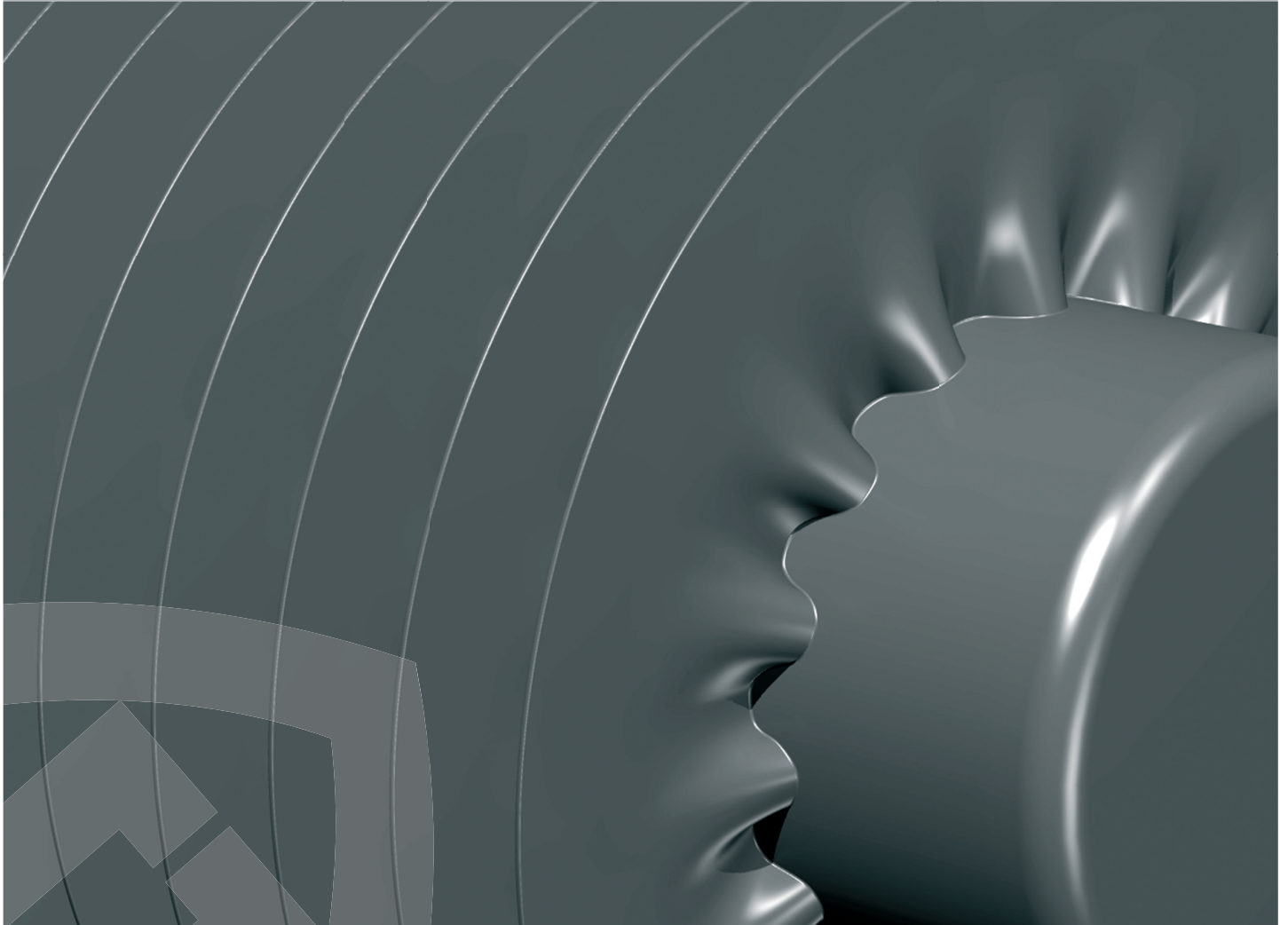




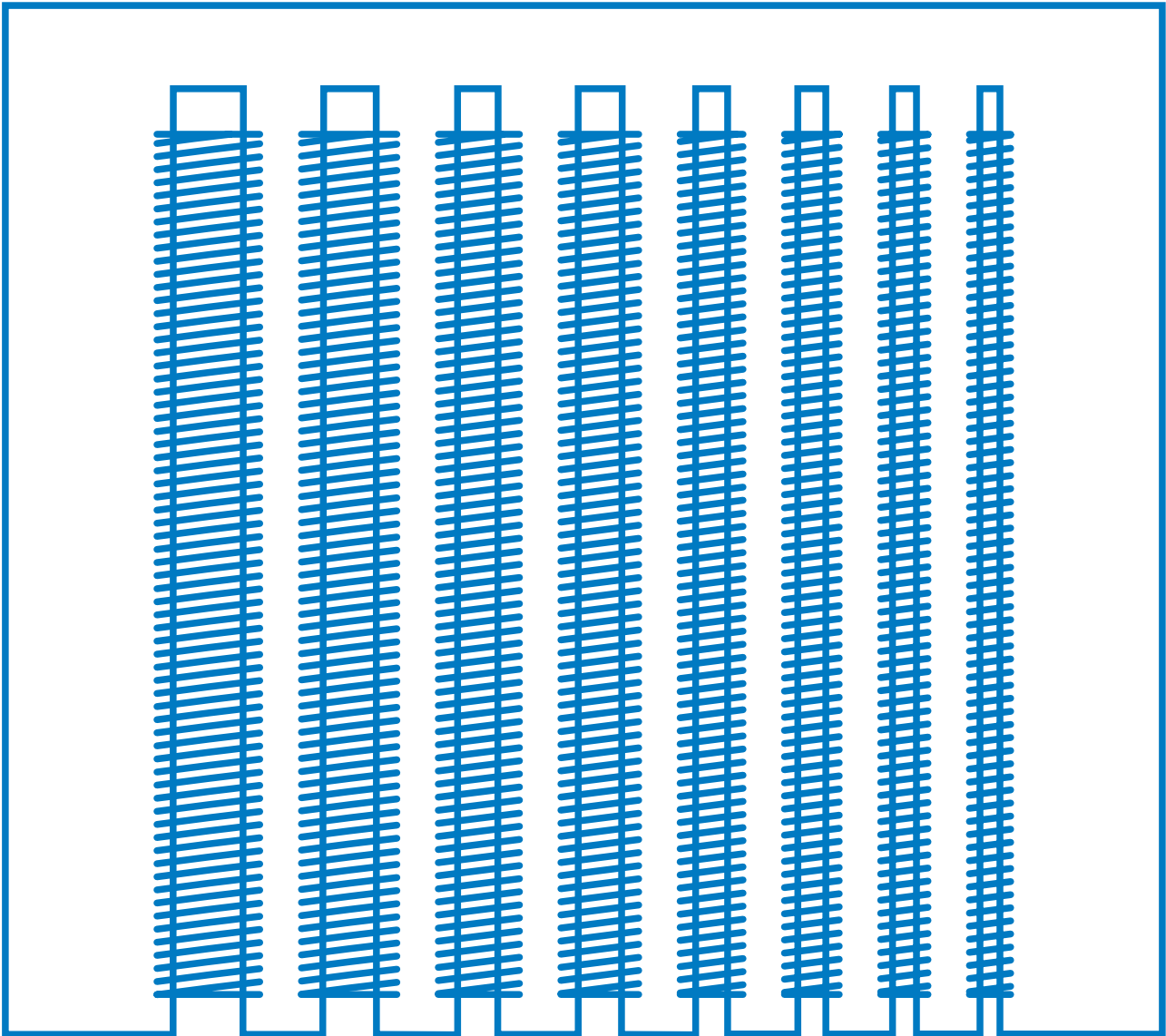
Finned Tubes



MEINERTZ



Finned Tubes for Space Heating and other thermal applications



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Finned Tubes type K manufactured from boiler tubes

Standard Programme K									
		K33-73-08	K33-83-10	K42-92-10	K48-98-10	K60-110-10	K60-123-12	K76-139-12	K101-164-12
Tube size	mm	33,7x2,6	33,7x2,6	42,4x2,6	48,3x2,6	60,3x2,9	60,3x2,9	76,1x2,9	101,6x3,6
Fin diameter / Fin pitch	mm	73/8	83/10	92/10	98/10	110/10	123/12,5	139/12,5	164/12,5
Outside surface area	m²/m	1,03	1,13	1,30	1,41	1,63	1,84	2,15	2,65
Water volume	l/m	0,6	0,6	1,1	1,5	2,3	2,3	3,9	7,0
Weight (without water)	kg/m	4,3	4,7	5,2	6,1	7,3	8,2	9,1	13,7
VVS No.(in DK only)		337810	337811	337813	337814	337815	337816	337818	337819

Meinertz Finned Tubes are Danish quality products offering excellent mechanical and thermal properties.

Manufacture

The Finned Tubes are manufactured by helically winding a strip directly onto the tube. Due to the corrugated lower fin area the surface area of the fins is increased and at the same time a turbulent air flow is created which results in an increased performance.

Performance Test

In order to achieve optimum performances at different temperatures the relationship between tube diameter, fin height and fin pitch has been precisely calculated.

The K-programme has undergone a performance test to DS/ISO 3149 in a closed test room at the Danish Technological Institute, Copenhagen.

Description

Type K is manufactured from welded steel tubes St 37.0 with welding factor 1.0 according to DIN 2458/1626. Maximum pressure 160 bar, maximum temperature 300°C. A certificate to EN 10204/DIN 50049-3.1 B is available when requested at the time of ordering.

Tube codification

Example: K60-123-12

K = Tube and fin material

60 = Tube outside diameter (mm)

123 = Fin diameter (mm)

12 = Fin pitch (mm)

Plain Tube Option type G

As an alternative to the Finned Tube Programme K, a plain tube execution without fins is available in the same forms of supply as described on pages 8 and 9.

Forms of supply

Meinertz Finned Tubes are supplied in required lengths up to 6 m with plain ends suitable for welding or with welded sockets. Placement and dimensions of the sockets as well as the various welded construction elements are shown on pages 8, 9 and 11.

Surface treatment

If not indicated otherwise, Meinertz Finned Tubes are supplied in an untreated condition.

At an extra cost the Finned Tubes can be supplied with the paint finish RAL 9016 according to the following procedure:

1. Alkaline degreasing.
2. Phosphatizing.
3. Passivation.
4. Oven drying at 170°C.
5. Powder coating with epoxy/polyester powder mix EPPE.
6. Baking at 185°C.
7. Special packing.

At an additional extra price Meinertz Finned Tubes can be supplied in other RAL colours.

Meinertz Finned Tubes can also be supplied in the hot-dip galvanised condition on the outside or both on the outside and inside. Furthermore, the Finned Tubes can be supplied with Sendzimir zinc coated steel strip on untreated tubes.

Installation

Meinertz Finned Tubes can be installed on the floor, under the ceiling or in a floor channel. See Brackets chapter on page 10.

Applications

Meinertz Finned Tubes can be installed as a visual highlight or more discreetly by integration. There is a great variety of applications in new buildings as well as for restorations and refurbishment.

Some examples are listed below:

- Show rooms and galleries.
 - Airport terminals.
 - Covered places and arcades.
 - Offices, canteens and shops.
 - Schools, sports halls and swimming pools.
 - Rooms with large glass façades.
 - Ecological green houses, tropical houses and green forest halls.
 - Churches, meeting halls and cinemas.
 - Industrial buildings and stores.
 - Workshops, garages and petrol stations.
 - Cargo, refrigerated and passenger ships.
 - Air-conditioned stables and chinchilla farms
- as well as many other possibilities.

Warranty

Approved installations are protected by a five years warranty covering manufacturing and material defects.



Thermal capacity in watts for type K from 1,000 to 6,000 mm Temperature sets: (90/70/20)°C and (80/60/20)°C

Δt 60K (90/70/20)°C	K33-73-08	K33-83-10	K42-92-10	K48-98-10	K60-110-10	K60-123-12	K76-139-12	K101-164-12
1000 mm	317	356	366	402	413	476	552	684
1200 mm	380	427	439	482	496	571	662	821
1400 mm	444	498	512	563	578	666	773	958
1600 mm	507	570	586	643	661	762	883	1094
1800 mm	571	641	659	724	743	857	994	1231
2000 mm	634	712	732	804	826	952	1104	1368
2200 mm	697	783	805	884	909	1047	1214	1505
2400 mm	761	854	878	965	991	1142	1325	1642
2600 mm	824	926	952	1045	1074	1238	1435	1778
2800 mm	888	997	1025	1126	1156	1333	1546	1915
3000 mm	951	1068	1098	1206	1239	1428	1656	2052
3200 mm	1014	1139	1171	1286	1322	1523	1766	2189
3400 mm	1078	1210	1244	1367	1404	1618	1877	2326
3600 mm	1141	1282	1318	1447	1487	1714	1987	2462
3800 mm	1205	1353	1391	1528	1569	1809	2098	2599
4000 mm	1268	1424	1464	1608	1652	1904	2208	2736
4200 mm	1331	1495	1537	1688	1735	1999	2318	2873
4400 mm	1395	1566	1610	1769	1817	2094	2429	3010
4600 mm	1458	1638	1684	1849	1900	2190	2539	3146
4800 mm	1522	1709	1757	1930	1982	2285	2650	3283
5000 mm	1585	1780	1830	2010	2065	2380	2760	3420
5200 mm	1648	1851	1903	2090	2148	2475	2870	3557
5400 mm	1712	1922	1976	2171	2230	2570	2981	3694
5600 mm	1775	1994	2050	2251	2313	2666	3091	3830
5800 mm	1839	2065	2123	2332	2395	2761	3202	3967
6000 mm	1902	2136	2196	2412	2478	2856	3312	4104

Δt 50K (80/60/20)°C	K33-73-08	K33-83-10	K42-92-10	K48-98-10	K60-110-10	K60-123-12	K76-139-12	K101-164-12
1000 mm	242	274	277	298	308	358	415	514
1200 mm	290	329	332	358	370	430	498	617
1400 mm	339	384	388	417	431	501	581	720
1600 mm	387	438	443	477	493	573	664	822
1800 mm	436	493	499	536	554	644	747	925
2000 mm	484	548	554	596	616	716	830	1028
2200 mm	532	603	609	656	678	788	913	1131
2400 mm	581	658	665	715	739	859	996	1234
2600 mm	629	712	720	775	801	931	1079	1336
2800 mm	678	767	776	834	862	1002	1162	1439
3000 mm	726	822	831	894	924	1074	1245	1542
3200 mm	774	877	886	954	986	1146	1328	1645
3400 mm	823	932	942	1013	1047	1217	1411	1748
3600 mm	871	986	997	1073	1109	1289	1494	1850
3800 mm	920	1041	1053	1132	1170	1360	1577	1953
4000 mm	968	1096	1108	1192	1232	1432	1660	2056
4200 mm	1016	1151	1163	1252	1294	1504	1743	2159
4400 mm	1065	1206	1219	1311	1355	1575	1826	2262
4600 mm	1113	1260	1274	1371	1417	1647	1909	2364
4800 mm	1162	1315	1330	1430	1478	1718	1992	2467
5000 mm	1210	1370	1385	1490	1540	1790	2075	2570
5200 mm	1258	1425	1440	1550	1602	1862	2158	2673
5400 mm	1307	1480	1496	1609	1663	1933	2241	2776
5600 mm	1355	1534	1551	1669	1725	2005	2324	2878
5800 mm	1404	1589	1607	1728	1786	2076	2407	2981
6000 mm	1452	1644	1662	1788	1848	2148	2490	3084

The Finned Tubes have undergone a performance test to DS/ISO 3149 in a closed test room at the Danish Technological Institute, Copenhagen.

Thermal capacity in watts/metre for type K at other temperature sets

Room temperature 20°C

Inlet temperature °C	Type	Outlet temperature °C										
		30°C	35°C	40°C	45°C	50°C	55°C	60°C	65°C	70°C	75°C	80°C
90°C	K33-73-08	80	109	137	166	195	225	256	286	317	349	382
	K33-83-10	100	133	165	197	229	260	292	324	356	387	424
	K42-92-10	68	99	131	166	203	241	280	322	366	412	458
	K48-98-10	56	87	121	159	200	246	294	347	402	463	523
	K60-110-10	66	99	135	175	217	262	309	360	413	470	530
	K60-123-12	83	123	165	210	258	310	361	418	476	535	603
	K76-139-12	108	156	205	257	312	368	428	489	552	621	690
85°C	K101-164-12	167	229	292	353	418	482	548	617	684	752	825
	K33-73-08	77	105	133	161	190	219	248	279	311	341	
	K33-83-10	96	128	159	190	220	251	283	316	346	379	
	K42-92-10	66	97	129	164	200	238	280	322	366	412	
	K48-98-10	55	86	120	159	201	247	296	350	407	468	
	K60-110-10	64	97	134	173	216	260	309	360	413	470	
	K60-123-12	81	120	162	207	255	306	361	418	476	535	
80°C	K76-139-12	105	151	200	251	305	361	422	485	547	614	
	K101-164-12	160	220	280	341	403	466	531	600	665	736	
	K33-73-08	73	100	128	156	184	213	242	271	302		
	K33-83-10	91	122	153	182	212	243	274	305	336		
	K42-92-10	64	95	127	162	198	237	278	322	366		
	K48-98-10	54	85	120	159	201	249	298	353	411		
	K60-110-10	63	96	132	171	214	260	309	360	418		
75°C	K60-123-12	79	118	160	205	254	304	358	414	476		
	K76-139-12	101	147	196	247	300	357	416	476	542		
	K101-164-12	152	210	269	328	389	450	515	580	646		
	K33-73-08	70	97	123	151	179	206	235	265			
	K33-83-10	86	116	146	175	205	235	264	295			
	K42-92-10	62	92	125	160	196	235	276	319			
	K48-98-10	53	84	119	159	203	250	303	359			
70°C	K60-110-10	61	94	130	170	213	260	309	363			
	K60-123-12	77	115	157	202	251	302	358	414			
	K76-139-12	97	142	190	242	294	350	409	472			
	K101-164-12	144	200	258	316	374	436	500	561			
	K33-73-08	67	92	118	145	173	201	229				
	K33-83-10	82	111	139	168	196	226	255				
	K42-92-10	60	90	123	158	194	234	276				
65°C	K48-98-10	52	83	119	159	205	253	307				
	K60-110-10	60	92	129	169	212	260	311				
	K60-123-12	74	113	155	200	248	302	356				
	K76-139-12	94	138	186	235	290	345	403				
	K101-164-12	136	190	246	302	360	420	482				
	K33-73-08	63	88	114	140	166	194					
	K33-83-10	77	105	132	160	188	216					
60°C	K42-92-10	59	88	121	156	193	234					
	K48-98-10	51	83	119	161	207	258					
	K60-110-10	58	91	128	168	212	260					
	K60-123-12	72	110	153	198	247	300					
	K76-139-12	90	134	180	230	284	341					
	K101-164-12	128	180	234	289	346	405					
	K33-73-08	59	84	109	134	161						
55°C	K33-83-10	72	99	125	153	179						
	K42-92-10	57	86	119	154	192						
	K48-98-10	50	83	120	163	210						
	K60-110-10	57	90	127	168	213						
	K60-123-12	70	108	150	196	247						
	K76-139-12	86	129	176	226	279						
	K101-164-12	120	170	222	275	331						
50°C	K33-73-08	56	79	103	129							
	K33-83-10	67	93	118	145							
	K42-92-10	55	85	117	153							
	K48-98-10	50	83	121	165							
	K60-110-10	55	88	126	168							
	K60-123-12	68	106	148	196							
	K76-139-12	82	125	171	220							
45°C	K101-164-12	112	160	210	262							
	K33-73-08	52	75	98								
	K33-83-10	62	86	111								
	K42-92-10	53	83	116								
	K48-98-10	49	83	123								
	K60-110-10	54	87	126								
	K60-123-12	66	104	147								
40°C	K76-139-12	78	120	166								
	K101-164-12	103	149	198								
	K33-73-08	48	70									
	K33-83-10	57	80									
	K42-92-10	52	81									
	K48-98-10	49	84									
	K60-110-10	53	87									
35°C	K60-123-12	64	102									
	K76-139-12	74	115									
	K101-164-12	94	138									
	K33-73-08	44										
	K33-83-10	51										
	K42-92-10	50										
	K48-98-10	50										
30°C	K60-110-10	52										
	K60-123-12	62										
	K76-139-12	70										
	K101-164-12	85										

Exponent	N1	N2
K33-73-08	1,27	2,11
K33-83-10	1,28	1,94
K42-92-10	1,22	2,58
K48-98-10	1,23	3,02
K60-110-10	1,24	2,81
K60-123-12	1,24	2,67
K76-139-12	1,28	2,49
K101-164-12	1,35	2,15

N1 = constant water flow and variable inlet temperature
 N2 = constant inlet temperature and variable water flow

Forms of supply for type K

Diagram 1: Form of supply LSV

Straight lengths with plain ends.
Standard length of unfinned ends
75 mm, other lengths available
on request, as well as unfinned
intermediate sections.

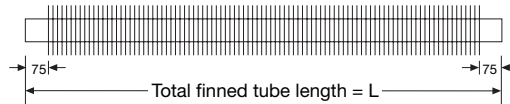


Diagram 2: Form of supply LKK

Straight lengths with concentrically
welded sockets.

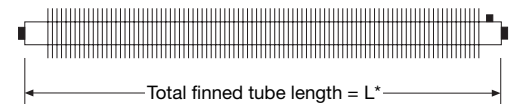


Diagram 3: Form of supply LEK

Straight lengths with one excentrically
and one concentrically welded socket.

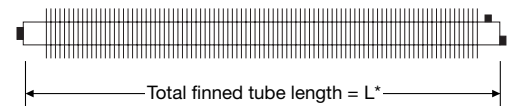


Diagram 4: Form of supply LRS

Straight lengths with sockets welded
to the tube side.

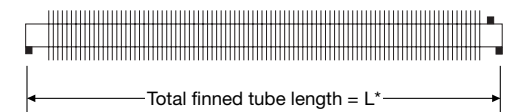


Diagram 5: Form of supply LIF

Straight lengths with sockets welded
to the same end and distributing tube
inside. Only applicable for types
K60-110-10, K60-123-12, K76-139-12,
K101-164-12.

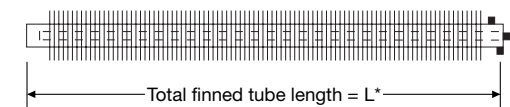


Diagram 6A: Form of supply LRO

Straight lengths with welded plates
and sockets.

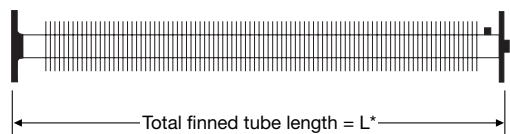


Diagram 6B: Form of supply LFL

Straight lengths with welded DIN flanges
and sockets.

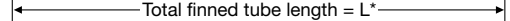


Diagram 7: Form of supply LBH

Straight lengths with welded 90° tube
bends and height tubes with bottoms.
Positioning of the sockets to be indicated
on the order.

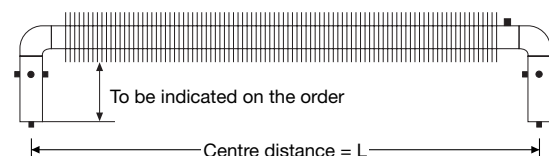


Diagram 8A: Form of supply LBR

Straight lengths with welded 90° tube
bends and height tubes with plates and
sockets.

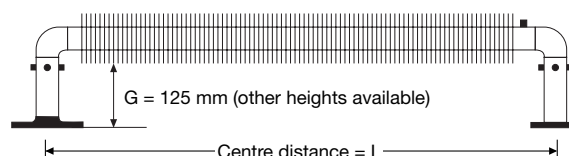


Diagram 8B: Form of supply LBF

Like diagram 8A, however with DIN
flanges.



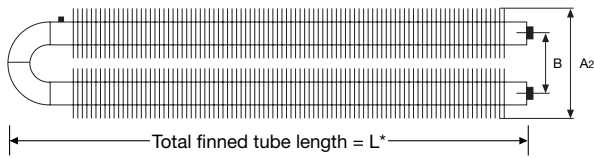


Diagram 9: Form of supply 2SE

Finned tube element "Hairpin", two-tube execution, in series, with sockets.

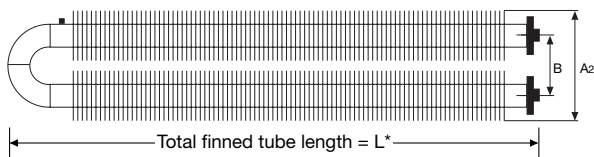


Diagram 10: Form of supply 2SR

Finned tube element "Hairpin", two-tube execution, in series, with welded plates and sockets.

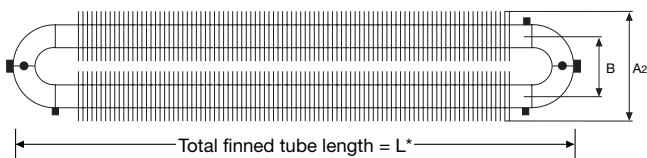


Diagram 11: Form of supply 2G0

Finned tube element, in two-tube execution, with two welded 180° tube bends. Positioning of the sockets to be indicated on the order.

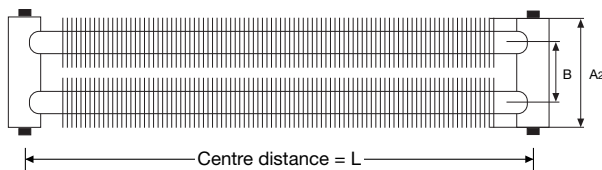


Diagram 12: Form of supply 2PE

Finned tube element, two-tube execution, in parallel, with closed distributing tube and sockets.

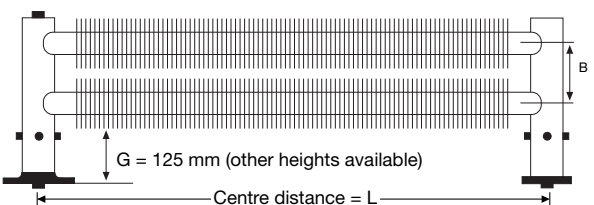


Diagram 13A: Form of supply 2HE

Finned tube element, two-tube execution, in parallel, with closed height/distributing tube and sockets.

Diagram 13B: Form of supply 2HR

Like 2HE, however with plates.

Diagram 13C: Form of supply 2HF

Like 2HE, however with DIN flanges.

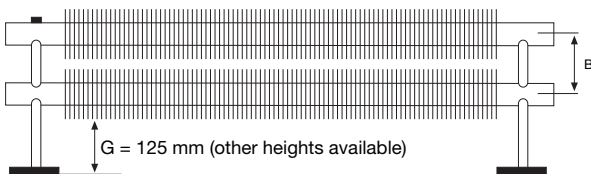


Diagram 14: Form of supply 2LR

Finned tube element, two-tube execution, in parallel, with intermediate and support tube, with plate and socket.

L = centre distance

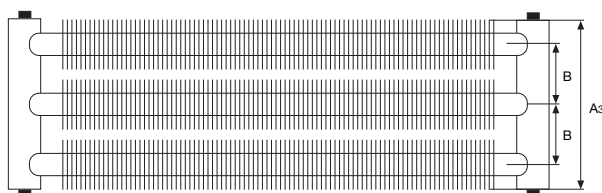


Diagram 15: Form of supply 3PE

Finned tube element, three-tube execution, in parallel, with distributing tube and sockets. (Also available as 4PE, 5PE etc.).

L = centre distance

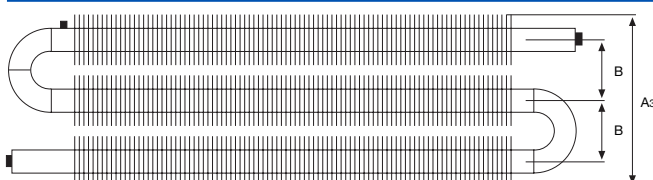


Diagram 16: Form of supply 3SE

Finned tube element, three-tube execution, in series, with sockets. (Also available as 4PE, 5PE etc.).

Total finned tube length L as Fig. 9.

Bent Finned Tubes type B

Diagram 17: Bent Finned Tubes

Available in the following two dimensions:

B32-82-10

Dimensions and performance see K33-83-10

B42-92-10

Dimensions and performance see K42-92-10

Form of supply BSV

Bent Finned Tubes with plain ends.

Form of supply BKK

Bent Finned Tubes with concentrically welded sockets.

Form of supply BRS

Bent Finned Tubes with sockets welded to the tube side.

Form of supply BBH

Bent Finned Tubes with welded 90° tube bends and height tubes with bottoms.

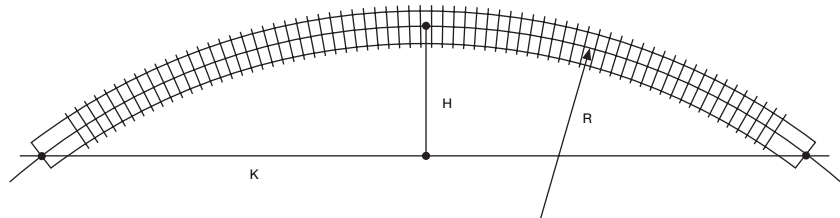
Positioning to be indicated on the order.

Form of supply BBR

As BBH, however with plates and sockets.

Form of supply BBF

As BBH, however with DIN flanges and sockets.



$$\text{Radius calculation: } R = \frac{K^2}{8 \cdot H} + \frac{H}{2}$$

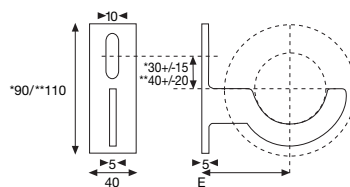
$$R_{\min} \text{ and } K_{\min} = 1000 \text{ mm}$$

Brackets

Brackets available on request.
Please state type and quantity on order.

Diagram 18: Wall bracket

Standard execution.

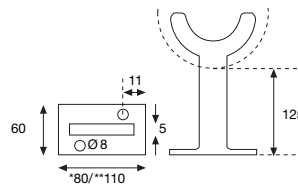


* K33-73-08 to K48-98-10

** K60-110-10 to K101-164-12

Diagram 19: Floor bracket

Standard execution.

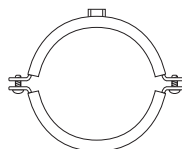


* K33-73-08 to K48-98-10

** K60-110-10 to K101-164-12

Diagram 20: Pipe clip

Double-ended galvanised tube clip with welded nut.



Special brackets according to customer drawings available.

For mounting under the ceiling wire or steel strip can also be used.

In case of installation in front of glass façades the steel column is often used as support for the Finned Tubes, and holes for the Finned Tubes or connection tubes can then be drilled into the steel column.

The Finned Tubes can be supplied with unfinned intermediate sections on request.

Loose fin spirals are available.

Execution	No. of brackets for Finned Tube length		
	0-2.5 m	2.6-4.0 m	4.1-6.0 m
Single-tube	2 pieces	3 pieces	4 pieces
2- and 3-tube	3 pieces	5 pieces	7 pieces

Linear expansion

$$\Delta L = L \cdot 0.000012 \cdot (t_m - 10^\circ\text{C})$$

L = Finned tube length in mm

t_m = Mean water temperature

Meinertz Finned Tubes for other thermal applications

Product

Meinertz Finned Tubes are Danish quality products offering excellent mechanical and thermal properties. The Finned Tubes are manufactured by helically winding a strip directly and tightly onto the tube. Due to the corrugated lower fin area the surface area of the fins is increased.

Finned Tube types

- Type K Welded steel tubes
DIN 2458/1626.
- Type Z As type K, however with
zinc coated steel fin.
- Type L Welded precision steel tubes
DIN 2394.
- Type D Heavy-weight steel tubes
DIN 2441.
- Type R Welded stainless steel tubes
material No. 1.4306/
AISI 304L.
- Type S Welded acid-resistant steel
tubes material No. 1.4435/
AISI 316L.
- Type C Seamless copper tubes
DIN 1787/ISO 274.

Type A Aluminium tubes
AlMgSi0,5 DIN 1725.

Type E Finned heating elements.

Type O Loose fin spirals,
without tube.

Tube codification

Example: L25-65-08

- L = Tube and fin material
- 25 = Tube outside diameter (mm)
- 65 = Fin diameter (mm)
- 08 = Fin pitch (mm)

Forms of supply

Meinertz Finned Tubes are supplied in required lengths from 200 to 6,000 mm, depending on the tube diameter. The required length of the plain, unfinned ends must be indicated on the order.

Surface treatment

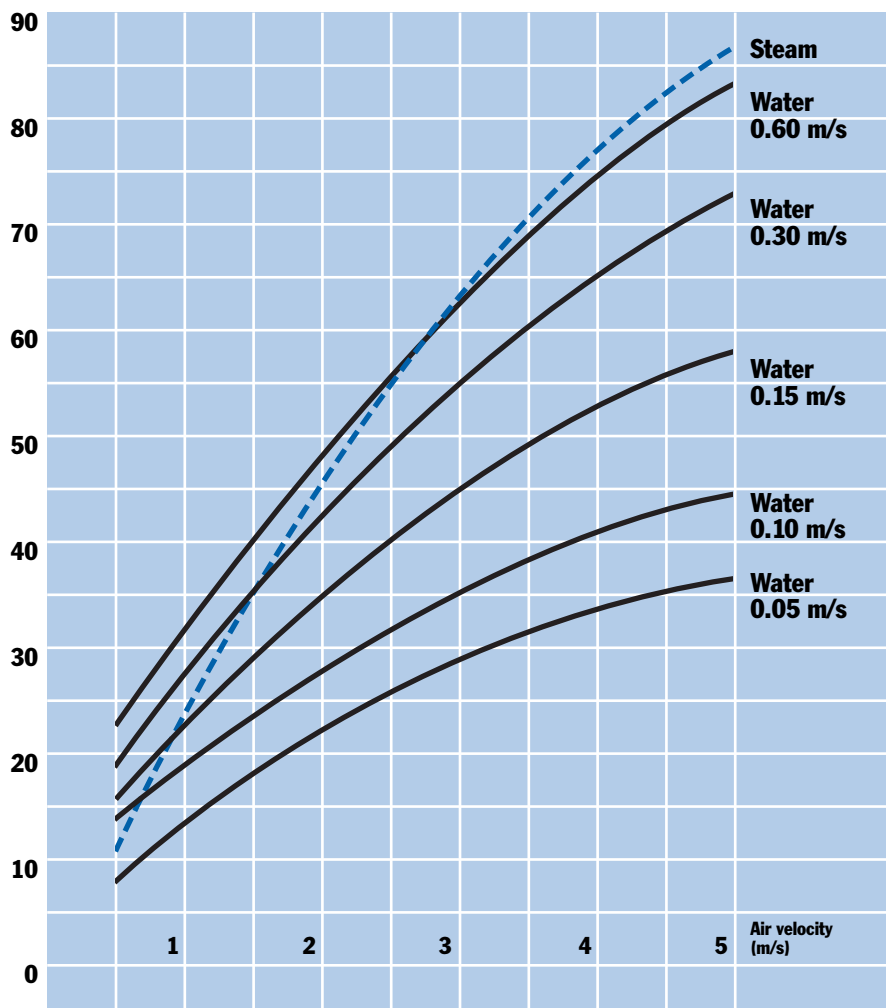
If not indicated otherwise, Meinertz Finned Tubes are supplied in an untreated condition. At an extra cost the Finned Tubes can be supplied with a paint finish in RAL colours (see also page 2).

Meinertz Finned Tubes can also be supplied in hot-dip galvanised condition, either on the outside only or on both the outside and inside.

Applications

- Air heaters and air coolers.
- Heat recovery and air-conditioning systems.
- Flue gas and industrial coolers.
- Oil preheaters and oil coolers.
- Secondary heat exchangers in collecting tanks.
- Brick drying and concrete hardening installations.
- Timber and grain drying installations.
- Baking ovens.
- Drying chambers for the foodstuff industry.
- Technical aggregates for the chemical and petrochemical industry.
- Intercoolers for air compressors.
- Solar collectors.
- Finned electric heating elements.
- Finned electric heating elements for subsequent bending.

Heat transfer coefficient k
(watts/m²K)



Graphs for a rough calculation of Finned Tube bundles for water and steam application. Meinertz Finned Tube types L and D.

The following equation is used to calculate the performance in watts:

$$Q = F \cdot K \cdot (t_{\text{water mean}} - t_{\text{air mean}})$$

Finned Tubes type L manufactured from welded precision steel tubes DIN 2394

Standard programme L									
		L16-40-06	L19-51-08	L22-54-08	L22-62-10	L25-65-08	L28-68-08	L32-72-08	L38-88-10
Tube size	mm	16x1,5	19x1,5	22x1,5	22x1,5	25x1,5	28x1,5	32x1,5	38x1,5
Fin diameter / Fin pitch	mm	40/6	51/8	54/8	62/10	65/8	68/8	72/8	88/10
Outside surface area	m ² /m	0,45	0,55	0,60	0,66	0,87	0,93	1,00	1,21
Weight	kg/m	1,3	1,8	2,1	2,2	2,7	2,6	3,3	4,0
VVS No. (in DK only)		337830	337831	337832	337833	337834	337835	337837	337839

Total programme L						
Tube size mm	Fin diameter mm	Fin dimension mm	Type No.			
			Fin pitch mm / Outside surface area m ² /m			
12,7 x 1,5	28	8 x 0,75	L12-28-04	L12-28-05	L12-28-06	
			F04 / 0,32	F05 / 0,26	F06 / 0,22	
16 x 1,5	36	10 x 0,50	L16-36-05	L16-36-06	L16-36-08	
			F05 / 0,41	F06 / 0,35	F08 / 0,28	
	40	12 x 0,50	L16-40-05	L16-40-06	L16-40-08	
			F05 / 0,52	F06 / 0,45	F08 / 0,35	
19 x 1,5	39	10 x 0,50	L19-39-05	L19-39-06	L19-39-08	
			F05 / 0,46	F06 / 0,39	F08 / 0,31	
	43	12 x 0,50	L19-43-05	L19-43-06	L19-43-08	
			F05 / 0,58	F06 / 0,49	F08 / 0,38	
51	16 x 0,75	L19-51-06	L19-51-08	L19-51-10		
		F06 / 0,72	F08 / 0,55	F10 / 0,45		
22 x 1,5	46	12 x 0,50	L 22-46-05	L 22-46-06	L 22-46-08	
			F05 / 0,63	F06 / 0,54	F08 / 0,42	
	54	16 x 0,75	L 22-54-08	L 22-54-10	L 22-54-12	
			F08 / 0,60	F10 / 0,50	F12 / 0,42	
	62	20 x 0,75	L 22-62-08	L 22-62-10	L 22-62-12	
			F08 / 0,81	F10 / 0,66	F12 / 0,57	
25 x 1,5	57	16 x 0,75	L 25-57-06	L 25-57-08	L 25-57-10	
			F06 / 0,84	F08 / 0,65	F10 / 0,54	
65	20 x 0,75	L 25-65-08	L 25-65-10	L 25-65-12		
		F08 / 0,87	F10 / 0,71	F12 / 0,61		
28 x 1,5	60	16 x 0,75	L 28-60-06	L 28-60-08	L 28-60-10	
			F06 / 0,90	F08 / 0,70	F10 / 0,57	
	68	20 x 0,75	L 28-68-08	L 28-68-10	L 28-68-12	
			F08 / 0,93	F10 / 0,76	F12 / 0,65	
32 x 1,5	72	20 x 0,75	L 32-72-08	L 32-72-10	L 32-72-12	
			F08 / 1,00	F10 / 0,82	F12 / 0,70	
	82	25 x 0,75	L 32-82-08	L 32-82-10	L 32-82-12	
			F08 / 1,35	F10 / 1,10	F12 / 0,93	
38 x 1,5	78	20 x 0,75	L 38-78-08	L 38-78-10	L 38-78-12	
			F08 / 1,12	F10 / 0,92	F12 / 0,78	
	88	25 x 0,75	L 38-88-08	L 38-88-10	L 38-88-12	
			F08 / 1,50	F10 / 1,21	F12 / 1,03	



Standard

Finned Tubes type D manufactured from heavy-weight steel tubes DIN 2441

Standard programme D									
	D10-42-06	D15-53-08	D20-67-08	D25-84-10	D32-92-10	D40-98-10	D50-123-12	D80-152-12	
Tube size	inches	3/8	1/2	3/4	1	1 1/4	1 1/2	2	3
Tube size	mm	17,5x2,9	21,8x3,25	27,3x3,25	34,2x4,05	42,9x4,05	48,8x4,05	60,8x4,50	89,5x4,85
Fin diameter / Fin pitch	mm	42/6	53/8	67/8	84/10	92/10	98/10	123/12,5	152/12,5
Outside surface area	m²/m	0,47	0,60	0,91	1,14	1,31	1,42	1,84	2,41
Weight	kg/m	2,1	2,9	3,9	5,8	6,8	7,8	10,6	14,5
VVS No. (in DK only)		337820	337822	337823	337824	337825	337826	337827	337829

Total programme D					
Tube size Inches (mm)	Fin diameter mm	Fin dimension mm	Type No.		
			Fin pitch mm / Outside surface area m ² /m		
3/8" 17,5 x 2,9	37	10 x 0,50	D10-37-05	D10-37-06	D10-37-08
			F05 / 0,44	F06 / 0,37	F08 / 0,29
1/2" 21,8 x 3,25	41	12 x 0,50	D10-41-05	D10-41-06	D10-41-08
			F05 / 0,48	F06 / 0,47	F08 / 0,36
1/2" 21,8 x 3,25	46	12 x 0,50	D15-46-05	D15-46-06	D15-46-08
			F05 / 0,63	F06 / 0,54	F08 / 0,42
			D15-53-08	D15-53-10	D15-53-12
3/4" 27,3 x 3,25	59	16 x 0,75	F08 / 0,60	F10 / 0,49	F12 / 0,42
			D 20-59-06	D 20-59-08	D 20-59-10
			F06 / 0,89	F08 / 0,69	F10 / 0,56
1" 34,2 x 4,05	67	20 x 0,75	D 20-67-08	D 20-67-10	D 20-67-12
			F08 / 0,91	F10 / 0,75	F12 / 0,64
1 1/4" 42,9 x 4,05	74	20 x 0,75	D 25-74-08	D 25-74-10	D 25-74-12
			F08 / 1,04	F10 / 0,86	F12 / 0,73
			D 25-84-08	D 25-84-10	D 25-84-12
1 1/2" 48,8 x 4,05	84	25 x 0,75	F08 / 1,40	F10 / 1,14	F12 / 0,97
			D 32-82-08	D 32-82-10	D 32-82-12
			F08 / 1,21	F10 / 0,99	F12 / 0,85
2" 60,8 x 4,50	92	25 x 0,75	D 32-92-10	D 32-92-12	D 32-92-15
			F10 / 1,31	F12 / 1,11	F15 / 0,92
			D 40-88-08	D 40-88-10	D 40-88-12
1 1/2" 48,8 x 4,05	88	20 x 0,75	F08 / 1,32	F10 / 1,09	F12 / 0,93
			D 40-98-10	D 40-98-12	D 40-98-15
			F10 / 1,42	F12 / 1,21	F15 / 1,00
2" 60,8 x 4,50	110	25 x 0,75	D 50-110-10	D 50-110-12	D 50-110-15
			F10 / 1,63	F12 / 1,39	F15 / 1,15
			D 50-123-10	D 50-123-12	D 50-123-15
3" 89,5 x 4,85	123	31,5 x 0,75	F10 / 2,17	F12 / 1,84	F15 / 1,51
			D 80-139-10	D 80-139-12	D 80-139-15
			F10 / 2,18	F12 / 1,87	F15 / 1,55
3" 89,5 x 4,85	152	31,5 x 0,75	D 80-152-10	D 80-152-12	D 80-152-15
			F10 / 2,84	F12 / 2,41	F15 / 1,99

Standard



Finned Tubes type R and S manufactured from stainless and acid-resistant steel tubes

Tube size mm	Fin diameter mm	Fin dimension mm	Type No.		
			Fin pitch mm / Outside surface area m ² /m		
12 x 1,5	28	8 x 0,4	R 12-28-04	R 12-28-05	R 12-28-06
			F ₀₄ / 0,32	F ₀₅ / 0,26	F ₀₆ / 0,22
16 x 1,5	36	10 x 0,4	R 16-36-05	R 16-36-06	R 16-36-08
			F ₀₅ / 0,41	F ₀₆ / 0,35	F ₀₈ / 0,28
	40	12 x 0,4	R 16-40-05	R 16-40-06	R 16-40-08
			F ₀₅ / 0,52	F ₀₆ / 0,44	F ₀₈ / 0,35
19 x 1,5	39	10 x 0,4	R 19-39-05	R 19-39-06	R 19-39-08
			F ₀₅ / 0,46	F ₀₆ / 0,39	F ₀₈ / 0,31
	43	12 x 0,4	R 19-43-05	R 19-43-06	R 19-43-08
			F ₀₅ / 0,58	F ₀₆ / 0,49	F ₀₈ / 0,38
	51	16 x 0,4	R 19-51-06	R 19-51-08	R 19-51-10
			F ₀₆ / 0,72	F ₀₈ / 0,55	F ₁₀ / 0,45
21,3 x 2	45	S 12 x 0,8	S 21-45-05	S 21-45-06	S 21-45-08
			F ₀₅ / 0,62	F ₀₆ / 0,53	F ₀₈ / 0,41
22 x 1,5	46	R 12 x 0,4	R&S 22-46-05	R&S 22-46-06	R&S 22-46-08
		S 12 x 0,8	F ₀₅ / 0,63	F ₀₆ / 0,54	F ₀₈ / 0,42
	54	16 x 0,5	R 22-54-08	R 22-54-10	R 22-54-12
			F ₀₈ / 0,60	F ₁₀ / 0,49	F ₁₂ / 0,42
25 x 1,5	57	16 x 0,5	R&S 25-57-06	R&S 25-57-08	R&S 25-57-10
			F ₀₆ / 0,84	F ₀₈ / 0,65	F ₁₀ / 0,53
	65	20 x 0,7	R 25-65-08	R 25-65-10	R 25-65-12
			F ₀₈ / 0,87	F ₁₀ / 0,71	F ₁₂ / 0,61
28 x 1,5	60	16 x 0,5	R 28-60-06	R 28-60-08	R 28-60-10
			F ₀₆ / 0,90	F ₀₈ / 0,70	F ₁₀ / 0,57
	68	20 x 0,7	*) R&S 28-68-08	R&S 28-68-10	R&S 28-68-12
			F ₀₈ / 0,93	F ₁₀ / 0,76	F ₁₂ / 0,65
33,7 x 1,6	73	20 x 0,7	*) R&S 33-73-08	R&S 33-73-10	R&S 33-73-12
			F ₀₈ / 1,03	F ₁₀ / 0,85	F ₁₂ / 0,73
42,4 x 1,6	82	20 x 0,7	R&S 42-82-08	R&S 42-82-10	R&S 42-82-12
			F ₀₈ / 1,20	F ₁₀ / 0,99	F ₁₂ / 0,84
	92	25 x 0,7	R 42-92-10	R 42-92-12	R 42-92-15
			F ₁₀ / 1,30	F ₁₂ / 1,10	F ₁₅ / 0,91
48,3 x 1,6	88	20 x 0,7	R 48-88-08	R 48-88-10	R 48-88-12
			F ₀₈ / 1,31	F ₁₀ / 1,08	F ₁₂ / 0,92
	98	25 x 0,7	R 48-98-10	R 48-98-12	R 48-98-15
			F ₁₀ / 1,41	F ₁₂ / 1,20	F ₁₅ / 0,99
51 x 1,5	91	20 x 0,7	R 51-91-10	R 51-91-12	R 51-91-15
			F ₁₀ / 1,12	F ₁₂ / 0,96	F ₁₅ / 0,80
60,3 x 2	110	25 x 0,7	R 60-110-10	R 60-110-12	R 60-110-15
			F ₁₀ / 1,63	F ₁₂ / 1,39	F ₁₅ / 1,15

Typ R

Manufactured from welded stainless steel tubes material No. 1.4306/AISI 304L.
If requested at the time of ordering a certificate to EN 10204/DIN 50049-3.1 B
can be supplied.

 Standard

Typ S

Manufactured from welded acid-resistant steel tubes material No. 1.4435/AISI 316L.
If requested at the time of ordering a certificate to EN 10204/DIN 50049-3.1 B
can be supplied.

*) Only type R
is standard.

The Finned Tubes can be supplied with stainless steel fins on acid-resistant steel tubes.
Tubes from stainless and from acid-resistant materials can be supplied with fins from
normal steel, Sendzimir zinc coated steel or copper.

Meinertz A/S
Sverigesvej 16
DK-8700 Horsens
Tel +45 8652 1811 Fax
+45 8652 1515
www.meinertz.com

