



Cooling water recooling chillers HYFRA Sigma

Trouble-free. Flexible. Efficient.

A range of optional equipment allows the HYFRA Sigma series to adapt optimally to customer requirements. With a cooling capacity of 5 to 320 kW, HYFRA Sigma models are dimensioned to meet the major challenges of laser and machine tool applications.



Key data HYFRA Sigma

- ✓ **Power range:**
5 – 320 kW / (1 - 91 Tons)
- ✓ **Medium:**
Water
- ✓ **Footprint:**
5 – 28 kW on footprint of 0.5 m²;
(1 - 8 Tons on 5.4 sq.ft)
Up to 160 kW power in only 1 m²;
(up to 45 Tons on 10.8 sq.ft)
Up to 320 kW power in only 2 m²
(up to 45 Tons on 10.8 sq.ft)
- ✓ **Optimized:**
Equipped with HYFRA FleXX Technology
and various control options
- ✓ **Application:**
Machine tool applications



Technical data HYFRA Sigma EN 400V/50Hz

- a) Sound pressure level measured in free field at 1 m distance and 1.2 m height (tolerance +/- 2 dB (A)), ambient temperature 32 °C, sea level, including compressor operation, without start / stop -Phase
b) at 42 °C ambient temperature and 20 °C medium temperature
c) For other temperatures, contact your local HYFRA representative.
d) Cooling capacity (± 5%), for machines air-cooled, sea level, with HYFRA standard components.

HYFRA Sigma model no. (kW)	5	7	9	13	16	18	22	28	34	42	52	56	67	80	104	134	160	210	270	320
Performance data																				
400V/50Hz																				

Ambient °C	Refrigerant °C ^{c)}	Cooling capacity kW ^{d)}																			
	Water																				
32	15	4,0	6,2	7,8	11,5	13,9	16,6	20,0	25,3	29,9	37,0	45,5	50,7	59,9	71,3	91,0	119,8	142,6	182,0	240,0	285,0
	20	4.5	6.9	8.7	12.6	15.4	18.3	21.7	28.0	33.5	41.5	51.8	56.0	67.1	79.8	103.6	134.2	159.6	207.0	268.0	319.0
37	15	3.6	5.8	7.2	10.7	13.0	15.7	19.2	23.9	28.2	34.9	42.1	47.8	56.5	67.2	84.2	113.0	134.4	168.4	226.0	268.8
	20	4.1	6.7	7.9	11.8	14.4	17.2	20.5	26.2	31.1	37.9	49.0	52.4	62.4	73.0	98.0	124.8	146.0	196.0	249.6	292.0
42	15	3.4	5.3	6.7	10.2	11.4	14.7	18.0	22.9	27.4	32.0	40.2	45.8	54.9	62.0	80.4	109.8	123.0	160.8	219.6	238.8
	20	3.9	6.0	7.3	11.2	13.0	16.4	19.5	24.6	30.2	35.0	47.3	51.3	60.6	67.4	94.6	121.2	134.8	189.2	242.4	269.6

Technical data																						
Refrigerant		R134a	R410A																			
Refrigerant charge	kg	1,3	1,3	1,3	1,3	1,3	2	2	2	2,9	3,1	4,5	4,9	6,5	6,5	9	13	13	20	21	24	
Sound pressure level ^{a)} user side	dB(A)	68							70		71			74			76			78		
Power consumption max. ^{b)}	kW	3,37	4,47	5,17	7,06	8,16	8,16	9,76	12,08	13,41	17,65	19,45	20,15	26,45	32,3	39,7	52,3	64	81,8	112,6	127,8	
Current consumption max. ^{b)}	A	6,6	8	9	11,9	13,7	13,7	17,7	21,5	24,2	29,53	33,53	34,98	45,18	53,5	68,46	88,86	105,5	140,5	189,9	210,7	
Max. airflow rate	m³/h	4500					5500			6800		10000	10800	15500			21600	31000		52800	52800	68000
Tank capacity	l	130					120			300						400			500			
Water pressure	bar	3.2	3.1	3.0	3.5	3.3	3.0	2.5	2.8	2.5	2.5	2.5	4.0	3.2	2.9	3,2	2,9	2,5	3.2	2,9	2.8	
Nominal water flow	m³/h	0.8	1.2	1.5	2.1	2.6	2.9	3.5	4.3	5.1	6.5	7.0	8.0	10.3	12.7	14,0	20,6	25,0	28,0	38,0	46.0	
Water connection	inch	FT 3/4"					FT 1 1/4"					FT 1 1/2"			FT 2"		DN 65	DN 65	DN 65	DN 100	DN 100	DN 100
Fresh water connection	inch	FT 3/4"								FT 3/8"												

Dimensions and weight																			
Length	mm	715					1000						2000						
Width	mm	715					1000						2000						
Height	mm	1554					2055		2050		2055		1998						
Empty weight	kg	170	180	190	200	210	340	350	370	380	420	440	810	830	880	1800	1900	1980	



Technical data HYFRA Sigma EN 460V/60Hz

- a) Sound pressure level measured in free field at 1 m distance and 1.2 m height (tolerance +/- 2 dB (A)), ambient temperature 32 °C, sea level, including compressor operation, without start / stop -Phase
b) at 42 °C ambient temperature and 20 °C medium temperature
c) For other temperatures, contact your local HYFRA representative.
d) Cooling capacity (± 5%), for machines air-cooled, sea level, with HYFRA standard components.

HYFRA Sigma model no. (kW)		5	7	9	13	16	18	22	28	34	42	52	56	67	80	104	134	160	210	270	320				
Performance datav								460V/60Hz																	
Ambient °C	Refrigerant °C c)	Cooling capacity kW d)																							
	Water																								
32	15	4,0	6,0	7,4	10,9	13,1	16,6	18,4	22,8	27,6	34,5	44,7	47,0	53,0	66,8	89,4	106,1	133,6	178,8	212,2	267,1				
	20	4,8	7,2	8,8	13,5	15,0	19,1	22,8	26,3	33,5	39,6	51,3	55,0	61,3	76,4	102,6	122,6	152,8	205,2	245,2	305,6				
37	15	3,8	5,6	6,9	10,6	12,1	16,1	17,5	21,2	27,0	32,5	43,2	44,4	49,5	61,9	86,4	99,0	123,7	172,8	198,0	247,4				
	20	4,6	6,8	8,1	12,5	14,0	18,8	21,1	24,5	30,8	37,5	49,7	51,3	57,2	70,8	99,4	114,4	141,5	198,8	228,7	283,0				
42	15	3,5	5,3	6,6	9,7	11,0	14,9	16,7	19,4	24,5	30,6	39,7	40,9	45,8	56,6	79,4	91,6	113,2	158,8	183,1	226,4				
	20	4,3	6,5	7,9	11,5	12,7	17,3	19,4	22,6	28,1	35,3	45,7	47,3	52,9	64,8	91,4	105,8	129,6	182,8	211,6	259,1				
Technical data																									
Refrigerant	R134A		R410A																						
Refrigerant charge	kg	1,3					2,0			2,9	3,1	4,5	4,9	6,5		9,0	13,0	13,0	20,0	21,0	24,0				
Sound pressure level a) user side	dB(A)	71							73			74			77			79		76	78				
Power consumption max. b)	kW	4,1	5,1	5,7	7,2	8,4	9,2	10,7	11,7	14,1	17,3	21,1	21,1	23,3	31,9	43,5	47,9	65,0	85,0	99,4	129,8				
Current consumption max. b)	A	6,9	8,6	9,0	10,4	12,7	13,5	16,2	18,4	21,1	25,8	32,1	32,1	36,5	48,3	62,6	71,4	94,9	123,2	149,4	189,4				
Max. airflow rate	m³/h	4950							7480			11000	11880	17050		23760	34100	34100	52800,03		68000,04				
Tank capacity	L	130					120			300					400			500							
Water pressure	bar	3,2	3,1	3,0	3,5	3,3	3,0	2,5	2,8	2,5	3,5	3,5	4,0	3,2	2,9	4,0	3,5	3,0	3,2	2,9	2,8				
Nominal water flow	m³/h	0,8	1,2	1,5	2,1	2,6	2,9	3,5	4,3	5,1	6,5	7,0	8,0	10,3	12,7	14,0	20,6	25,0	28,0	38,0	46,0				
Water connection		FT 3/4"					FT 1 1/4"					FT 1 1/2"			FT 2"		DN 65			DN 100					
Fresh water connection		FT 3/4"												FT 3/8"											

Dimensions and weight																			
Length	mm	715					1000					2000			2400				
Width	mm	715					1000											2000	
Height	mm	1554					2055							1998			2185		
Empty weight	kg	170	180	190	200	210	340	350	370	380	420	440	810	830	880	1800	1900	1980	



Technical data HYFRA Sigma US 460V/60Hz

a) Sound pressure level measured in free field at 1 m (39,4 in) distance and 1.2 m (47,2 in) height (tolerance +/- 2 dB (A)), ambient temperature 32 °C (89,6 °F), sea level, including compressor operation, without start / stop -Phase

b) At 42 °C (107,6 °F) ambient temperature and 20 °C (68 °F) medium temperature

c) For other temperatures, contact your local HYFRA representative.

d) Cooling capacity (± 5%), for machines air-cooled, sea level, with HYFRA standard components.

HYFRA Sigma model no. (kW)		5	7	9	13	16	18	22	28	34	42	52	56	67	80	104	134	160	210	270	320						
Performance data								460V/60Hz																			
Ambient °F	Refrigerant °F _o		Cooling capacity kW _d																								
	Water																										
90	59	1,1	1,7	2,1	3,1	3,7	4,7	5,2	6,5	7,8	9,8	12,7	13,4	15,1	19,0	25,4	30,2	38,0	50,8	60,3	76,0						
	68	1,4	2,0	2,5	3,8	4,3	5,4	6,5	7,5	9,5	11,3	14,6	15,6	17,4	21,7	29,2	34,9	43,4	58,3	69,7	86,9						
99	59	1,1	1,6	2,0	3,0	3,4	4,6	5,0	6,0	7,7	9,2	12,3	12,6	14,1	17,6	24,6	28,2	35,2	49,1	56,3	70,3						
	68	1,3	1,9	2,3	3,6	4,0	5,3	6,0	7,0	8,8	10,9	14,1	14,6	16,3	20,1	28,3	32,5	40,2	56,5	65,0	80,5						
108	59	1,0	1,5	1,9	2,8	3,1	4,2	4,7	5,5	7,0	8,7	11,3	11,6	13,0	16,1	22,6	26,0	32,2	45,2	52,1	64,4						
	68	1,2	1,9	2,2	3,3	3,6	4,9	5,5	6,4	8,0	10,0	13,0	13,4	15,0	18,4	26,0	30,1	36,8	52,0	60,2	73,7						
Technical data																											
Refrigerant		R134a		R410A																							
Refrigerant charge	lbs	2,9						4,4			6,4	6,8	9,9	10,8	14,3	14,3	19,8	28,7	28,7	44,1	46,3	52,9					
Sound pressure level a) user side	dB(A)	71								73			74			77			79		78						
Power consumption max. b)	kW	4,1	5,1	5,7	7,2	8,4	9,2	10,7	11,7	14,1	17,3	21,1	21,1	23,3	31,9	43,5	47,9	65,0	85,0	99,4	129,8						
Current consumption max. b)	A	6,9	8,6	9,0	10,4	12,7	13,5	16,2	18,4	21,1	25,8	32,1	32,1	36,5	48,3	62,6	71,4	94,9	123,2	149,4	189,4						
Max. airflow rate	CFM	2913								4403	6474	6992	10035			13985	20071		31077		40023						
Tank capacity	gal	34					32			79						106			132								
Water pressure	psi	46,4	45,0	43,5	50,8	47,9	43,5	36,3	400,6	36,3	50,8	50,8	58,0	46,4	42,1	58,0	50,8	43,5	46,4	42,1	40,6						
Nominal water flow	gpm	3,5	5,3	6,6	9,2	11,4	12,8	15,4	18,9	22,5	28,6	30,8	35,2	45,3	55,9	61,6	90,7	110,1	123,3	167,3	202,5						
Water connection	inch	FT 3/4"					FT 1 1/4"					FT 1 1/2"			FT 2"	DN 65	DN 65	DN 65	DN 100	DN 100	DN 100						
Fresh water connection	inch	FT 3/4"									FT 3/8"																
Dimensions and weight																											
Length	inch	28,1								39,4						78,7			94,5								
Width	inch	28,1								39,4													78,7				
Height	inch	61,2								80,9			80,7	80,9			78,7			86,0							
Empty weight	lbs	375		397	419		441		463	750	772	816	838	926	970	1786	1830	1940	3968	4189	4365						



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Compact. Cost-optimized. Plug-in.

Up to 40 % height reduction for improved integration into various plant layouts.



Key data HYFRA Sigma c

- ✓ **Power range:**
5 – 16kW / (1 - 4.2 Tons)
- ✓ **Medium:**
Water
- ✓ **Footprint:**
5 – 16 kW on footprint of 0.5 m²;
(1 – 4,2 Tons on 5.4 sq.ft)
- ✓ **Optimized:**
Up to 40 % height reduction
- ✓ **Application:**
Machine tool applications

Technical data HYFRA Sigma EN 400V/50Hz

HYFRA Sigma c model no. (kW)		c 5	c 7	c 9	c 13	c 16
Performance data		400V/50Hz				
Ambient °C	Refrigerant °C _{d)}	Cooling capacity kW _{d)}				
	Water					
32	15	4.4	6.4	7.4	10.7	12.7
	20	5.3	7.3	8.7	12.7	14.7
37	15	3.7	5.4	6.4	9.1	11.7
	20	4.7	6.7	8.0	10.7	13.6
42	15	3.1	4.7	5.8	7.7	10.7
	20	4.0	6.0	7.5	9.3	12.5
Technical data						
Refrigerant		R134a	R410A			
Refrigerant charge	kg	1.1				
Sound pressure level _{a)} user side	dB(A)	66				68
Power consumption max. _{b)}	kW	3,1	4,2	4,9	6,6	8,0
Current consumption max. _{b)}	A	6.0	7,4	8,4	10,7	13,1
Max. airflow rate	m³/h	2900				4500
Tank capacity	l	26				
Water pressure	bar	3.4	3.3	3.2	3.1	3.0
Nominal water flow	m³/h	1.2	1.5	1.8	2.1	2.4
Water connection	Zoll	FT 3/4"				
Fresh water connection	Zoll	FT 3/4"				
Dimensions and weight						
Length	mm	720				
Width	mm	835				
Height	mm	930				
Empty weight	kg	114	117	119	130	

a) Sound pressure level measured in free field at 1 m distance and 1.2 m height (tolerance +/- 2 dB (A)), ambient temperature 32 °C, sea level, including compressor operation, without start / stop -Phase

b) at 42 °C ambient temperature and 20 °C medium temperature

c) For other temperatures, contact your local HYFRA representative.

d) Cooling capacity (± 5%), for machines air-cooled, sea level, with HYFRA standard components.



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- ✓ **Application:**
Machine tool applications

Technical data HYFRA Sigma EN 460V/60Hz

HYFRA Sigma c model no. (kW)		c 5	c 7	c 9	c 13	c 16
Performance data		460V/60Hz				
Ambient °C	Refrigerant °C _{d)}	Cooling capacity kW _{d)}				
	Water _{c)}					
32	15	3,8	5,7	7,1	10,4	12,6
	20	4,6	6,9	8,4	13,0	14,4
37	15	3,6	5,4	6,6	10,2	11,6
	20	4,4	6,5	7,8	12,0	13,4
42	15	3,4	5,1	6,3	9,3	10,5
	20	4,1	6,3	7,6	11,0	12,2
Technical data						
Refrigerant		R134A		R410A		
Refrigerant charge	kg	1,1	1,1	1,1	1,1	1,1
Sound pressure level _{a)} user side	dB(A)	69	69	69	69	71
Power consumption max. _{b)}	kW	3,8	4,8	5,2	6,7	7,6
Current consumption max. _{b)}	A	6,3	8,0	7,9	11,5	11,5
Max. airflow rate	m3/h	3190	3190	3190	3190	4950
Tank capacity	L	26	26	26	26	26
Water pressure	bar	3,4	3,3	3,2	3,1	3,0
Nominal water flow	m3/h	1,2	1,5	1,8	2,1	2,4
Conections Inlet/Outlet	mm	FT 3/4"				
Dimensions and weight						
Length	mm	720			720	
Width	mm	835			835	
Height	mm	930			930	
Empty weight	kg	114	117	119	130	

a) Sound pressure level measured in free field at 1 m distance and 1.2 m height (tolerance +/- 2 dB (A)), ambient temperature 32 ° C, sea level, including compressor operation, without start / stop -Phase

b) at 42 °C ambient temperature and 20 °C medium temperature

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5 – 16 kW on footprint of 0.5 m²;
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- ✓ **Application:**
Machine tool applications

Technical data HYFRA Sigma US 460V/60Hz

HYFRA Sigma c model no. (kW)		c 5	c 7	c 9	c 13	c 16
Performance data		460V/60Hz				
Ambient °F	Refrigerant °F ^{d)}	Cooling capacity kW _{d)}				
	Water					
90	59	1,1	1,6	2,0	3,0	3,6
	68	1,3	2,0	2,4	3,7	4,1
99	59	1,0	1,5	1,9	2,9	3,3
	68	1,2	1,8	2,2	3,4	3,8
108	59	1,0	1,4	1,8	2,6	3,0
	68	1,2	1,8	2,1	3,1	3,5
Technical data						
Refrigerant		R134A		R410A		
Refrigerant charge	lbs	2,4				
Sound pressure level a) user side	dB(A)	69				71
Power consumption max. b)	kW	3,7	4,7	5,3	6,8	8,4
Current consumption max. b)	A	6,3	8,0	8,4	9,8	12,7
Max. airflow rate	CFM	1878				2913
Tank capacity	gal	6,9				
Water pressure	psi	49,3	47,9	46,4	45,0	43,5
Nominal water flow	gpm	5,3	6,6	7,9	9,2	10,6
Water connection	Zoll	FT 3/4"				
Fresh water connection	Zoll	FT 3/4"				
Dimensions and weight						
Length	mm	720			720	
Width	mm	835			835	
Height	mm	930			930	
Empty weight	kg	114	117	119	130	

a) Sound pressure level measured in free field at 1,2 m (39,4 in) distance and 1,0 m (39,4 in) height (tolerance +/- 2 dB (A)), ambient temperature 32 °C (89,6 °F), sea level, including compressor operation, without start / stop -Phase

b) At 42 °C (107,6 °F) ambient temperature and 20 °C (68 °F) medium temperature

c) For other temperatures, contact your local HYFRA representative.

d) Cooling capacity (± 5%), for machines air-cooled, sea level, with HYFRA standard components.