



STANDARD COMMERCIAL SE4000i Energy Recovery Ventilator

PRODUCT
SPECIFICATIONS
& TECHNICAL
DATA



NOMINAL CAPACITY 3000-4000 CFM

CASING – STANDARD

- Double-wall cabinet
- 22-gauge galvanized steel interior and exterior
- Access doors with quarter-turn handles
- 22-gauge galvanized steel drain pan
- Drain Connections: 1" NPT
- Insulation: 1" (25 mm)

CASING – OPTIONAL

- Painted white baked enamel outside finish
- Pool Construction: TEFC motors, stainless steel interior, and epoxy-coated fans (NOTE: ERV not recommended for indoor pool applications)
- Removable access panels

MOUNTING – STANDARD

On platform

PLATE EXCHANGER OPTIONS

Standard Enthalpy (sensible and latent heat transfer)

Quantity: 4
Pitch: 0.14" (3.5 mm)
Dimensions: 21-7/32" x 21-7/32" x 19-3/8"
(539 mm x 539 mm x 492 mm)



High-Efficiency Enthalpy (sensible and latent heat transfer)

Quantity: 4
Pitch: 0.10" (2.5 mm)
Dimensions: 21-7/32" x 21-7/32" x 19-3/8"
(539 mm x 539 mm x 492 mm)



High-Latent-Transfer Enthalpy (sensible and latent heat transfer)

Quantity: 4
Pitch: 0.10" (2.5 mm)
Dimensions: 21-7/32" x 21-7/32" x 19-3/8"
(539 mm x 539 mm x 492 mm)



BLOWERS & MOTORS – STANDARD OPTIONS

Blowers:

- Quantity: 2
- Forward-curved
- Permanently sealed and lubricated ball bearings
- Power transmission by adjustable pulleys and belts

Motors:

- Type: Inverter duty 10:1
- Maximum Power: 5 hp
- Available Voltage:
 - » 120, 208, 230 V / 1ph / 60Hz
 - » 208, 230, 460, 575 V / 3ph / 60Hz

(See table on page 2 for details)

EC MOTORS – OPTIONAL

Blowers:

- Quantity: 4 (2 per air stream)
- Plenum Type: Backward Inclined
- Permanently sealed and lubricated ball bearings
- Direct Drive

EC Motors:

- Maximum Power:
 - » 1.9 kW at 208-230 V / 3ph / 60Hz
 - » 2.5 kW at 460 V / 3ph / 60Hz
- Available Voltage:
 - » 208, 230, 460 V / 3ph / 60Hz

(See table on page 2 for details)

ELECTRICAL & CONTROLS – STANDARD

- 24 V double motor contactor with start-stop dry contact
- Non-fused disconnect (NEMA 4)
- 24 V transformer for controls

ELECTRICAL & CONTROLS – OPTIONAL

- Fused disconnect
- 24 VAC, 20 VA power available for accessories

FILTERS – STANDARD

Quantity: 4 supply, 4 exhaust

Type: MERV 8

Dimensions: 18" x 20" x 2" (457 mm x 508 mm x 51 mm)

FILTERS – OPTIONAL

MERV 13 Filters (substitute on supply air circuit only)

LISTED BY



SE4000i Features (Continued)

FROST PREVENTION/CONTROL – OPTIONS

If no defrost mode is selected, it is the customer's responsibility to protect the core from freezing.

Frost control activated by a temperature reference: 14°F (-10°C)

Internal Pre-Heat by Electric Coil:

- Powered by unit, SCR control (unavailable with 120 V)

Internal Pre-Heat by Hot Water Coil:

- 0-10 V signal on the control panel
- Piping connections under unit

Exhaust Defrost:

- Supply air blower shuts down and outside air damper closes. Warm exhaust air defrosts the core until it is completely defrosted.
- Includes motorized and insulated damper on fresh air intake (OA)

Recirculation Defrost:

- Exhaust air blower shuts down, outside air damper closes, exhaust air damper (optional) closes, and recirculation damper (included) opens. Exhaust air warms up the core for a predetermined amount of time (see table at right).
- Includes motorized and insulated damper on fresh air intake (OA)

POST-HEAT COILS

Post-Heat by Electric Coil:

- Powered by unit, SCR control (unavailable with 120 V)

Post-Heat by Hot Water Coil:

- 0-10VDC signal to maintain supply air temperature, or 0-10VDC signal by others

OPTIONAL COMPONENTS

- Motorized and insulated damper for exhaust port (EA)
 - Adds 7" (178 mm) to overall unit width
- Non-insulated backdraft damper for exhaust port (EA)
- Motorized and insulated damper on fresh air intake (OA) (included with exhaust defrost and recirculation)

WARRANTY

Core Assembly:

- Standard & High-Efficiency Enthalpy: Limited 10-year
- High-Latent-Transfer: Limited 2-year

All Other Covered Components: Limited 2-year

RECIRCULATION DEFROST CYCLE TEMPERATURE			
Outside Temperature (T)		Minutes Defrost/Vent	
°F	°C	Standard	Extended
T > 14	T > -10	N/A	N/A
14 > T > -13	-10 > T > -25	7/25	10/20
-13 > T	-25 > T	10/22	10/15

SE4000i Motor & Blower Options*

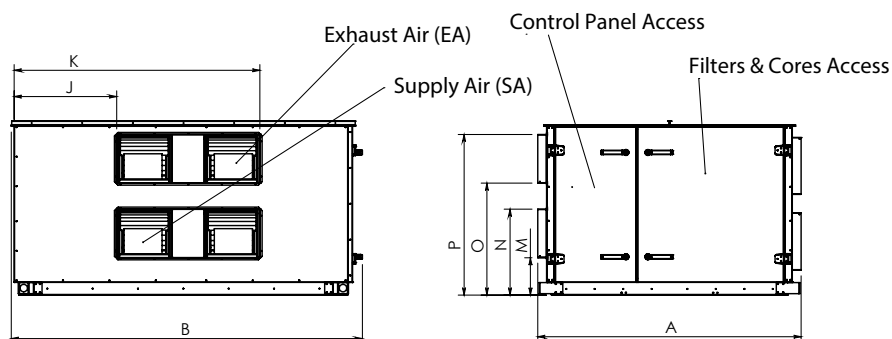
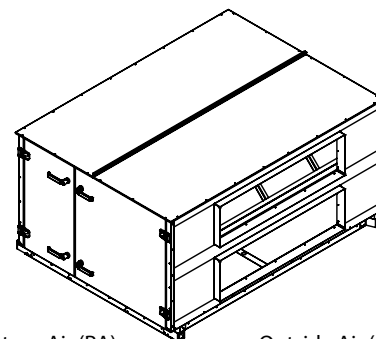
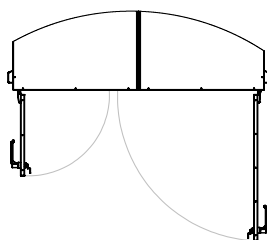
		PARAMETERS																	
		HP						VOLTAGE & PHASE								MOTOR SPEED			
		3/4	1	1.5	2	3	5	1-PHASE			3-PHASE				SINGLE SPEED	2-SPEED		VARIABLE SPEED	
120 V	208 V	230 V	208 V	230 V	460 V	575 V	MOTOR	VFD	MOTOR	VFD									
MOTOR TYPE & EFFICIENCY†	ODP, EPAct	√	√	√	√			√	√	√				√	√	√		√	
	ODP, Premium					√	√				√	√	√	√		√		√	
	TEFC, EPAct	√	√					√	√	√				√		√		√	
	TEFC, Premium			√	√	√	√				√	√	√	√		√		√	
	EC Motors	N/A									√	√	√		√	√		√	

*See pages 8-9 for motor sizing. See page 9 for EC Motors Power Consumption.

†Premium efficiency required when available.

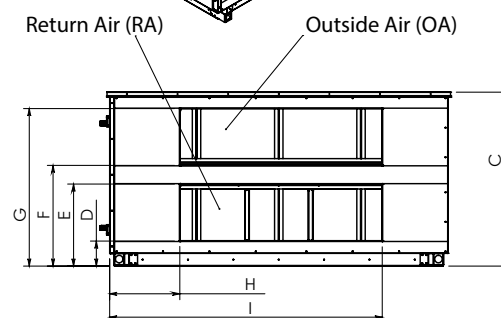
SE4000i Dimensions

Keep a minimum distance of 42" (1067 mm) in front of the unit and 24" (610 mm) behind it

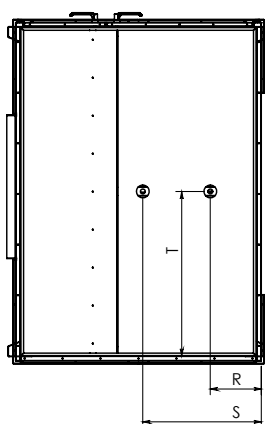


LEFT VIEW

FRONT VIEW



RIGHT VIEW



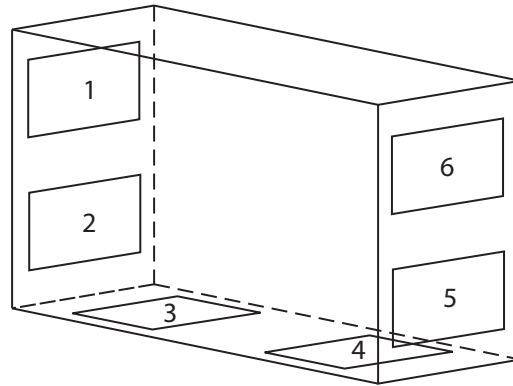
BOTTOM VIEW

DIMENSIONS in inches (mm)										
Overall						Openings				
A*			B	C	D	E	F	G	H	
Standard	1 Extension	2 Extensions								
66 (1676)	86 (2184)	106 (2692)	84.75 (2153)	46.75 (1187)	7.75 (197)	21.25 (540)	27.75 (705)	41.25 (1048)	16.625 (422)	
Openings										
I	J	K	M	N	O	P	Q	R	S	T
64.625 (1641)	24.25 (616)	58.25 (1480)	8.5 (216)	20 (508)	27.75 (705)	39.25 (997)	2 (51)	12.125 (308)	28.125 (714)	40.25 (1022)

*Optional motorized and insulated damper for exhaust port (EA) adds 7" (178 mm) to overall unit width

SE4000i Configurations & Weights

AVAILABLE CONFIGURATIONS*
1-2-5-6
1-3-5-6
1-2-4-6
1-3-4-6



DUCT CONNECTION KEY	
1	Exhaust Air (EA)
2, 3	Supply Air (SA)
4, 5	Return Air (RA)
6	Outside Air (OA)

*Mirror Image Cabinet Also Available

SE4000i WEIGHTS & DIMENSIONS †	
Minimum Unit Weight	875 lbs (397 kg)
Maximum Unit Weight	1800 lbs (816 kg)
Minimum Shipping Weight	920 lbs (417 kg)
Maximum Shipping Weight	1845 lbs (837 kg)

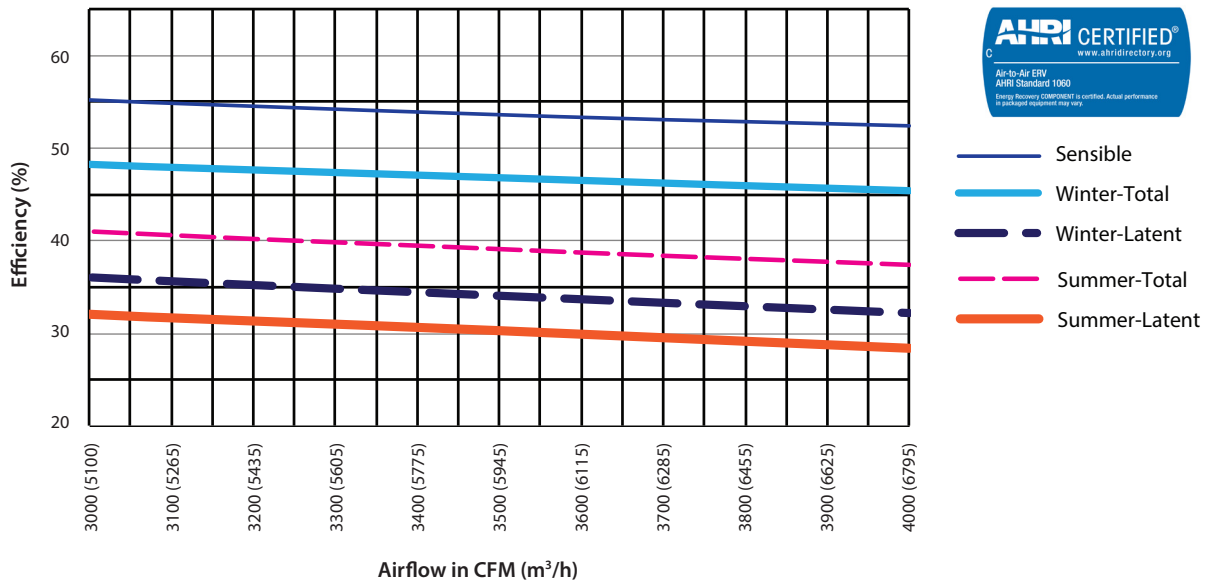
† Actual weight may vary by ±10%.

Standard Enthalpy Core Performance

AHRI STANDARD CONDITIONS	CONDITIONS	
Outside Air Temperature	Winter	Summer
Dry Bulb	35°F (1.7°C)	95°F (35°C)
Wet Bulb	33°F (0.6°C)	78°F (25.6°C)
Exhaust Air Temperature	Winter	Summer
Dry Bulb	70°F (21.1°C)	75°F (23.9°C)
Wet Bulb	58°F (14.4°C)	63°F (17.2°C)

Note: Efficiencies are based on AHRI standard winter conditions.

SE4000i – Standard Enthalpy Core Efficiency

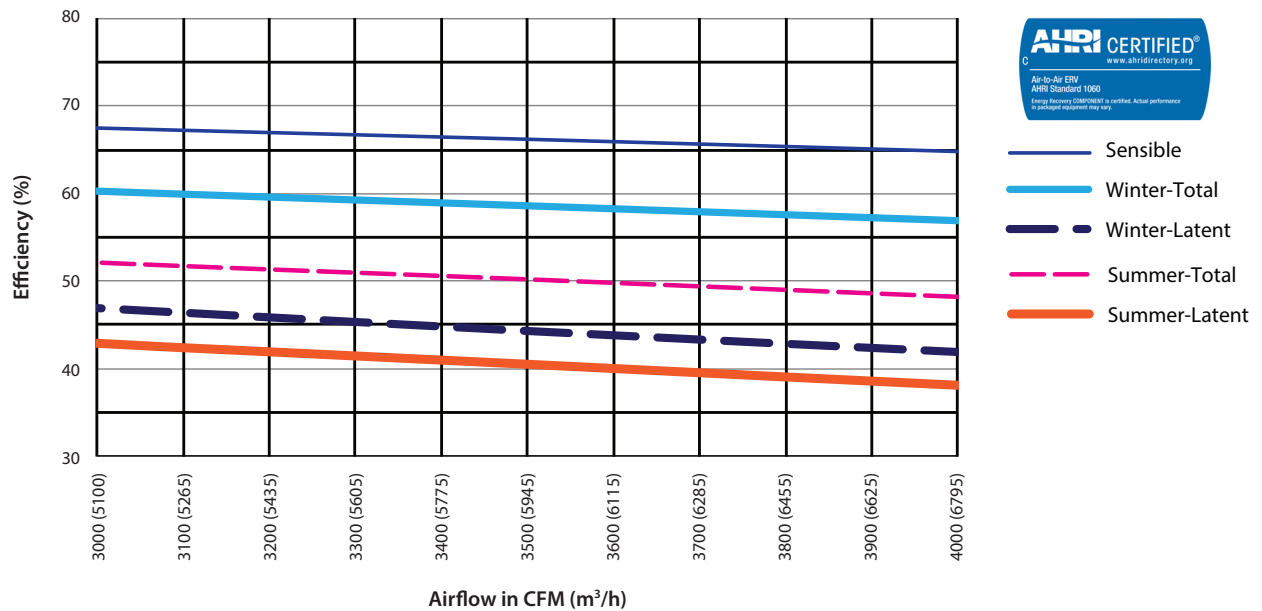


High-Efficiency Enthalpy Core Performance

AHRI STANDARD CONDITIONS	CONDITIONS	
Outside Air Temperature	Winter	Summer
Dry Bulb	35°F (1.7°C)	95°F (35°C)
Wet Bulb	33°F (0.6°C)	78°F (25.6°C)
Exhaust Air Temperature	Winter	Summer
Dry Bulb	70°F (21.1°C)	75°F (23.9°C)
Wet Bulb	58°F (14.4°C)	63°F (17.2°C)

Note: Efficiencies are based on AHRI standard winter conditions.

SE4000i – High-Efficiency Enthalpy Core Efficiency

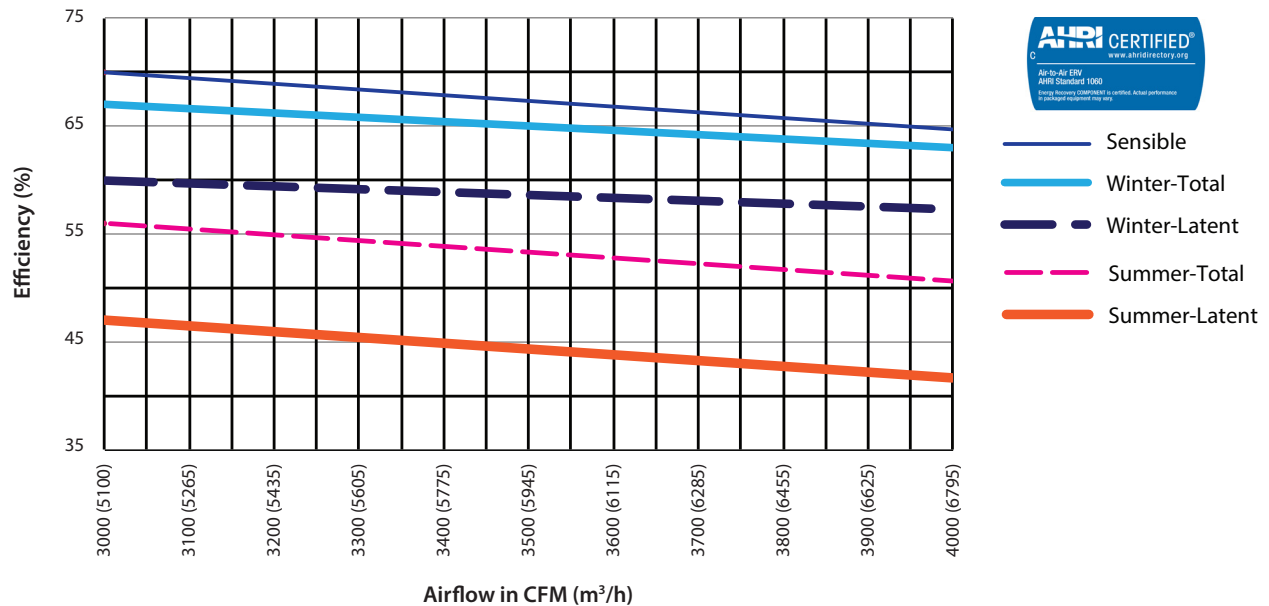


High-Latent-Transfer Enthalpy Core Performance

AHRI STANDARD CONDITIONS	CONDITIONS	
Outside Air Temperature	Winter	Summer
Dry Bulb	35°F (1.7°C)	95°F (35°C)
Wet Bulb	33°F (0.6°C)	78°F (25.6°C)
Exhaust Air Temperature	Winter	Summer
Dry Bulb	70°F (21.1°C)	75°F (23.9°C)
Wet Bulb	58°F (14.4°C)	63°F (17.2°C)

Note: Efficiencies are based on AHRI standard winter conditions.

SE4000i – High-Latent-Transfer Enthalpy Core Efficiency



Motor Selection – Standard Enthalpy Core

SUPPLY/EXHAUST																				
MOTOR	CFM (m³/h)	EXTERNAL STATIC PRESSURE (inH₂O) - SUPPLY/EXHAUST																		MOTOR
		0.25 (60 Pa)			0.50 (125 Pa)			0.75 (185 Pa)			1.00 (250 Pa)			1.25 (310 Pa)			1.50 (375 Pa)			
		RPM	BHP	HP	RPM	BHP	HP	RPM	BHP	HP	RPM	BHP	HP	RPM	BHP	HP	RPM	BHP	HP	
1.5 hp	3000 (5100)	1017	0.93	1.12	1149	1.14	1.37	1275	1.37	1.64	1395	1.63	1.96	1506	1.90	2.28	1611	2.18	2.62	3 hp
	3100 (5265)	1033	1.00	1.20	1164	1.21	1.45	1286	1.45	1.74	1404	1.71	2.05	1515	1.98	2.38	1619	2.27	2.72	
	3200 (5435)	1051	1.07	1.28	1178	1.29	1.55	1298	1.53	1.84	1413	1.79	2.15	1523	2.07	2.48	1626	2.36	2.83	
	3300 (5605)	1068	1.15	1.38	1192	1.37	1.64	1310	1.61	1.93	1423	1.88	2.26	1531	2.16	2.59	1633	2.46	2.95	
	3400 (5775)	1084	1.23	1.48	1205	1.45	1.74	1321	1.70	2.04	1431	1.97	2.36	1538	2.25	2.70	1640	2.55	3.06	
2 hp	3500 (5945)	1107	1.33	1.60	1224	1.55	1.86	1338	1.80	2.16	1446	2.07	2.48	1551	2.36	2.83	1651	2.66	3.19	5 hp
	3600 (6115)	1123	1.42	1.70	1238	1.64	1.97	1349	1.90	2.28	1456	2.17	2.60	1559	2.46	2.95	1658	2.77	3.32	
	3700 (6285)	1140	1.51	1.81	1251	1.73	2.08	1361	1.99	2.39	1466	2.27	2.72	1567	2.56	3.07	1665	2.87	3.44	
	3800 (6455)	1156	1.61	1.93	1266	1.83	2.20	1373	2.09	2.51	1476	2.37	2.84	1575	2.67	3.20	1672	2.98	3.58	
3 hp	3900 (6625)	1173	1.71	2.05	1280	1.94	2.33	1385	2.20	2.64	1487	2.48	2.98	1584	2.78	3.34	1680	3.10	3.72	
	4000 (6795)	1190	1.81	2.17	1295	2.05	2.46	1397	2.31	2.77	1497	2.59	3.11	1594	2.90	3.48	1687	3.21	3.85	

Motor Selection – High-Efficiency Enthalpy Core

SUPPLY/EXHAUST																					
MOTOR	CFM (m³/h)	EXTERNAL STATIC PRESSURE (inH₂O) - SUPPLY/EXHAUST																		MOTOR	
		0.25 (60 Pa)			0.50 (125 Pa)			0.75 (185 Pa)			1.00 (250 Pa)			1.25 (310 Pa)			1.50 (375 Pa)				
		RPM	BHP	HP	RPM	BHP	HP	RPM	BHP	HP	RPM	BHP	HP	RPM	BHP	HP	RPM	BHP	HP		
1.5 hp	3000 (5100)	1155	1.15	1.38	1280	1.38	1.66	1399	1.64	1.97	1511	1.91	2.29	1615	2.19	2.63	1713	2.48	2.98	3 hp	
	3100 (5265)	1174	1.23	1.48	1296	1.47	1.76	1413	1.73	2.08	1523	2.01	2.41	1627	2.29	2.75	1724	2.59	3.11		
2 hp	3200 (5435)	1188	1.31	1.57	1307	1.55	1.86	1422	1.82	2.18	1531	2.09	2.51	1634	2.39	2.87	1731	2.68	3.22		
	3300 (5605)	1206	1.40	1.68	1323	1.64	1.97	1435	1.91	2.29	1543	2.20	2.64	1645	2.49	2.99	1741	2.80	3.36		
	3400 (5775)	1224	1.49	1.79	1339	1.74	2.09	1449	2.01	2.41	1555	2.30	2.76	1656	2.60	3.12	1751	2.91	3.49		
	3500 (5945)	1243	1.59	1.91	1355	1.84	2.21	1463	2.12	2.54	1567	2.41	2.89	1667	2.71	3.25	1761	3.03	3.64		
3 hp	3600 (6115)	1265	1.70	2.04	1375	1.96	2.35	1480	2.24	2.69	1583	2.53	3.04	1682	2.84	3.41	1775	3.17	3.80		5 hp
	3700 (6285)	1279	1.80	2.16	1387	2.06	2.47	1491	2.34	2.81	1591	2.64	3.17	1688	2.95	3.54	1781	3.28	3.94		
	3800 (6455)	1301	1.92	2.30	1407	2.18	2.62	1508	2.47	2.96	1607	2.77	3.32	1703	3.09	3.71	1795	3.42	4.10		
	3900 (6625)	1314	2.02	2.42	1418	2.29	2.75	1518	2.57	3.08	1615	2.88	3.46	1709	3.20	3.84	1801	3.53	4.24		
	4000 (6795)	1336	2.15	2.58	1438	2.42	2.90	1536	2.71	3.25	1631	3.02	3.62	1723	3.34	4.01	1814	3.68	4.42		
	4100 (6965)	1353	2.27	2.72	1453	2.55	3.06	1550	2.84	3.41	1643	3.15	3.78	1734	3.48	4.18	1823	3.82	4.58		
	4200 (7135)	1371	2.40	2.88	1468	2.68	3.22	1564	2.98	3.58	1656	3.29	3.95	1745	3.62	4.34	1833	3.97	4.76		
	4250 (7220)	1379	2.47	2.96	1476	2.74	3.29	1571	3.04	3.65	1662	3.36	4.03	1751	3.69	4.43	1838	4.04	4.85		

NOTES:

hp = bhp x 1.2

Internal static pressure will vary based on selected options.

Motor selections do not apply to EC Motors.

Motor Selection – High-Latent-Transfer Enthalpy Core

SUPPLY/EXHAUST																				
MOTOR	CFM (m³/h)	EXTERNAL STATIC PRESSURE (inH₂O) - SUPPLY/EXHAUST																		MOTOR
		0.25 (60 Pa)			0.50 (125 Pa)			0.75 (185 Pa)			1.00 (250 Pa)			1.25 (310 Pa)			1.50 (375 Pa)			
		RPM	BHP	HP	RPM	BHP	HP	RPM	BHP	HP	RPM	BHP	HP	RPM	BHP	HP	RPM	BHP	HP	
2 hp	3000 (5100)	1215	1.26	1.51	1338	1.51	1.81	1454	1.77	2.12	1561	2.04	2.45	1662	2.33	2.80	1757	2.62	3.14	5 hp
	3100 (5265)	1233	1.34	1.61	1353	1.59	1.91	1467	1.86	2.23	1573	2.14	2.57	1674	2.43	2.92	1768	2.73	3.28	
	3200 (5435)	1251	1.43	1.72	1368	1.69	2.03	1480	1.96	2.35	1585	2.24	2.69	1685	2.54	3.05	1778	2.84	3.41	
	3300 (5605)	1263	1.51	1.81	1377	1.77	2.12	1488	2.05	2.46	1593	2.34	2.81	1692	2.64	3.17	1786	2.95	3.54	
	3400 (5775)	1280	1.61	1.93	1393	1.87	2.24	1501	2.15	2.58	1604	2.44	2.93	1703	2.75	3.30	1796	3.06	3.67	
3 hp	3500 (5945)	1302	1.72	2.06	1412	1.98	2.38	1518	2.27	2.72	1620	2.57	3.08	1717	2.88	3.46	1809	3.20	3.84	
	3600 (6115)	1318	1.82	2.18	1426	2.09	2.51	1530	2.38	2.86	1631	2.68	3.22	1727	3.00	3.60	1818	3.32	3.98	
	3700 (6285)	1331	1.92	2.30	1437	2.19	2.63	1538	2.48	2.98	1638	2.78	3.34	1733	3.10	3.72	1824	3.44	4.13	
	3800 (6455)	1352	2.04	2.45	1456	2.32	2.78	1556	2.61	3.13	1653	2.92	3.50	1747	3.21	3.85	1837	3.58	4.30	
	3900 (6625)	1368	2.16	2.59	1470	2.43	2.92	1569	2.73	3.28	1665	3.04	3.65	1757	3.37	4.04	1847	3.71	4.45	
	4000 (6795)	1385	2.28	2.74	1485	2.56	3.07	1582	2.86	3.43	1676	3.17	3.80	1768	3.51	4.21	1856	3.85	4.62	
	4100 (6965)	1397	2.39	2.87	1496	2.67	3.20	1592	2.98	3.58	1684	3.29	3.95	1774	3.63	4.36	1862	3.98	4.78	
5 hp	4200 (7135)	1414	2.52	3.02	1510	2.81	3.37	1604	3.11	3.73	1695	3.43	4.12	1784	3.77	4.52	1871	4.12	4.94	
	4250 (7220)	1426	2.59	3.11	1522	2.89	3.47	1615	3.19	3.83	1705	3.52	4.22	1792	3.85	4.62	N/A			

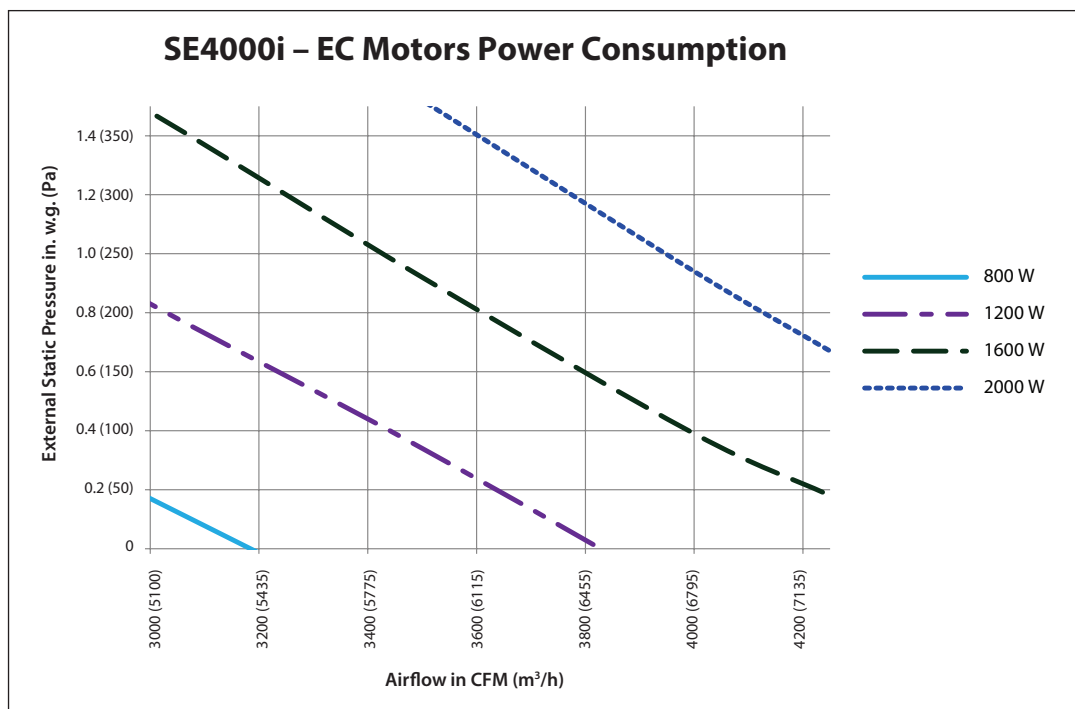
NOTES:

hp = bhp x 1.2

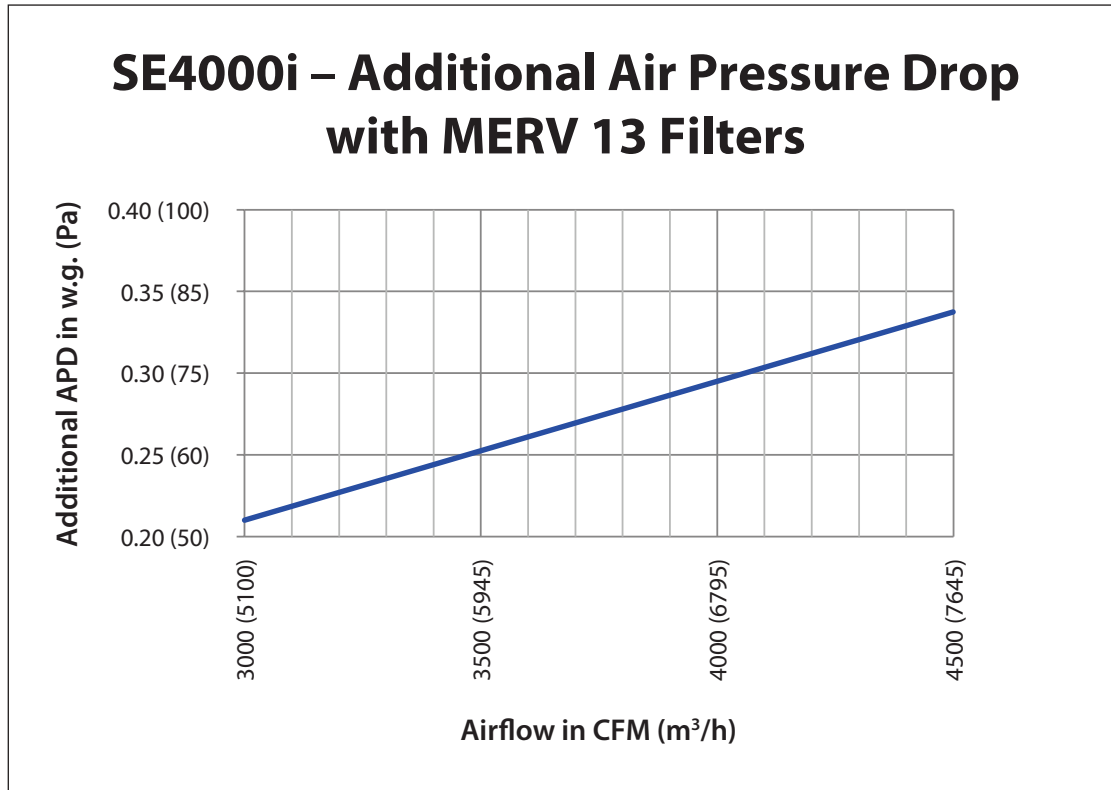
Internal static pressure will vary based on selected options.

Motor selections do not apply to EC Motors.

EC Motors



Additional Air Pressure Drop with MERV 13 Filters



Selection Information

▲ = Standard Feature

☐ = Optional Feature (check the box to select this option)

Send your completed selection to your American ALDES Representative.

MODEL

Series: Standard Commercial (SE)

Nominal Capacity: 3000-4000 CFM

Application: Interior (i)

CASING & CORE

Cabinet Finish

- ☒ Galvanized
☐ Painted
☐ Pool Construction

Duct Configuration (see pg. 4)

- ☒ 1-2-5-6
☐ 1-3-5-6
☐ 1-2-4-6
☐ 1-3-4-6

Mirror Image Cabinet

- ☐ Optional

Access Doors

- ☒ Fixed/Hinged
☐ Removable Panels

Plate Exchanger

- ☒ Standard Enthalpy
☐ High-Efficiency Enthalpy
☐ High-Latent-Transfer Enthalpy

FILTERS (SUPPLY)

- ☒ MERV 8 ☐ MERV 13

BLOWERS & MOTORS ¹

Supply Blower

- ☐ 3/4 hp ☐ 2 hp
☐ 1 hp ☐ 3 hp
☐ 1.5 hp ☐ 5 hp

Exhaust Blower

- ☐ 3/4 hp ☐ 2 hp
☐ 1 hp ☐ 3 hp
☐ 1.5 hp ☐ 5 hp

Motor Type

- ☐ ODP
☐ TEFC
☐ EC Motors

Speed

- ☒ Single Speed
☐ 2-Speed
☐ 2-Speed VFD
☐ Variable Speed Motor
☐ Variable Speed VFD

ELECTRICAL REQUIREMENTS ¹

- ☐ 120V/1ph/60Hz
☐ 208V/1ph/60Hz
☐ 230V/1ph/60Hz
☐ 208V/3ph/60Hz
☐ 230V/3ph/60Hz
☐ 460V/3ph/60Hz
☐ 575V/3ph/60Hz

DISCONNECT

- ☒ Non-Fused
☐ Fused

FROST CONTROL

- ☒ None
☐ Exhaust Defrost ²
☐ Recirculation ²
☐ Pre-Heat (Electric Coil)
☐ Pre-Heat (Hot Water Coil)

HEATING OPTIONS

- ☒ None
☐ Post-Heat (Electric Coil)
☐ Post-Heat (Hot Water Coil)

ADD-ONS

- ☐ Motorized & Insulated Damper for OA ²
☐ Motorized & Insulated Damper for EA
☐ Non-Insulated Backdraft Damper for EA
☐ 24 VAC, 10 VA terminals for OA and/or EA dampers by others
☐ 24 VAC, 20 VA power available for accessories by others
☐ Spare Filters QTY: _____
☐ Spare Belts QTY: _____

¹ See pg. 2 for motor and blower restrictions.

² OA Motorized & Insulated Damper included

Project:		Architect:	
Location:		Engineer:	
Model #:		Contractor:	
Quantity:		Comments:	
Submitted By:			
Date:			