KCC MANUFACTURING

VIKING™

DEDICATED OUTDOOR AIR SYSTEMS

VIKING DEDICATED OUTDOOR AIR SYSTEMS · AHRI 920 CERTIFIED

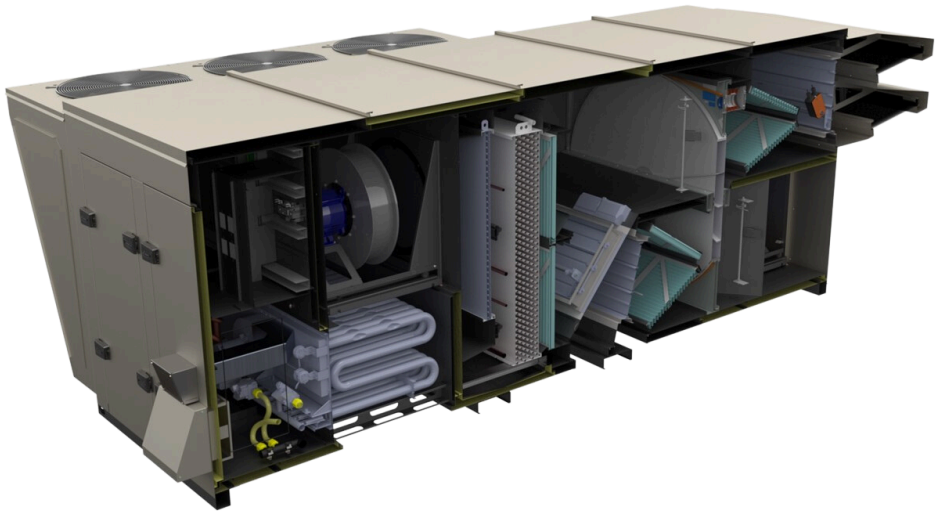
Air performance. Owned.

Viking delivers up to 100% conditioned outdoor air, maintaining the calculated supply dewpoint as low as 43°F, with modulating hot-gas reheat that decouples latent capacity from sensible demand. The engineers who designed it helped establish the AHRI DX-DOAS certification program and helped write ASHRAE SSPC 198, the method of test it is certified under. Four Viking OA cabinets, 3 to 80 tons, DX or chilled water, built by 1,000 employee-owners in Kentucky.

CAPACITY	AIRFLOW	COOLING	HEATING
3 – 80 TONS	**500 – 20,000 CFM**	**DX · Chilled Water** **ASHP · WSHP**	**IF Gas · Electric** **Hot Water · Heat Pump**

AIR
SHAPES
PERFORMANCE.

VIKING OA · REV 6 CUT-AWAY



50
YEARS OF CONTINUOUS U.S. MANUFACTURING

100%
EMPLOYEE-OWNED 1,000+ SHAREHOLDERS

20+
ENGINEERS ON ASHRAE TECHNICAL COMMITTEES

600K
SQ FT PRODUCTION ON A 150-ACRE CAMPUS

Part-load performance

Platforms engineered to exceed ASHRAE 90.1 and IECC part-load (ISMRE2) benchmarks, where high-performance specifications are won.

Certification from the inside

AHRI 920 certified equipment, the specifier's gatekeeper, with more than twenty KCC engineers on ASHRAE technical committees. KCC does not chase certification, it helps define it.

Direct engineering access

Specifiers talk to the engineers who design and test the equipment. No layers. Applications, DSR review and field support in one building.

Selecting for the load

GOOD · BETTER · BEST

The deciding variable is the sensible heat ratio at design. Conventional packaged equipment is selected at a 75°F DB / 63°F WB mixed-air entering condition and carries little to no reheat, so it dries the space only as a by-product of cooling it. Viking OA is selected at 95°F DB / 78°F WB entering outdoor air with modulating hot-gas reheat, so latent capacity stays available independent of sensible demand.

GOOD Conventional	BETTER Viking HA	BEST Viking OA
DESIGN **75° DB / 63° WB**	DESIGN **Mixed / partial OA**	DESIGN **95° DB / 78° WB**
BEST FOR **Most sensible applications**	BEST FOR **Adequate at many design conditions**	BEST FOR **Higher-latent applications**
SHR **~0.90**	SHR **~0.80**	SHR **0.70 or below**
HGRH **Little capacity / control**	HGRH **Partial capacity / control**	HGRH **Full capacity / control**

Inside the cabinet

VIKING OA · REV 6

Filtration
2" aluminum mesh at the unit intake, plus a 6" adjustable rack upstream of the evaporator coil

›

Total-energy wheel (optional)
Auxiliary cabinet with modulating bypass dampers

›

Cooling section
DX or chilled water, with Digital Scroll, variable speed or APR capacity control

›

Modulating HGRH
Set a minimum of 6" downstream of the evaporator, so reheat never reintroduces moisture

›

Heating
High-turndown IF gas, SCR electric, hot water or heat pump

›

Supply fan
Direct-drive VFD plenum fan on slide-out service rails

› 95° DB / 78° WB ENTERING OUTDOOR AIR

SUPPLY DEWPOINT AS LOW AS 43°F ›

- **2" double-wall R-13 insulation**, including the base, so there is no thermal break at the floor.
- **Direct-drive VFD plenum supply fan** on slide-out service rails.
- **Modulating hot-gas reheat coil** set a minimum of 6" downstream of the evaporator coil.
- **Digital Scroll, variable speed or APR capacity control** with head-pressure control via VFD.
- **High-turndown indirect gas-fired stainless heat exchanger**, SCR electric, or hot-water coils.
- **2" aluminum mesh filter at the intake**, plus a 6" adjustable filter rack upstream of the evaporator coil.
- **Microprocessor control** with an easy-to-read onboard interface.
- **Refrigerant leak detection**, 3 to 6 sensors by cabinet, with exhaust fans in the control cabinet.
- **65 kA SCCR · 65 KAIC**; 208V / 460V / 575V.

Options & accessories

SPECIFY AS REQUIRED

AIR SIDE & ENERGY RECOVERY

- Total-energy wheel, 30" to 86" dia., composite or aluminum, nominal 1,400 to 17,000 CFM
- Powered exhaust; split return / exhaust (OAK, OAN)
- 2-position or modulating economizer return-air damper
- Barometric relief; Class 1A dampers
- Electric preheater

ENVIRONMENT & PROTECTION

- Corrosive-environment package with eco-coated coils or stainless interiors
- Condenser hailguards (OAK)
- UV lights on the leaving-air side of the evaporator coil
- Smoke detectors
- Outdoor-air monitoring at the intake filter

SERVICE & CONFIGURATION

- LED service lights
- Lockable handles, Rev 6 cabinet (DSR)
- Heat-only configurations across the line
- Chilled-water turbulators and sine-wave coil (DSR)
- All-copper or stainless steel coils (DSR)

CONFIGURATIONS

Every cabinet is available as **Primary**, **with Powered Exhaust**, or **with Energy Recovery Wheel**, in vertical or horizontal supply and return. Heat-only units are available across the line. Refer to the model-number matrix on the cabinet cheat sheets (69 digits; tonnage is digits 5–7) or contact **applications@kccmfg.com** for selection support.

The Viking OA lineup

FOUR CABINETS · 3–80 TONS



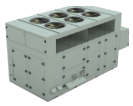
OAB
3 – 9 TONS



OAD
10 – 30 TONS



OAK
30 – 60 TONS



OAN
40 – 80 TONS

CABINET	NOMINAL TONNAGE	AIRFLOW (CFM)	COOLING	GAS HEAT (MBH)	ELECTRIC HEAT (KW)	HEAT PUMP
OAB	3 – 9	500 – 3,000	DX · Chilled water	50 – 200	5 – 48	ASHP · WSHP, all models
OAD	10 – 30	1,200 – 8,000	DX · Chilled water	150 – 600	15 – 119	ASHP · WSHP
OAK	30 – 60	3,000 – 13,500	DX · Chilled water	300 – 950	10 – 215	ASHP · WSHP, all models
OAN	40 – 80	4,000 – 20,000	DX · Chilled water	200 – 1,200	15 – 229	DX only

Heating across the line: indirect-fire gas · electric · hot water · heat pump (where listed). Compressors: Digital Scroll · fixed speed · variable speed (OAB, OAD). Voltage: 208V · 460V · 575V. Heat-only units available.

Dimensional data & unit weights

TYPICAL CONFIGURATIONS

CONFIGURATION		OABG · 3–9 TONS	OADG · 10–30 TONS	OAKG · 30–60 TONS	OANG · 40–80 TONS
Primary	Width (in.)	52	99	102	110
	Length (in.)	119	147	198	218
	Min. weight (lb)	1,295	2,319	5,207	6,560
	Max. weight (lb)	1,806	3,985	7,900	9,618
With powered exhaust	Width (in.)	52	99	118	139
	Length (in.)	161	147	198	281
	Min. weight (lb)	1,648	3,080	6,099	7,667
	Max. weight (lb)	2,422	4,807	8,474	11,394
With ERV	Width (in.)	52	99	118	139
	Length (in.)	161	213	260	337
	Min. weight (lb)	1,780	3,515	7,160	8,876

For complete dimensional data, curb details, installation clearances, corner weights and rigging instructions, see **IOM-A001 KCC Viking OA Installation, Operation and Maintenance Manual**. For the most accurate data on a given job, refer to the unit submittal.

Where the machine earns its keep

TYPICAL APPLICATIONS

K–12 & higher education
Ventilation-driven latent load per ASHRAE 62.1, with occupancy that swings hard between periods.

Healthcare & outpatient
Tight dewpoint and pressurization control, decoupled from the space sensible load.

Laboratories & cleanrooms
High outdoor-air fractions where energy recovery pays back fastest.

Indoor agriculture / CEA
Continuous, very high latent load with a sensible heat ratio well below 0.70.

Natatoria & wet spaces
Corrosive, moisture-critical environments calling for eco-coated coils or stainless interiors.

Hospitality & multifamily
Corridor and dwelling-unit ventilation delivered neutral, so terminal units carry sensible only.

PART-LOAD PERFORMANCE DATA

KCC selection software produces part-load performance data across the operating envelope, including the ISMRE2 points behind ASHRAE 90.1 and IECC compliance. **Ask your Sales Engineer to include part-load performance data with your schedule.**

Viking HA, the mixed-air platform

2 TO 30 TONS

Not every project needs 100% outdoor air. Where the design calls for partial outdoor air and a moderate latent load, Viking HA carries the ventilation and the space load in one machine, with the same cabinet construction, controls platform and factory behind it as Viking OA. Three cabinet sizes cover 2 to 30 tons; the HAE cabinet is detailed below.

CABINET	NOMINAL TONNAGE	AIRFLOW (CFM)	COOLING	GAS HEAT (MBH)	ELECTRIC HEAT (KW)	HEAT PUMP
HA small	2 – 9	Capacity range released; cabinet data to follow				
HAE	10 – 15	1,500 – 6,000	DX	200 – 400	24 – 99	ASHP, all models
HA large	17 – 30	Capacity range released; cabinet data to follow				

HAE CONSTRUCTION & CONTROLS

- Models HAE010, HAE012 and HAE015, each available DX or air-source heat pump
- 2-stage or variable speed compressors; 208V / 230V · 460V · 575V
- Indirect-fire gas or electric heat, vertical supply and vertical return
- Refrigerant leak detection, one sensor

HAE CONFIGURATIONS & OPTIONS

- Primary, with powered exhaust, or with energy recovery wheel
- Total-energy wheels 30" to 46" dia., nominal 1,400 to 4,000 CFM
- Electric preheater; corrosive-environment options; Class 1A dampers
- Smoke detectors; LED service lights; 65 KAIC

Heat pumps, air source and water source

ELECTRIFIED HEATING

PLATFORM	NOMINAL TONNAGE	AIR-SOURCE (ASHP)	WATER-SOURCE (WSHP)
Viking OA · OAB	3 – 9	All models	All models
Viking OA · OAD	10 – 30	Available	Available
Viking OA · OAK	30 – 60	All models	All models
Viking OA · OAN	40 – 80	DX only	DX only
Viking HA · HAE	10 – 15	All models	Not available

Specifying the heat pump. Heat pump sits alongside indirect-fire gas, SCR electric and hot water as a heating selection, so the decision is made at schedule rather than at the cabinet.

- **Air source** suits sites without a condenser water loop and pairs with supplemental electric or gas heat for design-day capacity.
- **Water source** ties the unit into an existing or planned condenser water or geothermal loop and holds capacity as ambient drops.
- Electrical service must be sized for the heat pump plus any simultaneous supplemental heat.

The curb comes from the same building

ROOFING INFRASTRUCTURE SINCE 1987

KCC is one of North America's leading manufacturers of roof curbs and curb adapters, and has supplied national HVAC OEMs for nearly four decades. On a Viking job the curb and the equipment come off the same campus, engineered together, so the interface is not a coordination item between two vendors.

- Roof curbs and curb adapters, including metal building curbs
- Curb adapters for equipment replacement over an existing opening
- Gutters, skylights, smoke vents, roof hatches and walkways
- Curb details, clearances, corner weights and rigging published with the unit in IOM-A001

Built by owners

SINCE 1977

1977
KCC is founded in Kentucky.

1987
Roof curb manufacturing begins, now nearly four decades supplying national OEMs.

2008
KCC becomes 100% employee-owned through an ESOP.

2010
HVAC equipment manufacturing begins.

2019
Inaugural Butler Lifetime Partner Award, the first ever issued.

Today
1,000th employee-owner welcomed. A 150-acre, 600,000+ sq ft campus is underway, home to the most capable DOAS psychrometric chamber in the world.

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