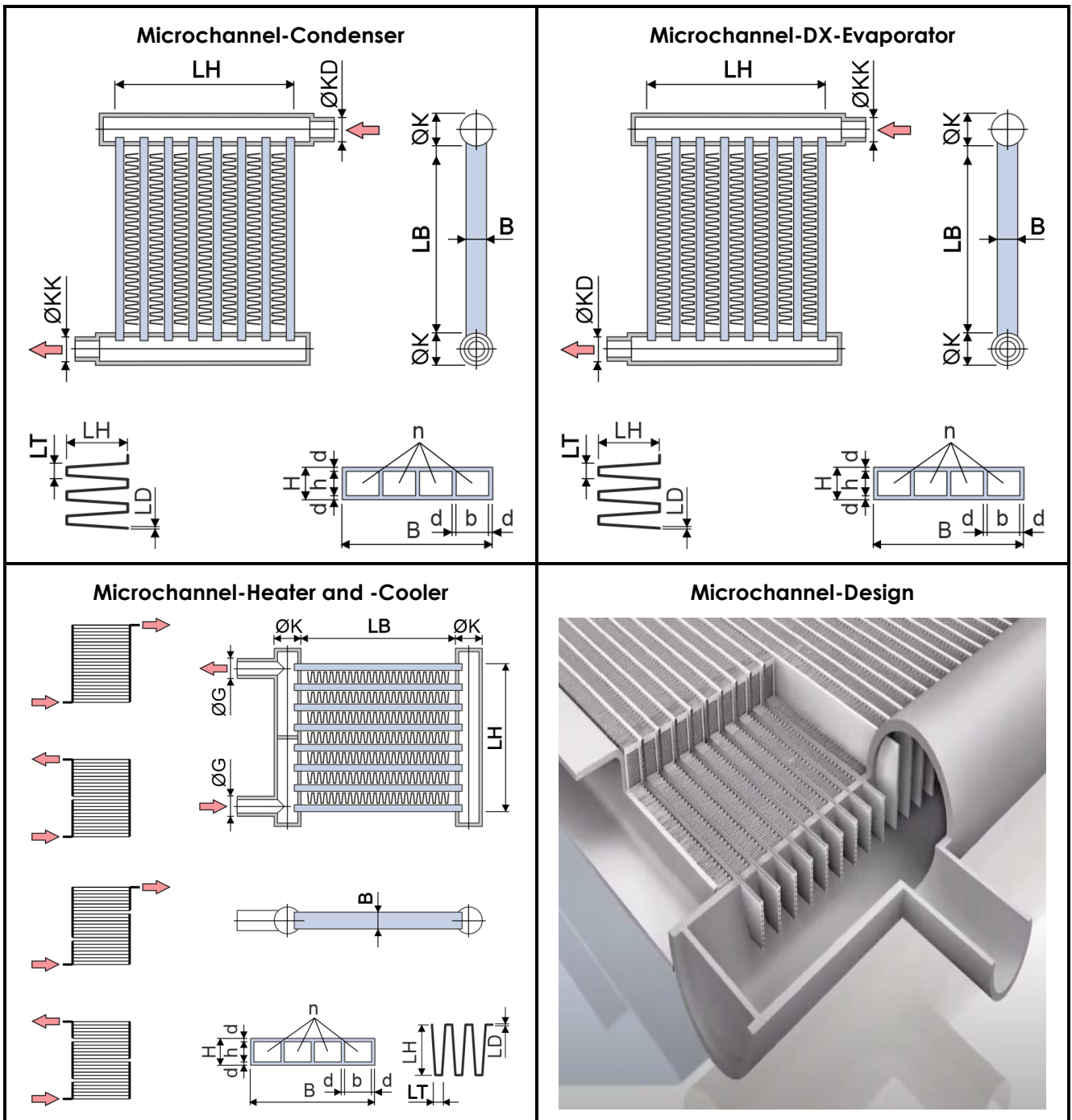




Microchannel finned heat exchanger

Microchannel heat exchangers (MCHE) offer many advantages in terms of heat transfer coefficient, content, weight and depth. MCHE are made entirely of aluminum. The soldering furnace is used to connect the individual parts. The larger the heat exchangers, the larger the soldering furnace must be, which is only worthwhile if larger quantities of the same heat exchanger are produced.



On pages 2 to 5 you will find exemplary layouts for condensers, DX evaporators, air heaters and air coolers.

Condenser: 1R-0T-1430A-30.0PA-AI

Capacity total	kW	164.459
Surface reserve	%	5.811
Present surface	m2	73.956
Required surface	m2	69.894
k-coeff.	W/m2K	56.995
Average temp. diff.	K	41.284



Company
Branch
Street
Country / ZIP / City

Phone: xxxxxxxxx
Fax: xxxxxxxxx
E-Mail
Homepage

City, 14.3.2024
With the compliments of

Representative
Direct dialing
xxxxxxxxx

Plant
Object
Position

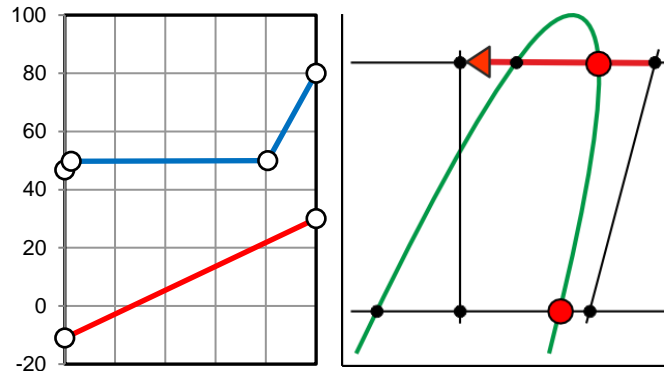
Software by www.zcs.ch

Air humid		Inlet	Outlet	Definition
Height over sea level	m			0.000
Pressure	hPa			1013.250
Fouling factor	m2K/W			5.000E-05
Temp.	°C	-11.000	30.000	20.000
Rel. humidity	%	90.000	5.020	40.000
Abs. humidity	g/kg	1.306	1.306	5.784
Density humid	kg/m3	1.345	1.163	1.200
Enthalpy humid	kJ/kg	-7.827	33.537	34.805
Volume flow humid	m3/h	10654.557	12320.856	12000.000
Mass flow dry	kg/h	14313.370	14313.370	14313.370
Velocity	m/s	1.725	1.994	1.943
Pressure drop	Pa		5.924	

R290 (Propane) & 0.5% Oil ISO VG32

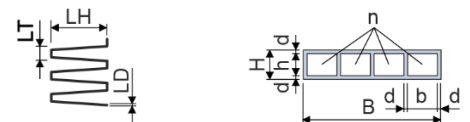
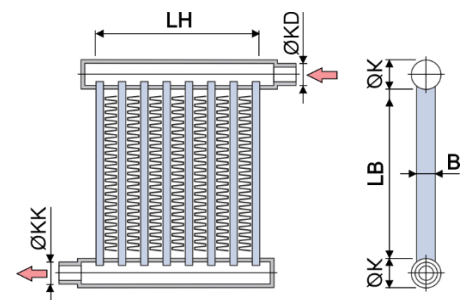
Fouling factor	m2K/W	5.000E-05
Pressure	bar	17.133
Hot gas	°C	80.000
Condensation"	°C	50.000
Condensation'	°C	50.000
Subcooling	°C	47.000
Mass flow	kg/h	1633.912
Volume flow in	m3/h	42.368
Volume flow out	m3/h	3.623
Pressure drop	bar	0.157
Pressure drop	K	0.421

Temp. (°C)



System type complete AI

Number of channels	Piece	3600	
Microchannel	Piece	120	
Tube coupling in series	Piece	1	
Number of circuits (NC)	Piece	3600	
Volume	l	20	
Weight	kg	44	
Pipe diameter in	ØKD	60	
Pipe diameter out	ØKK	34	
Collector	ØK	76	
Finned width	LB	mm	1200
Finned height	LH	mm	1430
Fin thickness	LD	mm	0.200
Fin spacing	LT	mm	2.500
Fin height	LH	mm	10.000
Number of channels	n	Piece	30
Microchannel thickness	d	mm	0.300
Microchannel width	b	mm	1.400
Microchannel height	h	mm	1.400
Microchannel width	B	mm	51.300
Microchannel height	H	mm	2.000



Delivery: 5-6 weeks
Validity: 12 weeks
Condit.: net, prepaid address
Payment: 30 days net

Price net: EUR 1170.00



Capacity total	kW	75.616
Capacity sensible	kW	51.653
Capacity latent	kW	23.963
Capacity frost	kW	0.000
Surface reserve	%	7.930
Present surface	m2	73.956
Required surface	m2	68.522
k-coeff.	W/m2K	73.249
Average temp. diff.	K	15.066

Company
Branch
Street
Country / ZIP / City

Phone: xxxxxxxxx
Fax: xxxxxxxxx
E-Mail
Homepage

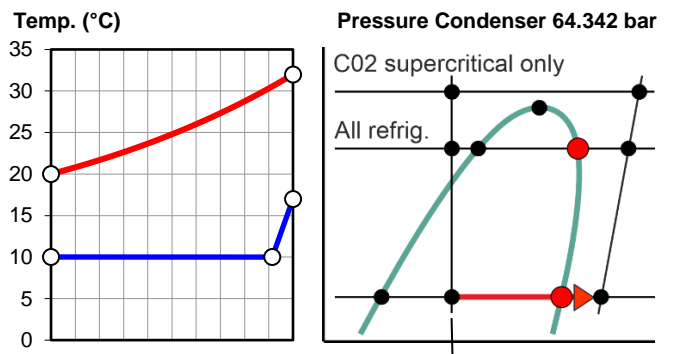
City, 14.3.2024
With the compliments of

Representative
Direct dialing
xxxxxxxxx

Plant
Object
Position

Air humid (ff = 0.00005 m2K/W)		Inlet	Outlet	Definition
Height over sea level	m			0.000
Pressure	hPa			1013.250
Temp.	°C	32.000	20.000	5.000
Rel. humidity	%	40.000	66.200	80.000
Abs. humidity	g/kg	11.860	9.631	4.320
Density humid	kg/m3	1.148	1.197	1.265
Enthalpy humid	kJ/kg	62.569	44.566	15.873
Volume flow humid	m3/h	13323.229	12754.317	12000.000
Mass flow dry	kg/h	15120.480	15120.480	15120.480
Condensate flow	kg/h		33.705	
Surface temperature	°C	10.859	10.127	
Velocity	m/s	2.157	2.065	1.943
Pressure drop dry	Pa		7.082	
Pressure drop wet	Pa		8.032	

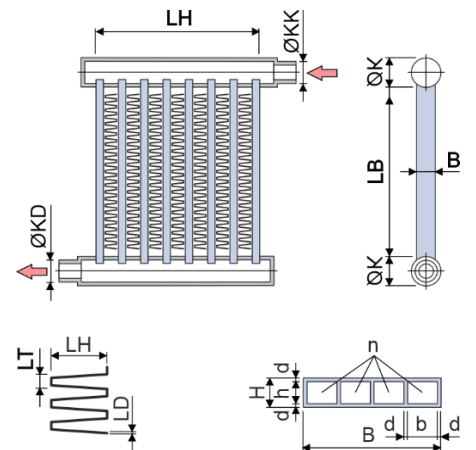
R744 (CO2) & 0.5% Oil ISO VG32 (ff = 0.00005 m2K/W)		
Pressure	bar	45.022
Condensate"	°C	25.000
Condensate'	°C	25.000
Subcooling	°C	22.000
Evaporation"	°C	10.000
Superheating	°C	17.000
Mass flow	kg/h	1535.448
Volume flow	m3/h	11.365
Velocity	m/s	0.447
Pressure drop	bar	0.004
Pressure drop	K	0.004



Part of steam on the inject point 17.29 %

System type complete AI

Number of channels	Piece	3600
Microchannel	Piece	120
Tube coupling in series	Piece	1
Number of circuits (NC)	Piece	3600
Volume	l	20
Weight	kg	44
Pipe diameter in	ØKK	34
Pipe diameter out	ØKD	42
Collector	ØK	mm 76
Finned width	LB	mm 1200
Finned height	LH	mm 1430
Fin thickness	LD	mm 0.200
Fin spacing	LT	mm 2.500
Fin height	LH	mm 10.000
Number of channels	n	Piece 30
Microchannel thickness	d	mm 0.300
Microchannel width	b	mm 1.400
Microchannel height	h	mm 1.400
Microchannel width	B	mm 51.300
Microchannel height	H	mm 2.000



Delivery: 5-6 weeks
Validity: 12 weeks
Condit.: net, prepaid address
Payment: 30 days net
Price net: EUR 1164.00



Capacity	kW	140.377
Surface reserve	%	4.764
Present surface	m2	73.956
Required surface	m2	70.592
k-coeff.	W/m2K	61.051
Average temp. diff. (92.92 %)	K	32.572

Company
Branch
Street
Country / ZIP / City

Air humid		Inlet	Outlet	Definition
Height over sea level	m			0.000
Pressure	hPa			1013.250
Fouling factor	m2K/W			5.000E-05
Temp.	°C	-11.000	24.000	20.000
Rel. humidity	%	90.000	7.134	40.000
Abs. humidity	g/kg	1.306	1.306	5.784
Density humid	kg/m3	1.345	1.187	1.200
Enthalpy humid	kJ/kg	-7.827	27.480	34.805
Volume flow humid	m3/h	10654.557	12077.007	12000.000
Mass flow dry	kg/h	14313.370	14313.370	14313.370
Velocity	m/s	1.725	1.955	1.943
Pressure drop	Pa		5.834	

Phone: xxxxxxxxxx
Fax: xxxxxxxxxx
E-Mail
Homepage

City, 14.3.2024
With the compliments of

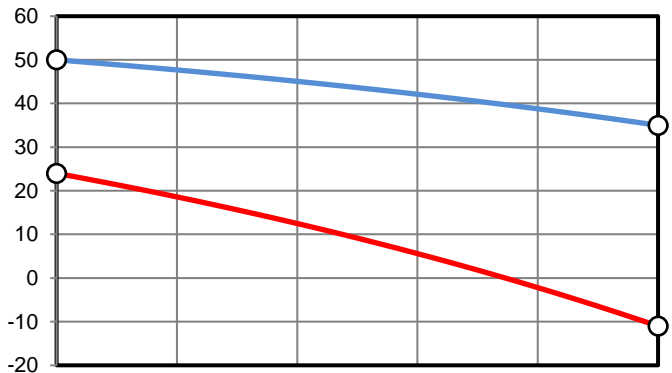
Representative
Direct dialing
xxxxxxxxxx

Plant
Object
Position

Water

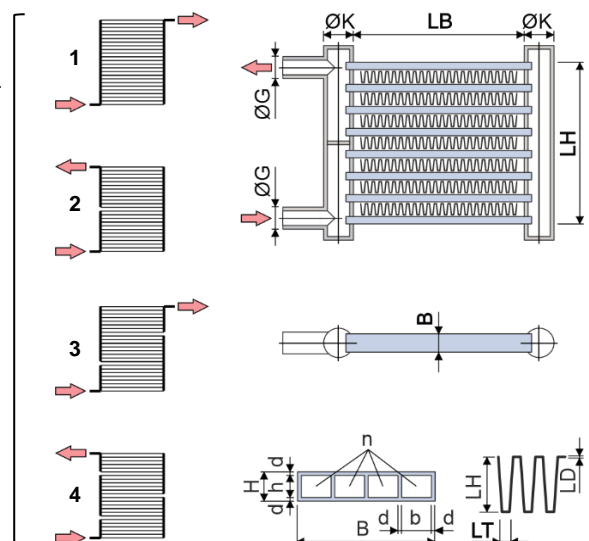
Fouling factor	m2K/W	5.000E-05
Temp. in	°C	50.000
Temp. out	°C	35.000
Density	kg/m3	991.230
Spec. heat	kJ/kgK	4.177
Heat cond.	W/mK	0.634
Viscosity	Pas	6.235E-04
Mass flow	kg/h	8064.916
Volume flow	m3/h	8.136
Velocity	m/s	0.641
Pressure drop (T/C = 19.978)	kPa	27.029

Temp. (°C)

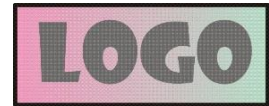


System type complete AI

Number of channels	Piece	3600	
Microchannel	Piece	120	
Tube coupling in series	Piece	2	
Number of circuits (NC)	Piece	1800	
Volume	l	20	
Weight	kg	44	
Pipe diameter in	ØG	2"	
Pipe diameter out	ØG	2"	
Collector	ØK	mm	76
Finned width	LB	mm	1200
Finned height	LH	mm	1430
Fin thickness	LD	mm	0.200
Fin spacing	LT	mm	2.500
Fin height	LH	mm	10.000
Number of channels	n	Piece	30
Microchannel thickness	d	mm	0.300
Microchannel width	b	mm	1.400
Microchannel height	h	mm	1.400
Microchannel width	B	mm	51.300
Microchannel height	H	mm	2.000



Delivery: 5-6 weeks
Validity: 12 weeks
Condit.: net, prepaid address
Payment: 30 days net
Price net: EUR 1172.00



Capacity total	kW	76.454
Capacity sensible	kW	52.961
Capacity latent	kW	23.493
Capacity frost	kW	0.000
Surface reserve	%	10.696
Present surface	m ²	73.956
Required surface	m ²	66.809
k-coeff.	W/m ² K	75.129
Average temp. diff. (93.74 %)	K	15.232

Company
Branch
Street
Country / ZIP / City

Phone: xxxxxxxxxx
Fax: xxxxxxxxxx
E-Mail
Homepage

City, 14.3.2024
With the compliments of

Representative
Direct dialing
xxxxxxxxxx

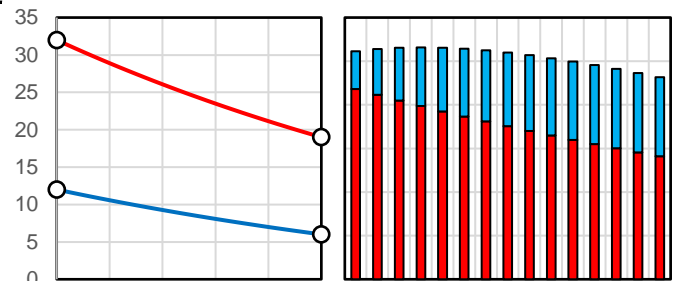
Plant
Object
Position

Air humid (ff = 0.00005 m ² K/W)		Inlet	Outlet	Definition
Height over sea level	m			0.000
Pressure	hPa			1013.250
Temp.	°C	32.000	19.000	20.000
Rel. humidity	%	40.000	69.861	40.000
Abs. humidity	g/kg	11.860	9.552	5.784
Density humid	kg/m ³	1.148	1.201	1.200
Enthalpy humid	kJ/kg	62.569	43.340	34.805
Volume flow humid	m ³ /h	12612.054	12030.813	12000.000
Mass flow dry	kg/h	14313.370	14313.370	14313.370
Condensate flow	kg/h		33.043	
Surface temperature	°C	14.785	7.810	
Velocity	m/s	2.042	1.947	1.943
Pressure drop dry	Pa		6.946	
Pressure drop wet	Pa		7.852	

Water (ff = 0.00005 m²K/W)

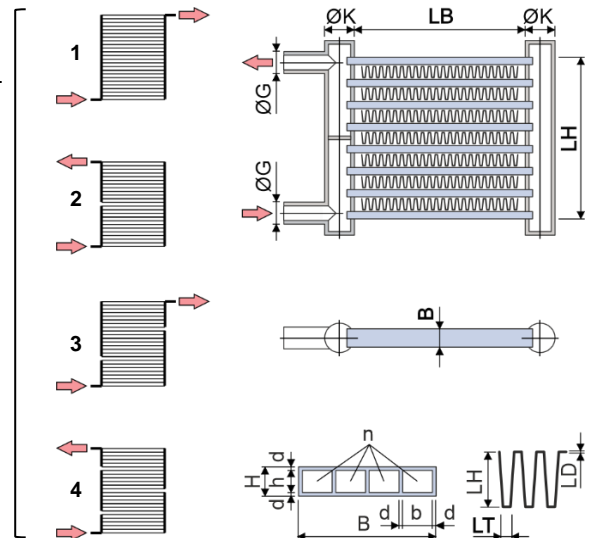
Temp. in	°C	6.000
Temp. out	°C	12.000
Density	kg/m ³	2.000
Spec. heat	kJ/kgK	4.196
Heat cond.	W/mK	0.577
Viscosity	Pas	1.378E-03
Volume flow	m ³ /h	10.934
Velocity	m/s	0.861
Pressure drop (T/C = 24.706)	kPa	54.673

Temp. (°C)



System type complete AI

Number of channels	Piece	3600	
Microchannel	Piece	120	
Tube coupling in series	Piece	2	
Number of circuits (NC)	Piece	1800	
Volume	l	20	
Weight	kg	44	
Pipe diameter in	ØG	2"	
Pipe diameter out	ØG	2"	
Collector	ØK	mm	76
Finned width	LB	mm	1200
Finned height	LH	mm	1430
Fin thickness	LD	mm	0.200
Fin spacing	LT	mm	2.500
Fin height	LH	mm	10.000
Number of channels	n	Piece	30
Microchannel thickness	d	mm	0.300
Microchannel width	b	mm	1.400
Microchannel height	h	mm	1.400
Microchannel width	B	mm	51.300
Microchannel height	H	mm	2.000



Delivery: 5-6 weeks
Validity: 12 weeks
Condit.: net, prepaid address
Payment: 30 days net

Price net: EUR 1172.00