



AIR-COOLED Low, Medium and High Temp

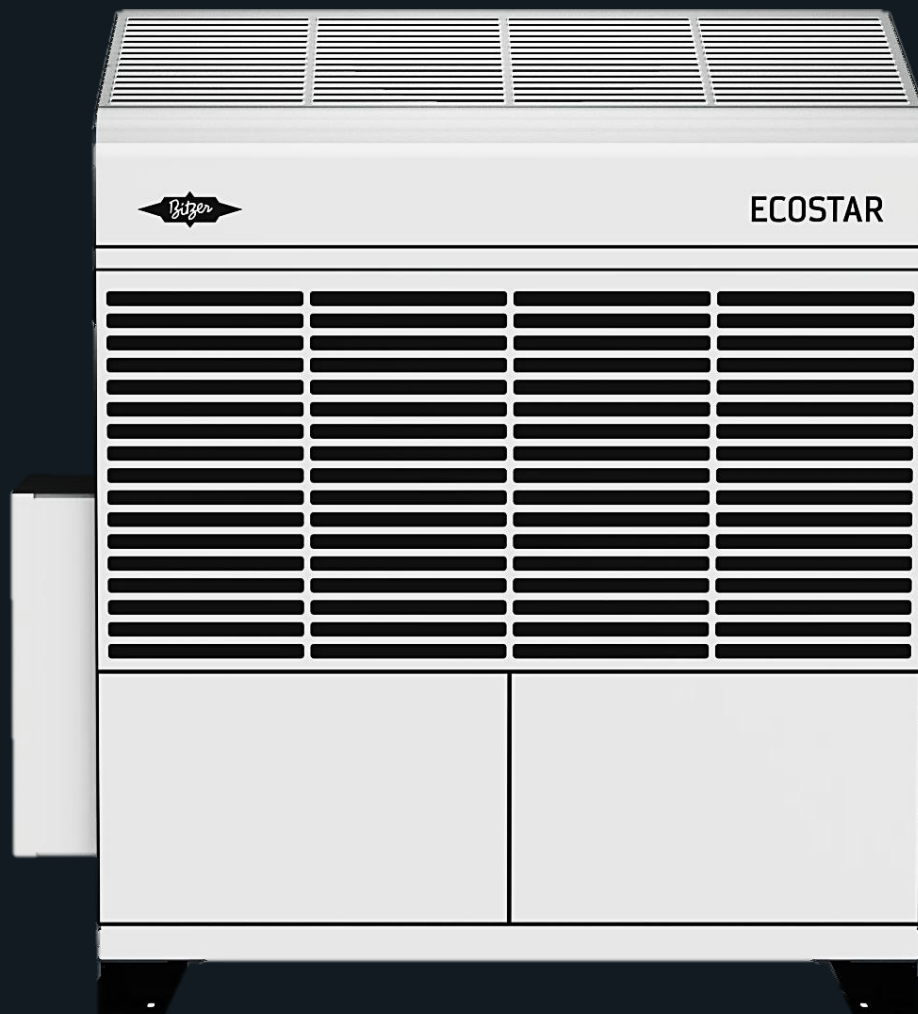
VARIABLE CAPACITY SYSTEM

LHV5E
LHV7E



INTELLIGENT
COMPRESSORS

ECOSTAR





ECOSTAR

The latest generation of the BITZER ECOSTAR is designed to meet the strictest global efficiency standards by using a variable speed compressor, EC fan motors, and mini-channel condenser coil. These features, along with other control logic, allow for stable, efficient operation in an easy-to-install, sustainable low maintenance, state-of-the-art system.

Highlights

- **Highest Level of Efficiency**
 - EC fans motors
 - Mini-channel condenser
 - ECOLINE VARISPEED VFD compressor
 - Precise linear and stable modular capacity control (no digital pulsing)

- **Sustainable**
 - 25%-35% energy reduction vs standard units.
 - 10%+ energy savings vs systems with PMW scrolls
 - Low refrigerant charge (Under 50 lbs.)
 - Serviceable compressor
 - Lowest potential leak points

- **Multiuse Flexible Application**
 - Wide operating range for low, medium or AC temperature applications.
 - Refrigerants: R404A, R507A, R448A, R449A, R134a, R513A, R450A
 - 575v, 460v or 230v
 - Quiet: Std 50 dBA and 45 dBA in low sound mode.
 - Multiple evaporator temps on one unit.
 - Standard cabinet designed for high wind, hail protection and coastal regions with no upcharges.
 - Smallest footprint, weight, and space requirement of any centralized system.
 - Use with loop piping or circuits.
 - Communication: Open protocol Ethernet LAN and Modbus RTU.

- **Low Cost of Ownership**
 - Unit designed for ease of service with full access to all components.
 - Breaks down for service within one minute.
 - Lowest maintenance and service cost vs any centralized system.
 - Easy to use interface with self-diagnostic features.
 - Free BEST software download connecting via cable or Bluetooth with no special tools needed.
 - Simple 5 steps to commissioning.

- **Main control settings**
 - Suction pressure or room temperature
 - 7-day flexible control program
 - Wide operating ranges from low temperatures to AC.
 - Up to 4 ECOSTAR units can be connected for temperature control via Modbus
 - Fan control

- **Listed per UL standard**



Explanation of Model Number

LHV 7E / 4 C E S - 3. F3 Y

Model designation

LHV = ECOSTAR Condensing Unit

LHV 7E / 4 C E S - 3. F3 Y

Number of EC fans

5E = 1

7E = 2

LHV 7E / 4 C E S - 3. F3 Y

Compressor type

2 = Number of cylinders

D = Displacement

E = ECOLINE series

S = Centrifugal lubrication

LHV 7E / 4 C E S - 3. F3 Y

Nominal HP

LHV 7E / 4 C E S - 3. F3 Y

Voltage

C3 = 575v/3ph/60Hz

F3 = 460v/3ph/60Hz

V3 = 230v/3ph/60Hz

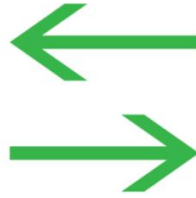
LHV 7E / 4 C E S - 3. F3 Y

Oil Type

Y = BSE32

BEST Software

The BEST Software is an easy-to-use tool used to connect directly to BITZER IQ products via a PC or mobile BEST App. Navigation through an intuitive user interface allows the user to configure, analyze, diagnose, reset, and download a wide variety of data.



- **Easy configuration**
 - Software or legend tool
 - Smooth load matching for daily and annual demand fluctuations
- **Reliable online diagnosis**
 - Display of all connected sensors
 - Pressure transducers
 - Temperature sensors
 - Oil Level Switches
 - Analog and Digital I/Os
 - Operating point within the application window
 - Capacity control status
- **User-friendly interface**
 - Visualization of current operating conditions
 - Data log download
 - Default parameters of device and compressor setups saved
 - Alarm list with integrated help function
 - Free easy to load firmware updates available
- **Communication**
 - BEST Software via PC or Bluetooth
 - BEST App via Bluetooth

ECOSTAR SERIAL LEGEND												
CUSTOMER		JOB #		STORE		DATE		LOCATION		DATE		
UNIT #	CU #	CIRCUIT INFORMATION				DISCH TEMP	CAP MBH	EVAP TEMP	ORIG. ELECTRICAL			MFC CONTROL
		CASE / EVAP MODEL	DESCRIPTION	FAN AMP	LT AMP				AS AMP	SUP AMP	DEF TYPE	
1	1	30 x 20 x 8	(2) KUSE	Walk in	34	24.50	75					
2	2		LSA	Example	35	28.50	72					
3	3		SL	5 Doors Walk in	34	16.00	78					
4	4											
5	5											
6	6											
7	7											
8	8											
TYPIC: 60/30 30 For Reference Only. Case Must Not Connect To Binary												
UNIT NOMINCLATURE		LVN/VCES-RVY	COMPRESSOR	ACES BY	Notes							
AMBIENT TEMP		35	POWER VOLTAGE	208/240								
DEW SUCTION TEMP		20	UNIT FLA	44.7								
CAPACITY MBH		71.7	UNIT MCA	68								
UNIT DIMENSIONS		30" x 20" x 8"	UNIT HOOKS	110								
SHIPPING WEIGHT		770 LB	SCOP	95								
SUCTION GROUP		60.0	AVAIL. (MBH)	71.7	Factory Locked							
STORE DESIGN CONDITIONS												
REFRIGERANT		R404A	INSIDE TEMP / RH	75F / 55%								
RECEIVER CAPACITY AT 90% LRB		49	CONTROL VOLTAGE									
UNIT CHANGE (LBS)												





Performance data

Performance data for the ECOSTAR units is available in the BITZER Software.

- Power consumption provided by the software includes compressor, inverter, and fan power.
- 575v and 230v versions are limited to 65Hz maximum operation.
- BITZER Software is available online or as a download for Window's PCs.

460v Technical Data

460v/3ph/60Hz MODEL	Capacity [kBtuh] R513A		Capacity [kBtuh] R448A		Unit			Electrical					
	T _{amb} = 95°F @ 87Hz		T _{amb} = 95°F @ 87Hz										
	+40°F	+20°F	+20°F	-15°F	Comp Wgt	Weight [lb]	Speed Range	MOPD	MCA	COMP RLA 1.4 / 1.56	LRA	VFD Max Output	Fan Amps
LHV7E/4FES-5.F3Y	58.7	38	54.2	22.7	238	728	25-87 Hz	60	37.6	14.6 / 13.1	66.5	28	1.5 x 2
LHV7E/4EES-6.F3Y	71.3	48.4	64.8	27.6	243	728	25-87 Hz	60	37.6	14.9 / 13.4	66.5	28	1.5 x 2
LHV7E/4DES-5.F3Y	81.1	54.9	--	--	238	728	25-87 Hz	60	37.6	12.0 / 10.8	66.5	28	1.5 x 2
LHV7E/4CES-6.F3Y	86.4*	65.2	--	--	249	728	25-87 Hz	60	37.6	15.8 / 14.2	88	28	1.5 x 2
LHV7E/4DES-7.F3Y	81.2	54.9	71.5	30.8	322	728	25-87 Hz	60	37.6	17.0 / 15.3	88	28	1.5 x 2
LHV7E/4CES-9.F3Y	94	65.2	85	38.7	320	728	25-87 Hz	60	37.6	19.0 / 17.1	88	28	1.5 x 2
LHV7E/4VES-7.F3Y	96.9	67.2	--	--	351	860	25-87 Hz	60	37.6	13.6 / 12.2	75	28	1.5 x 2
LHV7E/4TES-9.F3Y	109.2	77.6	--	--	357	860	25-87 Hz	60	37.6	15.7 / 14.1	90	28	1.5 x 2
LHV7E/4PES-12.F3Y	109.0*	84	--	--	370	860	25-87 Hz	60	37.6	19.3 / 17.3	111	28	1.5 x 2
LHV7E/4NES-14.F3Y	--	94.3	--	--	390	860	25-87 Hz	60	37.6	22.1 / 19.9	126	28	1.5 x 2

Notes:

Shaded models are for low Pressure refrigerants R134A, R513A, R450A.

460v design requires 5 wires: 3~/N/PE (N is required).

*@ 35°F Evap.

230v Technical Data

230v/3ph/60Hz MODEL	Capacity [kBtuh] R513A		Capacity [kBtuh] R448A		Unit			Electrical					
	T _{amb} = 95°F @ 60Hz		T _{amb} = 95°F @ 60Hz					Comp Wgt	Weight [lb]	Speed Range	MOPD	MCA	COMP RLA 1.4 / 1.56
	+40°F	+20°F	+20°F	-15°F									
LHV7E/4FES-5.V3Y	44	27.7	40.9	16.6	209	760	25-65 Hz	80	49.3	27.0 / 24.2	163	37	1.5 x 2
LHV7E/4EES-6.V3Y	54.4	35.7	49.6	20.4	209	760	25-65 Hz	80	49.3	31.3 / 28.1	163	37	1.5 x 2
LHV7E/4DES-5.V3Y	62.8	41.2	-	-	207	760	25-65 Hz	80	49.3	23.0 / 20.6	163	37	1.5 x 2
LHV7E/4CES-6.V3Y	74	49.8	-	-	218	760	25-65 Hz	80	49.3	27.9 / 25.0	215	37	1.5 x 2
LHV7E/4DES-7.V3Y	62.8	41.2	55.2	22.9	220	760	25-65 Hz	80	68	34.5 / 31.0	215	52	1.5 x 2
LHV7E/4CES-9.V3Y	74	49.8	67.1	29.1	218	760	25-65 Hz	80	68	38.1 / 34.2	215	52	1.5 x 2
LHV7E/4VES-7.V3Y	77.1	51.8	-	-	306	885	25-65 Hz	80	49.3	27.1 / 24.4	150	37	1.5 x 2
LHV7E/4TES-9.V3Y	88.5	60.6	-	-	317	885	25-65 Hz	80	49.3	31.4 / 28.2	180	37	1.5 x 2
LHV7E/4PES-12.V3Y	96.8	66.6	-	-	324	905	25-65 Hz	80	68	38.8 / 34.6	222	52	1.5 x 2
LHV7E/4NES-14.V3Y	111.7	75.7	-	-	342	905	25-65 HZ	110	68	44.3 / 39.7	252	52	1.5 x 2

575v Technical Data

575v/3ph/60Hz MODEL	Capacity [kBtuh] R513A		Capacity [kBtuh] R448A		Unit			Electrical					
	T _{amb} = 95°F @ 60Hz		T _{amb} = 95°F @ 60Hz					Comp Wgt	Weight [lb]	Speed Range	MOPD	MCA	COMP RLA 1.4 / 1.56
	+40°F	+20°F	+20°F	-15°F									
LHV7E/4FES-5.C3Y	44	27.7	40.9	16.6	209	760	25-65 Hz	25	18.0	9.7 / 8.7	48	12	1.5 x 2
LHV7E/4EES-6.C3Y	54.4	35.7	49.6	20.4	209	760	25-65 Hz	35	23.0	10.5 / 9.4	48	16	1.5 x 2
LHV7E/4DES-5.C3Y	62.8	41.2	-	-	207	760	25-65 Hz	30	18.0	10.0 / 9.0	48	12	1.5 x 2
LHV7E/4CES-6.C3Y	74	49.8	-	-	218	760	25-65 Hz	35	23.0	12.5 / 11.2	63.5	16	1.5 x 2
LHV7E/4DES-7.C3Y	62.8	41.2	55.2	22.9	220	760	25-65 Hz	50	31.8	12.3 / 11.0	63.5	23	1.5 x 2
LHV7E/4CES-9.C3Y	74	49.8	67.1	29.1	218	760	25-65 Hz	50	31.8	15.2 / 13.7	63.5	23	1.5 x 2
LHV7E/4VES-7.C3Y	77.1	51.8	-	-	306	885	25-65 Hz	35	23.0	10.7 / 9.6	60	16	1.5 x 2
LHV7E/4TES-9.C3Y	88.5	60.6	-	-	317	885	25-65 Hz	50	31.8	13.6 / 12.2	72	23	1.5 x 2
LHV7E/4PES-12.C3Y	96.8	66.6	-	-	324	905	25-65 Hz	50	31.8	16.0 / 14.4	89	23	1.5 x 2
LHV7E/4NES-14.C3Y	111.7	75.7	-	-	342	905	25-65 Hz	50	31.8	17.7 / 15.9	101	23	1.5 x 2

Notes:

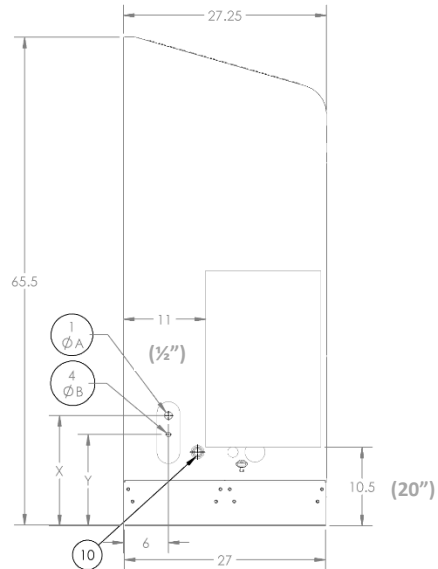
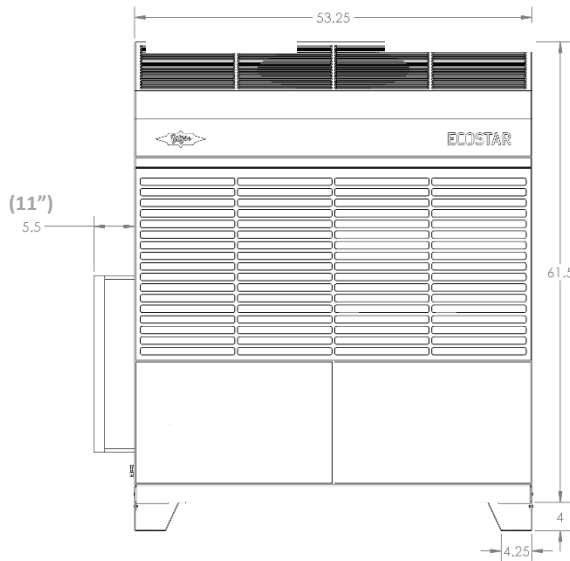
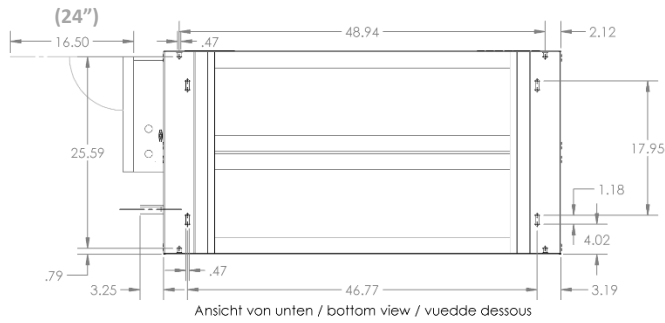
Shaded models are for low Pressure refrigerants R134A, R513A, R450A

230v / 575v design requires 4 wires: 3~/PE.

230v / 575v version is limited to 65Hz maximum operation.

Operation with a generator, emergency power generator, or networks with reactive current compensation systems only after consultation with BITZER.

Dimensional Drawing



Model	øA [inch]	øB [inch]	X [inch]	Y [inch]	øA [mm]	øB [mm]	X [mm]	Y [mm]
LHV5E/2DES-3.	7/8	5/8	14.7	12.2	22	16	372	310
LHV5E/4FES-5.	1 1/8	5/8	14.8	12.2	28	16	375	310
LHV5E/4EES-6.	1 1/8	5/8	14.8	12.2	28	16	375	310
LHV7E/4FES-5.	1 1/8	5/8	14.8	12.2	28	16	375	310
LHV7E/4EES-6.	1 1/8	5/8	14.8	12.2	28	16	375	310
LHV7E/4DES-5.	1 3/8	7/8	15.1	12.1	35	22	383	308
LHV7E/4CES-6.	1 3/8	7/8	15.1	12.1	35	22	383	308
LHV7E/4DES-7.	1 3/8	7/8	15.1	12.1	35	22	383	308
LHV7E/4CES-9.	1 3/8	7/8	15.1	12.1	35	22	383	308
LHV7E/4VES-7.	1 5/8	7/8	15.1	12.1	42	22	383	308
LHV7E/4TES-9.	1 5/8	7/8	15.1	12.1	42	22	383	308
LHV7E/4PES-12.	1 5/8	7/8	15.1	12.1	42	22	383	308
LHV7E/4NES-14.	1 5/8	7/8	15.1	12.1	42	22	383	308

Connection Positions:

- 1** Suction gas line
- 4** Refrigerant outlet
- 10** Sight glass

Notes:

- 460v unit pictured
- Control panel not to scale for 230v / 575v units
- 230v / 575v Control panel dimension in parenthesis

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