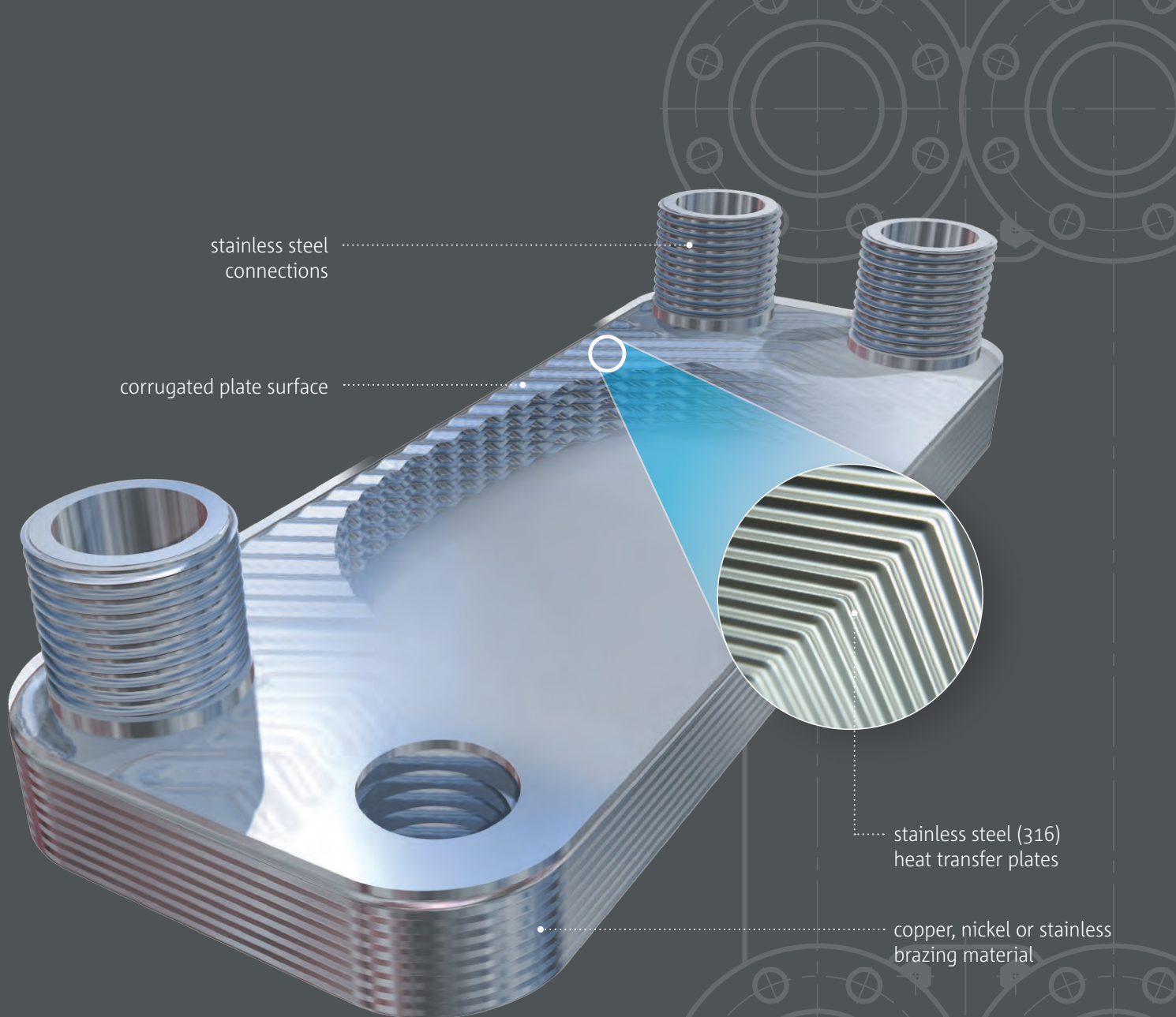


HEAT EXCHANGERS | aico[∞]i



Brazed Plate
Heat Exchangers



Advantages

- Compact models with high heat transfer capacity
- Stainless steel plates with corrugated surface ensure turbulent flow and structural support to the unit
- High heat transfer coefficient
- Cost efficiency
- Single or double wall option. Copper, nickel and stainless brazing material available
- Quick and easy installation

Applications

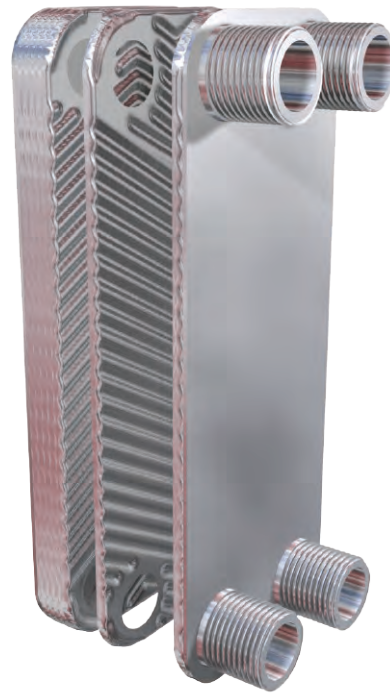
- Condensers and evaporators in refrigeration systems
- Oil coolers
- Close approach fluid-to-fluid heat transfer
- Industrial process heat recovery
- Solar and geothermal heating
- Hydronic heating
- Central heating
- Gas cooling

L LINE

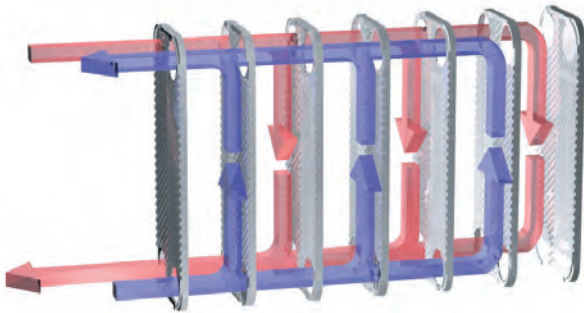
Brazed Plate Heat Exchangers

Brazed plate heat exchangers consist of stainless steel plate packs, which have embossed chevron patterns. The plates are turned 180° to each other, causing the plate ridges to intersect, and creating a lattice of intersecting channels. The fluids can flow in counter-current or co-current way.

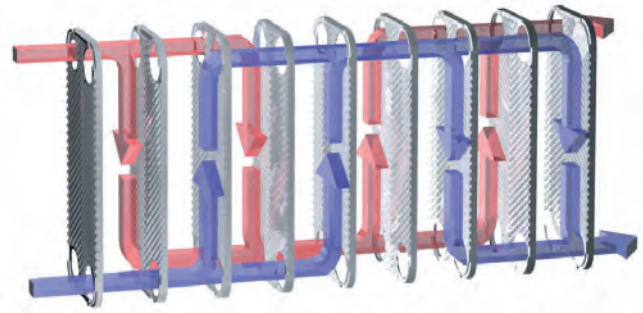
Special corrugation patterns promotes high turbulence flow. Turbulence dramatically improves heat transfer rates and reduces the amount of deposits inside the unit.



Flow Chanel Diagram in Heat Exchanger



one-pass - channels are parallel.



multi-pass - system of channels is divided into groups which are connected in series.

By changing number of plates, geometry of plates, pattern of plate corrugation and channel diagrams we can custom design heat exchangers for individual needs of the customers

Double Wall Brazed Plate Heat Exchangers

The design of the double wall brazed plate heat exchanger prevents cross contamination of fluid streams if there is an internal leak within the unit.

Two stainless steel plate walls separate the fluid streams, with an air gap in between. In the event of a leak, the affected fluid will flow into the air gap and escape out of the heat exchanger, enabling visual detection of the leak.

Advantages of AIC Double Wall Brazed Plate Heat Exchangers

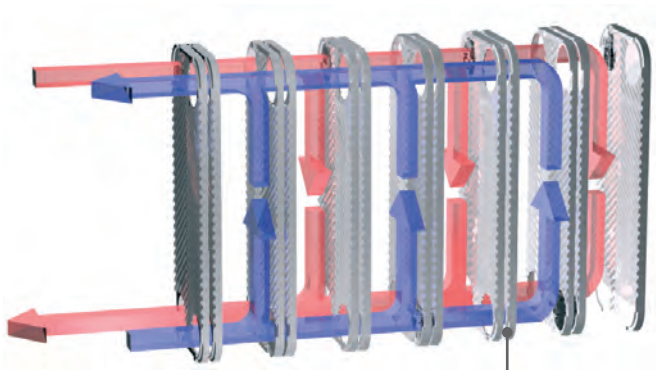
- Visual leak detection
- Prevents fluid cross-contamination
- High thermal efficiency
- Compact design, small footprint

Applications

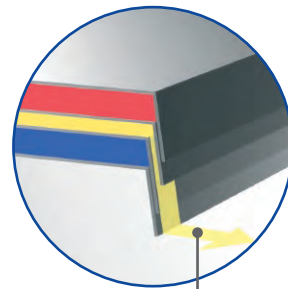
- Potable water heating
- Domestic hot water heating
- Hospitals
- Food and beverage processing
- Chemical industry

The entire construction is sealed together by means of brazing in a special vacuum furnace.

Flow Channel Diagram in Double Wall Heat Exchanger



Double walls allow leaks to be visually detected without cross contaminating the fluid streams.



Leaks escape into the atmosphere through the air gap between the double walls.

Technical Product Specifications



L Line

Model	Dimensions mm (in)					Plate Area	Channel Volume	Maximum Flow	Max. Number of Plates	Weight (empty)
	A	B	C	D	F					
						m ² (sq.ft)	L (USGal)	L/min (GPM)		kg (lb)
LA 14	194 (7.6)	80 (3.1)	154 (6.1)	40 (1.6)	10.0+2.3NP(0.39+0.09NP)	0.012 (0.13)	0.021 (0.005)	110 (29)	60	0.8+0.05NP(1.8+0.10NP)
LA 22	300 (11.8)	79 (3.1)	260 (10.2)	42 (1.7)	9.0+2.3NP(0.36+0.09NP)	0.022 (0.24)	0.034 (0.009)	68 (18)	60	1.1+0.09NP(2.4+0.20NP)
LA 34	469 (18.5)	80 (3.1)	432 (17.0)	42 (1.7)	9.0+2.3NP(0.36+0.09NP)	0.034 (0.37)	0.054 (0.014)	68 (18)	60	1.7+0.12NP(3.7+0.26NP)
LB 31	306 (12.0)	126 (5.0)	250 (9.8)	70 (2.8)	10+2.5NP (0.39+0.10NP)	0.032 (0.34)	0.054 (0.014)	212 (56)	150	1.6+0.15NP(3.5+0.33NP)
LB 47	414 (16.3)	122 (4.8)	360 (14.2)	68 (2.7)	10+2.5NP (0.39+0.10NP)	0.047 (0.51)	0.072 (0.019)	212 (56)	150	2.1+0.18NP(4.6+0.40NP)
LB 60	506 (19.9)	126 (5.0)	444 (17.5)	64 (2.5)	10+2.5NP (0.39+0.10NP)	0.058 (0.62)	0.097 (0.026)	212 (56)	150	3.5+0.24NP(7.7+0.53NP)
LC 110X	530 (20.9)	248 (9.8)	456 (17.9)	174 (6.9)	11.5+2.4NP(0.45+0.09NP)	0.113 (1.22)	0.196 (0.052)	450 (119)	200	7.2+0.52NP(15.8+1.14NP)
LC 110H	463 (18.2)	255 (10.0)	378 (14.9)	170 (6.7)	10.0+2.4NP(0.39+0.09NP)	0.110 (1.18)	0.162 (0.043)	550 (145)	200	4.3+0.39NP(9.4+0.86NP)
LC 110L	463 (18.2)	255 (10.0)	378 (14.9)	170 (6.7)	10.0+2.4NP(0.39+0.09NP)	0.110 (1.18)	0.162 (0.043)	650 (172)	200	4.3+0.39NP(9.4+0.86NP)
LC 110Y	523 (20.6)	241 (9.5)	430 (16.9)	148 (5.8)	13.4+2.8NP(0.53+0.11NP)	0.104 (1.12)	0.216 (0.057)	700 (185)	200	7.2+0.55NP(15.8+1.21NP)
LC 110Z	523 (20.6)	241 (9.5)	430 (16.9)	148 (5.8)	13.4+2.8NP(0.53+0.11NP)	0.104 (1.12)	0.216 (0.057)	900 (238)	200	7.7+0.55NP(16.9+1.21NP)
LC 170	685 (27.0)	255 (10.0)	600 (23.6)	170 (6.7)	10.0+2.4NP(0.39+0.09NP)	0.170 (1.83)	0.255 (0.067)	500(132)	200	5.9+0.60NP(13.0+1.32NP)
LD235	784 (30.9)	306 (12.0)	682 (26.9)	204 (8.0)	12.0+2.6NP(0.47+0.10NP)	0.235 (2.53)	0.398 (0.105)	1500 (396)	280	19.0+0.81NP(41.8+1.78NP)

NP - number of plates

Standard Construction:

- Plates & Connections: AISI 316
- Brazing Material: Copper (Optional - Nickel, Stainless)
- Single Wall Plates (Optional - Double-Wall)

Design Parameters:

- Working Temperature up to 230°C (445°F)
- Working Pressure up to 45 bar (650 PSI)



DW Line

Model	Dimensions mm (in)					Plate Area	Channel Volume	Maximum Flow	Max. Number of Plates	Weight (empty)
	A	B	C	D	F					
						m ² (sq.ft)	L (USGal)	L/min (GPM)		kg (lb)
LA14DW	201 (7.9)	80 (3.1)	164 (6.5)	42 (1.7)	10+2.4NP (0.39+0.09NP)	0,014 (0,15)	0,022 (0,006)	110 (29)	60	0.8+0.05NP (1.8+0.10NP)
LA22DW	300 (11.8)	80 (3.1)	260 (10.2)	42 (1.7)	10+2.4NP (0.39+0.09NP)	0,022 (0,24)	0,035 (0,009)	68 (18)	60	1.1+0.08NP (2.4+0.18NP)
LA34DW	469 (18.5)	80 (3.1)	432 (17.0)	42 (1.7)	10+2.4NP (0.39+0.09NP)	0,034 (0,37)	0,054 (0,014)	68 (18)	60	1.7+0.12NP (3.7+0.26NP)
LB31DW	286 (11.3)	117 (4.6)	232 (9.1)	68 (2.7)	10+2.5NP (0.39+0.10NP)	0,031 (0,33)	0,047 (0,012)	212 (56)	150	1.9+0.12NP (4.2+0.26NP)
LB47DW	414 (16.3)	117 (4.6)	360 (14.2)	68 (2.7)	10+2.5NP (0.39+0.10NP)	0,047 (0,51)	0,072 (0,019)	212 (56)	150	2.3+0.19NP (5.1+0.42NP)
LB60DW	534 (21.0)	117 (4.6)	480 (18.9)	68 (2.7)	10+2.5NP (0.39+0.10NP)	0,060 (0,65)	0,091 (0,024)	212 (56)	150	2.6+0.24NP (5.7+0.53NP)
LC110DW	463 (18.2)	225 (8.9)	378 (14.9)	170 (6.7)	11+2.5NP (0.43+0.10NP)	0,110 (1,18)	0,162 (0,043)	550 (145)	200	4.3+0.39NP (9.5+0.86NP)
LC170DW	685 (27.0)	255 (8.9)	600 (23.6)	170 (6.7)	11+2.5NP (0.43+0.10NP)	0,170 (1,83)	0,255 (0,067)	500 (132)	200	5.9+0.6NP (13+1.32NP)
LD235DW	784 (30.9)	306 (12.0)	68 (26.9)	204 (8.0)	13+2.5NP (0.51+0.10NP)	0,235 (2,53)	0,398 (0,105)	1500 (396)	280	19.0+0.81NP (41.8+1.78NP)

NP - number of plates

Standard Construction

- Double Wall Plates
- Plate Material: ANSI 316
- Brazing Material: Copper

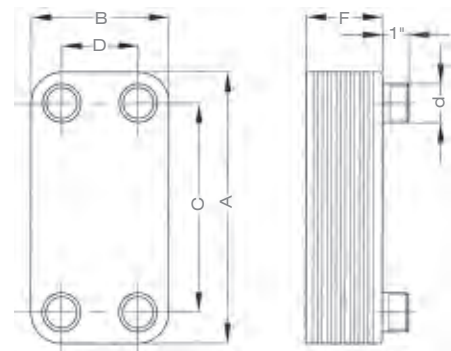
Design Parameters

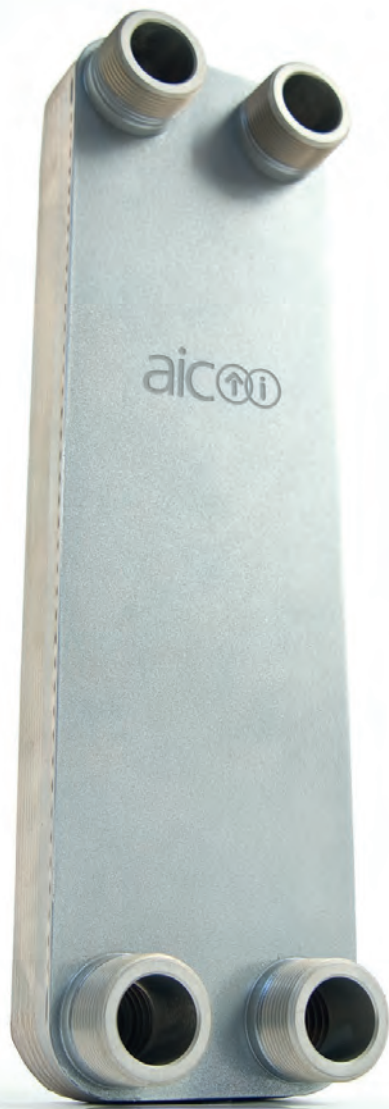
- Working Temperature up to 230°C (445°F)
- Working Pressure up to 33.2 bar (481 PSI)

Standard Connections

Model		Solder	Threaded
Standard	Double Wall	d* (in)	d (in)
LA 14	LA14DW	7/8"	3/4"
LA 22	LA22DW	7/8"	3/4"
LA 34	LA34DW	1-1/8"	1"
LB 31	LB31DW	1-1/8"	1"
LB 47	LB47DW	1-1/8"	1"
LB 60	LB60DW	1-1/8"	1"
LC 110X	—	1-5/8", 2"	1-1/2", 2"
LC 110H	LC110DW	1-5/8"	2-1/2"
LC 110L	—	1-5/8"	2-1/2"
LC 110Y	—	1-5/8"	2-1/2"
LC 110Z	—	1-5/8"	3"
LC 170	LC170DW	1-5/8"	2-1/2"
LC 235	LD235DW	2-1/8"	3"

* inner diameter of connection





Quality Management System

At AIC we are committed to providing exceptional service and value to our diverse clientele.

Our stringent quality processes and management systems fulfill and are certified to the requirements of ISO9001.

Our products are certified by many national and international technical inspection authorities: Canadian CRN, UL, PED (97/23/EC), ASME UM and U. We can also work closely with our clients to design products to meet their exact criteria.



CRN



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Authorized Representative



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T: 905 829 4666, F: 905 829 4646

DATE: 05/11/2020
PROJECT:
CONTACT:
COMPANY:
CALC. NO.:
PREPARED BY:
REF: 0495-201105111600-150417

HEAT EXCHANGERS CALCULATION SHEET

PROJECT DATA SHEET

Heat Load	1239850.35 BTU/h	
LMTD	38.2 deg. F	
Min. Oversizing	0 %	
	Hot Side	Cold Side
Fluid	water	water
Inlet Temperature	160.00 deg. F	40.00 deg. F
Outlet Temperature	105.00 deg. F	140.00 deg. F
Mass Flow	22552.05 lb/h	12390.14 lb/h
Inlet Volume Flow	46.00 USGal/min	24.80 USGal/min
Outlet Volume Flow	45.30 USGal/min	25.11 USGal/min
Max. Pressure Drop	10 psi	14.50 psi

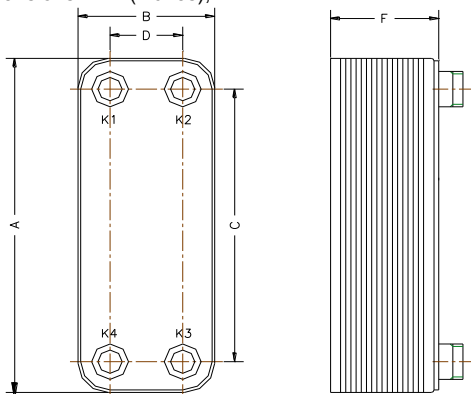
HEAT EXCHANGER SELECTION

Heat Exchanger Type	LC110DW - 30	
# of Units Parallel	1.00	
Heat Transfer Area	34.8 ft2	
Fouling Factor	0.0000 ft2hf/BTU	
OHTC Clean	932.9 BTU/ft2hf	
OHTC Fouling	932.9 BTU/ft2hf	
Oversize	0.0 %	
	Hot Side	Cold Side
Calculated Pressure Drop	6.28 psi	1.97 psi
Heat Transfer NTU	-	-

PHYSICAL PROPERTIES

	Hot Side	Cold Side
Fluid	water	water
Pressure	100.0 psig	100.0 psig
Reference Temperature	132.5 deg. F	90.0 deg. F
Density	61.661 lb/ft3	62.222 lb/ft3
Heat Capacity	1.0 BTU/lbF	1.001 BTU/lbF
Thermal Conductivity	0.369 BTU/ft hF	0.353 BTU/ft hF
Dynamic Viscosity	0.505 cP	0.764 cP

Dimensions: mm (inches), NP = 'Number of Plates'



A	B	C	D	F	K1	K2	K3	K4
462 (18.2)	254 (10.0)	378.5(14.9)	170.2(6.7)	13.0 + 2.4NP(0.51+ 0.09NP)	2 1/2"	2 1/2"	2 1/2"	2 1/2"

Specifications and dimensional data shall be used as guidelines and may change without notice.
For guaranteed performance, please verify selections with the manufacturer.



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Oakville, ON
L6H 5S4 Canada
T: 905 829 4666, F: 905 829 4646

DATE: 05/11/2020
PROJECT:
CONTACT:
COMPANY:
CALC. NO.:
PREPARED BY:
REF: 0495-201105111221-150417

HEAT EXCHANGERS CALCULATION SHEET

PROJECT DATA SHEET

Heat Load	2250044.72 BTU/h	
LMTD	38.2 deg. F	
Min. Oversizing	0 %	
	Hot Side	Cold Side
Fluid	water	water
Inlet Temperature	160.00 deg. F	40.00 deg. F
Outlet Temperature	105.00 deg. F	140.00 deg. F
Mass Flow	40926.81 lb/h	22485.27 lb/h
Inlet Volume Flow	83.48 USGal/min	45.00 USGal/min
Outlet Volume Flow	82.21 USGal/min	45.56 USGal/min
Max. Pressure Drop	10 psi	14.50 psi

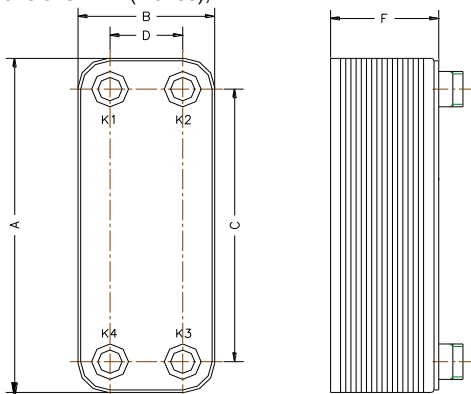
HEAT EXCHANGER SELECTION

Heat Exchanger Type	LC110DW - 50	
# of Units Parallel	1.00	
Heat Transfer Area	58.0 ft2	
Fouling Factor	0.0000 ft2hf/BTU	
OHTC Clean	1015.8 BTU/ft2hf	
OHTC Fouling	1015.8 BTU/ft2hf	
Oversize	0.0 %	
	Hot Side	Cold Side
Calculated Pressure Drop	7.02 psi	2.33 psi
Heat Transfer NTU	-	-

PHYSICAL PROPERTIES

	Hot Side	Cold Side
Fluid	water	water
Pressure	100.0 psig	100.0 psig
Reference Temperature	132.5 deg. F	90.0 deg. F
Density	61.661 lb/ft3	62.222 lb/ft3
Heat Capacity	1.0 BTU/lbF	1.001 BTU/lbF
Thermal Conductivity	0.369 BTU/ft h F	0.353 BTU/ft h F
Dynamic Viscosity	0.505 cP	0.764 cP

Dimensions: mm (inches), NP = 'Number of Plates'



A	B	C	D	F	K1	K2	K3	K4
462 (18.2)	254 (10.0)	378.5(14.9)	170.2(6.7)	13.0 + 2.4NP(0.51+ 0.09NP)	2 1/2"	2 1/2"	2 1/2"	2 1/2"

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DATE: 05/11/2020
PROJECT:
CONTACT:
COMPANY:
CALC. NO.:
PREPARED BY:
REF: 0495-201105113203-150417

HEAT EXCHANGERS CALCULATION SHEET

PROJECT DATA SHEET

Heat Load	2940434.88 BTU/h	
LMTD	36.4 deg. F	
Min. Oversizing	0 %	
	Hot Side	Cold Side
Fluid	water	water
Inlet Temperature	160.00 deg. F	40.00 deg. F
Outlet Temperature	100.00 deg. F	140.00 deg. F
Mass Flow	49026.20 lb/h	29384.51 lb/h
Inlet Volume Flow	100.00 USGal/min	58.81 USGal/min
Outlet Volume Flow	98.39 USGal/min	59.54 USGal/min
Max. Pressure Drop	10 psi	14.50 psi

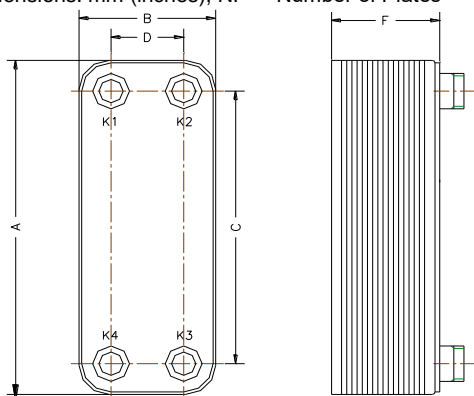
HEAT EXCHANGER SELECTION

Heat Exchanger Type	LC110DW - 80	
# of Units Parallel	1.00	
Heat Transfer Area	92.8 ft2	
Fouling Factor	0.0000 ft2hf/BTU	
OHTC Clean	870.0 BTU/ft2hf	
OHTC Fouling	870.0 BTU/ft2hf	
Oversize	0.0 %	
	Hot Side	Cold Side
Calculated Pressure Drop	4.15 psi	1.65 psi
Heat Transfer NTU	-	-

PHYSICAL PROPERTIES

	Hot Side	Cold Side
Fluid	water	water
Pressure	100.0 psig	100.0 psig
Reference Temperature	130.0 deg. F	90.0 deg. F
Density	61.704 lb/ft3	62.222 lb/ft3
Heat Capacity	1.0 BTU/lbF	1.001 BTU/lbF
Thermal Conductivity	0.368 BTU/ft h F	0.353 BTU/ft h F
Dynamic Viscosity	0.515 cP	0.764 cP

Dimensions: mm (inches), NP = 'Number of Plates'



A	B	C	D	F	K1	K2	K3	K4
462 (18.2)	254 (10.0)	378.5(14.9)	170.2(6.7)	13.0 + 2.4NP(0.51+ 0.09NP)	2 1/2"	2 1/2"	2 1/2"	2 1/2"

Specifications and dimensional data shall be used as guidelines and may change without notice.
For guaranteed performance, please verify selections with the manufacturer.