

BITZER ECOSTAR INVERTER UNITS



Ecostar Inverter Condensing Units

The ECOSTAR condensing units offer a wide cooling capacity range due to a semi-hermetic Bitzer Varispeed compressor regulated by a frequency inverter and an intelligent control presented as a Plug & Play solution. The control system allows for extremely energy-efficient and noise-reduced operation as well as a suction pressure guided or a temperature guided control plus evaporator set point rise option at night.

Ecostar units utilise BEST Software via PC (a number of BITZER IQ products may be configured with the BEST Software) The Best Software has intuitive user interface displays, complete operating status overview including data logging for easy maintenance & service.

The Ecostar unit control system offers reliable online diagnosis with displays of all connected sensors, e.g. pressure transmitters, temperature sensors, oil level switches, digital and analogue inputs and outputs. Plus current operating points within the application limit and current capacity control status. Also analysis with data log download and visualisation of all operating parameters plus alarm list with integrated help function for easy maintenance and service.

Main Product Features

Bitzer Semi-Hermetic Varispeed Compressors

The compressor can be operated in two control modes:

- Temperature-guided
- Suction pressure-guided

Mini Channel Condenser Coil

- High efficiency and excellent heat exchange
- Copper tube with aluminium fins
- Less refrigerant charge
- Plastic fin corrosion protection

Main control settings

- Control via weekly program
- Suction pressure or room temperature (optional sensor) incl. set point
- Up to 4 ECOSTAR Units can be connected for temperature control via Modbus
- Fan control

Condenser EC fans

Select between two operation modes:

- Eco mode (factory setting) energy optimised operation
- Low sound mode sound optimised operation

Night mode:

- Limits the compressor frequency and the fan.
- Sound emission can be limited up to 45 dB(A).

Communication via the BEST Software Requirements:

The BEST software can be downloaded for free from the BITZER website (www.bitzer.de).

Mobile device

- equipped with the operating system Windows XP or newer
- equipped with USB port or
- equipped with Bluetooth

Data connection:

- USB 2.0: A plug/Mini-B-USB plug (cable length max. 2m)
- Bluetooth 4.0: Range approx. 30m



Standard Fitted Items:

- Bitzer Varispeed Compressor
- Mini Channel Condenser
- LODAM Unit Controller
- EC Condenser Fans
- Oil Separator - internal float
- Liquid Receiver with sight glass
- External discharge line check valve
- Liquid Line Drier & Sight glass
- Delta PII Oil Level Monitor
- Dual Pressure Control
- Fully Wired Electrical Panel
- BSE32 Oil Charge
- Quality Weatherproof Outdoor Case



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R134A – Medium Temperature Inverter Condensing Units

Unit Model	Compressor Speed		Ambient Temp °C	Refrigeration Capacity Watts								
	Drive Output Frequency	approximate revs per minute (revs per second)		Evaporating Temperature °C								
				+10	+5	0	-5	-10	-15	-20	-25	
LHV5E2DE3F1Y Three Phase 380...400V/3/50Hz Unit Max. Operating Current: 16.0 amps Unit Weight: 310 kg 1 x Condenser Fan: 350 watts 50Hz 5550 m³/h 50Hz @ max. operating conditions Maximum Receiver Charge R134A: 23.2 kg Compressor Speed Range: 30...87Hz	25 Hz	750 rpm (12 rps)	32	n/a								
			38									
			43									
	30 Hz	900 rpm (15 rps)	32	6138	5057	4121	3317	2630	2051	1575	1172	
			38	5670	4666	3796	3049	2412	1875	1433	1057	
			43	5371	4405	3571	2855	2245	1731	1316	964	
	40 Hz	1200 rpm (20 rps)	32	8289	6842	5585	4500	3570	2779	2115	1573	
			38	7658	6313	5145	4136	3271	2536	1920	1419	
			43	7281	5989	4861	3890	3059	2356	1765	1293	
	50 Hz	1450 rpm (24 rps)	32	10331	8554	6996	5645	4483	3491	2655	1959	
			38	9547	7893	6444	5187	4107	3185	2408	1762	
			43	8997	7491	6110	4897	3854	2968	2223	1605	
	60 Hz	1800 rpm (30 rps)	32	12185	10143	8319	6723	5345	4167	3169	2336	
			38	11272	9362	7663	6178	4897	3800	2873	2099	
			43	10545	8808	7261	5848	4610	3552	2661	1919	
	70 Hz	2100 rpm (35 rps)	32	13801	11574	9534	7723	6148	4797	3651	2691	
			38	12776	10691	8784	7097	5631	4375	3309	2417	
			43	11928	9995	8263	6721	5314	4100	3073	2215	
	87 Hz	2610 rpm (43 rps)	32	16157	13623	11334	9239	7378	5767	4395	3241	
			38	14945	12593	10454	8492	6758	5259	3983	2909	
			43	13940	11740	9748	7967	6385	4946	3711	2677	
	LHV7E4FE5F1Y Three Phase 380...400V/3/50Hz Unit Max. Operating Current: 22.0 amps Unit Weight: 340 kg 2 x Condenser Fans: 2 x 350 watts 50Hz 9070 m³/h 50Hz @ max. operating conditions Maximum Receiver Charge R134A: 23.2 kg Compressor Speed Range: 25...87Hz	25 Hz	750 rpm (12 rps)	32	6722	5492	4443	3556	2823	2201	1680	1248
				38	6183	5046	4075	3258	2579	2002	1517	1116
				43	5799	4714	3787	3013	2375	1835	1380	1005
30 Hz		900 rpm (15 rps)	32	8170	6681	5405	4320	3410	2664	2037	1517	
			38	7514	6135	4954	3950	3112	2422	1840	1357	
			43	7069	5750	4620	3662	2866	2218	1674	1221	
40 Hz		1200 rpm (20 rps)	32	11019	9032	7320	5854	4614	3577	2736	2044	
			38	10132	8293	6707	5348	4200	3242	2468	1827	
			43	9578	7813	6286	4985	3885	2969	2244	1644	
50 Hz		1450 rpm (24 rps)	32	13718	11282	9162	7339	5789	4486	3408	2544	
			38	12616	10357	8392	6704	5266	4060	3064	2273	
			43	11847	9779	7899	6272	4892	3736	2783	2043	
60 Hz		1800 rpm (30 rps)	32	16172	13368	10887	8737	6900	5350	4062	3010	
			38	14884	12274	9971	7978	6276	4839	3647	2683	
			43	13870	11506	9399	7489	5849	4469	3326	2412	
70 Hz		2100 rpm (35 rps)	32	18311	15250	12470	10030	7933	6158	4675	3460	
			38	16873	14009	11423	9158	7213	5567	4195	3073	
			43	15677	13048	10706	8613	6742	5156	3838	2762	
87 Hz		2610 rpm (43 rps)	32	21409	17951	14827	11993	9514	7398	5624	4160	
			38	19710	16509	13589	10949	8648	6687	5043	3690	
			43	18298	15310	12620	10232	8106	6217	4633	3332	

Note: Based on 18°C Celsius return vapour and inherent liquid sub-cooling

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R134A – Medium Temperature Inverter Condensing Units

Unit Model	Compressor Speed		Ambient Temp °C	Refrigeration Capacity Watts								
	Drive Output Frequency	approximate revs per minute (revs per second)		Evaporating Temperature °C								
				+10	+5	0	-5	-10	-15	-20	-25	
LHV7E4DES7F3Y Three Phase 380..400V/3/50Hz Unit Max. Operating Current: 30.0 amps Unit Weight: 340 kg 2 x Condenser Fans: 2 x 350 watts 50Hz 9070 m³/h 50Hz @ max. operating conditions Maximum Receiver Charge R134A: 23.2 kg Compressor Speed Range: 25...87Hz	25 Hz	750 rpm (12 rps)	32	9978	8192	6653	5340	4230	3304	2551	1925	
			38	9199	7545	6119	4901	3873	3017	2320	1739	
			43	8701	7111	5743	4578	3595	2780	2126	1582	
	30 Hz	900 rpm (15 rps)	32	12082	9938	8084	6495	5145	4014	3080	2330	
			38	11137	9151	7433	5959	4708	3660	2800	2104	
			43	10543	8653	7000	5584	4386	3382	2565	1912	
	40 Hz	1200 rpm (20 rps)	32	16111	13342	10896	8777	6968	5439	4166	3124	
			38	14863	12287	10016	8051	6372	4954	3774	2812	
			43	13886	11548	9466	7584	5966	4604	3473	2552	
	50 Hz	1450 rpm (24 rps)	32	19670	16469	13548	10957	8718	6818	5226	3915	
			38	18165	15184	12457	10049	7971	6208	4731	3517	
			43	16913	14142	11664	9475	7493	5792	4373	3208	
	60 Hz	1800 rpm (30 rps)	32	22806	19194	15936	12972	10357	8115	6229	4668	
			38	21048	17702	14667	11899	9468	7387	5637	4190	
			43	19585	16461	13638	11123	8908	6916	5227	3836	
	70 Hz	2100 rpm (35 rps)	32	25540	21597	18007	14778	11858	9315	7161	5372	
			38	23556	19906	16580	13564	10840	8477	6479	4820	
			43	21905	18499	15392	12601	10132	7951	6025	4425	
	87 Hz	2610 rpm (43 rps)	32	29381	25029	21007	17353	14080	11133	8587	6454	
			38	27067	23044	19321	15936	12881	10131	7766	5788	
			43	25142	21394	17920	14758	11928	9441	7247	5337	
	LHV7E4CE9F3Y Three Phase 380..400V/3/50Hz Unit Max. Operating Current: 36.0 amps Unit Weight: 340 kg 2 x Condenser Fans: 2 x 350 watts 50Hz 9070 m³/h 50Hz @ max. operating conditions Maximum Receiver Charge R134A: 23.2 kg Compressor Speed Range: 25...87H	25 Hz	750 rpm (12 rps)	32	12085	9960	8122	6546	5207	4083	3153	2403
				38	11163	9194	7490	6027	4784	3742	2881	2186
				43	10582	8708	7069	5664	4474	3476	2653	2003
30 Hz		900 rpm (15 rps)	32	14577	12057	9853	7953	6334	4968	3831	2902	
			38	13471	11129	9084	7322	5818	4550	3495	2639	
			43	12658	10528	8599	6903	5457	4241	3232	2417	
40 Hz		1200 rpm (20 rps)	32	19177	16061	13223	10720	8561	6728	5192	3926	
			38	17743	14837	12192	9866	7861	6159	4733	3558	
			43	16549	13857	11454	9328	7411	5770	4400	3273	
50 Hz		1450 rpm (24 rps)	32	23226	19588	16305	13325	10687	8420	6511	4926	
			38	21473	18104	15052	12267	9812	7706	5932	4461	
			43	20014	16867	14021	11483	9251	7247	5536	4121	
60 Hz		1800 rpm (30 rps)	32	26753	22700	18996	15665	12653	10004	7751	5873	
			38	24715	20964	17532	14434	11617	9153	7060	5316	
			43	23018	19519	16313	13424	10859	8616	6611	4927	
70 Hz		2100 rpm (35 rps)	32	29774	25405	21367	17698	14413	11456	8899	6753	
			38	27483	23445	19707	16306	13241	10481	8104	6111	
			43	25575	21814	18325	15147	12302	9799	7602	5680	
87 Hz		2610 rpm (43 rps)	32	33910	29190	24744	20639	16920	13605	10639	8100	
			38	31253	26902	22794	18994	15548	12455	9687	7328	
			43	29040	24999	21172	17626	14405	11537	9032	6835	

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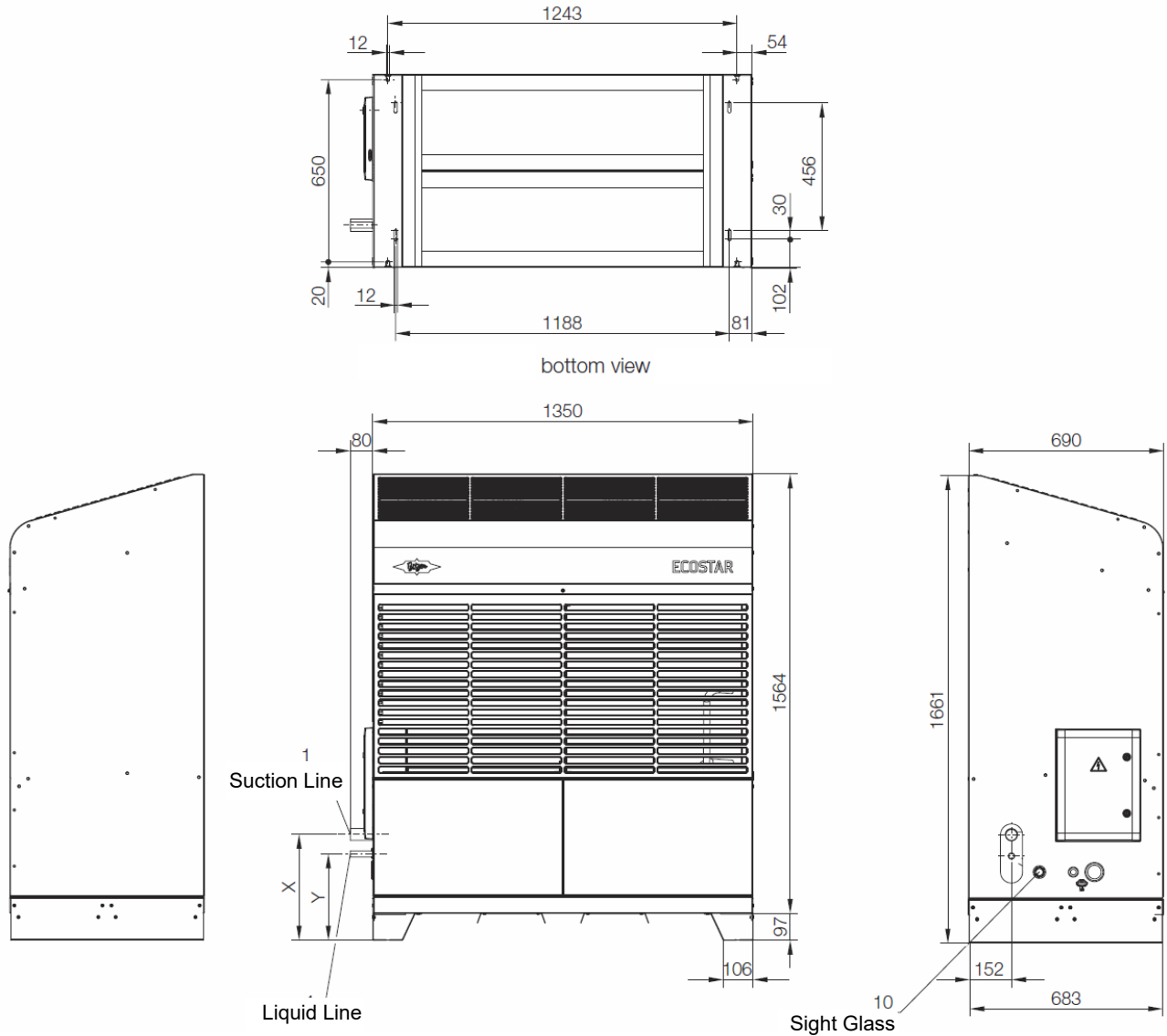
R134A – Medium Temperature Inverter Condensing Units

Unit Model	Compressor Speed		Ambient Temp °C	Refrigeration Capacity Watts							
	Drive Output Frequency	approximate revs per minute (revs per second)		Evaporating Temperature °C							
				+10	+5	0	-5	-10	-15	-20	-25
LHV7E4TE9F3Y Three Phase 380..400V/3/50Hz Unit Max. Operating Current: 28.0 amps Unit Weight: 400 kg 2 x Condenser Fans: 2 x 350 watts 50Hz 9070 m³/h 50Hz @ max. operating conditions Maximum Receiver Charge R134A: 23.2 kg Compressor Speed Range: 25...87H	25 Hz	750 rpm (12 rps)	32	15302	12687	10373	8360	6628	5154	3916	2899
			38	14059	11637	9496	7628	6017	4642	3486	2544
			43	13127	10941	8949	7152	5597	4269	3148	2238
	30 Hz	900 rpm (15 rps)	32	18234	15250	12529	10125	8041	6260	4757	3510
			38	16781	13996	11470	9237	7298	5636	4230	3062
			43	15579	13043	10758	8686	6814	5202	3837	2696
	40 Hz	1200 rpm (20 rps)	32	23508	19877	16565	13528	10804	8438	6424	4738
			38	21621	18270	15196	12349	9804	7592	5706	4121
			43	-	16947	14083	11490	9176	7052	5210	3659
	50 Hz	1450 rpm (24 rps)	32	28060	23921	20077	16571	13378	10503	8018	5923
			38	-	21979	18420	15160	12148	9449	7117	5144
			43	-	20384	17062	14004	11241	8786	6534	4594
	60 Hz	1800 rpm (30 rps)	32	31895	27396	23145	19212	15642	12395	9501	7031
			38	-	25166	21231	17572	14234	11155	8429	6102
			43	-	23334	19666	16234	13090	10270	7759	5476
70 Hz	2100 rpm (35 rps)	32	-	30335	25784	21514	17596	14066	10850	8051	
		38	-	27859	23649	19675	16012	12674	9625	6981	
		43	-	25816	21906	18180	14722	11589	8811	6290	
87 Hz	2610 rpm (43 rps)	32	-	34300	29429	24752	20382	16398	12824	9584	
		38	-	31470	26985	22634	18542	14796	11387	8304	
		43	-	-	24982	20919	17054	13492	10296	7489	
LHV7E4NE14F3Y Three Phase 380..400V/3/50Hz Unit Max. Operating Current: 36.0 amps Unit Weight: 410 kg 2 x Condenser Fans: 2 x 350 watts 50Hz 9070 m³/h 50Hz @ max. operating conditions Maximum Receiver Charge R134A: 23.2 kg Compressor Speed Range: 25...87H	25 Hz	750 rpm (12 rps)	32	-	-	-	11091	8799	6835	5177	3799
			38	-	-	-	10101	7968	6137	4585	3295
			43	-	-	-	-	7440	5663	4155	2895
	30 Hz	900 rpm (15 rps)	32	-	-	16392	13351	10635	8280	6280	4608
			38	-	-	-	12165	9630	7431	5558	3990
			43	-	-	-	11312	9003	6886	5059	3525
	40 Hz	1200 rpm (20 rps)	32	-	-	-	17469	14125	11085	8440	6206
			38	-	-	-	15955	12805	9947	7465	5365
			43	-	-	-	14715	11800	9205	6843	4778
	50 Hz	1450 rpm (24 rps)	32	-	-	-	21042	17159	13654	10473	7726
			38	-	-	-	19215	15588	12270	9262	6673
			43	-	-	-	17728	14307	11218	8489	5981
	60 Hz	1800 rpm (30 rps)	32	-	-	-	24121	19791	15858	12311	9131
			38	-	-	-	22030	17977	14286	10897	7882
			43	-	-	-	20333	16506	13002	9874	7092
70 Hz	2100 rpm (35 rps)	32	-	-	-	26735	22057	17759	13905	10399	
		38	-	-	-	24423	20037	15994	12333	8976	
		43	-	-	-	22549	18407	14560	11092	8047	
87 Hz	2610 rpm (43 rps)	32	-	-	-	30283	25191	20426	16094	12228	
		38	-	-	-	27675	22894	18393	14293	10570	
		43	-	-	-	25540	21046	16755	12822	9331	

Note: Based on 18°C Celsius return vapour and inherent liquid sub-cooling

BITZER ECOSTAR INVERTER UNITS

Ecostar Inverter Unit Dimensions



Unit Model	Unit Connections		Dimensions		Unit Weight
	Suction Line	Liquid Line	X	Y	
LHV5E2DE3F1Y	7/8"	5/8"	372 mm	310 mm	310 kg
LHV7E4FE5F1Y	1-1/8"	5/8"	375 mm	310 mm	340 kg
LHV7E4DES7F3Y	1-3/8"	7/8"	383 mm	308 mm	340 kg
LHV7E4CE9F3Y	1-3/8"	7/8"	383 mm	308 mm	340 kg
LHV7E4TE9F3Y	1-5/8"	7/8"	383 mm	308 mm	400 kg
LHV7E4NE14F3Y	1-5/8"	7/8"	383 mm	308 mm	410 kg