



Brine re-cooling in air handling units

With increasing global warming, the demand for cold water is also increasing, for which chillers and ice storage tanks are used to cover peaks. The majority of the waste heat is not used, which is why it has to be dissipated via a brine recooler. If outdoor installation on the roof of the brine recooler is not permitted or is not possible for other reasons, brine re-cooling can be carried out just as well, if not better, in an air handling unit in the technical room. Because the COP cold water set should be as large as possible, brine temperatures must be kept as low as possible. Depending on the outside temperature, this requires three different op-

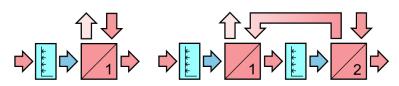
erating modes.

Winter **Transition Summer** Dry Adiabatic Hybrid

The two-stage operation can keep brine temperatures lower. The investment costs are higher, but the operating costs are lower, which pays for itself within a very short time.

Single-stage operation

Two-stage operation



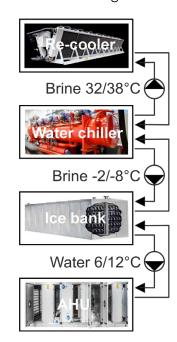
Brine re-coolers on the roof have various disadvantages. In autumn, the heat exchangers clog. These must be cleaned periodically against the direction of the air, i.e. from the inside, with high-pressure water equipment. This requires an inspection door on the rear of the brine air cooler and a catwalk inside.

Due to the risk of freezing, a brine must be used. As standard, this consists of 65% water, 34% ethylene glycol and 1% corrosion inhibitors. The freezing limit is -19°C. Clariant, for example, calls this product Antifrogen N, which is nonbiodegradable and banned in the food sector. Therefore, a different mixture is used there, consisting of 61% water, 38% propylene glycol and 1% anti-corrosion inhibitors. The freezing limit is -19°C. Clariant, for example, calls this product Antifrogen L, which is also non-biodegradable...

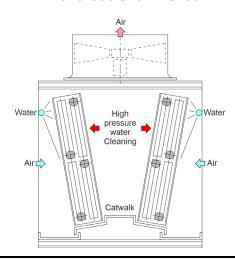
What equipment is needed to have cold water available at air handling unit is actually known, but is repeatedly underestimated by planning engineers, who also argue that cooling energy is about 4 times cheaper than electricity energy due to the COP of the chiller.

Necessary equipment

Brine re-cooler Chiller Ice storage Air handling unit



Brine re-cooler on the roof



With regard to brines based on ethylene or propylene glycol, for example Clariant's products Antifrogen N or Antifrogen L, it should be mentioned that if planning engineers use them anyway against better knowledge, they apparently not only don't care, but don't give a shit about the environment. Well, these guys are irreversibly stuffed with microplastics from head to toe anyway, which means that they are not biodegradable either.

It would really be better to use **Temper-20** at a freezing limit of -20°C, which is biodegradable and can also be used in the food sector. In addition, with **Temper-20** the fin coil heat exchangers are even smaller and therefore even more cost-effective.

But back to the problem of brine re-coolers on the roof, with the rest of the equipment, such as the chiller, ice storage and air handlin unit, arranged in the technical room in the basement. This means very long well-insulated pipes from the basement to the roof through several floors, which also requires appropriate high-pressure pumps, not to mention other high investment and operating costs.

But now finally back to the only absolutely reasonable justifiable solution, the brine re-cooling in an air handling unit in the technical room, where all other equipment is also arranged.

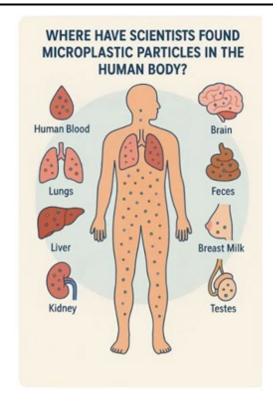
Two-stage brine re-cooling in an air handling unit



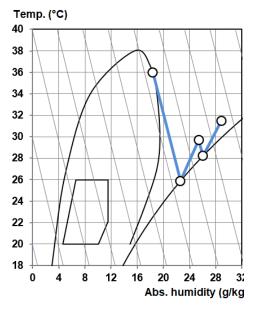
We have customers who have installed this optimal solution several times with great success for 25 years and have operated it for several years. One of these customers even dispensed with brines and carried out everything with water, which made it possible to make the fin coil heat exchangers even smaller and even more cost-effective. The only condition was, that below 0°C, no cold water was needed and therefore the centrifugal fan for the outside air could be disconnected from the power supply.

In the picture on the top right, the relative humidity of 100%, the comfort range according to DIN 1946 and the meteorological range for northern European countries can be seen in black color. In gray color, slanted isenthalps are visible. In blue with start and end points, the two-stage adiabatic and hybrid temperature and humidity curve is visible.

If you don't want to take any risks, you should therefore choose values regarding the maximum enthalpy for the outside air, not the absolutely inadequate values of 32°C/40%, as is far too often celebrated, but values of 36°C/46%, thus ensuring that the brine re-coolers deliver 100% of the required performance even in the sultry midsummer. Anything else is despicable risk management.



Two-stage brine re-cooling





Recooler: 40/35/16-16R-64	T-4000A-3.0	PA-128C-Cu/Al	Mg2.5/AISI 304	Software	by www.zcs.ch
Capacity total	kW	500.000			
Capacity sensible	kW	169.440	^ =	1	
Capacity latent	kW	330.560	几个	,	
Surface reserve	%	0.860		dry	Company
			7 E 7 1	S uly	Branch
Present surface	m2	3455.482	^ [1	
Required surface	m2	3426.007	八个	Ļ	Street
k-coeff.	W/m2K	41.185		Adiabatic A	Country / ZIP / City
Average temp. diff.	K	3.544	7/ 1	→ Hybrid	
					Phone: xxxxxxxxxx
Air humid		Inlet	Outlet	Definition	Fax: xxxxxxxxxx
Fouling factor	m2K/W			5.000E-05	E-Mail
Height over sea level	m			540.000	Homepage
ŭ	hPa				Homepage
Pressure		05.005	00.040	949.653	014 . 0.0.0005
Temp. (36.000)	°C	25.885	32.919	20.000	City, 9.8.2025
Rel. humidity (46.000)	%	100.000	82.591	40.000	With the compliments of
Abs. humidity (18.360)	g/kg	22.597	28.217	6.174	Representative
Density humid	kg/m3	1.091	1.063	1.124	Direct dialing
Enthalpy humid	kJ/kg	83.636	105.409	35.793	XXXXXXXXX
Volume flow humid	m3/h	77458.892	79971.889	74000.000	Temp. (°C)
Mass flow dry	kg/h	82674.265	82674.265	82674.265	40
•	_				
Velocity	m/s	2.101	2.169	2.007	38
Pressure drop dry	Pa		173.622		
Pressure drop wet	Pa		248.136		36
					34
Water Temp.	°C	15.000			34
Evaporation total	kg/h	814.958			32
,					
34 V% Et alycol		Inlet	Outlet	Definition	30
34 V% Et.glycol	017/14/	iniet	Ouliet		28
Fouling factor	m2K/W			5.000E-05	
Temp.	°C	36.000	30.000	33.000	26
Density	kg/m3	1044.351	1047.053	1045.724	
Spec. heat	kJ/kgK	3.624	3.606	3.615	24
Heat cond.	W/mK	0.453	0.447	0.450	22
Viscositv	Pas	1.636E-03	1.891E-03	1.756E-03	
Viscosity		1.636E-03 79.462	1.891E-03 79.257	1.756E-03 79.358	20
Volume flow	m3/h	79.462	79.257	79.358	
Volume flow Reynolds	m3/h 	79.462 8985.812	79.257 7773.866	79.358 8368.177	18
Volume flow Reynolds Velocity	m3/h m/s	79.462	79.257 7773.866 0.900	79.358	18 0 3 6 9 12 15 18 21 24 27 30
Volume flow Reynolds	m3/h 	79.462 8985.812	79.257 7773.866	79.358 8368.177	18
Volume flow Reynolds Velocity Pressure drop	m3/h m/s	79.462 8985.812	79.257 7773.866 0.900	79.358 8368.177	18 0 3 6 9 12 15 18 21 24 27 30
Volume flow Reynolds Velocity Pressure drop Technical data	m3/h m/s	79.462 8985.812 0.902	79.257 7773.866 0.900 38.187	79.358 8368.177	18 0 3 6 9 12 15 18 21 24 27 30 Abs. humidity (g/kg)
Volume flow Reynolds Velocity Pressure drop Technical data Tubes total	m3/h m/s	79.462 8985.812 0.902	79.257 7773.866 0.900 38.187	79.358 8368.177	18 0 3 6 9 12 15 18 21 24 27 30 Abs. humidity (g/kg) Tubes: Cu
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Volume flow Reynolds Velocity Pressure drop Technical data Tubes total Tubes blank	m3/h m/s	79.462 8985.812 0.902 Piece Piece	79.257 7773.866 0.900 38.187	79.358 8368.177	18 0 3 6 9 12 15 18 21 24 27 30 Abs. humidity (g/kg) Tubes: Cu Tubes: smooth
Volume flow Reynolds Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains	m3/h m/s	79.462 8985.812 0.902 Piece Piece Piece	79.257 7773.866 0.900 38.187 1024 0	79.358 8368.177	Tubes: Cu Tubes: smooth Tubes: staggered
Volume flow Reynolds Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height	m3/h m/s	79.462 8985.812 0.902 Piece Piece Piece Piece	79.257 7773.866 0.900 38.187 1024 0 0/0 16 64	79.358 8368.177	Tubes: Cu Tubes: smooth Tubes: staggered Collectors: 1.32 m/s Cu Connections: 1.32 m/s Cu
Volume flow Reynolds Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series	m3/h m/s	79.462 8985.812 0.902 Piece Piece Piece Piece Piece	79.257 7773.866 0.900 38.187 1024 0 0/0 16 64 8	79.358 8368.177	Tubes: Cu Tubes: smooth Tubes: 1.32 m/s Cu Connections: 1.32 m/s Cu Fins: ribbed AIMg2.5
Volume flow Reynolds Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC)	m3/h m/s	Piece	79.257 7773.866 0.900 38.187 1024 0 0/0 16 64 8 128	79.358 8368.177	Tubes: Cu Tubes: smooth Tubes: 1.32 m/s Cu Connections: 1.32 m/s Cu Fins: ribbed AlMg2.5 Frame: 2.00 mm AlSI 304
Volume flow Reynolds Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume	m3/h m/s	Piece	79.257 7773.866 0.900 38.187 1024 0 0/0 16 64 8 128 856	79.358 8368.177	Tubes: Cu Tubes: Smooth Tubes: Staggered Collectors: 1.32 m/s Cu Connections: 1.32 m/s Cu Fins: ribbed AlMg2.5 Frame: 2.00 mm AlSI 304 Circulations: 2 Parallel
Volume flow Reynolds Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight	m3/h m/s kPa	79.462 8985.812 0.902 Piece Piece Piece Piece Piece Piece I kg	79.257 7773.866 0.900 38.187 1024 0 0/0 16 64 8 128 856 1827	79.358 8368.177	Tubes: Cu Tubes: Smooth Tubes: Staggered Collectors: 1.32 m/s Cu Connections: 1.32 m/s Cu Fins: ribbed AlMg2.5 Frame: 2.00 mm AlSI 304 Circulations: 2 Parallel Protection: without
Volume flow Reynolds Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections	m3/h m/s kPa	79.462 8985.812 0.902 Piece Piece Piece Piece Piece Piece I kg	79.257 7773.866 0.900 38.187 1024 0 0/0 16 64 8 128 856 1827 4"	79.358 8368.177 0.901	Tubes: Cu Tubes: Smooth Tubes: Staggered Collectors: 1.32 m/s Cu Connections: 1.32 m/s Cu Fins: ribbed AlMg2.5 Frame: 2.00 mm AlSI 304 Circulations: 2 Parallel Protection: Without Protection:
Volume flow Reynolds Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height	m3/h m/s kPa G RH	79.462 8985.812 0.902 Piece Piece Piece Piece Piece Piece I kg	79.257 7773.866 0.900 38.187 1024 0 0/0 16 64 8 128 856 1827 4" 2640	79.358 8368.177 0.901	Tubes: Cu Tubes: Smooth Tubes: Staggered Collectors: 1.32 m/s Cu Connections: 1.32 m/s Cu Fins: ribbed AlMg2.5 Frame: 2.00 mm AlSI 304 Circulations: 2 Parallel Protection: without
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Volume flow Reynolds Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height	m3/h m/s kPa G RH	79.462 8985.812 0.902 Piece Piece Piece Piece Piece Piece I kg	79.257 7773.866 0.900 38.187 1024 0 0/0 16 64 8 128 856 1827 4" 2640	79.358 8368.177 0.901	Tubes: Cu Tubes: smooth Tubes: staggered Collectors: 1.32 m/s Cu Connections: 1.32 m/s Cu Fins: ribbed AlMg2.5 Frame: 2.00 mm AlSI 304 Circulations: 2 Parallel Protection: without Protection: horizontal
Volume flow Reynolds Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width	m3/h m/s kPa G RH BT	79.462 8985.812 0.902 Piece Piece Piece Piece Piece Piece Piece mm mm	79.257 7773.866 0.900 38.187 1024 0 0/0 16 64 8 128 856 1827 4" 2640 4268	79.358 8368.177 0.901	Tubes: Cu Tubes: smooth Tubes: staggered Collectors: 1.32 m/s Cu Connections: 1.32 m/s Cu Fins: ribbed AlMg2.5 Frame: 2.00 mm AlSI 304 Circulations: 2 Parallel Protection: without Protection: horizontal
Volume flow Reynolds Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth	m3/h m/s kPa G RH BT RT	79.462 8985.812 0.902 Piece Piece Piece Piece Piece Piece Piece mm mm mm	79.257 7773.866 0.900 38.187 1024 0 0/0 16 64 8 128 856 1827 4" 2640 4268 660	79.358 8368.177 0.901	Tubes: Cu Tubes: smooth Tubes: staggered Collectors: 1.32 m/s Cu Connections: 1.32 m/s Cu Fins: ribbed AlMg2.5 Frame: 2.00 mm AlSI 304 Circulations: 2 Parallel Protection: without Protection: horizontal
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Volume flow Reynolds Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Finned depth Frame on top	m3/h m/s kPa G RH BT RT LH LB LF RO	Piece Piece Piece Piece Piece Piece Piece Piece Mag mm mm mm mm mm mm mm mm	79.257 7773.866 0.900 38.187 1024 0 0/0 16 64 8 128 856 1827 4" 2640 4268 660 2560 4000 554 40	79.358 8368.177 0.901	Tubes: Cu Tubes: smooth Tubes: staggered Collectors: 1.32 m/s Cu Connections: 1.32 m/s Cu Fins: ribbed AlMg2.5 Frame: 2.00 mm AlSI 304 Circulations: 2 Parallel Protection: without Protection: horizontal
Volume flow Reynolds Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Finned depth Frame on top Frame no bottom	m3/h m/s kPa G RH BT RT LH LB LF RO RU	79.462 8985.812 0.902 Piece Piece Piece Piece Piece Piece mm mm mm mm mm mm mm mm mm	79.257 7773.866 0.900 38.187 1024 0 0/0 16 64 8 128 856 1827 4" 2640 4268 660 2560 4000 554 40 40	79.358 8368.177 0.901	Tubes: Cu Tubes: smooth Tubes: staggered Collectors: 1.32 m/s Cu Connections: 1.32 m/s Cu Fins: ribbed AlMg2.5 Frame: 2.00 mm AlSI 304 Circulations: Protection: without Protection: horizontal
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Volume flow Reynolds Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Finned depth Frame on top Frame on bottom Frame in front	m3/h m/s kPa G RH BT RT LH LB LF RO RU RV	79.462 8985.812 0.902 Piece Piece Piece Piece Piece Piece mm	79.257 7773.866 0.900 38.187 1024 0 0/0 16 64 8 128 856 1827 4" 2640 4268 660 2560 4000 554 40 40 40	79.358 8368.177 0.901	Tubes: Cu Tubes: smooth Tubes: staggered Collectors: 1.32 m/s Cu Connections: 1.32 m/s Cu Fins: ribbed AIMg2.5 Frame: 2.00 mm AISI 304 Circulations: 2 Parallel Protection: without Protection: horizontal
Volume flow Reynolds Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69mm)	m3/h m/s kPa G RH BT RT LH LB LF RO RU RV RN	Piece Piece Piece Piece Piece Piece Piece Piece Mag Mm	79.257 7773.866 0.900 38.187 1024 0 0/0 16 64 8 128 856 1827 4" 2640 4268 660 2560 4000 554 40 40 40 69	79.358 8368.177 0.901	Tubes: Cu Tubes: smooth Tubes: staggered Collectors: 1.32 m/s Cu Connections: 1.32 m/s Cu Fins: ribbed AlMg2.5 Frame: 2.00 mm AlSI 304 Circulations: 2 Parallel Protection: without Protection: horizontal
Volume flow Reynolds Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69mm) Collector-Diameter	m3/h m/s kPa G RH BT RT LH LB LF RO RU RV RN K	79.462 8985.812 0.902 Piece Piece Piece Piece Piece Piece I kg mm	79.257 7773.866 0.900 38.187 1024 0 0/0 16 64 8 128 856 1827 4" 2640 4268 660 2560 4000 554 40 40 69 108	79.358 8368.177 0.901	Tubes: Cu Tubes: smooth Tubes: staggered Collectors: 1.32 m/s Cu Connections: 1.32 m/s Cu Fins: ribbed AlMg2.5 Frame: 2.00 mm AlSI 304 Circulations: 2 Parallel Protection: without Protection: horizontal
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Volume flow Reynolds Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned depth Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69mm) Collector-Diameter Collector distance Fin spacing	m3/h m/s kPa G RH BT RT LH LB F RO RV RN K AD KA LT	79.462 8985.812 0.902 Piece Piece Piece Piece Piece Piece I kg mm	79.257 7773.866 0.900 38.187 1024 0 0/0 16 64 8 128 856 1827 4" 2640 4268 660 2560 4000 554 40 40 69 108 199 520 3.000	79.358 8368.177 0.901	Tubes: Cu Tubes: smooth Tubes: staggered Collectors: 1.32 m/s Cu Connections: 1.32 m/s Cu Fins: ribbed AlMg2.5 Frame: 2.00 mm AlSI 304 Circulations: 2 Parallel Protection: without Protection: horizontal LB RN 1 2 Delivery: 5-6 weeks
Volume flow Reynolds Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69mm) Collector-Diameter Collector covering Collector distance Fin spacing Fin thickness	m3/h m/s kPa G RH BT RT LH LB LF RO RU RV RN K AD KA LT LD	79.462 8985.812 0.902 Piece Piece Piece Piece Piece Piece Piece I kg mm	79.257 7773.866 0.900 38.187 1024 0 0/0 16 64 8 128 856 1827 4" 2640 4268 660 2560 4000 554 40 40 69 108 199 520 3.000 0.200	79.358 8368.177 0.901	Tubes: Cu Tubes: smooth Tubes: staggered Collectors: 1.32 m/s Cu Fins: ribbed AIMg2.5 Frame: 2.00 mm AISI 304 Circulations: Protection: without Protection: horizontal LB RN 1 2 2 2 2 2 2 2 3 0 3 0 0 0 0 0 0 0 0 0 0
Volume flow Reynolds Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69mm) Collector-Diameter Collector covering Collector distance Fin spacing Fin thickness Tube diameter	m3/h m/s kPa GRH BT RT LH LB LF RO RV RN K AD KA LT LD DA	79.462 8985.812 0.902 Piece Piece Piece Piece Piece Piece Piece I kg mm	79.257 7773.866 0.900 38.187 1024 0 0/0 16 64 8 128 856 1827 4" 2640 4268 660 2560 4000 554 40 40 69 108 199 520 3.000 0.200 16.400	79.358 8368.177 0.901	Tubes: Cu Tubes: smooth Tubes: staggered Collectors: 1.32 m/s Cu Fins: ribbed AIMg2.5 Frame: 2.00 mm AISI 304 Circulations: Protection: without Protection: horizontal LB RN 1 Delivery: 5-6 weeks Validity: 12 weeks Condit.: net, prepaid address
Volume flow Reynolds Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69mm) Collector-Diameter Collector covering Collector distance Fin spacing Fin thickness Tube diameter Tube thickness	m3/h m/s kPa GRH BT RT LH LB LF RO RV RN KA AD KA LT LD DA S	79.462 8985.812 0.902 Piece Piece Piece Piece Piece Piece Piece I kg mm	79.257 7773.866 0.900 38.187 1024 0 0/0 16 64 8 128 856 1827 4" 2640 4268 660 2560 4000 554 40 40 69 108 199 520 3.000 0.200 16.400 0.400	79.358 8368.177 0.901	Tubes: Cu Tubes: smooth Tubes: staggered Collectors: 1.32 m/s Cu Connections: 1.32 m/s Cu Fins: ribbed AIMg2.5 Frame: 2.00 mm AISI 304 Circulations: 2 Parallel Protection: without Protection: horizontal LB RN Delivery: 5-6 weeks Validity: 5-6 weeks
Volume flow Reynolds Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69mm) Collector-Diameter Collector covering Collector distance Fin spacing Fin thickness Tube diameter Tube thickness Tube interval on the height	m3/h m/s kPa GRH BT RT LH LB LF RO RU RV RN K AD KA LT LD DA	79.462 8985.812 0.902 Piece Piece Piece Piece Piece Piece Piece I kg mm	79.257 7773.866 0.900 38.187 1024 0 0/0 16 64 8 128 856 1827 4" 2640 4268 660 2560 4000 554 40 40 69 108 199 520 3.000 0.200 16.400	79.358 8368.177 0.901	Tubes: Cu Tubes: smooth Tubes: staggered Collectors: 1.32 m/s Cu Connections: 1.32 m/s Cu Fins: ribbed AlMg2.5 Frame: 2.00 mm AlSI 304 Circulations: 2 Parallel Protection: without Protection: horizontal LB RN 1 2 2 2 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3
Volume flow Reynolds Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69mm) Collector-Diameter Collector covering Collector distance Fin spacing Fin thickness Tube diameter Tube thickness	m3/h m/s kPa GRH BT RT LH LB LF RO RV RN KA AD KA LT LD DA S	79.462 8985.812 0.902 Piece Piece Piece Piece Piece Piece Piece Piece Nome Nome Nome Nome Nome Nome Nome Nom	79.257 7773.866 0.900 38.187 1024 0 0/0 16 64 8 128 856 1827 4" 2640 4268 660 2560 4000 554 40 40 69 108 199 520 3.000 0.200 16.400 0.400	79.358 8368.177 0.901	Tubes: Tubes: Tubes: Series Support Staggered Collectors: Connections: Frame: Circulations: Protection: Protection: Flow direction: Flow direction: Collectors: Connections: Frame: Circulations: Cu Frame: Cu Albs: Albs: 21 24 27 30 Abs. humidity (g/kg) Cu Cu Fins: Frame: Cu Cu Cu Alsu AlSI 304 Circulations: Circu

2 Recooler in serial coupling	g	Cooler-1	Cooler-2	Total			
Capacity total	kW	256.132	243.868	500.000			
Capacity sensible	kW	91.239	78.763	170.003			
Capacity latent	kW	164.892	165.105	329.997			
Surface reserve	%	1.111	0.934	1.040		Company	/
Present surface	m2	1727.741	1152.668	2880.410		Branch	,
Required surface	m2	1708.764	1142.000	2850.764		Street	
Air humid	IIIZ	Definition	1142.000	2030.704		Country / ZIP	/ City
Fouling factor	m2K/W	5.000E-05				Odditi y / Zii	/ Oity
· ·			^			Dh	
Height over sea level	m	540.000	74	— ↓		Phone: xxxxx	
Pressure	hPa	949.653				Fax: xxxxxxx	(XXX
Temp.	°C	20.000	7 17	[] / 2] /		E-Mail	
Rel. humidity	%	40.000				Homepag	е
Volume flow	m3/h	74000.000					
Air humid		Cooler-1	Cooler-2	Total		City, 9.8.20	25
Temp. in	°C	36.000	29.673			With the complin	nents of
Rel. humidity in	%	46.000	89.789	Inlet		Representat	tive
Abs. humidity in	g/kg	18.360	25.407			Direct diali	ng
Temp. in	°C	25.885	28.208			xxxxxxxx	x
Rel. humidity in	%	100.000	100.000	Adiabatic	Temp. (°C)	Software by www	v.zcs.ch
Abs. humidity in	g/kg	22.597	26.027		40	,	· · · · · · · · · · · · · · · · · · ·
Temp. out	°C	29.673	31.458		N N	\ \ \ \ \ \	
Rel. humidity out	%	89.789	91.561	Outlet	38		\ \ \
-				Outlet	36	$X \cap Y$	
Abs. humidity out	g/kg	25.407	28.837		30	/	
Velocity	m/s	2.119	2.145		34		
Pressure drop dry	Pa	86.663	59.734	146.397	\ \/ \/	\	
Pressure drop wet	Pa	121.833	86.736	208.569	32		NO
Water Temp.	°C	15.000	15.000		30 \		
Evaporation total	kg/h	582.643	283.586	866.229	1. \ \ / \	\ \ \ \\\\\	
34 V% Et.glycol (0.00005 m2		Inlet	Outlet	Definition	28		
Temp.	°C	36.000	30.000	33.000	26	_ \	
Density	kg/m3	1044.351	1047.053	1045.724			\
Spec. heat	kJ/kgK	3.624	3.606	3.615	24	+	
Heat cond.	W/mK	0.453	0.447	0.450	22	$\ \cdot \ \times X $	
Viscosity	Pas	1.636E-03	1.891E-03	1.756E-03	22	$X \cup X \setminus X \cup X$	
Mass flow	kg/h	83134.546	83134.546	83134.546	20	<u> </u>	
Volume flow	m3/h	79.604			\		1 1
volume now							
Devesalde	1110/11		79.399	79.500	18	40 40 00 0	14 20 20
Reynolds		9001.882	7787.769	8383.142	0 4 8		24 28 32
Velocity	 m/s		7787.769 0.901				24 28 32 midity (g/kg)
Velocity Pressure drop		9001.882	7787.769 0.901 54.837	8383.142 0.903		Abs. hur	midity (g/kg)
Velocity Pressure drop Technical data	 m/s	9001.882 0.904	7787.769 0.901 54.837 Cooler-1	8383.142 0.903	0 4 8	Abs. hur	midity (g/kg) Cooler-2
Velocity Pressure drop Technical data Tubes total	 m/s	9001.882 0.904 Piece	7787.769 0.901 54.837 Cooler-1 512	8383.142 0.903 Cooler-2 384	0 4 8 Tubes:	Abs. hur Cooler-1 Cu	Cooler-2
Velocity Pressure drop Technical data	 m/s	9001.882 0.904	7787.769 0.901 54.837 Cooler-1 512 0	8383.142 0.903 Cooler-2 384 0	Tubes:	Abs. hur Cooler-1 Cu smooth	Cooler-2 Cu smooth
Velocity Pressure drop Technical data Tubes total	 m/s	9001.882 0.904 Piece	7787.769 0.901 54.837 Cooler-1 512	8383.142 0.903 Cooler-2 384	0 4 8 Tubes:	Abs. hur Cooler-1 Cu	Cooler-2
Velocity Pressure drop Technical data Tubes total Tubes blank	 m/s	9001.882 0.904 Piece Piece	7787.769 0.901 54.837 Cooler-1 512 0	8383.142 0.903 Cooler-2 384 0	Tubes:	Abs. hur Cooler-1 Cu smooth	Cooler-2 Cu smooth
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains	 m/s	9001.882 0.904 Piece Piece Piece	7787.769 0.901 54.837 Cooler-1 512 0 0/0	8383.142 0.903 Cooler-2 384 0 0/0	Tubes: Tubes: Tubes: Tubes:	Cooler-1 Cu smooth staggered	Cooler-2 Cu smooth staggered
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth	 m/s	9001.882 0.904 Piece Piece Piece Piece	7787.769 0.901 54.837 Cooler-1 512 0 0/0	8383.142 0.903 Cooler-2 384 0 0/0 6	Tubes: Tubes: Tubes: Tubes: Collectors:	Cooler-1 Cu smooth staggered Cu	Cooler-2 Cu smooth staggered Cu
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series	 m/s	Piece Piece Piece Piece Piece Piece Piece	7787.769 0.901 54.837 Cooler-1 512 0 0/0 8 64	8383.142 0.903 Cooler-2 384 0 0/0 6 64	Tubes: Tubes: Tubes: Tubes: Collectors: Connections:	Cooler-1 Cu smooth staggered Cu Cu	Cooler-2 Cu smooth staggered Cu Cu
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height	 m/s	Piece Piece Piece Piece Piece Piece Piece Piece Piece	7787.769 0.901 54.837 Cooler-1 512 0 0/0 8 64 4	8383.142 0.903 Cooler-2 384 0 0/0 6 64 4	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Fins:	Cooler-1 Cu smooth staggered Cu Cu AIMg2.5	Cooler-2 Cu smooth staggered Cu Cu AIMg2.5
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume	 m/s	Piece	7787.769 0.901 54.837 Cooler-1 512 0 0/0 8 64 4 128 451	8383.142 0.903 Cooler-2 384 0 0/0 6 64 4 96 349	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Fins: Frame: Circulations:	Cooler-1 Cu smooth staggered Cu Cu AIMg2.5 AISI 304	Cooler-2 Cu smooth staggered Cu Cu AIMg2.5 AISI 304 2
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight	m/s kPa	Piece	7787.769 0.901 54.837 Cooler-1 512 0 0/0 8 64 4 128 451 961	8383.142 0.903 Cooler-2 384 0 0/0 6 64 4 96 349 707	Tubes: Tubes: Tubes: Collectors: Connections: Fins: Frame: Circulations: Circulations:	Cooler-1 Cu smooth staggered Cu Cu AIMg2.5 AISI 304 2 Parallel	Cooler-2 Cu smooth staggered Cu Cu AIMg2.5 AISI 304 2 Parallel
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections	m/s kPa	Piece	7787.769 0.901 54.837 Cooler-1 512 0 0/0 8 64 4 128 451 961 4"	8383.142 0.903 Cooler-2 384 0 0/0 6 64 4 96 349 707 4"	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Fins: Frame: Circulations: Circulations: Protection:	Cooler-1 Cu smooth staggered Cu Cu AIMg2.5 AISI 304	Cooler-2 Cu smooth staggered Cu Cu AIMg2.5 AISI 304
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height	m/s kPa	Piece Piece Piece Piece Piece Piece Piece Piece Piece mm	7787.769 0.901 54.837 Cooler-1 512 0 0/0 8 64 4 128 451 961 4" 2640	8383.142 0.903 Cooler-2 384 0 0/0 6 64 4 96 349 707 4" 2640	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Frame: Circulations: Circulations: Protection: Protection:	Cooler-1 Cu smooth staggered Cu Cu AIMg2.5 AISI 304 2 Parallel without	Cooler-2 Cu smooth staggered Cu Cu AlMg2.5 AISI 304 2 Parallel without
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width	m/s kPa G RH BT	Piece Piece Piece Piece Piece Piece Piece Piece Piece Mag mm mm	7787.769 0.901 54.837 Cooler-1 512 0 0/0 8 64 4 128 451 961 4" 2640 4268	8383.142 0.903 Cooler-2 384 0 0/0 6 64 4 96 349 707 4" 2640 4268 A	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Fins: Frame: Circulations: Circulations: Protection:	Cooler-1 Cu smooth staggered Cu Cu AIMg2.5 AISI 304 2 Parallel	Cooler-2 Cu smooth staggered Cu Cu AIMg2.5 AISI 304 2 Parallel
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth	m/s kPa G RH BT RT	Piece Mkg mm mm mm	7787.769 0.901 54.837 Cooler-1 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380	8383.142 0.903 Cooler-2 384 0 0/0 6 64 4 96 349 707 4" 2640 4268 A 310	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Frame: Circulations: Circulations: Protection: Protection:	Cooler-1 Cu smooth staggered Cu Cu AIMg2.5 AISI 304 2 Parallel without horizontal	Cooler-2 Cu smooth staggered Cu AIMg2.5 AISI 304 2 Parallel without horizontal
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height	G RH BT RT LH	Piece Piece Piece Piece Piece Piece Piece Piece Piece Mag mm mm mm mm	7787.769 0.901 54.837 Cooler-1 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560	8383.142 0.903 Cooler-2 384 0 0/0 6 64 4 96 349 707 4" 2640 4268 A 310 2560	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Fins: Frame: Circulations: Circulations: Protection: Protection:	Cooler-1 Cu smooth staggered Cu Cu AIMg2.5 AISI 304 2 Parallel without horizontal	Cooler-2 Cu smooth staggered Cu AIMg2.5 AISI 304 2 Parallel without
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width	GRH BT RT LH LB	Piece Piece Piece Piece Piece Piece Piece Piece Piece Mag mm mm mm mm mm	7787.769 0.901 54.837 Cooler-1 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000	8383.142 0.903 Cooler-2 384 0 0/0 6 64 4 96 349 707 4" 2640 4268 A 310 2560 4000	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Fins: Frame: Circulations: Circulations: Protection: Protection:	Cooler-1 Cu smooth staggered Cu Cu AIMg2.5 AISI 304 2 Parallel without horizontal	Cooler-2 Cu smooth staggered Cu AIMg2.5 AISI 304 2 Parallel without horizontal
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Finned depth	GRH BT RT LH LB LF	Piece Piece Piece Piece Piece Piece Piece Piece Piece Mag mm mm mm mm	7787.769 0.901 54.837 Cooler-1 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000 277	8383.142 0.903 Cooler-2 384 0 0/0 6 64 4 96 349 707 4" 2640 4268 A 310 2560 4000 208	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Fins: Frame: Circulations: Circulations: Protection: Protection:	Cooler-1 Cu smooth staggered Cu Cu AIMg2.5 AISI 304 2 Parallel without horizontal	Cooler-2 Cu smooth staggered Cu AIMg2.5 AISI 304 2 Parallel without horizontal
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width	GRH BT RT LH LB LF RO	Piece Piece Piece Piece Piece Piece Piece Piece Piece Mag mm mm mm mm mm	7787.769 0.901 54.837 Cooler-1 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000	8383.142 0.903 Cooler-2 384 0 0/0 6 64 4 96 349 707 4" 2640 4268 A 310 2560 4000	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Fins: Frame: Circulations: Circulations: Protection: Protection: AD LB	Cooler-1 Cu smooth staggered Cu Cu AIMg2.5 AISI 304 2 Parallel without horizontal	Cooler-2 Cu smooth staggered Cu AIMg2.5 AISI 304 2 Parallel without horizontal
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Finned depth	GRH BT RT LH LB LF RO RU	Piece Piece Piece Piece Piece Piece Piece Piece Piece Mag mm mm mm mm mm mm	7787.769 0.901 54.837 Cooler-1 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000 277	8383.142 0.903 Cooler-2 384 0 0/0 6 64 4 96 349 707 4" 2640 4268 A 310 2560 4000 208 40	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Fins: Frame: Circulations: Circulations: Protection: Protection: AD LB	Cooler-1 Cu smooth staggered Cu Cu AIMg2.5 AISI 304 2 Parallel without horizontal	Cooler-2 Cu smooth staggered Cu AIMg2.5 AISI 304 2 Parallel without horizontal
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Finned depth Frame on top	GRH BT RT LH LB LF RO	Piece Piece Piece Piece Piece Piece Piece Piece Piece Mag mm mm mm mm mm mm mm mm	7787.769 0.901 54.837 Cooler-1 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000 277 40	8383.142 0.903 Cooler-2 384 0 0/0 6 64 4 96 349 707 4" 2640 4268 A 310 2560 4000 208 40	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Fins: Frame: Circulations: Circulations: Protection: Protection: AD LB	Abs. hur Cooler-1 Cu smooth staggered Cu Cu AIMg2.5 AISI 304 2 Parallel without horizontal	Cooler-2 Cu smooth staggered Cu AIMg2.5 AISI 304 2 Parallel without horizontal
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Finned depth Frame on top Frame on bottom	GRH BT RT LH LB LF RO RU	Piece Piece Piece Piece Piece Piece Piece Piece Piece Mag mm	7787.769 0.901 54.837 Cooler-1 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000 277 40 40	8383.142 0.903 Cooler-2 384 0 0/0 6 64 4 96 349 707 4" 2640 4268 A 310 2560 4000 208 40	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Fins: Frame: Circulations: Circulations: Protection: Protection: AD LB	Abs. hur Cooler-1 Cu smooth staggered Cu Cu AIMg2.5 AISI 304 2 Parallel without horizontal	Cooler-2 Cu smooth staggered Cu AIMg2.5 AISI 304 2 Parallel without horizontal
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Finned depth Frame on top Frame on bottom Frame in front	GRHBTRTLHLBLFRORU	9001.882 0.904 Piece Piece Piece Piece Piece Piece Piece Mag mm	7787.769 0.901 54.837 Cooler-1 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000 277 40 40	8383.142 0.903 Cooler-2 384 0 0/0 6 64 4 96 349 707 4" 2640 4268 A 310 2560 4000 208 40 40	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Frame: Circulations: Circulations: Protection: Protection: AD LB	Abs. hur Cooler-1 Cu smooth staggered Cu Cu AIMg2.5 AISI 304 2 Parallel without horizontal	Cooler-2 Cu smooth staggered Cu AIMg2.5 AISI 304 2 Parallel without horizontal
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69/69mm) Collector-Diameter	GRHBTRTLHLBLFRORURVRN	Piece Piece Piece Piece Piece Piece Piece Piece Mag mm	7787.769 0.901 54.837 Cooler-1 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000 277 40 40 40 69	8383.142 0.903 Cooler-2 384 0 0/0 6 64 4 96 349 707 4" 2640 4268 A 310 2560 4000 208 40 40 40 69	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Fins: Frame: Circulations: Circulations: Protection: Protection: AD LB	Abs. hur Cooler-1 Cu smooth staggered Cu Cu AIMg2.5 AISI 304 2 Parallel without horizontal	Cooler-2 Cu smooth staggered Cu AIMg2.5 AISI 304 2 Parallel without horizontal
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69/69mm)	GRHBTRTLHLBLFRORURVRNK	9001.882 0.904 Piece Piece Piece Piece Piece Piece I kg mm	7787.769 0.901 54.837 Cooler-1 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000 277 40 40 69 108	8383.142 0.903 Cooler-2 384 0 0/0 6 64 4 4 96 349 707 4" 2640 4268 A 310 2560 4000 208 40 40 69 108	Tubes: Tubes: Tubes: Collectors: Connections: Frame: Circulations: Protection: Protection: AD LB	Abs. hur Cooler-1 Cu smooth staggered Cu Cu AIMg2.5 AISI 304 2 Parallel without horizontal	Cooler-2 Cu smooth staggered Cu AIMg2.5 AISI 304 2 Parallel without horizontal
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Frame on top Frame on bottom Frame in front Frame on back (~69/69mm) Collector-Diameter Collector distance	GRHBTRTLHLBLFRORURVRNKADKA	Piece Mag mm	7787.769 0.901 54.837 Cooler-1 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000 277 40 40 40 69 108 199 243	8383.142 0.903 Cooler-2 384 0 0/0 6 64 4 4 96 349 707 4" 2640 4268 A 310 2560 4000 208 40 40 69 108 199 174	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Frame: Circulations: Circulations: Protection: Protection: AD LB OK BT Delivery:	Abs. hur Cooler-1 Cu smooth staggered Cu Cu AIMg2.5 AISI 304 2 Parallel without horizontal	Cooler-2 Cu smooth staggered Cu AIMg2.5 AISI 304 2 Parallel without horizontal
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69/69mm) Collector-Diameter Collector distance Fin spacing	GRH BT RT LH LB LF RO RV RN K AD KA LT	Piece I kg mm	7787.769 0.901 54.837 Cooler-1 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000 277 40 40 40 69 108 199 243 3.000	8383.142 0.903 Cooler-2 384 0 0/0 6 64 4 4 96 349 707 4" 2640 4268 A 310 2560 4000 208 40 40 69 108 199 174 3.400	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Frame: Circulations: Circulations: Protection: Protection: AD LB OK BT Delivery: Validity:	Cooler-1 Cu smooth staggered Cu Cu AIMg2.5 AISI 304 2 Parallel without horizontal	Cooler-2 Cu smooth staggered Cu AlMg2.5 AISI 304 2 Parallel without horizontal
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69/69mm) Collector-Diameter Collector covering Collector distance Fin spacing Fin thickness	GRH BT RT LH LB LF RO RU RV RN K AD KA LT LD	Piece I kg mm	7787.769 0.901 54.837 Cooler-1 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000 277 40 40 69 108 199 243 3.000 0.200	8383.142 0.903 Cooler-2 384 0 0/0 6 64 4 4 96 349 707 4" 2640 4268 A 310 2560 4000 208 40 40 69 108 199 174 3.400 0.200	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Frame: Circulations: Circulations: Protection: Protection: AD LB OK BT Delivery: Validity: Condit.:	Cooler-1 Cu smooth staggered Cu Cu AIMg2.5 AISI 304 2 Parallel without horizontal	Cooler-2 Cu smooth staggered Cu AlMg2.5 AISI 304 2 Parallel without horizontal
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69/69mm) Collector-Diameter Collector covering Collector distance Fin spacing Fin thickness Tube diameter	GRH BT RT LH LB LF RO RU RV RN KAD KA LT LD DA	Piece I kg mm	7787.769 0.901 54.837 Cooler-1 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000 277 40 40 40 69 108 199 243 3.000 0.200 16.400	8383.142 0.903 Cooler-2 384 0 0/0 6 64 4 4 96 349 707 4" 2640 4268 A 310 2560 4000 208 40 40 69 108 199 174 3.400 0.200 16.400	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Frame: Circulations: Circulations: Protection: Protection: AD LB OK BT Delivery: Validity:	Cooler-1 Cu smooth staggered Cu Cu AIMg2.5 AISI 304 2 Parallel without horizontal	Cooler-2 Cu smooth staggered Cu AlMg2.5 AISI 304 2 Parallel without horizontal
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned depth Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69/69mm) Collector-Diameter Collector covering Collector distance Fin spacing Fin thickness Tube diameter Tube thickness	GRH BT RT LH LB LF RO RU RV RN KAD KA LT LD DA S	Piece I kg mm	7787.769 0.901 54.837 Cooler-1 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000 277 40 40 69 108 199 243 3.000 0.200 16.400 0.400	8383.142 0.903 Cooler-2 384 0 0/0 6 64 4 4 96 349 707 4" 2640 4268 A 310 2560 4000 208 40 40 69 108 199 174 3.400 0.200 16.400 0.400	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Frame: Circulations: Circulations: Protection: Protection: AD LB ØK LT ØK BT Delivery: Validity: Condit.: Payment:	Cooler-1 Cu smooth staggered Cu Cu AIMg2.5 AISI 304 2 Parallel without horizontal	Cooler-2 Cu smooth staggered Cu AlMg2.5 AISI 304 2 Parallel without horizontal 2 5-6 weeks 12 weeks paid address 30 days net
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69/69mm) Collector-Diameter Collector covering Collector distance Fin spacing Fin thickness Tube diameter	GRH BT RT LH LB LF RO RU RV RN KAD KA LT LD DA	Piece I kg mm	7787.769 0.901 54.837 Cooler-1 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000 277 40 40 40 69 108 199 243 3.000 0.200 16.400	8383.142 0.903 Cooler-2 384 0 0/0 6 64 4 4 96 349 707 4" 2640 4268 A 310 2560 4000 208 40 40 69 108 199 174 3.400 0.200 16.400	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Frame: Circulations: Circulations: Protection: Protection: AD LB OK BT Delivery: Validity: Condit.:	Cooler-1 Cu smooth staggered Cu Cu AIMg2.5 AISI 304 2 Parallel without horizontal	Cooler-2 Cu smooth staggered Cu AlMg2.5 AISI 304 2 Parallel without horizontal

Recooler-1: 40/35/16-8R-64	T-4000A-3.0	0PA-128C-Cu/A	IMg2.5/AISI 304	Software	by www.zcs.ch
Capacity total	kW	256.132			LOGO
Capacity sensible	kW	91.239	\triangle		LUGU
Capacity latent	kW	164.892			
Surface reserve	%	1.111			Company
Present surface	m2	1727.741			Branch
			\		
Required surface	m2	1708.764	_ ` .		Street
k-coeff.	W/m2K	40.323	Recool	er-1	Country / ZIP / City
Average temp. diff.	K	3.717			
					Phone: xxxxxxxxxx
Air humid		Inlet	Outlet	Definition	Fax: xxxxxxxxxx
Fouling factor	m2K/W			5.000E-05	E-Mail
Height over sea level	m			540.000	Homepage
Pressure	hPa			949.653	
	°C	25.885	29.673	20.000	City, 9.8.2025
Temp. (36.000)					
Rel. humidity (46.000)	%	100.000	89.789	40.000	With the compliments of
Abs. humidity (18.360)	g/kg	22.597	25.407	6.174	Representative
Density humid	kg/m3	1.091	1.076	1.124	Direct dialing
Enthalpy humid	kJ/kg	83.636	94.790	35.793	XXXXXXXXX
Volume flow humid	m3/h	77458.892	78781.912	74000.000	Temp. (°C)
Mass flow dry	kg/h	82674.265	82674.265	82674.265	40
Velocity	m/s	2.101	2.137	2.007	
•	Pa	2.101	86.663	2.001	38
Pressure drop dry					36
Pressure drop wet	Pa		121.833		36
					34
Water Temp.	°C	15.000			· \ \
Evaporation total	kg/h	582.643			32
					30
34 V% Et.glycol		Inlet	Outlet	Definition	30
Fouling factor	m2K/W			5.000E-05	28
Temp.	°C	33.077	30.000	31.539	
Density	kg/m3	1045.689	1047.053	1046.377	26
•	•				24
Spec. heat	kJ/kgK	3.615	3.606	3.611	-· \ <i> </i>
Heat cond.	W/mK	0.450	0.447	0.449	22
Viscosity	Pas	1.753E-03	1.891E-03	1.820E-03	
Mass flow	kg/h	82986.147	82986.147	82986.147	20 1 1 1 1
IVIASS IIUW	kg/II	02900.147	02900.147	02000.147	
Volume flow	m3/h	79.360	79.257	79.308	18
	_				18 0 4 8 12 16 20 24 28 32
Volume flow	m3/h	79.360	79.257	79.308	0 4 8 12 16 20 24 28 32
Volume flow Velocity	m3/h m/s	79.360	79.257 0.900	79.308	
Volume flow Velocity	m3/h m/s	79.360	79.257 0.900	79.308	0 4 8 12 16 20 24 28 32
Volume flow Velocity Pressure drop	m3/h m/s	79.360	79.257 0.900	79.308	0 4 8 12 16 20 24 28 32
Volume flow Velocity Pressure drop Technical data Tubes total	m3/h m/s	79.360 0.901 Piece	79.257 0.900 22.205	79.308	0 4 8 12 16 20 24 28 32 Abs. humidity (g/kg)
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank	m3/h m/s	79.360 0.901 Piece Piece	79.257 0.900 22.205 512 0	79.308	0 4 8 12 16 20 24 28 32 Abs. humidity (g/kg) Tubes: Cu Tubes: smooth
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains	m3/h m/s	Piece Piece Piece	79.257 0.900 22.205 512 0 0/0	79.308	Tubes: Cu Tubes: smooth Tubes: staggered
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth	m3/h m/s	Piece Piece Piece Piece Piece	79.257 0.900 22.205 512 0 0/0 8	79.308	Tubes: Cu Tubes: smooth Tubes: staggered Collectors: 1.32 m/s Cu
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height	m3/h m/s	Piece Piece Piece Piece Piece Piece	79.257 0.900 22.205 512 0 0/0 8 64	79.308	Tubes: Cu Tubes: smooth Tubes: staggered Collectors: 1.32 m/s Cu Connections: 1.32 m/s Cu
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series	m3/h m/s	Piece Piece Piece Piece Piece Piece Piece Piece Piece	79.257 0.900 22.205 512 0 0/0 8 64 4	79.308	Tubes: Cu Tubes: smooth Tubes: smooth Tubes: cu Collectors: 1.32 m/s cu Connections: 1.32 m/s cu Fins: ribbed AIMg2.5
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC)	m3/h m/s	Piece Piece Piece Piece Piece Piece Piece Piece Piece	79.257 0.900 22.205 512 0 0/0 8 64 4 128	79.308	Tubes: Cu Tubes: smooth Tubes: smooth Tubes: cu Collectors: 1.32 m/s cu Connections: 1.32 m/s cu Fins: ribbed AIMg2.5 Frame: 2.00 mm AISI 304
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series	m3/h m/s	Piece Piece Piece Piece Piece Piece Piece Piece Piece	79.257 0.900 22.205 512 0 0/0 8 64 4	79.308	Tubes: Cu Tubes: smooth Tubes: smooth Tubes: cu Collectors: 1.32 m/s cu Connections: 1.32 m/s cu Fins: ribbed AIMg2.5
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC)	m3/h m/s	Piece Piece Piece Piece Piece Piece Piece Piece Piece	79.257 0.900 22.205 512 0 0/0 8 64 4 128	79.308	Tubes: Cu Tubes: smooth Tubes: smooth Tubes: cu Collectors: 1.32 m/s cu Connections: 1.32 m/s cu Fins: ribbed AIMg2.5 Frame: 2.00 mm AISI 304
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume	m3/h m/s	Piece	79.257 0.900 22.205 512 0 0/0 8 64 4 128 451	79.308	Tubes: Cu Tubes: smooth Tubes: smooth Tubes: cu Tubes: smooth Collectors: 1.32 m/s cu Connections: 1.32 m/s cu Fins: ribbed AIMg2.5 Frame: 2.00 mm AISI 304 Circulations: 2 Parallel
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight	m3/h m/s kPa	Piece Piece Piece Piece Piece Piece Piece Piece Riece Piece Riece	79.257 0.900 22.205 512 0 0/0 8 64 4 128 451 961	79.308 0.900	Tubes: Cu Tubes: Smooth Tubes: Smooth Tubes: Smooth Tubes: Staggered Collectors: 1.32 m/s Cu Connections: 1.32 m/s Cu Fins: ribbed AIMg2.5 Frame: 2.00 mm AISI 304 Circulations: 2 Parallel Protection: without
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height	m3/h m/s kPa G RH	Piece Piece Piece Piece Piece Piece Piece Piece Piece mm	79.257 0.900 22.205 512 0 0/0 8 64 4 128 451 961 4" 2640	79.308 0.900	Tubes: Cu Tubes: Smooth Tubes: Staggered Collectors: 1.32 m/s Cu Connections: 1.32 m/s Cu Fins: ribbed AIMg2.5 Frame: 2.00 mm AISI 304 Circulations: 2 Parallel Protection: without Protection: horizontal
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width	m3/h m/s kPa G RH BT	Piece Piece Piece Piece Piece Piece Piece Piece Mg mm mm	79.257 0.900 22.205 512 0 0/0 8 64 4 128 451 961 4" 2640 4268	79.308 0.900	Tubes: Cu Tubes: smooth Tubes: staggered Collectors: 1.32 m/s Cu Connections: 1.32 m/s Cu Fins: ribbed AIMg2.5 Frame: 2.00 mm AISI 304 Circulations: 2 Parallel Protection: without Protection: horizontal
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth	m3/h m/s kPa G RH BT RT	Piece Piece Piece Piece Piece Piece Piece Piece Mag mm mm mm	79.257 0.900 22.205 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380	79.308 0.900	Tubes: Cu Tubes: smooth Tubes: staggered Collectors: 1.32 m/s Cu Connections: 1.32 m/s Cu Fins: ribbed AIMg2.5 Frame: 2.00 mm AISI 304 Circulations: 2 Parallel Protection: without Protection: horizontal
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height	m3/h m/s kPa G RH BT RT LH	Piece Piece Piece Piece Piece Piece Piece Piece Mag mm mm mm mm	79.257 0.900 22.205 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560	79.308 0.900	Tubes: Cu Tubes: smooth Tubes: staggered Collectors: 1.32 m/s Cu Fins: ribbed AlMg2.5 Frame: 2.00 mm AlSI 304 Circulations: 2 Parallel Protection: flow direction: horizontal
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width	m3/h m/s kPa G RH BT RT LH LB	Piece Piece Piece Piece Piece Piece Piece Piece Mag mm mm mm mm mm	79.257 0.900 22.205 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000	79.308 0.900	Tubes: Cu Tubes: smooth Tubes: staggered Collectors: 1.32 m/s Cu Connections: 1.32 m/s Cu Fins: ribbed AIMg2.5 Frame: 2.00 mm AISI 304 Circulations: 2 Parallel Protection: without Protection: horizontal
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Finned depth	m3/h m/s kPa G RH BT RT LH LB LF	Piece Piece Piece Piece Piece Piece Piece Piece Mag mm mm mm mm mm mm	79.257 0.900 22.205 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000 277	79.308 0.900	Tubes: Cu Tubes: smooth Tubes: staggered Collectors: 1.32 m/s Cu Fins: ribbed AIMg2.5 Frame: 2.00 mm AISI 304 Circulations: 2 Parallel Protection: without Protection: horizontal
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width	m3/h m/s kPa G RH BT RT LH LB LF RO	Piece Piece Piece Piece Piece Piece Piece Piece Mag mm mm mm mm mm	79.257 0.900 22.205 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000 277 40	79.308 0.900	Tubes: Cu Tubes: smooth Tubes: staggered Collectors: 1.32 m/s Cu Connections: 1.32 m/s Cu Fins: ribbed AIMg2.5 Frame: 2.00 mm AISI 304 Circulations: 2 Parallel Protection: without Protection: horizontal
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Finned depth	m3/h m/s kPa G RH BT RT LH LB LF	Piece Piece Piece Piece Piece Piece Piece Piece Mag mm mm mm mm mm mm	79.257 0.900 22.205 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000 277	79.308 0.900	Tubes: Tubes: Tubes: Tubes: Smooth Tubes: Staggered Collectors: 1.32 m/s Cu Fins: ribbed Frame: 2.00 mm AISI 304 Circulations: Protection: Protection: Protection: Tubes: Smooth Staggered AlMg2.5 Frame: 2.00 mm AISI 304 Circulations: 2 Parallel without Protection: Tubes: Smooth AlMg2.5 Frame: 2.00 mm AISI 304 Circulations: 1.32 m/s Cu Tubes: Smooth AlMg2.5 Frame: 1.32 m/s Cu Almg2.5 Frame: 1.30 m/s Cu Almg2.5 Frame: 1.32 m/s Cu Fins: Ribed Almg2.5 Frame: 1.32 m/s Cu Almg2.5 Frame: 1.32 m/s Cu Fins: Ribed Ribed
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Finned depth Frame on top	m3/h m/s kPa G RH BT RT LH LB LF RO	Piece Piece Piece Piece Piece Piece Piece Piece Mag mm mm mm mm mm mm mm mm mm	79.257 0.900 22.205 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000 277 40	79.308 0.900	Tubes: Cu Tubes: smooth Tubes: staggered Collectors: 1.32 m/s Cu Fins: ribbed AIMg2.5 Frame: 2.00 mm AISI 304 Circulations: 2 Parallel Protection: without Protection: horizontal
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Finned depth Frame on top Frame on bottom	m3/h m/s kPa G RH BT RT LH LB LF RO RU	Piece Piece Piece Piece Piece Piece Piece Piece Mag mm	79.257 0.900 22.205 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000 277 40 40	79.308 0.900	Tubes: Tubes: Tubes: Tubes: Smooth Tubes: Staggered Collectors: 1.32 m/s Cu Fins: ribbed AlMg2.5 Frame: 2.00 mm AlSI 304 Circulations: Protection: Protection: Tubes: Smooth Staggered AlMg2.5 Frame: 2.00 mm AlSI 304 Circulations: Protection: Tubes: Smooth Staggered AlMg2.5 Frame: 2.00 mm AlSI 304 Circulations: Alsi 304 Circulations: Description: Tubes: Smooth Staggered Almg2.5 Frame: 2.00 mm Alsi 304 Circulations: Description: Substituting the stage of t
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned depth Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69mm)	m3/h m/s kPa G RH BT RT LH LB LF RO RU RV RN	Piece Piece Piece Piece Piece Piece Piece I kg mm	79.257 0.900 22.205 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000 277 40 40 40 69	79.308 0.900	Tubes: Tubes: Tubes: Tubes: Smooth Tubes: Staggered Collectors: 1.32 m/s Cu Fins: ribbed AlMg2.5 Frame: 2.00 mm AlSI 304 Circulations: Protection: Protection: Tubes: Smooth Staggered AlMg2.5 Frame: 2.00 mm AlSI 304 Circulations: Protection: Tubes: Smooth Staggered AlMg2.5 Frame: 2.00 mm AlSI 304 Circulations: Alsi 304 Circulations: Description: Tubes: Smooth Staggered Almg2.5 Frame: 2.00 mm Alsi 304 Circulations: Description: Substituting the stage of t
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned depth Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69mm) Collector-Diameter	m3/h m/s kPa G RH BT RT LH LB LF RO RU RV RN K	Piece Piece Piece Piece Piece Piece Piece Piece I kg mm	79.257 0.900 22.205 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000 277 40 40 69 108	79.308 0.900	Tubes: Tubes: Tubes: Tubes: Smooth Tubes: Staggered Collectors: Connections: Fins: Frame: Circulations: Protection: Protection: Protection: Smooth AlMg2.5 Frame: 2.00 mm AlSi 304 Circulations: Protection: Protection: Smooth AlMg2.5 Frame: 2.00 mm Alsi 304 Circulations: Almg2.5 Frame: 1.32 m/s Cu Without Protection: Morizontal
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69mm) Collector-Diameter Collector covering	m3/h m/s kPa G RH BT RT LH LB LF RO RU RV RN K AD	Piece Piece Piece Piece Piece Piece Piece Piece I kg mm	79.257 0.900 22.205 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000 277 40 40 69 108 199	79.308 0.900	Tubes: Tubes: Tubes: Tubes: Smooth Tubes: Staggered Collectors: 1.32 m/s Cu Fins: ribbed AlMg2.5 Frame: 2.00 mm AlSI 304 Circulations: Protection: Protection: Tubes: Smooth Staggered AlMg2.5 Frame: 2.00 mm AlSI 304 Circulations: Protection: Tubes: Smooth Staggered AlMg2.5 Frame: 2.00 mm AlSI 304 Circulations: Alsi 304 Circulations: Description: Tubes: Smooth Staggered Almg2.5 Frame: 2.00 mm Alsi 304 Circulations: Description: Substituting the stage of t
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69mm) Collector-Diameter Collector covering Collector distance	m3/h m/s kPa G RH BT RT LH LB LF RO RU RV RN K AD KA	Piece Piece Piece Piece Piece Piece Piece Piece I kg mm	79.257 0.900 22.205 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000 277 40 40 69 108 199 243	79.308 0.900	Tubes: Cu Tubes: smooth Tubes: staggered Collectors: 1.32 m/s Cu Fins: ribbed AIMg2.5 Frame: 2.00 mm AISI 304 Circulations: 2 Parallel Protection: without Protection: horizontal
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69mm) Collector-Diameter Collector distance Fin spacing	m3/h m/s kPa G RH BT RT LH LB LF RO RU RV RN K AD KA LT	Piece Piece Piece Piece Piece Piece Piece Piece I kg mm	79.257 0.900 22.205 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000 277 40 40 69 108 199 243 3.000	79.308 0.900	Tubes: Cu Tubes: smooth Tubes: staggered Collectors: 1.32 m/s Cu Fins: ribbed AIMg2.5 Frame: 2.00 mm AISI 304 Circulations: 2 Parallel Protection: without Protection: horizontal LB RN Delivery: 5-6 weeks
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69mm) Collector-Diameter Collector covering Collector distance Fin spacing Fin thickness	m3/h m/s kPa G RH BT RT LH LB LF RO RV RN K AD KA LT LD	Piece Piece Piece Piece Piece Piece Piece Piece I kg mm	79.257 0.900 22.205 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000 277 40 40 69 108 199 243 3.000 0.200	79.308 0.900	Tubes: Tubes: Tubes: Tubes: Smooth Tubes: Staggered Collectors: Connections: Frame: Circulations: Protection: Protection: Protection: Protection: Smooth AlMg2.5 Frame: 2.00 mm AlSI 304 Circulations: 2 Parallel without Protection: horizontal Delivery: Validity: S-6 weeks 12 weeks
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69mm) Collector-Diameter Collector distance Fin spacing	m3/h m/s kPa G RH BT RT LH LB LF RO RV RN K AD KA LT LD DA	Piece Piece Piece Piece Piece Piece Piece Piece I kg mm	79.257 0.900 22.205 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000 277 40 40 69 108 199 243 3.000 0.200 16.400	79.308 0.900	Tubes: Cu Tubes: smooth Tubes: staggered Collectors: 1.32 m/s Cu Fins: ribbed AIMg2.5 Frame: 2.00 mm AISI 304 Circulations: 2 Parallel Protection: without Protection: horizontal LB RN Delivery: 5-6 weeks
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69mm) Collector-Diameter Collector covering Collector distance Fin spacing Fin thickness	m3/h m/s kPa G RH BT RT LH LB LF RO RV RN K AD KA LT LD DA S	Piece Piece Piece Piece Piece Piece Piece Piece Piece Mm	79.257 0.900 22.205 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000 277 40 40 69 108 199 243 3.000 0.200	79.308 0.900	Tubes: Tubes: Tubes: Tubes: Smooth Tubes: Staggered Collectors: Connections: Frame: Circulations: Protection: Protection: Protection: Protection: Smooth AlMg2.5 Frame: 2.00 mm AlSI 304 Circulations: 2 Parallel without Protection: horizontal Delivery: Validity: S-6 weeks 12 weeks
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned depth Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69mm) Collector-Diameter Collector covering Collector distance Fin spacing Fin thickness Tube diameter	m3/h m/s kPa G RH BT RT LH LB LF RO RV RN K AD KA LT LD DA	Piece Mm	79.257 0.900 22.205 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000 277 40 40 69 108 199 243 3.000 0.200 16.400	79.308 0.900	Tubes: Tubes: Tubes: Staggered Collectors: Connections: Frame: Circulations: Protection: Protection: Tlow direction: Tubes: Staggered AlMg2.5 Frame: Conmm AlSI 304 Circulations: Protection: From the company of the c
Volume flow Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69mm) Collector-Diameter Collector covering Collector distance Fin spacing Fin thickness Tube diameter Tube thickness	m3/h m/s kPa G RH BT RT LH LB LF RO RV RN K AD KA LT LD DA S	Piece Nome Nome Nome Nome Nome Nome Nome Nom	79.257 0.900 22.205 512 0 0/0 8 64 4 128 451 961 4" 2640 4268 380 2560 4000 277 40 40 69 108 199 243 3.000 0.200 16.400 0.400	79.308 0.900	Tubes: Tubes: Tubes: Staggered Collectors: Connections: Frame: Circulations: Protection: Protection: Tlow direction: Tubes: Staggered AlMg2.5 Frame: Conmm AlSI 304 Circulations: Protection: From the company of the c

	IT-4000A-3.4	IPA-96C-Cu/All	Mg2.5/AISI 304	Software	by www.zcs.ch	
Capacity total	kW	243.868				LOGO
Capacity sensible	kW	78.763				LOGO
Capacity latent	kW	165.105				
Surface reserve	%	0.934 戊				Company
Present surface	m2	1152.668				Branch
Required surface	m2	1142.000				Street
k-coeff.	W/m2K	45.715	Recool	er-2		Country / ZIP / City
Average temp. diff.	K	4.671				
						Phone: xxxxxxxxxx
Air humid		Inlet	Outlet	Definition		Fax: xxxxxxxxxxx
Fouling factor	m2K/W			5.000E-05		E-Mail
Height over sea level	m			540.000		Homepage
Pressure	hPa			949.653		
Temp. (29.673)	°C	28.208	31.458	20.000		City, 9.8.2025
Rel. humidity (89.789)	%	100.000	91.561	40.000	W	ith the compliments of
Abs. humidity (25.407)	g/kg	26.027	28.837	6.174		Representative
Density humid	kg/m3	1.081	1.068	1.124		Direct dialing
Enthalpy humid	kJ/kg	94.828	105.448	35.793		XXXXXXXXX
Volume flow humid	m3/h	78475.963	79666.127	74000.000	Temp. (°C)	
Mass flow dry	kg/h	82674.265	82674.265	82674.265	40	
Velocity	m/s	2.129	2.161	2.007	38	
Pressure drop dry	Pa		59.734			/ \\
Pressure drop wet	Pa		86.736		36	\ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
					34	
Water Temp.	°C	15.000				\
Evaporation total	kg/h	283.586			32	K0 /
					30 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
34 V% Et.glycol		Inlet	Outlet	Definition		
Fouling factor	m2K/W			5.000E-05	28	
Temp.	°C	36.000	33.077	34.539	26	
Density	kg/m3	1044.351	1045.689	1045.025		\
Spec. heat	kJ/kgK	3.624	3.615	3.620	24	
Heat cond.	W/mK	0.453	0.450	0.451	22	- $//$ $/ /// ////////$
Viscosity	Pas	1.636E-03	1.753E-03	1.693E-03	20	<i>X</i> / \ \ \ \
Mass flow	kg/h	82986.147	82986.147	82986.147	20 1	7
Valuma flau						/ / / / / / /
Volume flow	m3/h	79.462	79.360	79.411	18	
Velocity	m/s	79.462 1.203	1.201	79.411 1.202	18 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
						2 16 20 24 28 3: Abs. humidity (g/kg
Velocity	m/s		1.201			
Velocity Pressure drop	m/s		1.201 32.632			
Velocity Pressure drop Technical data	m/s	1.203	1.201		0 4 8 12	Abs. humidity (g/kg
Velocity Pressure drop Technical data Tubes total	m/s	1.203 Piece	1.201 32.632 384		0 4 8 12 Tubes:	Abs. humidity (g/kg
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains	m/s	1.203 Piece Piece	1.201 32.632 384 0		0 4 8 12 Tubes: Tubes:	Abs. humidity (g/kg
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth	m/s	Piece Piece Piece	1.201 32.632 384 0 0/0 6		Tubes: Tubes: Tubes: Collectors:	Abs. humidity (g/kg Ci smooti staggeree 1.32 m/s Ci
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height	m/s	Piece Piece Piece Piece	1.201 32.632 384 0 0/0		Tubes: Tubes: Tubes: Tubes:	Abs. humidity (g/kg Ci smootl staggerer 1.32 m/s Ci 1.32 m/s
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth	m/s	Piece Piece Piece Piece Piece Piece	1.201 32.632 384 0 0/0 6 64		Tubes: Tubes: Tubes: Collectors: Connections:	Abs. humidity (g/kg Ci smootl staggerer 1.32 m/s Ci 1.32 m/s Ci
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series	m/s	Piece Piece Piece Piece Piece Piece Piece	1.201 32.632 384 0 0/0 6 64 4		Tubes: Tubes: Tubes: Collectors: Connections: Fins:	Abs. humidity (g/kg Ci smootl staggerer 1.32 m/s Ci 1.32 m/s Ci ribbed AIMg2.3
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC)	m/s	Piece Piece Piece Piece Piece Piece Piece Piece	1.201 32.632 384 0 0/0 6 64 4 96		Tubes: Tubes: Tubes: Collectors: Connections: Fins: Frame:	Abs. humidity (g/kg Ci smootl staggerer 1.32 m/s Ci 1.32 m/s Ci ribbed AIMg2.3
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume	m/s	Piece Piece Piece Piece Piece Piece Piece Piece	1.201 32.632 384 0 0/0 6 64 4 96 349		Tubes: Tubes: Tubes: Collectors: Connections: Fins: Frame: Circulations:	Abs. humidity (g/kg Ci smootl staggerer 1.32 m/s Ci 1.32 m/s Ci ribbed AIMg2.3 2.00 mm AISI 300 2 Paralle
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight	m/s kPa	Piece Piece Piece Piece Piece Piece Piece Piece Riece Piece	1.201 32.632 384 0 0/0 6 64 4 96 349 707	1.202	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Fins: Frame: Circulations: Protection:	Abs. humidity (g/kg Ci smootl staggerer 1.32 m/s Ci 1.32 m/s Ci ribbed AIMg2.3 2.00 mm AISI 300 2 Paralle
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections	m/s kPa	Piece Piece Piece Piece Piece Piece Piece Piece Piece	1.201 32.632 384 0 0/0 6 64 4 96 349 707 4"	1.202 Air	Tubes: Tubes: Tubes: Collectors: Connections: Fins: Frame: Circulations: Protection: Protection: flow direction:	Abs. humidity (g/kg Ci smootl staggeree 1.32 m/s Ci 1.32 m/s Ci ribbed AIMg2.4 2.00 mm AISI 30- 2 Paralle withou
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width	m/s kPa G RH	Piece Piece Piece Piece Piece Piece Piece Piece mmm mm	1.201 32.632 384 0 0/0 6 64 4 96 349 707 4" 2640 4268	1.202	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Frame: Circulations: Protection: Protection: flow direction:	Abs. humidity (g/kg Ci smootl staggeree 1.32 m/s Ci 1.32 m/s Ci ribbed AIMg2.4 2.00 mm AISI 30- 2 Paralle withou
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth	m/s kPa G RH BT RT	Piece Piece Piece Piece Piece Piece Piece Piece Mag mm mm mm	1.201 32.632 384 0 0/0 6 64 4 96 349 707 4" 2640 4268 310	1.202 Air	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Frame: Circulations: Protection: Protection: flow direction:	Abs. humidity (g/kg Ci smootl staggerer 1.32 m/s Ci 1.32 m/s Ci ribbed AlMg2.3 2.00 mm AISI 30- 2 Paralle withou horizonta
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width	m/s kPa G RH BT	Piece Piece Piece Piece Piece Piece Piece Piece mmm mm	1.201 32.632 384 0 0/0 6 64 4 96 349 707 4" 2640 4268	Air	Tubes: Tubes: Tubes: Collectors: Connections: Fins: Frame: Circulations: Protection: Protection: flow direction:	Abs. humidity (g/kg Ci smootl staggerer 1.32 m/s Ci 1.32 m/s Ci ribbed AlMg2.3 2.00 mm AISI 30- 2 Paralle withou horizonta
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width	m/s kPa G RH BT RT LH	Piece Piece Piece Piece Piece Piece Piece Piece Mag mm mm mm mm	1.201 32.632 384 0 0/0 6 64 4 96 349 707 4" 2640 4268 310 2560	1.202	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Frame: Circulations: Protection: Protection: flow direction:	Abs. humidity (g/kg Ci smootl staggerer 1.32 m/s Ci 1.32 m/s Ci ribbed AlMg2.3 2.00 mm AISI 30- 2 Paralle withou horizonta
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned depth	m/s kPa G RH BT RT LH LB LF	Piece Piece Piece Piece Piece Piece Piece Piece Mag mm mm mm mm mm mm mm	1.201 32.632 384 0 0/0 6 64 4 96 349 707 4" 2640 4268 310 2560 4000	Air	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Fins: Frame: Circulations: Protection: flow direction:	Abs. humidity (g/kg Ci smootl staggerer 1.32 m/s Ci 1.32 m/s Ci ribbed AlMg2.3 2.00 mm AISI 30- 2 Paralle withou horizonta
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width	m/s kPa G RH BT RT LH LB LF RO	Piece Piece Piece Piece Piece Piece Piece Piece Mag mm mm mm mm mm	1.201 32.632 384 0 0/0 6 64 4 96 349 707 4" 2640 4268 310 2560 4000 208	1.202	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Fins: Frame: Circulations: Protection: Protection: flow direction:	Abs. humidity (g/kg Ci smootl staggerer 1.32 m/s Ci 1.32 m/s Ci ribbed AlMg2.3 2.00 mm AISI 30- 2 Paralle withou horizonta
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Finned depth Frame on top	m/s kPa G RH BT RT LH LB LF	Piece Piece Piece Piece Piece Piece Piece Piece Mag mm mm mm mm mm mm mm mm	1.201 32.632 384 0 0/0 6 64 4 96 349 707 4" 2640 4268 310 2560 4000 208 40	Air AD ØK	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Fins: Frame: Circulations: Protection: flow direction:	Abs. humidity (g/kg Ci smootl staggerer 1.32 m/s Ci 1.32 m/s Ci ribbed AlMg2.3 2.00 mm AISI 30- 2 Paralle withou horizonta
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Finned depth Frame on top Frame on bottom Frame in front	m/s kPa G RH BT RT LH LB LF RO RU	Piece Piece Piece Piece Piece Piece Piece Piece I kg mm mm mm mm mm mm mm	1.201 32.632 384 0 0/0 6 64 4 96 349 707 4" 2640 4268 310 2560 4000 208 40 40	Air AD ØK	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Frame: Circulations: Protection: Protection: flow direction:	Abs. humidity (g/kg Ci smooti staggerer 1.32 m/s Ci ribbed AIMg2.: 2.00 mm AISI 30 2 Paralle without horizonta
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Finned depth Frame on top Frame on bottom	m/s kPa G RH BT RT LH LB LF RO RU RV	Piece Piece Piece Piece Piece Piece Piece Piece Piece Mm	1.201 32.632 384 0 0/0 6 64 4 96 349 707 4" 2640 4268 310 2560 4000 208 40 40	Air AD ØK	Tubes: Tubes: Tubes: Collectors: Connections: Fins: Frame: Circulations: Protection: flow direction: LB RN Q	Abs. humidity (g/kg Construction Staggerer 1.32 m/s Construction 1.32 m/s Construction Construction Construction Staggerer 1.32 m/s Construction
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69mm) Collector-Diameter	m/s kPa G RH BT RT LH LB LF RO RU RV RN K	Piece Piece Piece Piece Piece Piece Piece I kg mm	1.201 32.632 384 0 0/0 6 64 4 96 349 707 4" 2640 4268 310 2560 4000 208 40 40 40 69	Air AD ØK	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Frame: Circulations: Protection: Protection: flow direction:	Abs. humidity (g/kg Crismooti staggerer 1.32 m/s Cribbed AIMg2.3 2.00 mm AISI 30 2 Paralle without horizonta
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned height Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69mm)	M/S kPa G RH BT RT LH LB LF RO RU RV RN	Piece Piece Piece Piece Piece Piece Piece I kg mm	1.201 32.632 384 0 0/0 6 64 4 96 349 707 4" 2640 4268 310 2560 4000 208 40 40 69 108	Air AD ØK	Tubes: Tubes: Tubes: Collectors: Connections: Fins: Frame: Circulations: Protection: flow direction: LB RN Q	Abs. humidity (g/kg Construction Staggerer 1.32 m/s Construction 1.32 m/s Construction Construction Construction Staggerer 1.32 m/s Construction
Velocity Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69mm) Collector-Diameter Collector covering Collector distance	M/s kPa G RH BT RT LH LB F RO RU RV RN K AD KA	Piece Piece Piece Piece Piece Piece Piece Piece I kg mm	1.201 32.632 384 0 0/0 6 64 4 96 349 707 4" 2640 4268 310 2560 4000 208 40 40 69 108 199 174	Air AD ØK	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Frame: Circulations: Protection: Protection: flow direction: LB RN O2 RV BT	Abs. humidity (g/kg Company of the control of the
Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned width Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69mm) Collector-Diameter Collector covering Collector distance Fin spacing	M/S kPa G RH BT RT LH LB LF RO RV RN KA AD KA LT	Piece Piece Piece Piece Piece Piece Piece Piece I kg mm	1.201 32.632 384 0 0/0 6 64 4 96 349 707 4" 2640 4268 310 2560 4000 208 40 40 69 108 199 174 3.400	Air AD ØK	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Frame: Circulations: Protection: Protection: flow direction: LB RN Q RV BT Delivery:	Abs. humidity (g/kg Ci smooth staggerer 1.32 m/s Ci ribbed AIMg2.3 2.00 mm AISI 30 2 Paralle without horizonta
Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned depth Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69mm) Collector-Diameter Collector covering Collector distance Fin spacing Fin thickness	m/s kPa G RH BT RT LH LB LF RO RV RN KA LT LD	Piece Piece Piece Piece Piece Piece Piece Piece Piece I kg mm	1.201 32.632 384 0 0/0 6 6 44 4 96 349 707 4" 2640 4268 310 2560 4000 208 40 40 69 108 199 174 3.400 0.200	Air AD ØK	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Frame: Circulations: Protection: Protection: flow direction: LB RN ON BT Delivery: Validity:	Abs. humidity (g/kg Ci smooti staggerer 1.32 m/s Ci 1.32 m/s Ci ribbed AIMg2.3 2 Paralle withou horizonta 1 2 5-6 week 12 week
Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned depth Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69mm) Collector-Diameter Collector distance Fin spacing Fin thickness Tube diameter	m/s kPa G RH BT RT LH LB LF RO RV RN KA LT LD DA	Piece I kg mm	1.201 32.632 384 0 0/0 6 64 4 96 349 707 4" 2640 4268 310 2560 4000 208 40 40 69 108 199 174 3.400 0.200 16.400	Air AD ØK	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Frame: Circulations: Protection: Protection: flow direction: LB RN ON BT Delivery: Validity: Condit.:	Abs. humidity (g/kg Ci smooth staggerer 1.32 m/s Ci 1.32 m/s Ci ribbed AlMg2.3 2 Paralle withou horizonta 1 2 5-6 week 12 week net, prepaid addres
Pressure drop Technical data Tubes total Tubes blank Int. vent./drains Tube rows on the depth Tube rows on the height Tube coupling in series Number of circuits (NC) Volume Weight Connections Frame height Frame width Frame depth Finned height Finned depth Finned depth Frame on top Frame on bottom Frame in front Frame on back (~69mm) Collector-Diameter Collector covering Collector distance Fin spacing Fin thickness	m/s kPa G RH BT RT LH LB LF RO RV RN KA LT LD	Piece Piece Piece Piece Piece Piece Piece Piece Piece I kg mm	1.201 32.632 384 0 0/0 6 6 44 4 96 349 707 4" 2640 4268 310 2560 4000 208 40 40 69 108 199 174 3.400 0.200	Air AD ØK	Tubes: Tubes: Tubes: Tubes: Collectors: Connections: Frame: Circulations: Protection: Protection: flow direction: LB RN ON BT Delivery: Validity:	Abs. humidity (g/kg Ci smooti staggerer 1.32 m/s Ci 1.32 m/s Ci ribbed AIMg2.3 2 Paralle withou horizonta 1 2 5-6 week 12 week