HIROSS

Advanced Cooling Technologies

Superchiller 2000

Water Chillers

English

Superchiller 2000

Aircooled free cooling waterchiller

The HIROSS Superchiller 2000 products are a compact air cooled chillers line with additional built-in free cooling coils.

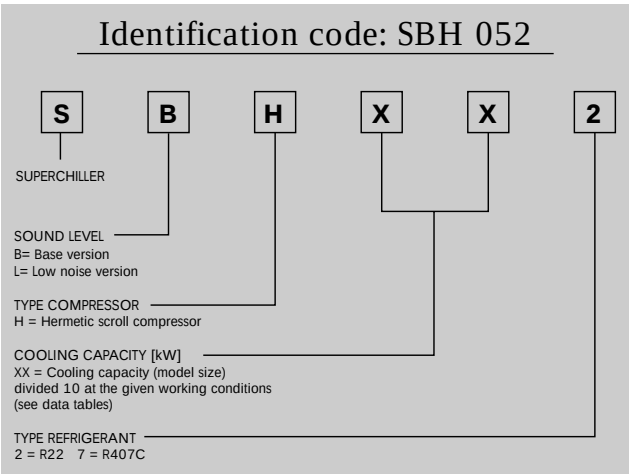
They are designed and produced with the latest engineering expertise, so that these units will be able to satisfy all the needs of any end user to produce cool water at the most efficient working at the lowest price during all the year.

A complete range of optional accessories is available and it makes the unit suitable for all HVAC applications with any water cooled requests, as telecommunications, dealing room, computers room and process cooling applications.

A built-in water buffer tank is available in different sizes depending on the requested cooling capacity.

The Superchiller 2000 units are completely factory assembled, charged with refrigerant R22 or R407C and shipped as a single package ready for installation.

The units are designed with a single point connection for power supply and equipped with HIROSS microprocessor controllers, specifically designed for the maximum energy saving compressor reliability and integration with all the others HIROSS product lines.



All units are CE marked and supplied with their declaration of conformity, in order to satisfy the most recent requirements for mechanical and electrical safety.

Safety equipment and pressure vessels have been designed and tested in accordance with the main national standards.

Available versions:
- Standard
- Low noise

Increased compressor life and reduced maintenance

Since Superchiller compressor(s) are normally required to work for less hours than those of a conventional chiller, they have a longer life expectancy and require less maintenance then a conventional chiller.

Cost savings

Reduced space requirements in comparison with a conventional chiller plus a Dry Cooler obtained through Hiross Superchiller 2000 compact design and the reduced amount of working hours of compressors offer exceptional savings both at long and at short term.

Substantial savings

Super saving zones. *Good saving zones.*

The use of chilled water in commercial or industrial air conditioning system and in industrial processes and machine cooling is extensive.
However, more than 80% of the cost to produce chilled water is given by the electrical power consumption of the refrigeration compressors.
The Superchiller 2000 product line developed by the Hiross research team, takes advantage of the fact that, in cold or medium temperature climates (such as most of Europe and North America), it is possible, during many periods, to obtain a “free cooling” effect from low outdoor temperatures without need to run the compressors.

The Superchiller can be usefully applied in those installations which use chilled water all year round. Factors such as climatic conditions in the installation site, temperature of the chilled water required and daily working hours amount will determine the possible saving of energy cost.
For Northern Europe the reduction in energy costs is generally around 40%, sufficient to pay back the additional capital cost of the Superchiller in some months. Thereafter the savings become net profit.
In some cases the savings are enough to justify the replacement of an existing conventional chiller with a Superchiller 2000.

Reliable and efficient refrigeration

The system features two completely separate refrigerant circuits, where each circuit operates independently, ensuring through this redundency a residual service in the event of a fault in one circuit and maximum energy efficiency.
The Superchiller is equipped with two or four scroll hermetic compressors or with two heavy duty semihermetic reciprocating compressors of the latest generation: so energy efficiency ratio of Superchiller 2000 is among the highest achievable on the market. Evaporator with two refrigerant circuits offers highest energy efficiency, both in PHE and in Shell&Tube configuration.
A water buffer tank is also available as optional over the entire units' range.
All units with cooling capacity of 100 kW and more are supplied with 4 steps of cooling capacity as standard.

Additional advantages

- Multiple, direct-driven fans operate at low velocity. For higher efficiency and further noise reduction during mechanical cooling, a stepless fan speed control is available as special option on standard versions and it's installed as standard on low noise versions.
- All units are tested during production and before shipping.
- For ease of maintenance, the unit's front doors allow an easy access to all components.
- Open frame on SBR-SLR units permits an easy maintenance to hydraulic circuit, including the three-way valve and the safety devices.
- For applications over 200 kW a silenced version with a specially-housed pumps is available as special option.
- It is possible to order Superchiller models both with R22 and R407C refrigerants (see data sheets enclosed), so accordingly to the last regulations to counteract any dangerous ambient impact caused by refrigerant gases.

Electrical board

According to IEC standards.
Supply 400 +/- 10% V/ 3 / 50 Hz + PE.
Auxiliary supply circuit at 230 V / 1 / 50 Hz and 24 V for the unit SBR, SLR.
Auxiliary supply circuit at 24 V/ 1 / 50 Hz for the unit SBH, SLH.
Harnesses are made and tested according to safety IEC norms (EN60204-1).
Electrical panel with an external main switch installed with the function to lock the panel on the power section.
Electrical standard protection for compressor are MCB on SBH / SLH models and fuses on SBR / SLR models, and single fans are MCBs protected as standard on all Superchiller 2000 range of models.
Compressor manual operation is available through Microface controller.
Voltage free contacts for remote indication of:

- Compressor in operation
- Pump/s in operation
- General alarm

Available as standard contacts for unit ON / OFF from remote.

Operating principle

Superchiller's efficient design makes it possible to dissipate the heat load utilizing freecooling, the unit's refrigeration circuit, or a combination of both.

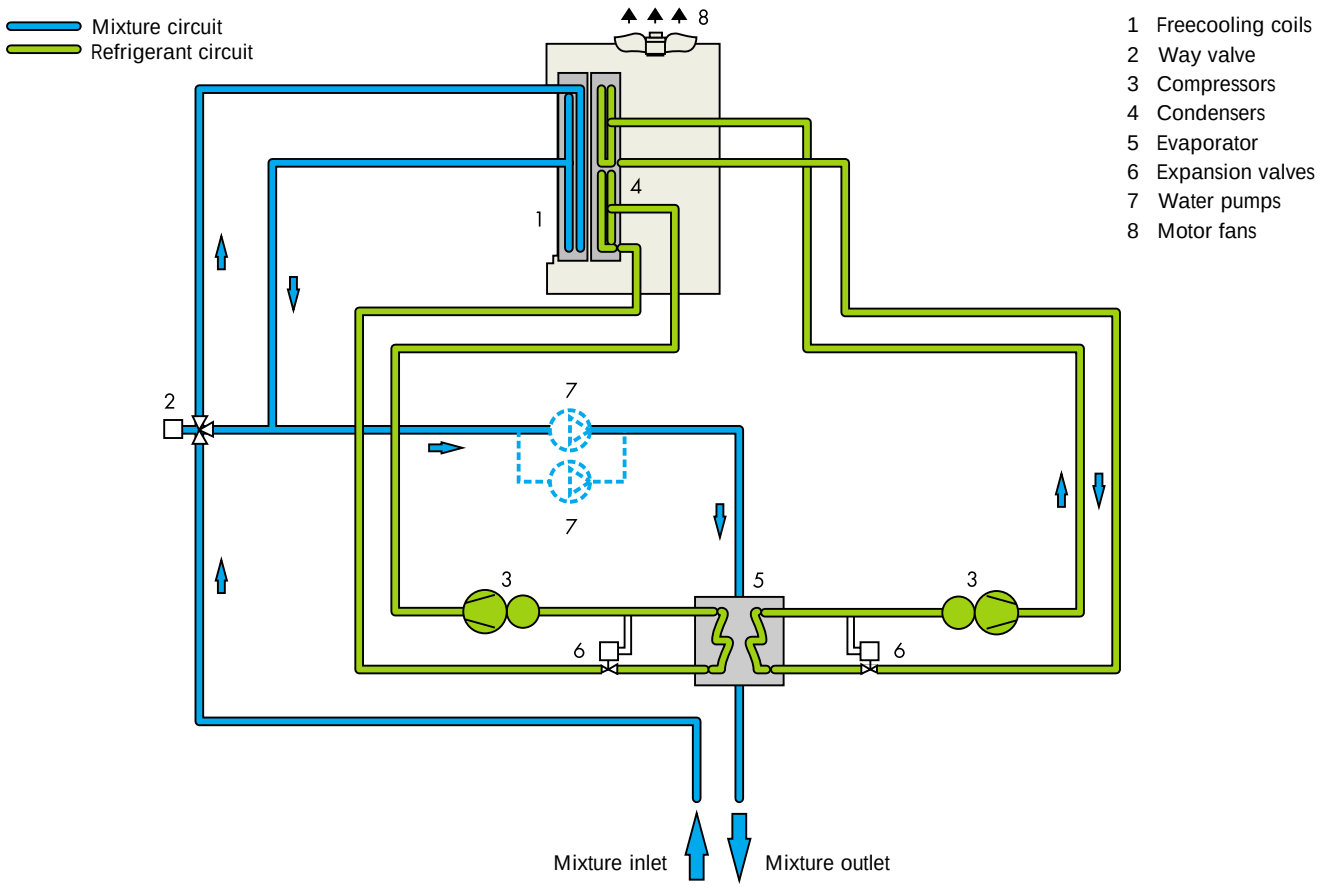
The water/glycol mixture entering in the unit (coming back from the system or process in which it has been used) is pumped (7) through the three-way valve (2) to the evaporator (5), where it is cooled by evaporating refrigerant direct expansion.

The refrigeration circuit includes compressors (3), condensers (4), an ambient air stream introduced by fans (8), refrigerant expansion valves (6), and a single evaporator (5).

When the outside air temperature is below the temperature of the water/glycol mixture entering in the unit, the three-way valve (2), operated by Hiross controller on board, diverts the mixture flow through free cooling heat exchangers (1). This creates the freecooling effect.

If the outside temperature is sufficiently low to dissipate the entire heat load, the refrigeration compressors automaticaly switch off, and the mixture's temperature is controlled through air flow value given by the fans (8). If the delivered water temperature is too low, the three-way valve (2) driven proportionally by the Hiross controller, can control the water flow through freecooling coils (1).

If the outside temperature is too high for freecooling, the compressors will operate as long as necessary to ensure the correct glycol/water mixture temperature, as a conventional chiller.



Microface Microprocessor Control

Microface is the standard on-board controller. It ensures the complete Superchiller functions, with LCD-Display for Parameters and Alarm Indications.

- LCD-Display with Push-Buttons for complete Set-up of the unit.
- Quick-Set-up with Unit-Code.
- Display for indication of Mixture Temperatures (In, Out and Evaporator Inlet) and Ambient Temperature.
- Display for indication of refrigeration Circuits pressures.
- Hour Counters standard for pumps, fans and compressors.
- Management for Single Pump and Double Pump (auto-rotation) units with special start algorithm.
- Compressors safety integrated: special control alghoritm, minimum running time with special behaviour of parzialisation during freecooling working mode.
- Auto-selection of strategy for compressor/ condenser fan start at different ambient temperatures.
- Freecooling Control with low temperature control for fans and the change-over valve.
- Condenser / Freecooling fans controlled in steps or with various fanspeed, with different programs for Compressor-, Freecooling- and Mixed mode.
- Alarm messages with LED-Indication, 3-digit abbreviation and Alarm Code.
- All units are equipped with Input for remote On/Off, voltfree contacts for Operation and Alarm (additional warning contact optional)
- 0-10V shifting Input for various Setpoint Modification.
- Ambient compensation: the Setpoint can be “floated” between two values according the ambient temperature.
- User Input with various functions: Warning, Alarm, 2nd Setpoint, stop compressor etc.
- Several Superchillers can be connected with “Hirobus” for additional cooling steps implementation (up to 16 units).
- Units rotation permitted to achieve equal working hours for all Superchillers.
- Stand-by functions include rotation of stand-by units.
- Automatic return to “stand-alone” mode in case of bus problems.
- All Modifications of Parameters are protected by different Password Levels.

Hiromatic Microprocessor Control

The Hiromatic is the “Hi End” user Interface to monitor and control up to 16 Superchillers with graphical display, timer functions, RS422 and help on line for Service personnel. Hiromatic is supplied in a separate box to be mounted separately for remote Supervision.

MAIN FEATURES

- Permanent Display of Mixture Inlet, Outlet and Ambient Temperature.
- Permanent Display of freecooling and compressor steps with display of free cooling capacity.
- Unit Graphical Data Records: each single unit records Inlet and Outlet temperature for a time of 12 and 96 hours (2 different records for each unit).
- System Graphic Data Records: the System records the Main Inlet and Main Outlet temperature for a time of 12 and 96 hours (2 different records).
- Just one window shows the status of all units (on, off, alarm, warning etc.)
- Online Help: each Parameter has its own window where all necessary information is available.
- English, German and Italian language prompts.
- Hour Counters standard for pumps, fans and compressors.
- User friendly Menu with graphical Icons and Online Help.
- Menu for full manual or semi-manual operation of all Superchillers.
- Alarm messages in written text with date and time and service instructions.
- Each single units has its own Status Report which contains up to 54 (last) events (alarms, warnings, power on / off etc.) occured from the last power on.
- The system status report contains up to 198 (last) events permanently stored into the backup RAM (data available after Power Off).
- Built-in timer for individual set-up of each Superchiller: during timer mode the unit either stops or has a different Setpoint as during normal operation; some periods during the day can be set with different operating mode than the periods an full timer mode days.
- All Modifications of Parameters are protected by different Password Levels.
- The Hiromatic also provides the connection to “Hirolink”, which allows full Data-Transmission either to the “Hiross Hirovisor 97” or to Building Management Systems.

SBH Technical data

MODEL R22		SBH052	SBH062	SBH072	SBH082	SBH102	SBH112	SBH152	SBH172
POWER SUPPLY	**V/ph/Hz**	**400/3/50**							
PERFORMANCE (1)									
cooling capacity	kW	48,3	55,7	70,0	85,5	99,6	111,0	146,7	171,0
total power input	kW	17,4	20,8	26,3	31,5	34,9	41,5	53,4	61,0
compressors power input	kW	15,5	18,8	24,4	28,6	32,0	38,5	49,5	56,1
EER unit	-	2,77	2,68	2,66	2,71	2,85	2,68	2,75	2,80
freecooling capacity (2)	kW	33,4	34,8	40,0	51,8	57,6	59,5	78,8	92,6
nominal mixture flow	m^3/h	9,07	10,45	13,15	16,06	18,70	20,85	27,54	32,10
nominal mixture pressure drop	kPa	78	101	92	117	96	117	98	105
air flow rate	m^3/h	21.000	21.000	20.400	31.500	30.600	30.600	40.800	51.000
sound pressure level (3)	dB(A)	69	69	70	72	71	71	73	74
sound pressure level (4)	dB(A)	57	57	58	60	59	59	62	63
REFRIGERANT CIRCUIT	no.	2							
COMPRESSORS	no.	2				4			
	type	hermetic scroll							
nominal power (each)	HP	9	10	13	15	9	10	13	15
standard step control		50/100				25/50/75/100			
AXIAL FANS	no.	2	2	2	3	3	3	4	5
WATER CONNECTIONS									
diameters	inch	2”	2”	2”	2”	2”	2”	2” 1/2	2” 1/2
buffer tank volume (optional)	ltr	300	300	300	300	650	650	650	650
ELECTRICAL CHARACTERISTICS									
OA unit	A	32	38	48	56	64	75	98	109
FLA unit	A	37	42	54	62	73	83	107	122
compressor nominal current	A	29	34	45	51	59	70	91	100
DIMENSIONS									
length	mm	2200	2200	2200	2990	2990	2990	3780	4570
depth	mm	1100	1100	1100	1100	1100	1100	1100	1100
height	mm	2045	2045	2045	2045	2045	2045	2045	2045
WEIGHTS									
net weight	kg	840	840	920	1090	1330	1330	1670	1930
working weight	kg	877	877	970	1140	1398	1398	1764	2039

(1) Outdoor temperature 35 °C, mixture temperature 15/10 °C, water/glycol mixture 70/30 %
(2) Outdoor temperature 5 °C, mixture inlet temperature 15 °C, nominal mixture flow
(3) SPL measured with outdoor temperature 35 °C, free field conditions, 1 m from unit, according ISO 3744
(4) SPL measured with outdoor temperature 35 °C, free field conditions, 5 m from unit, 1 m above ground level

SBH Technical data

MODEL R407C		SBH057	SBH067	SBH077	SBH087	SBH107	SBH117	SBH157	SBH177
POWER SUPPLY	**V/ph/Hz**	**400/3/50**							
PERFORMANCE (1)									
cooling capacity	kW	46,4	53,4	67,2	82,1	95,6	106,6	140,8	164,1
total power input	kW	17,0	20,3	25,7	30,8	34,1	40,5	52,1	59,6
compressors power input	kW	15,1	18,3	23,8	27,9	31,2	37,6	48,2	54,7
EER unit	-	2,72	2,63	2,61	2,66	2,80	2,63	2,70	2,75
freecooling capacity (2)	kW	32,9	34,2	39,4	51,0	56,7	58,6	77,6	91,2
nominal mixture flow	m^3/h	8,71	10,03	12,63	15,42	17,95	20,01	26,44	30,82
nominal mixture pressure drop	kPa	72	94	85	109	89	109	91	98
air flow rate	m^3/h	21.000	21.000	20.400	31.500	30.600	30.600	40.800	51.000
sound pressure level (3)	dB(A)	69	69	70	72	71	71	73	74
sound pressure level (4)	dB(A)	57	57	58	60	59	59	62	63
REFRIGERANT CIRCUIT	no.	2							
COMPRESSORS	no.	2				4			
	type	hermetic scroll							
nominal power (each)	HP	9	10	13	15	9	10	13	15
standard step control		50/100				25/50/75/100			
AXIAL FANS	no.	2	2	2	3	3	3	4	5
WATER CONNECTIONS									
diameters	inch	2”	2”	2”	2”	2”	2”	2” 1/2	2” 1/2
buffer tank volume (optional)	ltr	300	300	300	300	650	650	650	650
ELECTRICAL CHARACTERISTICS									
OA unit	A	32	37	48	55	63	74	97	107
FLA unit	A	37	42	54	62	73	83	107	122
compressor nominal current	A	28	34	44	50	58	69	90	98
DIMENSIONS									
length	mm	2200	2200	2200	2990	2990	2990	3780	4570
depth	mm	1100	1100	1100	1100	1100	1100	1100	1100
height	mm	2045	2045	2045	2045	2045	2045	2045	2045
WEIGHTS									
net weight	kg	840	840	920	1090	1330	1330	1670	1930
working weight	kg	877	877	970	1140	1398	1398	1764	2039

(1) Outdoor temperature 35 °C, mixture temperature 15/10 °C, water/glycol mixture 70/30 %
(2) Outdoor temperature 5 °C, mixture inlet temperature 15 °C, nominal mixture flow
(3) SPL measured with outdoor temperature 35 °C, free field conditions, 1 m from unit, according ISO 3744
(4) SPL measured with outdoor temperature 35 °C, free field conditions, 5 m from unit, 1 m above ground level

SLH Technical data

MODEL R22		SLH052	SLH062	SLH072	SLH082	SLH102	SLH112	SLH152	SLH172
POWER SUPPLY	**V/ph/Hz**	**400/3/50**							
PERFORMANCE (1)									
cooling capacity	kW	47,2	55,5	71,1	85,8	100,8	112,3	147,5	168,3
total power input	kW	17,7	20,3	26,0	30,4	34,1	40,3	52,3	62,9
compressors power input	kW	16,3	18,9	23,9	28,3	31,3	37,5	48,8	58,0
EER unit	-	2,67	2,74	2,74	2,82	2,95	2,79	2,82	2,68
freecooling capacity (2)	kW	29,4	31,7	43,8	47,3	60,1	62,5	75,8	84,6
nominal mixture flow	m^3/h	8,86	10,43	13,35	16,10	18,92	21,09	27,70	31,60
nominal mixture pressure drop	kPa	76	69	90	92	84	101	79	103
air flow rate	m^3/h	16.200	15.600	24.300	23.400	31.200	31.200	39.000	43.000
sound pressure level (3)	dB(A)	62	62	64	64	64	64	66	66
sound pressure level (4)	dB(A)	50	50	52	52	53	53	55	55
REFRIGERANT CIRCUIT	no.	2							
COMPRESSORS	no.	2				4			
	type	hermetic scroll							
nominal power (each)	HP	9	10	13	15	9	10	13	15
standard step control		50/100				25/50/75/100			
AXIAL FANS	no.	2	2	3	3	4	4	5	5
WATER CONNECTIONS									
diameters	inch	2”	2”	2”	2”	2”	2”	2” 1/2	2” 1/2
buffer tank volume (optional)	ltr	300	300	300	300	650	650	650	650
ELECTRICAL CHARACTERISTICS									
OA unit	A	32	37	48	54	63	73	96	111
FLA unit	A	36	41	53	60	72	82	106	122
compressor nominal current	A	30	34	44	50	58	68	90	102
DIMENSIONS									
length	mm	2200	2200	2990	2990	3780	3780	4570	4570
depth	mm	1100	1100	1100	1100	1100	1100	1100	1100
height	mm	2045	2045	2045	2045	2045	2045	2045	2045
WEIGHTS									
net weight	kg	860	900	1090	1170	1570	1570	1920	1970
working weight	kg	897	948	1140	1236	1654	1654	2029	2079

(1) Outdoor temperature 35 °C, mixture temperature 15/10 °C, water/glycol mixture 70/30 %
(2) Outdoor temperature 5 °C, mixture inlet temperature 15 °C, nominal mixture flow
(3) SPL measured with outdoor temperature 35 °C, free field conditions, 1 m from unit, according ISO 3744
(4) SPL measured with outdoor temperature 35 °C, free field conditions, 5 m from unit, 1 m above ground level

SLH Technical data

MODEL R407C		SLH057	SLH067	SLH077	SLH087	SLH107	SLH117	SLH157	SLH177
POWER SUPPLY	**V/ph/Hz**	**400/3/50**							
PERFORMANCE (1)									
cooling capacity	kW	45,3	53,3	68,2	82,3	96,7	107,8	141,6	161,5
total power input	kW	17,3	19,8	25,4	29,7	33,3	39,4	51,1	61,4
compressors power input	kW	15,9	18,4	23,3	27,6	30,5	36,6	47,6	56,5
EER unit	-	2,62	2,69	2,69	2,77	2,90	2,74	2,77	2,63
freecooling capacity (2)	kW	28,9	31,2	43,1	46,6	59,2	61,5	74,7	83,3
nominal mixture flow	m^3/h	8,50	10,01	12,81	15,46	18,16	20,25	26,59	30,33
nominal mixture pressure drop	kPa	71	65	84	85	79	94	74	96
air flow rate	m^3/h	16.200	15.600	24.300	23.400	31.200	31.200	39.000	43.000
sound pressure level (3)	dB(A)	62	62	64	64	64	64	66	66
sound pressure level (4)	dB(A)	50	50	52	52	53	53	55	55
REFRIGERANT CIRCUIT	no.	2							
COMPRESSORS	no.	2				4			
	type	hermetic scroll							
nominal power (each)	HP	9	10	13	15	9	10	13	15
standard step control		50/100				25/50/75/100			
AXIAL FANS	no.	2	2	3	3	4	4	5	5
WATER CONNECTIONS									
diameters	inch	2”	2”	2”	2”	2”	2”	2” 1/2	2” 1/2
buffer tank volume (optional)	ltr	300	300	300	300	650	650	650	650
ELECTRICAL CHARACTERISTICS									
OA unit	A	31	36	47	53	62	72	95	109
FLA unit	A	36	41	53	60	72	82	106	122
compressor nominal current	A	29	34	43	49	57	67	89	101
DIMENSIONS									
length	mm	2200	2200	2990	2990	3780	3780	4570	4570
depth	mm	1100	1100	1100	1100	1100	1100	1100	1100
height	mm	2045	2045	2045	2045	2045	2045	2045	2045
WEIGHTS									
net weight	kg	860	900	1090	1170	1570	1570	1920	1970
working weight	kg	897	948	1140	1236	1654	1654	2029	2079

(1) Outdoor temperature 35 °C, mixture temperature 15/10 °C, water/glycol mixture 70/30 %
(2) Outdoor temperature 5 °C, mixture inlet temperature 15 °C, nominal mixture flow
(3) SPL measured with outdoor temperature 35 °C, free field conditions, 1 m from unit, according ISO 3744
(4) SPL measured with outdoor temperature 35 °C, free field conditions, 5 m from unit, 1 m above ground level

SBR Technical data

MODEL R22		SBR212	SBR252	SBR302	SBR342	SBR432	SBR502	SBR602	SBR682	SBR752
POWER SUPPLY	**V/ph/Hz**					**400/3/50**				
PERFORMANCE (1)										
cooling capacity	kW	216,4	242,5	309,1	337,9	431,8	483,5	591,4	686,1	734,2
total power input	kW	95,8	96,0	114,6	142,1	193,5	194,1	229,6	285,3	284,2
compressors power input	kW	87,4	87,6	102,0	129,5	176,7	177,3	208,6	260,0	259,0
EER unit	-	2,26	2,52	2,70	2,38	2,23	2,49	2,58	2,41	2,58
freecooling capacity (2)	kW	135,0	140,8	215,8	221,3	269,2	280,8	363,5	443,9	451,5
nominal mixture flow	m^3/h	40,64	45,53	58,04	63,45	81,08	90,79	111,05	128,84	137,86
nominal mixture pressure drop	kPa	111	137	140	163	116	116	158	191	221
air flow rate	m^3/h	72.000	72.000	108.000	108.000	144.000	144.000	180.000	216.000	216.000
sound pressure level (3)	dB(A)	77	77	78	79	80	80	81	82	81
sound pressure level (4)	dB(A)	66	66	67	68	70	70	71	72	71
REFRIGERANT CIRCUIT	no.					2				
COMPRESSORS	no.	2	2	2	2	4	4	4	4	2
	type					reciprocating semihermetic				
nominal power (each)	HP	40	50	60	75	40	50	60	75	160
standard step control		33/50/83/100	37/50/87/100	37/50/87/100	37/50/87/100	25/50/75/100	25/50/75/100	25/50/75/100	25/50/75/100	37/50/87/100
AXIAL FANS	no.	4	4	6	6	8	8	10	12	12
WATER CONNECTIONS										
diameters	inch	victaulic 3"		victaulic 4"			victaulic 5"			
buffer tank volume (optional)	ltr	800	800	1100	1100	1100	1100	1500	1500	1500
ELECTRICAL CHARACTERISTICS										
OA unit	A	159	180	216	257	321	363	430	516	494
FLA unit	A	184	200	248	320	368	400	488	640	540
compressor nominal current	A	143	164	192	233	289	331	390	468	446
DIMENSIONS										
length	mm	3020	3020	4120	4120	5220	5220	6320	7420	7420
depth	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
height	mm	2370	2370	2370	2370	2370	2370	2370	2370	2370
WEIGHTS										
net weight	kg	2560	2810	3510	3500	4660	5100	5810	6550	6680
working weight	kg	2751	3007	3792	3789	5033	5516	6310	7135	7265

(1) Outdoor temperature 35 °C, mixture temperature 15/10 °C, water/glycol mixture 70/30 %
(2) Outdoor temperature 5 °C, mixture inlet temperature 15 °C, nominal mixture flow
(3) SPL measured with outdoor temperature 35 °C, free field conditions, 1 m from unit, according ISO 3744
(4) SPL measured with outdoor temperature 35 °C, free field conditions, 5 m from unit, 1 m above ground level

SBR Technical data

MODEL R407C		SBR217	SBR257	SBR307	SBR347	SBR437	SBR507	SBR607	SBR687	SBR757
POWER SUPPLY	**V/ph/Hz**					**400/3/50**				
PERFORMANCE (1)										
cooling capacity	kW	204,5	229,1	292,1	319,3	408,0	456,9	558,9	648,4	693,8
total power input	kW	93,2	93,4	111,6	138,2	188,2	188,8	223,3	277,5	276,4
compressors power input	kW	84,8	85,0	99,0	125,6	171,4	172,0	202,3	252,3	251,2
EER unit	-	2,19	2,45	2,62	2,31	2,17	2,42	2,50	2,34	2,51
freecooling capacity (2)	kW	133,0	138,7	212,6	218,0	265,2	276,5	358,1	437,2	444,8
nominal mixture flow	m^3/h	38,41	43,02	54,85	59,96	76,62	85,80	104,94	121,75	130,28
nominal mixture pressure drop	kPa	100	124	126	146	104	104	142	171	199
air flow rate	m^3/h	72.000	72.000	108.000	108.000	144.000	144.000	180.000	216.000	216.000
sound pressure level (3)	dB(A)	77	77	78	79	80	80	81	82	81
sound pressure level (4)	dB(A)	66	66	67	68	70	70	71	72	71
REFRIGERANT CIRCUIT	no.					2				
COMPRESSORS	no.	2	2	2	2	4	4	4	4	2
	type					reciprocating semihermetic				
nominal power (each)	HP	40	50	60	75	40	50	60	75	160
standard step control		33/50/83/100	37/50/87/100	37/50/87/100	37/50/87/100	25/50/75/100	25/50/75/100	25/50/75/100	25/50/75/100	37/50/87/100
AXIAL FANS	no.	4	4	6	6	8	8	10	12	12
WATER CONNECTIONS										
diameters	inch	victaulic 3"		victaulic 4"			victaulic 5"			
buffer tank volume (optional)	ltr	800	800	1100	1100	1100	1100	1500	1500	1500
ELECTRICAL CHARACTERISTICS										
OA unit	A	155	176	211	251	314	355	420	504	483
FLA unit	A	184	200	248	320	368	400	488	640	540
compressor nominal current	A	139	160	187	227	282	323	380	456	435
DIMENSIONS										
length	mm	3020	3020	4120	4120	5220	5220	6320	7420	7420
depth	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
height	mm	2370	2370	2370	2370	2370	2370	2370	2370	2370
WEIGHTS										
net weight	kg	2560	2810	3510	3500	4660	5100	5810	6550	6680
working weight	kg	2751	3007	3792	3789	5033	5516	6310	7135	7265

(1) Outdoor temperature 35 °C, mixture temperature 15/10 °C, water/glycol mixture 70/30 %
(2) Outdoor temperature 5 °C, mixture inlet temperature 15 °C, nominal mixture flow
(3) SPL measured with outdoor temperature 35 °C, free field conditions, 1 m from unit, according ISO 3744
(4) SPL measured with outdoor temperature 35 °C, free field conditions, 5 m from unit, 1 m above ground level

SLR Technical data

MODEL R22		SLR212	SLR252	SLR302	SLR342	SLR432	SLR502	SLR602	SLR682
POWER SUPPLY	**V/ph/Hz**	**400/3/50**							
PERFORMANCE (1)									
cooling capacity	kW	211,1	253,8	302,5	344,6	420,0	495,7	596,9	669,5
total power input	kW	95,0	91,6	112,5	137,0	192,4	186,0	223,0	285,6
compressors power input	kW	89,7	83,5	104,4	126,2	181,6	172,5	206,8	269,4
EER unit	-	2,2	2,8	2,7	2,5	2,2	2,7	2,7	2,3
freecooling capacity (2)	kW	121,4	183,6	193,3	221,9	241,8	311,0	384,8	396,0
nominal mixture flow	m^3/h	39,65	47,66	56,80	64,71	78,87	93,08	112,09	125,71
nominal mixture pressure drop	kPa	108	157	135	107	112	126	167	185
air flow rate	m^3/h	58.800	88.200	88.200	117.600	117.600	147.000	176.400	176.400
sound pressure level (3)	dB(A)	69	70	70	71	71	71	72	73
sound pressure level (4)	dB(A)	58	59	59	61	61	61	62	63
REFRIGERANT CIRCUIT	no.	2							
COMPRESSORS	no.	2				4			
	type	reciprocating semihermetic							
nominal power (each)	HP	40	50	60	75	40	50	60	75
standard step control		33/50/83/100	37/50/87/100	37/50/87/100	37/50/87/100	25/50/75/100	25/50/75/100	25/50/75/100	25/50/75/100
AXIAL FANS	no.	4	6	6	8	8	10	12	12
WATER CONNECTIONS									
diameters	inch	victaulic 3"		victaulic 4"			victaulic 5"		
buffer tank volume (optional)	ltr	800	800	1100	1100	1100	1100	1500	1500
ELECTRICAL CHARACTERISTICS									
OA unit	A	156	172	209	247	315	347	415	509
FLA unit	A	177	198	238	314	354	391	476	620
compressor nominal current	A	146	158	195	228	296	324	387	482
DIMENSIONS									
length	mm	3020	4120	4120	5220	5220	6320	7420	7420
depth	mm	2260	2260	2260	2260	2260	2260	2260	2260
height	mm	2370	2370	2370	2370	2370	2370	2370	2370
WEIGHTS									
net weight	kg	2600	3430	3550	4110	4720	5760	6440	6620
working weight	kg	2791	3686	3832	4461	5093	6230	6993	7205

(1) Outdoor temperature 35 °C, mixture temperature 15/10 °C, water/glycol mixture 70/30 %
(2) Outdoor temperature 5 °C, mixture inlet temperature 15 °C, nominal mixture flow
(3) SPL measured with outdoor temperature 35 °C, free field conditions, 1 m from unit, according ISO 3744
(4) SPL measured with outdoor temperature 35 °C, free field conditions, 5 m from unit, 1 m above ground level

SLR Technical data

MODEL R407C		SLR217	SLR257	SLR307	SLR347	SLR437	SLR507	SLR607	SLR687
POWER SUPPLY	**V/ph/Hz**	**400/3/50**							
PERFORMANCE (1)									
cooling capacity	kW	199,5	239,8	285,9	325,7	396,9	468,5	564,1	632,7
total power input	kW	92,4	89,1	109,4	133,2	187,0	180,8	216,8	277,6
compressors power input	kW	87,0	81,0	101,3	122,4	176,2	167,3	200,6	261,4
EER unit	-	2,16	2,69	2,61	2,45	2,12	2,59	2,60	2,28
freecooling capacity (2)	kW	119,6	180,8	190,4	218,5	238,1	306,3	379,0	390,1
nominal mixture flow	m^3/h	37,47	45,04	53,68	61,15	74,53	87,96	105,92	118,80
nominal mixture pressure drop	kPa	97	141	122	96	101	113	150	166
air flow rate	m^3/h	58.800	88.200	88.200	117.600	117.600	147.000	176.400	176.400
sound pressure level (3)	dB(A)	69	70	70	71	71	71	72	73
sound pressure level (4)	dB(A)	58	59	59	61	61	61	62	63
REFRIGERANT CIRCUIT	no.	2							
COMPRESSORS	no.	2				4			
	type	reciprocating semihermetic							
nominal power (each)	HP	40	50	60	75	40	50	60	75
standard step control		33/50/83/100	37/50/87/100	37/50/87/100	37/50/87/100	25/50/75/100	25/50/75/100	25/50/75/100	25/50/75/100
AXIAL FANS	no.	4	6	6	8	8	10	12	12
WATER CONNECTIONS									
diameters	inch	victaulic 3"		victaulic 4"			victaulic 5"		
buffer tank volume (optional)	ltr	800	800	1100	1100	1100	1100	1500	1500
ELECTRICAL CHARACTERISTICS									
OA unit	A	152	168	204	241	307	339	405	497
FLA unit	A	177	198	238	314	354	391	476	620
compressor nominal current	A	143	154	190	222	289	316	378	469
DIMENSIONS									
length	mm	3020	4120	4120	5220	5220	6320	7420	7420
depth	mm	2260	2260	2260	2260	2260	2260	2260	2260
height	mm	2370	2370	2370	2370	2370	2370	2370	2370
WEIGHTS									
net weight	kg	2600	3430	3550	4110	4720	5760	6440	6620
working weight	kg	2791	3686	3832	4461	5093	6230	6993	7205

(1) Outdoor temperature 35 °C, mixture temperature 15/10 °C, water/glycol mixture 70/30 %
(2) Outdoor temperature 5 °C, mixture inlet temperature 15 °C, nominal mixture flow
(3) SPL measured with outdoor temperature 35 °C, free field conditions, 1 m from unit, according ISO 3744
(4) SPL measured with outdoor temperature 35 °C, free field conditions, 5 m from unit, 1 m above ground level

Accessories

	SBH	SBR	SLH	SLR
4 steps for capacity control	STD from SBH 10	STD	STD from SBH 10	STD
Condensing control through stepped sequential power fans connection	STD	STD	N.A.	N.A.
Condensing control through continuous adjustment of fans speed	SPEC	SPEC	STD	STD
R407C refrigerant	OPT	OPT	OPT	OPT
TÜV standards	OPT	OPT	OPT	OPT
SAQ, TTK, MIE, UDT standards	SPEC	SPEC	SPEC	SPEC
Storage tank with gauge, connection for unit filling, air purge and discharge bottom tap	OPT	OPT	OPT	OPT
Pump unit: - 1 2-pole pump with standard head static pressure - 2 2-pole pumps with standard head static pressure - 1 2-pole pump with high head static pressure - 2 2-pole pumps with high head static pressure - 2 4-pole pumps with standard head static pressure	OPT	OPT	OPT	OPT
Flow switch mounted on board	STD	STD	STD	STD
Mechanical filter for hydraulic protection of plate heat-exchanger (supplied with the unit but not installed)	STD	N.A.	STD	N.A.
Hydraulic kit consisting of: - expansion vessel, safety valve 3.5 Barg	OPT	OPT	OPT	OPT
Automatic magnetothermal switches for each compressor	STD	OPT	STD	OPT
Electrical accessories: - power factor correction device cosϕ= 0.9 or - TELECOM ITA kit for QE (power factor correction device included)	OPT	OPT	OPT	OPT
Control system with remote ICON Hiromatic on closed panel IP40, for remote control of up to 16 Superchiller units with record of working parameter, help on line for service personnel, complete with serial connection RS422	OPT	OPT	OPT	OPT
Refrigerant high/low pressure gauges	OPT	STD	OPT	STD
Pump down	N.A.	OPT	N.A.	OPT
Witnessed test: the client witnesses the final test on the unit, and Hiross supply unit performance certification	OPT	OPT	OPT	OPT
Coil protection: - antileaf metal filters or - safety protection grids	OPT	OPT	OPT	OPT
Partial heat recovery (20%) with frost protection if unused but filled with water	SPEC	SPEC	SPEC	SPEC
Surface treatment on finned coils: - ALUCOAT treatment with epoxidic powder painting or - coils with tubes and fins made by copper	SPEC	SPEC	SPEC	SPEC
Packing in wooden case	SPEC	SPEC	SPEC	SPEC
Evaporator heating elements or Tank heating elements with safety thermostat	SPEC	SPEC	SPEC	SPEC
Vibration-damping supports: - made of rubber for std units - made of rubber for units with tank - with springs for std units - with springs for units with tank	SPEC	SPEC	SPEC	SPEC
Special condensing pressure control with liquid receivers	SPEC	N.A.	SPEC	N.A.
Special electric supplies	SPEC	SPEC	SPEC	SPEC
Noise insulating kit for pump	N.A.	SPEC	N.A.	SPEC
Brine version	SPEC	SPEC	SPEC	SPEC

For special accessories not mentioned in the price-list contact Hiross technical department.

All information given in this catalogue is intended as indicative only.
The manufacturer reserves the right to change specifications without prior notice.

The Quality Management System of the High Performance Air Conditioning Division of Hiross SpA is certified by Lloyd's Register Quality Assurance to ISO 9001:1994.

Notes

Notes

Italy
Hiross S.p.A.
Via Leonardo da Vinci 8
35028 Piove di Sacco (Pd)
Tel. +39 049 9719111
Fax +39 049 5841257

Austria
Hiross Austria GmbH
Oberhausnerstraße 2
2301 Gross-Enzersdorf / Wien
Tel. +43 2249 70900
Fax +43 2249 7090222

Branch offices in Warsaw,
Prague and Budapest

France
Hiross S.A.
124 Avenue Gallieni
93170 Bagnolet
Tel. +33 1 43600177
Fax +33 1 43607007

Germany
Hiross Deutschland GmbH
Liebigstraße 9
85551 Kirchheim
Tel. +49 89 9050070
Fax +49 89 90500710

Branch offices in Munich,
Mönchengladbach,
Frankfurt, Berlin, Hamburg,
Stuttgart and Leipzig

United Kingdom
Hiross Ltd.
Globe Park
Marlow
Buckinghamshire
SL7 1YG
Tel. +44 1628 403200
Fax +44 1628 403203

Switzerland
Liebert AG
Räffelstraße 29
8045 Zürich
Tel. +41 (0) 1456 5060
Fax +41 (0) 1456 5070

www.hiross.it

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