

LBK - CONCEPT

- Air volume from 100 to 100.000 m³/h
- Cooling / heating / heat recovery / humidifying / mixing / ventilation
- Customised according to your specifications
- Three construction methods with maximum flexibility

Description

The importance of a comfortable indoor climate is often underestimated. As producers of air handling units, we can supply any concept of air handling and climate control equipment that is required. Ventilation, heating, cooling, humidifying, dehumidifying and heat recovery are some of these possibilities.

For heat recovery we utilise high efficiency cross flow heat exchanger, twin coil systems, heat wheels and heat pipes. Also possible is StatiqCooling, a new energy saving method of cooling with water without a cooling machine.

Every air handling unit can be assembled according to your wishes, without being bound to measurements. Our staff will be happy to inform you of the possibilities.

Air volume, process, external resistance, filters, dimensions, sound, energy use etc. will all be taken into consideration to help you make your final choice.

To realise this, we at Thermo Air, have designed three construction types to produce air handling units for every process.

- Welded frame- construction**
- Pentapost- construction**
- Sandwich panel-construction**

Every construction method has its own specific application areas. As standard, we have designed a number of modules with which we can build up our air handling units. The process determines which construction method and module should be applied.

With these models and dimensions, we can provide you with any type of airhandling unit you require. Given its air volume and matching dimensions, the 30SP type is a speciality product that is only available on request.

Sandwich panel-construction



Welded frame- construction



Pentapost- construction



Pentapost- construction



Construction types

A. Welded frame-construction

Constructed of a fully welded frame with single walled or double walled insulated plating. Sendzimir galvanised plating material is applied as standard. Available in pre-coated colours such as RAL 9010, 9001, 7035, other colours available on request. This construction method is frequently used for ventilation and industrial heating processes such as spraying cabinets or oil/gas fired air heaters.

The welded frame construction guarantees you a robust and sturdy air handling unit. A significant advantage of this construction type is the availability of practical modules. This construction is suitable for indoor and outdoor installation.

B. Aluminum pentapost-construction

Aluminium angle profile with single or double walled insulated plating, with an insulation width of 20 to 50 mm. The galvanised steel plating material is supplied standard in the colour RAL 7035. It is also available in pre-coated panels in the colours RAL 9010 and 9001 or customer specific colours. This construction type has been chosen by us because of its high quality and fast production time. It is suitable for use in all processes for climate control. With its modular structure the pentapost construction is of appealing design which makes it suitable for indoor or outdoor installation.

C. Self supporting sandwich-construction

Completely manufactured from self supporting sandwich panels (with a standard width of 40 mm). This construction type is suitable for larger air volumes and dimensions, as well as special application ranges. The self supporting PIR/PUR panels have a closed cell structure and are galvanised on both sides with an RAL 7035 polyester coating. Other colours are available on request.

All sandwich panel constructed units are single, complete units. They are therefore applied in the larger and more complex air handling units. Sandwich panels are available in various panel widths.

Their robust and deluxe design can be attributed from the UNP-profile mounting, the high insulation degree and the stainless steel protection profiles.

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Types

The LBK-range contains the following models:

Model	Air volume (m³/h)	Module (h x w) (mm)	
7	400 - 1.400	400	400
9	600 - 2.400	500	500
10	1.200 - 4.000	600	600
12	2.400 - 6.800	800	800
15	3.200 - 11.200	1000	1000
18	7.000 - 17.000	1200	1200
25	10.000 - 26.000	1500	1500
30SP	26.000 - ->	*)	*)

*) on request

Possibilities

Every LBK uses an IMOFA HE(B) or a direct driven DD fan. These powerful and quiet fans form the heart of every unit. Below you will find a concise summary of the possibilities of our LBK range.

- filtering
- ventilation
- heating (oil or gas fired, warm water)
- cooling (direct expansion, chilled water, adiabatic cooling)
- mixing
- air supply and extraction
- heat recovery (cross flow heat exchangers, heat wheels, twin coils)
- air humidifiers (steam, ultrasonic)
- complete regulation (temperature regulation with sensors)
- mains/maintenance switches (fitted)
- sound dampers
- frequency regulators (supplied separately)
- filter pollution detection, such as gauge points, magnehelic and minihelic.

Compliance as per the Standards stated in Machine Directive 89/336 EC (attachment 2B) and the Low Voltage Directive 73/23/EEC.

Base frame

All Thermo Air air handling units are supplied with a base frame or self supporting profile. The units are also supplied as a complete unit including hoisting hooks. This reduces on site installation time. If you have limited space, we can also supply the unit in separate components.

Set-up

Our air handling units are suitable for indoor or outdoor installation. For the outdoor model, we supply an overhanging roof strip, durable roof finishing and a weather cowl with bird

Sandwich panel-construction



mesh. This produces the perfect air handling units for outdoor installation.

Selection table

Standard information for the LBK range can be found in the selection table. This enables you to directly choose the LBK type suitable for your situation. The table includes a selection of our standard heat coils, however, we can also help you select customized heat coils due to our expertise and selection software.

Special conditions

For applications with special requirements, such as the ATEX standard and/or high temperature applications, we can apply certified components to the LBK range. Our advisors are happy to advise you of the possibilities.

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Technical data

Air handling LBK concept			Heating		Heating		Heating		Heating		Cooling	
Type	Air volume m³/h	Air speed m/s	Capacity	Air intake resistance	Capacity	Air intake resistance	Capacity	Air intake resistance	Capacity	Air intake resistance	Direct expansion	Air intake resistance
			1-row kW	1-row Pa	2-rows kW	2-rows Pa	3-rows kW	3-rows Pa	4-rows kW	4-rows Pa	4-rows kW	4-rows Pa
LBK 7	400	0,11	3,3	6	6	11	4)	4)	8,5	21	4)	4)
LBK 7	600	0,17	4,2	11	8	21	4)	4)	11,5	45	4)	4)
LBK 7	800	0,22	4,8	18	9,5	35	4)	4)	14	70	4)	4)
LBK 7	1.000	0,28	5,4	26	11	52	4)	4)	16	103	4)	4)
LBK 7	1.200	0,33	5,9	36	12	71	4)	4)	18	142	4)	4)
LBK 7	1.400	0,39	6,4	46	13	92	4)	4)	20	185	4)	4)
LBK 9	600	0,17	5,6	4	9,5	8	12	12	14		6,7	21
LBK 9	800	0,22	6,6	7	11,5	13	15	20	17,5	16	8,2	35
LBK 9	1.000	0,28	7,5	10	13	20	17	29,5	20,5	27	9,4	51
LBK 9	1.200	0,33	8,3	14	14,5	27	19,5	40	23,3	39	10,5	70
LBK 9	1.400	0,39	9,1	18	16	35	21,5	53	25,8	54	11,5	92
LBK 9	1.600	0,44	9,7	22	17,3	45	23,4	66	28,5	70	4)	4)
LBK 9	1.800	0,50	10,3	27	18,5	55	25,1	81	30,5	89	4)	4)
LBK 9	2.000	0,56	10,8	33	19,6	65	26,8	98	32,6	109	4)	4)
LBK 9	2.200	0,61	11,3	39	21	77	28,3	115	34,6	131	4)	4)
LBK 9	2.400	0,67	11,9	45	22	89	29,7	135	36,5	154	4)	4)
LBK 10	1.200	0,33	11,5	6	18	12	23	18	27	24	13	35
LBK 10	1.600	0,44	12,5	10	22	20	28	30	33	40	14	46
LBK 10	2.000	0,56	14	15	25	29	32	44	39	59	14,5	58
LBK 10	2.400	0,67	15,5	20	27,5	41	36	61	44	81	15,2	71
LBK 10	2.800	0,78	17	27	30	53	40	79	49	106	13,5	85
LBK 10	3.200	0,89	18	34	32,5	67	43	100	53	134	4)	4)
LBK 10	3.600	1,00	19	41	34,5	82	46	123	57,5	164	4)	4)
LBK 10	4.000	1,11	20	49	36,5	99	50	147	61	196	4)	4)
LBK12	2.400	0,67	18	8	33	14	43,5	22	51	29	25	37
LBK12	2.800	0,78	19	10	37	19	48	28	57	38	27,5	48
LBK12	3.200	0,89	20,5	12	40	24	52,5	36	62,5	48	30	60
LBK12	3.600	1,00	22	15	42,5	30	57	44	68	58	32	74
LBK12	4.000	1,11	23	18	45	35	61	53	73	70	34	90
LBK12	4.400	1,22	24	21	48	41	65	62	78	83	4)	4)
LBK12	4.800	1,33	25,5	24	50	48	68	72	82,5	96	4)	4)
LBK12	5.200	1,44	26,5	28	52,5	55	72	83	87	110	4)	4)
LBK12	5.600	1,56	27,5	31	55	63	75	94	91	126	4)	4)
LBK12	6.000	1,67	28	35	57	71	78	106	95	142	4)	4)
LBK12	6.400	1,78	29	40	59	79	81	119	99	158	4)	4)
LBK12	6.800	1,89	30	44	60	84	84	132	103	176	4)	4)
LBK15	3.200	0,89	27	5	49	10	64,5	15	73	20	36	26
LBK15	4.000	1,11	30,5	8	56,5	15	75,5	22	86	30	42	38
LBK15	4.800	1,33	33,5	10	63	20	85,5	30	99	40	47	52
LBK15	5.600	1,56	36,5	13	69	26	95	40	110	52	52	68
LBK15	6.400	1,78	39	17	75	33	103	50	120	66	56	86
LBK15	7.200	2,00	42	20	80,5	41	111	61	130	81	50	105
LBK15	8.000	2,22	44	24	85,5	48	119	73	140	96	4)	4)
LBK15	8.800	2,44	46	29	90	57	126	86	149	115	4)	4)
LBK15	9.600	2,67	48	33	95	67	133	100	158	133	4)	4)
LBK15	10.400	2,89	50	38	99	76	140	115	165	152	4)	4)
LBK15	11.200	3,11	52	44	102	87	146	130	173	173	4)	4)
LBK18	7.000	1,94	51	10	95	19	128	28	147	37	69	51
LBK18	8.000	2,22	55	12	103	23	140	35	162	47	76	64
LBK18	9.000	2,50	59	14	111	29	151	43	176	57	81	78
LBK18	10.000	2,78	63	17	118	34	162	51	189	69	86	94
LBK18	11.000	3,06	65	20	125	40	172	61	202	81	91	111
LBK18	12.000	3,33	69	24	131	47	182	71	214	94	96	129
LBK18	13.000	3,61	71	27	137	54	191	81	226	108	4)	4)
LBK18	14.000	3,89	74	31	143	62	200	92	237	123	4)	4)
LBK18	15.000	4,17	76	35	148	69	208	104	247	139	4)	4)
LBK18	16.000	4,44	79	39	154	77	216	116	258	155	4)	4)
LBK18	17.000	4,72	81	43	159	86	223	129	267	172	4)	4)
LBK25	10.000	2,78	80	8	144	15	4)	4)	220	21	110	40
LBK25	12.000	3,33	88	11	160	21	4)	4)	250	42	120	55
LBK25	14.000	3,89	96	14	180	28	4)	4)	280	55	130	71
LBK25	16.000	4,44	104	17	190	35	4)	4)	310	70	140	89
LBK25	18.000	5,00	110	22	206	42	4)	4)	334	85	150	110
LBK25	20.000	5,56	113	26	218	51	4)	4)	358	102	4)	4)
LBK25	22.000	6,11	120	30	230	60	4)	4)	380	120	4)	4)
LBK25	24.000	6,67	126	35	241	70	4)	4)	400	140	4)	4)
LBK25	26.000	7,22	132	40	252	80	4)	4)	422	160	4)	4)

1) Warm water trajectory 80-60°C, air intake condition -7°C

2) Cold water trajectory 6-12°C, air intake condition +28°C / 60% RV

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		Cooling			Flat filter Class G3		Bag filter Class G4		Bag filter Class F5		Bag filter Class F7	
	Air speed	Cold water	Air side resistance	Air speed	Resistance	Resistance	Resistance	Resistance	Resistance	Resistance	Resistance	Resistance
					Clean	1/2 polluted	Clean	1/2 polluted	Clean	1/2 polluted	Clean	1/2 polluted
	4-rows	4-rows	4-rows	4-rows	Clean	1/2 polluted	Clean	1/2 polluted	Clean	1/2 polluted	Clean	1/2 polluted
	m/s	kW	Pa	m/s	Pa	Pa	Pa	Pa	Pa	Pa	Pa	Pa
	4)	2,6	27	1,3	9	54,5						
	4)	3,5	55	1,9	21	60,5						
	4)	4,1	91	2,5	37	68,5						
	4)	4)	4)	4)	58	79						
	4)	4)	4)	4)	4)	4)						
	4)	4)	4)	4)	4)	4)						
	1,1	3,5	55	1,9	7	54	23	137	17	134	27	139
	1,4	4	91	2,5	12	56	24	137	19	135	30	140
	1,8	4,5	134	3,1	19	60	26	138	21	136	33	142
	2,2	4)	4)	4)	27	64	28	139	23	137	37	144
	2,5	4)	4)	4)	32	66	31	141	25	138	41	146
	4)	4)	4)	4)	48	74	33	142	27	139	45	148
	4)	4)	4)	4)	60	80	36	143	31	141	50	150
	4)	4)	4)	4)	4)	4)	39	145	34	142	56	153
	4)	4)	4)	4)	4)	4)	41	146	37	144	61	156
	4)	4)	4)	4)	4)	4)	45	148	42	146	68	159
	1,4	9,5	38	1,5	11	56	28	139	23	137	37	144
	1,6	11,6	63	2	20	60	33	142	27	139	45	148
	1,8	13,5	92	2,5	31	66	39	145	34	142	56	153
	2,1	15,1	127	3	45	73	45	148	42	146	68	159
	2,3	4)	4)	4)	4)	4)	52	151	51	151	84	167
	4)	4)	4)	4)	4)	4)	60	155	62	156	103	177
	4)	4)	4)	4)	4)	4)	70	160	76	163	126	188
	4)	4)	4)	4)	4)	4)	82	166	93	172	154	202
	1,5	18	38	1,5	11	56	32	141	27	139	43	147
	1,7	19	49	1,8	15	58	35	143	30	140	49	150
	2	21	62	2	20	60	39	145	34	142	56	153
	2,2	23	76	2,3	25	63	43	147	39	145	64	157
	2,5	24,5	91	2,5	31	66	47	149	44	147	72	161
	4)	27	125	3	37	69	51	151	50	150	82	166
	4)	4)	4)	4)	44	72	56	153	57	154	93	172
	4)	4)	4)	4)	4)	4)	62	156	64	157	106	178
	4)	4)	4)	4)	4)	4)	69	160	74	162	122	186
	4)	4)	4)	4)	4)	4)	75	163	84	167	138	194
	4)	4)	4)	4)	4)	4)	83	167	95	173	157	204
	4)	4)	4)	4)	4)	4)	91	171	108	179	179	215
	1,2	26,5	26	1,2	7	54	29	140	23	137	38	144
	1,5	31	38	1,5	11	56	32	141	27	139	44	147
	1,8	35	52	1,8	17	59	36	143	31	141	51	151
	2,1	39	68	2,1	23	62	41	146	37	144	60	155
	2,4	42	86	2,4	29	65	46	148	43	147	71	161
	2,7	46	105	2,7	37	69	52	151	50	150	83	167
	4)	4)	4)	4)	46	73	58	154	59	155	97	174
	4)	4)	4)	4)	4)	4)	65	158	68	159	113	182
	4)	4)	4)	4)	4)	4)	73	162	80	165	133	192
	4)	4)	4)	4)	4)	4)	82	166	94	172	156	203
	4)	4)	4)	4)	4)	4)	93	172	110	180	182	216
	1,8	54	48	1,7	24	62	35	143	30	140	49	150
	2	60	61	2	31	66	38	144	34	142	55	153
	2,3	64	74	2,2	39	70	42	146	38	144	63	157
	2,6	69	89	2,5	48	74	46	148	44	147	72	161
	2,8	73,5	105	2,7	4)	4)	51	151	49	150	81	166
	3,1	78	122	3	4)	4)	56	153	56	153	92	171
	4)	4)	4)	4)	4)	4)	61	156	63	157	105	178
	4)	4)	4)	4)	4)	4)	68	159	72	161	119	185
	4)	4)	4)	4)	4)	4)	74	162	82	166	136	193
	4)	4)	4)	4)	4)	4)	82	166	93	172	154	202
	4)	4)	4)	4)	4)	4)	90	170	105	178	175	213
	1,6	82	40	1,6	14	57	34	142	29	140	47	149
	1,9	96	55	1,9	20	60	38	144	34	142	55	153
	2,2	106	71	2,2	28	64	44	147	40	145	66	158
	2,5	116	90	2,5	36	68	49	150	47	149	78	164
	2,8	126	110	2,8	46	73	56	153	56	153	92	171
	4)	4)	4)	4)	4)	4)	64	157	66	158	110	180
	4)	4)	4)	4)	4)	4)	72	161	78	164	130	190
	4)	4)	4)	4)	4)	4)	82	166	93	172	154	202
	4)	4)	4)	4)	4)	4)	93	172	110	180	183	217

3) End resistance G4, 250 Pa; Fkz5, 250 Pa; Fkz7, 250 Pa

4) Available on request