The Innovation Company

LTG Aktiengesellschaft

Fan Coil Units

for Installation in False Floors

Example: Type VKB

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Components for Room Air Technology

Germany

Central Office (Frankfurt)
Sales area:
PLZ 54, 55, 60, 63, 64, 66-69, 97
Sontraer Str. 27
D-60386 Frankfurt am Main
☎ (069) 94 20 19-14, Fax -10
E-mail: Bergmann@LTG-AG.de

Central office (Herborn)
Sales area:
PLZ 30, 31, 34-38, 56, 57, 61, 65
Sperberweg 16
D-35745 Herborn
Herr Hartmann
☎ (02772) 570-725, Fax -727
E-mail: Hartmann@LTG-AG.de

Eastern office (Berlin)
Sales area:
PLZ 10-25, 29, 39
Eisenhutweg 51a
D-12487 Berlin
Herr Linke
☎ (030) 63 22 87-74, Fax -75
E-mail: Linke@LTG-AG.de

Eastern office (Chemnitz)
Sales area:
PLZ 01-09, 98, 99
Johannes-Ebert-Straße 20
D-09128 Chemnitz
Herr Schenfeld
☎ (0371) 77118-01, Fax -02
E-mail: Schenfeld@LTG-AG.de

Southern office
Sales area:
PLZ 70-96
Grenzstraße 7
D-70435 Stuttgart
Herr Gau
☎ (0711) 8201-209, Fax -210
E-mail: Gau@LTG-AG.de

Western office
Sales area:
PLZ 26-28, 32, 33, 40-53, 58-59
Baststraße 30
D-46119 Oberhausen/Rheinl.
Herr Perenz
☎ (0208) 30431-55, Fax -56
E-mail: Perenz@LTG-AG.de

Austria

KTG Klimatechnische Gesellschaft mbH
Schubertstraße 13, A-2126 Ladendorf
☎ (02575) 21089, Fax (02575) 21022
E-Mail: office@ktg-wien.com

Great Britain

MAP
Motorised Air Products Ltd.
Unit 5A, Sopwith Crescent
Wickford Business Park Wickford
GB-Essex SS11 8YU
☎ (01268) 57 44 42, Fax (01268) 57 44 43
E-Mail: info@mapuk.com

Netherlands

Opticlima Systems
Leeuwerikstraat 110, NL-3853 AG Ermelo
☎ (0341) 493969, Fax (0341) 493931
E-Mail: info@opticlima.nl

Poland

HTK Went Sp.z.o.o.
ul. Chopina 13/3, PL-30047 Krakow
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ArGelo S. A.
R. Luis Pastor de Macedo, Lote 28 B
P-1750-158 Lisboa
☎ (21) 752 01 20, Fax (21) 752 01 29
E-Mail: info@argelo.pt

Slovenia

Energo Plus
Koprska 108 d, SLO- 1000 Ljubljana
☎ (01) 200 73 67, Fax (01) 42 33 346
E-Mail: info@energoplus.si

Switzerland

Laminair AG
Kirchbergstrasse 105
Ch-3400 Burgdorf
☎ (034) 420 02-10, (034) 420 02-11
E-Mail: info@laminair.ch

Turkey

Step Müh. Yapi Ltd.
Yali Yolu Sokak, Turanli Apt. No: 24 D.1
TR- 34744 Bostanci-Istanbul
☎ (0216) 445 2931, Fax (0216) 445 2505
E-Mail: info@stepyapi.com.tr

The Program for Room Air Technology

Components

Air diffusers for walls, floors and ceilings · LTG System clean® · linear diffusers Coandatrol® · ceiling air diffusers Coandavent® · displacement diffusers · LTG chilling fans cool wave® · induction units Klimavent® · fan coil units Raumluft · ceiling fan coil units Ventotel® · facade fan coil units · airflow control units · labair® system

Engineering services

Technical services for investors, architects, engineers and plant builders during design, construction and operation of buildings. Reliable and precise data relating to the ventilation of air conditioning system are given already before realization of the project, determined by measurements, calculations, building simulations and experiments.

Components for Process Air Technology

Japan

Toho Engineering Co. Ltd.
14-11, Shimizu 3-Chome, Kita Ku
Japan 462 Nagoya
☎ (052) 9 91-10 40, Fax (052) 9 14-98 22
E-Mail: main@tohoeng.com

The Program for Process Air Technology

Components

Axial-flow, centrifugal and tangential fans · Collector system for: coarse and fine particle filtration, separating and compacting, compressing and humidifying.

Engineering services

Technical services for construction engineers and plant designers during development and operation of assembly groups, machines and plants.

LTG Components for A/C Systems -The Cost-Effective Alternative
LTG Fan Coil Units Raumluft®

Function

Fan Coil Units Raumluft® use an integrated fan that draws in the ambient air. In a water-fed heat exchanger this air is cooled or heated and returned to the room.

The system uses low-noise, maintenance-free cross-flow fans. Speed control is realised using a 5-speed motor that may be triggered through individual switches. Group triggering of several units with one switch is also possible.

The fan coil units re-circulate room air. However, on request they may also be delivered with a connection for fresh air.

The solid construction and finish of the fan coil units ensure both reliability and long-term functional safety.

Advantages

- **Versatile range**
  - two- and four-pipe systems
  - different sizes
- **Features**
  - low-noise cross-flow fan
  - energy-saving fan operation
  - units with fresh air supply (option)
- **Room air flow**
  - uniform air discharge over the entire unit length through a cross-flow fan
  - inlet and outlet grille with adjustable air guidance for optimum room air flow
  - a variety of flow patterns
- **Installation properties**
  - compact construction and minimum unit height
- **System solutions**
  - complete control technology solutions
- **Maintenance**
  - easily removable, maintenance-free fan
  - convenient, accessible heat exchanger on the suction side

Accessories / Special versions

(see brochure "Accessories for LTG A/C Systems")

- Special fan insert for mixed air/displacement air
- Condensate tray with drainage spigot
- For water-side unit connection:
  coupling 1/2"
  or air bleed fitting,
  flexible connection hoses with or without venting
- Air outlet grille
- Fresh air supply
- Control accessories

Tolerances

- For the dimensions given in this brochure, the General Tolerances according to DIN ISO 2768-vL apply.
  For the outlet grille, the Special Tolerances stated in the drawing apply.
- Straightness and Twist Tolerances - for aluminum extrusion sections - according to DIN EN12020-2.

Finish

- The surface finish is designed to meet the requirements for applications in buildings - room climate according to DIN 1946 Part 2. Other requirements on request.

You will find the actual ***Tender documentation*** at the end of this document.
They are available in word format at your local dealership or at www.LTG-AG.de.

Fan Coil Units for Installation in False Floors Types VKB, VKB-N

Specification

The Fan Coil Unit Type VKB has been specifically designed for hotels and office buildings with strict acoustic requirements.

The unit is ideal for installation in false floors with a recommended clearance of 200 to 250 (VKB-N: 150 -200 mm).

Since all the components are below floor level the Fan Coil Unit VKB may also be used with full height facade glazing.

The airflow optimized stainless steel or aluminium air grille is foot traffic resistant and does not require any additional supporting cross members.

Visible parts of the housing are coated black.

Application

The fan coil unit has been designed and approved for an ambient temperature of +5° to +50° C and a max. relative humidity of 90% (non-condensing operation).

Function

A low-noise five-speed cross-flow fan draws in ambient air through the air grille via the heat exchanger and returns the cooled or heated air into the room over the entire fan width.

The supply air is discharged from the air grille close to the facade and vertically upwards, then mixes in summer with the hot room air in front of the facade, in winter with the falling cold air in front of the window (mixed air flow close to the facade).

In the cooling mode, the supply air, having passed the mixing air zone, flows through the room by displacement.

Fan Coil Unit
for Installation in False Floors
Type VKB
Example with stainless steel grille

Advantages

- Versions
  - Grille width 200 and 300 mm
  - With connection for fresh air supply
  - With humidification
  - For dehumidifying operation
- **Maintenance**
  - Easy maintenance and cleaning via removable air grille.
- **High comfort**
  - High comfort in the cooling mode resulting from the combined mixed air/displacement air flow.
  - Excellent shielding of floor-to-ceiling glass surfaces during winter.
- **Acoustics**
  - Very low sound power level resulting from the low-noise tangential fan.
  - High damping of the cross-talk sound transmission into adjacent rooms via the access floor.
- **Installation**
  - Foot traffic resistant version. No additional cross members required.
  - Separate installation of A/C unit, facade and double floor.
  - Height-adjustable feet for easy adjustment.
- **Low energy consumption**
  - Energy-saving fan operation
- **Design**
  - Eye-catching air grille design.
- **Systems Unit Series**
  - May be used in combination with floor-mounted induction units type HFB, facade fan coil unit type FVD/FVDplus and diffusers LDU-W.

Example of room air flow type VKB

Fan Coil Unit for Installation in False Floors Type VKB Grille Width 200 mm

Specification

Fan coil unit with one heat exchanger and two separate circuits for heating and cooling the ambient air.

The unit is ideal for installation in access floors with a recommended clearance of 200 to 250 mm.

Precise adjustment of the units is realized via vibration-isolated, height-adjustable feet - retractable up to D_{min}.

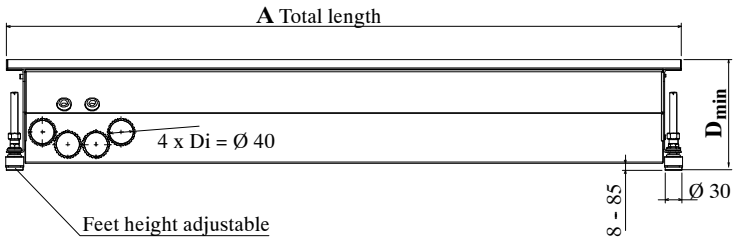
Water-side control by valves (accessories separate).

Dimensions, Weights

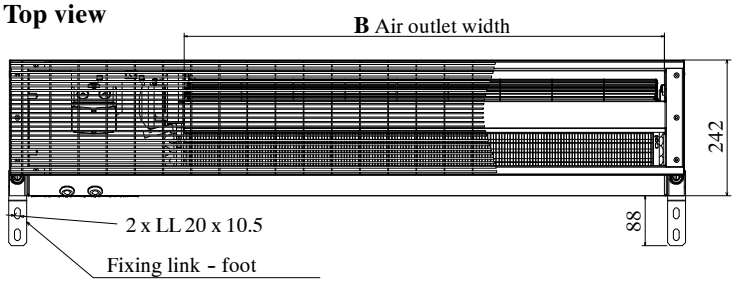
Size	A [mm]	B [mm]	D_{min} [mm]	E [mm]	Weight [kg]
500	898	526	Version with stainless steel grille: 193 Version with aluminum roller grille: 201 Version with aluminum linear grille: 201	Version with stainless steel grille: 205 Version with aluminum roller grille: 208 Version with aluminum linear grille: 208	19
630	988	626			21
800	1198	856			25
1000	1398	1056			31
1250	1598	1256			36

Dimensions

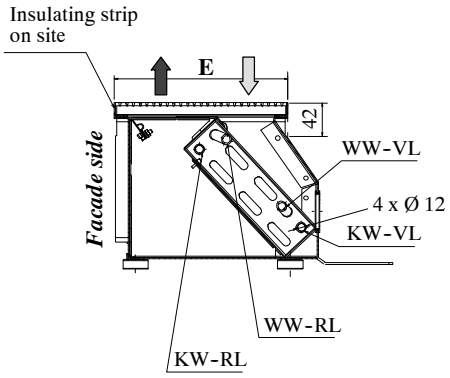
Front view



Top view



View from left



Supply air

Room air

Illustration:
Version with stainless steel grille

KW-VL = cooling - water inlet
KW-RL = cooling - water return
WW-VL = heating - water inlet
WW-RL = heating - water return

Fan Coil Unit for Installation in False Floors Type VKB
Grille Width 200 mm, with Connection for Fresh Air Supply DN 80, Version F1

Specification

Fan coil unit with one heat exchanger and two separate circuits for heating and cooling the ambient air.

Additional socket for fresh air supply DN 80, air discharge via perforated plate.

The unit is ideal for installation in access floors with a recommended clearance of 200 to 250 mm.

Precise adjustment of the units is realized via vibration-isolated, height-adjustable feet - retractable up to D_{min}.

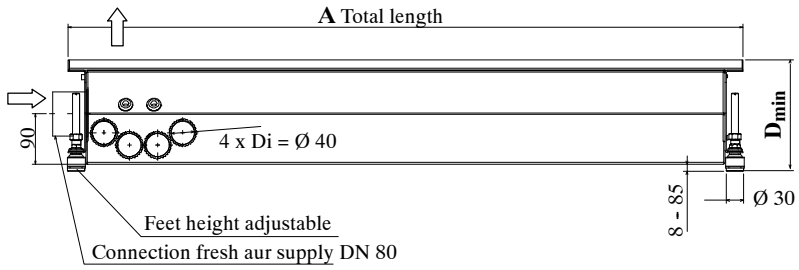
Water-side control by valves (accessories separate).

Dimensions, Weights

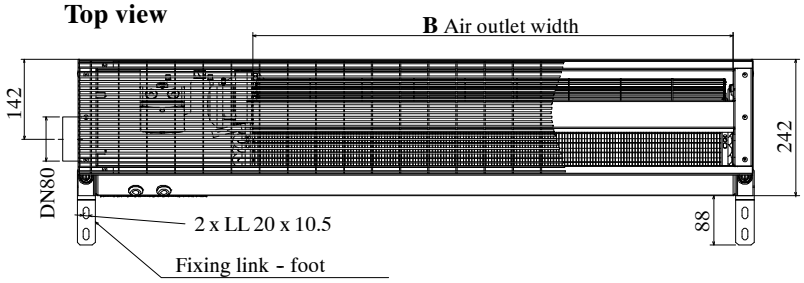
Size	A [mm]	B [mm]	D_{min} [mm]	E [mm]	Weight [kg]
500	898	526	Version with stainless steel grille: 193 Version with aluminum roller grille: 201 Version with aluminum linear grille: 201	Version with stainless steel grille: 205 Version with aluminum roller grille: 208 Version with aluminum linear grille: 208	19
630	988	626			21
800	1198	856			25
1000	1398	1056			31
1250	1598	1256			36

Dimensions

Front view



Top view



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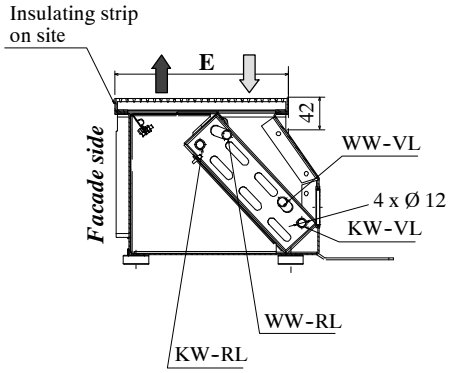


Supply air

Room air

Fresh air supply

KW-VL = cooling - water inlet
KW-RL = cooling - water return
WW-VL = heating - water inlet
WW-RL = heating - water return

Illustration:
Version with stainless steel grille

Acoustic power level
for separate socket for fresh air supply
(must be added to the unit's power level)

V_P [m^3/(hm)]	40	60	80	100
$L_{wA\,P}$ [dB(A)]	29	30	33	39
Pressure loss [Pa]	15	40	65	85

The **total acoustic power level** may be calculated as follows:

$L_{wA} = 10 * \log (10^{0.1 * L_{wA\,P}} + 10^{0.1 * L_{wA,VKB}})$

Fan Coil Unit for Installation in False Floors Type VKB
Grille Width 200 mm

Size 500 - 4-pipe-system - cooling and heating

n [-]	V [m³/h]	L_{A18} [dB(A)]	L_{wA} [dB(A)]	Q_k[1] /Δt [W/K]	Q_k[1] [W]	Q_h /Δt [W/K]	w_{ok} /$Δp_w$ [kg/h]/[kPa]	w_{oh} /$Δp_w$ [kg/h]/[kPa]	P_{el} [W]
I	180	25	32	38	380	31	200/8	100/2.5	15
II	250	32	38	46	460	36			17
III	300	36	42	52	520	42			20
IV	340	41	47	57	570	46			22
V	400	47	53	62	620	50			27

Size 630 - 4-pipe-system - cooling and heating

n [-]	V [m³/h]	L_{A18} [dB(A)]	L_{wA} [dB(A)]	Q_k[1] /Δt [W/K]	Q_k[1] [W]	Q_h /Δt [W/K]	w_{ok} /$Δp_w$ [kg/h]/[kPa]	w_{oh} /$Δp_w$ [kg/h]/[kPa]	P_{el} [W]
I	230	26	32	46	460	38	200/10	100/3.5	15
II	300	32	38	57	570	45			17
III	370	36	42	64	640	51			20
IV	420	41	47	69	690	55			22
V	490	47	53	75	750	60			27

Size 800 - 4-pipe-system - cooling and heating

n [-]	V [m³/h]	L_{A18} [dB(A)]	L_{wA} [dB(A)]	Q_k[1] /Δt [W/K]	Q_k[1] [W]	Q_h /Δt [W/K]	w_{ok} /$Δp_w$ [kg/h]/[kPa]	w_{oh} /$Δp_w$ [kg/h]/[kPa]	P_{el} [W]
I	280	25	31	54	540	45	200/12	100/4	15
II	390	31	37	64	640	51			17
III	470	34	42	72	720	56			20
IV	520	40	46	77	770	61			22
V	600	46	52	84	840	64			27

Size 1000 - 4-pipe-system - cooling and heating

n [-]	V [m³/h]	L_{A18} [dB(A)]	L_{wA} [dB(A)]	Q_k[1] /Δt [W/K]	Q_k[1] [W]	Q_h /Δt [W/K]	w_{ok} /$Δp_w$ [kg/h]/[kPa]	w_{oh} /$Δp_w$ [kg/h]/[kPa]	P_{el} [W]
I	300	25	31	60	600	44	200/15	100/5	15
II	410	32	38	70	700	56			17
III	510	36	42	79	790	63			19
IV	570	41	47	84	840	67			22
V	660	47	53	92	920	74			27

Size 1250 - 4-pipe-system - cooling and heating

n [-]	V [m³/h]	L_{A18} [dB(A)]	L_{wA} [dB(A)]	Q_k[1] /Δt [W/K]	Q_k[1] [W]	Q_h /Δt [W/K]	w_{ok} /$Δp_w$ [kg/h]/[kPa]	w_{oh} /$Δp_w$ [kg/h]/[kPa]	P_{el} [W]
I	330	25	31	66	660	54	200/17	100/6.5	15
II	450	32	38	77	770	61			17
III	560	36	42	86	860	69			19
IV	620	41	47	92	920	73			22
V	720	47	53	101	1010	81			27

Values are given for the unit including the air outlet grille but without filter
standard flow rate cooling 200 kg/h

1 Water supply temperature 16°C; induction air temperature before entering the heat exchanger 26°C, non-condensing operation (induction air temperature may vary from the ambient air temperature).

Legend see page 18

Fan Coil Unit for Installation in False Floors Type VKB Grille Width 300 mm

Specification

Fan coil unit with one heat exchanger and two separate circuits for heating and cooling the ambient air.

The unit is ideal for installation in access floors with a recommended clearance of 200 to 250 mm.

Precise adjustment of the units is realized via vibration-isolated, height-adjustable feet - retractable up to D_{min}.

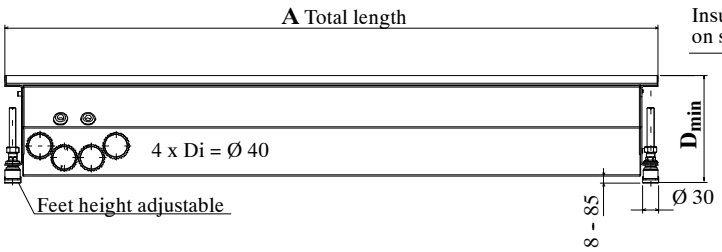
Water-side control by valves (accessories separate).

Dimensions, Weights

Size	A [mm]	B [mm]	D_{min} [mm]	E [mm]	Weight [kg]
500	898	526	Version with stainless steel grille: 193 Version with aluminum roller grille: 201 Version with aluminum linear grille: 201	Version with stainless steel grille: 305 Version with aluminum roller grille: 308 Version with aluminum linear grille: 308	25
630	988	626			27
800	1198	856			31
1000	1398	1056			37
1250	1598	1256			42

Dimensions

Front view



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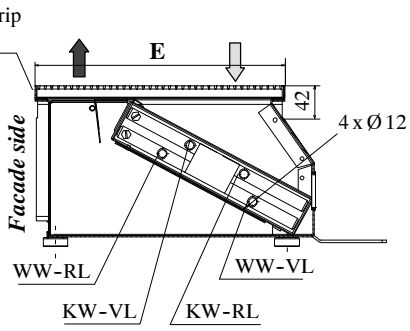
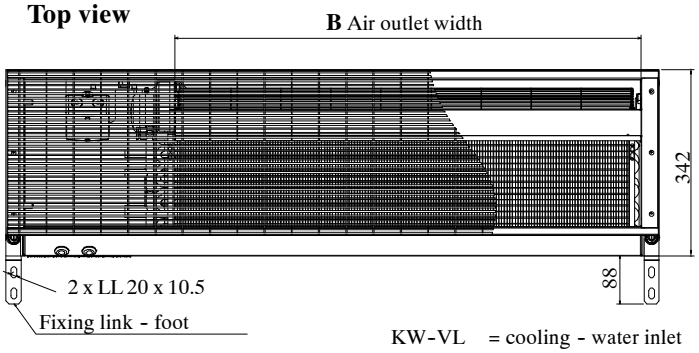


Top view



KW-VL = cooling - water inlet
KW-RL = cooling - water return
WW-VL = heating - water inlet
WW-RL = heating - water return

Illustration:
Version with stainless steel grille

Fan Coil Unit for Installation in False Floors Type VKB
Grille Width 300 mm, with Connection for Fresh Air Supply DN 80, Version F1

Specification

Fan coil unit with one heat exchanger and two separate circuits for heating and cooling the ambient air.

Additional socket for fresh air supply DN 80, air discharge via perforated plate.

The unit is ideal for installation in access floors with a recommended clearance of 200 to 250 mm.

Precise adjustment of the units is realized via vibration-isolated, height-adjustable feet - retractable up to D_{min}.

Water-side control by valves (accessories separate).

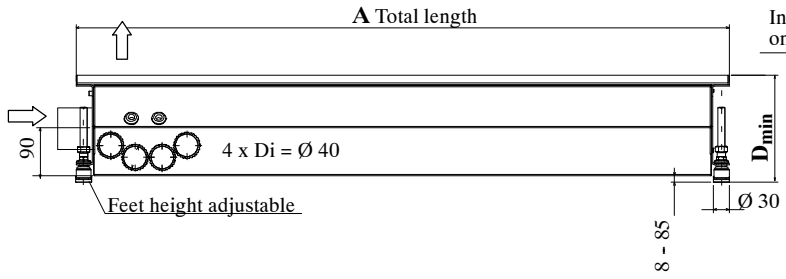
Dimensions, Weights

Size	A [mm]	B [mm]	D_{min} [mm]	E [mm]	Weight [kg]
500	898	526	Version with stainless steel grille: 193 Version with aluminum roller grille: 201 Version with aluminum linear grille: 201	Version with stainless steel grille: 305 Version with aluminum roller grille: 308 Version with aluminum linear grille: 308	25
630	988	626			27
800	1198	856			31
1000	1398	1056			37
1250	1598	1256			42

Dimensions

KW-VL = cooling - water inlet
KW-RL = cooling - water return
WW-VL = heating - water inlet
WW-RL = heating - water return

Front view



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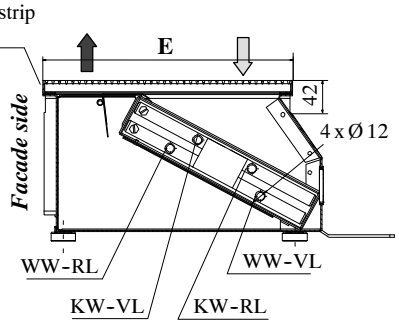
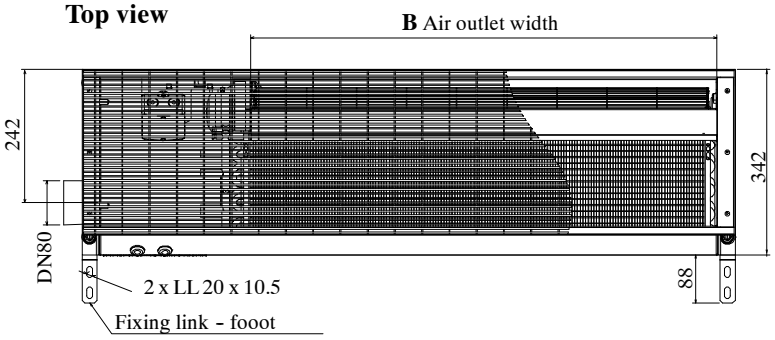


Top view



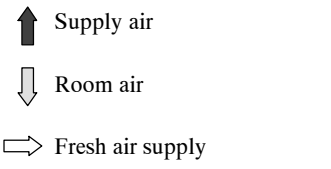


Illustration:
Version with stainless steel grille

Acoustic power level
for separate socket for fresh air supply
(must be added to the unit's power level)

V_P [m^3/(hm)]	40	60	80	100
$L_{wA\,P}$ [dB(A)]	29	30	33	39
Pressure loss [Pa]	15	40	65	85

The **total acoustic power level** may be calculated as follows:

$L_{wA} = 10 * \log (10^{0.1 * L_{wA\,P}} + 10^{0.1 * L_{wA,VKB}})$

Fan Coil Unit for Installation in False Floors Type VKB
Grille Width 300 mm, with Connection for Fresh Air Supply - Box below, Version F2

Specification

Fan coil unit with one heat exchanger and two separate circuits for heating and cooling the ambient air.

Fresh air supply with flow rates up to 200 m^3/h while maintaining low noise levels. Separate fresh air connection integrated in the housing across the entire unit width.

The unit is ideal for installation in access floors with a recommended clearance of 400-600 mm.

Precise adjustment of the units is realized via vibration-isolated, height-adjustable feet - retractable up to D_{min}.

Water-side control by valves (accessories separate).

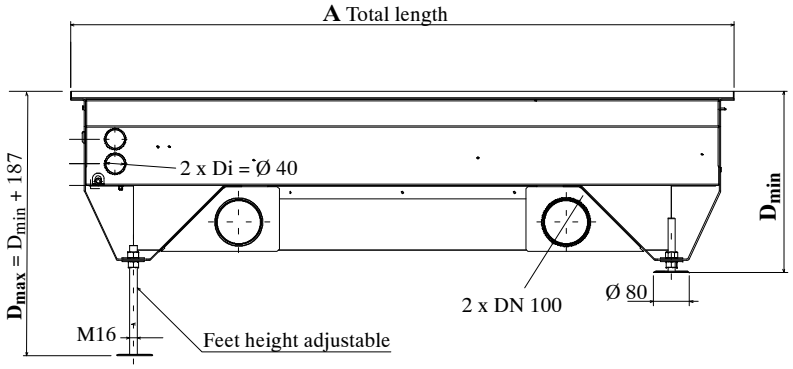
Dimensions, Weights

Size	A [mm]	B [mm]	L [mm]	D_{min} [mm]	E [mm]	Weight [kg]
500	898	526	818	Version with stainless steel grille: 367 Version with aluminum roller grille: 375 Version with aluminum linear grille: 375	Version with stainless steel grille: 325 Version with aluminum roller grille: 328 Version with aluminum linear grille: 328	25
630	988	626	908			33
800	1198	856	1118			39
1000	1398	856	1318			45
1250	1598	856	1518			50

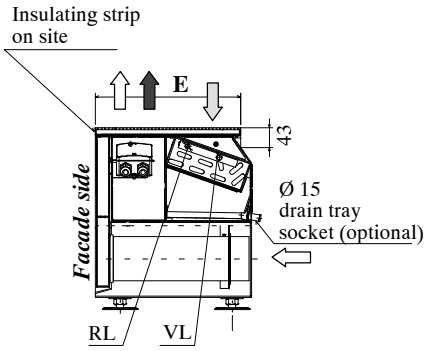
Dimensions

VL = water inlet
RL = water return

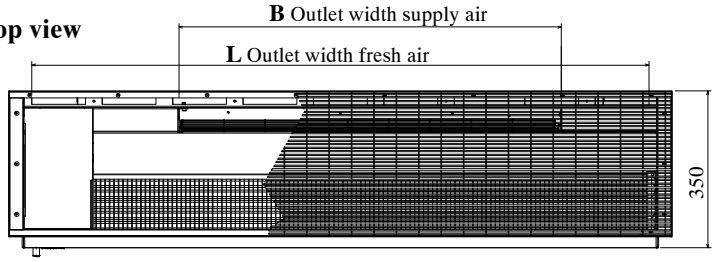
Front view



View from left



Top view



Supply air

Room air

Fresh air supply

Illustration:
Version with stainless steel grille

Acoustic power level
for separate socket for fresh air supply
(must be added to the unit's power level)

V_P [m^3/(hm)]	100	150	80	200
$L_{wA\,P}$ [dB(A)]	30	33	33	41
Pressure loss [Pa]	13	29	65	52

The **total acoustic power level** may be calculated as follows:

$L_{wA} = 10 * \log (10^{0.1 * L_{wA\,P}} + 10^{0.1 * L_{wA,VKB}})$

Fan Coil Unit for Installation in False Floors Type VKB
Grille Width 300 mm, with Connection for Fresh Air Supply - Box in Front, Version F3

Spezifikation

Fan coil unit with one heat exchanger and two separate circuits for heating and cooling the ambient air.

Fresh air supply with flow rates up to 200 m^3/h while maintaining low noise levels. Separate fresh air connection integrated in the housing.

The unit is ideal for installation in access floors with a recommended clearance of 230-290 mm.

Precise adjustment of the units is realized via vibration-isolated, height-adjustable feet - retractable up to D_{min}.

Water-side control by valves (accessories separate).

Dimensions, Weights

Size	A [mm]	B [mm]	L [mm]	D_{min} [mm]	E [mm]	Weight[kg]
1250	1598	856	1219	Version with stainless steel grille: 228 Version with aluminum roller grille: 236 Version with aluminum linear grille: 236	Version with stainless steel grille: 330 Version with aluminum roller grille: 333 Version with aluminum linear grille: 333	43

Dimensions

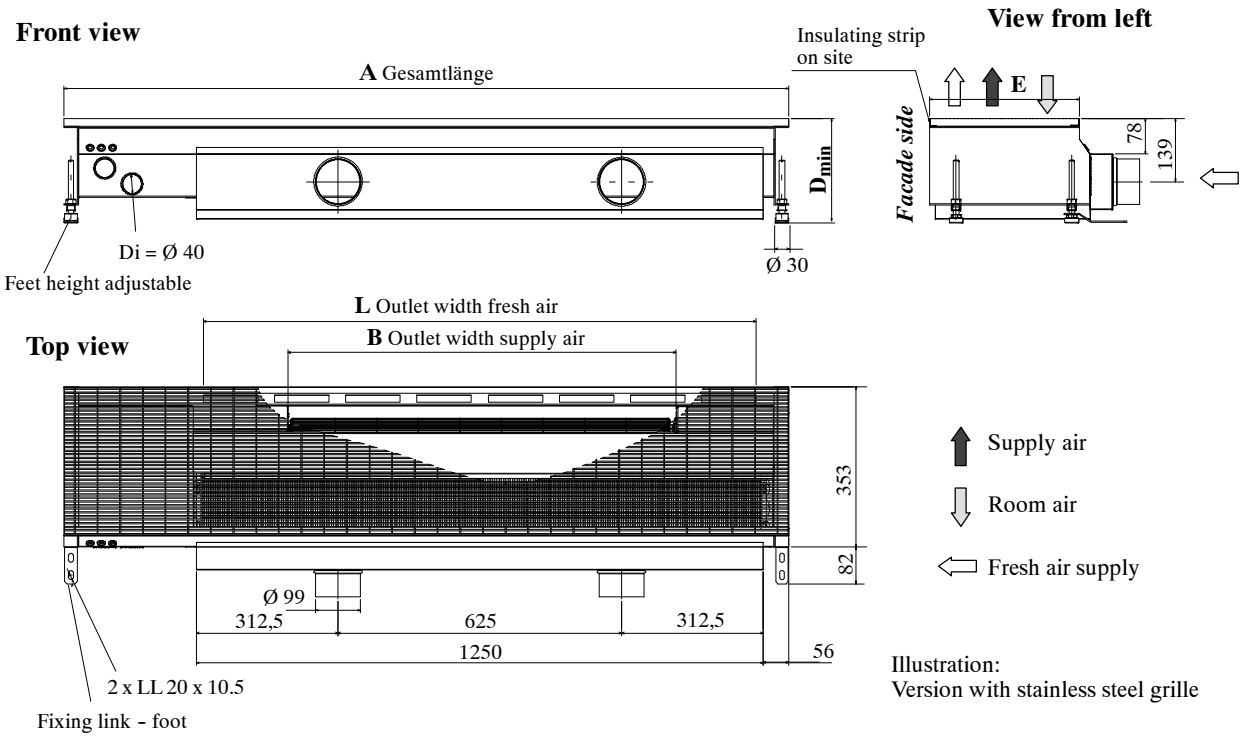


Illustration:
Version with stainless steel grille

Acoustic power level
for separate socket for fresh air supply
(must be added to the unit's power level)

The **total acoustic power level** may be calculated as follows:

$L_{wA} = 10 * \log (10^{0.1 * L_{wA\,P}} + 10^{0.1 * L_{wA,VKB}})$

2 sockets (DN 100), with grille (aluminum linear)

V_P [m^3/(hm)]	50	100	150	200	250
$L_{wA\,P}$ [dB(A)]	27	28	29	36	43
Pressure loss [Pa]	2	3	7	12	19

1 socket (DN 100), with grille (aluminum linear)

V_P [m^3/(hm)]	40	60	80	100
$L_{wA\,P}$ [dB(A)]	27	28	33	39
Pressure loss [Pa]	0,5	1	2	3

Fan Coil Unit for Installation in False Floors Type VKB
Grille Width 300 mm

Size 500 - 4-pipe-system - cooling and heating

n [-]	V [m³/h]	L_{A18} [dB(A)]	L_{wA} [dB(A)]	Q_k[1] /Δt [W/K]	Q_k[1] [W]	Q_h /Δt [W/K]	w_{ok} /$Δp_w$ [kg/h]/[kPa]	w_{oh} /$Δp_w$ [kg/h]/[kPa]	P_{el} [W]
I	210	24	30	38	380	31	200/14	100/3	15
II	240	28	34	46	460	38			17
III	250	33	39	55	550	45			20
IV	350	39	45	61	610	50			22
V	420	45	51	69	690	56			27

Size 630 - 4-pipe-system - cooling and heating

n [-]	V [m³/h]	L_{A18} [dB(A)]	L_{wA} [dB(A)]	Q_k[1] /Δt [W/K]	Q_k[1] [W]	Q_h /Δt [W/K]	w_{ok} /$Δp_w$ [kg/h]/[kPa]	w_{oh} /$Δp_w$ [kg/h]/[kPa]	P_{el} [W]
I	250	24	30	46	460	37	200/16	100/4	15
II	285	27	33	55	550	45			17
III	340	33	39	67	670	55			20
IV	420	39	45	73	730	60			22
V	510	45	51	84	840	69			27

Size 800 - 4-pipe-system - cooling and heating

n [-]	V [m³/h]	L_{A18} [dB(A)]	L_{wA} [dB(A)]	Q_k[1] /Δt [W/K]	Q_k[1] [W]	Q_h /Δt [W/K]	w_{ok} /$Δp_w$ [kg/h]/[kPa]	w_{oh} /$Δp_w$ [kg/h]/[kPa]	P_{el} [W]
I	300	24	30	55	550	45	200/20	100/5	15
II	340	27	33	66	660	54			17
III	410	32	38	79	790	64			20
IV	500	38	44	87	870	71			22
V	600	45	51	99	990	81			27

Size 1000 - 4-pipe-system - cooling and heating

n [-]	V [m³/h]	L_{A18} [dB(A)]	L_{wA} [dB(A)]	Q_k[1] /Δt [W/K]	Q_k[1] [W]	Q_h /Δt [W/K]	w_{ok} /$Δp_w$ [kg/h]/[kPa]	w_{oh} /$Δp_w$ [kg/h]/[kPa]	P_{el} [W]
I	320	24	30	60	600	49	200/24	100/6	15
II	350	27	33	72	720	59			17
III	440	32	38	87	870	71			19
IV	540	38	44	96	960	79			22
V	650	45	51	109	1090	89			27

Size 1250 - 4-pipe-system - cooling and heating

n [-]	V [m³/h]	L_{A18} [dB(A)]	L_{wA} [dB(A)]	Q_k[1] /Δt [W/K]	Q_k[1] [W]	Q_h /Δt [W/K]	w_{ok} /$Δp_w$ [kg/h]/[kPa]	w_{oh} /$Δp_w$ [kg/h]/[kPa]	P_{el} [W]
I	340	24	30	67	670	55	200/28	100/7	15
II	380	27	33	80	800	65			17
III	470	32	38	96	960	79			19
IV	580	38	44	105	1050	86			22
V	690	45	51	120	1200	98			27

Values are given for the unit including the air outlet grille but without filter
standard flow rate cooling 200 kg/h

[1] Water supply temperature 16°C; induction air temperature before entering the heat exchanger 26°C, non-condensing operation (induction air temperature may vary from the ambient air temperature).

Legend see page 18

Fan Coil Unit for Installation in False Floors Type VKB E Grille Width 300 mm, Dehumidifying Operation

Specification

Fan coil unit with one heat exchanger and two separate circuits for heating and cooling the ambient air.

The unit is provided with a separate condensate tray of stainless steel including drainage for dehumidification.

Condensate drainage is to be provided for on site in conformance with pertinent regulations.

The unit is ideal for installation in access floors with a recommended clearance of 200 to 250 mm.

Precise adjustment of the units is realized via vibration-isolated, height-adjustable feet - retractable up to D_{min}.

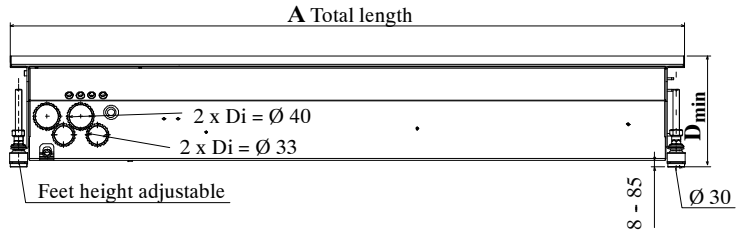
Water-side control by valves (accessories separate).

Dimensions, Weights

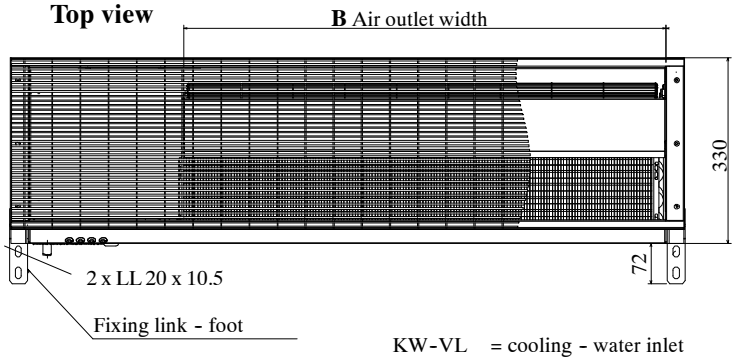
Size	A [mm]	B [mm]	D_{min} [mm]	E [mm]	Weight [kg]
500	898	526	Version with stainless steel grille: 193 Version with aluminum roller grille: 201 Version with aluminum linear grille: 201	Version with stainless steel grille: 305 Version with aluminum roller grille: 308 Version with aluminum linear grille: 308	26
630	988	626			28
800	1198	856			32
1000	1398	1056			38
1250	1598	1256			43

Dimensions

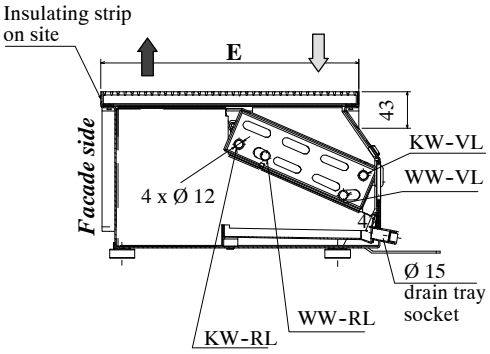
Front view



Top view



View from left



Supply air

Room air

KW-VL = cooling - water inlet
KW-RL = cooling - water return
WW-VL = heating - water inlet
WW-RL = heating - water return

Illustration:
Version with stainless steel grille

Fan Coil Unit for Installation in False Floors Type VKB E
Grille Width 300 mm, Dehumidifying Operation

Size 500 - 4-pipe-system - cooling and heating

n [-]	V [m³/h]	L_{wA} [dB(A)]	$Q_k^1/\Delta t$ [W/K]	Q_k^2 [W]	Q_{ksens}^2 [W]	Q_k^3 [W]	Q_{ksens}^3 [W]	Q_k^4 [W]	Q_{ksens}^4 [W]	$Q_h/\Delta t$ [W/K]	$w_{ok}/\Delta p_w$ [kg/h]/[kPa]	$w_{oh}/\Delta p_w$ [kg/h]/[kPa]	P_{el} [W]
I	140	31	33	825	568	713	523	550	420	28			15
II	180	36	37	895	636	786	599	591	471	31			17
III	240	41	43	980	757	859	704	650	554	37	200/8	100/3	20
IV	290	45	48	1056	864	916	795	706	625	40			22
V	340	51	55	1155	1001	1040	911	793	724	44			27

Size 630 - 4-pipe-system - cooling and heating

n [-]	V [m³/h]	L_{wA} [dB(A)]	$Q_k^1/\Delta t$ [W/K]	Q_k^2 [W]	Q_{ksens}^2 [W]	Q_k^3 [W]	Q_{ksens}^3 [W]	Q_k^4 [W]	Q_{ksens}^4 [W]	$Q_h/\Delta t$ [W/K]	$w_{ok}/\Delta p_w$ [kg/h]/[kPa]	$w_{oh}/\Delta p_w$ [kg/h]/[kPa]	P_{el} [W]
I	165	31	39	975	671	842	618	650	497	33			15
II	220	36	44	1065	757	935	713	702	561	36			17
III	290	41	52	1186	915	1039	852	786	670	43	200/10	100/3.5	20
IV	350	45	58	1276	1044	1107	960	853	755	47			22
V	410	51	66	1386	1201	1247	1093	952	869	52			27

Size 800 - 4-pipe-system - cooling and heating

n [-]	V [m³/h]	L_{wA} [dB(A)]	$Q_k^1/\Delta t$ [W/K]	Q_k^2 [W]	Q_{ksens}^2 [W]	Q_k^3 [W]	Q_{ksens}^3 [W]	Q_k^4 [W]	Q_{ksens}^4 [W]	$Q_h/\Delta t$ [W/K]	$w_{ok}/\Delta p_w$ [kg/h]/[kPa]	$w_{oh}/\Delta p_w$ [kg/h]/[kPa]	P_{el} [W]
I	200	30	45	1125	774	972	713	750	573	38			15
II	280	35	55	1331	946	1168	891	878	701	44			17
III	360	40	64	1459	1126	1279	1048	968	824	50	200/12	100/4	20
IV	430	45	71	1562	1278	1355	1176	1044	924	57			22
V	510	51	80	1680	1456	1512	1325	1154	1053	62			27

Size 1000 - 4-pipe-system - cooling and heating

n [-]	V [m³/h]	L_{wA} [dB(A)]	$Q_k^1/\Delta t$ [W/K]	Q_k^2 [W]	Q_{ksens}^2 [W]	Q_k^3 [W]	Q_{ksens}^3 [W]	Q_k^4 [W]	Q_{ksens}^4 [W]	$Q_h/\Delta t$ [W/K]	$w_{ok}/\Delta p_w$ [kg/h]/[kPa]	$w_{oh}/\Delta p_w$ [kg/h]/[kPa]	P_{el} [W]
I	220	30	50	1250	860	1080	792	833	637	42			15
II	295	35	60	1452	1032	1274	972	958	764	48			17
III	375	40	71	1619	1250	1419	1163	1074	914	57	200/15	100/5	20
IV	445	45	78	1716	1404	1488	1292	1147	1016	63			22
V	560	51	87	1827	1583	1644	1441	1255	1145	70			27

Size 1250 - 4-pipe-system - cooling and heating

n [-]	V [m³/h]	L_{wA} [dB(A)]	$Q_k^1/\Delta t$ [W/K]	Q_k^2 [W]	Q_{ksens}^2 [W]	Q_k^3 [W]	Q_{ksens}^3 [W]	Q_k^4 [W]	Q_{ksens}^4 [W]	$Q_h/\Delta t$ [W/K]	$w_{ok}/\Delta p_w$ [kg/h]/[kPa]	$w_{oh}/\Delta p_w$ [kg/h]/[kPa]	P_{el} [W]
I	225	30	54	1350	929	1166	855	900	688	44			15
II	300	35	67	1621	1152	1423	1085	1069	854	54			17
III	380	40	77	1756	1355	1538	1261	1164	992	63	200/17	100/6.5	20
IV	450	45	84	1848	1512	1603	1391	1235	1094	67			22
V	570	51	94	1974	1711	1777	1557	1355	1237	75			27

Values are given for the unit including the air outlet grille but without filter
standard flow rate cooling 200 kg/h

1 Water supply temp. 16°C; induction air temp. before entering the heat exchanger 26°C, non-condensing operation

2 Water supply temp. 6°C; induction air temp. before entering the heat exchanger 26°C, r.h. 50 %, condensing operation

3 Water supply temp. 8°C; induction air temp. before entering the heat exchanger 26°C, r.h. 50 %, condensing operation

4 Water supply temp. 12°C; induction air temp. before entering the heat exchanger 26°C, r.h. 50 %, condensing operation

(induction air temperature may vary from the ambient air temperature).

Legend see page 18

Fan Coil Unit for Installation in False Floors Type VKB-800 EB Grille Width 300 mm, with Humidification

Specification

Fan coil unit with one heat exchanger and two separate circuits for heating and cooling the ambient air.

An ultrasound humidifier has been integrated in the unit casing humidifying the recirculated air with the fan in operation (control on site) via a stainless steel humidification lance, and uniformly conveying the air to the discharge section.

The unit is ideal for installation in access floors with a recommended clearance of 200 to 250 mm.

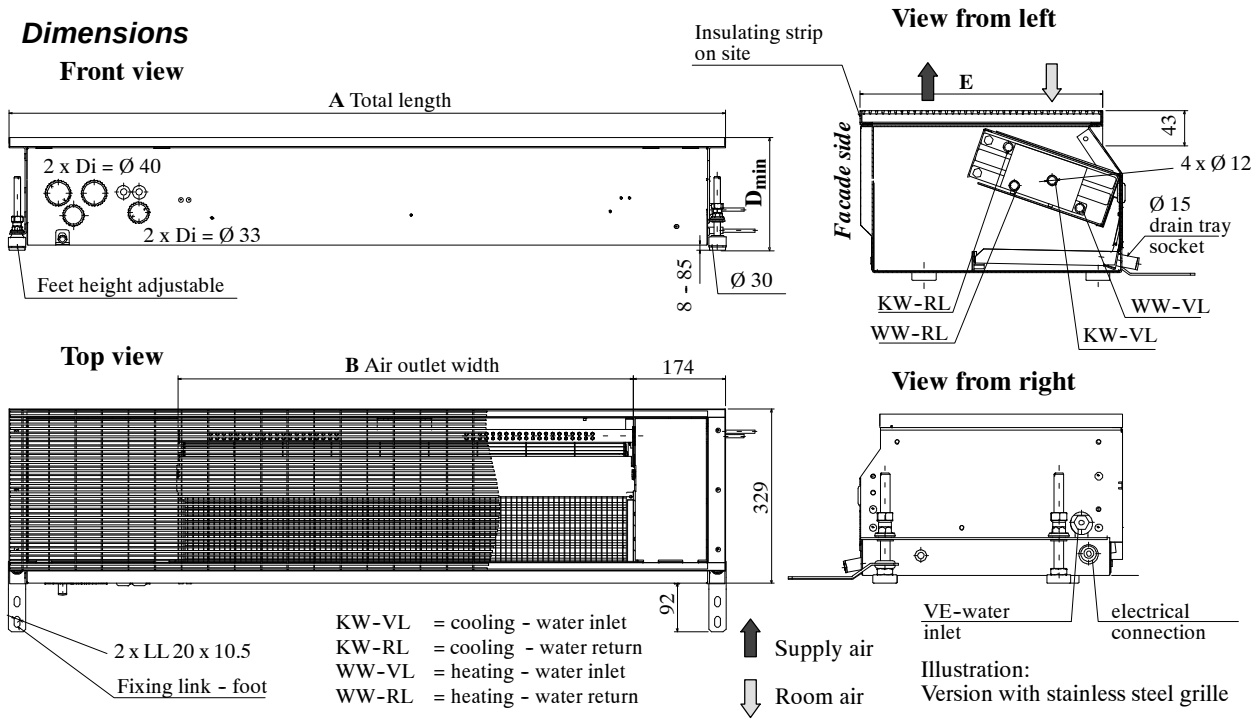
Precise adjustment of the units is realized via vibration-isolated, height-adjustable feet - retractable up to D_{min}.

Water-side control by valves (accessories separate).

Dimensions, Weights

Size	A [mm]	B [mm]	D_{min} [mm]	E [mm]	Weight [kg]
800	1350	858	Version with stainless steel grille: 211 Version with aluminum roller grille: 219 Version with aluminum linear grille: 219	Version with stainless steel grille: 305 Version with aluminum roller grille: 308 Version with aluminum linear grille: 308	40

Dimensions



Technical Specification *(legend see page 18)*

n [-]	V [m³/h]	L_{A18} [dB(A)]	L_{wA} [dB(A)]	$Q_k^1/\Delta t$ [W/K]	Q_k^1 [W]	$Q_h^2/\Delta t$ [W/K]	Q_h^2 [W]	$w_{ok}/\Delta p_w$ [kg/h]/[kPa]	$w_{oh}/\Delta p_w$ [kg/h]/[kPa]	P_{el} [W]
I	200	23	29	41	410	37	890	200/20	100/3	16
II	280	31	37	53	530	42	1010			18
III	360	35	41	62	620	46	1100			21
IV	430	40	46	67	670	49	1180			23
V	510	45	51	75	750	53	1270			29

The humidification capacity is 325 to 340 g/hour with air speeds between 2 and 4. [2]
Values are given for the unit including the air outlet grille but without filter, standard flow rate cooling 200 kg/h
Filter impact: Caloric output decreases by 13%. The sound power level has been determined with humidification inactive.

1 Water supply temp. 16°C; induction air temp. before entering the heat exchanger 26°C, non-condensing operation (induction air temperature may vary from the ambient air temperature).

2 Water supply temp. 50°C; induction air temp. before entering the heat exchanger 26°C (induction air temperature may vary from the ambient air temperature).

Fan Coil Unit for Installation in False Floors Type VKB-1250 EH Grille Width 300 mm, with electric Heating

Specification

Fan coil unit with one heat exchanger for cooling the ambient air.

The unit housing includes a ribbed pipe heating device. With the fan on (control on site), it heats up the recirculating air with a heating capacity of 1500 Watts and conveys it uniformly into the diffusion section.

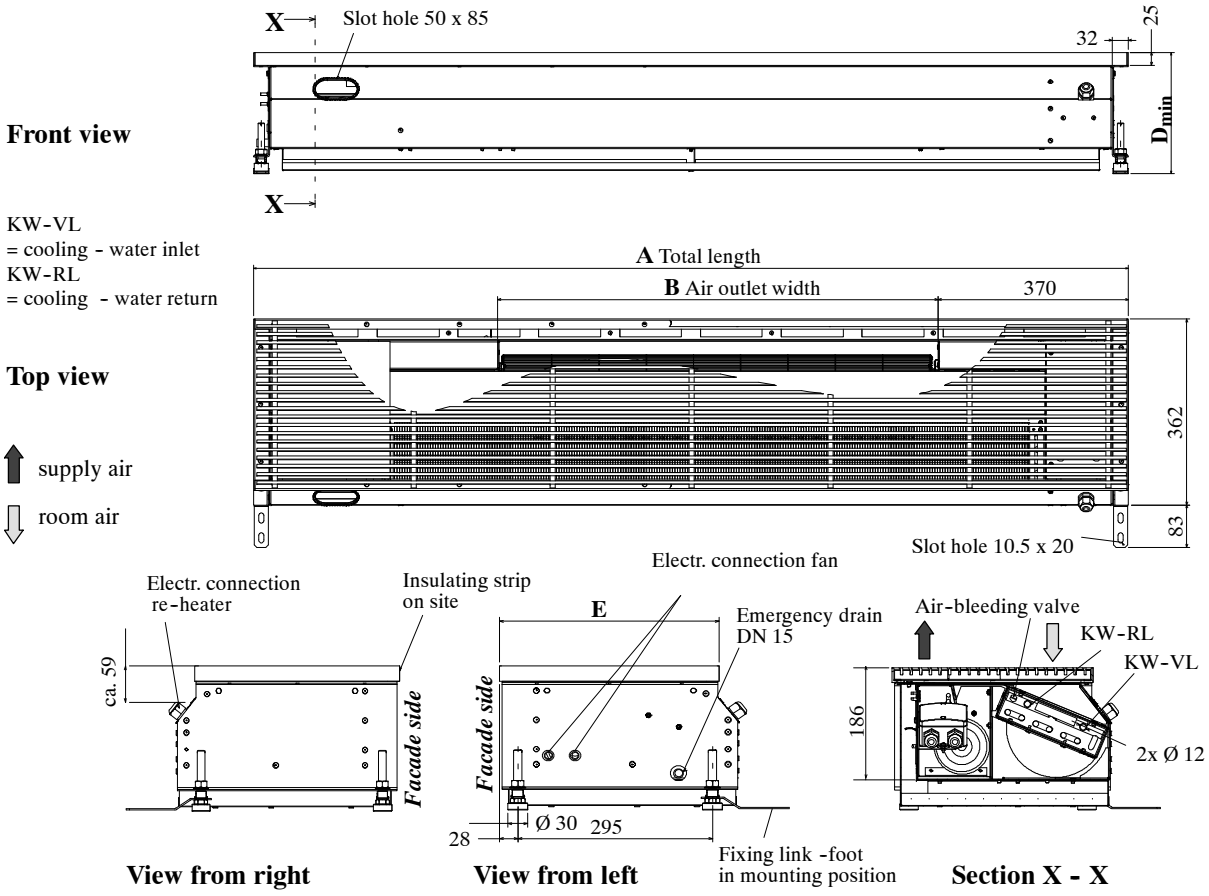
The unit is ideal for installation in access floors with a recommended clearance of 200 to 250 mm.

Precise adjustment of the units is realized via vibration-isolated, height-adjustable feet - retractable up to D_{min}.

Water-side control by valves (accessories separate).

Dimensions, Weights

Size	A [mm]	B [mm]	D_{min} [mm]	E [mm]	Weight [kg]
1250	1700	856	Version with stainless steel grille: 228 Version with aluminum roller grille: 236 Version with aluminum linear grille: 236	Version with stainless steel grille: 330 Version with aluminum roller grille: 333 Version with aluminum linear grille: 333	43



Technical Specification *(legend see page 18)*

n [-]	V [m³/h]	L_{A18} [dB(A)]	L_{wA} [dB(A)]	$Q_k/\Delta t$ [W/K]	Q_k [W]	Q_h [W]	$w_{ok}/\Delta p_w$ [kg/h]/[kPa]	P_{el} [W]
I	285	24	30	53	530	1500	200/26	16
II	350	31	37	70	700			18
III	413	37	43	82	820			21
IV	479	42	48	92	9200			23
V	572	47	53	105	1050			29

Values are given for the unit without the air outlet grille, without filter.
The sound power level has been determined with the electric heating off.

Fan Coil Unit for Installation in False Floors Type VKB-N 800 Grille Width 300 mm, for False Floors of Low Height

Specification

Fan coil unit with one heat exchanger and two separate circuits for heating and cooling the ambient air.

The unit is ideal for installation in access floors with a recommended clearance of 125 to 165 mm (take care to consider construction tolerances and grille types).

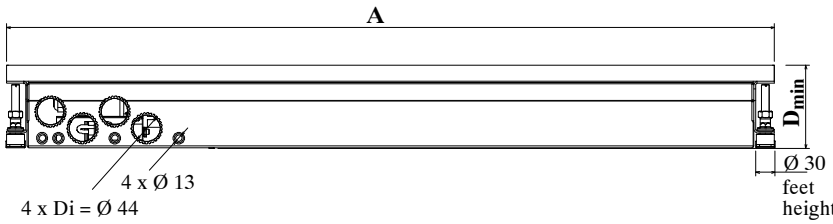
Precise adjustment of the units is realized via vibration-isolated, height-adjustable feet - retractable up to D_{min}.

Dimensions, Weights

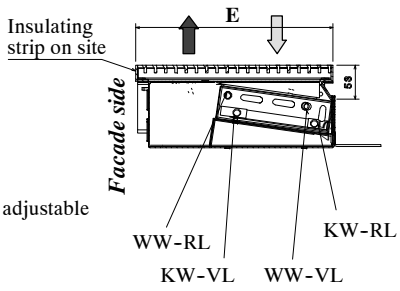
Size	A [mm]	B [mm]	D_{min} [mm]	E [mm]	Weight [kg]
800	1198	856	Version with stainless steel grille: 122 Version with aluminum roller grille: 130 Version with aluminum linear grille: 130	Version with stainless steel grille: 305 Version with aluminum roller grille: 308 Version with aluminum linear grille: 308	20

Dimensions

Front view



View from left



Top view

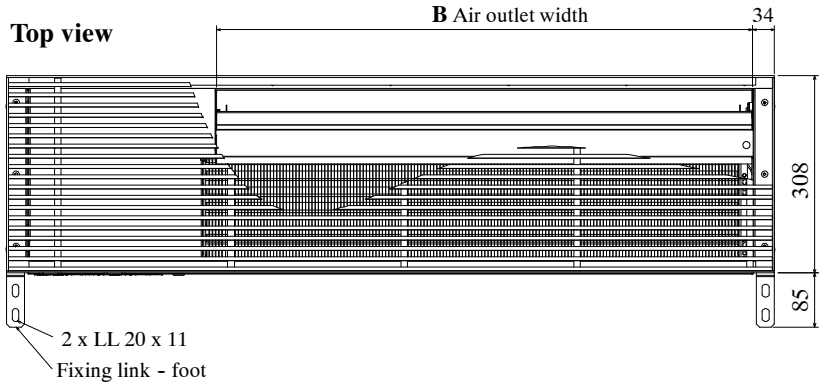


Illustration:
Version with stainless steel grille

KW-VL = cooling - water inlet
KW-RL = cooling - water return
WW-VL = heating - water inlet
WW-RL = heating - water return

Fan Coil Unit for Installation in False Floors Type VKB-N 800 Grille Width 300 mm, for False Floors of Low Height

Size 800 - 4-pipe-system - cooling and heating

n [-]	**V** [m^3/h]	**L_{A18}** [dB(A)]	**L_{wA}** [dB(A)]	**Q_k[1] /Δt** [W/K]	**Q_k[1]** [W]	**Q_h /Δt** [W/K]	**w_{ok} /$Δp_w$** [kg/h]/[kPa]	**w_{oh} /$Δp_w$** [kg/h]/[kPa]	**P_{el}** [W]
I	220	25	31	39	390	34	200/12	100/4	11
II	250	28	34	45	450	38			11
III	290	31	37	53	530	42			12
IV	350	34	40	58	580	45			13
V	410	37	43	64	640	48			14

Values are given for the unit including the air outlet grille but without filter

Standard flow rate cooling 200 kg/h

[1] Water supply temperature 16°C; induction air temperature before entering the heat exchanger 26°C, non-condensing operation (induction air temperature may vary from the ambient air temperature).

Legend

n - speed

V - flow rate (± 10%)

L_{A18} - sound pressure level

L_{wA} - sound power level ± 3 dB(A)

Q_k - total cooling capacity

Q_{ksens} - sensible cooling capacity (condensing operation)

Q_h - total heating capacity

Δt - temperature difference between induction air temperature before entering the heat exchanger and water supply

w_{ok} - standard water flow rate (cooling)*

w_{oh} - standard water flow rate (heating)*

$Δp_w$ - water-side pressure loss

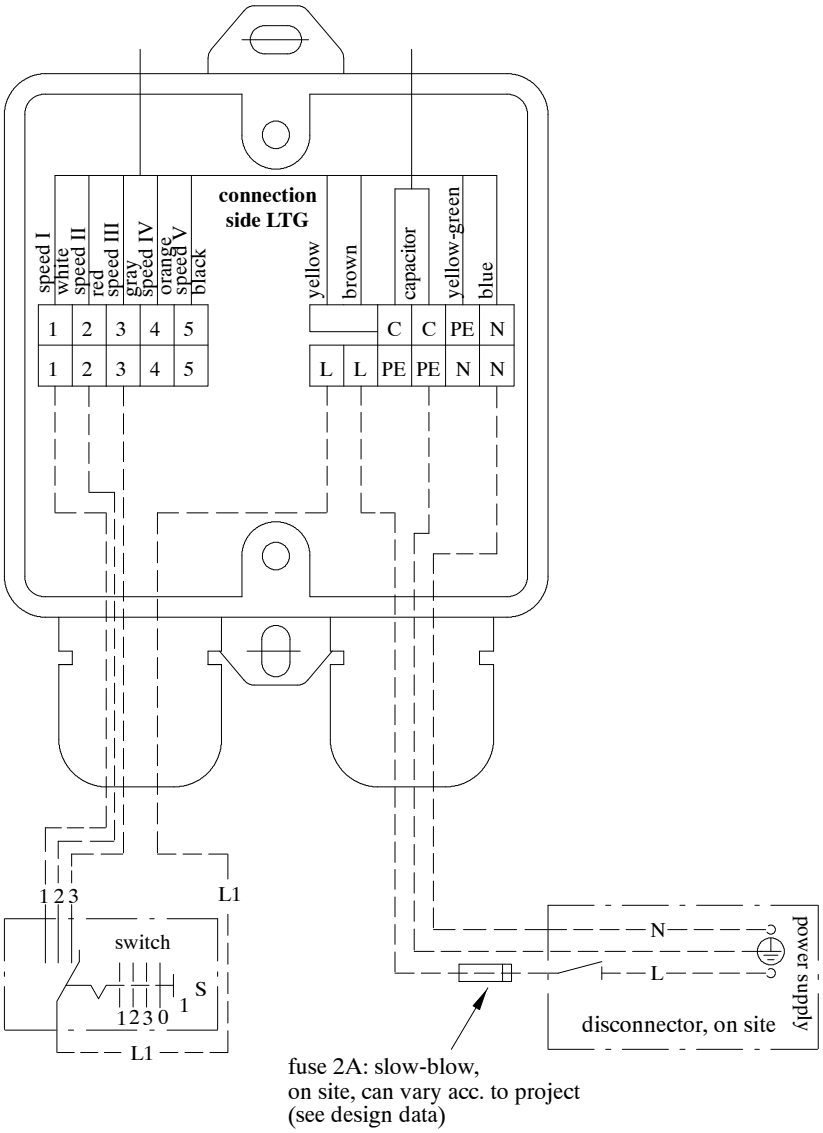
P_{el} - electric power consumption (± 10%)

*correction for other flow rates see pages 20-23

Fan Coil Unit for Installation in False Floors Types VKB, VKB-N
Speed Control Wiring Diagram

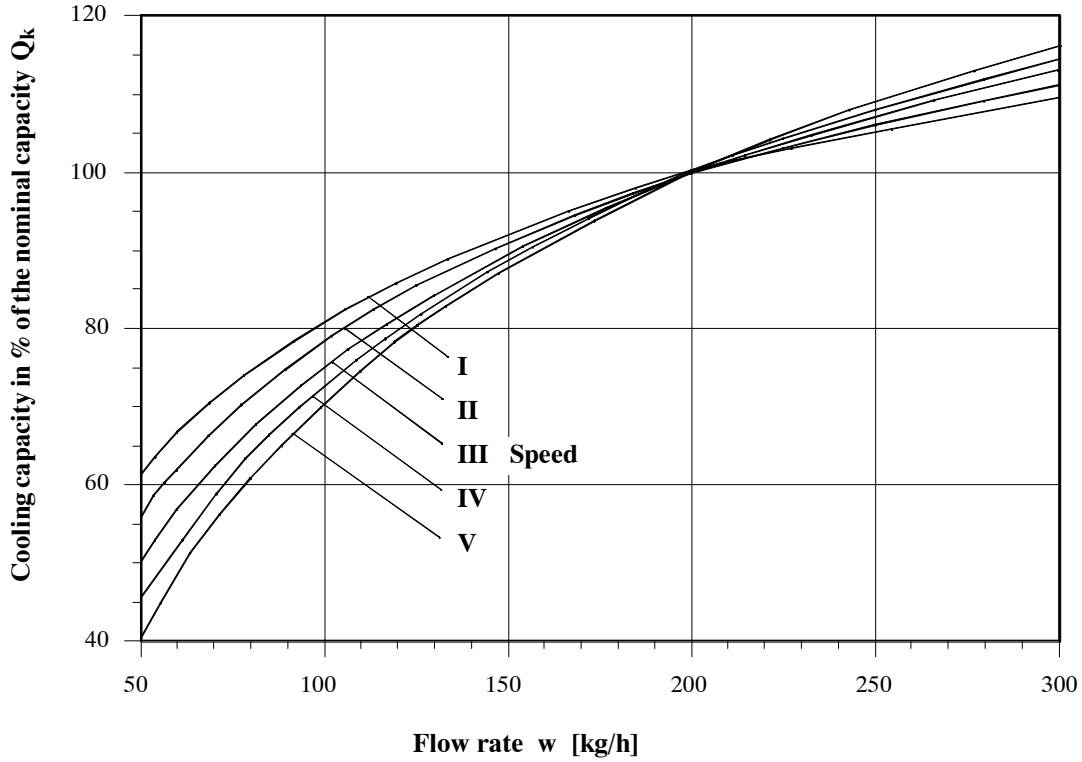
Note: - Capacitor motor with 5 tappings.
- Multiple unit triggering possible (max. 4 units).
- The technical data contain details about the current consumption and the corresponding electrical power.

Notice: For safe starting of the fan, use speed III

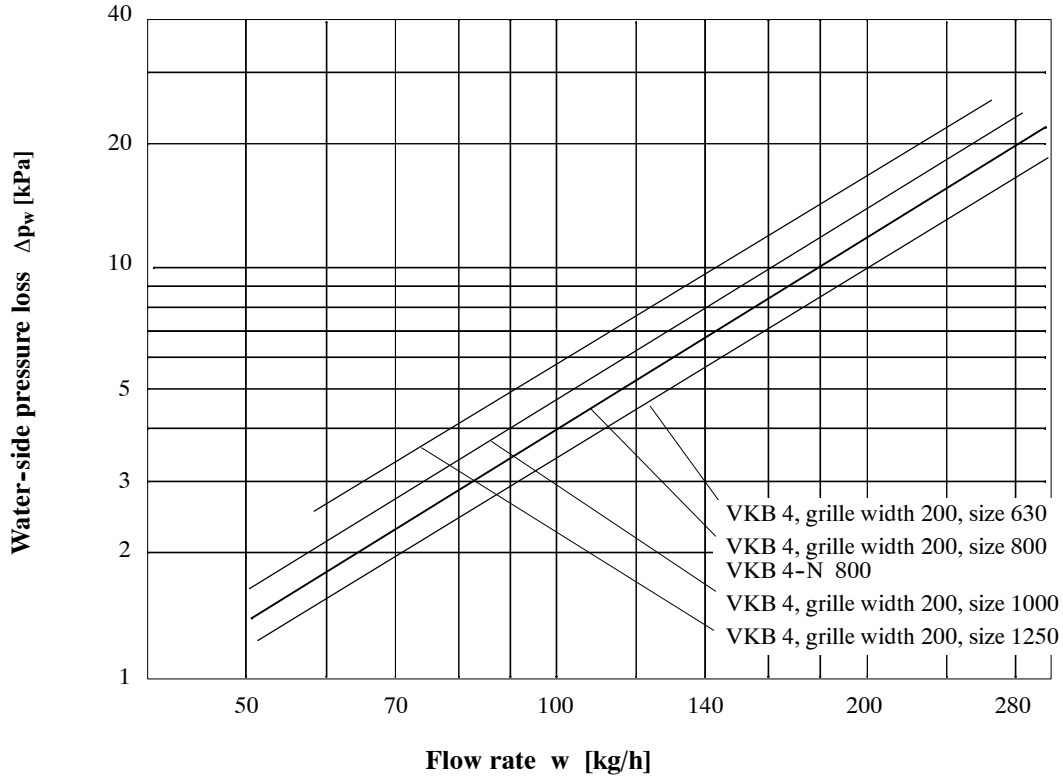


Fan Coil Units for Installation in False Floors
Types VKB-4 (Grille Width 200 mm) and VKB-4-N

Cooling capacity for different water flow rates

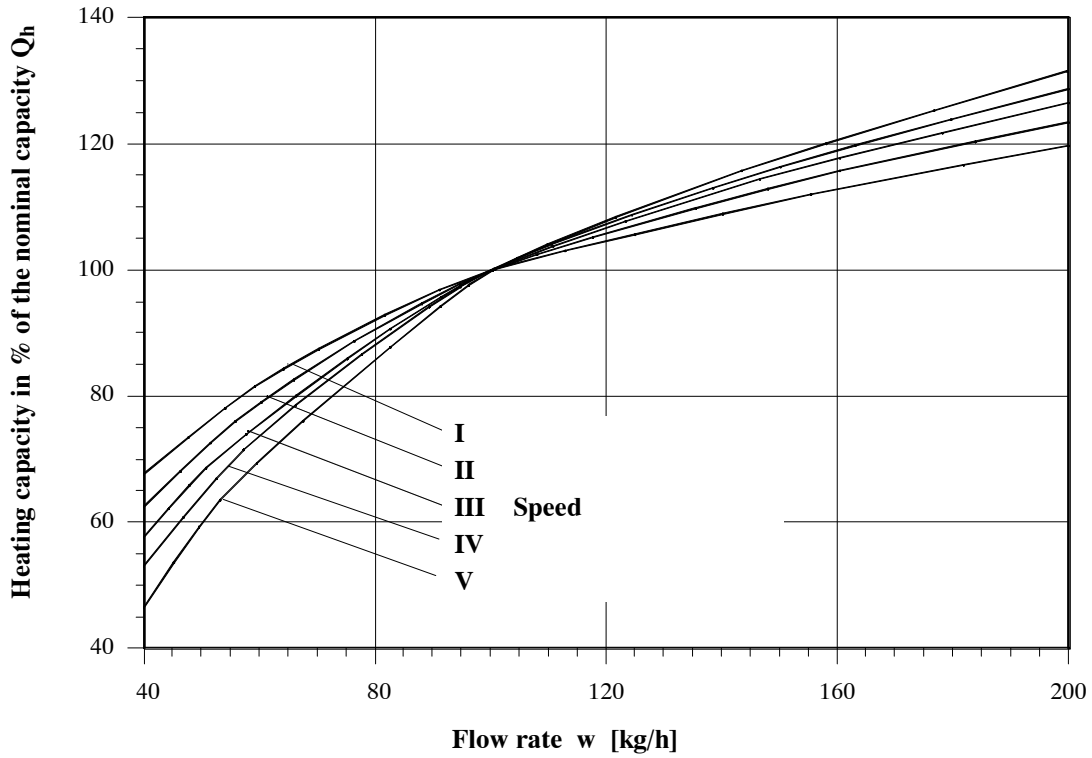


Water-side pressure loss of the cooler for different flow rates



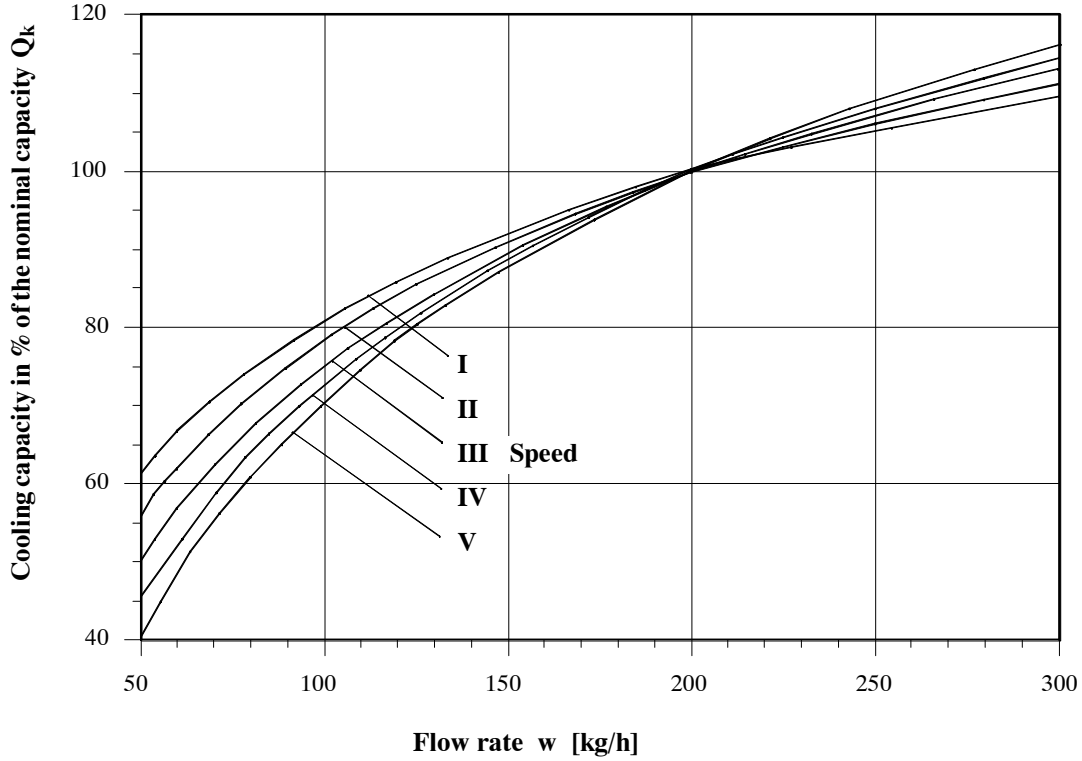
Fan Coil Units for Installation in False Floors
Types VKB-4 (Grille Width 200 mm) and VKB-4-N

Heating capacity for different water flow rates

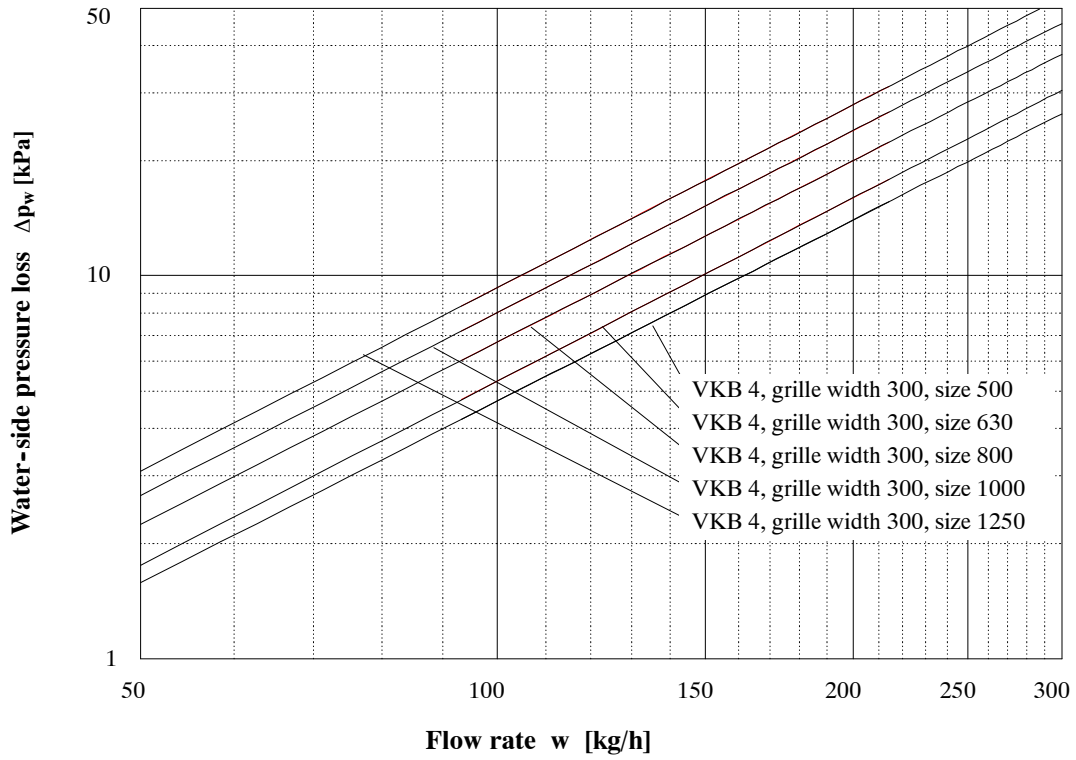


Fan Coil Units for Installation in False Floors
Types VKB-4 (Grille Width 300 mm)

Cooling capacity for different water flow rates

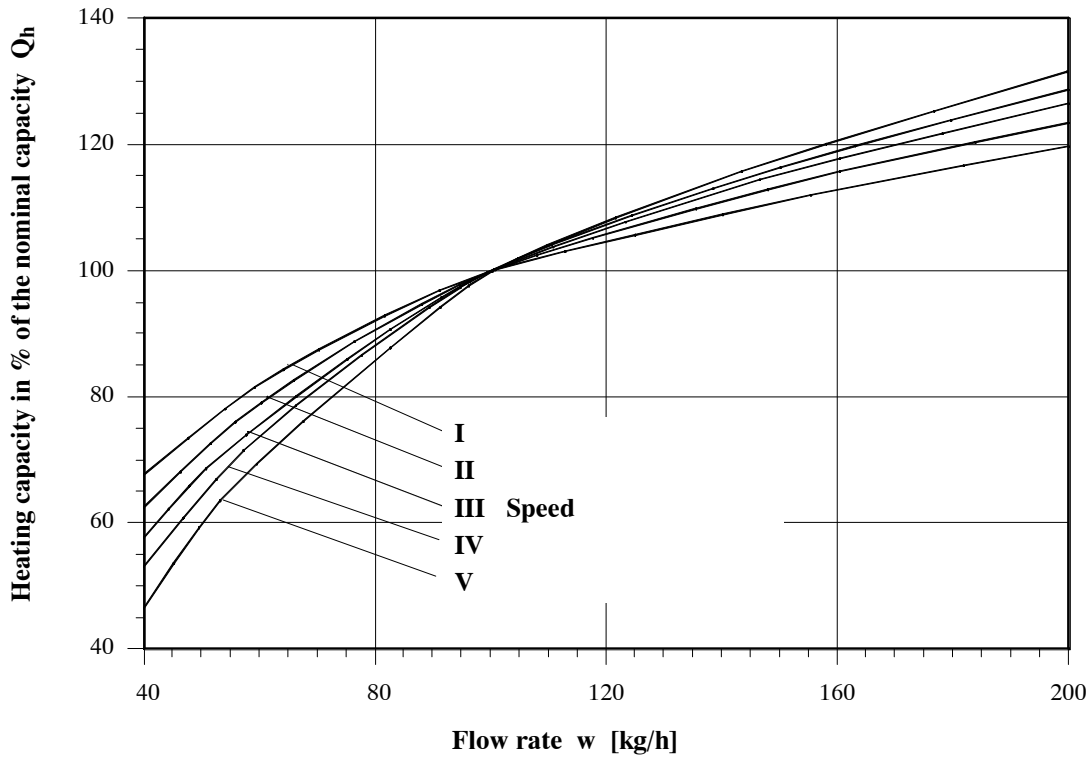


Water-side pressure loss of the cooler for different flow rates

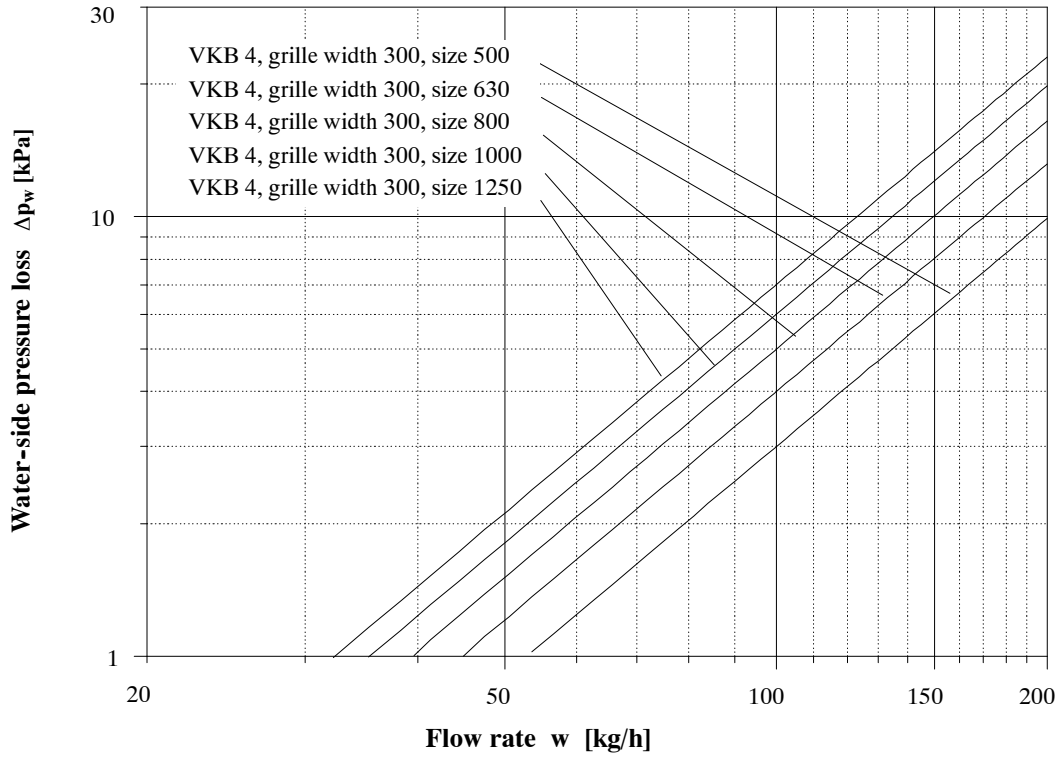


Fan Coil Units for Installation in False Floors
Types VKB-4 (Grille Width 300 mm)

Heating capacity for different water flow rates

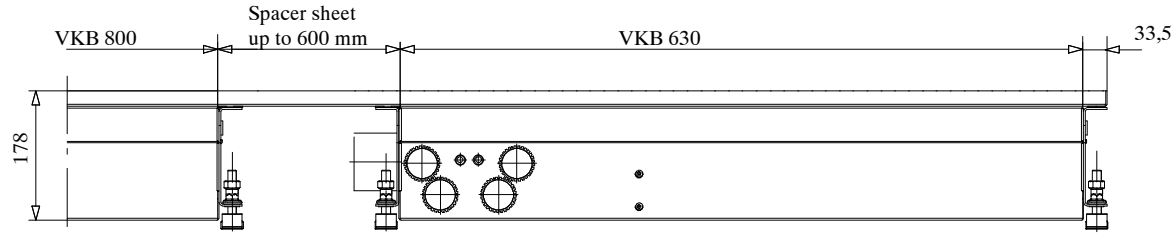


Water-side pressure loss of the heater for different flow rates

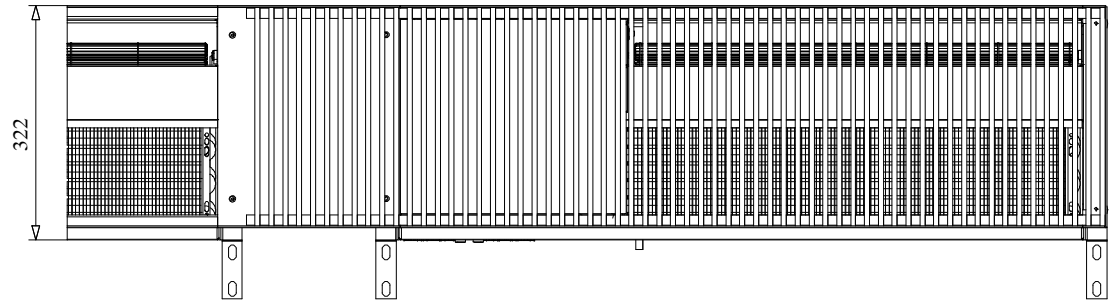


Fan Coil Unit for Installation in False Floors
Types VKB and VKB-N - Installation in line - Example

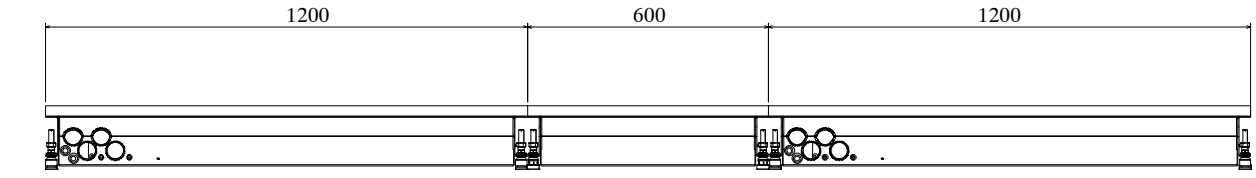
Version with spacer sheet

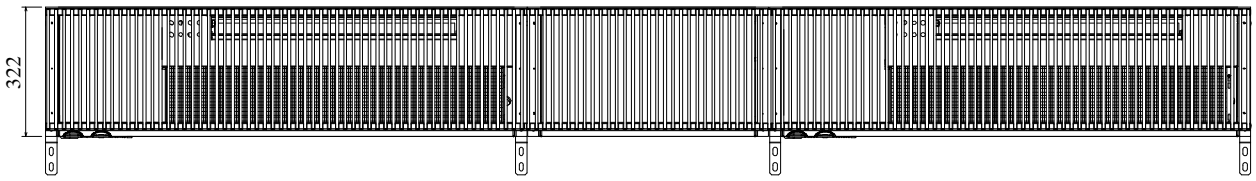


Top view

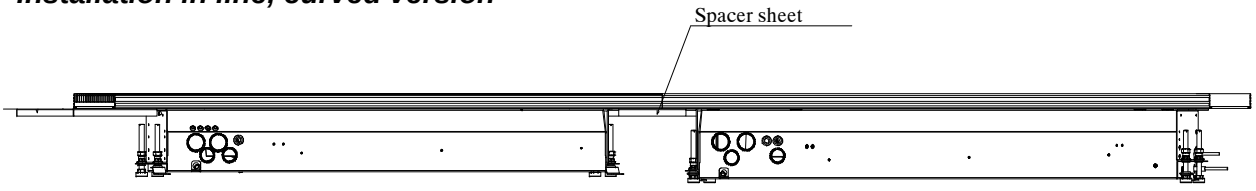


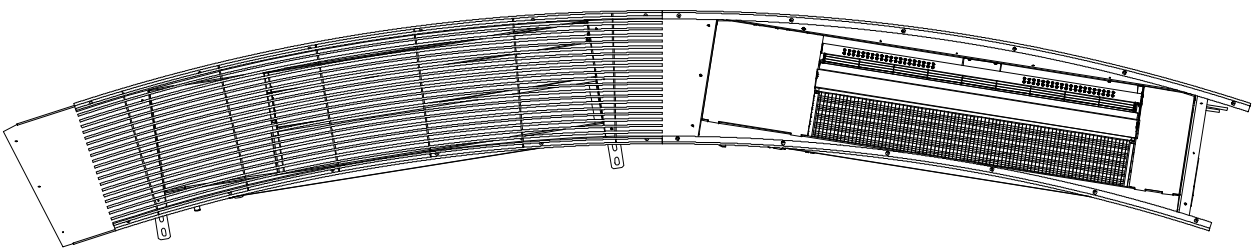
Version with empty tray





Installation in line, curved version





Fan Coil Unit for Installation in False Floors Types VKB and VKB-N

Installation in line

In order to produce a ”continuous effect” grille, black coated spacer sheets are fixed between the units.

If the space between units is greater than 400 mm or if end pieces are used, additional supports will be required to provide more stability.

If the space is 600 mm or greater, the use of an empty tray is recommended for stabilization.

The LTG roller grilles may also be used to create cutouts for columns or mitre edges.

Grille load capacity

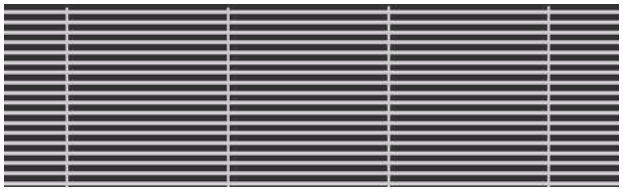
The 3 variants of foot traffic resistant LTG grilles offer the following static load capacities:

- Stainless steel grille 1500 kg/m^2
- Aluminium roller grille 1600 kg/m^2
- Aluminium linear grille 2000 kg/m^2

Other capacities on request

LTG-stainless steel grille

LTG-aluminium roller grille



LTG-aluminium linear grille

Fan Coil Units for Installation in False Floors Types VKB, VKB-N

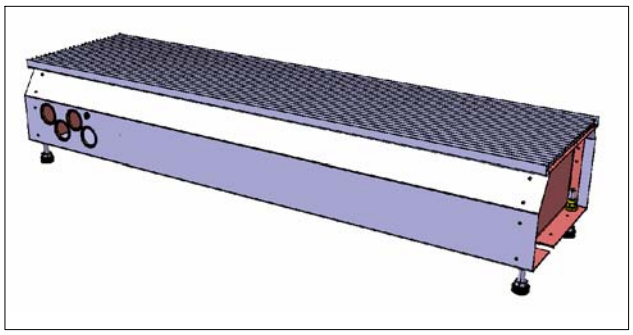
Installation

The compact design with a unit depth of 320 mm allows the installation of the unit between floor supports. Height-adjustable feet ensure a precise alignment of the unit.

The control valve compartment and the water connection are located on the unit's left side. Bushings for water connection hoses are provided on the unit's rear panel, on the left hand side.

Power connection is to be realised using the splash-protected terminal box on the left hand side.

The ventilation grille is designed to be flush-mounted to the floor. It is foot traffic resistant without the need for any additional cross members.



Fan Coil Unit Type VKB - with ventilation grille

Control (see brochure "Accessories")

Installation Sequence

- Set the unit with insulating strips directly on the facade.
- Height adjustment and exact positioning of the unit through adjustable feet.
- If required, use e.g. a PU adhesive to fix the unit feet in order to avoid accidental movement.
- Fixation of the unit on fixing links using bolts.
- Set the feet for floor panels and install the floor panels so that a direct contact with the unit is ensured.
- In case of continuous grille: Align units precisely and attach connecting pieces to the unit's bottom using countersunk head screws.

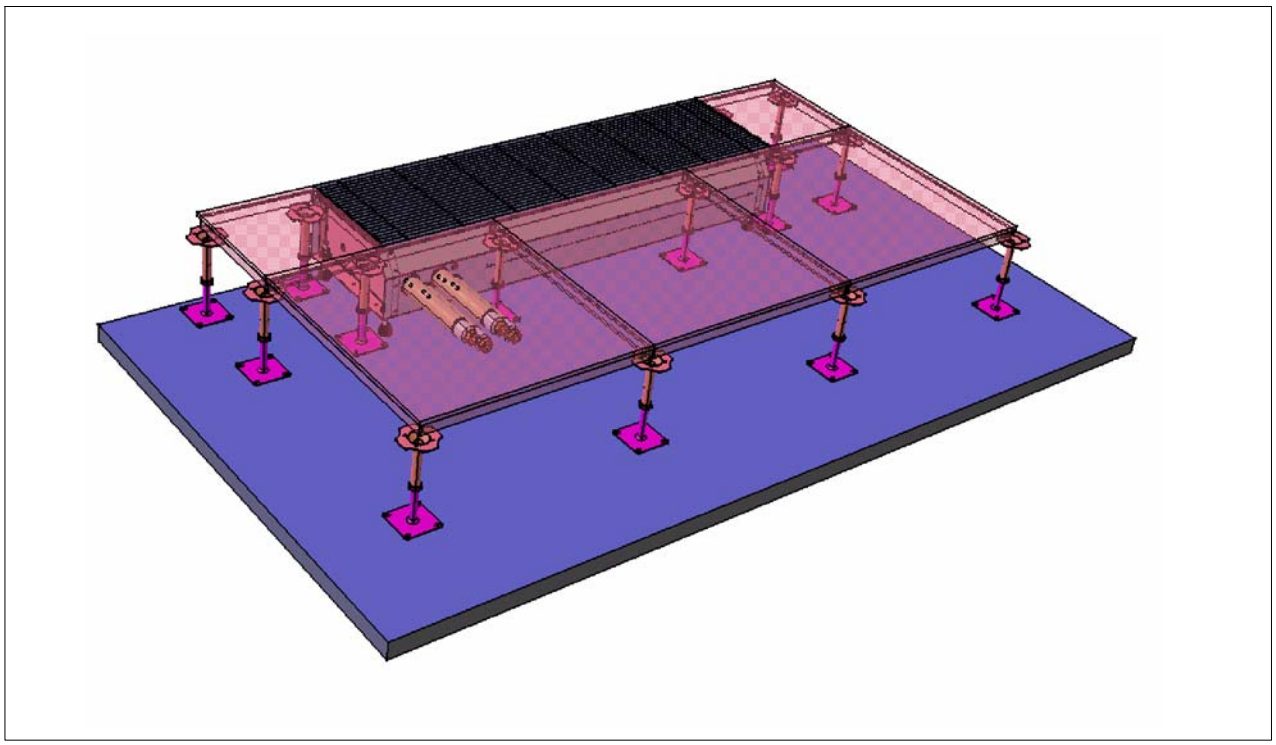
Maintenance

All components are located within a sheet steel pan and are easily accessible from above for maintenance, inspection and cleaning.

VKB-EB: Instructions for the control (chapter 6.1) included in the Instructions for Installation and Maintenance must be observed when planning, installing, and operating the ultrasound humidifier. Safe operation will only be ensured if these instructions are strictly observed.

Special Versions / Accessories

- Control valves optionally with continuous, thermal or 3-position actuator.
- Insulated flexible hoses with safe quick-release connectors on the heat exchanger and integrated air-relief valves.



Fan Coil Unit Type VKB - Installation between floor supports

Fan Coil Units for Installation in False Floors Types VKB, VKB-N

Nomenclature

VKB - 4 - N 800 / F1 / E / 300 / 1198 / D / OR / E / S

2-pipe unit	**2**
4-pipe unit	**4**
low height	**N**
size	**800**
without fresh air supply	**-**
with fresh air supply	**F1**
with fresh air supply	**F2**
with fresh air supply	**F3**
for condensing operation	**E**
with humidificatiion	**EB**
with fresh air supply and dehumidific.	**FE**
with electric heating	**EH**
grille width [mm]	**300**
	200
grille length [mm]	**1198**
straight-way 3-point valve	**D**
3-way 3-point valve	**3**
straight-way valve, thermal	**T**
without angular end piece for distance sheet	**OR**
1 angular end piece	**1R**
2 angular end pieces	**2R**
stainless steel grille	**E**
aluminium roller grille 20 mm	**AR**
anodized aluminium linear grille	**AE**
coating black	**S**
coating special colour	**SO**

Specification and Schedule of Prices

Fan Coil Unit for Installation in False Floors Type VKB, Grille width 200 mm

Qty.	Description	Unit Price in €	Total price in€
	Fan coil unit for 2- and 4-pipe systems for water-side control by valves Type VKB (heating and cooling) Fan coil unit with a two-row heat exchanger with separate water circuits for cooling and heating (2- and 4-pipe system), consisting of: - **Housing** for free installation in floor cavities or false floors, consisting of a torsion-resistant pan of galvanized sheet steel, surface coated, sheet steel thickness: 1.5 mm, with reinforced side edges, sheet thickness 2.5 mm to tolerate high static loads (sound insulation index (RW) > 25 dB), with separate valve housing and supporting profile on the face to accept ventilation grille, including foot traffic sound insulation. - **Foot traffic resistant ventilation grille**, made of aluminium over the entire unit width, **width 200 mm**, serving as an inspection opening. Thus, all components are easily accessible from above for maintenance. - **Low-noise cross-flow fan**, in vibration-isolated bearings, with steady characteristic and uniform discharge over the entire width. 5-speed internal rotor capacitor motor, terminal box wired (IP 54). Motor protection through integrated thermo switch. Low energy consumption < 30 W. Impeller blade with direct drive and maintenance-free slide bearing. Activation via mechanical 3-speed switch or control panel (accessory). - **Supporting feet**, with foot traffic insulation, 4 pieces, height adjustable. - **Bushing for water hoses** exiting the unit tray in direction of room with edge protection, optimized for high cross-talk attenuation. - **Heat exchanger** with 2 separate water circuits, consisting of smooth 12 mm copper tubes with pressed-on aluminum fins, for a high caloric output and high natural convection. Operating pressure up to 12 bar. Water-side connection of quick release couplings. - **Control valve housing** on the unit's left hand side. - **Air outlet duct close to the facade** for better facade shielding. **Exterior dimensions** (aluminium linear grille): depth x height = 242 mm x 201 mm (dimensions may vary depending on variant) **Baugröße:** o 500 o 630 o 800 o 1000 o 1250 **Manufacturer:** **LTG Aktiengesellschaft** **Series:** **Fan Coils** **Type:** **VKB** -2-		

Specification and Schedule of Prices

Fan Coil Unit for Installation in False Floors Type VKB, Grille width 200 mm

Qty.	Description	Unit Price in €	Total price in€
	Variants: o Fresh air connection (sockets) for air flow rates up to 60 m^3/h, connection via DN 80 socket. Fresh air supply is realized low-impulse via the perforated sheet which also serves to cover the valve compartment. o Damper KLI integrated in the fresh air connection. o Mixed displacement air insert MQ. Spreading vanes to improve indoor air flow, integrated in the discharge section to produce a combined mixed/displacement air flow at low air speed, for increased cooling output and reduced temperature layer formation in the occupied zone. o Stainless steel grille o Aluminum - Roller grille o Prepared for installation in line Differently formed side panel to take a connecting sheet and give the grille a continuous look. **Accessories/special version** (optional, at extra charge): - Flexible hose, **oxygen diffusion tight version** (Oxiblock, PE), with stainless steel braiding, quick release coupling on one side, other side optional, length: 500 mm, **without insulation for hot water** up to supply temperatures of 50 °C, operating pressure 10 bar - Flexible hose, **oxygen diffusion tight version** (Oxiblock, PE), with stainless steel braiding, quick release coupling on one side, other side optional, length: 500 mm, **with insulation for cold water** <u>or standard hose:</u> - Flexible hose, (EPDM-core), with stainless steel braiding, quick release coupling on one side, other side optional, length: 500 mm, **without insulation for hot water** - Flexible hose, (EPDM-core), with stainless steel braiding, quick release coupling on one side, other side optional, length: 500 mm, **with insulation for cold water** - 2 valves with thermoelectrical actuator - 2 valves with 3-position actuator - Plug-in connections with 1/2” internal thread for direct valve connection -3-		

Specification and Schedule of Prices

Fan Coil Unit for Installation in False Floors Type VKB, Grille width 200 mm

Technical Specification

Cooling mode

Induction air temperature	[°C]			
Water supply temperature	[°C]			
		Speed I	Speed II	Speed III
Flow rate	[m³/h]			
Cooling capacity	[W]			
Sound power level L_{WA}	[dB(A)]			
Sound pressure level at 18 m² Sabine L_{pA}	[dB(A)]			
Electric power consumption	[W]			

Heating mode

Induction air temperature	[°C]			
Water supply temperature	[°C]			
		Speed I	Speed II	Speed III
Flow rate	[m³/h]			
Heating capacity	[W]			
Sound power level L_{WA}	[dB(A)]			
Sound pressure level at 18 m² Sabine L_{pA}	[dB(A)]			
Electric power consumption	[W]			

Specification and Schedule of Prices

Fan Coil Unit for Installation in False Floors Type VKB, Grille width 300 mm

Qty.	Description	Unit Price in €	Total price in€
	Fan coil unit for 2- and 4-pipe systems for water-side control by valves Type VKB (heating and cooling) Fan coil unit with a two-row heat exchanger with separate water circuits for cooling and heating (2- and 4-pipe system), consisting of: - **Housing** for free installation in floor cavities or false floors, consisting of a torsion-resistant pan of galvanized sheet steel, surface coated, sheet steel thickness: 1.5 mm, with reinforced side edges, sheet thickness 2.5 mm to tolerate high static loads (sound insulation index (RW) > 25 dB), with separate valve housing and supporting profile on the face to accept ventilation grille, including foot traffic sound insulation. - **Foot traffic resistant ventilation grille**, made of aluminium over the entire unit width, **width 300 mm**, serving as an inspection opening. Thus, all components are easily accessible from above for maintenance. - **Low-noise cross-flow fan**, in vibration-isolated bearings, with steady characteristic and uniform discharge over the entire width. 5-speed internal rotor capacitor motor, terminal box wired (IP 54). Motor protection through integrated thermo switch. Low energy consumption < 30 W. Impeller blade with direct drive and maintenance-free slide bearing. Activation via mechanical 3-speed switch or control panel (accessory). - **Supporting feet**, with foot traffic insulation, 4 pieces, height adjustable. - **Bushing for water hoses** exiting the unit tray in direction of room with edge protection, optimized for high cross-talk attenuation. - **Heat exchanger** with 2 separate water circuits, consisting of smooth 12 mm copper tubes with pressed-on aluminum fins, for a high caloric output and high natural convection. Operating pressure up to 12 bar. Water-side connection of quick release couplings. - **Control valve housing** on the unit's left hand side. - **Air outlet duct close to the facade** for better facade shielding. **Exterior dimensions** (aluminium linear grille): depth x height = 342 mm x 201 mm (dimensions may vary depending on variant) **Size:** o 500 o 630 o 800 o 1000 o 1250 **Manufacturer:** **LTG Aktiengesellschaft** **Series:** **Fan Coils** **Type:** **VKB** -2-		

Specification and Schedule of Prices

Fan Coil Unit for Installation in False Floors Type VKB, Grille width 300 mm

Qty.	Description	Unit Price in €	Total price in€
	Variants: o Fresh air connection (sockets) for air flow rates up to 60 m^3/h, connection via DN 80 socket. Fresh air supply is realized low-impulse via the perforated sheet which also serves to cover the valve compartment. o Fresh air connection (box) for air flow rates up to 200 m^3/h, connection via two DN 100 sockets. Fresh air supply is realized via separate box on the bottom side. Discharge section across the entire unit length. o Fresh air connection (box) for air flow rates up to 200 m^3/h, connection via two DN 100 sockets. Fresh air supply is realized via separate box on the front side. o Damper KLI integrated in the fresh air connection. o Mixed displacement air insert MQ. Spreading vanes to improve indoor air flow, integrated in the discharge section to produce a combined mixed/displacement air flow at low air speed, for increased cooling output and reduced temperature layer formation in the occupied zone. o Condensate tray for condensing operation. Stainless steel condensate tray, with special insulation and drainage socket 15 mm for connection to the condensate network on site. o Stainless steel grille o Aluminum - Roller grille o Prepared for installation in line Differently formed side panel to take a connecting sheet and give the grille a continuous look. **Accessories/special version** (optional, at extra charge): - Flexible hose, **oxygen diffusion tight version** (Oxiblock, PE), with stainless steel braiding, quick release coupling on one side, other side optional, length: 500 mm, **without insulation for hot water** up to supply temperatures of 50 °C, operating pressure 10 bar - Flexible hose, **oxygen diffusion tight version** (Oxiblock, PE), with stainless steel braiding, quick release coupling on one side, other side optional, length: 500 mm, **with insulation for cold water** <u>or standard hose:</u> - Flexible hose, (EPDM-core), with stainless steel braiding, quick release coupling on one side, other side optional, length: 500 mm, **without insulation for hot water** - Flexible hose, (EPDM-core), with stainless steel braiding, quick release coupling on one side, other side optional, length: 500 mm, **with insulation for cold water** - 2 valves with thermoelectrical actuator - 2 valves with 3-position actuator - Plug-in connections with 1/2” internal thread for direct valve connection -3-		

Specification and Schedule of Prices

Fan Coil Unit for Installation in False Floors Type VKB, Grille width 300 mm

Technical Specification

Cooling mode

Induction air temperature	[°C]			
Water supply temperature	[°C]			
		Speed I	Speed II	Speed III
Flow rate	[m³/h]			
Cooling capacity	[W]			
Sound power level L_{WA}	[dB(A)]			
Sound pressure level at 18 m² Sabine L_{pA}	[dB(A)]			
Electric power consumption	[W]			

Heating mode

Induction air temperature	[°C]			
Water supply temperature	[°C]			
		Speed I	Speed II	Speed III
Flow rate	[m³/h]			
Heating capacity	[W]			
Sound power level L_{WA}	[dB(A)]			
Sound pressure level at 18 m² Sabine L_{pA}	[dB(A)]			
Electric power consumption	[W]			

Specification and Schedule of Prices

Fan Coil Unit for Installation in False Floors Type VKB-4-800-EB

Qty.	Description	Unit Price in €	Total price in€
	Fan coil unit for 4-pipe systems for water-side control by valves Type VKB-4-800 EB (heating and cooling) Fan coil unit with a two-row heat exchanger with separate water circuits for cooling and heating, humidifying and dehumidifying operation (4-pipe system), consisting of: - **Housing** for free installation in floor cavities or false floors, consisting of a torsion-resistant pan of galvanized sheet steel, surface coated, sheet steel thickness: 1.5 mm, with reinforced side edges, sheet thickness 2.5 mm to tolerate high static loads (sound insulation index (RW) > 25 dB), with separate valve housing and supporting profile on the face to accept ventilation grille, including foot traffic sound insulation. - **Foot traffic resistant ventilation grille**, made of aluminium over the entire unit width, **width 300 mm**, serving as an inspection opening. Thus, all components are easily accessible from above for maintenance. - **Low-noise cross-flow fan**, in vibration-isolated bearings, with steady characteristic and uniform discharge over the entire width. 5-speed internal rotor capacitor motor, terminal box wired (IP 54). Motor protection through integrated thermo switch. Low energy consumption < 30 W. Impeller blade with direct drive and maintenance-free slide bearing. Activation via mechanical 3-speed switch or control panel (accessory). - **Ultrasound humidifier** for connection to the demineralized water system on site. Water mist introduction is realized via humidification tube (integrated in the discharge section). Humidification output up to 400 g/h (depending on speed). - **Supporting feet**, with foot traffic insulation, 4 pieces, height adjustable. - **Bushing for water hoses** exiting the unit tray in direction of room with edge protection, optimized for high cross-talk attenuation. - **Recirculating air filter** G2 (coarse dust filter). For easy replacement attached by Velcro to the heat exchanger. - **Heat exchanger** with 2 separate water circuits, consisting of smooth 12 mm copper tubes with pressed-on aluminum fins, for a high caloric output and high natural convection. Operating pressure up to 12 bar. Water-side connection of quick release couplings. - **Air outlet duct close to the facade** for better facade shielding. **Exterior dimensions** (aluminium linear grille): width x depth x height = 1198 x 329 x 219 x 201 mm **Manufacturer: LTG Aktiengesellschaft** **Series: Fan Coils** **Type: VKB-4-800 EB**		

Specification and Schedule of Prices

Fan Coil Unit for Installation in False Floors Type VKB-4-800-EB

Qty.	Description	Unit Price in €	Total price in€
	Variants: o Stainless steel grille o Aluminum - Roller grille o Prepared for installation in line Differently formed side panel to take a connecting sheet and give the grille a continuous look. **Accessories/special version** (optional, at extra charge): - Flexible hose, **oxygen diffusion tight version** (Oxiblock, PE), with stainless steel braiding, quick release coupling on one side, other side optional, length: 500 mm, **without insulation for hot water** up to supply temperatures of 50 °C, operating pressure 10 bar - Flexible hose, **oxygen diffusion tight version** (Oxiblock, PE), with stainless steel braiding, quick release coupling on one side, other side optional, length: 500 mm, **with insulation for cold water** <u>or standard hose:</u> - Flexible hose, (EPDM-core), with stainless steel braiding, quick release coupling on one side, other side optional, length: 500 mm, **without insulation for hot water** - Flexible hose, (EPDM-core), with stainless steel braiding, quick release coupling on one side, other side optional, length: 500 mm, **with insulation for cold water** - 2 valves with thermoelectrical actuator - 2 valves with 3-position actuator - Plug-in connections with 1/2” internal thread for direct valve connection -3-		

Specification and Schedule of Prices

Fan Coil Unit for Installation in False Floors Type VKB-4-800-EB

Technical Specification

Cooling mode

Induction air temperature	[°C]			
Water supply temperature	[°C]			
		Speed I	Speed II	Speed III
Flow rate	[m³/h]			
Cooling capacity	[W]			
Sound power level L_{WA}	[dB(A)]			
Sound pressure level at 18 m² Sabine L_{pA}	[dB(A)]			
Electric power consumption	[W]			

Heating mode

Induction air temperature	[°C]			
Water supply temperature	[°C]			
		Speed I	Speed II	Speed III
Flow rate	[m³/h]			
Heating capacity	[W]			
Sound power level L_{WA}	[dB(A)]			
Sound pressure level at 18 m² Sabine L_{pA}	[dB(A)]			
Electric power consumption	[W]			

Specification and Schedule of Prices

Fan Coil Unit for Installation in False Floors Type VKB-4-N 800

Qty.	Description	Unit Price in €	Total price in€
	Fan coil unit for 4-pipe systems for water-side control by valves Type VKB (heating and cooling) for false floors of low height Fan coil unit with a two-row heat exchanger with separate water circuits for cooling and heating (4-pipe system), consisting of: - **Housing** for free installation in floor cavities or false floors, consisting of a torsion-resistant pan of galvanized sheet steel, surface coated, sheet steel thickness: 1.5 mm, with reinforced side edges, sheet thickness 2.5 mm to tolerate high static loads (sound insulation index (RW) > 25 dB), with separate valve housing and supporting profile on the face to accept ventilation grille, including foot traffic sound insulation. - **Foot traffic resistant ventilation grille**, made of aluminium over the entire unit width, **width 300 mm**, serving as an inspection opening. Thus, all components are easily accessible from above for maintenance. - **Low-noise cross-flow fan**, in vibration-isolated bearings, with steady characteristic and uniform discharge over the entire width. 5-speed internal rotor capacitor motor, terminal box wired (IP 54). Motor protection through integrated thermo switch. Low energy consumption < 20 W. Impeller blade with direct drive and maintenance-free slide bearing. Activation via mechanical 3-speed switch or control panel (accessory). - **Supporting feet**, with foot traffic insulation, 4 pieces, height adjustable. - **Bushing for water hoses** exiting the unit tray in direction of room with edge protection, optimized for high cross-talk attenuation. - **Heat exchanger** with 2 separate water circuits, consisting of smooth 12 mm copper tubes with pressed-on aluminum fins, for a high caloric output and high natural convection. Operating pressure up to 12 bar. Water-side connection of quick release couplings. The two-pipe unit requires connection of the radiator only. - **Control valve housing** on the unit's left hand side. - **Air outlet duct close to the facade** for better facade shielding. **Exterior dimensions** (aluminium linear grille): width x depth x height = 1198 x 310 x 130 mm (dimensions may vary depending on variant) **Manufacturer: LTG Aktiengesellschaft** **Series: Fan Coils** **Type: VKB-4-N 800** -2-		

Specification and Schedule of Prices

Fan Coil Unit for Installation in False Floors Type VKB-4-N 800

Qty.	Description	Unit Price in €	Total price in€
	Variants: o Stainless steel grille o Aluminum - Roller grille o Prepared for installation in line Differently formed side panel to take a connecting sheet and give the grille a continuous look. **Accessories/special version** (optional, at extra charge): - Flexible hose, **oxygen diffusion tight version** (Oxiblock, PE), with stainless steel braiding, quick release coupling on one side, other side optional, length: 500 mm, **without insulation for hot water** up to supply temperatures of 50 °C, operating pressure 10 bar. - Flexible hose, **oxygen diffusion tight version** (Oxiblock, PE), with stainless steel braiding, quick release coupling on one side, other side optional, length: 500 mm, **with insulation for cold water** <u>or standard hose:</u> - Flexible hose, (EPDM-core), with stainless steel braiding, quick release coupling on one side, other side optional, length: 500 mm, **without insulation for hot water** - Flexible hose, (EPDM-core), with stainless steel braiding, quick release coupling on one side, other side optional, length: 500 mm, **with insulation for cold water** - 2 valves with thermoelectrical actuator - 2 valves with 3-position actuator - Plug-in connections with 1/2” internal thread for direct valve connection -3-		

Specification and Schedule of Prices

Fan Coil Unit for Installation in False Floors Type VKB-4-N 800

Technical Specification

Cooling mode

Induction air temperature	[°C]			
Water supply temperature	[°C]			
		Speed I	Speed II	Speed III
Flow rate	[m³/h]			
Cooling capacity	[W]			
Sound power level L_{WA}	[dB(A)]			
Sound pressure level at 18 m² Sabine L_{pA}	[dB(A)]			
Electric power consumption	[W]			

Heating mode

Induction air temperature	[°C]			
Water supply temperature	[°C]			
		Speed I	Speed II	Speed III
Flow rate	[m³/h]			
Heating capacity	[W]			
Sound power level L_{WA}	[dB(A)]			
Sound pressure level at 18 m² Sabine L_{pA}	[dB(A)]			
Electric power consumption	[W]			