

SPC HIDROS - Technical Data Sheet High Ambient Temperature Units

INTRODUCTION

SPC Hidros High Ambient Temperature Units are high-performance dehumidifiers, designed for use in industrial applications. They can operate in environments up to 60°C.

The range includes two models. HH units offer a standard dehumidifier design. HHZ units have external condensers housed within their casing for temperature control. Each model is available in three sizes.

All the units are fully assembled, wired and tested. They are leak tested under pressure before being charged with refrigerant R134a. Units comply with all relevant European Union Directives and are individually marked with a CE label and provided with a Conformity Declaration.

Installation of SPC Hidros units is simple; once service connections and condensate drains have been connected the unit's installation is complete. Once installed, SPC Hidros units are designed for easy maintenance and service. Each component is readily accessible and easily replaceable.



MAIN COMPONENTS

Casing	Composed of a solid frame and a set of quick release panels (for easy access to internal parts) formed from heavy-gauge galvanised steel sheet, coated with an epoxy based powder paint that is oven baked to increase durability and resistance to corrosion. Drain trays are made of stainless steel.
Compressor	Reciprocating semi-hermetic type, suction gas cooled, part winding start, crank case heater, thermal overload protection, with pressure tapplings on suction and discharge side.
Evaporator	Direct-expansion evaporator coil constructed from copper tubes mechanically expanded into aluminium fins, vertically mounted, with stainless steel condensate tray at the bottom. An air filter is installed on the coil inlet as standard.
Internal / External Condenser	Condenser coil constructed from copper tubes mechanically expanded into aluminium fins, vertically mounted.
Internal / External Fan	Centrifugal double inlet fan, statically and dynamically balanced, with belt and pulley transmission.
Refrigerant Circuit	This consists of a filter drier, expansion device, high and low pressure switches and a set of solenoid valves.
Electrical Board	This consists of compressor fuses, fan fuses, auxiliary circuit fuses, compressor contactor, fan relay, terminal block with connection for remote on-off and hygrostat control and local on-off switch.
Micro-processor	Standard on all units. This controls the unit from the hygrostat and defrost thermostat. It controls the compressor start and stop sequence, defrost cycles and alarms. A dedicated LED panel signals the presence of supply power, running mode, defrost pending or alarm.
Defrost Thermostat	Standard on all units. This signals to the microprocessor control that a defrost cycle is needed and controls its termination.

ACCESSORIES

SPC Hidros High Ambient Temperature Units have a range of optional accessories, listed below.

MODEL	HH500	HH700	HH1500	HHZ500	HHZ700	HHZ1500
Remote Hygostat With Ductwork Probe (-10 to 70°C)	✓	✓	✓			
Remote Hygostat With Ductwork Probe (-10 to 70°C)	✓	✓	✓			
Remote Thermo-Hygostat With Ductwork Probe (0 to 50°C)				✓	✓	✓
Remote Thermo-Hygostat With Ductwork Probe (-10 to 70°C)				✓	✓	✓
High Static Pressure Fan	✓	✓	✓	✓	✓	✓
Air Filter With Supporting Frame For Ducted Air Inlet	✓	✓	✓	✓	✓	✓

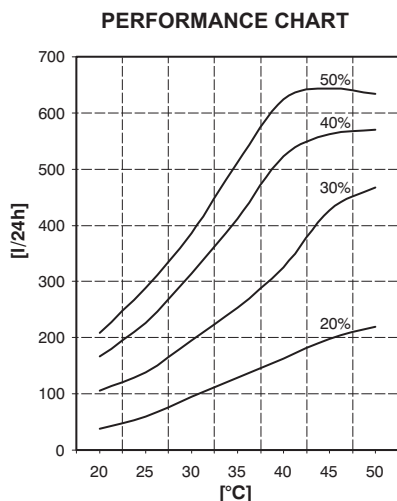
TECHNICAL DATA

The table below shows technical data for the SPC Hidros High Ambient Temperature Units. Detailed performance data is supplied overleaf.

MODEL	HH500	HH700	HH1500	HHZ500	HHZ700	HHZ1500
Moisture Removal Rate (l/24h)	523.0 ⁽¹⁾	717.8 ⁽¹⁾	1450.8 ⁽¹⁾	523.0 ⁽¹⁾	717.8 ⁽¹⁾	1450.8 ⁽¹⁾
Nominal Absorbed Power - Drying Mode (kW)	13.3 ⁽¹⁾	15.9 ⁽¹⁾	33.8 ⁽¹⁾	14.3 ⁽¹⁾	15.9 ⁽¹⁾	33.8 ⁽¹⁾
Cooling Capacity (kW)	-	-	-	35.3 ⁽³⁾	47.9 ⁽³⁾	96.6 ⁽³⁾
Nominal Absorbed Power - Cooling Mode (kW)	-	-	-	14.8 ⁽³⁾	17.4 ⁽³⁾	36.8 ⁽³⁾
Maximum Absorbed Power (kW)	14.0 ⁽²⁾	17.5 ⁽²⁾	37.7 ⁽²⁾	15.5 ⁽⁴⁾	19.0 ⁽⁴⁾	40.7 ⁽⁴⁾
Nominal Absorbed Current (A)	23.6 ⁽¹⁾	27.8 ⁽¹⁾	68.1 ⁽¹⁾	26.6 ⁽¹⁾	30.8 ⁽¹⁾	74.1 ⁽¹⁾
Maximum Absorbed Current (A)	25.0 ⁽²⁾	29.9 ⁽²⁾	71.2 ⁽²⁾	28.0 ⁽⁴⁾	32.9 ⁽⁴⁾	77.2 ⁽⁴⁾
Air Flow (m³/s)	1.805	1.980	3.417	2.222	2.227	3.645
Available Static Pressure (Pa)	200			150		
Refrigerant	R134a					
Sound Pressure Level (dBa)	74 ⁽⁵⁾	75 ⁽⁵⁾	78 ⁽⁵⁾	76 ⁽⁵⁾	77 ⁽⁵⁾	80 ⁽⁵⁾
Operating Temperature Range (°C)	15-60					
Operating Humidity Range (%)	10-99					
Length (mm)	2300		2600	2300		2600
Depth (mm)	1220		1720	1220		1720
Height (mm)	1405		1507	2113		2290
Weight (kg)	498	550	815	570	601	928
Power Supply	400 / 3 / 50					

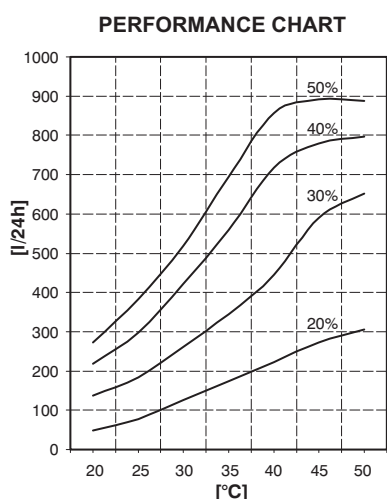
- NOTES: (1) Room temperature 40 °C, relative humidity 40%
 (2) Room temperature 50 °C, relative humidity 50%
 (3) Room temperature 40 °C, relative humidity 50%, ambient temperature 35 °C
 (4) Room temperature 50 °C, relative humidity 50%, ambient temperature 35 °C
 (5) At 1m in free field condition over a reflecting surface

PERFORMANCE DATA - HH500



		TEMPERATURE (°C)	20	25	30	35	40	45	50
RELATIVE HUMIDITY	20%	Moisture Removal Rate (l/24h)	37.7	59.2	94.8	128.9	162.7	197.7	219.0
		Absorbed Power (kW)	7.0	7.9	9.0	10.3	11.5	12.1	12.4
		Air Temperature Increase (°C)	3.7	4.4	5.4	6.4	7.4	8.1	8.6
		Ambient Thermal Load (kW)	9.5	11.1	13.3	15.5	17.7	19.3	20.3
	30%	Moisture Removal Rate (l/24h)	105.2	138.5	195.0	253.8	325.4	426.6	466.6
		Absorbed Power (kW)	7.0	8.0	9.1	10.4	11.5	12.1	12.4
		Air Temperature Increase (°C)	4.6	5.5	6.7	8.1	9.5	11.2	11.8
		Ambient Thermal Load (kW)	11.5	13.4	16.2	19.2	22.4	25.9	27.4
	40%	Moisture Removal Rate (l/24h)	166.5	225.6	314.2	411.1	523.0 ⁽¹⁾	562.5	570.3
		Absorbed Power (kW)	7.2	8.2	9.3	10.7	11.8 ⁽¹⁾	12.2	12.5
		Air Temperature Increase (°C)	5.5	6.7	8.4	10.3	12.3 ⁽¹⁾	13.0	13.2
		Ambient Thermal Load (kW)	13.5	16.2	19.9	24.0	28.4 ⁽¹⁾	29.9	30.4
	50%	Moisture Removal Rate (l/24h)	207.9	288.6	386.5	511.4	623.9	643.2	633.2
		Absorbed Power (kW)	7.2	8.2	9.4	10.7	11.9	12.3	12.5
		Air Temperature Increase (°C)	6.0	7.5	9.4	11.6	13.6	14.1	14.1
		Ambient Thermal Load (kW)	14.7	18.0	22.0	26.9	31.4	32.3	32.3

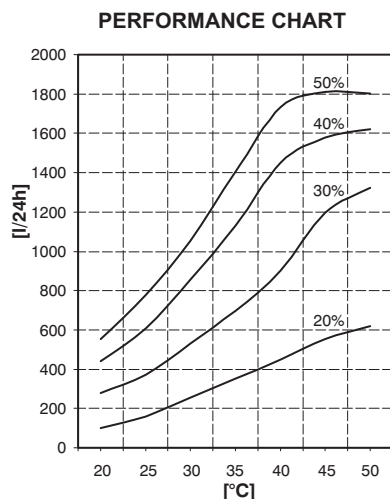
PERFORMANCE DATA - HH700



		TEMPERATURE (°C)	20	25	30	35	40	45	50
RELATIVE HUMIDITY	20%	Moisture Removal Rate (l/24h)	49.2	78.1	126.5	174.4	222.7	273.3	305.6
		Absorbed Power (kW)	8.2	9.4	10.8	12.4	14.0	14.7	15.2
		Air Temperature Increase (°C)	4.0	4.8	6.0	7.2	8.5	9.4	10.0
		Ambient Thermal Load (kW)	11.1	13.1	15.9	18.9	21.9	24.1	25.5
	30%	Moisture Removal Rate (l/24h)	137.3	182.8	260.7	343.7	445.4	589.7	651.1
		Absorbed Power (kW)	8.2	9.4	10.9	12.5	14.0	14.7	15.2
		Air Temperature Increase (°C)	5.1	6.1	7.6	9.3	11.1	13.2	14.1
		Ambient Thermal Load (kW)	13.7	16.2	19.9	23.9	28.3	33.2	35.5
	40%	Moisture Removal Rate (l/24h)	217.6	298.5	421.1	558.2	717.8 ⁽¹⁾	779.0	797.4
		Absorbed Power (kW)	8.4	9.7	11.2	12.8	14.4 ⁽¹⁾	14.8	15.3
		Air Temperature Increase (°C)	6.1	7.6	9.7	12.0	14.6 ⁽¹⁾	15.5	15.9
		Ambient Thermal Load (kW)	16.2	19.8	24.8	30.4	36.5 ⁽¹⁾	38.8	39.8
	50%	Moisture Removal Rate (l/24h)	272.1	382.3	518.7	694.4	857.8	892.4	887.0
		Absorbed Power (kW)	8.5	9.8	11.2	12.8	14.5	14.9	15.4
		Air Temperature Increase (°C)	6.8	8.7	10.9	13.7	16.3	16.9	17.0
		Ambient Thermal Load (kW)	17.8	22.3	27.7	34.4	40.7	42.1	42.4

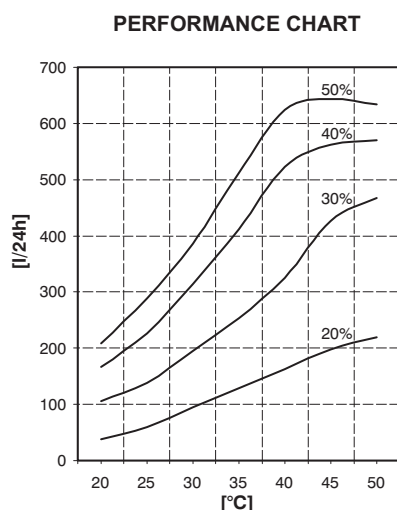
(1) Indicates performance at nominal operating conditions.

PERFORMANCE DATA - HH1500



		TEMPERATURE (°C)	5	10	15	20	25	30	35
RELATIVE HUMIDITY	20%	Moisture Removal Rate (l/24h)	99.9	158.4	256.2	352.7	450.3	553.4	620.6
		Absorbed Power (kW)	17.5	20.0	23.0	26.5	29.9	31.7	32.8
		Air Temperature Increase (°C)	4.9	5.9	7.3	8.8	10.3	11.5	12.2
		Ambient Thermal Load (kW)	23.3	27.6	33.4	39.7	45.9	50.7	53.7
	30%	Moisture Removal Rate (l/24h)	278.9	370.9	528.2	695.5	900.5	1194.2	1322.0
		Absorbed Power (kW)	17.5	20.1	23.1	26.7	29.9	31.7	32.8
		Air Temperature Increase (°C)	6.2	7.4	9.3	11.3	13.5	16.0	17.1
		Ambient Thermal Load (kW)	28.6	33.8	41.4	49.7	58.9	69.2	73.9
	40%	Moisture Removal Rate (l/24h)	442.0	605.5	853.1	1129.4	1450.8	1578.2	1619.8
		Absorbed Power (kW)	18.0	20.7	23.8	27.5	30.8 ⁽¹⁾	32.0	33.0
		Air Temperature Increase (°C)	7.4	9.2	11.7	14.5	17.5 ⁽¹⁾	18.7	19.2
		Ambient Thermal Load (kW)	33.8	41.1	51.4	63.0	75.6 ⁽¹⁾	80.5	82.7
	50%	Moisture Removal Rate (l/24h)	553.0	775.9	1051.3	1404.8	1734.6	1809.0	1803.0
		Absorbed Power (kW)	18.1	20.8	24.0	27.5	31.0	32.2	33.3
		Air Temperature Increase (°C)	8.2	10.4	13.1	16.4	19.5	20.3	20.5
		Ambient Thermal Load (kW)	37.0	46.2	57.3	71.0	84.0	87.3	88.2

PERFORMANCE DATA - HHZ500

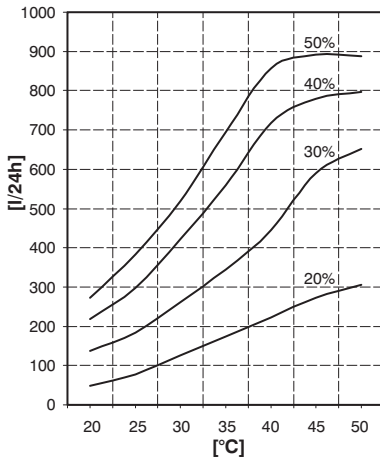


		TEMPERATURE (°C)	20	25	30	35	40	45	50
DRYING MODE	RELATIVE HUMIDITY	20%	Moisture Removal Rate (l/24h)	37.7	59.2	94.8	128.9	162.7	197.7
			Absorbed Power (kW)	7.0	7.9	9.0	10.3	11.5	12.4
			Air Temperature Increase (°C)	3.7	4.4	5.4	6.4	7.4	8.1
			Ambient Thermal Load (kW)	9.5	11.1	13.3	15.5	17.7	20.3
	30%		Moisture Removal Rate (l/24h)	105.2	138.5	195.0	253.8	325.4	426.6
			Absorbed Power (kW)	7.0	8.0	9.1	10.4	11.5	12.4
			Air Temperature Increase (°C)	4.6	5.5	6.7	8.1	9.5	11.2
			Ambient Thermal Load (kW)	11.5	13.4	16.2	19.2	22.4	27.4
	40%		Moisture Removal Rate (l/24h)	166.5	225.6	314.2	411.1	523.0 ⁽¹⁾	562.5
			Absorbed Power (kW)	7.2	8.2	9.3	10.7	11.8 ⁽¹⁾	12.2
			Air Temperature Increase (°C)	5.5	6.7	8.4	10.3	12.3 ⁽¹⁾	13.0
			Ambient Thermal Load (kW)	13.5	16.2	19.9	24.0	28.4 ⁽¹⁾	29.9
	50%		Moisture Removal Rate (l/24h)	207.9	288.6	386.5	511.4	623.9	643.2
			Absorbed Power (kW)	7.2	8.2	9.4	10.7	11.9	12.3
			Air Temperature Increase (°C)	6.0	7.5	9.4	11.6	13.6	14.1
			Ambient Thermal Load (kW)	14.7	18.0	22.0	26.9	31.4	32.3
COOLING MODE	RELATIVE HUMIDITY	30%	Cooling Capacity (kW)	13.3	17.2	21.9	27.4	33.9	39.8
			Absorbed Power (kW)	7.2	8.2	9.1	10.1	11.1	11.9
	50%		Cooling Capacity (kW)	14.0	18.1	22.9	29.6	35.3 ⁽¹⁾	41.4
			Absorbed Power (kW)	7.4	8.4	9.3	10.3	11.3 ⁽¹⁾	12.1

(1) Indicates performance at nominal operating conditions.

PERFORMANCE DATA - HHZ700

PERFORMANCE CHART

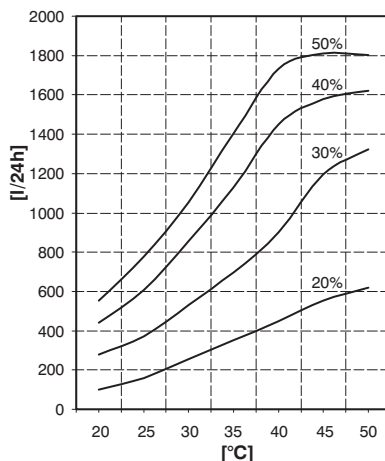


				DRYING MODE						
				RELATIVE HUMIDITY						
		20%	TEMPERATURE (°C)	20	25	30	35	40	45	50
			Moisture Removal Rate (l/24h)	49.2	78.1	126.5	174.4	222.7	273.3	305.6
			Absorbed Power (kW)	8.2	9.4	10.8	12.4	14.0	14.7	15.2
			Air Temperature Increase (°C)	4.0	4.8	6.0	7.2	8.5	9.4	10.0
			Ambient Thermal Load (kW)	11.1	13.1	15.9	18.9	21.9	24.1	25.5
		30%	Moisture Removal Rate (l/24h)	137.3	182.8	260.7	343.7	445.4	589.7	651.1
			Absorbed Power (kW)	8.2	9.4	10.9	12.5	14.0	14.7	15.2
			Air Temperature Increase (°C)	5.1	6.1	7.6	9.3	11.1	13.2	14.1
			Ambient Thermal Load (kW)	13.7	16.2	19.9	23.9	28.3	33.2	35.5
		40%	Moisture Removal Rate (l/24h)	217.6	298.5	421.1	558.2	717.8 ⁽¹⁾	779.0	797.4
			Absorbed Power (kW)	8.4	9.7	11.2	12.8	14.4 ⁽¹⁾	14.8	15.3
			Air Temperature Increase (°C)	6.1	7.6	9.7	12.0	14.6 ⁽¹⁾	15.5	15.9
			Ambient Thermal Load (kW)	16.2	19.8	24.8	30.4	36.5 ⁽¹⁾	38.8	39.8
		50%	Moisture Removal Rate (l/24h)	272.1	382.3	518.7	694.4	857.8	892.4	887.0
			Absorbed Power (kW)	8.5	9.8	11.2	12.8	14.5	14.9	15.4
			Air Temperature Increase (°C)	6.8	8.7	10.9	13.7	16.3	16.9	17.0
Ambient Thermal Load (kW)	17.8		22.3	27.7	34.4	40.7	42.1	42.4		

				COOLING MODE						
				RELATIVE HUMIDITY						
		30%	Cooling Capacity (kW)	17.5	22.9	29.3	37.0	46.0	50.0	54.2
			Absorbed Power (kW)	8.5	9.7	10.9	12.1	13.4	14.0	14.6
		50%	Cooling Capacity (kW)	18.5	24.1	30.8	38.7	47.9 ⁽¹⁾	52.1	56.4
			Absorbed Power (kW)	8.8	9.9	11.1	12.4	13.7 ⁽¹⁾	14.3	14.8

PERFORMANCE DATA - HHZ1500

PERFORMANCE CHART



DRYING MODE			TEMPERATURE (°C)	20	25	30	35	40	45	50
	RELATIVE HUMIDITY	20%	Moisture Removal Rate (l/24h)	99.9	158.4	256.2	352.7	450.3	553.4	620.6
			Absorbed Power (kW)	17.5	20.0	23.0	26.5	29.9	31.7	32.8
			Air Temperature Increase (°C)	4.9	5.9	7.3	8.8	10.3	11.5	12.2
			Ambient Thermal Load (kW)	23.3	27.6	33.4	39.7	45.9	50.7	53.7
		30%	Moisture Removal Rate (l/24h)	278.9	370.9	528.2	695.5	900.5	1194.2	1322.0
			Absorbed Power (kW)	17.5	20.1	23.1	26.7	29.9	31.7	32.8
			Air Temperature Increase (°C)	6.2	7.4	9.3	11.3	13.5	16.0	17.1
			Ambient Thermal Load (kW)	28.6	33.8	41.4	59.7	58.9	69.2	73.9
		40%	Moisture Removal Rate (l/24h)	442.0	605.5	853.1	1129.4	1450.8 ⁽¹⁾	1578.2	1619.8
			Absorbed Power (kW)	18.0	20.7	23.6	27.5	30.8 ⁽¹⁾	32.0	33.0
			Air Temperature Increase (°C)	7.4	9.2	11.7	14.5	17.5 ⁽¹⁾	18.7	19.2
			Ambient Thermal Load (kW)	33.8	41.1	51.4	63.0	75.6 ⁽¹⁾	80.5	82.7
		50%	Moisture Removal Rate (l/24h)	553.0	775.9	1051.3	1404.8	1734.6	1809.0	1803.0
			Absorbed Power (kW)	18.1	20.8	24.0	27.5	31.0	32.2	33.3
			Air Temperature Increase (°C)	8.2	10.4	13.1	16.4	19.5	20.3	20.5
Ambient Thermal Load (kW)			37.0	46.2	57.3	71.0	84.0	87.3	88.2	

COOLING MODE	RELATIVE HUMIDITY	30%	Cooling Capacity (kW)	36.1	46.8	59.6	74.9	92.7	100.7	109.1
			Absorbed Power (kW)	17.9	20.5	23.2	25.9	29.8	29.9	31.1
		50%	Cooling Capacity (kW)	38.1	49.2	62.5	78.2	96.6 ⁽¹⁾	104.8	113.5
			Absorbed Power (kW)	18.5	21.1	23.7	26.5	29.4 ⁽¹⁾	30.5	31.7

(1) Indicates performance at nominal operating conditions.