

AAF®—HermanNelson® Unit Ventilators

- Built-up floor and ceiling units, plus air source air conditioner, air-to-air heat pump or water source heat pump (boiler/tower and geothermal)
- Draw-through design with face and bypass damper control for superior temperature and dehumidification control
- GentleFlo™ Air Moving System for very quiet operation
- Welded frame construction and industrial strength cabinet and finish for long life
- Unique Draw-Thru Design provides uniform air distribution across the coil for even discharge air temperatures
- Controls flexibility—MicroTech® II controls with our Open Choices™ feature for easy integration with the BAS of your choice
- Digital Ready™ feature provides industry standard Direct Digital Control (DDC) components for easy integration of unit controllers by others
- Economizer, Demand Control Ventilation (DCV) and Part Load, Variable Air options allow you to reduce operating costs while closely matching classroom comfort requirements

For more detail, refer to Catalogs UV1600, UV1610, and UV-1-231. For the most current information, refer to www.mcquay.com.



Models AHF, AHB, AHV, and AHR ceiling units
Available with ECM motor



Models AVS, AVB, AVV, and AVR floor units



Models AZS, AZQ, AZV, AZR, AED, AEQ, GRQ and ERQ self-contained floor units



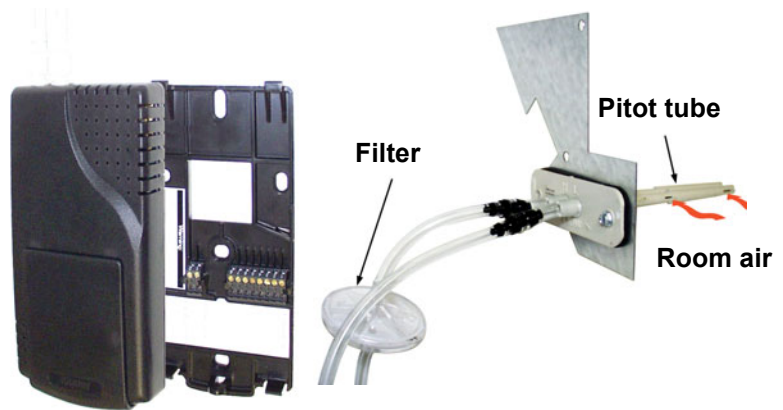
Available LONMARK certified

Options



MicroTech II DDC controls

- Precise, efficient operation
- User-friendly keypad with visual display
- Plug-in interface to BAS of your choice (LONWORKS[®] SCC, BACnet[®] MS/TP, Metasys[®] N2 Open)
- Part-load, variable air option varies fan speed automatically to meet room load, helping to provide comfort and reduce operating costs



CO₂ sensor and unit-mounted sensing device

- Modulates amount of outside air to meet ASHRAE Standard 62.1-2004 requirements and lower operating costs

Three different economizer types for “free” cooling

- Basic—compares inside and outside temperature
- Expanded—compares inside and outside temperature, and outside air relative humidity to help prevent the entrance of humid outside air
- Leading Edge—compares temperature and relative humidity of inside and outside air (a true enthalpy economizer) to help prevent the entrance of humid outside air



Draftstop[®] system

- Intercepts cold drafts from windows



Optional remote room air sensor



Optional expanded room air sensor

- With variable temperature adjustment (+/- 3 degrees)



Optional deluxe room air sensor

- Individual room temperature control with variable temperature adjustment (54 to 82 degrees)

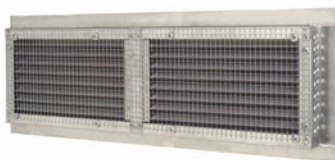
AAF®—HermanNelson® Unit Ventilators

Louvers

- Constructed of heavy gauge aluminum (painted or unpainted) for maximum durability
- Designed to maximize outdoor air intake and keep rain and moisture out



Front



Back

AV/AH horizontal and vertical blade louvers



Front

Back

Self-contained louver

Self-contained wall sleeve

- Heavy duty construction
- Simplifies installation and service



Dual top hinged access doors

- Provides easy access to motor and end bearing

Non-glare top

- Scuff resistant

Fan housing

- Logarithmic expansion for quieter operation

Welded frame construction

- Promotes long life

Three sectionalized front access panels

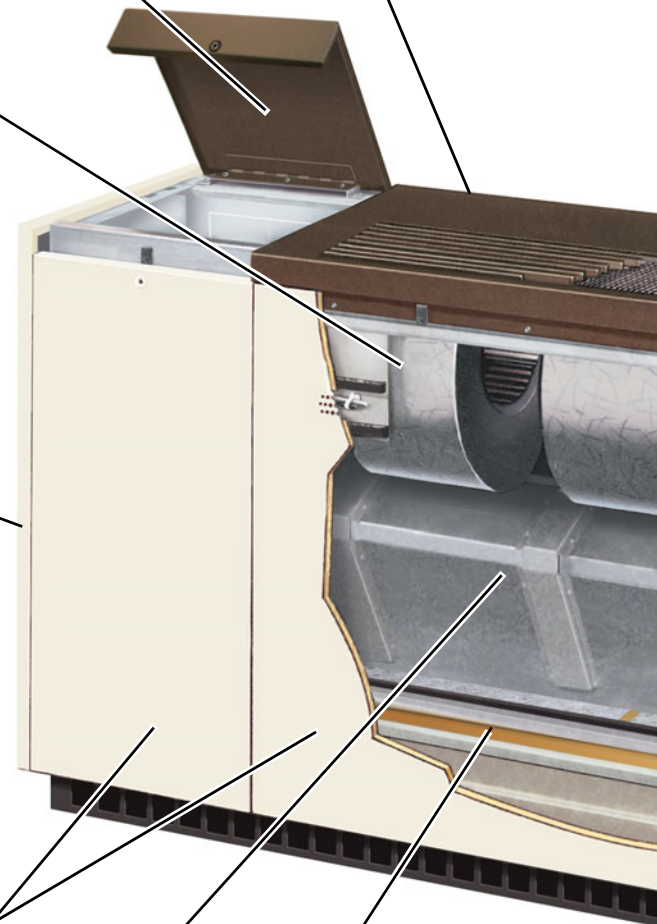
- Easy access to unit interior

Face and bypass damper

- Superior dehumidification control

Full length filter

- All air delivered into the classroom is filtered
- One piece design makes filter changes quick and easy



Unit Ventilators

Features

Fan wheel design

- Larger and fewer blades move air quietly

MicroTech II local user interface

- Displays unit condition
- Diagnostics capability
- Settable unit functions

Maintainable motor location

- Motor location out of airstream for easy access

MicroTech II controls

- LONWORKS®, BACnet®, Metasys® communication capability

High heat transfer coil design

- Provides more cooling capacity

Integral drain pan

- Standard in all units to permit future cooling

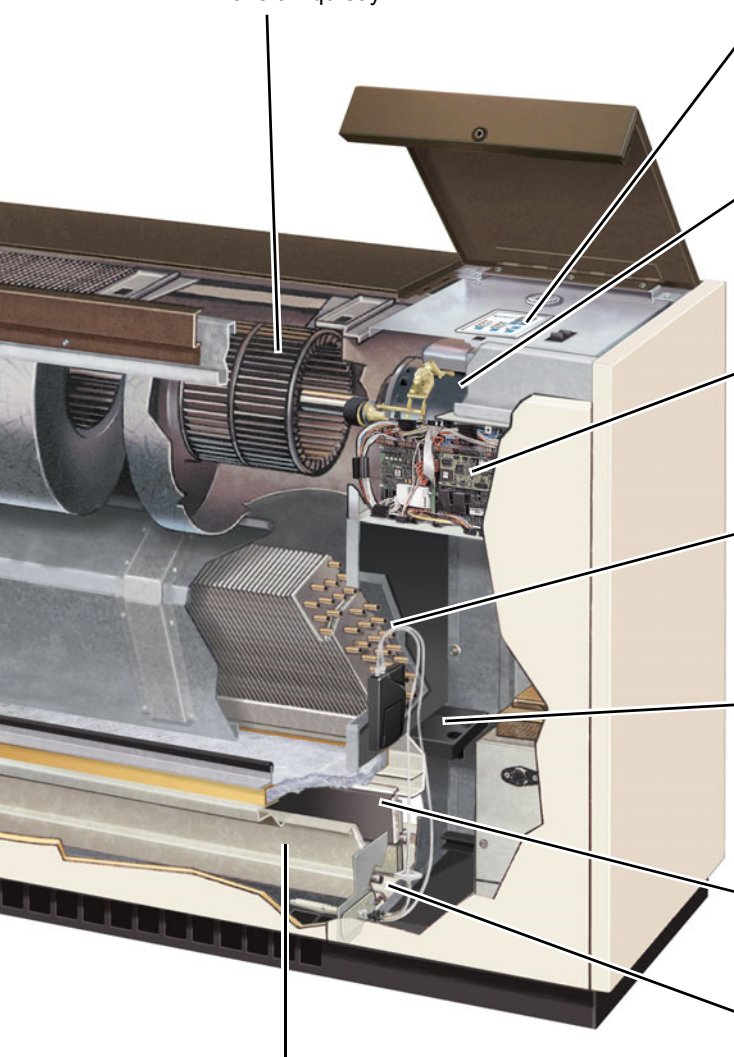
Insulated, double-wall outdoor air damper

- Seals without twisting

Optional factory-mounted CO₂ sensor

Indoor return air damper

- Unique, free floating design to prevent cold air gusts from directly entering the classroom



Physical Data

AV Floor Unit Physical Data

Unit series			S07	S10	S13	S15
Nominal airflow, cfm (L/s)			750 (354)	1000 (472)	1250 (590)	1500 (708)
Filter data	Nominal size	inches	10 × 36 1/2 × 1	10 × 48-1/2 × 1	10 × 60-1/2 × 1	10 × 36-1/2 × 1
		mm	254 × 927 × 25	254 × 1232 × 25	254 × 1537 × 25	254 × 927 × 25
	Area	ft ² (m ²)	2.54 (.24)	3.37 (.31)	4.2 (.39)	5.08 (.47)
	Quantity		1	1	1	2
Shipping weight, lb (kg) ¹	16 5/8" deep units		350 (158)	425 (193)	495 (225)	570 (259)
	21 7/8" deep units		370 (168)	445 (202)	525 (238)	600 (272)
Height, inches (mm)			30 1/8 (765)			
Depth, inches (mm)			16 5/8 (422)	16 5/8 (422)	16 5/8 (422)	16 5/8 (422)
			21 7/8 (556)	21 7/8 (556)	21 7/8 (556)	21 7/8 (556)
Width, inches (mm) ²			62 (1575)	74 (1880)	86 (2184)	98 (2489)

1. Approximate weights based on face and bypass damper controlled unit with 4-row cooling coil, high capacity hot water coil and MicroTech II controls.

2. Measurement is without end panels.

AH Ceiling Unit Physical Data

Unit series			S07, H07	S10, H10	S13, H13	S15, H15	S20, H20
Nominal airflow, cfm (L/s)			750 (354)	1000 (472)	1250 (590)	1500 (708)	2000 (994)
Filter data	Nominal size	inches	10 × 36 1/2 × 1	10 × 48 1/2 × 1	10 × 60 1/2 × 1	10 × 36 1/2 × 1	10 × 36 1/2 × 1
		mm	254 × 927 × 25	254 × 1232 × 25	254 × 1537 × 25	254 × 927 × 25	254 × 914 × 25
	Area	ft ² (m ²)	2.54 (.24)	3.37 (.31)	4.2 (.39)	5.08 (.47)	5.08 (.47)
	Quantity		1	1	1	2	2
Shipping weight, lb (kg) ¹	Discharge air arrangement	AH, AT, BD, FD, FG	385 (179)	465 (211)	540 (245)	600 (272)	680 (309) ²
Height, inches (mm)			16 5/8 (422)	16 5/8 (422)	16 5/8 (422)	16 5/8 (422)	16 5/8 (422)
Depth, inches (mm)		AH, AT	36 (914)	36 (914)	36 (914)	36 (914)	–
		BD, FD, FG	40 (1016)	40 (1016)	40 (1016)	40 (1016)	40 (1016)
Width, inches (mm) ³			62 (1575)	74 (1880)	86 (2184) 98	98 (2489)	98 (2489)

1. Approximate weights based on face and bypass damper controlled unit with 4-row cooling coil, high capacity hot water coil and MicroTech II controls.

2. FD and FG are for 2000 cfm only.

3. Measurement is without end panels.

Unit Ventilators

Nominal Capacity Data—Models AV/AH

Unit series ¹		S07	S10	S13	S15	S20 ²
Cooling capacity (Btuh) ³	cfm	750	1000	1250	1500	2000
	2-row	17,900	23,600	31,500	38,800	44,900
	3-row	21,700	33,300	41,100	51,200	50,800
	4-row	27,800	35,600	43,400	56,700	62,200
Steam heat (Btuh) ⁴	cfm	750	1000	1250	1500	2000
	Standard	50,300	75,200	89,000	111,500	140,800
	High	66,500	89,900	112,500	128,500	227,900
Electric heat (Btuh)	Low	20,500	27,300	34,100	41,000	41,000
	High	41,000	54,600	68,300	81,900	81,900
Hot water heat ⁵	1-row	37,000	49,500	57,000	66,000	69,800
	2-row	48,300	62,000	74,100	97,200	96,700
	3-row	56,800	72,000	84,500	97,500	115,000
	4-row	62,500	81,000	95,000	110,000	142,100

1. All data is for F Vintage units.

2. Ceiling unit only.

3. 80°F/67°F entering air temperature; 45°F entering water temperature; 10°F water temperature rise.

4. 0°F entering air temperature; 2 PSI steam at 218.5°F.

5. 60°F entering air temperature; 160°F entering water temperature; 6 gpm water flow.

Physical Data

Self-Contained Floor Unit Physical Data—Models AZ, AE, AR/ER

Unit series		024	030	036	040	044 ¹	048	054	
Nominal airflow, cfm (L/S)		960 (453)	960 (453)	1160 (548)	1160 (548)	1430 (675)	1430 (675)	1430 (675)	
Filter data	Nominal size	inches	10 × 48 1/2 × 1	10 × 48 1/2 × 1	10 × 60 1/2 × 1	10 × 60 1/2 × 1	10 × 36 1/2 × 1	10 × 36 1/2 × 1	10 × 36 1/2 × 1
		mm	254 × 1232 × 25	254 × 1232 × 25	254 × 1537 × 25	254 × 1537 × 25	254 × 927 × 25	254 × 927 × 25	254 × 927 × 25
	Area	ft ² (m ²)	3.37 (.31)	3.37 (.31)	4.2 (.39)	4.2 (.39)	5.08 (.47)	5.08 (.47)	5.08 (.47)
	Quantity		1	1	1	1	2	2	2
Shipping weight, lb (kg)		885 (402)	885 (402)	975 (442)	975 (442)	1075 (448)	1075 (448)	1075 (448)	
Height, inches (mm)		30 (762)	30 (762)	30 (762)	30 (762)	30 (762)	30 (762)	30 (762)	
Room depth, inches (mm)			16 5/8 (422)	16 5/8 (422)	16 5/8 (422)	16 5/8 (422)	16 5/8 (422)	16 5/8 (422)	
			21 7/8 (556)	21 7/8 (556)	21 7/8 (556)	21 7/8 (556)	21 7/8 (556)	21 7/8 (556)	
			28 (711)	28 (711)	28 (711)	28 (711)	28 (711)	28 (711)	
Width inches, (mm) ¹		86 (2184)	86 (2184)	98 (2489)	98 (2489)	110 (2794)	110 (2794)	110 (2794)	

1. AE/AZ only.

2. Measurement is without end panels.

Unit Ventilators

Nominal Capacity Data—Model AZ

Unit series		AZ024	AZ030	AZ036	AZ040	AZ044	AZ048	AZ054	
Cooling capacity ¹	Total	Btuh	26,837	31,475	36,821	39,194	43,900	48,500	53,300
		Watts	7865	9225	10,792	11,487	12,864	14,210	15,617
	Sensible	Btuh	21,531	23,447	28,314	29,123	30,100	32,100	34,100
		Watts	6310	6852	8298	8535	8816	9405	9991
EER		11.1	10.5	11.1	10.5	9.5	9.3	9.1	
Steam heat ²	Low capacity (68)	Btuh	52,000	52,000	64,000	64,000	77,800	77,800	77,800
		Watts	15,236	15,236	18,752	18,752	22,795	22,795	22,795
	High capacity (69)	Btuh	85,700	85,700	105,000	105,000	128,500	128,500	128,500
		Watts	25,110	25,110	30,765	30,765	37,650	37,650	37,650
Electric heat	Low	kW	8.0	8.0	10.0	10.0	12.0	12.0	12.0
		MBh	27.3	27.3	34.1	34.1	41.0	41.0	41.0
	High	kW	16.0	16.0	20.0	20.0	24.0	24.0	24.0
		MBh	54.6	54.6	68.3	68.3	81.9	81.9	81.9
Hot water heat ³	1-row coil	Btuh	45,700	45,700	54,100	54,100	63,800	63,800	63,800
		Watts	13,390	13,390	15,851	15,851	18,693	18,693	18,693
	2-row coil	Btuh	62,500	62,500	73,500	73,500	88,600	88,600	88,600
		Watts	18,313	18,313	21,536	21,536	25,959	25,959	25,959

1. 80°/67°F (27°/19°C) Entering Air Temperature; 95°F Ambient.

2. Steam Heating @ 2 psig Steam (13.8 KPa); 60°F Entering Air Temperature.

3. 60°F Entering Air Temperature; 160°F Entering Water Temperature; 6 gpm Water Flow.

Unit Ventilators

Nominal Capacity Data—Model AE

Unit series			AE024	AE030	AE036	AE040	AE044	AE048	AE054
Cooling capacity ¹	Total	Btuh	26,837	31,475	36,821	39,194	43,900	48,500	53,300
		Watts	7865	9225	10,792	11,487	12,864	14,210	15,617
	Sensible	Btuh	21,531	23,447	28,314	29,123	30,100	32,100	34,100
		Watts	6310	6872	8298	8535	8822	9408	9994
	EER		11.1	10.5	11.1	10.5	9.5	9.3	9.1
	COP		3.3	3.1	3.3	3.1	2.8	2.7	2.6
	Power	kW	2.4	3.0	3.3	3.7	4.6	5.2	5.9
Heating capacity ²	Total	Btuh	21,900	26,900	34,600	39,200	41,900	47,300	52,300
		Watts	6419	7884	10,141	11,489	12,280	13,863	15,328
	COP		2.9	2.8	3.0	2.9	2.7	2.6	2.5
	power	kW	2.19	2.77	3.39	3.99	4.57	5.24	6.10
Electric heat	Low	kW	8.0	8.0	10.0	10.0	12.0	12.0	12.0
		MBh	27.3	27.3	34.1	34.1	41.0	41.0	41.0
	High	kW	16.0	16.0	20.0	20.0	24.0	24.0	24.0
		MBh	54.6	54.6	68.3	68.3	81.9	81.9	81.9

1. Based on ASHRAE and ARI test conditions of 95°F (35°C) DB/75°F (21°C) WB outside; 80°F (27°C)/67°F (19°C) inside.

2. Based on ASHRAE and ARI test conditions of 47°F (8°C) DB/43°F (6°C) WB outside; 70°F (21°C) inside.

Nominal Capacity Data—Models AR/ER

Unit series			AR/ER024	AR/ER030	AR/ER036	AR/ER040	AR/ER048	AR/ER054	
Boiler/ tower	Water flow		Gpm	6.6	8.4	9.7	11.2	12.8	14.5
			L/s	0.42	0.53	0.61	0.71	0.81	0.92
	Cooling ¹	Total	Btuh	25,075	32,005	37,104	42,098	48,503	55,128
			Watts	7349	9380	10,875	12,338	14,210	15,617
		Sensible	Btuh	18,330	21,539	22,818	27,439	33,116	36,838
			Watts	5372	6313	6688	8042	9706	10,797
		EER		11.0	10.7	10.9	10.4	10.5	10.7
		COP		4.1	4.5	4.5	4.3	4.0	3.9
	Heating ²	Total	Btuh	28,783	35,826	43,505	47,100	54,208	61,846
			Watts	8436	10,500	12,749	13,804	15,887	18,126
		COP		3.23	3.14	3.19	3.05	3.07	3.13
	Geothermal	Water flow		gpm	6.0	7.5	9.0	9.0	10.0
L/s				0.38	0.47	0.57	0.57	0.63	0.63
Cooling ³		Total	Btuh	26,200	30,500	37,000	41,300	48,000	54,000
			Watts	7679	8939	10,844	12,104	14,210	15,617
		Sensible	Btuh	17,162	18,453	22,874	25,772	31,474	33,967
			Watts	5030	5408	6704	7553	9225	9955
		EER		14.0	15.2	15.5	14.6	13.6	13.3
		COP		4.10	4.50	4.50	4.30	4.00	3.90
Heating ⁴		Total	Btuh	19,000	23,000	28,000	33,000	35,200	41,000
			Watts	5569	6741	8206	9672	10,317	12,016
		COP		3.1	2.9	3.0	3.0	2.9	2.8
Electric heat		Low	kW	8.0	8.0	10.0	10.0	12.0	12.0
	MBh		27.3	27.3	34.1	34.1	41.0	41.0	
	High	kW	16.0	16.0	20.0	20.0	24.0	24.0	
		MBh	54.6	54.6	68.3	68.3	81.9	81.9	

1. Based on ASHRAE and ARI test conditions of 95°F (35°C) DB/75°F (21°C) WB outside; 80°F (27°C)/67°F (19°C) inside; 85°F (29°C) EWT.

2. Based on ASHRAE and ARI test conditions of 47°F (8°C) DB/43°F (6°C) WB outside; 70°F (21°C) inside; 70°F (21°C) EWT.

3. Based on ASHRAE and ARI Standard 330 conditions of 77°F (25°C) entering temperature of 15% brine solution.

4. Based on ASHRAE and ARI Standard 330 conditions of 32°F (0°C) entering temperature of 15% brine solution.