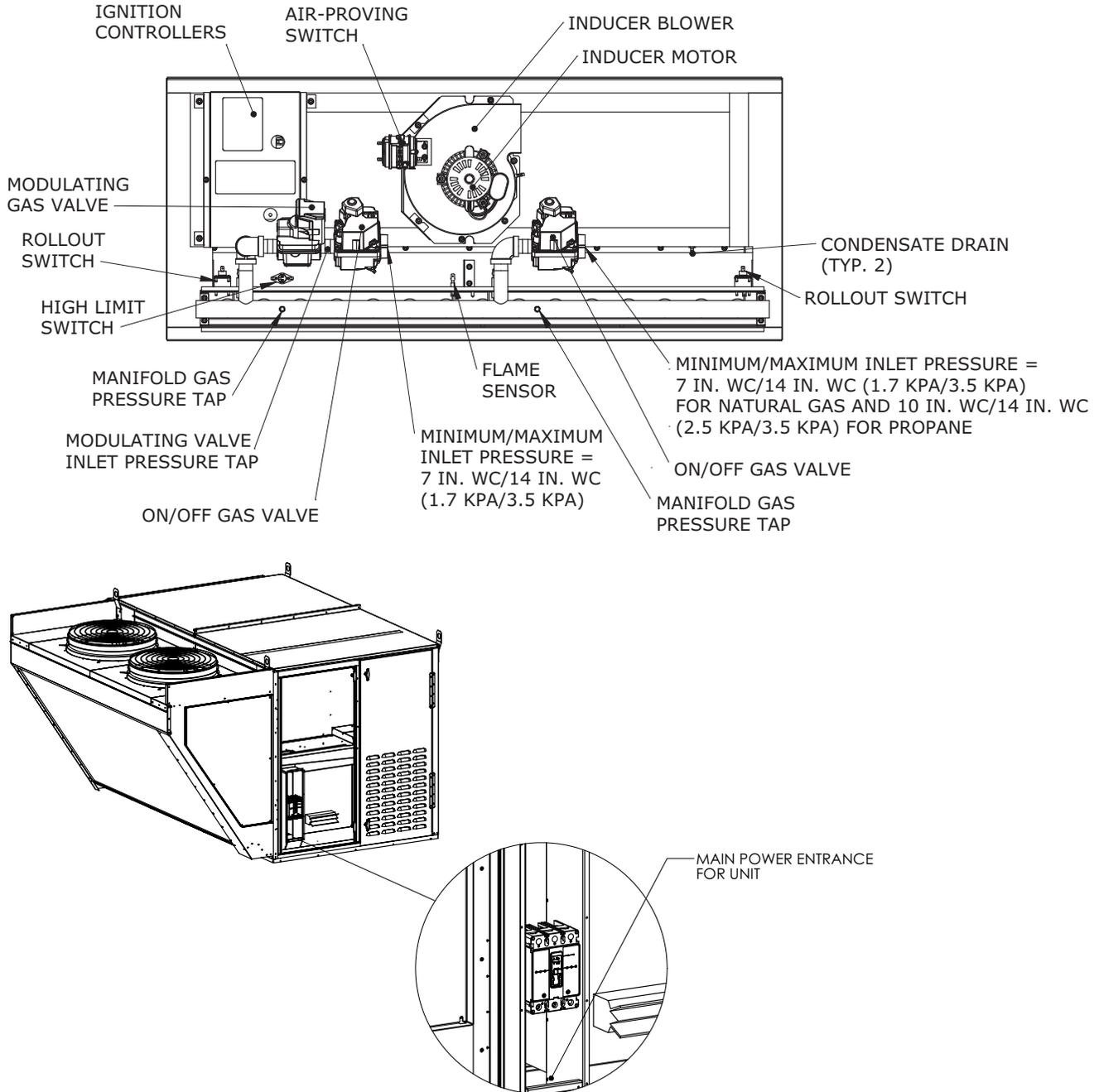
Unit Clearances, Curb Dimensions, and Dimensional Data

Figure 61. Unit dimensional data for OAN 30–54 tons, horizontal supply and horizontal return with ERV (in.)



Indirect Gas-fired Furnace Heater and Power

Figure 62. OAB, OAD, OAG, OAK, and OAN indirect gas-fired furnace heater and power





Unit Weight and Rigging

Unit Weight

Table 20. Typical unit weight and center-of-gravity (CG)—indirect-fired units without auxiliary cabinet

| Model Number | Operating Weight (lb) | | Shipping Weight (lb) | | Center-of-gravity (in.) | |
|-------------------|-----------------------|------|----------------------|------|-------------------------|-------|
| | Min | Max | Min | Max | Length | Width |
| OABD036*/OABE036* | 1255 | 1439 | 1503 | 1687 | 26 | 43.5 |
| OABD048*/OABE048* | 1255 | 1439 | 1503 | 1687 | 26 | 43.5 |
| OABD060*/OABE060* | 1255 | 1439 | 1503 | 1687 | 26 | 43.5 |
| OABD072*/OABE072* | 1295 | 1479 | 1543 | 1727 | 26 | 43.5 |
| OABD084*/OABE084* | 1295 | 1479 | 1543 | 1727 | 26 | 43.5 |
| OABD096*/OABE096* | 1295 | 1479 | 1543 | 1727 | 26 | 43.5 |
| OABD108*/OABE108* | 1336 | 1520 | 1584 | 1768 | 26 | 43.5 |
| OADD060*/OADE060* | 1811 | 2275 | 1811 | 2275 | 40 | 30 |
| OADD072*/OADE072* | 1811 | 2330 | 1811 | 2330 | 40 | 30 |
| OADD084*/OADE084* | 1811 | 2330 | 1811 | 2330 | 40 | 30 |
| OADD096*/OADE096* | 1901 | 2596 | 1901 | 2596 | 40 | 30 |
| OADD120*/OADE120* | 1901 | 2596 | 1901 | 2596 | 40 | 30 |
| OADD144*/OADE144* | 1901 | 2596 | 1901 | 2596 | 40 | 30 |
| OADD180*/OADE180* | 1901 | 2734 | 1901 | 2734 | 40 | 30 |
| OAGD120*/OAGE120* | 2559 | 4012 | 2559 | 4012 | N/A | N/A |
| OAGD144*/OAGE144* | 2559 | 4063 | 2559 | 4063 | N/A | N/A |
| OAGD180*/OAGE180* | 2559 | 4113 | 2559 | 4113 | N/A | N/A |
| OAGD210*/OAGE210* | 2567 | 4243 | 2567 | 4243 | N/A | N/A |
| OAGD240*/OAGE240* | 2567 | 4294 | 2567 | 4294 | N/A | N/A |
| OAGD264*/OAGE264* | 2567 | 4294 | 2567 | 4294 | N/A | N/A |
| OAGD300*/OAGE300* | 2822 | 4546 | 2822 | 4546 | N/A | N/A |
| OAKD144*/OAKE144* | 3125 | 3790 | 3125 | 3790 | 49 | 34 |
| OAKD180*/OAKE180* | 3289 | 3954 | 3289 | 3954 | 49 | 34 |
| OAKD210*/OAKE210* | 3344 | 4161 | 3344 | 4161 | 49 | 34 |
| OAKD240*/OAKE240* | 3372 | 4189 | 3372 | 4189 | 49 | 34 |
| OAKD264*/OAKE264* | 3372 | 4189 | 3372 | 4189 | 49 | 34 |
| OAKD300*/OAKE300* | 3530 | 4390 | 3530 | 4390 | 49 | 34 |
| OAKD360*/OAKE360* | 3338 | 4198 | 3338 | 4198 | 49 | 34 |
| OAND360*/OANE360* | 4931 | 5914 | 4931 | 5914 | 67 | 38 |
| OAND420*/OANE420* | 5246 | 6229 | 5246 | 6229 | 67 | 38 |
| OAND480*/OANE480* | 5339 | 6351 | 5339 | 6351 | 67 | 38 |
| OAND540*/OANE540* | 5406 | 6363 | 5406 | 6363 | 67 | 38 |
| OAND600*/OANE600* | 5570 | 6652 | 5570 | 6652 | 67 | 38 |
| OAND648*/OANE648* | 5582 | 6664 | 5582 | 6664 | 67 | 38 |

Note: Minimum and maximum weights vary widely due to the highly configurable nature of the product.

Table 21. Typical unit weight and center-of-gravity (CG)—indirect-fired units with auxiliary cabinet

| Model Number | Operating Weight (lb) | | Shipping Weight (lb) | | Center-of-gravity (in.) | |
|-------------------|-----------------------|------|----------------------|------|-------------------------|-------|
| | Min | Max | Min | Max | Length | Width |
| OABD036*/OABE036* | 1740 | 2054 | 2048 | 2362 | 26 | 68 |
| OABD048*/OABE048* | 1740 | 2054 | 2048 | 2362 | 26 | 68 |
| OABD060*/OABE060* | 1740 | 2054 | 2048 | 2362 | 26 | 68 |
| OABD072*/OABE072* | 1780 | 2094 | 2088 | 2402 | 26 | 68 |
| OABD084*/OABE084* | 1780 | 2094 | 2088 | 2402 | 26 | 68 |
| OABD096*/OABE096* | 1780 | 2094 | 2088 | 2402 | 26 | 68 |
| OABD108*/OABE108* | 1821 | 2135 | 2129 | 2443 | 26 | 68 |
| OADD060*/OADE060* | 2798 | 3262 | 2798 | 3262 | 56 | 29 |
| OADD072*/OADE072* | 2743 | 3262 | 2743 | 3262 | 56 | 29 |
| OADD084*/OADE084* | 2775 | 3294 | 2775 | 3294 | 56 | 29 |
| OADD096*/OADE096* | 2927 | 3622 | 2927 | 3622 | 56 | 29 |
| OADD120*/OADE120* | 2927 | 3622 | 2927 | 3622 | 56 | 29 |
| OADD144*/OADE144* | 2927 | 3622 | 2927 | 3622 | 56 | 29 |
| OADD180*/OADE180* | 2927 | 3760 | 2927 | 3760 | 56 | 29 |
| OAGD120*/OAGE120* | 3879 | 4012 | 3879 | 4012 | N/A | N/A |
| OAGD144*/OAGE144* | 3879 | 4281 | 3879 | 4281 | N/A | N/A |
| OAGD180*/OAGE180* | 3879 | 4281 | 3879 | 4281 | N/A | N/A |
| OAGD210*/OAGE210* | 3887 | 4289 | 3887 | 4289 | N/A | N/A |
| OAGD240*/OAGE240* | 3887 | 4294 | 3887 | 4294 | N/A | N/A |
| OAGD264*/OAGE264* | 3887 | 4294 | 3887 | 4294 | N/A | N/A |
| OAGD300*/OAGE300* | 4058 | 4546 | 4058 | 4546 | N/A | N/A |
| OAKD144*/OAKE144* | 4508 | 5173 | 4508 | 5173 | 72 | 33 |
| OAKD180*/OAKE180* | 4715 | 5380 | 4715 | 5380 | 72 | 33 |
| OAKD210*/OAKE210* | 5028 | 5845 | 5028 | 5845 | 72 | 33 |
| OAKD240*/OAKE240* | 5056 | 5873 | 5056 | 5873 | 72 | 33 |
| OAKD264*/OAKE264* | 5056 | 5873 | 5056 | 5873 | 72 | 33 |
| OAKD300*/OAKE300* | 5194 | 6054 | 5194 | 6054 | 72 | 33 |
| OAKD360*/OAKE360* | 4936 | 5796 | 4936 | 5796 | 72 | 33 |
| OAND360*/OANE360* | 6907 | 7890 | 6907 | 7890 | 81 | 37 |
| OAND420*/OANE420* | 7222 | 8205 | 7222 | 8205 | 81 | 37 |
| OAND480*/OANE480* | 7315 | 8327 | 7315 | 8327 | 81 | 37 |
| OAND540*/OANE540* | 7382 | 8339 | 7382 | 8339 | 81 | 37 |
| OAND600*/OANE600* | 7527 | 8609 | 7527 | 8609 | 81 | 37 |
| OAND648*/OANE648* | 7539 | 8621 | 7539 | 8621 | 81 | 37 |

Note: Minimum and maximum weights vary widely due to the highly configurable nature of the product.

Unit Weight and Rigging

Table 22. Typical unit weight—direct-fired units

| Model Number | Operating Weight (lb) | |
|--------------|-----------------------|------|
| | Min | Max |
| OABD036* | 1655 | 1839 |
| OABD048* | 1655 | 1839 |
| OABD060* | 1655 | 1839 |
| OABD072* | 1695 | 1879 |
| OABD084* | 1695 | 1879 |
| OABD096* | 1695 | 1879 |
| OABD108* | 1736 | 1920 |
| OAGD120* | 2912 | 3198 |
| OAGD144* | 2912 | 3198 |
| OAGD180* | 2913 | 3199 |
| OAGD210* | 3062 | 3348 |
| OAGD240* | 3134 | 3439 |
| OAGD264* | 3135 | 3439 |
| OAGD300* | 3175 | 3489 |
| OAGD360* | 3186 | 3500 |

Note: Minimum and maximum weights vary widely due to the highly configurable nature of the product.

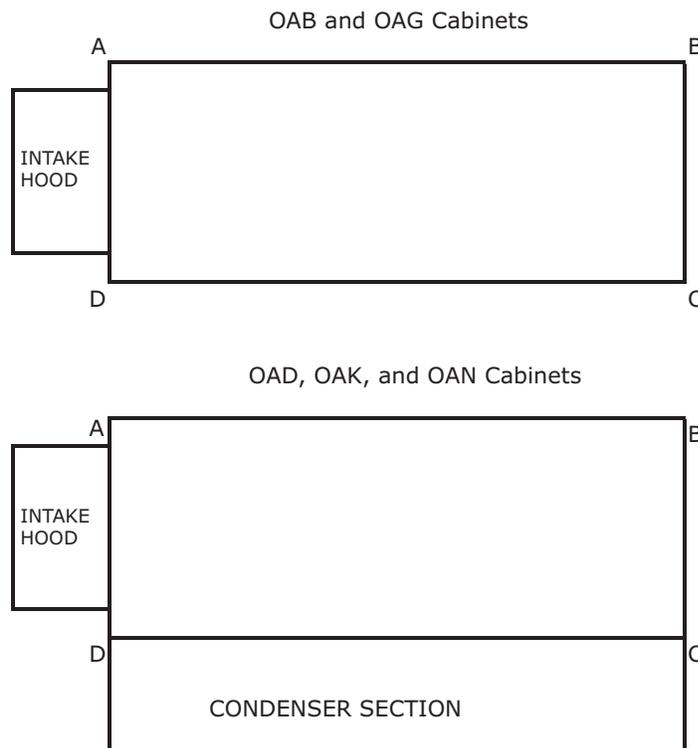
Corner Weight

Table 23. Corner weights for indirect-fired units (percent of total weight)

| Cabinet Size | Percentage (%) | | | |
|--------------------------------|----------------|----------|----------|----------|
| | Corner A | Corner B | Corner C | Corner D |
| OAB* without auxiliary cabinet | 21.3 | 31.9 | 21.4 | 25.4 |
| OAB* with auxiliary cabinet | 24.1 | 29.5 | 22.0 | 24.4 |
| OAD* without auxiliary cabinet | 16.3 | 20.7 | 33.3 | 29.7 |
| OAD* with auxiliary cabinet | 18.2 | 23.2 | 27.5 | 31.1 |
| OAK* without auxiliary cabinet | 20.1 | 17.2 | 34.0 | 28.7 |
| OAG* without auxiliary cabinet | 25.0 | 29.8 | 21.1 | 24.1 |
| OAG* with auxiliary cabinet | 28.0 | 25.4 | 23.1 | 23.5 |
| OAK* with auxiliary cabinet | 18.3 | 24.0 | 32.5 | 25.2 |
| OAN* without auxiliary cabinet | 14.9 | 24.2 | 29.9 | 31.0 |
| OAN* with auxiliary cabinet | 16.8 | 23.6 | 28.5 | 31.1 |

Note: Actual corner weights will vary depending on components selected.

Figure 63. Cabinet corners



Rigging

Figure 64. Rigging and center-of-gravity data

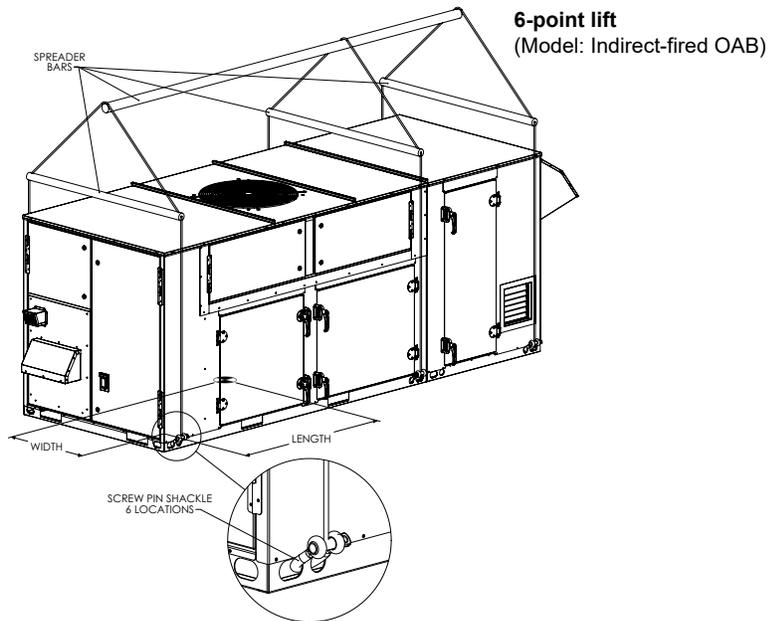
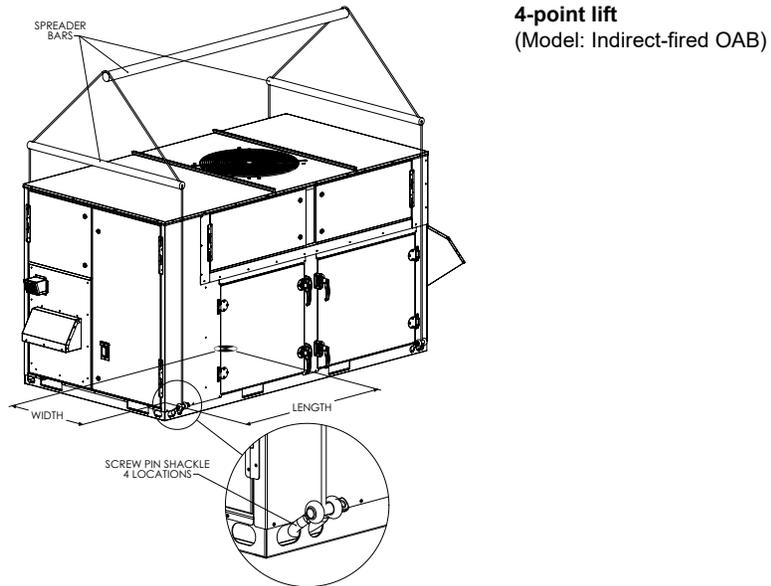
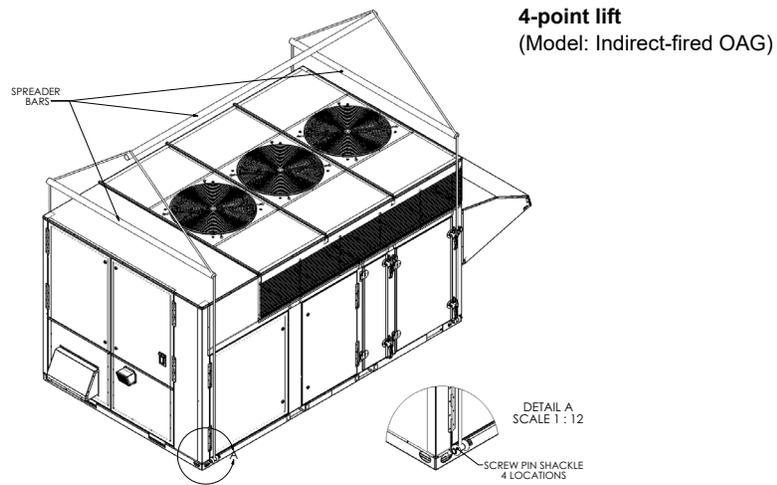
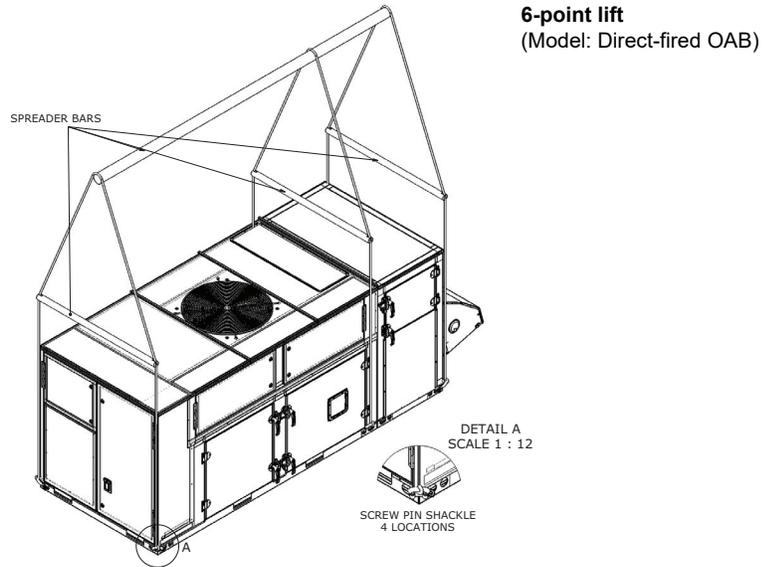


Figure 64. Rigging and center-of-gravity data (continued)



Unit Weight and Rigging

Figure 64. Rigging and center-of-gravity data (continued)

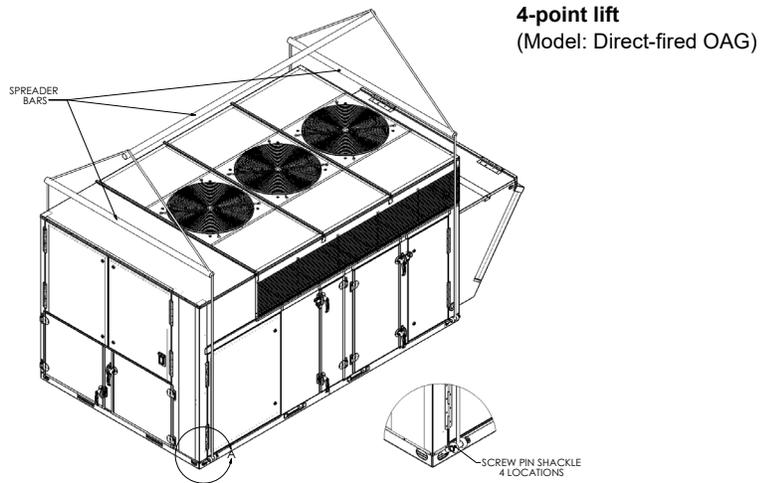
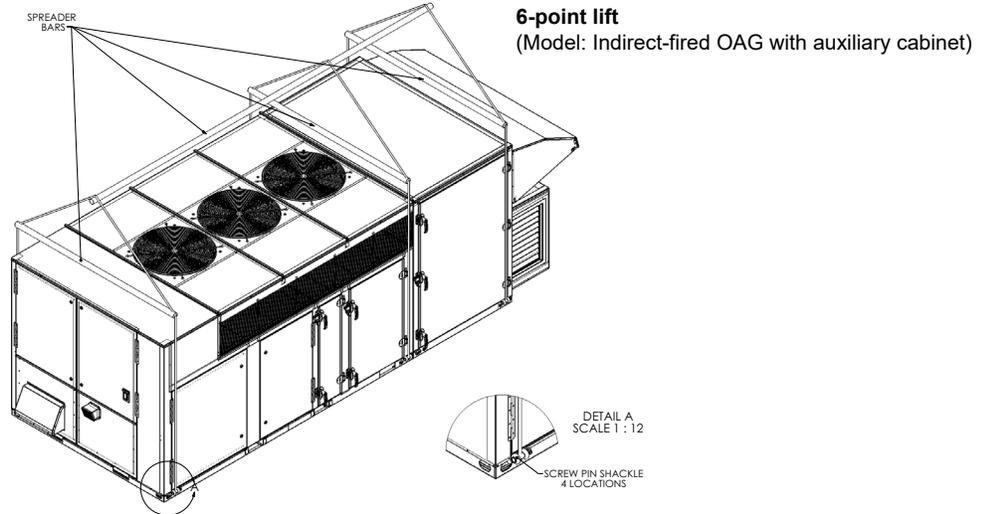
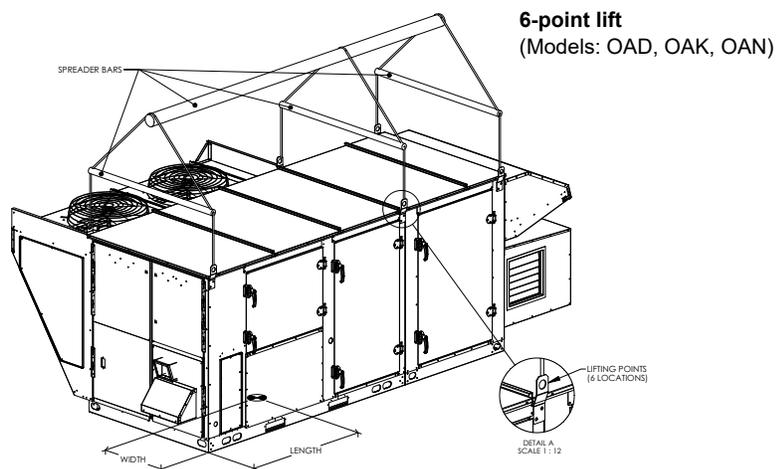
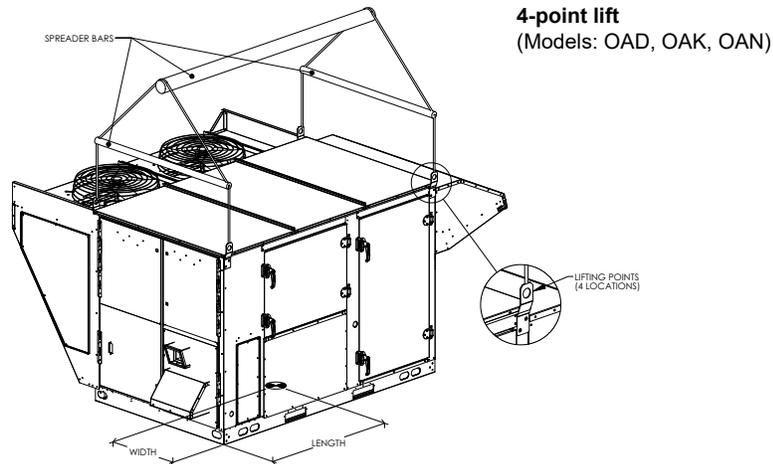


Figure 64. Rigging and center-of-gravity data (continued)



For rigging instructions, please refer to the *Installation, Operation, and Maintenance* for your specific product:

- OAU-SVX01*-EN (*Installation, Operation, and Maintenance: Horizon™ Outdoor Air Unit - Indirect Gas-Fired/Electric Heat/Air Source Heat Pump - Models: OADD, OADE, OAKD, OAKE, OAND, OANE*)
- OAU-SVX02*-EN (*Installation, Operation, and Maintenance: Horizon™ Outdoor Air Unit - Indirect Fired Gas/Electric Heat and Air Source Heat Pump - Models: OABD, OABE, OAGD*)
- OAU-SVX005*-EN (*Installation, Operation, and Maintenance: Horizon™ Outdoor Air Unit - Direct Gas-Fired - Model: OAB, OAG*)



Mechanical Specifications

Horizon Outdoor Air Mechanical Specifications

General

The supply and return openings shall be available as vertical airflow (OAD, OAK, or OAN), vertical/horizontal airflow (OAG), or convertible (OAB) between vertical/horizontal. Cooling performance shall be rated in accordance with ETL testing procedures. All units shall be factory assembled, internally wired, fully charged with R-410A, and 100 percent run tested to check cooling operation, fan and blower rotation, and control sequence before leaving the factory. Wiring internal to the unit shall be colored and numbered for simplified identification. Units shall be ETL listed and labeled, classified in accordance to UL 1995/CAN/CSA No. 236-M40 for Central Cooling Air Conditioners. Canadian units shall be CSA Certified.

Casing

Unit casing shall be constructed of zinc-coated, heavy gauge, galvanized steel. Exterior surfaces shall be cleaned, phosphatized, and finished with a weather-resistant baked enamel finish. Unit's surface shall be tested 672 hours in a salt spray test in compliance with ASTM B117. Unit shall have a 2-inch thick Antimicrobial Insulation with an R-value of 13. All insulation edges shall be either captured or sealed. The unit's base pan shall have no penetrations within the perimeter of the curb other than the raised downflow supply/return openings to provide an added water integrity precaution, if the condensate drain backs up. The top cover shall be one piece construction or, where seams exist, it shall be double-hemmed and gasket-sealed. The ribbed top adds extra strength and enhances water removal from unit top.

Drain Pan

The drain pan is a single-walled assembly made of Type 430 stainless steel. It is sloped in two planes and is fully drainable. The coils are mounted above the drain pan to allow easy inspection and cleaning of the drain pan.

Refrigeration and Dehumidification Systems

Compressors

All units shall have direct-drive, hermetic, scroll type compressors with centrifugal type oil pumps. Motor shall be suction gas-cooled and shall have a voltage utilization range of plus or minus 10 percent of unit nameplate voltage. Internal overloads shall be provided with the scroll compressors. Each compressor has a crankcase heater to minimize the amount of liquid refrigerant present in the oil sump during off cycles.

Evaporator and Condenser Coils

Refer to [Figure 65](#). Internally finned copper tubes mechanically bonded to a configured aluminum plate fin shall be standard. Coils shall be leak tested at the factory to ensure the pressure integrity. The evaporator coil and condenser coil shall be leak tested to 500 psig and pressure tested to 500 psig. The condenser coil shall have a fin design with slight gaps for ease of cleaning. Evaporator coil will have four or six interlaced rows for superior sensible and latent cooling.

Figure 65. Evaporator and reheat coil



Chilled Water Coils

The chilled water coil is AHRI performance certified and shall bear the ARI symbol. Tubes are to be mechanically expanded into fins (secondary surface) for maximum heat transfer and shall be 6 rows. Materials are to be 1/2 in. diameter x (0.020) wall thickness. Secondary surface (fins) shall be of the plate-fin design using aluminum with die-formed collars. Fin design is waffle in a staggered tube pattern to meet performance requirements. Collars will hold fin spacing at specified density, and cover the entire tube surface. Fins are to be free of oils and oxidation. The coil shall have MPT connections constructed of copper.

The optional Cooney Freeze Block is designed to allow ice to form within the tubes, without restriction, by discharging a small amount of water into the drain pan. Each expansion header has a factory installed Cooney Freeze Block Valve that is both pressure and thermally activated. The valve will open when outside air below 35°F comes in contact with the header or return end of the coil, or when the internal pressure of the coil exceeds 300 psi. The valve will automatically reset and allow the coil to resume normal operation, when the pressure decreases, or when the temperature increases.

Mechanical Specifications

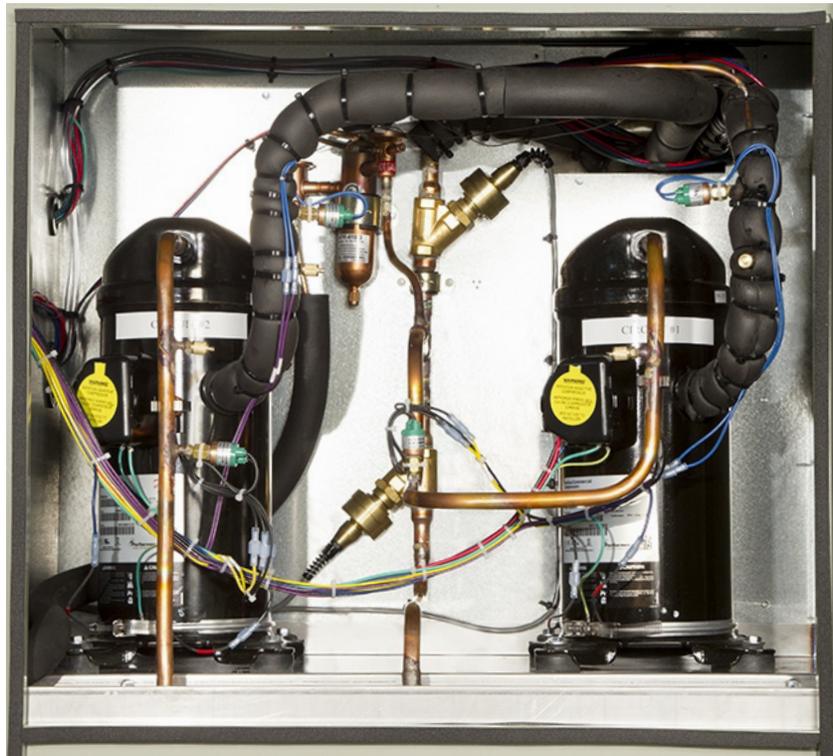
Refrigerant Capacity Control

Units with standard scroll compressors shall be equipped with Refrigerant Capacity Control (RCC) on the lead circuit to ensure proper modulation of cooling. The RCC uses mechanical means to monitor and inject hot gas into the suction side of the compressor, unloading the compressor in part load conditions. The RCC is factory-set at 114 psig, which will maintain evaporator coil temperature at 38°F.

Units with eFlex™ variable speed scroll compressors are matched with a specially designed variable frequency drive that allows a modulating ratio of up to 4:1. This allows for unmatched control of leaving air temperatures to meet space loads. The eFlex compressors also include brushless permanent magnet motors designed to operate at higher efficiency resulting in significant part load energy savings. This makes units with eFlex technology the most efficient products in their class at part load.

Units with digital scroll type compressors shall have direct-drive, hermetic compressors with centrifugal type oil pumps. Motor shall be suction gas-cooled and shall have a voltage utilization range of plus or minus 10 percent of unit nameplate voltage. Internal overloads shall be provided with the scroll compressors. Crankcase heaters shall be included. Compressor shall be able to fully modulate from 20 percent to 100 percent.

Figure 66. Refrigerant capacity control



Total Energy Wheel (Composite)

The rotating wheel heat exchanger is composed of a rotating cylinder in an insulated cassette frame complete with seals, drive motor, and drive belt. The total-energy recovery wheel is coated with silica gel desiccant permanently bonded by a patented and proprietary process without the use of binders or adhesives, which may degrade desiccant performance. The substrate is a lightweight polymer and will not degrade nor require additional coatings for application in marine or coastal environments. Coated segments are washable with detergent or alkaline coil cleaner and water. Desiccant will not dissolve nor deliquesce in the presence of water or high humidity. As the wheel rotates between the ventilation and exhaust air streams it picks up sensible and latent heat energy and releases it into the colder air stream. The driving force behind the exchange is the difference in temperatures between the opposing air streams which is also called the thermal gradient. Bypass dampers will be provided on both the outside and exhaust air paths.

Total Energy Wheel (Aluminum)

The rotor media shall be lightweight and be made of aluminum. The rotor media shall be coated to prohibit corrosion; etched or oxidized surfaces are not acceptable. All surfaces must be coated with a non-migrating adsorbent layer of desiccant prior to being formed into the honeycomb media structure to insure that all surfaces are coated and that adequate latent capacity is provided. The desiccant must be designed for the adsorption of water vapor. The media shall be cleanable with low temperature steam, hot water or light detergent without degrading the latent recovery. Bypass dampers will be provided on both the outside and exhaust air paths.

Figure 67. Total-energy wheel module

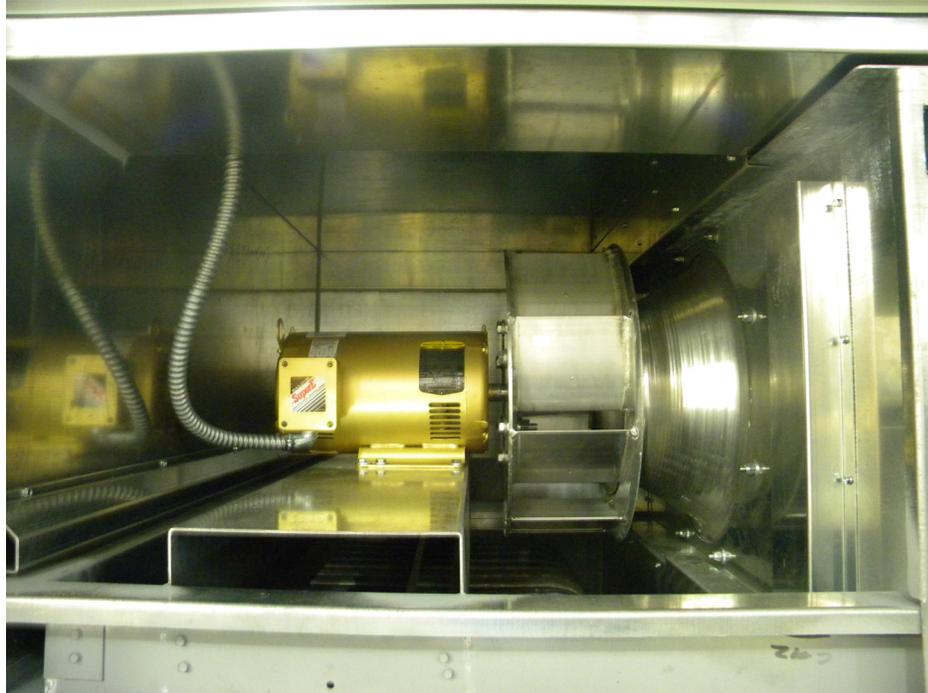


Supply and Exhaust Fan and Motors (OAD, OAK, and OAN)

Fan motor shall be direct drive type with factory installed Variable Frequency Drive. All motors shall be thermally protected. All indoor fan motors meet the U.S. Energy Policy Act of 2005 (EPACT).

Refer to [Figure 68](#).

Figure 68. Indoor fan and motor

**Supply and Exhaust Fan and Motors (Indirect- and Direct-fired OAB, and Indirect-fired OAG)**

Fan shall be a high efficiency backward curved impeller. The motor shall be an electronic commuted motor (ECM) with integrated power electronics.

Supply and Exhaust Fan and Motor (Direct-fired OAG)

Unit will have an FC, centrifugal fan with a belt-driven, adjustable sheave and thermally protected motor. The unit will have an adjustable idler arm assembly for quick adjustment of fan belts and motor sheaves. Indoor fan is equipped with an integrated fan fail switch.

Condenser Fan and Motors

The outdoor fan shall be direct-drive, statically and dynamically balanced, draw-through in the vertical discharge position. The fan motor shall be permanently lubricated and shall have built-in thermal overload protection.

Dampers—Low Leak

The outside air damper has a unit-controlled actuator with parallel-blades. The blade construction is a 14-gage galvanized steel, roll-formed airfoil-type.

Electrical and Controls

Controls

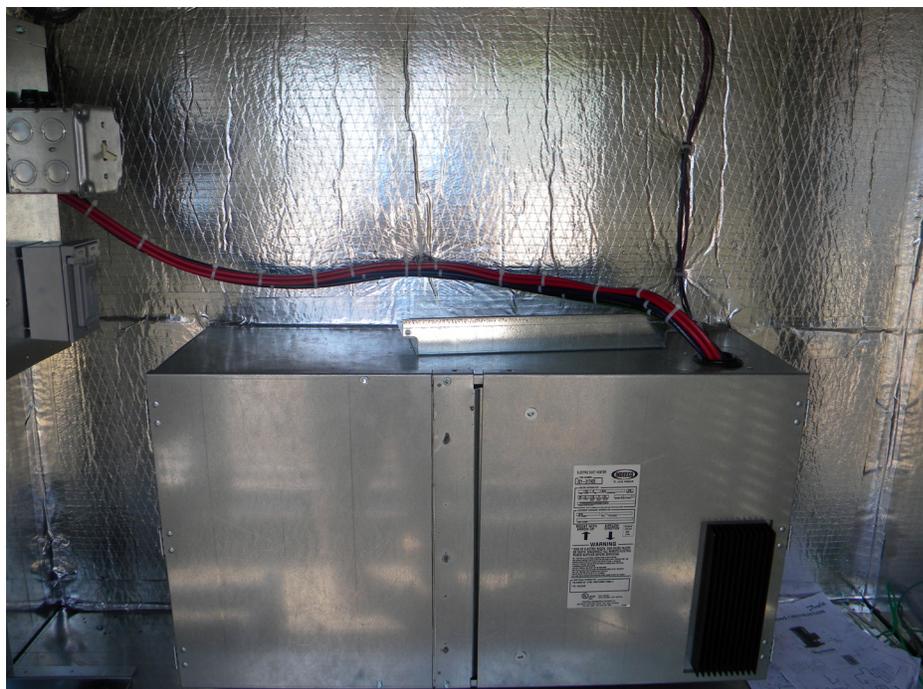
Unit is completely factory-wired with necessary controls and contactor pressure lugs for power wiring. Units will provide an external location for mounting fused disconnect device. Micro-processor controls are provided for all 24-volt control functions. The resident control algorithms will make all heating, cooling and/or ventilating decisions in response to electronic signals from sensors measuring outdoor temperature and humidity. The control algorithm maintains accurate temperature control, minimizes drift from set point, and provides better building comfort. A centralized micro-processor (RTRM) will provide anti-short cycle timing for a higher level of machine protection. Terminals are provided for a field installed dry contact or switch closure to put the unit in the Occupied or Unoccupied modes.

Options

Electric Heating Option

Primary heat is supplied using Electric Resistance heaters. Heaters shall meet the requirements of the National Electrical Code and shall be listed by Underwriters Laboratories for zero clearance to combustible surfaces and for use with heat pumps and air conditioning equipment. Heating elements shall be open coil, 80 percent nickel, 20 percent chromium, Grade A resistance wire. Type C alloys containing iron or other alloys are not acceptable. Coils shall be machine crimped into stainless steel terminals extending at least 1 inch into the air stream and all terminal hardware shall be stainless steel. Coils shall be supported by ceramic bushings staked into supporting brackets. Heater frames and terminal boxes shall be corrosion resistant steel. Unless otherwise indicated, the terminal box shall be NEMA 1 construction and shall be provided with a hinged, latching cover. Heaters shall be furnished with a disc type, automatic reset thermal cutout for primary over temperature protection. All heaters shall also be furnished with disc type, load-carrying manual reset thermal cutouts, factory wired in series with heater stages for secondary protection. Heat limiters or other fusible over temperature devices are not acceptable. Control will be SCR type. Unit shall be suitable for use with Electric Resistance Heat. Refer to [Figure 69](#).

Figure 69. ER Heater



Mechanical Specifications

Indirect Gas-Fired Heating Option

Primary heat is supplied using indirect fired gas heating. The heating section shall have a progressive tubular heat exchanger design using stainless steel burners and Type 409 stainless steel tubes. An induced draft combustion blower shall be used to pull the combustion products through the firing tubes. The heater shall use a direct spark ignition (DS) system. On initial call for heat, the combustion blower shall purge the heat exchanger for 20 seconds before ignition. After three unsuccessful ignition attempts, the entire heating system shall be locked out until manually reset at the unit. Units shall be comply with the California requirement for low NO_x emissions. Unit shall be suitable for use with Natural Gas.

Direct Gas-Fired Heating Option

The unit will have a fully modulating, high turndown direct-gas fired heat. The heating section will have a 6- or 12-in. direct gas-fired burner constructed with a corrosion resistant aluminum casting and stainless steel baffles.

On an initial call for heat, proper airflow must be verified sensed through a dual-action, factory-preset high/low burner differential air pressure switch prior to initiation of the ignition process. After proving airflow, an electronic ignition controller will begin a 30-second burner chamber pre-purge. Following pre-purge a direct spark igniter will ignite the fuel air mixture during a 15-second single-try lock out ignition trial. The microprocessor based RRU Control Module (RRUCM) will supply enable gas to the burner through a direct acting, fully modulating gas valve at a 25 percent firing for 45 seconds following successful ignition. At the end of the 90-second total pre- and post-ignition cycles, the gas burner will modulate to maintain required temperature set points controlled by the RRUCM. After one unsuccessful ignition attempt, the entire heating system will be locked out until manually reset at controller, through a remoter operator display or by removing and reapply power to the unit. Units will be suitable for use with natural gas.

Hydronic Heat Option

A factory installed one, two, or three row hydronic heating coil will be provided downstream of the fan. The unit controller provides a modulating output to control a factory-provided/field-installed water valve and accepts a low temperature limit input signal. Openings in the unit side panels for piping must also be field constructed.

Condenser Hot Gas Reheat

This option shall consist of a modulating hot-gas reheat coil located on the leaving air side of the evaporator coil pre-piped and circuited with a low pressure switch. For detailed unit control and operational modes, please refer to the Sequence of Operations in the *Installation, Operation, and Maintenance* for your specific product:

- OAU-SVX01*-EN (*Installation, Operation, and Maintenance: Horizon™ Outdoor Air Unit - Indirect Gas-Fired/Electric Heat/Air Source Heat Pump - Models: OADD, OADE, OAKD, OAKE, OAND, OANE*)
- OAU-SVX02*-EN (*Installation, Operation, and Maintenance: Horizon™ Outdoor Air Unit - Indirect Fired Gas/Electric Heat and Air Source Heat Pump - Models: OABD, OABE, OAGD*)
- OAU-SVX005*-EN (*Installation, Operation, and Maintenance: Horizon™ Outdoor Air Unit - Direct Gas-Fired - Model: OAB, OAG*)

Return Air

Air returns vertically through the unit base or horizontally through the cabinet. Dampers are low-leak. Each damper has a unit-controlled actuator. Inputs are provided for unoccupied economizer control, based upon a comparison of the outside air stream to a dry bulb reference point. Refer to [Figure 70](#).

Figure 70. Return air damper



Corrosion-Inhibiting Coating

Options include stainless steel interior walls with prepainted exterior walls, ECO-coated coils, and stainless steel coil casing.

Filters

Adjustable 6-inch filter rack with options for 2-inch MERV-8, 2-inch MERV-13, and 4-inch MERV-14 installed just upstream of the evaporator coil. In addition, 2-inch aluminum mesh mist eliminators are located in the intake hood for OAD, OAK, and OAN; a bird screen is provided for OAB and OAG. Other options include 120 V UVC downstream of the evaporator coil, and 2-inch, 24 V electrostatic filters.

Filter Status Switch

This option indicates when filters require cleaning or replacement. The Filter Status switch triggers an information-only diagnostic message on the human interface and will allow continued unit operation.

Non-Fused Disconnect Switch

A 3-pole, molded case, disconnect switch with provisions for through the base electrical connections shall be installed. The disconnect switch will be installed in the unit in a water tight enclosure. Wiring will be provided from the switch to the unit high voltage terminal block. The switch will be UL/CSA agency recognized. The disconnect switch will be sized per NEC and UL guidelines but will not be used in place of unit overcurrent protection.

Convenience Outlet

A convenience outlet is provided on the control side of the unit. The GFI outlet is 115 volt, and capable of manual resetting.

Figure 71. Convenience outlet



Roof Mounting Curb

The roof mounting curb is fabricated of 14-gage galvanized steel with a nominal 2-inch x 2-inch nailer setup. The curb ships knocked down with a curb gasket. Curb height options are 14 or 24 inches.

Sound Attenuation Package

The unit will be equipped with variable speed, ECM condenser fans with accessories and a compressor blanket to reduce sound and increase performance. When a unit is selected with the Sound Attenuation Package, it will also be equipped with head pressure control to allow the condenser fans to run as slow as possible while maintaining the performance of the unit. This option increases the overall height of the unit at the condenser section. Refer to the submittal for unit dimensional data when Sound Attenuation Package is selected.



Appendix

OAU Filter Guide

Table 24. OAB indirect-fired units

| Evaporator | | | | |
|----------------------------|-------|-----|--------|-------|
| Thickness | MERV | Qty | Height | Width |
| 2 in. | 8, 13 | 2 | 20 | 24 |
| 4 in. | 14 | 2 | 20 | 24 |
| Auxiliary Module | | | | |
| Return Air | | | | |
| Thickness | MERV | Qty | Height | Width |
| 2 in. | 8 | 4 | 20 | 24 |
| Outside Air ^(a) | | | | |
| Thickness | MERV | Qty | Height | Width |
| 2 in. | 8 | 4 | 20 | 24 |

(a) No filters will be provided on the outside air path of the auxiliary module if electric preheat is provided.

Table 25. OAB direct-fired units

| Thickness | MERV | Qty | Height | Width |
|-----------|------------------|-----|--------|-------|
| 2 in. | Mist Eliminators | 2 | 16 | 25 |
| 2 in. | 8, 13 | 2 | 16 | 25 |

Table 26. OAD units

| Evaporator | | | | |
|----------------------------|---------------|-----|--------|-------|
| Thickness | MERV | Qty | Height | Width |
| 2 in. | 8, 13 | 2 | 16 | 20 |
| | | 2 | 16 | 25 |
| 4 in. | 14 | 2 | 16 | 20 |
| | | 2 | 16 | 25 |
| Auxiliary Module | | | | |
| Return Air | | | | |
| Thickness | MERV | Qty | Height | Width |
| 2 in. | 8 | 2 | 20 | 24 |
| Outside Air ^(a) | | | | |
| Thickness | MERV | Qty | Height | Width |
| 2 in. | 8 | 2 | 20 | 24 |
| Inlet | | | | |
| Thickness | Material | Qty | Height | Width |
| 2 in. | Aluminum Mesh | 3 | 16 | 25 |

(a) No filters will be provided on the outside air path of the auxiliary module if electric preheat is provided.

Table 27. OAG indirect-fired units

| Evaporator | | | | | |
|----------------------------------|------------------|-----------------|------------|---------------|--------------|
| | Thickness | MERV | Qty | Height | Width |
| — | 2 in. | 8 | 2 | 16 | 20 |
| | | | 4 | 16 | 25 |
| — | 2 in. | 13 | 2 | 16 | 20 |
| | | | 4 | 16 | 25 |
| — | 4 in. | 14 | 2 | 16 | 20 |
| | | | 4 | 16 | 25 |
| Auxiliary Module | | | | | |
| Return Air | | | | | |
| | Thickness | MERV | Qty | Height | Width |
| — | 2 in. | 8 | 2 | 16 | 20 |
| | | | 4 | 16 | 25 |
| Outside Air^(a) | | | | | |
| | Thickness | MERV | Qty | Height | Width |
| — | 2 in. | 8 | 2 | 16 | 20 |
| | | | 4 | 16 | 25 |
| Inlet | | | | | |
| | Thickness | Material | Qty | Height | Width |
| | 2 in. | Aluminum Mesh | 6 | 16 | 24 |

(a) No filters will be provided on the outside air path of the auxiliary module if electric preheat is provided.

Table 28. OAG direct-fired units

| | Thickness | MERV | Qty | Height | Width |
|--|------------------|------------------|------------|---------------|--------------|
| | 2 in. | Mist Eliminators | 6 | 16 | 24 |
| | 2 in. | 8, 13 | 6 | 16 | 24 |
| | 4 in. | 14 | 6 | 16 | 24 |

Note: 2 in. mist eliminators and 2 in. MERV 8 filters are standard; MERV 13 filter is optional.

Table 29. OAK units

| Evaporator | | | | | |
|--|---------------|-----|--------|-------|--|
| Thickness | MERV | Qty | Height | Width | |
| 2 in. | 8, 13 | 9 | 20 | 18 | |
| 4 in. | 14 | 6 | 20 | 25 | |
| Auxiliary Module (46XX ERV) | | | | | |
| Return Air | | | | | |
| Thickness | MERV | Qty | Height | Width | |
| 2 in. | 8 | 2 | 25 | 20 | |
| | | 1 | 25 | 16 | |
| Outside Air^(a) | | | | | |
| Thickness | MERV | Qty | Height | Width | |
| 2 in. | 8 | 2 | 25 | 20 | |
| | | 1 | 25 | 16 | |
| Auxiliary Module (58XX/ 64XX ERV) | | | | | |
| Return Air | | | | | |
| Thickness | MERV | Qty | Height | Width | |
| 2 in. | 8 | 8 | 20 | 18 | |
| Outside Air^(a) | | | | | |
| Thickness | MERV | Qty | Height | Width | |
| 2 in. | 8 | 8 | 20 | 18 | |
| Inlet | | | | | |
| Thickness | Material | Qty | Height | Width | |
| 2 in. | Aluminum Mesh | 6 | 20 | 20 | |

(a) No filters will be provided on the outside air path of the auxiliary module if electric preheat is provided.

Table 30. OAN units

| Evaporator | | | | |
|---|-----------------|------------|---------------|--------------|
| Thickness | MERV | Qty | Height | Width |
| 2 in. | 8, 13 | 9 | 24 | 20 |
| 4 in. | 14 | 9 | 24 | 20 |
| Auxiliary Module (58XX ERV) | | | | |
| Return Air | | | | |
| Thickness | MERV | Qty | Height | Width |
| 2 in. | 8 | 6 | 18 | 20 |
| Outside Air^(a) | | | | |
| Thickness | MERV | Qty | Height | Width |
| 2 in. | 8 | 6 | 18 | 20 |
| Auxiliary Module (68XX / 74XX ERV) | | | | |
| Return Air | | | | |
| Thickness | MERV | Qty | Height | Width |
| 2 in. | 8 | 8 | 25 | 20 |
| Outside Air^(a) | | | | |
| Thickness | MERV | Qty | Height | Width |
| 2 in. | 8 | 8 | 25 | 20 |
| Inlet | | | | |
| Thickness | Material | Qty | Height | Width |
| 2 in. | Aluminum Mesh | 10 | 16 | 25 |

(a) No filters will be provided on the outside air path of the auxiliary module if electric preheat is provided.

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