



**EVAPTON**  
HEAT EXCHANGER

Customer -  
Attention -  
Project Nbr.  
Date 13.03.2024  
Description

### Exchanger data

Capacity	678,42	kW
Exchanging Surface	33,12	m <sup>2</sup>
Global heat transfer coefficient	2762	W/(m <sup>2</sup> K)
DTML	7,42	°C

### Inside Tubes Evaporator

#### TUBE SIDE

Refrigerant	R407C	
Fluid mass flow rate / Fluid Velocity	15398,7 / 18,26	kg/h / m/s
Evap. / Cond. temperature	2,75 - [Dew] / 45,00 - [Bubble]	°C / °C
Pressure drop	49,92	kPa
Evaporating latent heat	154299	J / kg
Partial heat transfert coefficient	10218	W/(m <sup>2</sup> K)
Fouling Factor	0,0000000	(m <sup>2</sup> K)/W
Thermophysical properties	LIQUID	GAS
Density	1233,8 kg/m <sup>3</sup>	20,135 kg/m <sup>3</sup>
Specific Heat	1418,6 J/(kg K)	960,5 J/(kg K)
Thermal Conductivity	0,09593 W/(m K)	0,0121 W/(m K)
Viscosity	0,000209 kg/(m s)	0,000011288 kg/(m s)

#### SHELL SIDE

Fluid	WATER (1,000 bar A/Liquid) - P8	
Fluid Flow / Fluid Velocity	113,3 / 1,55	m <sup>3</sup> /h / m/s
Inlet / Outlet temperature	12,00 / 6,86	°C / °C
Pressure drop	57,51	kPa
Partial heat transfert coefficient	5195	W/(m <sup>2</sup> K)
Fouling Factor	0,0000430	(m <sup>2</sup> K)/W
Thermophysical properties at the average temperature	9,43	°C
Density	999,7	kg/m <sup>3</sup>
Specific Heat	4196	J/(kg K)
Thermal Conductivity	0,5777	W/(m K)
Viscosity	0,001325	kg/(m s)

### Exchanger data

Nr of exchangers	1	
Tubes Length	2441	mm
Shell diameter	396	mm
Shell inlet/outlet nozzle	1 x 8" (219,2 mm th. 8,25 mm) / 8" (219,2 mm th. 8,25 mm)	
Tubes inlet/outlet nozzle	2 x 1,25" (42,2 mm th. 3,55 mm) / 2,5" (73,1 mm th. 5,2 mm)	

UNILAB SHELL - 220420