Vertical Series
LOWBOY & STUD
FAN COIL TECHNICAL CATALOG

IEC International Environmental

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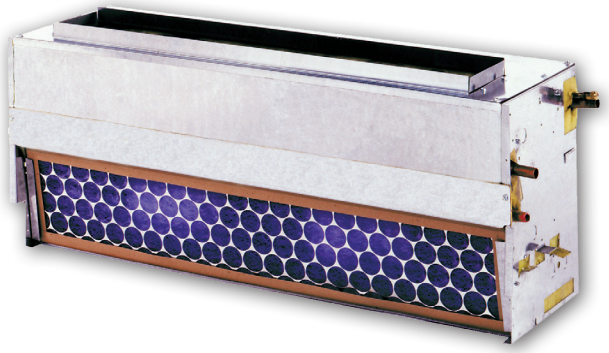
Portfolio

Vertical Lowboy Hideaway (LHA/LHW) 200 CFM to 600 CFM

The Vertical Lowboy Hideaway (LHA/LHW) fan coil unit is designed for concealed, under-window applications in public buildings, offices, hospitals and hotels. The low-silhouette design of the LHA and LHW does not interfere with vision through the window, obstruct light or detract from the motif in the room. Standard LHA and LHW units are constructed with 18 gauge galvanized steel and are provided with a galvanized finish.



Vertical Lowboy Cabinet (LXA/LXW) 200 CFM to 600 CFM

The Vertical Lowboy Cabinet (LXA/LXW) fan coil unit is designed for exposed, under-window applications in public buildings, offices, hospitals and hotels. The low-silhouette design of the LXA and LXW does not interfere with vision through the window, obstruct light or detract from the décor in the room. Standard LXA and LXW units have two flush die-formed doors for access to three-speed fan control and optional thermostats. Standard LXA and LXW units are constructed with 18 gauge galvanized steel and are provided with an attractive powder-coat paint finish.

Vertical Recessed Cabinet (STY/STW) 130 CFM to 275 CFM

The Vertical Recessed Cabinet (STY/STW) fan coil unit is designed for recessed wall applications where space is at a premium. The STY and STW are designed specifically for installation between the studs, ideally in foyers, bathrooms and other small areas. Standard STY and STW units are constructed with 18 gauge galvanized steel and are provided with a galvanized finish. The wall panel has an attractive powder-coat paint finish.

Features and Benefits

Application Fit

- Several cabinet types that will meet a multitude of room layouts.
  - The vertical lowboy cabinet units (LXA/LXW) can be used for the same applications (no sloped top) with low window sill height.
  - The vertical hideaway version of the above units (LHA/LHW) is tailored to recess in a wall or continuous cabinetry to meet architectural needs.
  - The vertical recessed cabinet (STY/STW) is a specific application unit for recessing in a corridor, bathroom, or stairwell wall where space is at a premium.

Design Flexibility

- Standard hydronic coils and electric heat are available to match the space heating and cooling loads.
- Optional powder-coat paint finish colors on exposed units grilles will blend with any décor.
- Custom cabinetry includes higher, wider, or deeper than standard sizes. Ideal for renovation jobs or where special sizes are required.
- Manual air dampers are available to meet ventilation needs (Not on Stud [STY/W]) Units).
- Wide variety of factory preassembled valve packages to meet desired controls specifications.
- Variety of insulation materials to meet IAQ concerns.
- Optional condensate float switch to meet latest building codes.
- Easy to use ratings program to speed up project design.

Ease of Installation

- Preassembled valve packages to minimize the piping work at the job-site.
- Optional unit mounted controls, service switches and fusing minimizes the electrical work required on site.
- Units are tagged at the factory for ease of identification on job site.
- Custom cabinetry facilitates installations by:
  - Wider units allow for same end piping and electrical connections to minimize floor penetrations and eliminate the need for filler cabinetry.

Ease of Service

- All components are accessible by simply removing the front panel.
- Blower and drain pan assembly slide out for service and cleaning.

Quality and Safety

- Every unit is tested and inspected at the factory for trouble free startup.
- ETL listed and AHRI certified.

Unit Model Key

Code Items	01	02	03	04	04a				05	06		07		
Code	L	H	0	4	A	Y	Y	C	B	Y	Y	C	2	R	5	C	P	A
	UNIT VINTAGE		SIZE		COILS			ELECTRIC HEAT				MOTOR		HAND/ ARRANGEMENT		CONTROLS		

UNIT VINTAGE

- LHA • Vertical LowBoy Hideaway
- LHW • Vertical LowBoy Tall Hideaway
- LXA • Vertical Lowboy Cabinet
- LXW • Vertical Lowboy Tall Cabinet
- STY • Vertical Recessed Cabinet
- STW • Vertical Recessed Wide Cabinet

SIZE

- 01 • 130 CFM
- 02 • 200 CFM
- 03 • 300 CFM****
- 04 • 400 CFM

COILS

Two-pipe Cooling and Heating or Four-pipe Cooling	Four-pipe Heating	Coil Connection
A • 3-Row	Y • None	Y • None
D • 2-Row	6 • 1-Row	S • Same End

ELECTRIC HEAT

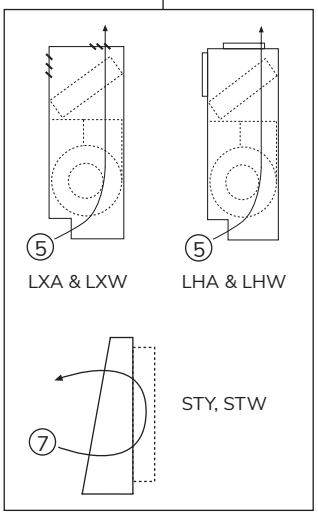
Voltage**	kW*	Stages
C • 120V	BY • 1.00	Y • Single Stage Only
D • 208V	CY • 1.50	
E • 240V	DY • 2.00	
F • 277V	FY • 3.00	

MOTOR

Voltage	Type
C • 115-1-60	1 • Shaded Pole (STY/STW only)
D • 208-1-60	2 • Permanent Split Capacitor
E • 230-1-60	A • ECM, 3-Spd Relay Brd (L/M/H)
F • 277-1-60	B • ECM, Proportional (0-10VDC)
	C • ECM, 4-Spd Board, Solid State w/PWM

HAND/ ARRANGEMENT

Hand**	Arrangement
R • Right	5
L • Left	7



CONTROLS

Voltage**	System		Thermostat
B • 24 V	**Manual Fan Operation**		A • Basic Electronic Wall Series, 155, Vertical
C • 120V	A1 • Standard Unit Mount (Switch Only)		B • Basic Electronic Wall Series, 155, Horizontal
D • 208V	A2 • Standard Wall Mount (Switch Only)		C • Basic Series, 156, Unit Mounted
E • 240V	**Function Control**		P • Basic 24V Digital, 7-Day Programmable
F • 277V	G • 2 Pipe Heat Only		N • Basic 24V Digital, Non-Programmable
	H • 2 Pipe Cool Only		F • Premium 24V Digital, 7-Day Programmable/ BACnet with Proportional Fan/ Valves Option
	K • 2 Pipe Heat and Cool Only		G • Premium 24V Digital BACnet with Proportional Fan/ Valves Option
	M • 2 Pipe Heat and Cool w/Aux. Elec. Heat		W • Venture 24V Wi-Fi Programmable
	P • 2 Pipe Cool Only w/Total Elec. Heat		
	R • 4 Pipe Heat and Cool		

* Consult factory for 50 Hz applications.
** Note that kWs range from 1.0 to 6.0 depending on voltage and unit size.
*** Standing in front of the unit, hand is determined by looking into the air supply and assigning the hand to match the location of the cooling coil connections.
**** Nominal CFM for STW/STY size 03 units is 275.

Rating and Listings

AHRI Certification

IEC's Vertical Series units are certified in compliance with Air-Conditioning, Heating, and Refrigeration Institute (AHRI) industry standard AHRI-440 for room fan coil units. Approved standard ratings are tabulated below.

C-ETL-US Listing

IEC's Vertical Series units are listed by ETL. The C-ETL-US listing signifies that IEC's fan coil units have been examined by ETL and are in compliance with both the U.S. and Canadian applicable standards.

Intertek 3061627
HEATING AND COOLING EQUIPMENT

PSC Motor Standard Ratings

Model	Size	Coil Rows	Air Flow Rating (SCFM)	Water Pressure Drop (ft. water)	Total Cap. (Btuh)	Sensible Cap. (Btuh)	Power Input (Watts)
LHA, LHW	02	3	220	13.0	5,500	3,800	90
	02	2	250	2.4	5,100	3,600	90
	03	3	340	25.0	10,900	7,100	130
	03	2	370	6.9	8,600	6,700	135
	04	3	430	9.0	13,400	8,800	145
	04	2	480	12.8	12,300	8,300	150
	06	3	670	11.3	21,100	14,600	250
	06	2	750	6.3	18,300	13,200	260
LXW, LXA	02	3	230	8.0	5,500	3,800	90
	02	2	250	2.4	5,100	3,600	90
	03	3	340	13.6	10,900	7,100	130
	03	2	370	6.9	8,600	6,700	135
	04	3	430	5.3	13,400	8,800	145
	04	2	480	12.8	12,300	8,300	150
	06	3	670	11.3	21,100	14,600	250
	06	2	750	10.0	18,300	13,200	260

EC Motor Standard Ratings

Model	Size	Coil Rows	Air Flow Rating (SCFM)	Water Pressure Drop (ft. water)	Total Cap. (Btuh)	Sensible Cap. (Btuh)	Power Input (Watts)
LHA, LHW	02	3	230	3.8	5,500	3,800	68
	02	2	250	2.4	5,100	3,600	68
	03	3	340	18.0	10,900	7,100	60
	03	2	370	6.9	8,600	6,700	135
	04	3	430	5.3	13,400	8,800	145
	04	2	480	12.8	12,300	8,300	150
	06	3	670	11.3	21,100	14,600	250
	06	2	750	6.3	18,300	13,200	260
LXW, LXA	02	3	230	9.0	5,500	3,800	68
	02	2	250	2.4	5,100	3,600	68
	03	3	340	13.6	10,900	7,100	130
	03	2	370	6.9	8,600	6,700	135
	04	3	430	5.3	13,400	8,800	145
	04	2	480	15.0	12,300	8,300	95
	06	3	670	11.3	21,100	14,600	250
	06	2	750	10.0	18,300	13,200	150

Shaded Pole Motor Standard Ratings

Model	Size	Coil Rows	Air Flow Rating (SCFM)	Water Pressure Drop (ft. water)	Total Cap. (Btuh)	Sensible Cap. (Btuh)	Power Input (Watts)
STY, STW	01	2	130	0.65	1,800	1,200	135
	03	2	275	5	6,100	4,700	270

NOTES:
1. Ratings are based on 80°F DB and 67°F WB EAT, 45°F EWT, 10°F water temperature rise, high fan speed, motor voltage 115/1/60, and airflow under dry coil conditions.
2. For all application ratings, use IEC's computer selection program, the quick-selection ratings provided in this catalog, or contact your local IEC representative.
3. For additional information, please consult the Directory of Certified Air-Conditioning, Heating, and Refrigeration Products or AHRI's website at www.ahrinet.org.

Air Delivery (60 Hz)

Model	Coil	Unit Size	CFM @ 0.0 ESP For Fan Speed			High Speed CFM @ ESP Indicated						
			Low	Med	High	0.05	0.10	0.15	0.20	0.25	0.30	0.35
LHA LXA LHW LXW	2-Row	02	125	170	250	225	190	150	120			
		03	195	285	370	345	305	275	235			
		04	240	350	480	440	400	360	320			
		06	395	575	750	700	660	660	560			
	3-Row	02	115	155	220	210	180	145	115			
		03	185	265	345	315	285	255	230			
		04	230	335	460	420	385	345	310			
		06	355	510	670	625	580	540	495			

NOTES: 1. Tabled values are standard CFM at sea level, 70°F with dry coil.
2. Factory-installed throwaway air filter and supply air grille (where applicable) static pressure losses are included in all fan performances for all sizes.
3. Consult factory for 50 Hz applications.

Motor Data

Thermal Overload Protection

All split-capacitor motors furnished by IEC contain internal thermal-overload protection. The overload automatically resets when the temperature returns to a safe limit. Electronics Testing Laboratories, Inc. (ETL) approves the motor and thermal overload combination at locked rotor conditions only.

PSC Motor Electrical Data — LHA/LHW, LXA,LXW

Voltage	Fan Speed	Unit Size	02	03	04	06
		Nominal HP	1/20	1/12	1/12	(2) 1/12
115V 60 Hz 1-Phase	High	Amps	0.60	1.60	1.60	3.20
		Watts	72	135	150	260
	Medium	Amps	0.30	0.60	0.60	1.20
		Watts	45	65	65	125
	Low	Amps	0.20	0.30	0.30	0.80
		Watts	25	40	40	85
208V 60 Hz 1-Phase	High	Amps	0.50	0.66	0.66	1.32
		Watts	56	109	116	232
	Low	Amps	0.20	0.30	0.30	0.50
		Watts	35	55	58	103
230V 60 Hz 1-Phase	High	Amps	0.50	0.66	0.66	1.32
		Watts	64	128	138	245
	Low	Amps	0.22	0.28	0.30	0.52
		Watts	42	65	67	120
277V 60 Hz 1-Phase	High	Amps	0.30	0.50	0.50	1.00
		Watts	85	135	140	260
	Medium	Amps	0.12	0.33	0.34	0.65
		Watts	45	85	88	155
	Low	Amps	0.07	0.22	0.22	0.40
		Watts	35	55	57	100
220V 50 Hz 1-Phase	High	Amps	0.37	0.39	0.39	0.78
		Watts	64	128	138	245
	Medium	Amps	0.12	0.33	0.34	0.65
		Watts	45	85	88	155
	Low	Amps	0.07	0.22	0.22	0.40
		Watts	35	55	57	100

NOTES: Total unit motor Amps and Watts are shown.

PSC Motor Electrical Data — STY/STW

Voltage	Fan Speed	Unit Size	01	03
		Nominal HP	1/20	(2) 1/20
115V 60 Hz 1-Phase Shaded Pole	High	Amps	1.60	3.20
		Watts	135	270
	Medium	Amps	1.00	1.91
		Watts	83	167
	Low	Amps	0.80	1.54
		Watts	69	138

NOTES: Total unit motor Amps and Watts are shown.

EC Motor Performance Data — Vertical L**, Standard Performance

Voltage	Unit Size	L**02/03/04	L**06
	Nominal HP	1/7	(2)1/7
120V	Rated Motor FLA	2.3	2.3, 2.3
	Max Program Current	1.0	1.3, 1.3
208-240V	Rated Motor FLA	1.4	1.4, 1.4
	Max Program Current	0.6	0.8, 0.8
277V	Rated Motor FLA	1.2	1.2, 1.2
	Max Program Current	0.5	0.7, 0.7

Sound Data

L** Sound Power Data

UNIT SIZE	RATING	FAN SPEED	CFM	SOUND POWER LEVEL, Lw (dB reference one picowatt)							A-wgt (dBA)
				125 Hz	250 Hz	500 Hz	1K Hz	2K Hz	4K Hz	8K Hz	
2	CASING RADIATED	H	260	58	61	58	53	48	42	36	59
		M	165	51	52	49	42	37	28	31	50
		L	120	47	45	38	32	25	24	30	40
3	CASING RADIATED	H	350	61	65	59	57	54	49	43	63
		M	260	54	57	53	50	46	39	33	55
		L	160	46	46	43	37	31	25	30	44
4	CASING RADIATED	H	445	63	68	61	59	56	51	48	65
		M	310	55	56	53	49	45	39	35	55
		L	200	51	47	42	38	31	25	30	44
6	CASING RADIATED	H	665	67	70	65	63	59	54	50	68
		M	555	64	65	61	58	54	49	43	63
		L	445	61	59	55	51	48	40	35	57

NOTES: 1. Unit Test Configuration: Stamped Louver Front Return / Top Supply, 2 Row, 12 FPI Coil, 115VAC PSC Motor.
2. Casing Radiated Testing per AHRI 350-2008: 4.2.2.3 Casing radiated with free inlet, Sound Rating of Ducted Air Moving and Conditioning Equipment.
3. Sound power data is expressed in decibels, dB RE: 1 x 10^{-12} w (picowatts).

ST* Sound Power Data

UNIT SIZE	RATING	FAN SPEED	CFM	SOUND POWER LEVEL, Lw (dB reference one picowatt)							A-wgt (dBA)
				125 Hz	250 Hz	500 Hz	1K Hz	2K Hz	4K Hz	8K Hz	
1	CASING RADIATED	H	125	62	64	59	57	55	53	50	63
		M	105	58	60	56	54	51	49	44	59
		L	70	55	55	54	50	47	44	39	56
3	CASING RADIATED	H	265	72	67	62	60	59	57	54	67
		M	230	64	60	57	55	53	51	46	61
		L	195	56	53	51	47	45	42	36	53

NOTES: 1. Unit Test Configuration: Stamped Louver Front Return / Front Supply, 2 Row, 10 FPI Coil, 115VAC SP Motor.
2. Testing per AHRI 350-2008: 4.2.2.3 Casing radiated with free inlet, Sound Rating of Ducted Air Moving and Conditioning Equipment.
3. Sound power data is expressed in decibels, dB RE: 1 x 10^{-12} w (picowatts).

Electric Heating

Electric heaters are available on IEC Vertical Series fan coil units for the following applications.

Total Electric Heat

Total electric heat eliminates the requirement for a boiler. Heating and/or cooling may be available on an individual basis throughout the year. Two-pipe chilled water is used for cooling, and the electric heater is used for heating. Individual room controls can be supplied for either manual or automatic changeover.

Auxiliary Electric Heat

Auxiliary electric heat is ideal for tempering room air between seasons and during the cooling season when chilled water is being circulated. Individual room controls are supplied to provide electric heat only when chilled water is being circulated. During the regular heating season, heating is provided by hot water being circulated in the system.

Construction

The heater coils of high-grade resistance wire is centered in a 1/2-inch diameter tube and has helically wound 1-1/4-inch diameter fins. The terminal ends have an unheated section to isolate the terminals from the heat source. The heater is finished with a baked-on heat- and moisture-resistance coating.

The sheath heater element is mounted directly above the coil. High limit thermal cutouts protect the heater in the event of air failure. There are many special applications and control sequences for electric heat. For special applications, please consult the factory.

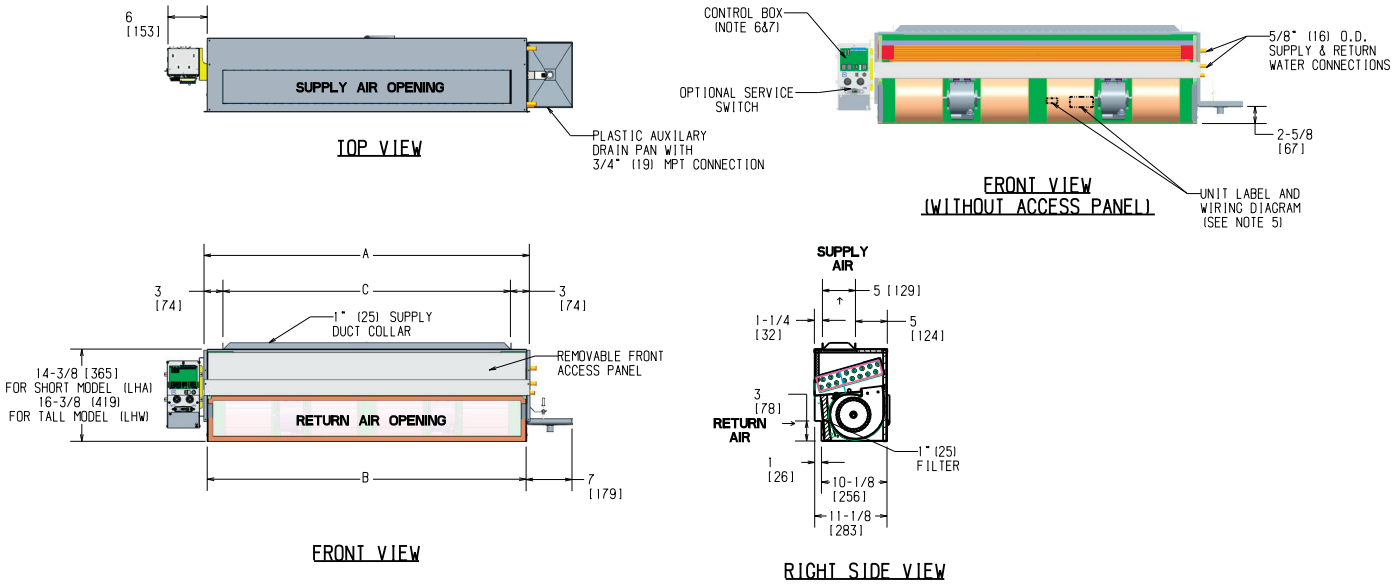
Electric Heater Selection

Voltage	kW	Unit Size			
		02	03	04	06
120V	1.0	L	L	L	L
	1.5	–	L	L	L
	2.0	–	–	L	L
	3.0	–	–	–	L
208V	1.0	L	L	L	L
	1.5	–	L	L	L
	2.0	–	–	L	L
	3.0	–	–	–	L
240V 277V	1.0	L	L	L	L
	1.5	–	L	L	L
	2.0	–	–	L	L
	3.0	–	–	–	L

NOTES:
1. L=Lowboy Cabinet Units (LHW, LXW units only).
2. All heaters are single stage and single phase.
3. Electric heaters are available with top air discharge only.
4. Electric Heating Capacities (BTUH) = Heater kW x 3413
5. Electric Heater Amperage = (Heater kW x 1000)/Applied Voltage

Submittal Data – L**

LHA/LHW – Vertical Lowboy Hideaway



Unit Model	Dimensions – Inches (Millimeters)			Quantity/Unit		Unit Weight*
	A	B	C	Blower	Motor	
LHA/LHW02	23 (584)	22 (559)	17 (432)	2	1	50
LHA/LHW03	28 (711)	27 (686)	22 (559)	2	1	60
LHA/LHW04	36 (914)	35 (889)	30 (762)	2	1	72
LHA/LHW06	50 (1270)	49 (1245)	44 (1118)	4	2	110

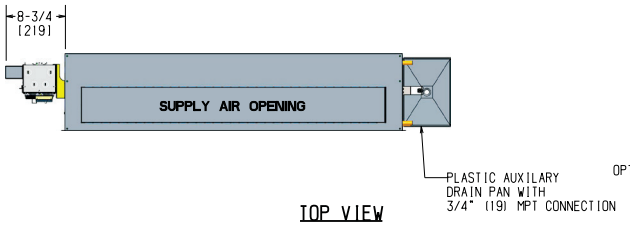
NOTES: * Unit weights (shown in pounds) are based on dry coils, minimum rows and exclude packaging, valves or other components.

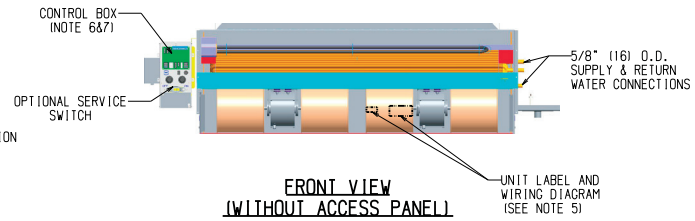
1. RH coil shown, LH opposite.
2. All dimensions +/- .25 (6). Drawing not to scale.
3. Product specifications are subject to changes without notice.
4. Control box size and position may vary (consult factory).
5. Position may vary.
6. Service access is located on the front of the control box.
7. Knockouts on the bottom and side of the control box for incoming power connections.

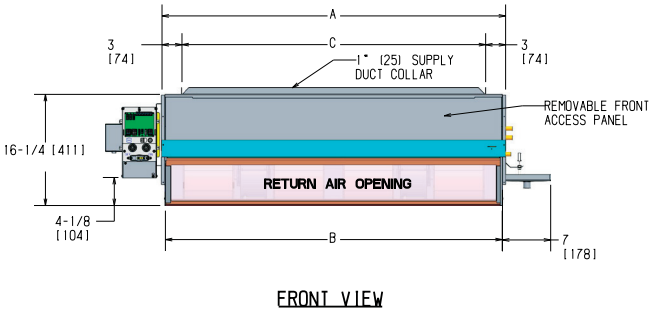
**Drawing is provided for reference only.
Dimensions may vary with options ordered.
Consult IEC website for submittal drawings.**

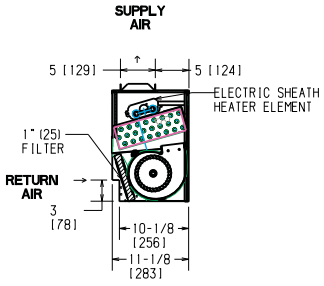
Submittal Data – L**, Cont'd.

LHW – Vertical Lowboy Hideaway with Electric Heat









Unit Model	Dimensions – Inches (Millimeters)			Quantity/Unit		Unit Weight*
	A	B	C	Blower	Motor	
LHW02	23 (584)	22 (559)	17 (432)	2	1	50
LHW03	28 (711)	27 (686)	22 (559)	2	1	60
LHW04	36 (914)	35 (889)	30 (762)	2	1	72
LHW06	50 (1270)	49 (1245)	44 (1118)	4	2	110

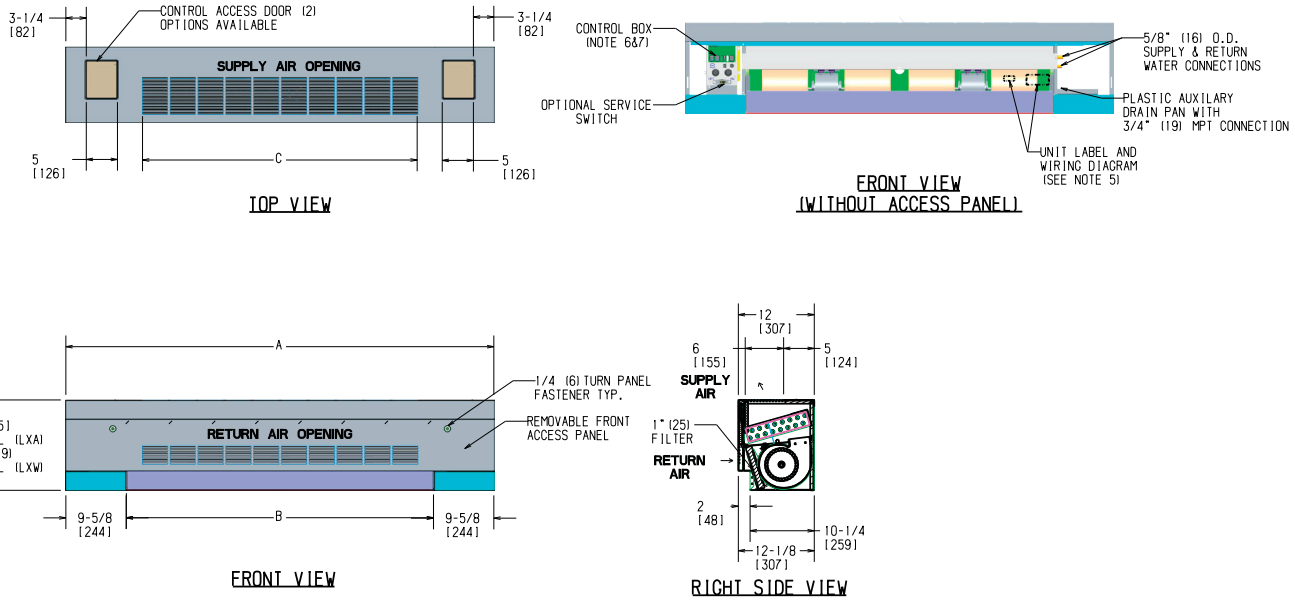
NOTES: * Unit weights (shown in pounds) are based on dry coils, minimum rows and exclude packaging, valves or other components.

1. RH coil shown, LH opposite.
2. All dimensions +/- .25 (6). Drawing not to scale.
3. Product specifications are subject to changes without notice.
4. Control box size and position may vary (consult factory).
5. Position may vary.
6. Service access is located on the front of the control box.
7. Knockouts on the bottom and side of the control box for incoming power connections.

Drawing is provided for reference only.
Dimensions may vary with options ordered.
Consult IEC website for submittal drawings.

Submittal Data – L**, Cont'd.

LXA/LXW – Vertical Lowboy and Vertical Lowboy Tall Cabinet



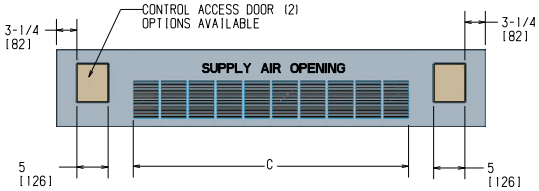
Unit Model	Dimensions – Inches (Millimeters)			Quantity/Unit		Unit Weight**
	A	B	C	Blower	Motor	
LXA/LXW02	41 (1041)	22 (559)	17 (432)	2	1	72
LXA/LXW03	46 (1168)	27 (686)	21-1/2 (546)	2	1	100
LXA/LXW04	54 (1372)	35 (889)	30-1/4 (768)	2	1	108
LXA/LXW06	68 (1727)	49 (1245)	43-3/8 (1102)	4	2	154

NOTES: * Height dimensions different for LHA/LHW. See drawing.
** Unit weights (shown in pounds) are based on dry coils, minimum rows and exclude packaging, valves or other components.
1. RH coil shown, LH opposite.
2. All dimensions +/- .25 (6). Drawing not to scale.
3. Product specifications are subject to changes without notice.
4. Control box size and position may vary (consult factory).
5. Position may vary.
6. Service access is located on the front of the control box.
7. Knockouts on the bottom and side of the control box for incoming power connections.

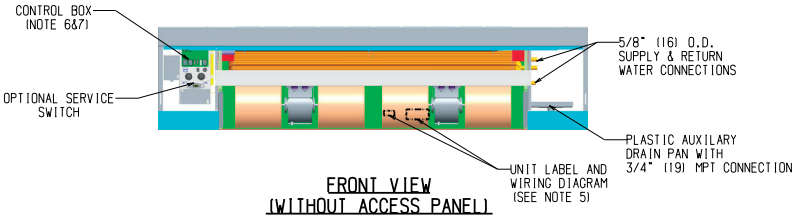
**Drawing is provided for reference only.
Dimensions may vary with options ordered.
Consult IEC website for submittal drawings.**

Submittal Data – L**, Cont'd.

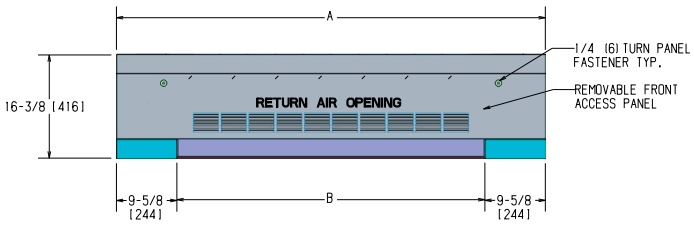
LXW – Vertical Lowboy Tall Cabinet with Electric Heat



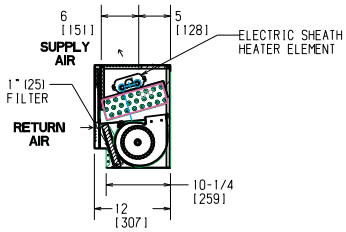
TOP VIEW



FRONT VIEW
(WITHOUT ACCESS PANEL)



FRONT VIEW



RIGHT SIDE VIEW

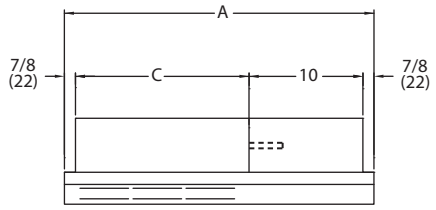
Unit Model	Dimensions – Inches (Millimeters)			Quantity/Unit		Unit Weight**
	A	B	C	Blower	Motor	
LXW02	41 (1041)	22 (559)	17 (432)	2	1	72
LXW03	46 (1168)	27 (686)	21-1/2 (546)	2	1	100
LXW04	54 (1372)	35 (889)	30-1/4 (768)	2	1	108
LXW06	68 (1727)	49 (1245)	43-3/8 (1102)	4	2	154

NOTES: * Height dimensions different for LHA/LHW. See drawing.
** Unit weights (shown in pounds) are based on dry coils, minimum rows and exclude packaging, valves or other components.
1. RH coil shown, LH opposite.
2. All dimensions +/- .25 (6). Drawing not to scale.
3. Product specifications are subject to changes without notice.
4. Control box size and position may vary (consult factory).
5. Position may vary.
6. Service access is located on the front of the control box.
7. Knockouts on the bottom and side of the control box for incoming power connections.

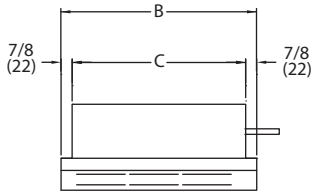
Drawing is provided for reference only.
Dimensions may vary with options ordered.
Consult IEC website for submittal drawings.

Submittal Data – ST*

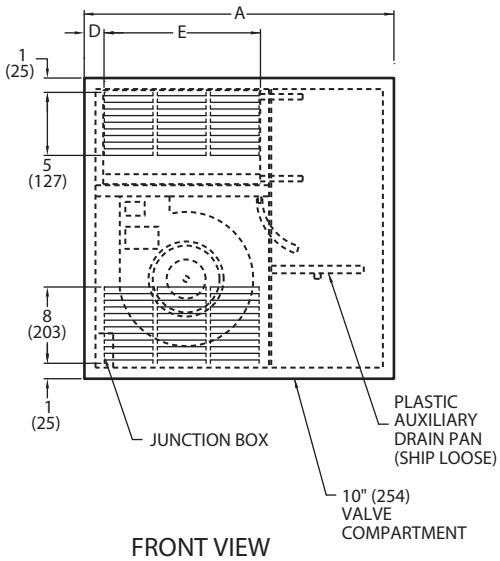
STY/STW – Vertical Recessed Cabinet



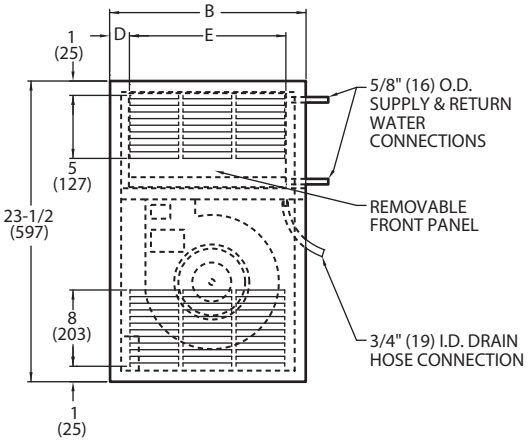
TOP VIEW
(EXTENDED MODEL)
STW



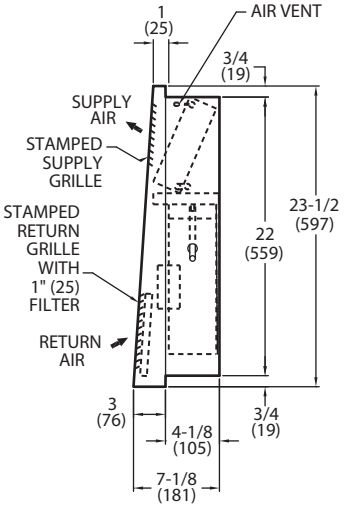
TOP VIEW
(STANDARD MODEL)
STY



FRONT VIEW



FRONT VIEW



RIGHT SIDE VIEW

Unit Model	Dimensions – Inches (Millimeters)					Quantity/Unit		Unit Weight*
	A	B	C	D	E	Blower	Motor	
STY/STW01	25-3/4 (654)	15-3/4 (400)	14 (356)	1-1/2 (38)	12-3/4 (324)	1	1	40
STY/STW03	39-3/4 (1010)	29-3/4 (756)	28 (711)	1-15/16 (49)	25-7/8 (657)	2	2	74

NOTES: * Unit weights (shown in pounds) are based on dry coils, minimum rows and exclude packaging, valves or other components.
1. Any modifications to product specifications by any person are subject to acceptance of the IEC Home Office. Product specifications are subject to change without notice.
2. All dimensions are +/- 1/4" (6).
3. RH shown, LH opposite.

**Drawing is provided for reference only.
Dimensions may vary with options ordered.
Consult IEC website for submittal drawings.**

Coil Data

Vertical Lowboy L** – Coil Surface Area

Size	Height (in)	Length (in)
02	10	17
03	10	22
04	10	30
06	10	44

Vertical Lowboy L** – Coil Weight (lbs) (Aluminum fins)

Size	2-Row	3-Row	4-Row
2	6	8.5	10.9
3	7.4	10.5	13.6
4	9.5	13.7	17.9
6	13.3	19.3	25.4

NOTES: Weights do not include headers or extras.

Vertical Lowboy L** – Coil Weight (lbs) (Copper fins)

Size	2-Row	3-Row	4-Row
2	11.5	16.6	21.8
3	14.4	21	27.7
4	19.1	28.1	37.1
6	27.4	40.5	53.6

NOTES: Weights do not include headers or extras.

Vertical Studs ST* – Coil Surface Area

Size	Height (in)	Length (in)
02	7.5	10
03	7.5	24

Vertical Studs ST* – Coil Weight (lbs) (Aluminum fins)

Size	2-Row
1	3.8
3	6.6

NOTES: Weights do not include headers or extras.

Vertical Studs ST* – Coil Weight (lbs) (Copper fins)

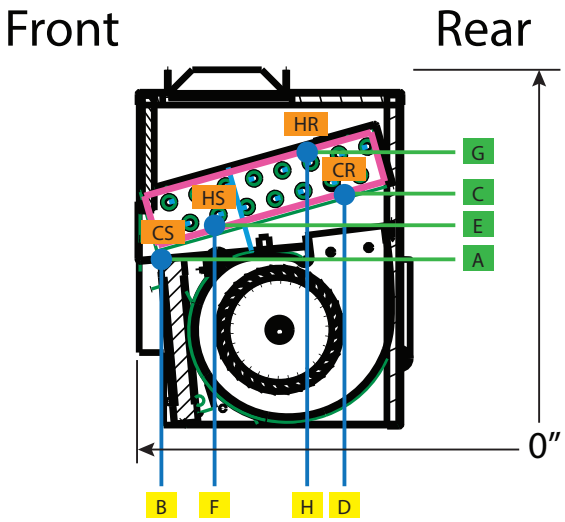
Size	2-Row
1	6.2
3	12.3

NOTES: Weights do not include headers or extras.

Piping Connections – Lowboys L**

Piping Connection Location – Hydronic Cooling & Heating Coils

Right hand unit with re-heat coil shown.



CR - Cold Water Return
HR - Hot Water Return
CS - Cold Water Supply
HS - Hot Water Supply
RH - Right Hand
LH - Left Hand

UNIT SIZE	COIL ROWS		CIRCUITS		LXA, LHA (1-3 ROWS)								Notes
					CS		CR		HS		HR		
	COOL	HEAT	COOL	HEAT	A	B	C	D	E	F	G	H	
L**02	2		1		9 1/2	9 6/7	10 2/3	1 3/4					
	3		1		10 3/5	9 4/5	10 8/9	4/5					
	2	1	1	1	9 2/5	10 1/8	10 8/9	4/5	10 3/5	9 4/5	13	1 2/5	
	2	1	1	1	9 2/5	10 1/8	10 8/9	4/5	10 8/9	4/5	13	1 2/5	OE
L**03	2		1		9 1/2	9 7/9	10 2/3	1 2/3					
	3		1		10 3/5	9 4/5	10 8/9	4/5					
	2	1	1	1	9 2/5	10 1/8	10 8/9	4/5	10 3/5	9 4/5	13	1 2/5	
	2	1	1	1	9 2/5	10 1/8	10 8/9	4/5	10 8/9	4/5	13	1 2/5	OE
L**04	2		1		9 1/2	9 7/9	10 2/3	1 2/3					
	3		2		10	10	11 1/3	1 1/4					
	2	1	1	1	9 2/5	10 1/8	10 8/9	4/5	10 3/5	9 4/5	13	1 2/5	
	2	1	1	1	9 2/5	10 1/8	10 8/9	4/5	10 8/9	4/5	13	1 2/5	OE
L**06	2		2		8 8/9	9 8/9	11 2/7	1 1/2					
	3		2		10	10	11 1/3	1 1/4					
	2	1	2	1	9	9 2/3	11 1/3	1 1/4	10 3/5	9 4/5	13	1 2/5	
	2	1	2	1	9	9 2/3	11 1/3	1 1/4	10 8/9	4/5	13	1 2/5	OE
L**02	3	1	1	1	11	10 2/7	10 1/2	1 2/7	12 1/7	9 8/9	13 5/6	1 2/7	
L**03	3	1	1	1	11	10 2/7	10 1/2	1 2/7	12 1/7	9 8/9	13 5/6	1 2/7	
	2	2	1	1	8 5/6	9 8/9	11 5/7	8/9	11	10 2/7	13 5/6	1 2/7	
L**04	3	1	2	1	10 1/2	9 8/9	11	1	12 1/7	9 8/9	13 5/6	1 2/7	
	2	2	1	1	10	9 1/2	10 1/2	1 2/7	12 1/7	9 8/9	12 5/8	1 5/7	
L**06	3	1	2	1	10 1/2	9 8/9	11	1	12 1/7	9 8/9	13 5/6	1 2/7	
	2	2	2	2	9 3/7	9 2/3	11	1	11 5/9	10	13 2/9	1 1/2	

NOTES:
1. OE designates opposite end connection.
2. Piping connection dimensions are consistent for either right hand or left hand connections.
3. Horizontal dimensions measured from rear panel. Vertical dimensions measured from bottom panel.
4. Measurements do not apply to same side piping and controls. Special Feature Requests (SFRs) may change piping stupout locations. Contact Applications.

Standard Features and Options

Vertical floor cabinets are constructed with 18 gauge galvanized steel.

Features and Options	Standard	Factory Installed Option	Field Installed Option	Factory Special Quote
Air Flow Arrangement				
Front Return/Top Supply (LHA, LXA)	X			
Front Return/Front Supply (STY, STW)	X			
Coils				
2-Rows 2-Pipe (LHA, LHW, LXA, LXW, STY, STW)	X			
3-Rows 2-Pipe	X			
2/1-Rows 4-Pipe (LHA, LHW, LXA, LXW)		X		
0.025" Tube Thickness				X
Manual Air Vent	X			
Automatic Air Vent		X		
Steam Coils (L**)		X		X
Coil Test Pressure 350	X			
Coil Test Pressure 400, 450		X		
Copper Coil Fins (2, 3, 4, 5)		X		
Connection				
Right or Left (Same End)	X			
Drain				
Stainless Steel Externally Coated	X			
Plastic Auxiliary Drain Pan	X			
Fin Material				
Aluminum w/Galvanized End Sheets	X			
Copper w/Stainless Steel End Sheets & Bottom Coil Baffle		X		X
Sheath Type Electric Heater (Total and Auxiliary) (L)**		X		
Indoor Air Quality				
1" Throwaway Non-woven Synthetic (L**, ST*)	X			
1" Permanent (L**)		X		
1" MERV 8 Pleated (L**, ST*)		X		
Bipolar Ionizer (L**)		X		
Insulation				
1/2" Standard Fiberglass	X			
1/2" Premium IAQ Fiberglass				X
1/2" Foil Face		X		
1/4" Closed Cell		X		
Motor Type				
PSC Motors w/Quick Connect (L**)	X			
ECM Motor w/Quick Connect (L**)		X		
Shaded Pole (ST*)	X			
Motor Voltage				
120/1/60 3-Speed	X			
208/230/277/1/60 3-Speed		X		

table continued on next page

Standard Features and Options, Cont'd.

Features and Options	Standard	Factory Installed Option	Field Installed Option	Factory Special Quote
Supply/Return Air Grilles				
Stamped Supply Grille (LXA, LXW, STY, STW)	X			
Stamped Return Grille (STY, STW)	X			
Paint Options (LX*, ST*)				
Arctic White	X			
Polar White, Flat Black, Ermine Gray, Champagne Beige, Toffee Brown		(LX*)		
Special Color				X
Controls				
Service Switch with Lockout Tabs		X		
Single Point Power Connection		X		
Incoming Power Fusing (L**)		X		
24V Controls (L**)		X		
Line Voltage Controls (L**, ST*)		X		
Condensate Float Switch		X		
Three Speed Switch		X		
Thermostats				
Unit Mounted (L**)		X		
Remote Mounted			X	
Custom Controls (DDC)		X		X
Outside Air Dampers				
Manual Controlled Damper (LHA, LHW, LXA, LXW)		X		
Cabinet Options				
1", 2.5" Leveling Legs		X		
Stainless Steel Coil Wrapper				X
Valve Package Options* (* Valve packages are assembled at the factory but field installed.)				
Union Connections at the Coil			X	
24" Braided Hoses			X	
Ball Valves			X	
2-Way/3-Way 25 psi Control Valve			X	
2-Way/3-Way 150 psi, Normally Closed, Control Valve			X	
2-Way/3-Way 150 psi, Normally Open, Control Valve			X	
2-Way/3-Way 35 psi Floating Control Valve			X	
2-Way/3-Way 35 psi Proportional Control Valve			X	
Combination Supply/Return Valves			X	X
Fixed Flow Control 1.0-8.0 GMP			X	
Y-Strainer/Y-Strainer with Blowdown			X	
P-T Ports			X	
Circuit Setter			X	
Balance Valve (Return Line)			X	
Balance Valve (3-Way Bypass)			X	

Standard Features and Options, Cont'd.

Filters

All Vertical Series units non-woven, synthetic throwaway filters furnished as standard equipment. Cleanable or MERV 8 pleated filters are optional.

Unit Size	Nominal One-Inch Filter Size – Inches (Millimeters)	
	LHA/LHW, LXA/LXW	STY/STW
01	–	10" x 14-1/2" (254 x 368)
02	7" x 21-3/4" (178 x 502)	–
03	7" x 26-3/4" (178 x 679)	10" x 28" (254 x 711)
04	7" x 34-3/4" (178 x 883)	–
06	7" x 48-3/4" (178 x 1238)	–

NOTES: Sizes shown are nominal ordering sizes.

Filter Static Resistance (in w.c.)

Unit Data			Filter Pressure Drop		
Model	Unit Size	Nominal CFM	1" Throwaway	1" Permanent	1" Merv 8
L**	02	200	0.045	0.074	0.13
	03	300	0.054	0.100	0.15
	04	400	0.055	0.104	0.15
	06	600	0.058	0.115	0.16

Bipolar Ionizer Specifications

SPECIFICATIONS:

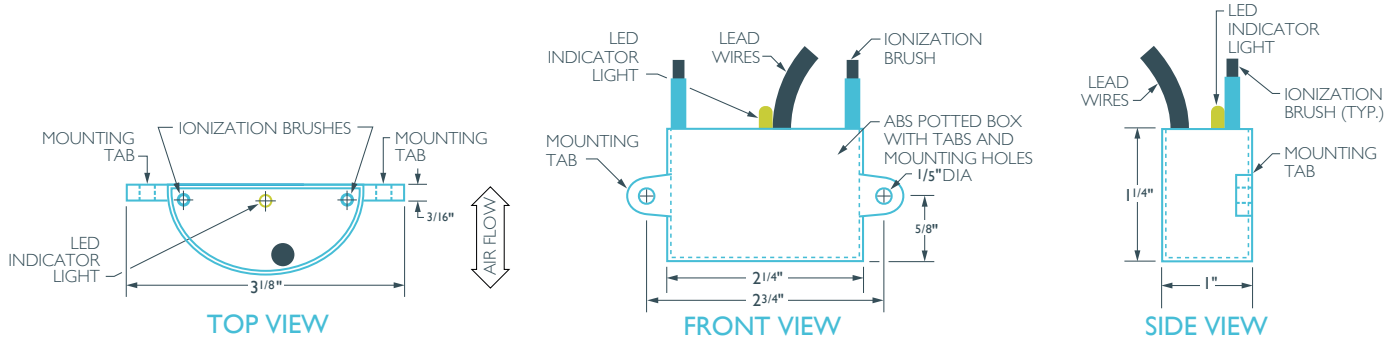
Airflow Capacity: ..... 2,400 CFM
Pressure Drop: ..... Less than 0.01 In. WG
Housing Material: ..... ABS
Weight: ..... 0.2 lbs.
Maximum Operating Temperature: ..... 200° F (93°C)
Electrical:
- Voltage: ..... 24V AC (602)
- Power Consumptions: ..... Less than 1 watt
- Frequency: ..... 50/60 hertz
- Over Current Protection: . 500mA Glass Cartridge Fuse
- Lead Wires ..... 50"(L)

Ionization Output:
- Mode of Operation ..... Needlepoint Type
- Needle Configuration: ..... Brush Type

DIMENSIONS: See Figure 1

APPROVALS: Intertek/ETL Standard UL 867

Figure 1. Dimensions not to scale.



Options and Accessories

Control Packages

Controls

We offer control packages that fit most customer needs. Additional controls and devices are available to meet even the most demanding operating logic.

Low Voltage Control (24V)

The 85 Control Board offers simplified install and service with its plug-in connections and QR code for quick wiring diagram reference. It also offers LED diagnostics and built-in design flexibility for added features such as staged cooling or BAS signal input. The 85 Control board is available with most control schemes.

85 Control Board Standard Features

- Simplified plug connections
- PSC or ECM control
- LED diagnostics (See IOM-100 for detailed LED function and outcome)
- QR code to wire diagram for ease of troubleshooting
- Conduit compatible for remote mounted control boxes
- Compatibility with all actuator types
- Removable thermostat connector

85 Control Board Options

- ECM fan speed adjustment
- Staged Cooling: compatible with IEC Venture Wi-Fi Thermostat (E055 - 1520330)
- BAS signal input to interrupt fan and actuators
- Fusing and service switch with electric heat
- Changeover or aquastat sensor
- Condensate switch LED indication
- Damper control

Condensate Float Switch

This switch shuts down the motor, actuator and electric heat (if applicable) when the water level in the drain pan reaches an unsafe level.

Service Switches

We offer concealed service switches for use by maintenance and service personnel to shut off the power while working on the unit.

Fusing

We offer incoming power fusing for all units as well as blower motor and control sub-fusing (single power source wiring).

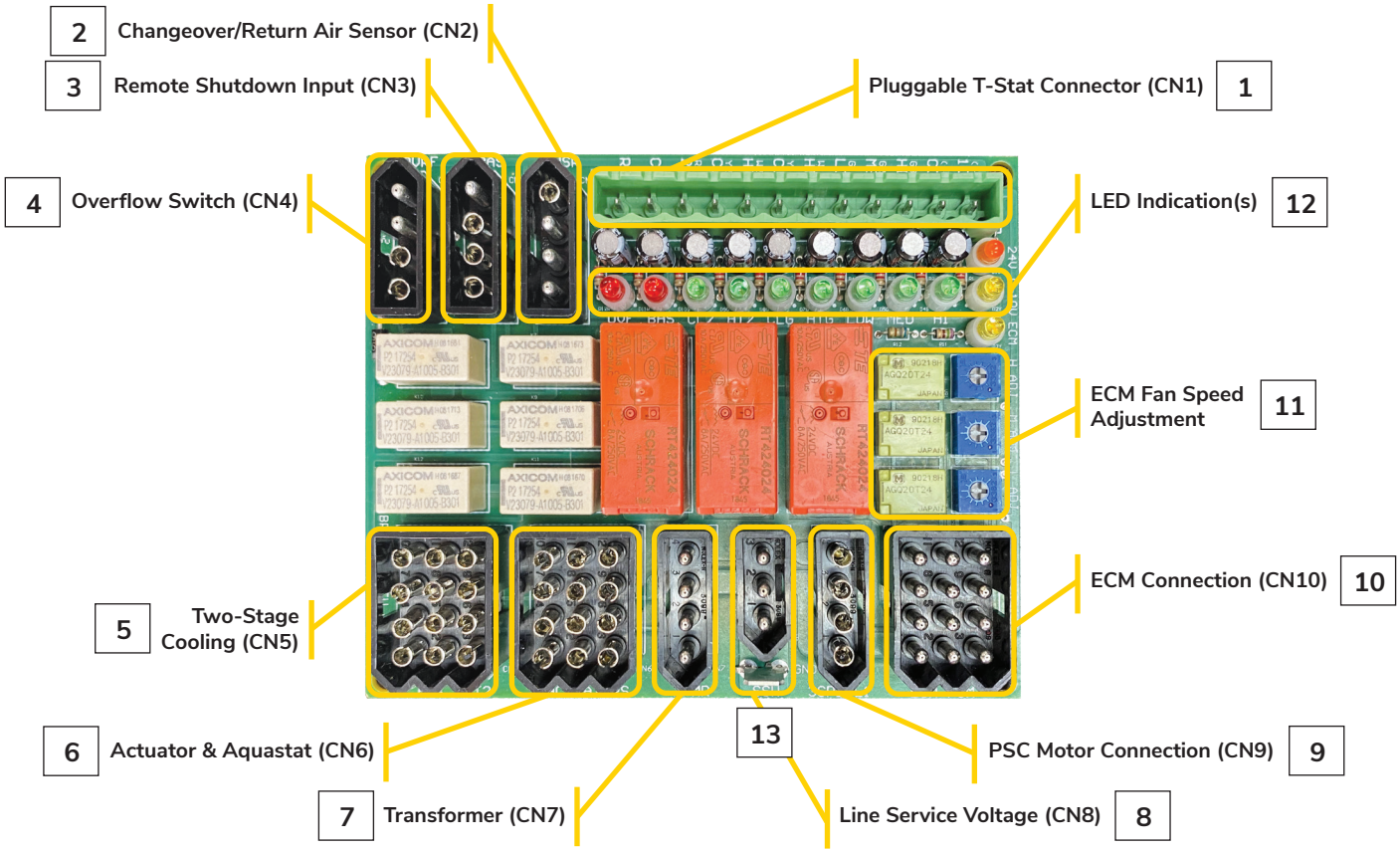
Other Control Options

- Unit mounted 3-speed switch (thermostat by others)
- 4-Speed silent switching board with potentiometers
- Low voltage remote shutdown relays (Special Quote)
- Fan and valve cycle applications (Special Quote)
- Thermostats available with large letter print for handicap applications (Special Quote)

Options and Accessories, Cont'd.

Controls Packages, Cont'd.

85 Control Board



1	CN1 – 24V Customer Input (Thermostat)
2	CN2 – Changeover/Return Air Sensor
3	CN3 – Remote Shutdown Input
4	CN4 – Condensate Overflow Switch
5	CN5 –Two Stage Cooling
6	CN6 – Actuator & Aquastat
7	CN7 – Transformer
8	CN8 – Line Service Voltage
9	CN9 – PSC Motor Connection
10	CN10 – ECM Connection
11	ECM Fan Speed Adjustment
12	LED Diagnostics
13	Ground Connection

Options and Accessories, Cont'd.

Thermostat Control Package Applications

Unit Type	Control Option	System Type	Changeover Type	W	P	N	F	G	A	B	C
-	Manual Fan	Manual[1]	None	-	-	-	-	-	-	-	-
2-Pipe	Valve Cycle*	Heat Only	None	•	•	•	•	•	•	•	•
		Cool Only	None	•	•	•	•	•	•	•	•
		Heat/Cool	Manual	-	-	-	-	-	•	•	•
			Automatic	•	•	•	•	•	•	•	•
		Heat/Cool with Auxiliary Electric Heat	Manual	-	-	-	-	-	•	•	•
			Automatic	•	•	•	•	•	•	•	•
		Cool with Total Electric Heat	Manual	-	-	-	-	-	•	•	•
			Automatic	•	•	•	•	•	•	•	•
4-Pipe		Heat/Cool	Manual	-	-	-	-	-	•	•	•
			Automatic	•	•	•	•	•	•	•	•

NOTE: 1. Fan switch only; no thermostat

Thermostat Features

All listed controls include fan switching.	Control Type[1]							
	W	P	N	F	G	A	B	C
24V, 115V, 208V, 240V, 277V	24V only	24V only	24V only	24V only	24V only	•	•	•
Wi-Fi Enabled	•	-	-	-	-	-	-	-
Mobile and Web App for Remote Control	•	-	-	-	-	-	-	-
Staged Cooling	•	-	-	-	-	-	-	-
Programmable	•	•	-	•	-	-	-	-
Remote Wall Mounted	•	•	•	•	•	•	•	
Manual Fan Switch Operation	•	•	•	•	•	•	•	•
Auto Fan Speed Control	•	•	•	•	•	-	-	-
Continuous 3-Speed Fan	•	•	•	•	•	•	•	•
Cycling Fan	•	•	•	•	•	•	•	•
O.A Damper Signal	•	•	•	•	•	-	-	-
Remote Temperature Sensor	Opt	Opt	Opt	Opt	Opt	•	•	•
Digital Display & Buttons	•	•	•	•	•	-	-	-
Local Temperature Set-Back	•	•	•	•	•	-	-	-
Water Temperature Purge Cycle	•	•	•	•	•	-	-	-
Proportional Control Valves	-	-	-	•	•	-	-	-
Floating Control Valves	-	-	-	•	•	-	-	-
Pipe Sensor	•	•	•	•	•	-	-	-

NOTES: 1. Control packages with valve cycle are continuous fan operation only.
2. All wall-mounted control packages are shipped loose for field installation (Boxes, tile rings, plaster rings, etc. are not provided.).
3. Aquastats are included in control packages, as required.

***LEGEND:**
A • Basic Electronic Wall Series, 155, Vertical
B • Basic Electronic Wall Series, 155, Horizontal
C • Basic Series, 156, Unit Mounted
P • Basic 24 V Digital, 7-Day Programmable
N • Basic 24 V Digital, Non-Programmable
F • Premium 24 V Digital, 7-Day Programmable/BACnet with Proportional Fan/Valves Option
G • Premium 24 V Digital BACnet with Proportional Fan/Valves Option
W • Venture 24 V Wi-Fi Programmable

Options and Accessories, Cont'd.

Venture 24V,
Wi-Fi Programmable

Basic 24V Digital
7-Day Programmable and
Non-Programmable Series

Premium 24V Digital
7-Day Programmable/BACnet

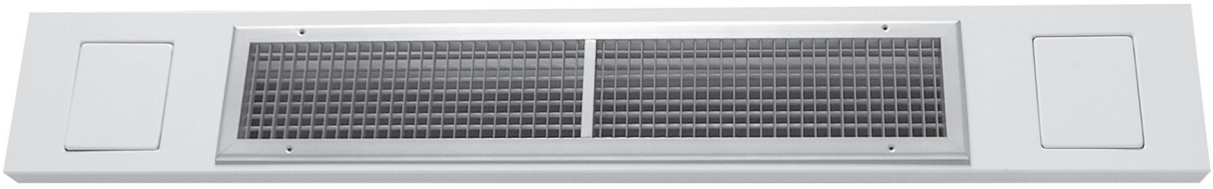
Basic Electronic Wall Series
155, Vertical and Horizontal

Options and Accessories, Cont'd.

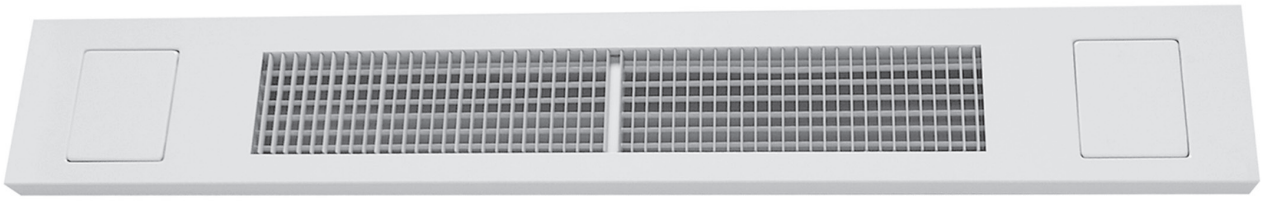
Supply Air Grilles

Unit Size	Nominal CFM	Recommended Grille Sizes – Inches (Millimeters)	
		LXA/LXW	LHA/LHW
02	200	16" x 6" (406 x 152)	16" x 5" (406 x 127)
03	300	22" x 6" (559 x 152)	22" x 5" (559 x 127)
04	400	30" x 6" (762 x 152)	30" x 5" (762 x 127)
06	600	44" x 6" (1118 x 152)	44" x 5" (1118 x 127)

NOTES:
1. Refer to Submittal Data for actual unit supply air opening dimensions.
2. LXA/LXW models supply air grilles are factory installed.
3. Consult factory for application restrictions using double-deflection grilles with electric heat and maximum coil rows.
4. LHA/LHW models supply air grilles are shipped loose.



Optional Double-deflection, Aluminum-finish Supply Grille
(Shown in Top Panel)

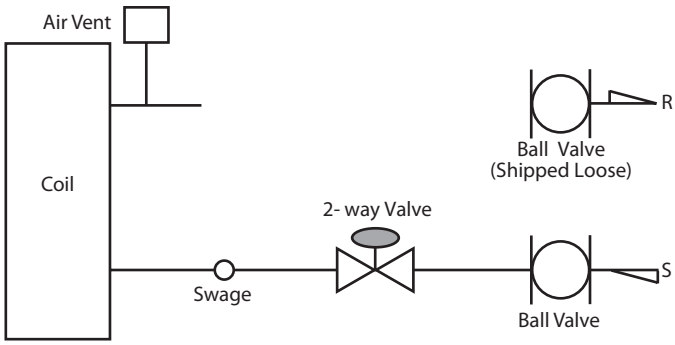


Optional Double-deflection, integral Supply Grille (LXA/LXW Models Only),
Painted to Match Color of Unit (Shown in Top Panel)

Piping Packages (Typical)

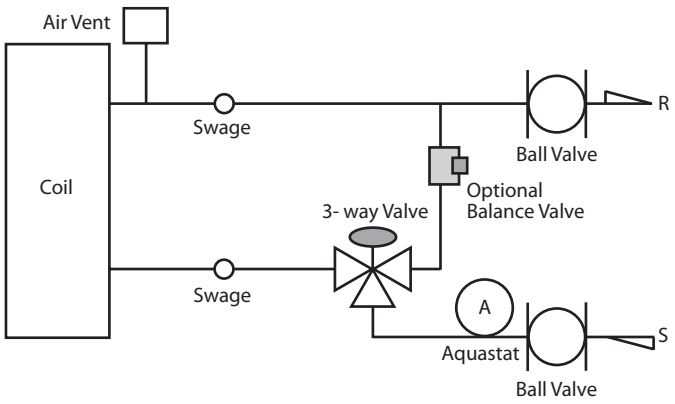
Two-way Motorized Control Valve

In a two-way motorized control valve package, the motor drives the valve open, and a spring returns the valve to a normally closed position. No water flows with the unit off. The standard supply connection from the coil will accept a swaged copper fitting for field brazing. As an option, this connection may be factory furnished with a union. When a swage is necessary, it becomes part of the valve package. The isolation, or ball, valve in the return piping is shipped loose for field installation.



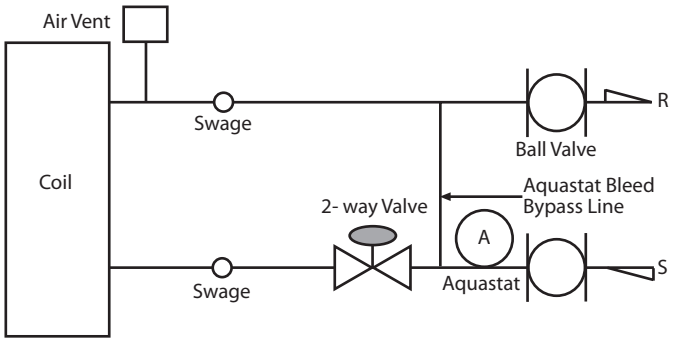
Three-way Motorized Control Valve

In a three-way motorized control valve package, a diverting valve controls water flow to the coil. When the unit is off, water bypasses the coil and flows directly to the system return. A balancing valve may be specified in the bypass line to permit equal flow balancing.



Two-way Motorized Control Valve with Aquastat Bypass Line

In a two-way motorized control valve package, the motor drives the valve open, and a spring returns the valve to a normally closed position. No water flows through the coil with the unit off. The aquastat bypass line allows a small amount of water to flow from the supply to the return piping when the control valve is closed. The strap-on aquastat senses whether the flowing water is being chilled or heated and switches a contact closed to provide automatic summer/winter changeover (ACO) for the system. When a 2-pipe cooling/heating system with optional auxiliary electric heat is desired, an additional aquastat is required.



NOTES:
1. Please note that project specifications for system pressure, pressure drop limitations and flow rate should be checked prior to selecting specific components or the valve package size
2. The supply and return piping connections of the factory-provided valve package are either swaged for field brazing (standard) or union fitted (optional) for field connection to the coil.
3. Consult IEC's Valve Packages and Piping Components manual or your local representative for detailed piping and valve application information. Factory-provided valve packages are assembled, brazed, wired electrically and dry-fit to the coil connections before shipping. Field brazing to the coil completes the installation. Some applications dictate shipping isolation valves loose.

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Contact your local IEC Sales Representative for further details and pricing applicable to this product. Visit our website (iec-okc.com) to find your local IEC Sales Rep.

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IEC International Environmental
A NIBE GROUP MEMBER
5000 W. I-40 Service Rd.
Oklahoma City, OK 73128
P: 405.605.5000
F: 405.605.5001
www.iec-okc.com