

SANHUA
*MICRO-
CHANNEL
HEAT
EXCHANGERS*



SANHUA

SINCE 1984

SANHUA

*“Strive for perfection,
Pursuit of excellence”*

Sanhua is a leading HVAC&R manufacturer of controls and components with a global footprint and 30 years of experience. Our co-operation with the largest companies in the Automotive, Appliance and HVAC&R industry makes Sanhua a leading worldwide OEM supplier providing the highest quality components at the most competitive price.

Furthermore, strategic acquisitions by Sanhua of leading HVAC brands such as Ranco and Aweco and joint venture projects with Danfoss transformed Sanhua into one of the largest manufacturers of Expansion, Solenoid and Reversing Valves with annual valve sales exceeding 100 Million pieces.

SANHUA IS LISTED IN TOP 100 STRONGEST CHINESE INDUSTRIAL BRANDS.

After sustainable growth over the last 3 decades, Sanhua have made significant progress to introduce a comprehensive range of controls and line components for the Commercial Air conditioning and Refrigeration Industries and to increase its service level coverage in the most important European markets.

CHILLING
ideas worldwide

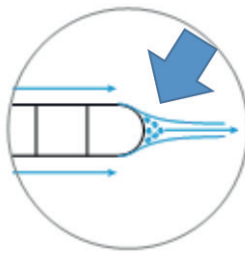
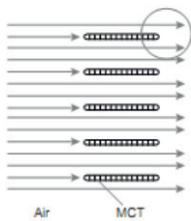
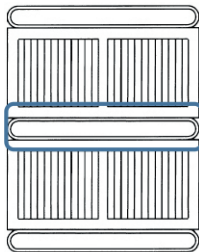
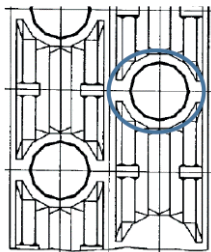
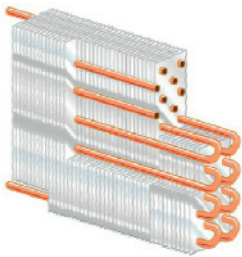
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Micro-Channel Heat Exchangers - Standard Range

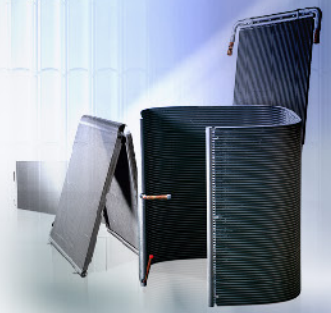
BENEFITS – Comparison with Fin & Tubes technology



1. Higher Heat Transfer:
(Based on the same footprint)
2. Higher Internal Heat Transfer Coefficient:
tubes with small section provide higher refrigerant speed and higher turbulence besides a bigger internal surface
3. Higher External Heat Transfer Coefficient:
the overall tubes surface touched by the air is much bigger than in T&F coils
4. Reduction on Footprint
(Based on the same heat rejection)
5. Less Air Pressure Drops
(Based on same heat rejection and same air speed value)
6. Smaller Internal Volume & Refrigerant Charge Reduction (up to 70%)
7. Compact dimension and limited Weight
8. No risk of galvanic corrosion
(Coil 100% in Aluminum alloy)
9. Coil easy to recycle (100% aluminum)
10. Tubes in Long Life Alloy (LLA) for aggressive environments

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Micro-Channel Heat Exchangers - Standard Range



Tubes Aluminum Alloy – Benefit of Long Life Alloy

The state of the art for Aluminum Alloy used in the MCHE tubes is 3102

Sanhua offers for his Micro-Channel Heat Exchangers Standard Range a new aluminum alloy so defined Long Life Alloy (LLA)

Sanhua LLA alloy guarantees higher mechanical properties and an higher corrosion resistance

Aluminum Alloy	Si	Fe	Cu	Mn
3102	< 0.4	< 0.7	< 0.1	0.05 ~ 0.40
LLA	< 0.1	< 0.12	< 0.01	0.90 ~ 1.10

1. Long Life Alloy (LLA) is a special aluminum alloy with an higher content of Manganese (Mn) and a lower content of Copper (Cu), Silicon (Si) and Iron (Fe) than the standard 3102.



LLA



3102

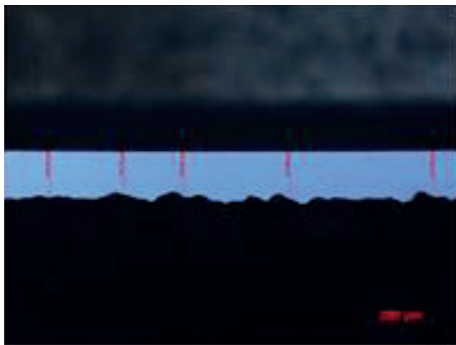
2. Long Life Alloy (LLA) has a very fine grain microstructure before and after brazing. A small grain structure increases:
 - a. the mechanical strength before but also after the brazing activity
 - b. the resistance to the inter-granular corrosion

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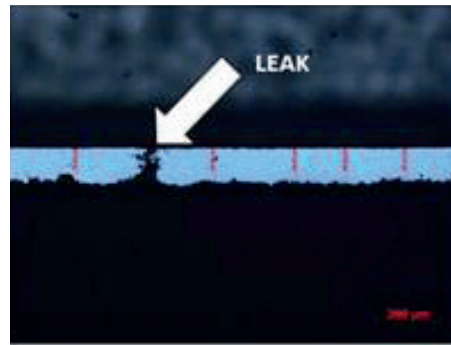
Micro-Channel Heat Exchangers - Standard Range

Long Life Alloy – Corrosion Test Results

3. Test based on ASTM G85-A3 (Acidified Synthetic Sea Water Test):
The test verifies the mechanical resistance/characteristics of the MCHE coils in aggressive and corrosive environment:
 - a. After 700 hours coils in 3102 and LLA passed the test
 - b. After 2000 hours only coil in LLA passed the test; the coil in 3102 showed a mechanical deformation due to the internal pressure and the thinning of pipes thickness



LLA

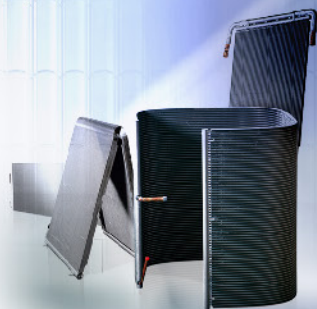


3102

4. Test based on ASTM G85-A3 (Acidified Synthetic Sea Water Test):
 - a. After 4500 hours the coil in LLA shows tube surface still smooth without any leakage points or risks
 - b. After 4500 hours the coil in 3102 shows a sharp localized attack due to a more concentrate corrosion effect

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Micro-Channel Heat Exchangers - Standard Range



Common Nominal Working Conditions

The Heat Rejection data valid for all the standard coils, present in the performance table in this catalogue has been calculated according to the following Nominal Working Conditions:

Nominal Working Conditions	Metric units		
Inlet Air Temperature	°C	35	TA.in
Inlet Relative Humidity	%	40	RH
Sub-Cooling	K	5	SC
Input data: ($\Delta T=10$ K)			
Condensing Temperature	°C	45	TC
Inlet refrigerant temperature	°C	75	
Input data: ($\Delta T=20$ K)			
Condensing Temperature	°C	55	TC
Inlet refrigerant temperature	°C	85	
Input data: ($\Delta T=30$ K)			
Condensing Temperature	°C	65	TC
Inlet refrigerant temperature	°C	95	

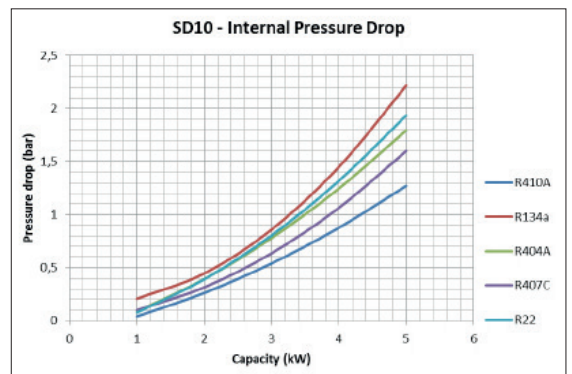
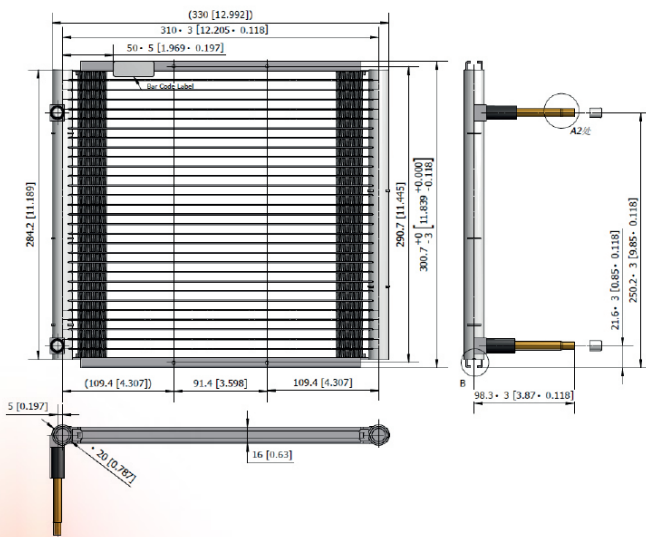
Nominal Working Conditions	Imperial units		
Inlet Air Temperature	°F	95	TA.in
Inlet Relative Humidity	%	40	RH
Sub-Cooling	°F	9	SC
Input data: ($\Delta T=18$ °F)			
Condensing Temperature	°F	113	TC
Inlet refrigerant temperature	°F	167	
Input data: ($\Delta T=36$ °F)			
Condensing Temperature	°F	131	TC
Inlet refrigerant temperature	°F	185	
Input data: ($\Delta T=54$ °F)			
Condensing Temperature	°F	149	TC
Inlet refrigerant temperature	°F	203	

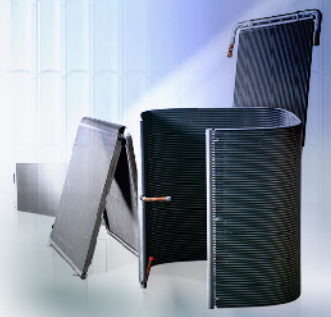
SANHUA *Micro-Channel Heat Exchangers - Standard Range*

SD10 Condenser

Dimensional Characteristics	Metric units		
Total length	mm	330	(L)
Total height	mm	300,7	(H)
Manifold diameter	mm	20	(Ø D)
Heat exchanger length	mm	290	(L1)
Heat exchanger height	mm	284,2	(H1)
Heat exchanger front surface	m ²	0,082418	(S)
Solder Connections			
Inlet connection (ID)	mm	6,15	(Ø IN)
Outlet connection (ID)	mm	6,15	(Ø OUT)
Internal Nomenclature:	16-FPI23-2G		
Coil Depth	mm	16	(cD)
Fins Distance	mm	1,1	
Fin height	mm	8,1	
Tubes height	mm	1,3	
Total internal volume	liters	0,174	
Coil Internal Volume	liters	0,0606	
Manifold Internal Volume	liters	0,1134	
Number of tubes		28	(-)
Number of passes		6	(-)
Pass Distribution (step 1/2/3/4/5/6)		6/6/5/5/3/3	
Physical Characteristics			
Max. Operating Pressure:	MPa	4,5	(PS)
Burst pressure:	MPa	13,5	
Temperature Range:	°C	-40 / 150	(TS)
Coil weight	kg	0,8	
Material			
Tube:	-	LLA	
Fins:	-	AA3003	
Manifold:	-	AA3003	
Inlet/Outlet tubes:	-	Copper	
Side plate:	-	AA3003	
Approval:			
PED	-	Art. 3.3	
UL	-	UL 207	

Dimensional Characteristics	Imperial units		
Total length	in	12,99	(L)
Total height	in	11,84	(H)
Manifold diameter	in	0,79	(Ø D)
Heat exchanger length	in	11,42	(L1)
Heat exchanger height	in	11,19	(H1)
Heat exchanger front surface	in ²	1277	(S)
Solder Connections			
Inlet connection (ODM)	in	1/4"	(Ø IN)
Outlet connection (ODM)	in	1/4"	(Ø OUT)
Internal Nomenclature:	16-FPI23-2G		
Coil Depth	in	0,63	(cD)
Fins Per Inch	FPI	23	
Fin height	in	0,32	
Tubes height	in	0,05	
Total internal volume	in ³	10,62	
Coil Internal Volume	in ³	3,70	
Manifold Internal Volume	in ³	6,92	
Number of tubes		28	(-)
Number of passes		6	(-)
Pass Distribution (step 1/2/3/4/5/6)		6/6/5/5/3/3	
Physical Characteristics			
Max. Operating Pressure:	psi	652,7	(PS)
Burst pressure:	psi	1958,0	
Temperature Range:	°F	-40 / 302	(TS)
Coil weight	lb	1,76	
Material			
Tube:	-	LLA	
Fins:	-	AA3003	
Manifold:	-	AA3003	
Inlet/Outlet tubes:	-	Copper	
Side plate:	-	AA3003	
Approval:			
PED	-	Art. 3.3	
UL	-	UL 207	





Performance Data (Metric Units)

Air Speed (m/s)	Air Flow (m ³ /h)	Air Pressure Drops (Pa)	Capacity (kW)								
			R410A			R134a			R404A		
			ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K
1	267,3	14,0	0,76	1,61	2,48	0,73	1,51	2,34	0,74	1,61	2,47
1,5	399,8	24,5	1,05	2,27	3,49	0,99	2,13	3,24	1,01	2,24	3,47
2	532,2	36,3	1,29	2,85	4,39	1,22	2,65	4,03	1,33	2,82	4,34
2,5	664,7	49,4	1,59	3,38	5,22	1,41	3,11	4,72	1,56	3,33	5,12
3	799,5	63,4	1,83	3,87	5,98	1,59	3,50	5,34	1,79	3,79	5,84
3,5	932,0	78,4	2,04	4,32	6,68	1,74	3,86	5,91	1,97	4,20	6,49
4	1064,4	94,2	2,23	4,73	7,32	1,87	4,15	6,38	2,15	4,60	7,07
4,5	1199,3	110,8	2,41	5,13	7,93	2,00	4,45	6,83	2,32	4,93	7,62

A

Air Speed (m/s)	Air Flow (m ³ /h)	Air Pressure Drops (Pa)	Capacity (kW)								
			R407C			R22			R507		
			ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K
1	267,3	14,0	0,36	1,36	2,24	0,44	1,51	2,33	0,74	1,61	2,47
1,5	399,8	24,5	0,48	1,93	3,13	0,99	2,14	3,26	1,01	2,24	3,47
2	532,2	36,3	0,50	2,42	3,92	1,23	2,68	4,07	1,33	2,82	4,34
2,5	664,7	49,4	0,56	2,85	4,63	1,48	3,14	4,79	1,56	3,33	5,12
3	799,5	63,4	0,59	3,24	5,28	1,62	3,56	5,46	1,79	3,79	5,84
3,5	932,0	78,4	0,65	3,59	5,87	1,79	3,94	6,04	1,97	4,20	6,49
4	1064,4	94,2	0,64	3,91	6,40	1,94	4,29	6,58	2,15	4,60	7,07
4,5	1199,3	110,8	0,70	4,22	6,91	1,91	4,61	7,08	2,32	4,93	7,62

B

Performance Data (Imperial Units)

Air Speed (ft/min)	Air Flow (cfm)	Air Pressure Drops (in H ₂ O)	Capacity (Btu/h x 1000)								
			R410A			R134a			R404A		
			ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F
197	157,3	0,1	2,59	5,51	8,46	2,48	5,16	7,98	2,54	5,51	8,45
295	235,3	0,1	3,57	7,74	11,92	3,38	7,27	11,07	3,45	7,63	11,84
394	313,2	0,1	4,42	9,73	15,00	4,15	9,05	13,75	4,53	9,62	14,83
492	391,2	0,2	5,44	11,54	17,83	4,82	10,62	16,10	5,34	11,36	17,49
591	470,6	0,3	6,23	13,22	20,44	5,41	11,96	18,22	6,10	12,94	19,95
689	548,5	0,3	6,95	14,74	22,81	5,93	13,19	20,19	6,74	14,35	22,15
787	626,5	0,4	7,63	16,15	25,01	6,39	14,18	21,78	7,35	15,70	24,15
886	705,9	0,4	8,23	17,51	27,09	6,82	15,18	23,34	7,93	16,85	26,03

A

Air Speed (ft/min)	Air Flow (cfm)	Air Pressure Drops (in H ₂ O)	Capacity (Btu/h x 1000)								
			R407C			R22			R507		
			ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F
197	157,3	0,1	1,22	4,64	7,63	1,49	5,16	7,97	2,54	5,51	8,45
295	235,3	0,1	1,63	6,58	10,69	3,39	7,30	11,12	3,45	7,63	11,84
394	313,2	0,1	1,72	8,25	13,39	4,20	9,14	13,90	4,53	9,62	14,83
492	391,2	0,2	1,91	9,72	15,81	5,05	10,73	16,37	5,34	11,36	17,49
591	470,6	0,3	2,02	11,08	18,04	5,54	12,15	18,63	6,10	12,94	19,95
689	548,5	0,3	2,20	12,25	20,04	6,10	13,46	20,64	6,74	14,35	22,15
787	626,5	0,4	2,19	13,36	21,87	6,61	14,64	22,47	7,35	15,70	24,15
886	705,9	0,4	2,38	14,40	23,58	6,52	15,75	24,17	7,93	16,85	26,03

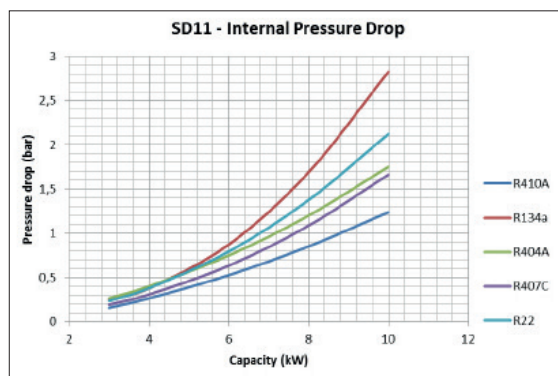
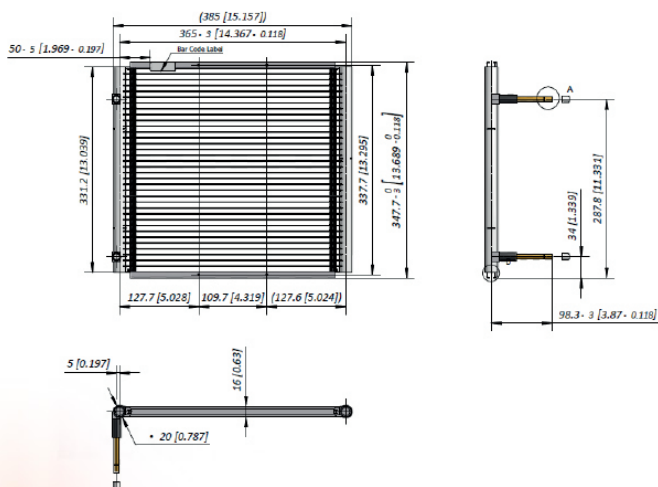
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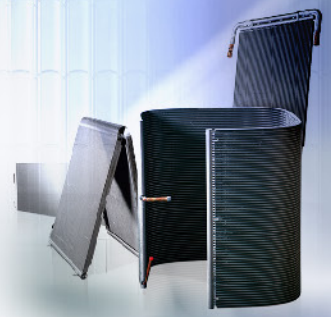
SANHUA *Micro-Channel Heat Exchangers - Standard Range*

SD11 Condenser

Dimensional Characteristics	Metric units		
Total length	mm	385	(L)
Total height	mm	347,7	(H)
Manifold diameter	mm	20	(Ø D)
Heat exchanger length	mm	345	(L1)
Heat exchanger height	mm	331,2	(H1)
Heat exchanger front surface	m ²	0,114264	(S)
Solder Connections			
Inlet connection (ID)	mm	6,15	(Ø IN)
Outlet connection (ID)	mm	6,15	(Ø OUT)
Internal Nomenclature:	16-FPI23-2G		
Coil Depth	mm	16	(cD)
Fins Distance	mm	1,1	
Fin height	mm	8,1	
Tubes height	mm	1,3	
Total internal volume	liters	0,219	
Coil Internal Volume	liters	0,1411	
Manifold Internal Volume	liters	0,0779	
Number of tubes		34	(-)
Number of passes		4	(-)
Pass Distribution (step 1/2/3/4)		10/9/8/7	
Physical Characteristics			
Max. Operating Pressure:	MPa	4,5	(PS)
Burst pressure:	MPa	13,5	
Temperature Range:	°C	-40 / 150	(TS)
Coil weight	kg	1,0	
Material			
Tube:	-	LLA	
Fins:	-	AA3003	
Manifold:	-	AA3003	
Inlet/Outlet tubes:	-	Copper	
Side plate:	-	AA3003	
Approval:			
PED	-	Art. 3.3	
UL	-	UL 207	

Dimensional Characteristics	Imperial units		
Total length	in	15,16	(L)
Total height	in	13,69	(H)
Manifold diameter	in	0,79	(Ø D)
Heat exchanger length	in	13,58	(L1)
Heat exchanger height	in	13,04	(H1)
Heat exchanger front surface	in ²	1771	(S)
Solder Connections			
Inlet connection (ID)	in	1/4"	(Ø IN)
Outlet connection (ID)	in	1/4"	(Ø OUT)
Internal Nomenclature:	16-FPI23-2G		
Coil Depth	in	0,63	(cD)
Fins Per Inch	FPI	23	
Fin height	in	0,32	
Tubes height	in	0,05	
Total internal volume	in ³	13,36	
Coil Internal Volume	in ³	8,61	
Manifold Internal Volume	in ³	4,75	
Number of tubes		34	(-)
Number of passes		4	(-)
Pass Distribution (step 1/2/3/4)		10/9/8/7	
Physical Characteristics			
Max. Operating Pressure:	psi	652,7	(PS)
Burst pressure:	psi	1958,0	
Temperature Range:	°F	-40 / 302	(TS)
Coil weight	lb	2,20	
Material			
Tube:	-	LLA	
Fins:	-	AA3003	
Manifold:	-	AA3003	
Inlet/Outlet tubes:	-	Copper	
Side plate:	-	AA3003	
Approval:			
PED	-	Art. 3.3	
UL	-	UL 207	





Performance Data (Metric Units)

Air Speed (m/s)	Air Flow (m ³ /h)	Air Pressure Drops (Pa)	Capacity (kW)								
			R410A			R134a			R404A		
			ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K
1	386,0	13,6	1,07	2,25	3,56	1,03	2,17	3,30	1,06	2,29	3,57
1,5	581,3	23,8	1,49	3,25	5,05	1,42	3,01	4,72	1,45	3,25	5,04
2	772,6	35,4	1,84	4,09	6,36	1,74	3,72	5,88	1,77	4,07	6,32
2,5	967,9	48,1	2,16	4,87	7,59	2,03	4,36	6,93	2,06	4,82	7,48
3	1158,6	61,8	2,44	5,57	8,68	2,29	5,13	7,86	2,30	5,49	8,56
3,5	1354,0	76,4	2,70	6,23	9,72	2,52	5,69	8,72	2,53	6,12	9,54
4	1549,3	91,8	2,94	6,84	10,69	2,72	6,17	9,50	2,72	6,80	10,45
4,5	1740,0	108,0	3,15	7,40	11,50	2,91	6,60	10,20	2,86	7,35	11,28

A

Air Speed (m/s)	Air Flow (m ³ /h)	Air Pressure Drops (Pa)	Capacity (kW)								
			R407C			R22			R507		
			ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K
1	386,0	13,6	0,55	1,94	3,18	1,02	2,16	3,33	1,06	2,29	3,57
1,5	581,3	23,8	0,68	2,69	4,52	1,42	3,01	4,71	1,45	3,25	5,04
2	772,6	35,4	0,87	3,33	5,68	1,74	3,73	5,90	1,77	4,07	6,32
2,5	967,9	48,1	0,89	4,02	6,73	2,04	4,55	6,99	2,06	4,82	7,48
3	1158,6	61,8	1,03	4,67	7,68	2,31	5,16	7,95	2,30	5,49	8,56
3,5	1354,0	76,4	1,07	5,20	8,61	2,55	5,73	8,86	2,53	6,12	9,54
4	1549,3	91,8	1,15	5,69	9,39	2,77	6,27	9,69	2,72	6,80	10,45
4,5	1740,0	108,0	1,20	6,14	10,14	2,97	6,75	10,44	2,86	7,35	11,28

B

Performance Data (Imperial Units)

Air Speed (ft/min)	Air Flow (cfm)	Air Pressure Drops (in H ₂ O)	Capacity (Btu/h x 1000)								
			R410A			R134a			R404A		
			ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F
197	227,2	0,1	3,65	7,69	12,15	3,52	7,41	11,26	3,61	7,81	12,18
295	342,2	0,1	5,07	11,11	17,24	4,85	10,29	16,13	4,94	11,11	17,21
394	454,7	0,1	6,28	13,97	21,73	5,96	12,71	20,06	6,05	13,90	21,59
492	569,7	0,2	7,37	16,63	25,90	6,94	14,90	23,68	7,03	16,47	25,56
591	681,9	0,2	8,33	19,01	29,64	7,80	17,52	26,84	7,87	18,76	29,22
689	796,9	0,3	9,21	21,26	33,20	8,60	19,44	29,77	8,63	20,90	32,59
787	911,9	0,4	10,03	23,37	36,51	9,30	21,06	32,45	9,30	23,22	35,70
886	1024,1	0,4	10,76	25,28	39,26	9,93	22,53	34,84	9,77	25,10	38,52

A

Air Speed (ft/min)	Air Flow (cfm)	Air Pressure Drops (in H ₂ O)	Capacity (Btu/h x 1000)								
			R407C			R22			R507		
			ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F
197	227,2	0,1	1,87	6,62	10,86	3,48	7,37	11,38	3,61	7,81	12,18
295	342,2	0,1	2,33	9,19	15,45	4,84	10,26	16,09	4,94	11,11	17,21
394	454,7	0,1	2,95	11,39	19,38	5,95	12,74	20,15	6,05	13,90	21,59
492	569,7	0,2	3,05	13,72	22,98	6,97	15,53	23,87	7,03	16,47	25,56
591	681,9	0,2	3,50	15,96	26,24	7,87	17,62	27,16	7,87	18,76	29,22
689	796,9	0,3	3,66	17,76	29,40	8,70	19,58	30,25	8,63	20,90	32,59
787	911,9	0,4	3,94	19,43	32,07	9,45	21,41	33,08	9,30	23,22	35,70
886	1024,1	0,4	4,08	20,96	34,64	10,14	23,07	35,64	9,77	25,10	38,52

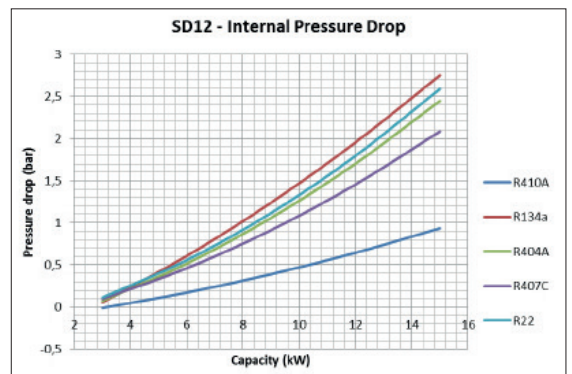
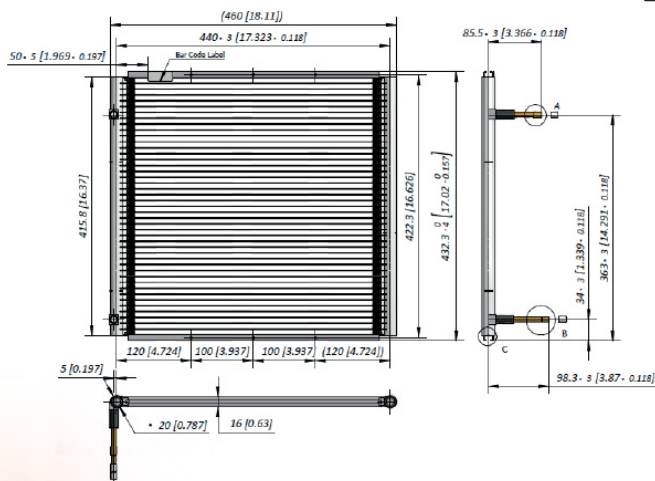
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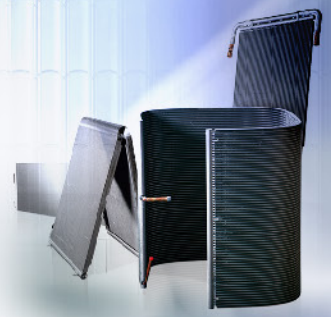
SANHUA *Micro-Channel Heat Exchangers - Standard Range*

SD12 Condenser

Dimensional Characteristics	Metric units		
Total length	mm	460	(L)
Total height	mm	432,3	(H)
Manifold diameter	mm	20	(Ø D)
Heat exchanger length	mm	420	(L1)
Heat exchanger height	mm	415,8	(H1)
Heat exchanger front surface	m ²	0,174636	(S)
Solder Connections			
Inlet connection (ID)	mm	8,2	(Ø IN)
Outlet connection (ID)	mm	6,15	(Ø OUT)
Internal Nomenclature:	16-FPI23-2G		
Coil Depth	mm	16	(cD)
Fins Distance	mm	1,1	
Fin height	mm	8,1	
Tubes height	mm	1,3	
Total internal volume	liters	0,3	
Coil Internal Volume	liters	0,1411	
Manifold Internal Volume	liters	0,1589	
Number of tubes		43	(-)
Number of passes		4	(-)
Pass Distribution (step 1/2/3/4)		14/12/10/7	
Physical Characteristics			
Max. Operating Pressure:	MPa	4,5	(PS)
Burst pressure:	MPa	13,5	
Temperature Range:	°C	-40 / 150	(TS)
Coil weight	kg	1,5	
Material			
Tube:	-	LLA	
Fins:	-	AA3003	
Manifold:	-	AA3003	
Inlet/Outlet tubes:	-	Copper	
Side plate:	-	AA3003	
Approval:			
PED	-	Art. 3.3	
UL	-	UL 207	

Dimensional Characteristics	Imperial units		
Total length	in	18,11	(L)
Total height	in	17,02	(H)
Manifold diameter	in	0,79	(Ø D)
Heat exchanger length	in	16,54	(L1)
Heat exchanger height	in	16,37	(H1)
Heat exchanger front surface	in ²	270,7	(S)
Solder Connections			
Inlet connection (ID)	in	5/16"	(Ø IN)
Outlet connection (ID)	in	1/4"	(Ø OUT)
Internal Nomenclature:	16-FPI23-2G		
Coil Depth	in	0,63	(cD)
Fins Per Inch	FPI	23	
Fin height	in	0,32	
Tubes height	in	0,05	
Total internal volume	in ³	18,31	
Coil Internal Volume	in ³	8,61	
Manifold Internal Volume	in ³	9,70	
Number of tubes		43	(-)
Number of passes		4	(-)
Pass Distribution (step 1/2/3/4)		14/12/10/7	
Physical Characteristics			
Max. Operating Pressure:	psi	652,7	(PS)
Burst pressure:	psi	1958,0	
Temperature Range:	°F	-40 / 302	(TS)
Coil weight	lb	3,31	
Material			
Tube:	-	LLA	
Fins:	-	AA3003	
Manifold:	-	AA3003	
Inlet/Outlet tubes:	-	Copper	
Side plate:	-	AA3003	
Approval:			
PED	-	Art. 3.3	
UL	-	UL 207	





Performance Data (Metric Units)

Air Speed (m/s)	Air Flow (m ³ /h)	Air Pressure Drops (Pa)	Capacity (kW)								
			R410A			R134a			R404A		
			ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K
1	628,7	13,6	1,77	3,91	6,05	1,70	3,59	5,49	1,74	3,78	5,82
1,5	943,0	23,8	2,45	5,33	8,22	2,32	4,98	7,63	2,38	5,27	8,17
2	1257,4	35,4	3,04	6,70	10,36	2,85	6,17	9,49	3,12	6,68	10,24
2,5	1571,7	48,1	3,75	8,03	12,30	3,32	7,22	11,12	3,69	7,89	12,08
3	1886,1	61,8	4,26	9,12	13,98	3,69	8,09	12,48	4,20	8,99	13,79
3,5	2200,4	76,4	4,82	10,27	15,71	4,08	8,97	13,87	4,66	9,96	15,26
4	2514,8	91,8	5,34	11,28	17,23	4,40	9,72	15,04	5,06	10,85	16,65
4,5	2829,1	108,0	5,82	12,23	18,63	4,69	10,39	16,10	5,38	11,65	17,92

A

Air Speed (m/s)	Air Flow (m ³ /h)	Air Pressure Drops (Pa)	Capacity (kW)								
			R407C			R22			R507		
			ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K
1	628,7	13,6	0,84	3,05	5,25	1,88	3,68	5,48	1,74	3,78	5,82
1,5	943,0	23,8	1,09	4,23	7,37	2,34	5,00	7,66	2,38	5,27	8,17
2	1257,4	35,4	1,28	5,26	9,24	2,90	6,24	9,59	3,12	6,68	10,24
2,5	1571,7	48,1	1,36	6,14	10,92	3,38	7,33	11,28	3,69	7,89	12,08
3	1886,1	61,8	1,43	6,93	12,43	3,82	8,33	12,84	4,20	8,99	13,79
3,5	2200,4	76,4	1,59	7,70	13,82	4,21	9,22	14,23	4,66	9,96	15,26
4	2514,8	91,8	1,59	8,33	15,08	4,57	10,04	15,51	5,06	10,85	16,65
4,5	2829,1	108,0	1,70	8,98	16,25	5,15	10,91	16,67	5,38	11,65	17,92

B

Performance Data (Imperial Units)

Air Speed (ft/min)	Air Flow (cfm)	Air Pressure Drops (in H ₂ O)	Capacity (Btu/h x 1000)								
			R410A			R134a			R404A		
			ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F
197	370,0	0,1	6,05	13,35	20,65	5,80	12,27	18,74	5,95	12,91	19,86
295	555,0	0,1	8,37	18,21	28,06	7,93	17,00	26,06	8,12	18,01	27,90
394	740,1	0,1	10,38	22,88	35,38	9,74	21,08	32,41	10,67	22,82	34,97
492	925,1	0,2	12,81	27,41	42,02	11,32	24,65	37,98	12,61	26,93	41,25
591	1110,1	0,2	14,54	31,13	47,73	12,62	27,62	42,61	14,33	30,71	47,09
689	1295,1	0,3	16,47	35,06	53,66	13,93	30,65	47,37	15,91	34,01	52,11
787	1480,1	0,4	18,23	38,53	58,83	15,03	33,20	51,37	17,27	37,06	56,85
886	1665,1	0,4	19,88	41,76	63,64	16,03	35,50	54,97	18,39	39,79	61,20

A

Air Speed (ft/min)	Air Flow (cfm)	Air Pressure Drops (in H ₂ O)	Capacity (Btu/h x 1000)								
			R407C			R22			R507		
			ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F
197	370,0	0,1	2,88	10,40	17,93	6,43	12,56	18,70	5,95	12,91	19,86
295	555,0	0,1	3,71	14,43	25,15	8,00	17,09	26,17	8,12	18,01	27,90
394	740,1	0,1	4,36	17,96	31,56	9,89	21,32	32,74	10,67	22,82	34,97
492	925,1	0,2	4,65	20,97	37,28	11,55	25,03	38,51	12,61	26,93	41,25
591	1110,1	0,2	4,88	23,67	42,46	13,03	28,44	43,84	14,33	30,71	47,09
689	1295,1	0,3	5,43	26,31	47,18	14,37	31,49	48,61	15,91	34,01	52,11
787	1480,1	0,4	5,41	28,46	51,50	15,59	34,28	52,96	17,27	37,06	56,85
886	1665,1	0,4	5,82	30,65	55,49	17,57	37,25	56,94	18,39	39,79	61,20

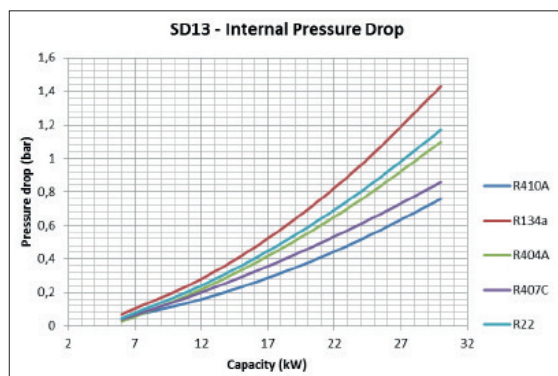
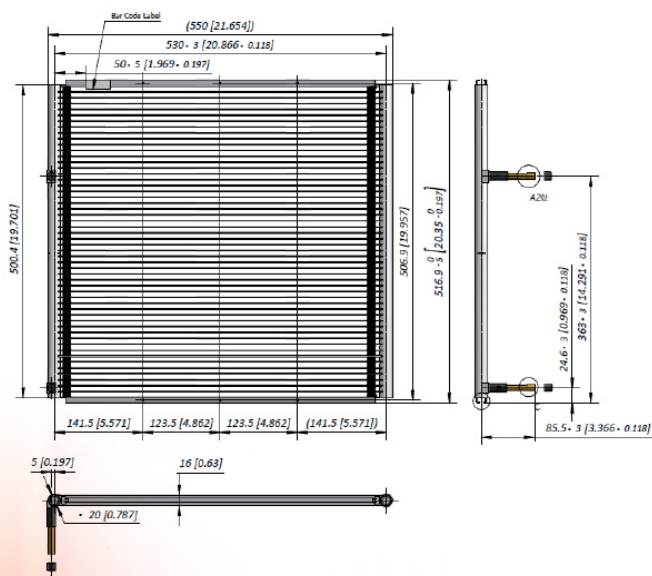
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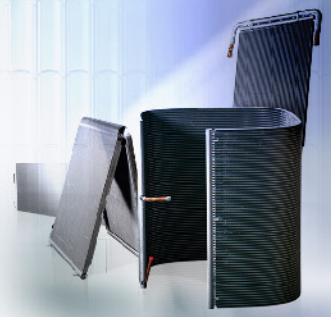
SANHUA Micro-Channel Heat Exchangers - Standard Range

SD13 Condenser

Dimensional Characteristics	Metric units		
Total length	mm	550	(L)
Total height	mm	516,9	(H)
Manifold diameter	mm	20	(Ø D)
Heat exchanger length	mm	510	(L1)
Heat exchanger height	mm	500,4	(H1)
Heat exchanger front surface	m ²	0,255204	(S)
Solder Connections			
Inlet connection (ID)	mm	9,7	(Ø IN)
Outlet connection (ID)	mm	8,2	(Ø OUT)
Internal Nomenclature:	16-FPI23-2G		
Coil Depth	mm	16	(cD)
Fins Distance	mm	1,1	
Fin height	mm	8,1	
Tubes height	mm	1,3	
Total internal volume	liters	0,4	
Coil Internal Volume	liters	0,1978	
Manifold Internal Volume	liters	0,2022	
Number of tubes		52	(-)
Number of passes		2	(-)
Pass Distribution (step 1/2)		28/24	
Physical Characteristics			
Max. Operating Pressure:	MPa	4,5	(PS)
Burst pressure:	MPa	13,5	
Temperature Range:	°C	-40 / 150	(TS)
Coil weight	kg	2,1	
Material			
Tube:	-	LLA	
Fins:	-	AA3003	
Manifold:	-	AA3003	
Inlet/Outlet tubes:	-	Copper	
Side plate:	-	AA3003	
Approval:			
PED	-	Art. 3.3	
UL	-	UL 207	

Dimensional Characteristics	Imperial units		
Total length	in	21,65	(L)
Total height	in	20,35	(H)
Manifold diameter	in	0,79	(Ø D)
Heat exchanger length	in	20,08	(L1)
Heat exchanger height	in	19,70	(H1)
Heat exchanger front surface	in ²	395,6	(S)
Solder Connections			
Inlet connection (ID)	in	3/8"	(Ø IN)
Outlet connection (ID)	in	5/16"	(Ø OUT)
Internal Nomenclature:	16-FPI23-2G		
Coil Depth	in	0,63	(cD)
Fins Per Inch	FPI	23	
Fin height	in	0,32	
Tubes height	in	0,05	
Total internal volume	in ³	24,41	
Coil Internal Volume	in ³	12,07	
Manifold Internal Volume	in ³	12,34	
Number of tubes		52	(-)
Number of passes		2	(-)
Pass Distribution (step 1/2)		28/24	
Physical Characteristics			
Max. Operating Pressure:	psi	652,7	(PS)
Burst pressure:	psi	1958,0	
Temperature Range:	°F	-40 / 302	(TS)
Coil weight	lb	4,63	
Material			
Tube:	-	LLA	
Fins:	-	AA3003	
Manifold:	-	AA3003	
Inlet/Outlet tubes:	-	Copper	
Side plate:	-	AA3003	
Approval:			
PED	-	Art. 3.3	
UL	-	UL 207	





Performance Data (Metric Units)

Air Speed (m/s)	Air Flow (m ³ /h)	Air Pressure Drops (Pa)	Capacity (kW)								
			R410A			R134a			R404A		
			ΔT=10K	ΔT=20K	ΔT=30K	ΔT=10K	ΔT=20K	ΔT=30K	ΔT=10K	ΔT=20K	ΔT=30K
1	883,4	13,5	2,42	5,05	8,04	2,29	4,88	7,46	2,33	5,30	8,27
1,5	1325,1	23,6	3,24	6,99	11,28	3,15	6,75	10,35	3,17	7,28	11,38
2	1766,8	35,1	4,06	8,81	14,36	3,89	8,46	13,04	3,89	9,12	14,35
2,5	2208,5	47,7	4,89	10,83	17,09	4,53	10,18	15,83	4,51	10,78	17,04
3	2650,2	61,3	5,71	12,42	19,62	5,12	11,60	18,08	5,08	12,30	19,52
3,5	3091,9	75,8	6,54	13,90	21,97	5,65	12,90	20,15	5,55	13,68	21,81
4	3533,6	91,0	7,36	15,32	24,19	6,13	14,09	22,06	6,02	14,98	23,94
4,5	3975,3	107,1	8,18	16,59	26,26	6,56	15,20	23,84	6,41	16,11	25,81

A

Air Speed (m/s)	Air Flow (m ³ /h)	Air Pressure Drops (Pa)	Capacity (kW)								
			R407C			R22			R507		
			ΔT=10K	ΔT=20K	ΔT=30K	ΔT=10K	ΔT=20K	ΔT=30K	ΔT=10K	ΔT=20K	ΔT=30K
1	883,4	13,5	2,22	4,65	7,07	2,33	4,87	7,41	2,33	5,30	8,27
1,5	1325,1	23,6	2,95	6,37	9,79	3,10	6,70	10,29	3,17	7,28	11,38
2	1766,8	35,1	3,66	8,23	12,79	3,82	8,58	13,33	3,89	9,12	14,35
2,5	2208,5	47,7	4,32	9,76	15,20	4,50	10,16	15,82	4,51	10,78	17,04
3	2650,2	61,3	4,96	11,32	17,67	5,09	11,60	18,10	5,08	12,30	19,52
3,5	3091,9	75,8	5,55	12,74	19,94	5,62	12,91	20,20	5,55	13,68	21,81
4	3533,6	91,0	6,08	14,07	22,05	6,12	14,14	22,17	6,02	14,98	23,94
4,5	3975,3	107,1	6,57	15,29	24,02	6,57	15,28	24,00	6,41	16,11	25,81

B

Performance Data (Imperial Units)

Air Speed (ft/min)	Air Flow (cfm)	Air Pressure Drops (in H ₂ O)	Capacity (Btu/h x 1000)								
			R410A			R134a			R404A		
			ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F
197	519,9	0,1	8,25	17,25	27,45	7,82	16,65	25,48	7,95	18,09	28,24
295	779,9	0,1	11,06	23,87	38,51	10,74	23,04	35,33	10,84	24,85	38,86
394	1039,9	0,1	13,88	30,10	49,04	13,27	28,89	44,52	13,28	31,13	48,99
492	1299,9	0,2	16,69	36,99	58,37	15,48	34,77	54,05	15,41	36,81	58,20
591	1559,8	0,2	19,50	42,42	67,02	17,50	39,62	61,74	17,37	42,02	66,67
689	1819,8	0,3	22,32	47,46	75,04	19,29	44,04	68,80	18,94	46,72	74,49
787	2079,8	0,4	25,13	52,31	82,62	20,92	48,14	75,35	20,55	51,16	81,76
886	2339,8	0,4	27,95	56,64	89,70	22,42	51,92	81,43	21,90	55,02	88,14

A

Air Speed (ft/min)	Air Flow (cfm)	Air Pressure Drops (in H ₂ O)	Capacity (Btu/h x 1000)								
			R407C			R22			R507		
			ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F
197	519,9	0,1	7,60	15,87	24,14	7,97	16,64	25,31	7,95	18,09	28,24
295	779,9	0,1	10,07	21,75	33,43	10,58	22,86	35,15	10,84	24,85	38,86
394	1039,9	0,1	12,52	28,09	43,67	13,05	29,29	45,53	13,28	31,13	48,99
492	1299,9	0,2	14,75	33,32	51,90	15,35	34,69	54,03	15,41	36,81	58,20
591	1559,8	0,2	16,95	38,64	60,34	17,37	39,60	61,83	17,37	42,02	66,67
689	1819,8	0,3	18,95	43,52	68,09	19,20	44,10	68,99	18,94	46,72	74,49
787	2079,8	0,4	20,77	48,05	75,32	20,88	48,30	75,72	20,55	51,16	81,76
886	2339,8	0,4	22,45	52,23	82,02	22,43	52,20	81,96	21,90	55,02	88,14

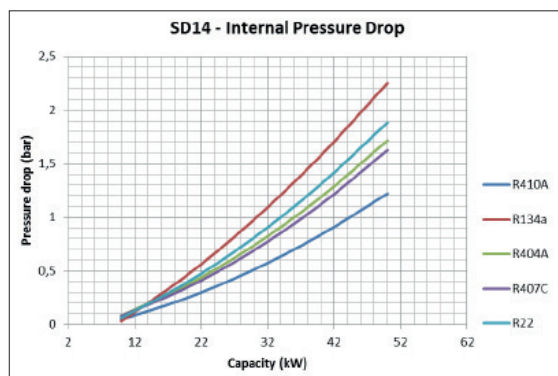
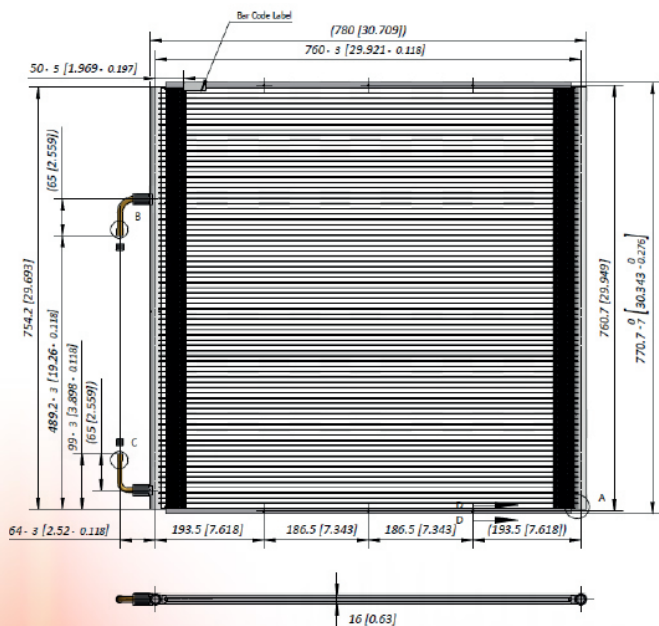
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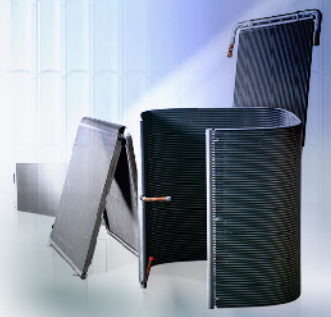
SANHUA *Micro-Channel Heat Exchangers - Standard Range*

SD14 Condenser

Dimensional Characteristics	Metric units		
Total length	mm	780	(L)
Total height	mm	770,7	(H)
Manifold diameter	mm	20	(Ø D)
Heat exchanger length	mm	740	(L1)
Heat exchanger height	mm	754,2	(H1)
Heat exchanger front surface	m ²	0,558108	(S)
Solder Connections			
Inlet connection (ID)	mm	9,7	(Ø IN)
Outlet connection (ID)	mm	8,2	(Ø OUT)
Internal Nomenclature:	16-FPI23-2G		
Coil Depth	mm	16	(cD)
Fins Distance	mm	1,1	
Fin height	mm	8,1	
Tubes height	mm	1,3	
Total internal volume	liters	0,733	
Coil Internal Volume	liters	0,4361	
Manifold Internal Volume	liters	0,2969	
Number of tubes		79	(-)
Number of passes		2	(-)
Pass Distribution (step 1/2)		42/37	
Physical Characteristics			
Max. Operating Pressure:	MPa	4,5	(PS)
Burst pressure:	MPa	13,5	
Temperature Range:	°C	-40 / 150	(TS)
Coil weight	kg	4,4	
Material			
Tube:	-	LLA	
Fins:	-	AA3003	
Manifold:	-	AA3003	
Inlet/Outlet tubes:	-	Copper	
Side plate:	-	AA3003	
Approval:			
PED	-	Art. 3.3	
UL	-	UL 207	

Dimensional Characteristics	Imperial units		
Total length	in	30,71	(L)
Total height	in	30,34	(H)
Manifold diameter	in	0,79	(Ø D)
Heat exchanger length	in	29,13	(L1)
Heat exchanger height	in	29,69	(H1)
Heat exchanger front surface	in ²	865,1	(S)
Solder Connections			
Inlet connection (ID)	in	3/8"	(Ø IN)
Outlet connection (ID)	in	5/16"	(Ø OUT)
Internal Nomenclature:	16-FPI23-2G		
Coil Depth	in	0,63	(cD)
Fins Per Inch	FPI	23	
Fin height	in	0,32	
Tubes height	in	0,05	
Total internal volume	in ³	44,73	
Coil Internal Volume	in ³	26,61	
Manifold Internal Volume	in ³	18,12	
Number of tubes		79	(-)
Number of passes		2	(-)
Pass Distribution (step 1/2)		42/37	
Physical Characteristics			
Max. Operating Pressure:	psi	652,7	(PS)
Burst pressure:	psi	1958,0	
Temperature Range:	°F	-40 / 302	(TS)
Coil weight	lb	9,70	
Material			
Tube:	-	LLA	
Fins:	-	AA3003	
Manifold:	-	AA3003	
Inlet/Outlet tubes:	-	Copper	
Side plate:	-	AA3003	
Approval:			
PED	-	Art. 3.3	
UL	-	UL 207	





Performance Data (Metric Units)

Air Speed (m/s)	Air Flow (m ³ /h)	Air Pressure Drops (Pa)	Capacity (kW)								
			R410A			R134a			R404A		
			ΔT=10K	ΔT=20K	ΔT=30K	ΔT=10K	ΔT=20K	ΔT=30K	ΔT=10K	ΔT=20K	ΔT=30K
1	1950,7	13,3	5,45	12,40	19,36	5,47	11,05	16,63	5,36	11,69	18,01
1,5	2935,5	23,3	7,54	16,79	26,04	7,19	15,44	23,70	7,33	16,36	25,39
2	3920,4	34,6	9,26	20,73	32,19	8,80	19,19	29,58	8,92	20,42	31,93
2,5	4886,2	47,1	10,94	24,55	38,16	10,28	22,48	34,69	10,41	24,04	37,66
3	5871,0	60,5	12,38	28,07	43,75	11,56	25,45	39,34	11,69	27,33	42,98
3,5	6855,9	74,8	13,69	31,29	48,90	12,71	28,13	43,54	12,80	30,30	47,80
4	7821,7	89,8	14,86	34,22	53,57	13,72	30,48	47,25	13,81	32,99	52,18
4,5	8806,5	105,6	15,95	37,02	58,08	14,66	32,68	50,70	14,54	35,42	56,30

A

Air Speed (m/s)	Air Flow (m ³ /h)	Air Pressure Drops (Pa)	Capacity (kW)								
			R407C			R22			R507		
			ΔT=10K	ΔT=20K	ΔT=30K	ΔT=10K	ΔT=20K	ΔT=30K	ΔT=10K	ΔT=20K	ΔT=30K
1	1950,7	13,3	5,23	11,03	16,82	5,19	10,95	16,72	5,36	11,69	18,01
1,5	2935,5	23,3	6,89	14,86	22,82	7,17	15,46	23,75	7,33	16,36	25,39
2	3920,4	34,6	8,55	18,62	28,70	8,87	19,33	29,80	8,92	20,42	31,93
2,5	4886,2	47,1	10,00	21,94	33,88	10,36	22,73	35,10	10,41	24,04	37,66
3	5871,0	60,5	11,32	25,00	38,69	11,70	25,84	39,98	11,69	27,33	42,98
3,5	6855,9	74,8	12,54	27,81	43,08	12,93	28,67	44,41	12,80	30,30	47,80
4	7821,7	89,8	13,88	30,48	47,08	14,27	31,34	48,41	13,81	32,99	52,18
4,5	8806,5	105,6	14,66	32,75	50,84	15,05	33,62	52,20	14,54	35,42	56,30

B

Performance Data (Imperial Units)

Air Speed (ft/min)	Air Flow (cfm)	Air Pressure Drops (in H ₂ O)	Capacity (Btu/h x 1000)								
			R410A			R134a			R404A		
			ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F
197	1148,1	0,1	18,60	42,35	66,11	18,68	37,74	56,80	18,30	39,91	61,51
295	1727,8	0,1	25,75	57,35	88,94	24,56	52,74	80,93	25,02	55,86	86,70
394	2307,4	0,1	31,64	70,78	109,92	30,04	65,53	101,02	30,47	69,75	109,03
492	2875,9	0,2	37,34	83,83	130,32	35,10	76,78	118,46	35,55	82,08	128,62
591	3455,5	0,2	42,28	95,85	149,41	39,49	86,92	134,34	39,91	93,34	146,77
689	4035,2	0,3	46,74	106,86	166,99	43,42	96,07	148,71	43,70	103,48	163,26
787	4603,7	0,4	50,76	116,85	182,95	46,84	104,10	161,37	47,17	112,68	178,19
886	5183,3	0,4	54,49	126,42	198,35	50,08	111,61	173,15	49,65	120,96	192,27

A

Air Speed (ft/min)	Air Flow (cfm)	Air Pressure Drops (in H ₂ O)	Capacity (Btu/h x 1000)								
			R407C			R22			R507		
			ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F
197	1148,1	0,1	17,85	37,66	57,46	17,74	37,41	57,08	18,30	39,91	61,51
295	1727,8	0,1	23,53	50,74	77,94	24,48	52,79	81,10	25,02	55,86	86,70
394	2307,4	0,1	29,19	63,60	98,01	30,30	66,03	101,76	30,47	69,75	109,03
492	2875,9	0,2	34,16	74,94	115,72	35,38	77,62	119,86	35,55	82,08	128,62
591	3455,5	0,2	38,66	85,39	132,12	39,95	88,24	136,53	39,91	93,34	146,77
689	4035,2	0,3	42,83	94,98	147,12	44,16	97,91	151,67	43,70	103,48	163,26
787	4603,7	0,4	47,40	104,10	160,79	48,73	107,03	165,32	47,17	112,68	178,19
886	5183,3	0,4	50,06	111,85	173,64	51,39	114,83	178,27	49,65	120,96	192,27

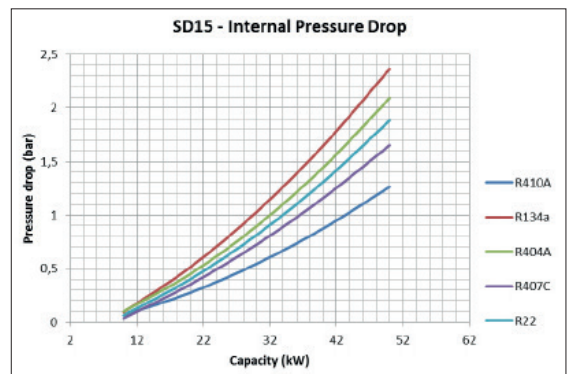
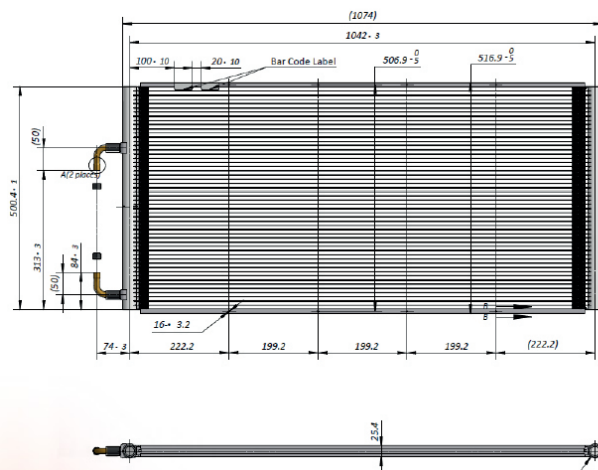
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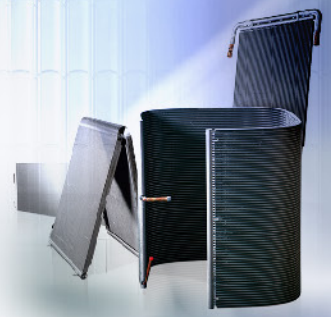
SANHUA *Micro-Channel Heat Exchangers - Standard Range*

SD15 Condenser

Dimensional Characteristics	Metric units		
Total length	mm	1074	(L)
Total height	mm	516,9	(H)
Manifold diameter	mm	32	(Ø D)
Heat exchanger length	mm	1010	(L1)
Heat exchanger height	mm	500,4	(H1)
Heat exchanger front surface	m ²	0,505404	(S)
Solder Connections			
Inlet connection (ID)	mm	12,9	(Ø IN)
Outlet connection (ID)	mm	12,9	(Ø OUT)
Internal Nomenclature:	25.4-FPI23-2G		
Coil Depth	mm	25,4	(cD)
Fins Distance	mm	1,1	
Fin height	mm	8,1	
Tubes height	mm	1,3	
Total internal volume	liters	1,152	
Coil Internal Volume	liters	0,6417	
Manifold Internal Volume	liters	0,5103	
Number of tubes		52	(-)
Number of passes		2	(-)
Pass Distribution (step 1/2)		28/24	
Physical Characteristics		Metric units	
Max. Operating Pressure:	MPa	4,5	(PS)
Burst pressure:	MPa	13,5	
Temperature Range:	°C	-40 / 150	(TS)
Coil weight	kg	6,4	
Material			
Tube:	-	LLA	
Fins:	-	AA3003	
Manifold:	-	AA3003	
Inlet/Outlet tubes:	-	Copper	
Side plate:	-	AA3003	
Approval:			
PED	-	Cat. I	
UL	-	UL 207	

Dimensional Characteristics	Imperial units		
Total length	in	42,28	(L)
Total height	in	20,35	(H)
Manifold diameter	in	1,26	(Ø D)
Heat exchanger length	in	39,76	(L1)
Heat exchanger height	in	19,70	(H1)
Heat exchanger front surface	in ²	783,4	(S)
Solder Connections			
Inlet connection (ID)	in	1/2"	(Ø IN)
Outlet connection (ID)	in	1/2"	(Ø OUT)
Internal Nomenclature:	25.4-FPI23-2G		
Coil Depth	in	1,00	(cD)
Fins Per Inch	FPI	23	
Fin height	in	0,32	
Tubes height	in	0,05	
Total internal volume	in ³	70,30	
Coil Internal Volume	in ³	39,16	
Manifold Internal Volume	in ³	31,14	
Number of tubes		52	(-)
Number of passes		2	(-)
Pass Distribution (step 1/2)		28/24	
Physical Characteristics		Metric units	
Max. Operating Pressure:	psi	652,7	(PS)
Burst pressure:	psi	1958,0	
Temperature Range:	°F	-40 / 302	(TS)
Coil weight	lb	14,11	
Material			
Tube:	-	LLA	
Fins:	-	AA3003	
Manifold:	-	AA3003	
Inlet/Outlet tubes:	-	Copper	
Side plate:	-	AA3003	
Approval:			
PED	-	Cat. I	
UL	-	UL 207	





Performance Data (Metric Units)

Air Speed (m/s)	Air Flow (m ³ /h)	Air Pressure Drops (Pa)	Capacity (kW)								
			R410A			R134a			R404A		
			ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K
1	1749,5	18,2	5,68	11,77	17,86	5,19	10,94	16,70	6,00	11,63	17,25
1,5	2624,2	30,7	7,81	16,83	25,85	7,31	15,35	23,38	7,56	16,22	24,89
2	3499,0	45,4	9,80	21,08	32,35	9,19	19,40	29,61	9,51	20,69	31,87
2,5	4373,7	62,2	11,70	25,25	38,80	10,86	23,07	35,28	11,28	24,75	38,22
3	5248,4	81,2	13,44	29,23	45,02	12,63	26,54	40,44	12,86	28,51	44,15
3,5	6123,2	102,4	15,07	32,96	50,84	13,74	29,43	45,13	14,30	31,95	49,59
4	6997,9	125,7	16,59	36,45	56,31	14,90	32,10	49,30	16,04	35,32	54,60
4,5	7872,6	151,2	17,98	39,72	61,45	16,14	34,55	52,96	18,13	38,72	59,30

A

Air Speed (m/s)	Air Flow (m ³ /h)	Air Pressure Drops (Pa)	Capacity (kW)								
			R407C			R22			R507		
			ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K
1	1749,5	18,2	5,79	10,59	15,39	5,33	11,02	16,72	6,00	11,63	17,25
1,5	2624,2	30,7	7,76	15,11	22,46	7,34	15,54	23,75	7,56	16,22	24,89
2	3499,0	45,4	9,61	19,20	28,78	9,29	19,54	29,80	9,51	20,69	31,87
2,5	4373,7	62,2	11,21	22,90	34,58	11,05	23,07	35,10	11,28	24,75	38,22
3	5248,4	81,2	12,67	26,30	39,93	12,66	26,32	39,98	12,86	28,51	44,15
3,5	6123,2	102,4	13,96	29,47	44,98	14,14	29,27	44,41	14,30	31,95	49,59
4	6997,9	125,7	15,16	32,33	49,49	15,50	31,96	48,41	16,04	35,32	54,60
4,5	7872,6	151,2	16,39	34,91	53,43	16,78	34,49	52,20	18,13	38,72	59,30

B

Performance Data (Imperial Units)

Air Speed (ft/min)	Air Flow (cfm)	Air Pressure Drops (in H ₂ O)	Capacity (Btu/h x 1000)								
			R410A			R134a			R404A		
			ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F
197	1029,7	0,1	19,41	40,21	61,01	17,72	37,37	57,03	20,48	39,70	58,93
295	1544,6	0,1	26,66	57,47	88,29	24,96	52,41	79,86	25,82	55,40	84,99
394	2059,4	0,2	33,47	71,98	110,49	31,38	66,25	101,12	32,49	70,67	108,85
492	2574,3	0,2	39,94	86,23	132,52	37,09	78,78	120,48	38,53	84,52	130,51
591	3089,1	0,3	45,91	99,83	153,75	43,15	90,63	138,10	43,92	97,35	150,78
689	3604,0	0,4	51,47	112,55	173,63	46,91	100,52	154,13	48,85	109,10	169,35
787	4118,8	0,5	56,65	124,47	192,30	50,88	109,63	168,38	54,79	120,64	186,48
886	4633,7	0,6	61,42	135,64	209,85	55,11	118,00	180,88	61,93	132,23	202,53

A

Air Speed (ft/min)	Air Flow (cfm)	Air Pressure Drops (in H ₂ O)	Capacity (Btu/h x 1000)								
			R407C			R22			R507		
			ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F
197	1029,7	0,1	19,78	36,17	52,57	18,21	37,65	57,08	20,48	39,70	58,93
295	1544,6	0,1	26,50	51,61	76,72	25,07	53,08	81,10	25,82	55,40	84,99
394	2059,4	0,2	32,83	65,57	98,30	31,72	66,74	101,76	32,49	70,67	108,85
492	2574,3	0,2	38,30	78,20	118,09	37,73	78,80	119,86	38,53	84,52	130,51
591	3089,1	0,3	43,28	89,82	136,37	43,23	89,88	136,53	43,92	97,35	150,78
689	3604,0	0,4	47,67	100,64	153,61	48,27	99,97	151,67	48,85	109,10	169,35
787	4118,8	0,5	51,78	110,40	169,02	52,95	109,13	165,32	54,79	120,64	186,48
886	4633,7	0,6	55,96	119,23	182,49	57,29	117,78	178,27	61,93	132,23	202,53

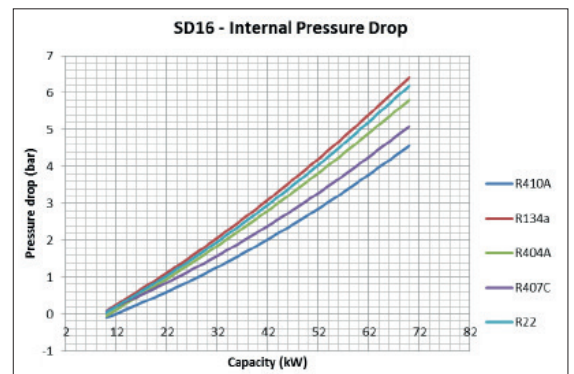
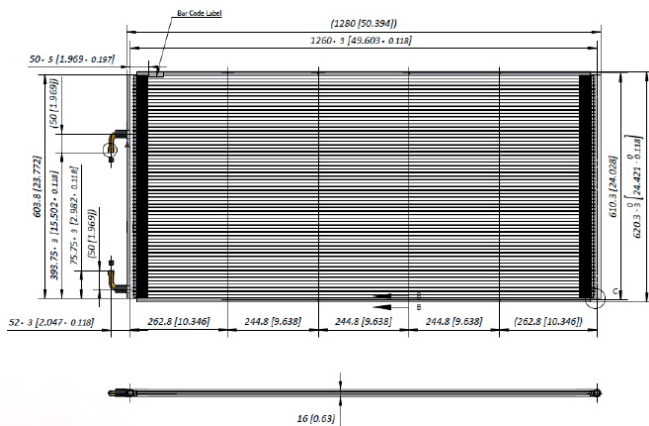
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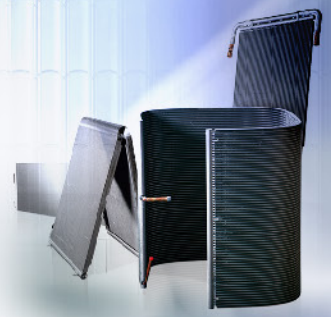
SANHUA Micro-Channel Heat Exchangers - Standard Range

SD16 Condenser

Dimensional Characteristics		Metric units	
Total length	mm	1280	(L)
Total height	mm	620,3	(H)
Manifold diameter	mm	20	(Ø D)
Heat exchanger length	mm	1240	(L1)
Heat exchanger height	mm	603,8	(H1)
Heat exchanger front surface	m ²	0,748712	(S)
Solder Connections			
Inlet connection (ID)	mm	12,9	(Ø IN)
Outlet connection (ID)	mm	12,9	(Ø OUT)
Internal Nomenclature:		16-FPI23-2G	
Coil Depth	mm	16	(cD)
Fins Distance	mm	1,1	
Fin height	mm	8,1	
Tubes height	mm	1,3	
Total internal volume	liters	0,809	
Coil Internal Volume	liters	0,5827	
Manifold Internal Volume	liters	0,2263	
Number of tubes		63	(-)
Number of passes		2	(-)
Pass Distribution (step 1/2)		43/20	
Physical Characteristics		Metric units	
Max. Operating Pressure:	MPa	4,5	(PS)
Burst pressure:	MPa	13,5	
Temperature Range:	°C	-40 / 150	(TS)
Coil weight	kg	5,9	
Material			
Tube:	-	LLA	
Fins:	-	AA3003	
Manifold:	-	AA3003	
Inlet/Outlet tubes:	-	Copper	
Side plate:	-	AA3003	
Approval:			
PED	-	Art. 3.3	
UL	-	UL 207	

Dimensional Characteristics		Imperial units	
Total length	in	50,39	(L)
Total height	in	24,42	(H)
Manifold diameter	in	0,79	(Ø D)
Heat exchanger length	in	48,82	(L1)
Heat exchanger height	in	23,77	(H1)
Heat exchanger front surface	in ²	1160,5	(S)
Solder Connections			
Inlet connection (ID)	in	1/2"	(Ø IN)
Outlet connection (ID)	in	1/2"	(Ø OUT)
Internal Nomenclature:		16-FPI23-2G	
Coil Depth	in	0,63	(cD)
Fins Per Inch	FPI	23	
Fin height	in	0,32	
Tubes height	in	0,05	
Total internal volume	in ³	49,37	
Coil Internal Volume	in ³	35,56	
Manifold Internal Volume	in ³	13,81	
Number of tubes		63	(-)
Number of passes		2	(-)
Pass Distribution (step 1/2)		43/20	
Physical Characteristics		Metric units	
Max. Operating Pressure:	psi	652,7	(PS)
Burst pressure:	psi	1958,0	
Temperature Range:	°F	-40 / 302	(TS)
Coil weight	lb	13,00	
Material			
Tube:	-	LLA	
Fins:	-	AA3003	
Manifold:	-	AA3003	
Inlet/Outlet tubes:	-	Copper	
Side plate:	-	AA3003	
Approval:			
PED	-	Art. 3.3	
UL	-	UL 207	





Performance Data (Metric Units)

Air Speed (m/s)	Air Flow (m ³ /h)	Air Pressure Drops (Pa)	Capacity (kW)								
			R410A			R134a			R404A		
			ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K
1	2616,9	13,8	7,48	16,10	24,72	7,46	15,05	22,65	7,33	15,69	24,06
1,5	3912,6	23,8	10,64	22,33	34,02	9,60	20,28	30,95	10,50	21,96	33,42
2	5208,4	35,1	13,34	27,95	42,56	11,72	24,83	37,94	12,97	27,26	41,55
2,5	6529,5	47,5	15,81	33,12	50,42	13,56	28,90	44,24	15,35	32,07	48,80
3	7825,2	60,8	18,01	37,70	57,39	15,13	32,46	49,80	17,20	36,13	55,07
3,5	9121,0	74,9	19,92	41,84	63,76	16,92	35,54	54,17	18,94	39,85	60,76
4	10442,1	89,7	21,76	45,53	69,30	18,39	38,41	58,44	20,54	43,27	66,00
4,5	11737,9	105,2	23,44	48,78	74,12	19,56	40,50	61,44	21,58	46,12	70,67

A

Air Speed (m/s)	Air Flow (m ³ /h)	Air Pressure Drops (Pa)	Capacity (kW)								
			R407C			R22			R507		
			ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K
1	2616,9	13,8	7,28	14,54	21,80	7,00	14,84	22,67	7,33	15,69	24,06
1,5	3912,6	23,8	10,00	20,17	30,34	9,66	20,53	31,41	10,50	21,96	33,42
2	5208,4	35,1	12,40	25,06	37,73	12,02	25,47	38,93	12,97	27,26	41,55
2,5	6529,5	47,5	14,76	29,57	44,37	14,42	29,93	45,44	15,35	32,07	48,80
3	7825,2	60,8	16,58	33,51	50,45	16,28	33,83	51,38	17,20	36,13	55,07
3,5	9121,0	74,9	18,22	36,99	55,77	17,95	37,28	56,61	18,94	39,85	60,76
4	10442,1	89,7	19,88	40,00	60,12	19,50	40,40	61,30	20,54	43,27	66,00
4,5	11737,9	105,2	21,23	42,83	64,43	20,88	43,19	65,49	21,58	46,12	70,67

B

Performance Data (Imperial Units)

Air Speed (ft/min)	Air Flow (cfm)	Air Pressure Drops (in H ₂ O)	Capacity (Btu/h x 1000)								
			R410A			R134a			R404A		
			ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F
197	1540,2	0,1	25,55	54,99	84,43	25,47	51,40	77,34	25,03	53,60	82,17
295	2302,9	0,1	36,33	76,26	116,19	32,80	69,25	105,71	35,85	74,99	114,13
394	3065,6	0,1	45,57	95,46	145,35	40,04	84,81	129,59	44,28	93,08	141,88
492	3843,1	0,2	53,99	113,09	172,20	46,32	98,71	151,09	52,42	109,54	166,66
591	4605,8	0,2	61,51	128,75	196,00	51,67	110,87	170,08	58,72	123,40	188,08
689	5368,4	0,3	68,03	142,88	217,74	57,78	121,39	184,99	64,68	136,10	207,52
787	6146,0	0,4	74,32	155,50	236,68	62,79	131,18	199,57	70,15	147,78	225,40
886	6908,7	0,4	80,04	166,58	253,12	66,79	138,31	209,83	73,69	157,52	241,35

A

Air Speed (ft/min)	Air Flow (cfm)	Air Pressure Drops (in H ₂ O)	Capacity (Btu/h x 1000)								
			R407C			R22			R507		
			ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F
197	1540,2	0,1	24,87	49,66	74,45	23,92	50,67	77,42	25,03	53,60	82,17
295	2302,9	0,1	34,16	68,88	103,60	32,99	70,13	107,27	35,85	74,99	114,13
394	3065,6	0,1	42,34	85,60	128,86	41,04	86,99	132,95	44,28	93,08	141,88
492	3843,1	0,2	50,42	100,98	151,53	49,23	102,21	155,20	52,42	109,54	166,66
591	4605,8	0,2	56,62	114,46	172,29	55,59	115,54	175,49	58,72	123,40	188,08
689	5368,4	0,3	62,22	126,34	190,47	61,30	127,31	193,33	64,68	136,10	207,52
787	6146,0	0,4	67,89	136,61	205,33	66,59	137,96	209,33	70,15	147,78	225,40
886	6908,7	0,4	72,49	146,26	220,03	71,31	147,49	223,67	73,69	157,52	241,35

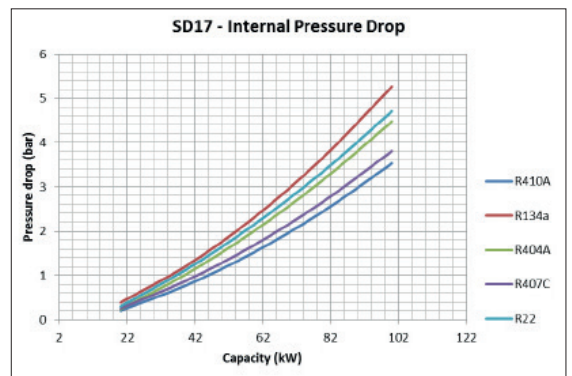
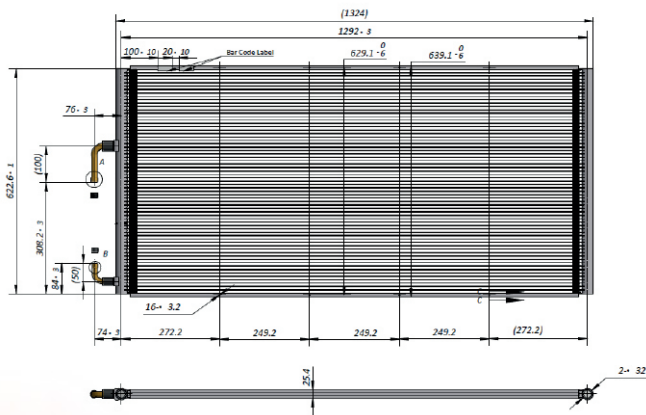
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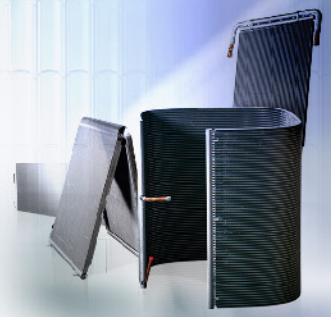
SANHUA *Micro-Channel Heat Exchangers - Standard Range*

SD17 Condenser

Dimensional Characteristics	Metric units		
Total length	mm	1324	(L)
Total height	mm	639,1	(H)
Manifold diameter	mm	20	(Ø D)
Heat exchanger length	mm	1284	(L1)
Heat exchanger height	mm	622,6	(H1)
Heat exchanger front surface	m ²	0,7994184	(S)
Solder Connections			
Inlet connection (ID)	mm	15,88	(Ø IN)
Outlet connection (ID)	mm	12,9	(Ø OUT)
Internal Nomenclature:		25.4-FPI23-2G	
Coil Depth	mm	25,4	(cD)
Fins Distance	mm	1,1	
Fin height	mm	8,1	
Tubes height	mm	1,3	
Total internal volume	liters	1,634	
Coil Internal Volume	liters	1,0085	
Manifold Internal Volume	liters	0,6255	
Number of tubes		65	(-)
Number of passes		2	(-)
Pass Distribution (step 1/2)		45/20	
Physical Characteristics			
Max. Operating Pressure:	MPa	4,5	(PS)
Burst pressure:	MPa	13,5	
Temperature Range:	°C	-40 / 150	(TS)
Coil weight	kg	9,6	
Material			
Tube:	-	LLA	
Fins:	-	AA3003	
Manifold:	-	AA3003	
Inlet/Outlet tubes:	-	Copper	
Side plate:	-	AA3003	
Approval:			
PED	-	Cat. I	
UL	-	UL 207	

Dimensional Characteristics	Imperial units		
Total length	in	52,13	(L)
Total height	in	25,16	(H)
Manifold diameter	in	0,79	(Ø D)
Heat exchanger length	in	50,55	(L1)
Heat exchanger height	in	24,51	(H1)
Heat exchanger front surface	in ²	1239,1	(S)
Solder Connections			
Inlet connection (ID)	in	5/8"	(Ø IN)
Outlet connection (ID)	in	1/2"	(Ø OUT)
Internal Nomenclature:		25.4-FPI23-2G	
Coil Depth	in	1,00	(cD)
Fins Per Inch	FPI	23	
Fin height	in	0,32	
Tubes height	in	0,05	
Total internal volume	in ³	99,71	
Coil Internal Volume	in ³	61,54	
Manifold Internal Volume	in ³	38,17	
Number of tubes		65	(-)
Number of passes		2	(-)
Pass Distribution (step 1/2)		45/20	
Physical Characteristics			
Max. Operating Pressure:	psi	652,7	(PS)
Burst pressure:	psi	1958,0	
Temperature Range:	°F	-40 / 302	(TS)
Coil weight	lb	21,16	
Material			
Tube:	-	LLA	
Fins:	-	AA3003	
Manifold:	-	AA3003	
Inlet/Outlet tubes:	-	Copper	
Side plate:	-	AA3003	
Approval:			
PED	-	Cat. I	
UL	-	UL 207	





Performance Data (Metric Units)

Air Speed (m/s)	Air Flow (m ³ /h)	Air Pressure Drops (Pa)	Capacity (kW)								
			R410A			R134a			R404A		
			ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K
1	2740,9	17,7	8,34	18,30	28,27	8,96	17,28	25,60	8,27	17,65	27,04
1,5	4098,3	29,9	12,13	25,58	39,03	11,91	24,27	36,63	11,96	25,41	38,87
2	5481,7	44,2	15,59	32,98	50,36	14,66	30,57	46,49	15,70	32,64	49,57
2,5	6839,1	60,7	19,07	39,88	60,68	17,23	36,23	55,23	18,76	39,25	59,73
3	8196,6	79,2	22,10	46,21	70,32	19,59	41,52	63,45	21,62	45,30	68,97
3,5	9580,0	99,8	24,94	52,21	79,47	21,77	46,08	70,39	24,34	50,88	77,43
4	10937,4	122,6	27,64	57,78	87,92	23,75	50,10	76,45	26,80	56,01	85,22
4,5	12294,9	147,4	30,09	62,99	95,89	25,53	53,53	81,54	28,86	60,68	92,50

A

Air Speed (m/s)	Air Flow (m ³ /h)	Air Pressure Drops (Pa)	Capacity (kW)								
			R407C			R22			R507		
			ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K
1	2740,9	17,7	9,28	16,89	24,51	9,68	17,63	25,58	8,27	17,65	27,04
1,5	4098,3	29,9	12,00	23,64	35,28	12,46	24,55	36,64	11,96	25,41	38,87
2	5481,7	44,2	14,60	29,88	45,17	15,17	31,05	46,94	15,70	32,64	49,57
2,5	6839,1	60,7	17,17	35,67	54,17	17,80	36,97	56,15	18,76	39,25	59,73
3	8196,6	79,2	19,58	40,93	62,28	20,36	42,57	64,78	21,62	45,30	68,97
3,5	9580,0	99,8	21,90	45,71	69,51	22,85	47,67	72,50	24,34	50,88	77,43
4	10937,4	122,6	24,03	49,94	75,85	25,26	52,50	79,73	26,80	56,01	85,22
4,5	12294,9	147,4	25,97	53,63	81,30	27,60	57,01	86,41	28,86	60,68	92,50

B

Performance Data (Imperial Units)

Air Speed (ft/min)	Air Flow (cfm)	Air Pressure Drops (in H ₂ O)	Capacity (Btu/h x 1000)								
			R410A			R134a			R404A		
			ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F
197	1613,2	0,1	28,47	62,50	96,53	30,59	59,00	87,41	28,24	60,29	92,34
295	2412,2	0,1	41,41	87,35	133,29	40,66	82,89	125,11	40,85	86,79	132,73
394	3226,4	0,2	53,24	112,62	172,00	50,08	104,42	158,76	53,63	111,46	169,30
492	4025,4	0,2	65,13	136,18	207,24	58,83	123,73	188,63	64,08	134,04	203,99
591	4824,3	0,3	75,46	157,81	240,16	66,91	141,80	216,68	73,85	154,70	235,55
689	5638,6	0,4	85,18	178,29	271,40	74,34	157,37	240,40	83,12	173,77	264,43
787	6437,5	0,5	94,41	197,34	300,27	81,10	171,09	261,08	91,53	191,29	291,05
886	7236,5	0,6	102,78	215,13	327,49	87,20	182,83	278,46	98,57	207,24	315,91

A

Air Speed (ft/min)	Air Flow (cfm)	Air Pressure Drops (in H ₂ O)	Capacity (Btu/h x 1000)								
			R407C			R22			R507		
			ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F
197	1613,2	0,1	31,68	57,68	83,69	33,07	60,21	87,35	28,24	60,29	92,34
295	2412,2	0,1	40,98	80,73	120,49	42,56	83,85	125,14	40,85	86,79	132,73
394	3226,4	0,2	49,84	102,05	154,26	51,80	106,05	160,31	53,63	111,46	169,30
492	4025,4	0,2	58,65	121,83	185,00	60,79	126,27	191,76	64,08	134,04	203,99
591	4824,3	0,3	66,85	139,78	212,71	69,53	145,39	221,24	73,85	154,70	235,55
689	5638,6	0,4	74,81	156,10	237,39	78,03	162,81	247,60	83,12	173,77	264,43
787	6437,5	0,5	82,07	170,55	259,04	86,27	179,28	272,29	91,53	191,29	291,05
886	7236,5	0,6	88,69	183,17	277,65	94,27	194,69	295,12	98,57	207,24	315,91

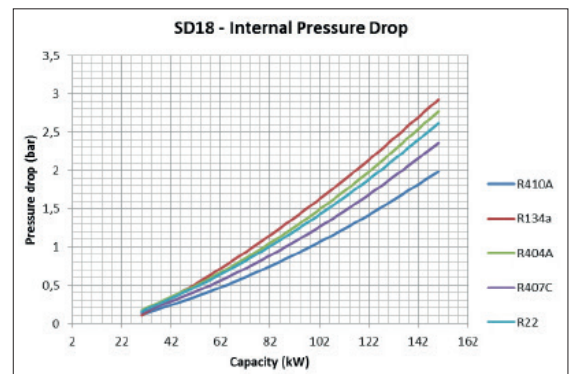
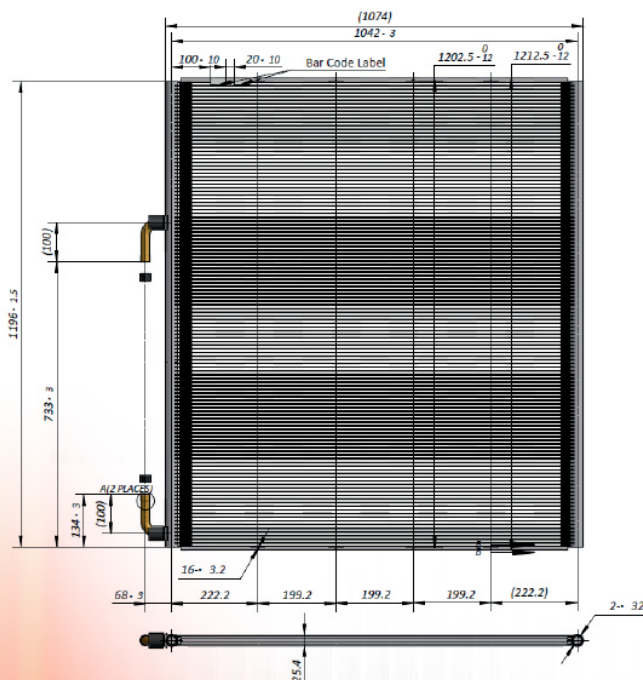
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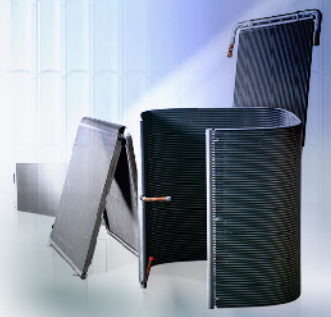
SANHUA *Micro-Channel Heat Exchangers - Standard Range*

SD18 Condenser

Dimensional Characteristics	Metric units		
Total length	mm	1074	(L)
Total height	mm	1212,5	(H)
Manifold diameter	mm	32	(Ø D)
Heat exchanger length	mm	1010	(L1)
Heat exchanger height	mm	1196	(H1)
Heat exchanger front surface	m ²	1,20796	(S)
Solder Connections			
Inlet connection (ID)	mm	22,4	(Ø IN)
Outlet connection (ID)	mm	22,4	(Ø OUT)
Internal Nomenclature:	25.4-FPI23-2G		
Coil Depth	mm	25,4	(cD)
Fins Distance	mm	1,1	
Fin height	mm	8,1	
Tubes height	mm	1,3	
Total internal volume	liters	2,794	
Coil Internal Volume	liters	1,567	
Manifold Internal Volume	liters	1,227	
Number of tubes		126	(-)
Number of passes		2	(-)
Pass Distribution (step 1/2)		76/50	
Physical Characteristics			
Max. Operating Pressure:	MPa	4,5	(PS)
Burst pressure:	MPa	13,5	
Temperature Range:	°C	-40 / 150	(TS)
Coil weight	kg	14,7	
Material			
Tube:	-	LLA	
Fins:	-	AA3003	
Manifold:	-	AA3003	
Inlet/Outlet tubes:	-	Copper	
Side plate:	-	AA3003	
Approval:			
PED	-	Cat. I	
UL	-	UL 207	

Dimensional Characteristics	Imperial units		
Total length	in	42,28	(L)
Total height	in	47,74	(H)
Manifold diameter	in	1,26	(Ø D)
Heat exchanger length	in	39,76	(L1)
Heat exchanger height	in	47,09	(H1)
Heat exchanger front surface	in ²	1872,3	(S)
Solder Connections			
Inlet connection (ID)	in	7/8"	(Ø IN)
Outlet connection (ID)	in	7/8"	(Ø OUT)
Internal Nomenclature:	25.4-FPI23-2G		
Coil Depth	in	1,00	(cD)
Fins Per Inch	FPI	23	
Fin height	in	0,32	
Tubes height	in	0,05	
Total internal volume	in ³	170,50	
Coil Internal Volume	in ³	95,62	
Manifold Internal Volume	in ³	74,88	
Number of tubes		126	(-)
Number of passes		2	(-)
Pass Distribution (step 1/2)		76/50	
Physical Characteristics			
Max. Operating Pressure:	psi	652,7	(PS)
Burst pressure:	psi	1958,0	
Temperature Range:	°F	-40 / 302	(TS)
Coil weight	lb	32,40	
Material			
Tube:	-	LLA	
Fins:	-	AA3003	
Manifold:	-	AA3003	
Inlet/Outlet tubes:	-	Copper	
Side plate:	-	AA3003	
Approval:			
PED	-	Cat. I	
UL	-	UL 207	





Performance Data (Metric Units)

Air Speed (m/s)	Air Flow (m ³ /h)	Air Pressure Drops (Pa)	Capacity (kW)								
			R410A			R134a			R404A		
			ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K
1	4263,4	17,7	14,68	28,36	42,04	14,08	26,81	39,54	13,60	27,88	42,16
1,5	6395,1	29,9	19,60	40,32	61,05	18,66	38,11	57,55	18,53	39,71	60,89
2	8568,8	44,2	24,63	51,79	78,94	22,99	48,32	73,66	23,16	50,88	78,60
2,5	10700,4	60,7	29,27	62,59	95,90	27,04	57,60	88,17	27,85	61,23	94,61
3	12832,1	79,2	31,71	71,17	110,63	30,88	66,20	101,51	31,60	70,57	109,54
3,5	14963,8	99,8	38,74	81,93	125,11	34,39	74,10	113,81	37,88	80,63	123,38
4	17095,5	122,6	42,97	90,97	138,98	37,65	81,46	125,28	41,87	89,16	136,45
4,5	19227,1	147,4	45,38	98,12	150,86	40,70	88,31	135,92	45,70	96,75	147,80

A

Air Speed (m/s)	Air Flow (m ³ /h)	Air Pressure Drops (Pa)	Capacity (kW)								
			R407C			R22			R507		
			ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K
1	4263,4	17,7	12,74	25,39	38,03	13,35	26,59	39,84	13,60	27,88	42,16
1,5	6395,1	29,9	16,77	35,91	55,05	17,47	37,41	57,36	18,53	39,71	60,89
2	8568,8	44,2	20,70	45,84	70,98	21,55	47,72	73,89	23,16	50,88	78,60
2,5	10700,4	60,7	24,51	54,95	85,39	25,50	57,16	88,83	27,85	61,23	94,61
3	12832,1	79,2	28,57	63,80	99,03	29,60	66,11	102,62	31,60	70,57	109,54
3,5	14963,8	99,8	32,51	71,97	111,44	33,70	74,61	115,52	37,88	80,63	123,38
4	17095,5	122,6	35,70	79,45	123,20	36,97	82,27	127,58	41,87	89,16	136,45
4,5	19227,1	147,4	39,96	87,26	134,56	41,31	90,21	139,11	45,70	96,75	147,80

B

Performance Data (Imperial Units)

Air Speed (ft/min)	Air Flow (cfm)	Air Pressure Drops (in H ₂ O)	Capacity (Btu/h x 1000)								
			R410A			R134a			R404A		
			ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F
197	2509,3	0,1	50,15	96,87	143,58	48,07	91,56	135,04	46,44	95,21	143,99
295	3764,0	0,1	66,92	137,71	208,49	63,74	130,15	196,55	63,28	135,62	207,95
394	5043,4	0,2	84,12	176,86	269,59	78,51	165,04	251,56	79,08	173,76	268,43
492	6298,0	0,2	99,96	213,74	327,52	92,35	196,72	301,10	95,10	209,10	323,10
591	7552,7	0,3	108,30	243,06	377,82	105,47	226,08	346,68	107,91	241,00	374,10
689	8807,3	0,4	132,31	279,79	427,26	117,45	253,06	388,66	129,36	275,36	421,35
787	10062,0	0,5	146,74	310,68	474,63	128,58	278,21	427,84	143,00	304,50	466,00
886	11316,7	0,6	154,97	335,10	515,23	139,00	301,59	464,19	156,09	330,42	504,76

A

Air Speed (ft/min)	Air Flow (cfm)	Air Pressure Drops (in H ₂ O)	Capacity (Btu/h x 1000)								
			R407C			R22			R507		
			ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F
197	2509,3	0,1	43,52	86,71	129,89	45,59	90,82	136,05	46,44	95,21	143,99
295	3764,0	0,1	57,27	122,63	188,00	59,67	127,77	195,88	63,28	135,62	207,95
394	5043,4	0,2	70,68	156,54	242,40	73,58	162,97	252,36	79,08	173,76	268,43
492	6298,0	0,2	83,72	187,68	291,63	87,09	195,22	303,35	95,10	209,10	323,10
591	7552,7	0,3	97,56	217,89	338,22	101,09	225,77	350,45	107,91	241,00	374,10
689	8807,3	0,4	111,02	245,80	380,57	115,09	254,80	394,51	129,36	275,36	421,35
787	10062,0	0,5	121,91	271,33	420,75	126,25	280,98	435,71	143,00	304,50	466,00
886	11316,7	0,6	136,47	298,01	459,55	141,08	308,08	475,09	156,09	330,42	504,76

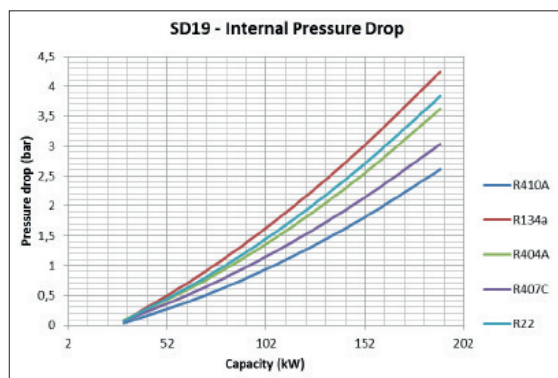
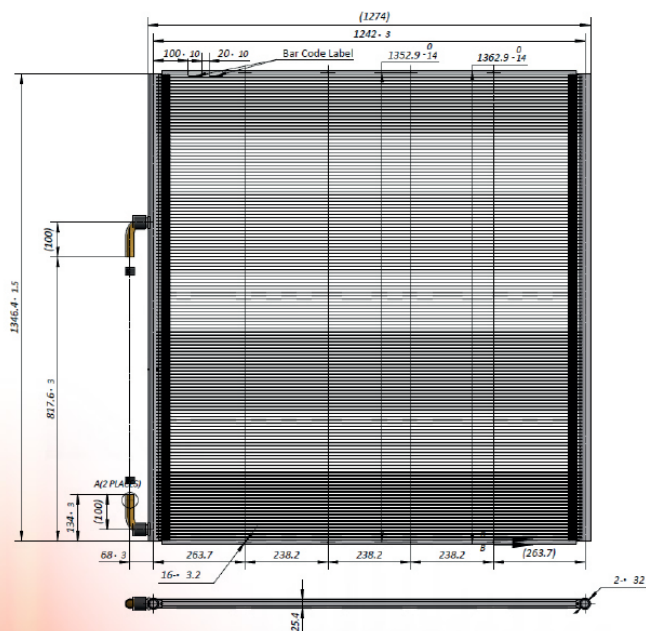
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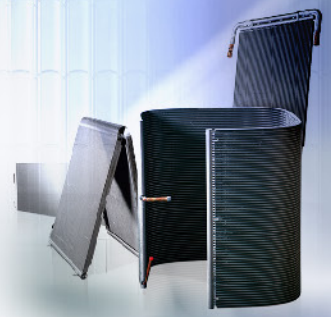
SANHUA Micro-Channel Heat Exchangers - Standard Range

SD19 Condenser

Dimensional Characteristics		Metric units	
Total length	mm	1274	(L)
Total height	mm	1362,9	(H)
Manifold diameter	mm	32	(Ø D)
Heat exchanger length	mm	1210	(L1)
Heat exchanger height	mm	1346,4	(H1)
Heat exchanger front surface	m ²	1,629144	(S)
Solder Connections			
Inlet connection (ID)	mm	22,4	(Ø IN)
Outlet connection (ID)	mm	22,4	(Ø OUT)
Internal Nomenclature:		25.4-FPI23-2G	
Coil Depth	mm	25,4	(cD)
Fins Distance	mm	1,1	
Fin height	mm	8,1	
Tubes height	mm	1,3	
Total internal volume	liters	3,486	
Coil Internal Volume	liters	2,1157	
Manifold Internal Volume	liters	1,3703	
Number of tubes		142	(-)
Number of passes		2	(-)
Pass Distribution (step 1/2)		90/52	
Physical Characteristics		Metric units	
Max. Operating Pressure:	MPa	4,5	(PS)
Burst pressure:	MPa	13,5	
Temperature Range:	°C	-40 / 150	(TS)
Coil weight	kg	19,5	
Material			
Tube:	-	LLA	
Fins:	-	AA3003	
Manifold:	-	AA3003	
Inlet/Outlet tubes:	-	Copper	
Side plate:	-	AA3003	
Approval:			
PED	-	Cat. I	
UL	-	UL 207	

Dimensional Characteristics		Imperial units	
Total length	in	50,16	(L)
Total height	in	53,66	(H)
Manifold diameter	in	1,26	(Ø D)
Heat exchanger length	in	47,64	(L1)
Heat exchanger height	in	53,01	(H1)
Heat exchanger front surface	in ²	2525,2	(S)
Solder Connections			
Inlet connection (ID)	in	7/8"	(Ø IN)
Outlet connection (ID)	in	7/8"	(Ø OUT)
Internal Nomenclature:		25.4-FPI23-2G	
Coil Depth	in	1,00	(cD)
Fins Per Inch	FPI	23	
Fin height	in	0,32	
Tubes height	in	0,05	
Total internal volume	in ³	212,73	
Coil Internal Volume	in ³	129,11	
Manifold Internal Volume	in ³	83,62	
Number of tubes		142	(-)
Number of passes		2	(-)
Pass Distribution (step 1/2)		90/52	
Physical Characteristics		Metric units	
Max. Operating Pressure:	psi	652,7	(PS)
Burst pressure:	psi	1958,0	
Temperature Range:	°F	-40 / 302	(TS)
Coil weight	lb	42,98	
Material			
Tube:	-	LLA	
Fins:	-	AA3003	
Manifold:	-	AA3003	
Inlet/Outlet tubes:	-	Copper	
Side plate:	-	AA3003	
Approval:			
PED	-	Cat. I	
UL	-	UL 207	





Performance Data (Metric Units)

Air Speed (m/s)	Air Flow (m ³ /h)	Air Pressure Drops (Pa)	Capacity (kW)								
			R410A			R134a			R404A		
			ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K
1	5806,8	17,7	16,74	37,31	57,88	17,85	35,99	54,13	14,82	36,04	57,25
1,5	8681,6	29,9	24,79	53,67	82,56	24,42	50,86	77,29	23,72	52,92	82,12
2	11556,5	44,2	32,62	69,24	105,86	30,47	63,94	97,42	31,62	68,22	104,83
2,5	14431,4	60,7	38,89	83,32	127,74	36,00	75,90	115,80	39,49	82,48	125,47
3	17363,2	79,2	46,55	97,42	148,30	41,06	86,75	132,43	45,57	95,18	144,78
3,5	20238,1	99,8	52,51	109,91	167,30	45,49	96,66	147,82	51,10	106,66	162,21
4	23113,0	122,6	58,03	121,36	184,69	49,52	105,13	160,73	56,21	117,26	178,30
4,5	25987,9	147,4	63,46	132,36	201,26	52,98	113,10	173,22	60,40	126,80	193,20

A

Air Speed (m/s)	Air Flow (m ³ /h)	Air Pressure Drops (Pa)	Capacity (kW)								
			R407C			R22			R507		
			ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K
1	5806,8	17,7	18,52	35,21	51,90	19,32	36,73	54,15	14,82	36,04	57,25
1,5	8681,6	29,9	24,69	49,56	74,44	25,55	51,30	77,06	23,72	52,92	82,12
2	11556,5	44,2	30,32	62,69	95,05	31,43	64,99	98,54	31,62	68,22	104,83
2,5	14431,4	60,7	35,76	74,84	113,91	36,96	77,35	117,74	39,49	82,48	125,47
3	17363,2	79,2	40,86	86,18	131,51	42,14	88,88	135,62	45,57	95,18	144,78
3,5	20238,1	99,8	45,65	96,53	147,40	46,98	99,33	151,69	51,10	106,66	162,21
4	23113,0	122,6	50,23	106,34	162,44	51,44	108,90	166,35	56,21	117,26	178,30
4,5	25987,9	147,4	54,31	115,08	175,85	55,58	117,77	179,96	60,40	126,80	193,20

B

Performance Data (Imperial Units)

Air Speed (ft/min)	Air Flow (cfm)	Air Pressure Drops (in H ₂ O)	Capacity (Btu/h x 1000)								
			R410A			R134a			R404A		
			ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F
197	3417,8	0,1	57,17	127,41	197,66	60,95	122,90	184,86	50,63	123,07	195,51
295	5109,8	0,1	84,65	183,29	281,94	83,39	173,68	263,97	80,99	180,73	280,47
394	6801,9	0,2	111,39	236,47	361,54	104,07	218,38	332,69	107,97	232,99	358,00
492	8494,0	0,2	132,82	284,54	436,26	122,93	259,20	395,46	134,85	281,68	428,52
591	10219,6	0,3	158,97	332,72	506,46	140,23	296,25	452,28	155,62	325,04	494,46
689	11911,7	0,4	179,32	375,35	571,37	155,36	330,09	504,83	174,52	364,25	553,99
787	13603,8	0,5	198,19	414,47	630,76	169,12	359,03	548,93	191,98	400,45	608,93
886	15295,9	0,6	216,71	452,03	687,34	180,92	386,25	591,58	206,26	433,03	659,80

A

Air Speed (ft/min)	Air Flow (cfm)	Air Pressure Drops (in H ₂ O)	Capacity (Btu/h x 1000)								
			R407C			R22			R507		
			ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F
197	3417,8	0,1	63,24	120,25	177,25	65,98	125,45	184,92	50,63	123,07	195,51
295	5109,8	0,1	84,31	169,27	254,24	87,27	175,22	263,16	80,99	180,73	280,47
394	6801,9	0,2	103,55	214,09	324,63	107,35	221,95	336,55	107,97	232,99	358,00
492	8494,0	0,2	122,13	255,58	389,02	126,24	264,17	402,10	134,85	281,68	428,52
591	10219,6	0,3	139,55	294,34	449,12	143,92	303,55	463,18	155,62	325,04	494,46
689	11911,7	0,4	155,90	329,65	503,40	160,44	339,24	518,04	174,52	364,25	553,99
787	13603,8	0,5	171,55	363,16	554,78	175,68	371,90	568,13	191,98	400,45	608,93
886	15295,9	0,6	185,47	393,02	600,56	189,80	402,19	614,58	206,26	433,03	659,80

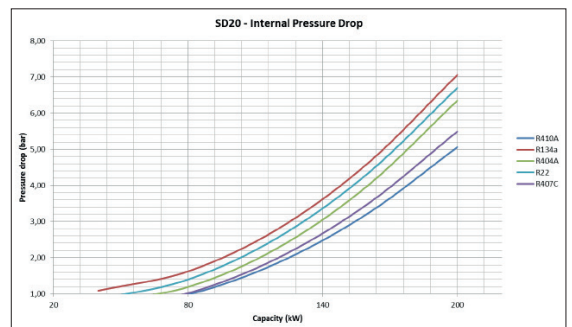
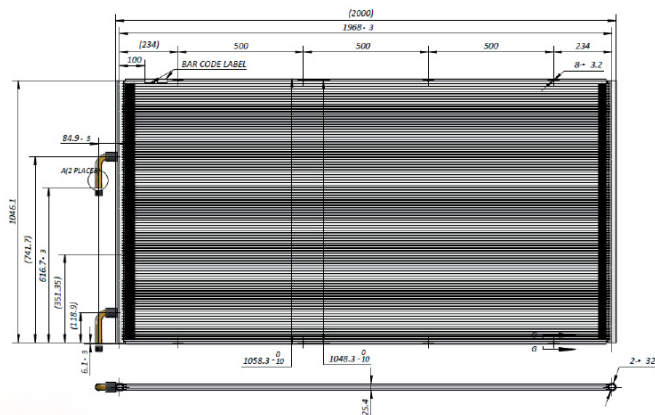
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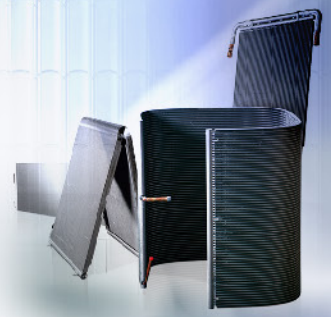
SANHUA *Micro-Channel Heat Exchangers - Standard Range*

SD20 Condenser

Dimensional Characteristics	Metric units		
Total length	mm	2000	(L)
Total height	mm	1062,6	(H)
Manifold diameter	mm	32	(Ø D)
Heat exchanger length	mm	1936	(L1)
Heat exchanger height	mm	1046,1	(H1)
Heat exchanger front surface	m ²	2.03	(S)
Solder Connections			
Inlet connection (ID)	mm	22,4	(Ø IN)
Outlet connection (ID)	mm	22,4	(Ø OUT)
Internal Nomenclature:			
		25.4-FPI23-4G	
Coil Depth	mm	25,4	(cD)
Fins Distance	mm	1,1	
Fin height	mm	8,1	
Tubes height	mm	2,0	
Total internal volume	liters	5,48	
Coil Internal Volume	liters	2,43	
Manifold Internal Volume	liters	3,05	
Number of tubes		102	(-)
Number of passes		2	(-)
Pass Distribution (step 1/2)		68/34	
Physical Characteristics			
Metric units			
Max. Operating Pressure:	MPa	4,5	(PS)
Burst pressure:	MPa	13,5	
Temperature Range:	°C	-40 / 150	(TS)
Coil weight	kg	25	
Material			
Tube:	-	LLA	
Fins:	-	AA3003	
Manifold:	-	AA3003	
Inlet/Outlet tubes:	-	Copper	
Side plate:	-	AA3003	
Approval:			
PED	-	Cat. II	
UL	-	UL 207	

Dimensional Characteristics	Imperial units		
Total length	in	78,74	(L)
Total height	in	41,83	(H)
Manifold diameter	in	1,26	(Ø D)
Heat exchanger length	in	76,22	(L1)
Heat exchanger height	in	41,19	(H1)
Heat exchanger front surface	in ²	3139,1	(S)
Solder Connections			
Inlet connection (ID)	in	7/8"	(Ø IN)
Outlet connection (ID)	in	7/8"	(Ø OUT)
Internal Nomenclature:			
		25.4-FPI23-4G	
Coil Depth	in	1,00	(cD)
Fins Per Inch	FPI	23	
Fin height	in	0,32	
Tubes height	in	0,08	
Total internal volume	in ³	334,41	
Coil Internal Volume	in ³	148,29	
Manifold Internal Volume	in ³	186,12	
Number of tubes		102	(-)
Number of passes		2	(-)
Pass Distribution (step 1/2)		68/34	
Physical Characteristics			
Imperial units			
Max. Operating Pressure:	psi	652,7	(PS)
Burst pressure:	psi	1958,0	
Temperature Range:	°F	-40 / 302	(TS)
Coil weight	lb	55,10	
Material			
Tube:	-	LLA	
Fins:	-	AA3003	
Manifold:	-	AA3003	
Inlet/Outlet tubes:	-	Copper	
Side plate:	-	AA3003	
Approval:			
PED	-	Cat. II	
UL	-	UL 207	





Performance Data (Metric Units)

Air Speed (m/s)	Air Flow (m ³ /h)	Air Pressure Drops (Pa)	Capacity (kW)								
			R410A			R134a			R404A		
			ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K
1	6628,1	20,7	26,77	48,74	70,72	18,78	34,20	49,62	23,62	43,01	62,40
1,5	9942,1	35,7	33,60	66,20	98,80	22,18	43,71	65,23	27,84	54,86	81,88
2	13256,2	52,6	39,13	80,12	121,10	25,85	52,92	80,00	30,96	63,39	95,82
2,5	16570,2	71,0	45,37	94,25	143,12	30,43	63,22	96,00	35,60	73,95	112,30
3	19884,3	90,8	50,97	106,56	162,16	35,49	74,21	112,94	40,25	84,16	128,07
3,5	23198,3	111,8	57,35	119,67	181,99	41,36	86,30	131,24	45,99	95,97	145,95
4	26512,4	133,8	62,90	130,72	198,54	47,26	98,20	149,15	51,96	107,98	164,00
4,5	29826,4	156,8	68,48	141,44	214,40	53,02	109,50	165,98	58,02	119,82	181,63

A

Air Speed (m/s)	Air Flow (m ³ /h)	Air Pressure Drops (Pa)	Capacity (kW)								
			R407C			R22			R507		
			ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K	ΔT=10 K	ΔT=20 K	ΔT=30 K
1	6628,1	20,7	17,84	32,48	47,12	18,61	33,89	49,17	23,62	43,01	62,40
1,5	9942,1	35,7	21,36	42,08	62,80	22,11	43,56	65,01	27,84	54,86	81,88
2	13256,2	52,6	25,29	51,78	78,27	26,22	53,68	81,15	30,96	63,39	95,82
2,5	16570,2	71,0	29,93	62,16	94,40	30,93	64,25	97,57	35,60	73,95	112,30
3	19884,3	90,8	34,83	72,83	110,82	35,92	75,11	114,29	40,25	84,16	128,07
3,5	23198,3	111,8	40,21	83,90	127,59	41,38	86,34	131,30	45,99	95,97	145,95
4	26512,4	133,8	45,98	95,54	145,11	47,08	97,84	148,60	51,96	107,98	164,00
4,5	29826,4	156,8	51,87	107,14	162,40	53,08	109,64	166,19	58,02	119,82	181,63

B

Performance Data (Imperial Units)

Air Speed (ft/min)	Air Flow (cfm)	Air Pressure Drops (in H ₂ O)	Capacity (Btu/h x 1000)								
			R410A			R134a			R404A		
			ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F
197	3901,1	0,1	91,42	166,47	241,52	64,14	116,80	169,46	80,66	146,88	213,09
295	5851,7	0,1	114,75	226,08	337,42	75,76	149,27	222,78	95,09	187,35	279,62
394	7802,3	0,2	133,64	273,61	413,59	88,28	180,75	273,21	105,74	216,49	327,25
492	9752,9	0,3	154,96	321,88	488,79	103,94	215,90	327,86	121,59	252,56	383,54
591	11703,4	0,4	174,06	363,94	553,82	121,22	253,46	385,69	137,46	287,41	437,37
689	13654,0	0,4	195,86	408,69	621,52	141,25	294,73	448,21	157,07	327,75	498,44
787	15604,6	0,5	214,83	446,44	678,04	161,39	335,38	509,37	177,46	368,77	560,09
886	17555,2	0,6	233,88	483,04	732,21	181,06	373,95	566,84	198,13	409,21	620,29

A

Air Speed (ft/min)	Air Flow (cfm)	Air Pressure Drops (in H ₂ O)	Capacity (Btu/h x 1000)								
			R407C			R22			R507		
			ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F	ΔT=18°F	ΔT=36°F	ΔT=54°F
197	3901,1	0,1	60,92	110,93	160,94	63,56	115,73	167,91	80,66	146,88	213,09
295	5851,7	0,1	72,94	143,72	214,49	75,50	148,76	222,02	95,09	187,35	279,62
394	7802,3	0,2	86,37	176,84	267,31	89,54	183,34	277,13	105,74	216,49	327,25
492	9752,9	0,3	102,20	212,30	322,39	105,64	219,43	333,23	121,59	252,56	383,54
591	11703,4	0,4	118,95	248,72	378,48	122,68	256,50	390,32	137,46	287,41	437,37
689	13654,0	0,4	137,32	286,53	435,74	141,31	294,86	448,41	157,07	327,75	498,44
787	15604,6	0,5	157,01	326,29	495,57	160,79	334,14	507,50	177,46	368,77	560,09
886	17555,2	0,6	177,16	365,89	554,62	181,29	374,43	567,57	198,13	409,21	620,29

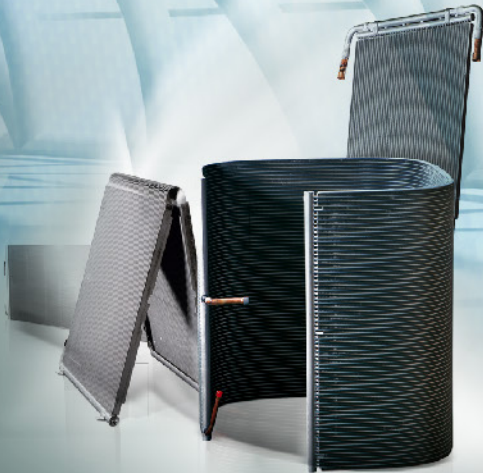
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