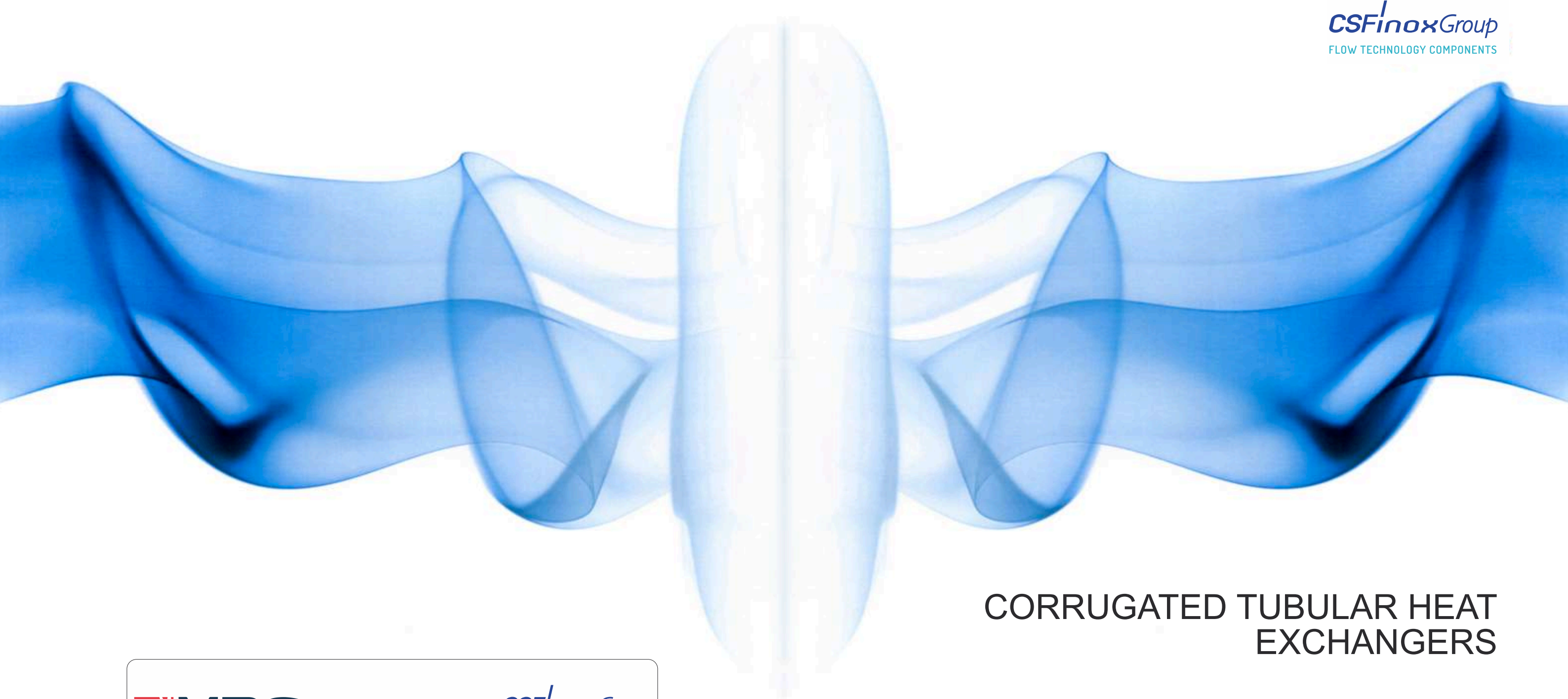


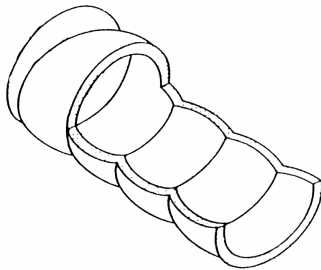
CROSSFLO

MULTITUBE INDUSTRIAL SERIE

CSFinoxGroup
FLOW TECHNOLOGY COMPONENTS



CORRUGATED TUBULAR HEAT
EXCHANGERS



THE CORRUGATION

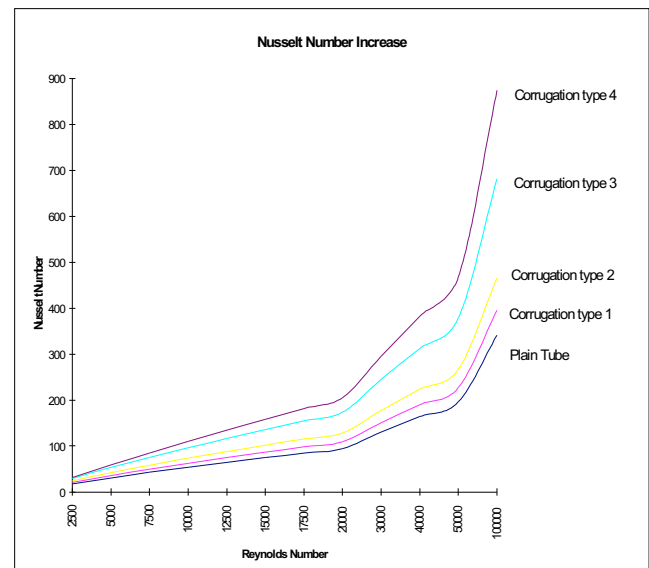
Corrugation is a particular processing applied on plain tubes to induce dynamic turbulence during the liquids flowing allowing thermal exchange optimization.

With corrugated tubes the thermal exchange efficiency can be enhanced by 40% up to 90% according to the following parameters:

- type of product
- selected profile
- type of application

ADVANTAGES

- reduced exchange surfaces
- reduced contact and standing product time inside the element
- reduced washing time thanks to a higher action produced by turbulence
- vertical or horizontal installation
- working possibilities with high pressures and temperatures
- gaskets-free design so lower maintenance costs
- easy to install and exchanger modularity



The Multitube CROSSFLO Heat Exchanger consists of small diameter corrugated tubes fitted inside an external jacket and welded on tube plates at end sides. An expansion joint is fitted on external jacket.

The product to be thermally processed flows inside small diameter tubes while service fluid flows inside the external jacket.

Multitube CROSSFLO Heat Exchanger is fully welded.

Application range

Particularly suited for thermal exchange process of industrial products having a low or medium viscosity even with particulates.

Standard materials

Stainless steel AISI 304 / 316 L
(Other kind of materials are available on request)

Standard pressure project

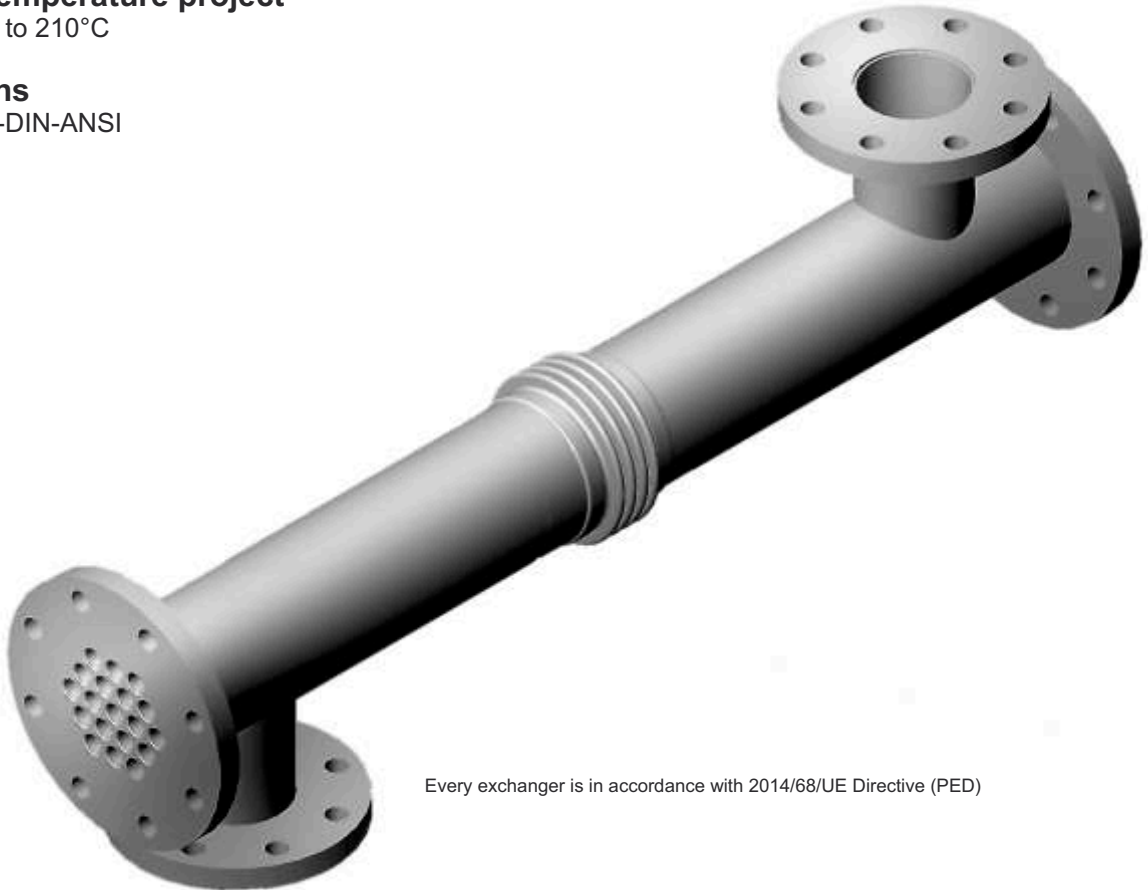
12/16 bar
(Higher pressures are available depending on utilized connections)

Standard temperature project

From 193° up to 210°C

Connections

FLANGE UNI-DIN-ANSI



Every exchanger is in accordance with 2014/68/UE Directive (PED)

MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m ²]	SHELL SECTION [mm ²]	TUBES SECTION [mm ²]	WEIGHT [kg]
MLI 60 12 1000	1.89	0.50	0.24	1787.0	549.8	14
MLI 60 12 1500	2.79	0.78	0.37	1787.0	549.8	16.5
MLI 60 12 2000	3.68	1.05	0.51	1787.0	549.8	19
MLI 60 12 3000	5.47	1.60	0.77	1787.0	549.8	24
MLI 60 12 6000	10.83	3.25	1.56	1787.0	549.8	38.5

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

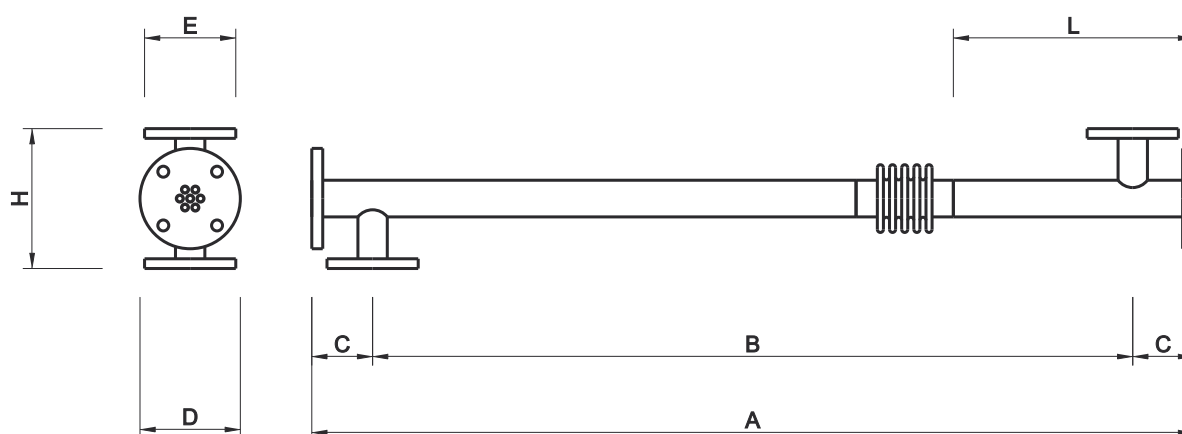
Article 4.3

1st Category

2nd Category

MODEL	VOLUME [litres]	PRESSURE [bar] *											
		1	2	3	4	5	6	7	8	9	10	11	12
MLI 60 12 1000	Shell / Tubes												
MLI 60 12 1500	Shell / Tubes												
MLI 60 12 2000	Shell / Tubes												
MLI 60 12 3000	Shell / Tubes									9.1			
MLI 60 12 6000	Shell / Tubes				4.6								

* for higher pressure contact MBS



MODEL	DIMENSIONS [mm]						
	A	B	C	D	E	H	L
MLI 60 12 1000	950	750	100	EN 1092-1 DN 50 PN.16	EN 1092-1 DN 40 PN.16	230	395
MLI 60 12 1500	1450	1250					
MLI 60 12 2000	1950	1750					
MLI 60 12 3000	2950	2750					
MLI 60 12 6000	5950	5750					

Not binding technical datas; may be modified by the Manufactures without advise

MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m ²]	SHELL SECTION [mm ²]	TUBES SECTION [mm ²]	WEIGHT [kg]
MLI 60 1000	1.69	0.74	0.21	1560.8	804.2	11.5
MLI 60 1500	2.47	1.14	0.32	1560.8	804.2	17
MLI 60 2000	3.25	1.54	0.43	1560.8	804.2	18.5
MLI 60 3000	4.81	2.34	0.66	1560.8	804.2	23
MLI 60 6000	9.49	4.76	1.34	1560.8	804.2	37

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

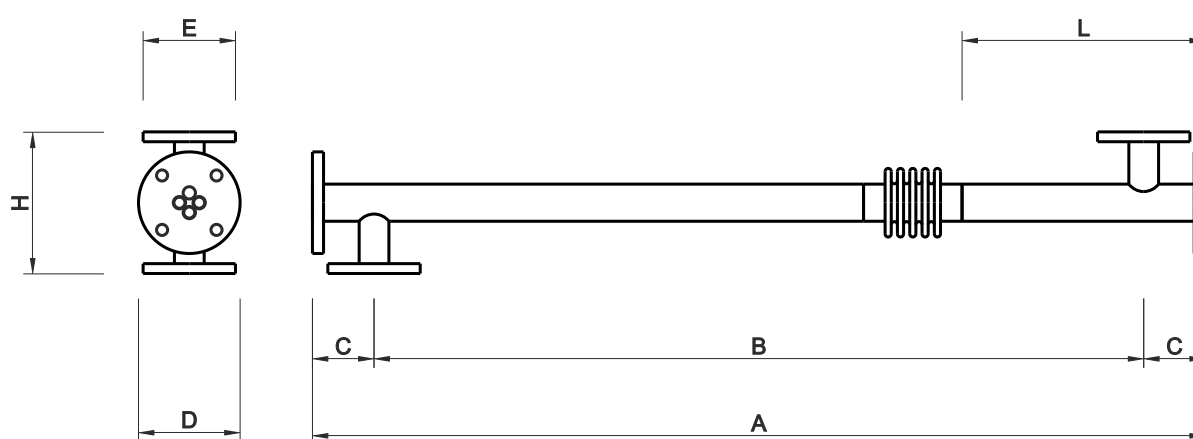
Article 4.3

1st Category

2nd Category

MODEL	VOLUME [litres]	PRESSURE [bar] *											
		1	2	3	4	5	6	7	8	9	10	11	12
MLI 60 1000	Shell / Tubes												
MLI 60 1500	Shell / Tubes												
MLI 60 2000	Shell / Tubes												
MLI 60 3000	Shell / Tubes										10.3		
MLI 60 6000	Shell / Tubes					5.2						10.5	

* for higher pressure contact MBS



MODEL	DIMENSIONS [mm]						
	A	B	C	D	E	H	L
MLI 60 1000	950	750	100	EN 1092-1 DN 50 PN.16 more connections on demand	EN 1092-1 DN 40 PN.16 more connections on demand	230	395
MLI 60 1500	1450	1250					
MLI 60 2000	1950	1750					
MLI 60 3000	2950	2750					
MLI 60 6000	5950	5750					

Not binding technical datas; may be modified by the Manufactures without advise

MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m ²]	SHELL SECTION [mm ²]	TUBES SECTION [mm ²]	WEIGHT [kg]
MLI 76 12 1000	3.13	0.72	0.34	2951.8	785.4	9.0
MLI 76 12 1500	4.61	1.11	0.53	2951.8	785.4	12.2
MLI 76 12 2000	6.08	1.50	0.72	2951.8	785.4	15.3
MLI 76 12 3000	9.03	2.29	1.10	2951.8	785.4	21.7
MLI 76 12 6000	17.89	4.64	2.23	2951.8	785.4	40.7

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

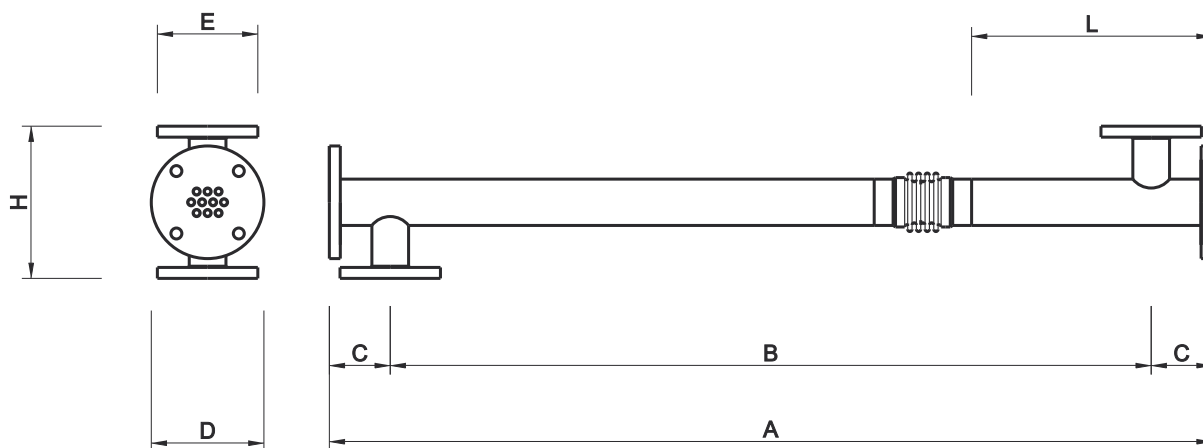
Article 4.3

1st Category

2nd Category

MODEL	VOLUME [litres]	PRESSURE [bar] *												
		1	2	3	4	5	6	7	8	9	10	11	12	
MLI 76 12 1000	Shell / Tubes													
MLI 76 12 1500	Shell / Tubes										10.8			
MLI 76 12 2000	Shell / Tubes								8.2					
MLI 76 12 3000	Shell / Tubes					5.5								
MLI 76 12 6000	Shell / Tubes		2.7									10.7	11.1	

* for higher pressure contact MBS



MODEL	DIMENSIONS [mm]						
	A	B	C	D	E	H	L
MLI 76 12 1000	950	750	100	EN 1092-1 DN 65 PN.16 more connections on demand	EN 1092-1 DN 50 PN.16 more connections on demand	250	395
MLI 76 12 1500	1450	1250					
MLI 76 12 2000	1950	1750					
MLI 76 12 3000	2950	2750					
MLI 76 12 6000	5950	5750					

Not binding technical datas; may be modified by the Manufactures without advise

MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m ²]	SHELL SECTION [mm ²]	TUBES SECTION [mm ²]	WEIGHT [kg]
MLI 76 1000	2.54	1.29	0.36	2301.5	1407.4	9.2
MLI 76 1500	3.69	1.99	0.56	2301.5	1407.4	12.5
MLI 76 2000	4.84	2.69	0.76	2301.5	1407.4	15.8
MLI 76 3000	7.14	4.10	1.15	2301.5	1407.4	22.3
MLI 76 6000	14.04	8.32	2.34	2301.5	1407.4	42.0

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

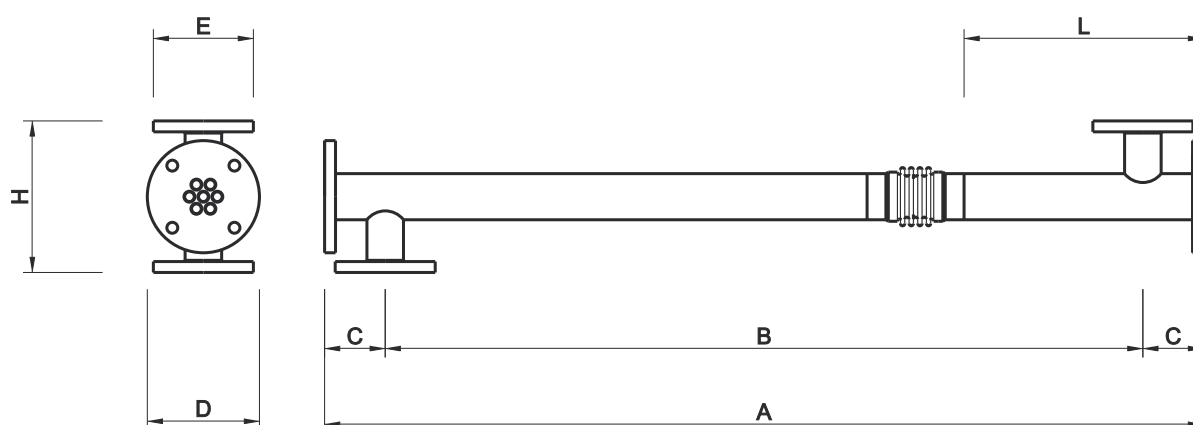
Article 4.3

1st Category

2nd Category

MODEL	VOLUME [litres]	PRESSURE [bar] *												
		1	2	3	4	5	6	7	8	9	10	11	12	
MLI 76 1000	Shell / Tubes													
MLI 76 1500	Shell / Tubes													
MLI 76 2000	Shell / Tubes									10.3				
MLI 76 3000	Shell / Tubes							7.0						12.1
MLI 76 6000	Shell / Tubes			3.5				6.0						

* for higher pressure contact MBS



MODEL	DIMENSIONS [mm]						
	A	B	C	D	E	H	L
MLI 76 1000	950	750	100	EN 1092-1 DN 65 PN.16 more connections on demand	EN 1092-1 DN 50 PN.16 more connections on demand	250	395
MLI 76 1500	1450	1250					
MLI 76 2000	1950	1750					
MLI 76 3000	2950	2750					
MLI 76 6000	5950	5750					

Not binding technical datas; may be modified by the Manufactures without advise

MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m ²]	SHELL SECTION [mm ²]	TUBES SECTION [mm ²]	WEIGHT [kg]
MLI 88 12 1000	3.98	1.36	0.65	3512.3	1492.3	13.0
MLI 88 12 1500	5.73	2.10	1.01	3512.3	1492.3	17.7
MLI 88 12 2000	7.49	2.85	1.37	3512.3	1492.3	22.4
MLI 88 12 3000	11.00	4.34	2.08	3512.3	1492.3	31.8
MLI 88 12 6000	21.54	8.82	4.23	3512.3	1492.3	60.0

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

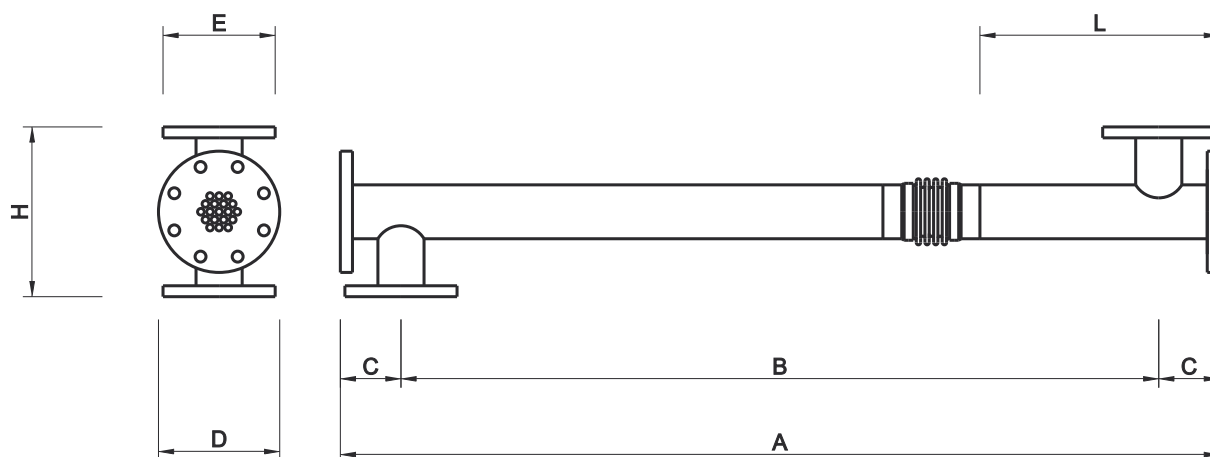
Article 4.3

1st Category

2nd Category

MODEL	VOLUME [litres]	PRESSURE [bar] *												
		1	2	3	4	5	6	7	8	9	10	11	12	
MLI 88 12 1000	Shell / Tubes													12.5
MLI 88 12 1500	Shell / Tubes								8.7					
MLI 88 12 2000	Shell / Tubes						6.6							
MLI 88 12 3000	Shell / Tubes				4.5								11.5	
MLI 88 12 6000	Shell / Tubes		2.3				5.6				9.2			

* for higher pressure contact MBS



MODEL	DIMENSIONS [mm]						
	A	B	C	D	E	H	L
MLI 88 12 1000	950	750	100	EN 1092-1 DN 80 PN.16 more connections on demand	EN 1092-1 DN 65 PN.16 more connections on demand	280	395
MLI 88 12 1500	1450	1250					
MLI 88 12 2000	1950	1750					
MLI 88 12 3000	2950	2750					
MLI 88 12 6000	5950	5750					

Not binding technical datas; may be modified by the Manufactures without advise

MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m ²]	SHELL SECTION [mm ²]	TUBES SECTION [mm ²]	WEIGHT [kg]
MLI 88 1000	3.62	1.83	0.51	3116.5	2010.6	12.1
MLI 88 1500	5.17	2.83	0.80	3116.5	2010.6	16.3
MLI 88 2000	6.73	3.84	1.08	3116.5	2010.6	20.5
MLI 88 3000	9.85	5.85	1.65	3116.5	2010.6	29.0
MLI 88 6000	19.20	11.88	3.34	3116.5	2010.6	54.3

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

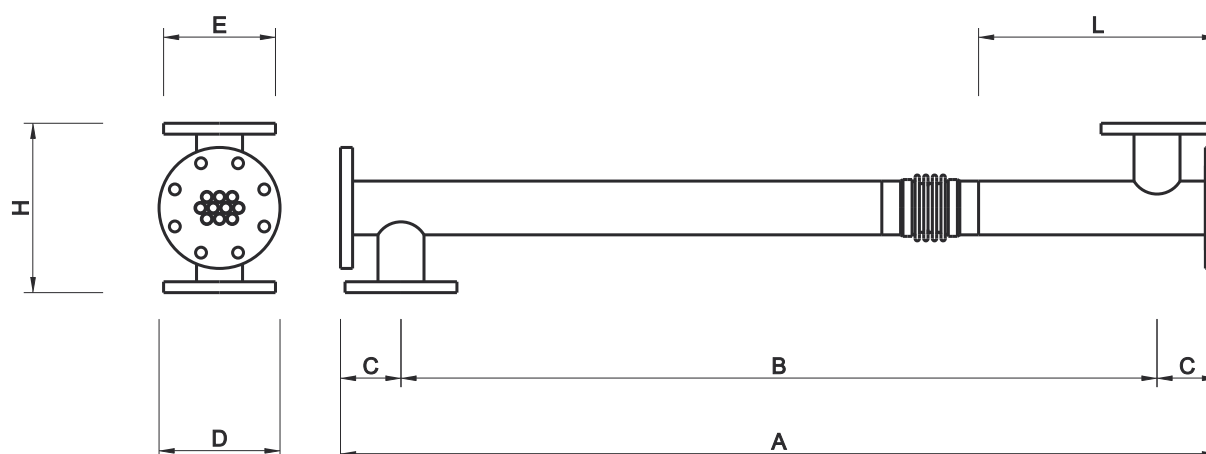
Article 4.3

1st Category

2nd Category

MODEL	VOLUME [litres]	PRESSURE [bar] *												
		1	2	3	4	5	6	7	8	9	10	11	12	
MLI 88 1000	Shell / Tubes													
MLI 88 1500	Shell / Tubes									9.6				
MLI 88 2000	Shell / Tubes							7.4						
MLI 88 3000	Shell / Tubes					5.0				8.5				
MLI 88 6000	Shell / Tubes		2.6			4.2						10.4		

* for higher pressure contact MBS



MODEL	DIMENSIONS [mm]						
	A	B	C	D	E	H	L
MLI 88 1000	950	750	100	EN 1092-1 DN 80 PN.16	EN 1092-1 DN 65 PN.16	280	395
MLI 88 1500	1450	1250					
MLI 88 2000	1950	1750					
MLI 88 3000	2950	2750					
MLI 88 6000	5950	5750					

Not binding technical datas; may be modified by the Manufactures without advise

MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m ²]	SHELL SECTION [mm ²]	TUBES SECTION [mm ²]	WEIGHT [kg]
MLI 114 12 1000	5.92	2.63	1.26	5370.6	2906.0	21.4
MLI 114 12 1500	8.60	4.09	1.96	5370.6	2906.0	29.2
MLI 114 12 2000	11.29	5.54	2.66	5370.6	2906.0	36.9
MLI 114 12 3000	16.66	8.44	4.05	5370.6	2906.0	52.5
MLI 114 12 6000	32.77	17.16	8.24	5370.6	2906.0	99.1

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

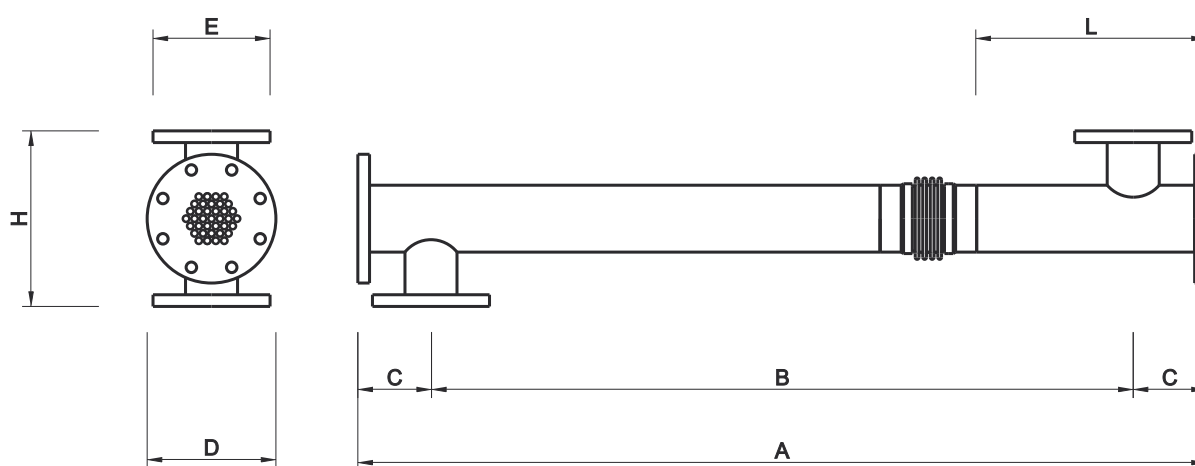
Article 4.3

1st Category

2nd Category

MODEL	VOLUME [litres]	PRESSURE [bar] *											
		1	2	3	4	5	6	7	8	9	10	11	12
MLI 114 12 1000	Shell / Tubes								8.4				
MLI 114 12 1500	Shell / Tubes					5.8							12.2
MLI 114 12 2000	Shell / Tubes				4.4					9.0			
MLI 114 12 3000	Shell / Tubes			3.0			5.9						12.0
MLI 114 12 6000	Shell / Tubes	1.5	2.9					6.1					11.6

* for higher pressure contact MBS



MODEL	DIMENSIONS [mm]						
	A	B	C	D	E	H	L
MLI 114 12 1000	950	700	125	EN 1092-1 DN 100 PN.16	EN 1092-1 DN 80 PN.16	300	392.5
MLI 114 12 1500	1450	1200					
MLI 114 12 2000	1950	1700					
MLI 114 12 3000	2950	2700					
MLI 114 12 6000	5950	5700					

Not binding technical datas; may be modified by the Manufactures without advise

MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m ²]	SHELL SECTION [mm ²]	TUBES SECTION [mm ²]	WEIGHT [kg]
MLI 114 1000	5.33	3.46	0.97	4720.3	3820.2	31
MLI 114 1500	7.69	5.37	1.51	4720.3	3820.2	38
MLI 114 2000	10.05	7.28	2.05	4720.3	3820.2	44
MLI 114 3000	14.77	11.10	3.12	4720.3	3820.2	57
MLI 114 6000	28.93	22.56	6.35	4720.3	3820.2	97

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

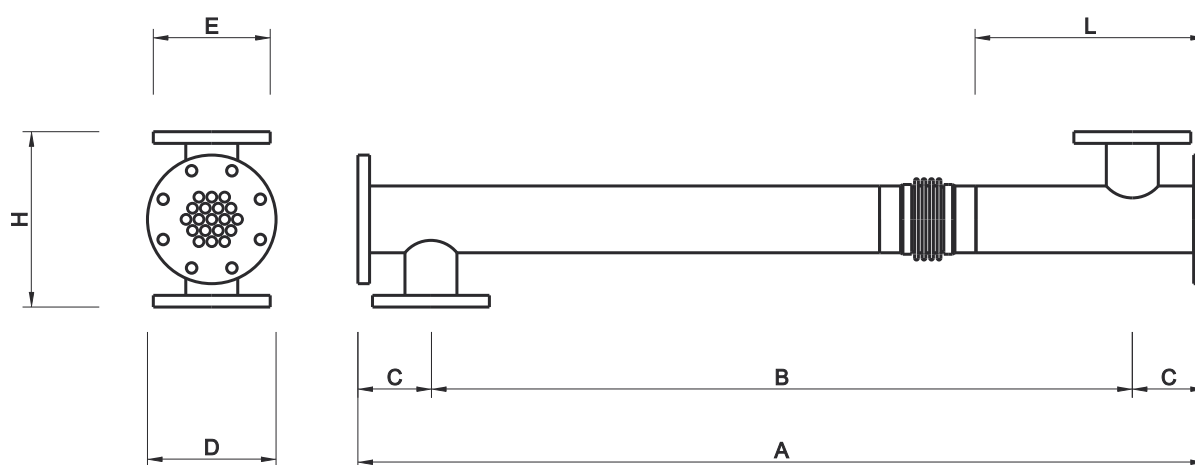
Article 4.3

1st Category

2nd Category

MODEL	VOLUME [litres]	PRESSURE [bar] *											
		1	2	3	4	5	6	7	8	9	10	11	12
MLI 114 1000	Shell / Tubes									9.3			
MLI 114 1500	Shell / Tubes						6.5			9.3			
MLI 114 2000	Shell / Tubes				4.9		6.8						
MLI 114 3000	Shell / Tubes			3.3	4.5								
MLI 114 6000	Shell / Tubes	1.7	2.2				6.9		8.8				

* for higher pressure contact MBS



MODEL	DIMENSIONS [mm]						
	A	B	C	D	E	H	L
MLI 114 1000	950	700	125	EN 1092-1 DN 100 PN.16 more connections on demand	EN 1092-1 DN 80 PN.16 more connections on demand	300	392.5
MLI 114 1500	1450	1200					
MLI 114 2000	1950	1700					
MLI 114 3000	2950	2700					
MLI 114 6000	5950	5700					

Not binding technical datas; may be modified by the Manufactures without advise

MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m ²]	SHELL SECTION [mm ²]	TUBES SECTION [mm ²]	WEIGHT [kg]
MLI 139 12 1000	9.65	3.68	1.77	8581.6	4084.1	29.8
MLI 139 12 1500	13.95	5.73	2.75	8581.6	4084.1	40.2
MLI 139 12 2000	18.24	7.77	3.73	8581.6	4084.1	50.6
MLI 139 12 3000	26.82	11.85	5.69	8581.6	4084.1	71.5
MLI 139 12 6000	52.56	24.10	11.57	8581.6	4084.1	134.0

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

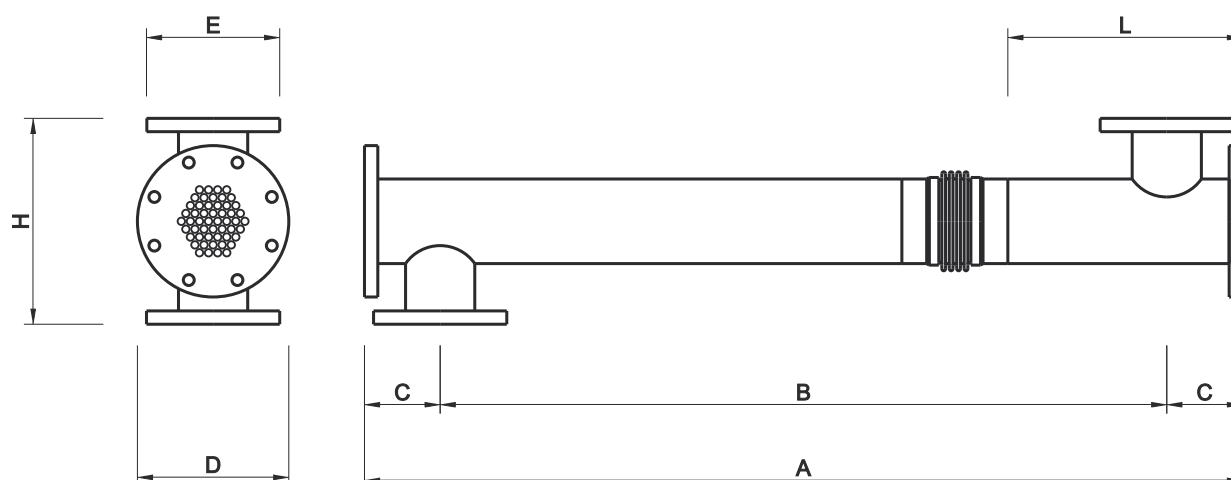
Article 4.3

1st Category

2nd Category

MODEL	VOLUME [litres]	PRESSURE [bar] *											
		1	2	3	4	5	6	7	8	9	10	11	12
MLI 139 12 1000	Shell / Tubes					5.1							
MLI 139 12 1500	Shell / Tubes			3.5					8.7				
MLI 139 12 2000	Shell / Tubes		2.7				6.4				10.9		
MLI 139 12 3000	Shell / Tubes	1.8				4.2		7.4					
MLI 139 12 6000	Shell / Tubes		2.0	3.8					8.2				

* for higher pressure contact MBS



MODEL	DIMENSIONS [mm]						
	A	B	C	D	E	H	L
MLI 139 12 1000	950	700					
MLI 139 12 1500	1450	1200					
MLI 139 12 2000	1950	1700	125	EN 1092-1 DN 125 PN.16	EN 1092-1 DN 100 PN.16	340	387.5
MLI 139 12 3000	2950	2700		more connections on demand	more connections on demand		
MLI 139 12 6000	5950	5700					

Not binding technical datas; may be modified by the Manufactures without advise

MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m ²]	SHELL SECTION [mm ²]	TUBES SECTION [mm ²]	WEIGHT [kg]
MLI 139 1000	8.76	4.90	1.38	7592.0	5428.7	27.2
MLI 139 1500	12.56	7.61	2.14	7592.0	5428.7	47.0
MLI 139 2000	16.35	10.33	2.90	7592.0	5428.7	62.0
MLI 139 3000	23.95	15.75	4.43	7592.0	5428.7	77.0
MLI 139 6000	46.72	32.04	9.01	7592.0	5428.7	117.5

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

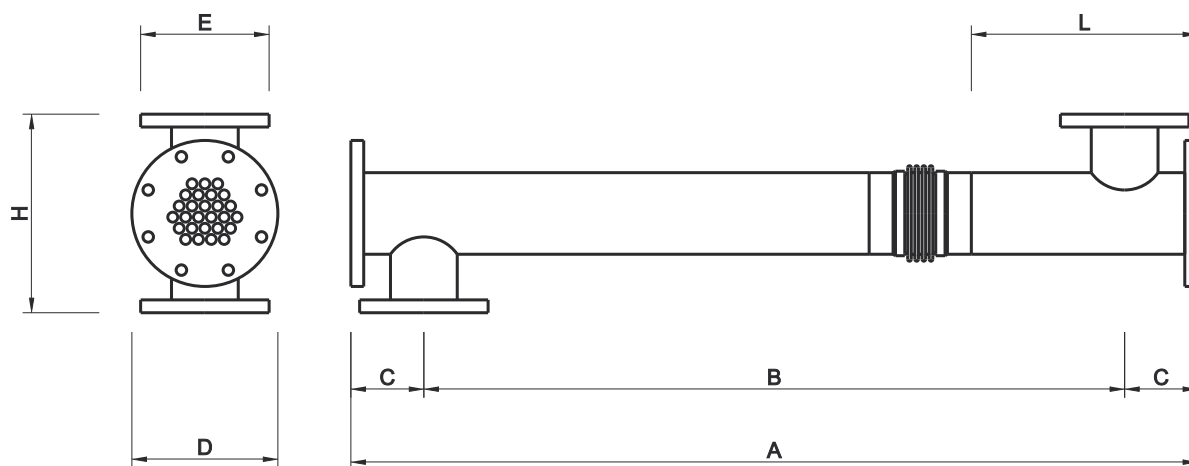
Article 4.3

1st Category

2nd Category

MODEL	VOLUME [litres]	PRESSURE [bar] *												
		1	2	3	4	5	6	7	8	9	10	11	12	
MLI 139 1000	Shell / Tubes					5.7						10.2		
MLI 139 1500	Shell / Tubes			3.9			6.5							
MLI 139 2000	Shell / Tubes			3.0	4.8									12.2
MLI 139 3000	Shell / Tubes		2.0	3.1					8.3					12.6
MLI 139 6000	Shell / Tubes	1.0	1.5		4.2		6.2							

* for higher pressure contact MBS



MODEL	DIMENSIONS [mm]						
	A	B	C	D	E	H	L
MLI 139 1000	950	700	125	EN 1092-1 DN 125 PN.16	EN 1092-1 DN 100 PN.16	340	387.5
MLI 139 1500	1450	1200					
MLI 139 2000	1950	1700					
MLI 139 3000	2950	2700					
MLI 139 6000	5950	5700					

Not binding technical datas; may be modified by the Manufactures without advise

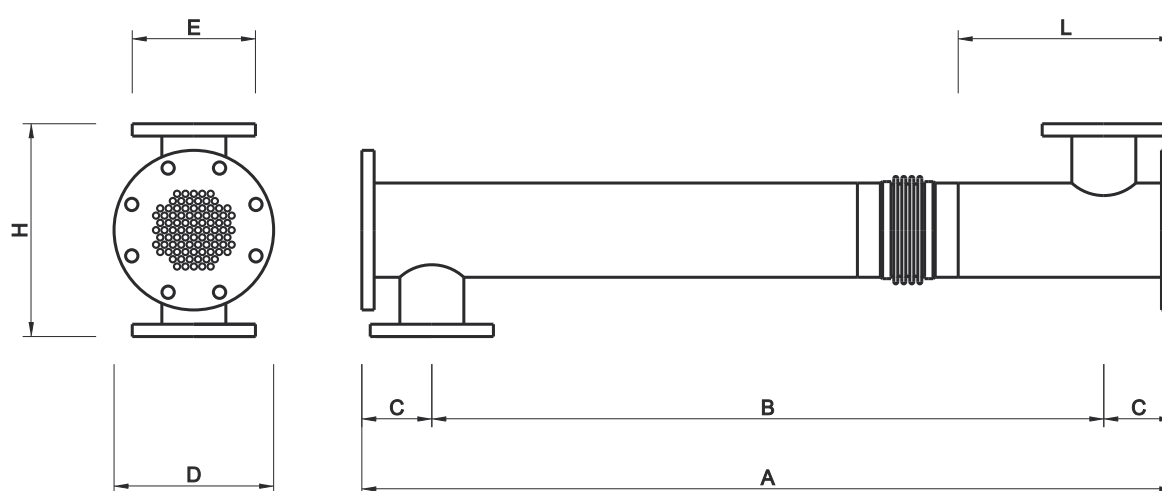
MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m ²]	SHELL SECTION [mm ²]	TUBES SECTION [mm ²]	WEIGHT [kg]
MLI 168 12 1000	11.71	6.23	2.99	10735.8	6911.5	48.5
MLI 168 12 1500	17.07	9.69	4.65	10735.8	6911.5	66.5
MLI 168 12 2000	22.44	13.15	6.31	10735.8	6911.5	84.5
MLI 168 12 3000	33.18	20.06	9.63	10735.8	6911.5	120.5
MLI 168 12 6000	65.39	40.79	19.58	10735.8	6911.5	228.5

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

Article 4.3 1st Category 2nd Category 3rd Category

MODEL	VOLUME [litres]	PRESSURE [bar] *												
		1	2	3	4	5	6	7	8	9	10	11	12	
MLI 168 12 1000	Shell / Tubes				4.2					8.0				
MLI 168 12 1500	Shell / Tubes		2.9				5.1						11.7	
MLI 168 12 2000	Shell / Tubes		2.2		3.8					8.9				
MLI 168 12 3000	Shell / Tubes	1.5		2.4				6.0				9.9		
MLI 168 12 6000	Shell / Tubes	1.2		3.0		4.9								

* for higher pressure contact MBS



MODEL	DIMENSIONS [mm]						
	A	B	C	D	E	H	L
MLI 168 12 1000	950	700	125	EN 1092-1 DN 150 PN.16	EN 1092-1 DN 100 PN.16	380	385
MLI 168 12 1500	1450	1200					
MLI 168 12 2000	1950	1700					
MLI 168 12 3000	2950	2700					
MLI 168 12 6000	5950	5700					

Not binding technical datas; may be modified by the Manufactures without advise

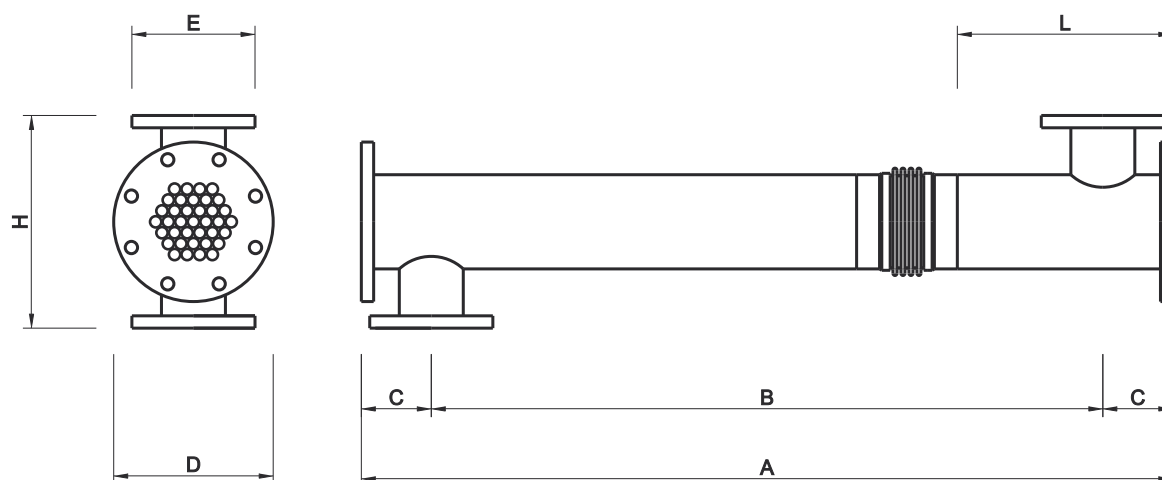
MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m ²]	SHELL SECTION [mm ²]	TUBES SECTION [mm ²]	WEIGHT [kg]
MLI 168 1000	10.20	8.49	2.10	9064.5	9415.4	61.0
MLI 168 1500	14.73	13.20	3.26	9064.5	9415.4	65.0
MLI 168 2000	19.26	17.91	4.42	9064.5	9415.4	77.0
MLI 168 3000	28.33	27.32	6.75	9064.5	9415.4	102.0
MLI 168 6000	55.52	55.57	13.72	9064.5	9415.4	177.0

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

Article 4.3
1st Category
2nd Category
3rd Category

MODEL	VOLUME [litres]	PRESSURE [bar] *											
		1	2	3	4	5	6	7	8	9	10	11	12
MLI 168 1000	Shell / Tubes				4.9	5.8							
MLI 168 1500	Shell / Tubes			3.3	3.7								
MLI 168 2000	Shell / Tubes		2.5	2.7							10.3	11.1	
MLI 168 3000	Shell / Tubes	1.7	1.8					7.0	7.3				
MLI 168 6000	Shell / Tubes			3.6	3.5								

* for higher pressure contact MBS



MODEL	DIMENSIONS [mm]						
	A	B	C	D	E	H	L
MLI 168 1000	950	700	125	EN 1092-1 DN 150 PN.16	EN 1092-1 DN 100 PN.16	380	385
MLI 168 1500	1450	1200					
MLI 168 2000	1950	1700					
MLI 168 3000	2950	2700					
MLI 168 6000	5950	5700					

Not binding technical datas; may be modified by the Manufactures without advise

MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m ²]	SHELL SECTION [mm ²]	TUBES SECTION [mm ²]	WEIGHT [kg]
MLI 219 12 1000	20.08	10.09	4.84	19493.3	11231.2	93.5
MLI 219 12 1500	29.83	15.70	7.54	19493.3	11231.2	121.5
MLI 219 12 2000	39.58	21.32	10.23	19493.3	11231.2	149.5
MLI 219 12 3000	59.07	32.55	15.62	19493.3	11231.2	206.5
MLI 219 12 6000	117.55	66.24	31.80	19493.3	11231.2	375.5

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

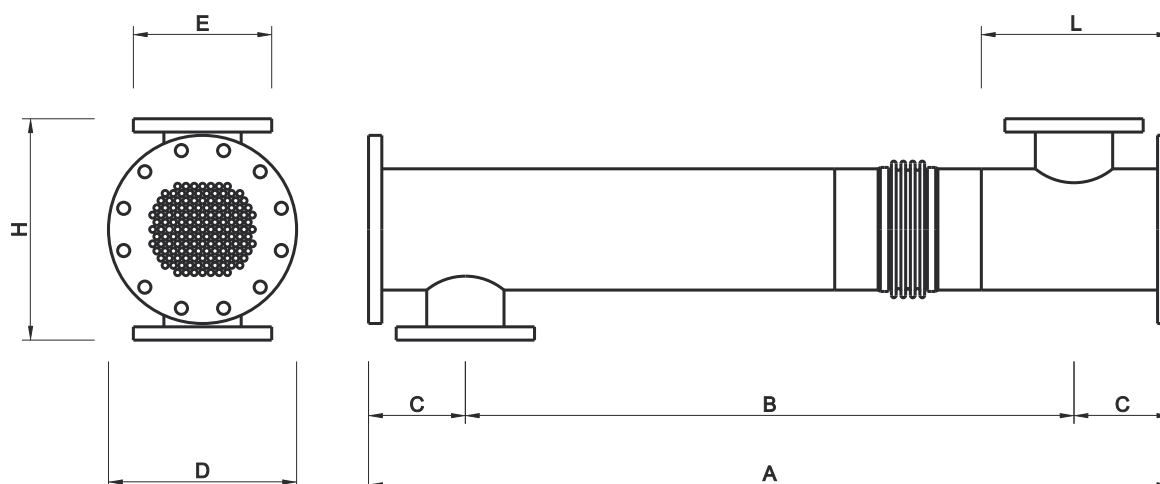
Article 4.3

1st Category

2nd Category

MODEL	VOLUME [litres]	PRESSURE [bar] *												
		1	2	3	4	5	6	7	8	9	10	11	12	
MLI 219 12 1000	Shell / Tubes		2.4			4.9					9.9			
MLI 219 12 1500	Shell / Tubes	1.6			3.1			6.7						12.7
MLI 219 12 2000	Shell / Tubes	1.2		2.3			5.0				9.3			
MLI 219 12 3000	Shell / Tubes		1.5		3.3				6.1					
MLI 219 12 6000	Shell / Tubes	1.7			3.0						8.5			

* for higher pressure contact MBS



MODEL	DIMENSIONS [mm]						
	A	B	C	D	E	H	L
MLI 219 12 1000	950	600	175	EN 1092-1 DN 200 PN.16	EN 1092-1 DN 125 PN.16	400	342.5
MLI 219 12 1500	1450	1100					
MLI 219 12 2000	1950	1600					
MLI 219 12 3000	2950	2600					
MLI 219 12 6000	5950	5600					

Not binding technical datas; may be modified by the Manufactures without advise

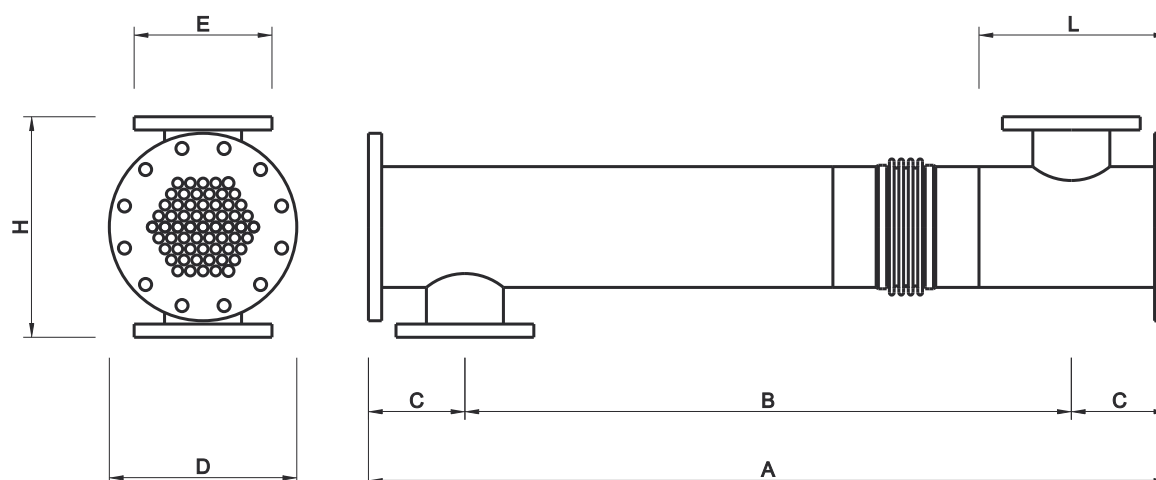
MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m ²]	SHELL SECTION [mm ²]	TUBES SECTION [mm ²]	WEIGHT [kg]
MLI 219 1000	17.40	13.94	3.44	16502.5	15522.6	67.0
MLI 219 1500	25.65	21.70	5.36	16502.5	15522.6	89.3
MLI 219 2000	33.90	29.46	7.27	16502.5	15522.6	111.5
MLI 219 3000	50.40	44.98	11.11	16502.5	15522.6	155.9
MLI 219 6000	99.91	91.55	22.61	16502.5	15522.6	289.1

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

Article 4.3
 1st Category
 2nd Category
 3rd Category

MODEL	VOLUME [litres]	PRESSURE [bar] *											
		1	2	3	4	5	6	7	8	9	10	11	12
MLI 219 1000	Shell / Tubes		2.8	3.5								11.4	
MLI 219 1500	Shell / Tubes	1.9	2.3					7.7		9.2			
MLI 219 2000	Shell / Tubes	1.4	1.6			5.8	6.7						
MLI 219 3000	Shell / Tubes		1.1	3.9	4.4								
MLI 219 6000	Shell / Tubes		2.0	2.1							10.0	10.9	

* for higher pressure contact MBS



MODEL	DIMENSIONS [mm]						
	A	B	C	D	E	H	L
MLI 219 1000	950	600	175	EN 1092-1 DN 200 PN.16	EN 1092-1 DN 125 PN.16	400	342.5
MLI 219 1500	1450	1100					
MLI 219 2000	1950	1600					
MLI 219 3000	2950	2600					
MLI 219 6000	5950	5600					

Not binding technical datas; may be modified by the Manufactures without advise

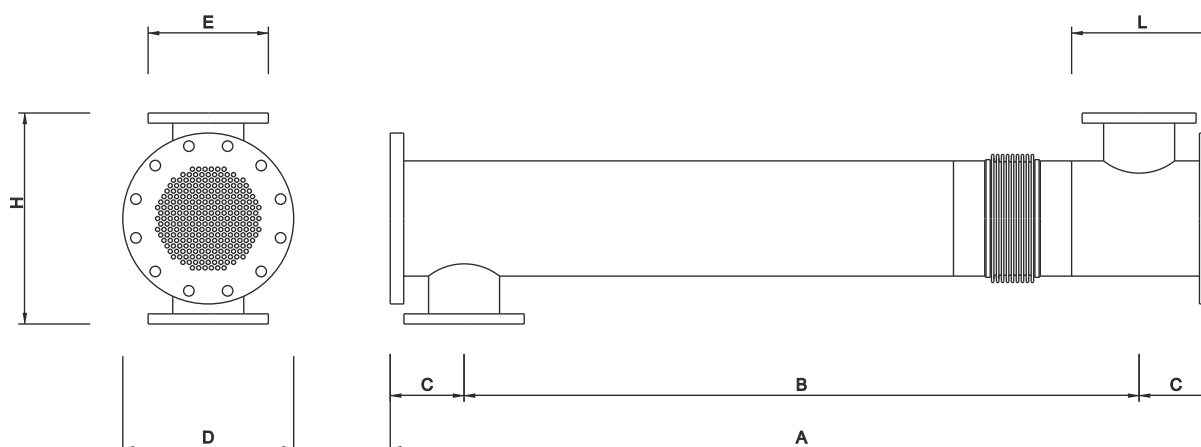
MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m ²]	SHELL SECTION [mm ²]	TUBES SECTION [mm ²]	WEIGHT [kg]
MLI 273 12 1000	23.45	17.61	8.45	27376	19870	146
MLI 273 12 1500	37.14	27.54	13.22	27376	19870	189
MLI 273 12 2000	50.83	37.48	17.98	27376	19870	220
MLI 273 12 3000	85.05	62.31	27.53	27376	19870	316
MLI 273 12 6000	160.34	116.96	56.14	27376	19870	574

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

Article 4.3 1st Category 2nd Category 3rd Category

MODEL	VOLUME [litres]	PRESSURE [bar] *														
		1	2	3	4	5	6	7	8	9	10	11	12			
MLI 273 12 1000	Shell / Tubes		2.1	2.8						8.5					11.3	
MLI 273 12 1500	Shell / Tubes	1.3	1.8				5.4			7.2						
MLI 273 12 2000	Shell / Tubes		1.3		3.9			5.3								
MLI 273 12 3000	Shell / Tubes			2.3		3.2									11.7	
MLI 273 12 6000	Shell / Tubes	1.2	1.7						6.2			8.5				

* for higher pressure contact MBS



MODEL	DIMENSIONS [mm]						
	A	B	C	D	E	H	L
MLI 273 12 1000	950	600	175	EN 1092-1 DN 250 PN.16	EN 1092-1 DN 150 PN.16	500	335
MLI 273 12 1500	1450	1100					
MLI 273 12 2000	1950	1600					
MLI 273 12 3000	2950	2600					
MLI 273 12 6000	5950	5600					

Not binding technical datas; may be modified by the Manufactures without advise

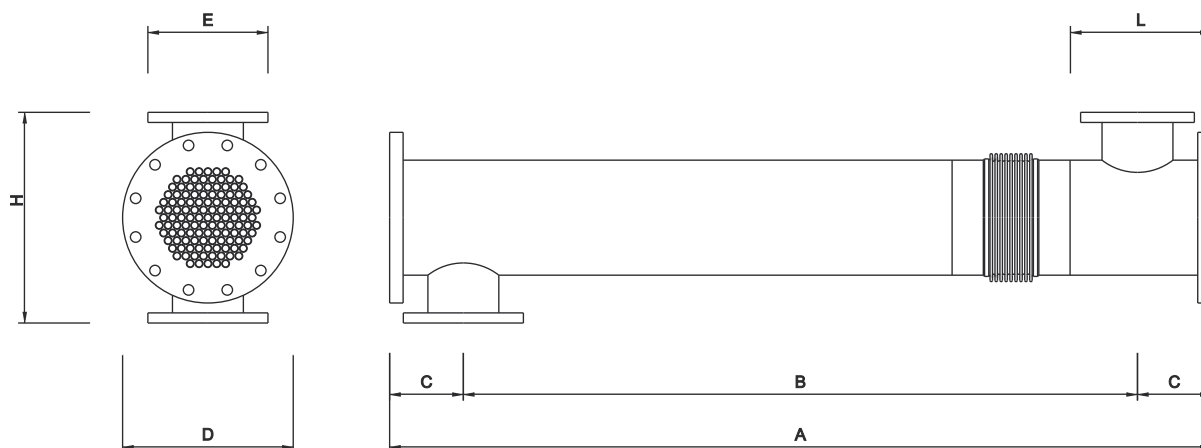
MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m ²]	SHELL SECTION [mm ²]	TUBES SECTION [mm ²]	WEIGHT [kg]
MLI 273 1000	27.05	21.56	6.06	25199	24329	105.5
MLI 273 1500	39.65	33.72	9.48	25199	24329	140.7
MLI 273 2000	52.25	45.88	12.90	25199	24329	175.9
MLI 273 3000	77.45	70.21	19.75	25199	24329	246.4
MLI 273 6000	153.04	143.20	40.27	25199	24329	457.8

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

Article 4.3
1st Category
2nd Category
3rd Category

MODEL	VOLUME [litres]	PRESSURE [bar] *														
		1	2	3	4	5	6	7	8	9	10	11	12			
MLI 273 1000	Shell / Tubes	1.8		2.3					7.3			9.2				
MLI 273 1500	Shell / Tubes	1.2	1.4				5.0	5.9								
MLI 273 2000	Shell / Tubes	1.0	1.0		3.8		4.3									
MLI 273 3000	Shell / Tubes			2.5	2.8											12.9
MLI 273 6000	Shell / Tubes	1.3	1.3						6.5	6.9						

* for higher pressure contact MBS



MODEL	DIMENSIONS [mm]						
	A	B	C	D	E	H	L
MLI 273 1000	950	600	175	EN 1092-1 DN 250 PN.16	EN 1092-1 DN 150 PN.16	500	335
MLI 273 1500	1450	1100					
MLI 273 2000	1950	1600					
MLI 273 3000	2950	2600					
MLI 273 6000	5950	5600					

Not binding technical datas; may be modified by the Manufactures without advise

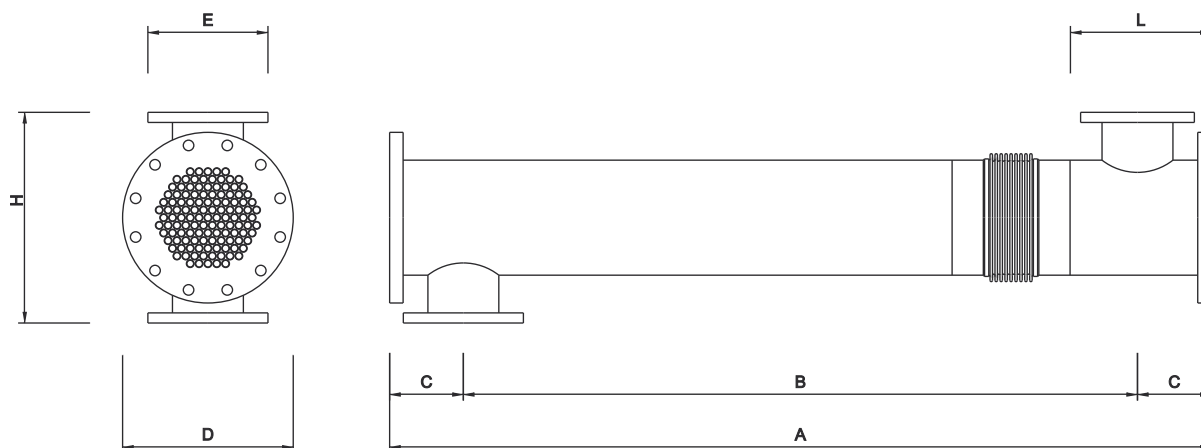
MODEL	SHELL VOLUME [litres]	TUBES VOLUME [litres]	EXCHANGE AREA [m ²]	SHELL SECTION [mm ²]	TUBES SECTION [mm ²]	WEIGHT [kg]
MLI 323 1000	46.76	32.75	8.384	36879.00	32756.00	185
MLI 323 1500	65.20	49.13	12.990	36879.00	32756.00	232
MLI 323 2000	83.64	65.51	17.596	36879.00	32756.00	275
MLI 323 3000	120.52	98.27	26.809	36879.00	32756.00	365
MLI 323 6000	231.15	196.54	54.447	36879.00	32756.00	633

Category calculation for second group's fluids - Gas, melted gas and liquids with a steam tension at maximum temperature > 0.5 bar

Article 4.3 1st Category 2nd Category 3rd Category

MODEL	VOLUME [litres]	PRESSURE [bar] *											
		1	2	3	4	5	6	7	8	9	10	11	12
MLI 323 1000	Shell / Tubes	1.1	1.6		4.1		6.1						
MLI 323 1500	Shell / Tubes	1.2	1.1	3.0	4.0								
MLI 323 2000	Shell / Tubes		2.3	3.1	4.3						11.9		
MLI 323 3000	Shell / Tubes	1.6							8.2		10.9		12.9
MLI 323 6000	Shell / Tubes				4.3	5.0							

* for higher pressure contact MBS



MODEL	DIMENSIONS [mm]						
	A	B	C	D	E	H	L
MLI 323 1000	950	550	200	EN 1092-1 DN 300 PN.16 more connections on demand	EN 1092-1 DN 200 PN.16 more connections on demand	600	340
MLI 323 1500	1450	1050					
MLI 323 2000	1950	1550					
MLI 323 3000	2950	2550					
MLI 323 6000	5950	5550					

Not binding technical datas; may be modified by the Manufactures without advise

Codification

MLI	76	7	12	1	3000	F	F	S	A	A
									Material	
									Product / Service	
									A - EN 1.4301 - AISI 304	
									B - EN 1.4404 - AISI 316 L	
									Gaskets Material	
									T - TEFLON	
									W - WITHOUT ASBESTOS FREE	
									R - GASKET'S REINFORCED GRAPHITE	
									- GASKET'S NOT INCLUDED	
									Element connections	
									Product / Service	
									D - DIN 11851	
									F - FLANGE EN - ANSI	
									G - GAS UNI 338 - RJT	
									Lenght [mm]	
									Expansion joint	
									0 - Excluded	
									1 - Included	
									Product diameter [mm]	
									Inner tubes number	
									Sheet diameter [mm]	
Multitube version										
MLI - Total welded version										