

SBSF-OPT SERIES

Optimized freecooling liquid chillers

EC axial fans

IP54 protection rating

Suitable for OUTDOOR installation



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

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 hitema.com

Managing Director:

Maurizio Burba

burbam@hitema.it



Air-cooled liquid chillers SBSF-OPT series, scroll compressors, R410A / R32 / R454B refrigerant, brazed plate / shell and tube evaporator, condenser coil with copper tubes and aluminium fins, integrated and optimized free-cooling coils, 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.

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	kW	99,8	124,4	148,6	179,0	186,4	230,9	297,3	331,8
TOTAL NOMINAL ABSORBED POWER	kW	29,2	36,9	42,9	50,6	56,5	74,2	93,7	108,3
EER	kW/kW	3,42	3,38	3,46	3,53	3,30	3,11	3,17	3,06
SEPR (HT) (3)	-	5,02	5,04	5,02	5,03	5,06	5,06	5,05	5,05
AIR TEMPERATURE FOR 100% FREE COOLING CAPACITY	°C	3,85	2,73	4,60	3,90	2,74	3,60	3,80	3,20
NOMINAL WATER FLOW	m ³ /h	17,2	21,4	25,6	30,8	32,1	39,7	51,1	57,1
MECHANICAL MODE PRESSURE DROPS (4) (6) (7)	kPa	72	70	65	63	60	55	68	76
FREE COOLING MODE PRESSURE DROPS (5)	kPa	149	165	122	128	129	149	145	167

FRIGORIFIC SECTION

COMPRESSORS / REFRIGERATING CIRCUITS / PARTITION STEP	nr.	2/1/2	2/1/2	4/2/4	4/2/4	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	ST	ST	ST	ST	ST	ST

HYDRAULIC SECTION

WATER FLOW RANGE (7)	m ³ /h	13,0÷23,0	16,0÷23,0	21,0÷36,0	25,0÷45,0	25,0÷45,0	30,0÷55,0	36,0÷66,0	40,0÷73,0
MAXIMUM PUMP ABSORBED POWER (WP OR OPTION DP)	P3 (2) kW	6,12	6,12	6,12	10,20	10,20	10,20	10,20	16,22
MAXIMUM PUMP ABSORBED CURRENT (WP OR OPTION DP)	P3 (2) A	10,40	10,40	10,40	17,40	17,40	17,40	17,40	26,60
MAXIMUM PUMP ABSORBED POWER (OPTION PH OR DPH)	P5 (2) kW	8,30	12,03	12,03	12,03	19,94	19,94	19,94	19,94
MAXIMUM PUMP ABSORBED CURRENT (OPTION PH OR DPH)	P5 (2) A	14,10	20,20	20,20	20,20	32,70	32,70	32,70	32,70
HYDRAULIC CONNECTIONS (FLANGED)	DN	DN65	DN65	DN80	DN80	DN80	DN80	DN100	DN100
TANK VOLUME (6) (9)	dm ³	150	150	300	300	300	300	380	380
EXPANSION VESSEL NUMBER x VOLUME (OPTION XV) (10)	liters	1x12	1x12	1x19	1x19	1x19	1x19	2x19	2x19

FAN SECTION (AXIAL)

FANS	nr.	4	4	6	6	6	6	8	8
MAXIMUM FANS ABSORBED POWER	EC kW	7,36	7,36	11,04	11,04	11,04	11,04	14,72	14,72
MAXIMUM FANS ABSORBED CURRENT	EC A	15,32	15,32	22,98	22,98	22,98	22,98	30,64	30,64
TOTAL AIR FLOW	m ³ /h	68000	68000	102000	102000	102000	102000	136000	136000

TOTAL ELECTRIC DATA

MAXIMUM ABSORBED CURRENT (F.L.A) (7)	A	75,3	88,2	110,4	83,0	143,0	168,7	209,1	238,4
MAXIMUM PEAK CURRENT (L.R.A) (7)	A	219,3	276,8	225,9	227,0	287,0	357,3	436,5	489,2
MAXIMUM PEAK CURRENT WITH SOFT START (OPTION SF) (L.R.A) (7)	A	184,5	231,8	197,9	192,2	252,2	312,3	382,1	427,2

NOISE DATA

SOUND PRESSURE FOR STANDARD CONFIGURATION (7) (8)	dB(A)	58,2	60,0	59,8	59,6	60,3	62,5	64,8	64,8
SOUND PRESSURE FOR LOW NOISE OPTION (LNJ) (7) (8)	dB(A)	57,4	58,2	59,1	59,1	59,3	60,3	62,2	62,2
SOUND PRESSURE FOR SUPER LOW NOISE OPTION (SLN) (7) (8)	dB(A)	57,2	57,7	59,0	58,9	59,1	59,6	61,2	61,2
SOUND PRESSURE FOR EXTRA LOW NOISE OPTION (ELN) (7) (8)	dB(A)	52,7	53,8	54,3	54,2	54,6	56,0	58,0	58,0

DIMENSIONS AND WEIGHT

LENGTH	mm	3300	3300	4600	4600	4600	4600	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 (6) (7)	kg	1670	1830	2690	2810	2810	3230	3490	3540
WEIGHT OPERATIVE FOR STANDARD CONFIGURATION (6) (7)	kg	1776	1946	2940	2960	2960	3400	3726	3786

The manufacturer reserves the right to modify specifications without notice.

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

Data referred to:

(1) Data referred to inlet/outlet water temperature = +12/+7 °C, ambient temperature = +35°C, fluid = Water

(2) Available pressure can be calculated from Hitema Online Selection Software

(3) 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

(4) Pressure drops taken in account: evaporator, valves, piping

(5) Pressure drops taken in account: evaporator, valves, piping, free-cooling coil

(6) Data referred to standard chiller configuration as indicated in frigorific section, with different evaporator this data can change

(7) Data referred to standard chiller configuration NP (no pump) and EC fans

(8) Sound pressure level referred to measures according to normative ISO3744, pressure level at distance of 10 m. referred to free field on reflecting surface

Air-cooled liquid chillers SBSF-OPT series, scroll compressors, R410A / R32 / R454B refrigerant, brazed plate / shell and tube evaporator, condenser coil with copper tubes and aluminium fins, integrated and optimized free-cooling coils, 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.

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	380	430	470	530	570	610	660	720
NOMINAL COOLING CAPACITY	W 12°C/7°C @ 35°C (1)	kW	386,5	430,3	464,1	514,9	545,0	606,2	667,6	706,8
TOTAL NOMINAL ABSORBED POWER		kW	121,2	143,1	159,2	170,5	186,6	200,0	216,5	232,1
EER		kW/kW	3,19	3,01	2,91	3,02	2,92	3,03	3,08	3,05
SEPR (HT) (3)		-	5,01	5,57	5,50	5,53	5,53	5,56	5,50	5,52
AIR TEMPERATURE FOR 100% FREE COOLING CAPACITY		°C	3,60	3,00	2,50	3,00	2,60	3,00	3,20	2,80
NOMINAL WATER FLOW		m3/h	66,5	74,0	79,8	88,6	93,7	104,3	114,8	121,6
MECHANICAL MODE PRESSURE DROPS (4) (6) (7)		kPa	79	79	84	86	78	83	94	98
FREE COOLING MODE PRESSURE DROPS (5)	kPa	150	163	177	171	170	174	179	191	
FRIGORIFIC SECTION										
COMPRESSORS / REFRIGERATING CIRCUITS / PARTITION STEP		nr.	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	ETS	ETS	ETS	ETS	ETS	ETS
KIND OF EVAPORATOR		-	ST	ST	ST	ST	ST	ST	ST	ST
HYDRAULIC SECTION										
WATER FLOW RANGE (7)		m3/h	47,0÷87,0	58,0÷107,0	62,0÷115,0	78,0÷142,0	78,0÷142,0	84,0÷143,0	84,0÷148,0	84,0÷157,0
MAXIMUM PUMP ABSORBED POWER (WP OR OPTION DP)	P3 (2)	kW	16,22	16,22	16,22	16,22	16,22	19,94	19,94	31,88
MAXIMUM PUMP ABSORBED CURRENT (WP OR OPTION DP)		A	26,60	26,60	26,60	26,60	26,60	32,70	32,70	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	39,09	57,65
MAXIMUM PUMP ABSORBED CURRENT (OPTION PH OR DPH)		A	53,50	53,50	53,50	65,60	65,60	65,60	65,60	93,50
HYDRAULIC CONNECTIONS (FLANGED)		DN	DN100	DN125	DN125	DN150	DN150	DN150	DN150	DN150
TANK VOLUME (6) (9)		dm³	500	500	500	500	500	500	700	700
EXPANSION VESSEL NUMBER x VOLUME (OPTION XV) (10)		liters	2x19	2x19	2x19	2x19	2x19	2x19	1x60	1x60
FAN SECTION (AXIAL)										
FANS		nr.	10	10	10	12	12	14	16	16
MAXIMUM FANS ABSORBED POWER	EC	kW	18,40	18,40	18,40	22,08	22,08	25,76	29,44	29,44
MAXIMUM FANS ABSORBED CURRENT		A	38,30	38,30	38,30	45,96	45,96	53,62	61,28	61,28
TOTAL AIR FLOW		m3/h	170000	170000	170000	204000	204000	238000	272000	272000
TOTAL ELECTRIC DATA										
MAXIMUM ABSORBED CURRENT (F.L.A) (7)		A	275,5	306,0	335,3	372,3	401,7	438,4	475,0	504,0
MAXIMUM PEAK CURRENT (L.R.A) (7)		A	526,2	533,4	586,0	623,1	652,4	772,6	809,2	838,2
MAXIMUM PEAK CURRENT WITH SOFT START (OPTION SF) (L.R.A) (7)		A	464,2	479,0	524,0	561,1	590,4	691,0	727,6	756,6
NOISE DATA										
SOUND PRESSURE FOR STANDARD CONFIGURATION (7) (8)		dB(A)	65,1	66,3	66,3	66,5	66,5	68,0	69,1	69,8
SOUND PRESSURE FOR LOW NOISE OPTION (LNJ) (7) (8)		dB(A)	62,8	63,4	63,4	63,9	63,9	65,0	65,9	66,4
SOUND PRESSURE FOR SUPER LOW NOISE OPTION (SLN) (7) (8)		dB(A)	62,0	62,4	62,4	63,0	63,0	63,9	64,7	65,1
SOUND PRESSURE FOR EXTRA LOW NOISE OPTION (ELN) (7) (8)		dB(A)	58,5	59,4	59,4	59,8	59,8	61,1	62,0	62,6
DIMENSIONS AND WEIGHT										
LENGTH		mm	7200	7200	7200	8500	8500	9800	11100	11100
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 (6) (7)		kg	4320	4610	4690	5420	5520	6180	6780	6880
WEIGHT OPERATIVE FOR STANDARD CONFIGURATION (6) (7)		kg	4646	4946	5046	5616	5746	6492	7222	7342

The manufacturer reserves the right to modify specifications without notice.

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

Data referred to:

(1) Data referred to inlet/outlet water temperature = +12/+7 °C, ambient temperature = +35°C, fluid = Water

(2) Available pressure can be calculated from Hitema Online Selection Software

(3) 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

(4) Pressure drops taken in account: evaporator, valves, piping

(5) Pressure drops taken in account: evaporator, valves, piping, free-cooling coil

(6) Data referred to standard chiller configuration as indicated in frigorific section, with different evaporator this data can change

(7) Data referred to standard chiller configuration NP (no pump) and EC fans

(8) Sound pressure level referred to measures according to normative ISO3744, pressure level at distance of 10 m. referred to free field on reflecting surface