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CHILLER

## SBS SERIES

*Air-Cooled liquid Chillers  
EC axial fans  
IP54 protection rating  
Suitable for OUTDOOR installation*



DATE: 29/09/2021	UPDATE: -
SERIES: SBS-SBSF	CHECKED BY: M. Burba
CODE: TTD-SBS-01	

**HITEMA INTERNATIONAL SRL**  
Via Mons. G. Babolin 14, Z.I. San Gabriele  
35024 Bovolenta – Padova (ITALY)  
Tel. +39 (0)49 5386344 R.a. 12 lines  
Fax. +39 (0)49 5386300  
[info@hitema.it](mailto:info@hitema.it) [hitema.com](http://hitema.com)  
Managing Director:  
Maurizio Burba  
[burbam@hitema.it](mailto:burbam@hitema.it)



Air-cooled liquid chillers **SBS series**, scroll compressors, R410A / R32 / R454B refrigerant, brazed plate / shell and tube evaporator, condenser coil with copper tubes and aluminium fins, EC axial fans. Electrical feed 400V/3ph/50Hz (60Hz version as option).  
IP54 protection rating, chillers suitable for outdoor installation. Additional modules (2 fans) can be added to improve efficiency (before the order).  
Inbuilt water storage tank and single pump P3 as option. Microchannel condenser coils as option.

Type of available evaporators:

ST = shell and tube evaporator, with high thickness copper tubes (0,41mm)  
B-ES = stainless steel brazed plate evaporator

Type of available expansion elements:

VTS = Thermostatic expansion valve  
ETS = Electronic expansion valve (available as option)

**TECHNICAL DATA**

**PERFORMANCES**

		Model	095	120	145	160	190	240	290	330	
NOMINAL COOLING CAPACITY	W 12°C/7°C @ 35°C (1)	kW	98,4	122,6	144,7	161,2	189,0	236,0	288,9	319,9	
TOTAL NOMINAL ABSORBED POWER		kW	25,9	34,1	44,3	52,0	51,4	68,0	88,6	103,6	
EER		kW/kW	3,80	3,60	3,27	3,10	3,68	3,47	3,26	3,09	
SEPR (HT) (3)		-	5,06	5,05	5,05	5,06	5,04	5,06	5,03	5,00	
NOMINAL WATER FLOW		m <sup>3</sup> /h	16,9	21,1	24,9	27,7	32,5	40,5	49,6	55,0	
MECHANICAL MODE PRESSURE DROPS (4) (5) (6)		kPa	50	54	55	54	47	40	41	47	
<b>FRIGORIFIC SECTION</b>											
COMPRESSORS / REFRIGERATING CIRCUITS / PARTITION STEP		nr.	2/1/2	2/1/2	2/1/2	2/1/2	4/2/4	4/2/4	4/2/4	4/2/4	
KIND OF EXPANSION ELEMENT		-	VTS	VTS	VTS	VTS	VTS	VTS	VTS	VTS	
KIND OF EVAPORATOR		-	B-ES	B-ES	B-ES	B-ES	ST	ST	ST	ST	
<b>HYDRAULIC SECTION</b>											
WATER FLOW RANGE (6)	m <sup>3</sup> /h	13,0÷23,0	16,0÷23,0	16,0÷42,0	20,0÷42,0	23,0÷42,0	29,0÷53,0	36,0÷66,0	38,0÷70,0		
MAXIMUM PUMP ABSORBED POWER (WP OR OPTION DP)	P3 (2)	kW	3,46	4,56	4,56	4,56	8,30	8,30	8,30	8,30	
MAXIMUM PUMP ABSORBED CURRENT (WP OR OPTION DP)		A	6,33	7,75	7,75	7,75	14,10	14,10	14,10	14,10	
MAXIMUM PUMP ABSORBED POWER (OPTION PH OR DPH)	P5 (2)	kW	6,12	10,20	10,20	10,20	16,22	16,22	16,22	16,22	
MAXIMUM PUMP ABSORBED CURRENT (OPTION PH OR DPH)		A	10,40	17,40	17,40	17,40	26,60	26,60	26,60	26,60	
HYDRAULIC CONNECTIONS (FLANGED/VICTAULIC) (8)	DN	DN65	DN65	DN80	DN80	DN80	DN80	DN100	DN100		
TANK VOLUME (5) (9)	dm <sup>3</sup>	150	150	150	150	300	300	300	300		
EXPANSION VESSEL NUMBER x VOLUME (OPTION XV) (10)	liters	1x8	1x8	1x8	1x8	1x19	1x19	1x19	1x19		
<b>FAN SECTION (AXIAL)</b>											
FANS	nr.	2	2	2	2	4	4	4	4		
MAXIMUM FANS ABSORBED POWER	EC	kW	3,68	3,68	3,68	3,68	7,36	7,36	7,36	7,36	
MAXIMUM FANS ABSORBED CURRENT		A	7,66	7,66	7,66	7,66	15,32	15,32	15,32	15,32	
TOTAL AIR FLOW	m <sup>3</sup> /h	41200	41200	41200	41200	82400	82400	82400	82400		
<b>TOTAL ELECTRIC DATA</b>											
MAXIMUM ABSORBED CURRENT (F.L.A) (6)	A	67,7	80,5	96,9	111,6	135,3	161,1	193,8	223,1		
MAXIMUM PEAK CURRENT (L.R.A) (6)	A	211,7	269,1	324,3	362,3	279,3	349,6	421,2	473,8		
MAXIMUM PEAK CURRENT WITH SOFT START (OPTION SF) (L.R.A) (6)	A	176,9	224,1	269,9	300,3	244,5	304,6	366,8	411,8		
<b>NOISE DATA</b>											
SOUND PRESSURE FOR STANDARD CONFIGURATION (6) (7)	dB(A)	58,2	60,0	61,8	61,8	61,2	63,0	64,8	64,8		
SOUND PRESSURE FOR LOW NOISE OPTION (L.NJ) (6) (7)	dB(A)	57,4	58,2	59,1	59,1	60,4	61,2	62,1	62,1		
SOUND PRESSURE FOR SUPER LOW NOISE OPTION (SLN) (6) (7)	dB(A)	54,8	56,1	57,5	57,5	57,8	59,1	60,6	60,6		
SOUND PRESSURE FOR EXTRA LOW NOISE OPTION (ELN) (6) (7)	dB(A)	54,4	55,2	56,1	56,1	57,4	58,2	59,1	59,1		
<b>DIMENSIONS AND WEIGHT</b>											
LENGTH	mm	1610	1610	1610	1610	2910	2910	2910	2910		
WIDTH	mm	2210	2210	2210	2210	2210	2210	2210	2210		
HEIGHT	mm	2500	2500	2500	2500	2500	2500	2500	2500		
WEIGHT EMPTY FOR STANDARD CONFIGURATION (5) (6)	kg	1030	1200	1250	1280	1900	2220	2320	2350		
WEIGHT OPERATIVE FOR STANDARD CONFIGURATION (5) (6)	kg	1050	1225	1280	1310	1950	2290	2410	2450		

The manufacturer reserves the right to modify specifications without notice.

Last update: 28/07/2021  
Revision: 03-2021

Data referred to:

- Data referred to inlet/outlet water temperature = +12/+7 °C, ambient temperature = +35°C, fluid = Water
- Available pressure can be calculated from Hitema Online Selection Software
- SEPR: data comply with the European Regulation (EU) 2016/2281, referring to high temperature process chillers in the configuration with brazed plate or shell and tube evaporator and without pump. Any added option that modify cooling capacity or absorbed power of the chiller will not be considered in the SEPR value
- Pressure drops taken in account: evaporator, piping
- Data referred to standard chiller configuration as indicated in frigorific section, with different evaporator this data can change
- Data referred to standard chiller configuration NP (no pump) and EC fans
- Sound pressure level referred to measures according to normative ISO3744, pressure level at distance of 10 m, referred to free field on reflecting surface
- Flanged connections with one of next options: Pump, Double pump, Tank. Flanged connections standard for models 095÷160
- To avoid excessive start/stop of the compressors a minimum water volume for the entire plant must be guarantee, the tank supplied by Hitema can be not enough
- The expansion vessel volume is calculated considering 50°C of deltaT between water temperature with chiller stopped and chiller active, 1/2bar of hydraulic circuit pre-charge and considering only the water volume of the unit

\*\* pump P5 includes the soft start (SF) option

Air-cooled liquid chillers **SBS series**, scroll compressors, R410A / R32 / R454B refrigerant, brazed plate / shell and tube evaporator, condenser coil with copper tubes and aluminium fins, EC axial fans. Electrical feed 400V/3ph/50Hz (60Hz version as option).  
**IP54 protection rating, chillers suitable for outdoor installation. Additional modules (2 fans) can be added to improve efficiency (before the order). Inbuilt water storage tank and single pump P3 as option. Microchannel condenser coils as option.**

Type of available evaporators:  
 ST = shell and tube evaporator, with high thickness copper tubes (0,41 mm)  
 B-ES = stainless steel brazed plate evaporator

Type of available expansion elements:  
 VTS = Thermostatic expansion valve  
 ETS = Electronic expansion valve (available as option)

**TECHNICAL DATA**

<b>PERFORMANCES</b>		Model	330/F6	380	430	470	470/F8	530	570	610
NOMINAL COOLING CAPACITY	W 12°C/7°C @ 35°C (1)	kW	345,5	387,0	433,3	464,8	490,9	527,4	563,0	603,0
TOTAL NOMINAL ABSORBED POWER		kW	97,8	110,6	132,8	147,4	141,8	154,4	168,3	186,5
EER		kW/kW	3,53	3,50	3,26	3,15	3,46	3,42	3,34	3,23
SEPR (HT) (3)		-	5,04	5,03	5,52	5,54	5,52	5,50	5,57	5,54
NOMINAL WATER FLOW		m <sup>3</sup> /h	59,3	66,5	74,4	79,9	84,3	90,6	96,7	103,6
MECHANICAL MODE PRESSURE DROPS (4) (5) (6)		kPa	55	57	56	60	67	59	52	56
<b>FRIGORIFIC SECTION</b>										
COMPRESSORS / REFRIGERATING CIRCUITS / PARTITION STEP	nr.	4/2/4	4/2/4	6/2/4	6/2/4	6/2/4	6/2/4	6/2/4	6/2/4	6/2/4
KIND OF EXPANSION ELEMENT	-	VTS	VTS	VTS	ETS	ETS	ETS	ETS	ETS	ETS
KIND OF EVAPORATOR	-	ST	ST	ST	ST	ST	ST	ST	ST	ST
<b>HYDRAULIC SECTION</b>										
WATER FLOW RANGE (6)	m <sup>3</sup> /h	38,0÷70,0	47,0÷87,0	60,0÷110,0	62,0÷120,0	62,0÷120,0	79,0÷145,0	79,0÷145,0	81,0÷150,0	
MAXIMUM PUMP ABSORBED POWER (WP OR OPTION DP)	P3 (2)	kW	8,30	10,20	10,20	10,20	10,20	16,22	16,22	16,22
MAXIMUM PUMP ABSORBED CURRENT (WP OR OPTION DP)		A	14,10	17,40	17,40	17,40	17,40	26,60	26,60	26,60
MAXIMUM PUMP ABSORBED POWER (OPTION PH OR DPH)	P5 (2)	kW	16,22	24,85	24,85	24,85	24,85	24,85	31,88	31,88
MAXIMUM PUMP ABSORBED CURRENT (OPTION PH OR DPH)		A	26,60	42,40	42,40	42,40	42,40	42,40	53,50	53,50
HYDRAULIC CONNECTIONS (FLANGED/VICTAULIC) (8)	DN	DN100	DN100	DN125	DN125	DN125	DN150	DN150	DN150	
TANK VOLUME (5) (9)	dm <sup>3</sup>	300	380	380	380	380	500	500	500	
EXPANSION VESSEL NUMBER x VOLUME (OPTION XV) (10)	liters	1x19	1x19	1x19	1x19	1x19	2x19	2x19	2x19	
<b>FAN SECTION (AXIAL)</b>										
FANS	nr.	6	6	6	6	8	8	8	8	
MAXIMUM FANS ABSORBED POWER	EC	kW	11,04	11,04	11,04	11,04	14,72	14,72	14,72	14,72
MAXIMUM FANS ABSORBED CURRENT		A	22,98	22,98	22,98	22,98	30,64	30,64	30,64	30,64
TOTAL AIR FLOW		m <sup>3</sup> /h	123600	123600	123600	123600	164800	164800	164800	164800
<b>TOTAL ELECTRIC DATA</b>										
MAXIMUM ABSORBED CURRENT (F.L.A) (6)	A	230,8	260,1	290,6	320,0	327,7	357,0	386,4	415,4	
MAXIMUM PEAK CURRENT (L.R.A) (6)	A	481,5	510,9	518,0	570,7	578,4	607,7	637,1	749,6	
MAXIMUM PEAK CURRENT WITH SOFT START (OPTION SF) (L.R.A) (6)	A	419,5	448,9	463,6	508,7	516,4	545,7	575,1	668,0	
<b>NOISE DATA</b>										
SOUND PRESSURE FOR STANDARD CONFIGURATION (6) (7)	dB(A)	65,5	65,5	66,5	66,5	67,0	67,0	67,0	68,2	
SOUND PRESSURE FOR LOW NOISE OPTION (LNJ) (6) (7)	dB(A)	63,3	63,3	63,9	63,9	64,7	64,7	64,7	65,4	
SOUND PRESSURE FOR SUPER LOW NOISE OPTION (SLN) (6) (7)	dB(A)	61,4	61,4	62,3	62,3	62,9	62,9	62,9	63,9	
SOUND PRESSURE FOR EXTRA LOW NOISE OPTION (ELN) (6) (7)	dB(A)	60,3	60,3	60,9	60,9	61,7	61,7	61,7	62,4	
<b>DIMENSIONS AND WEIGHT</b>										
LENGTH	mm	4210	4210	4210	4210	5900	5900	5900	5900	
WIDTH	mm	2210	2210	2210	2210	2210	2210	2210	2210	
HEIGHT	mm	2500	2500	2500	2500	2500	2500	2500	2500	
WEIGHT EMPTY FOR STANDARD CONFIGURATION (5) (6)	kg	2740	2850	3270	3320	3900	3950	4050	4100	
WEIGHT OPERATIVE FOR STANDARD CONFIGURATION (5) (6)	kg	2840	2950	3400	3460	4000	4070	4180	4250	

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 Revision: 03-2021

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- Sound pressure level referred to measures according to normative ISO3744, pressure level at distance of 10 m, referred to free field on reflecting surface
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VTS = Thermostatic expansion valve  
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**TECHNICAL DATA**

**PERFORMANCES**

		Model	610/F10	660	660/F10	720	840	930	1030	1230
NOMINAL COOLING CAPACITY	W 12°C/7°C @ 35°C (1)	kW	629,3	645,6	675,8	717,6	842,3	965,6	1021,7	1287,5
TOTAL NOMINAL ABSORBED POWER		kW	181,6	205,1	198,2	214,0	252,2	305,3	333,6	407,0
EER		kW/kW	3,47	3,15	3,41	3,35	3,34	3,16	3,06	3,16
SEPR (HT) (3)		-	5,51	5,56	5,50	5,57	5,57	5,53	5,50	5,57
NOMINAL WATER FLOW		m3/h	108,1	110,9	116,1	123,3	144,7	165,9	175,5	221,2
MECHANICAL MODE PRESSURE DROPS (4) (5) (6)		kPa	61	59	64	73	74	69	72	84
<b>FRIGORIFIC SECTION</b>										
COMPRESSORS / REFRIGERATING CIRCUITS / PARTITION STEP	nr.	6/2/4	6/2/4	6/2/4	6/2/4	9/3/6	9/3/6	9/3/6	12/4/8	
KIND OF EXPANSION ELEMENT	-	ETS	ETS	ETS	ETS	ETS	ETS	ETS	ETS	
KIND OF EVAPORATOR	-	ST	ST	ST	ST	ST	ST	ST	ST	
<b>HYDRAULIC SECTION</b>										
WATER FLOW RANGE (6)	m3/h	81,0÷150,0	81,0÷150,0	81,0÷150,0	86,0÷161,0	102,0÷180,0	108,0÷200,0	115,0÷215,0	142,0÷251,0	
MAXIMUM PUMP ABSORBED POWER (WP OR OPTION DP)	P3 (2)	kW	16,22	16,22	16,22	16,22	23,51	23,51	31,88	31,88
MAXIMUM PUMP ABSORBED CURRENT (WP OR OPTION DP)		A	26,60	26,60	26,60	26,60	39,00	39,00	53,50	53,50
MAXIMUM PUMP ABSORBED POWER (OPTION PH OR DPH)	P5 (2)	kW	31,88	31,88	31,88	39,09	39,09	39,09	47,31**	47,31**
MAXIMUM PUMP ABSORBED CURRENT (OPTION PH OR DPH)		A	53,50	53,50	53,50	65,60	65,60	65,60	77,60	77,60
HYDRAULIC CONNECTIONS (FLANGED/VICTAULIC) (8)	DN	DN150	DN150	DN150	DN150	DN150	DN200	DN200	DN200	
TANK VOLUME (5) (9)	dm³	500	500	500	500	500	500	500	700	
EXPANSION VESSEL NUMBER x VOLUME (OPTION XV) (10)	liters	2x19	2x19	2x19	2x19	2x19	2x19	2x19	1x60	
<b>FAN SECTION (AXIAL)</b>										
FANS	nr.	10	8	10	10	12	12	12	16	
MAXIMUM FANS ABSORBED POWER	EC	kW	18,40	14,72	18,40	18,40	22,08	22,08	22,08	29,44
MAXIMUM FANS ABSORBED CURRENT		A	38,30	30,64	38,30	38,30	45,96	45,96	45,96	61,28
TOTAL AIR FLOW	m3/h	206000	164800	206000	206000	247200	247200	247200	329600	
<b>TOTAL ELECTRIC DATA</b>										
MAXIMUM ABSORBED CURRENT (F.L.A) (6)	A	423,0	444,4	452,0	481,0	579,6	666,6	710,1	888,8	
MAXIMUM PEAK CURRENT (L.R.A) (6)	A	757,3	778,6	786,3	815,3	830,3	1000,8	1044,3	1223,0	
MAXIMUM PEAK CURRENT WITH SOFT START (OPTION SF) (L.R.A) (6)	A	675,7	697,0	704,7	733,7	768,3	919,2	962,7	1141,4	
<b>NOISE DATA</b>										
SOUND PRESSURE FOR STANDARD CONFIGURATION (6) (7)	dB(A)	68,5	69,1	69,3	70,0	68,8	70,8	71,6	72,1	
SOUND PRESSURE FOR LOW NOISE OPTION (LNU) (6) (7)	dB(A)	66,0	65,9	66,5	66,9	66,5	67,7	68,2	68,9	
SOUND PRESSURE FOR SUPER LOW NOISE OPTION (SLN) (6) (7)	dB(A)	64,3	64,6	65,0	65,6	64,7	66,4	NA	NA	
SOUND PRESSURE FOR EXTRA LOW NOISE OPTION (ELN) (6) (7)	dB(A)	63,0	62,9	63,5	63,9	63,5	64,7	NA	NA	
<b>DIMENSIONS AND WEIGHT</b>										
LENGTH	mm	7200	5900	7200	7200	8890	8890	8890	11490	
WIDTH	mm	2210	2210	2210	2210	2210	2210	2210	2210	
HEIGHT	mm	2500	2500	2500	2500	2500	2500	2500	2500	
WEIGHT EMPTY FOR STANDARD CONFIGURATION (5) (6)	kg	4750	4170	4820	4900	5900	6050	6200	7600	
WEIGHT OPERATIVE FOR STANDARD CONFIGURATION (5) (6)	kg	4820	4330	4950	5070	6220	6450	6670	8100	

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- (5) Data referred to standard chiller configuration as indicated in frigorific section, with different evaporator this data can change
- (6) Data referred to standard chiller configuration NP (no pump) and EC fans
- (7) Sound pressure level referred to measures according to normative ISO3744, pressure level at distance of 10 m, referred to free field on reflecting surface
- (8) Flanged connections with one of next options: Pump, Double pump, Tank. Flanged connections standard for models 095÷160
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