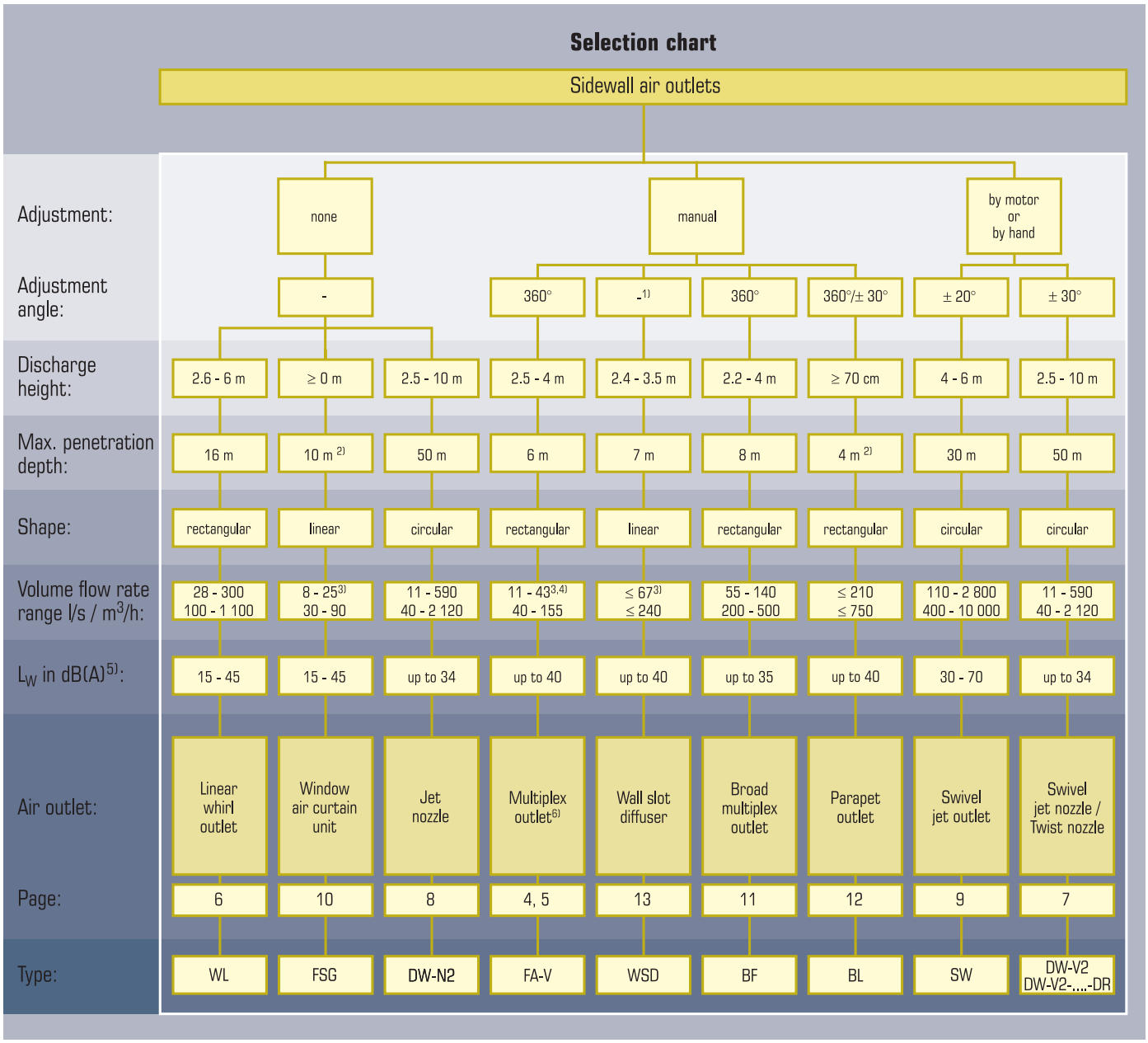
Krantz KOMPONENTEN®
Applied system solutions

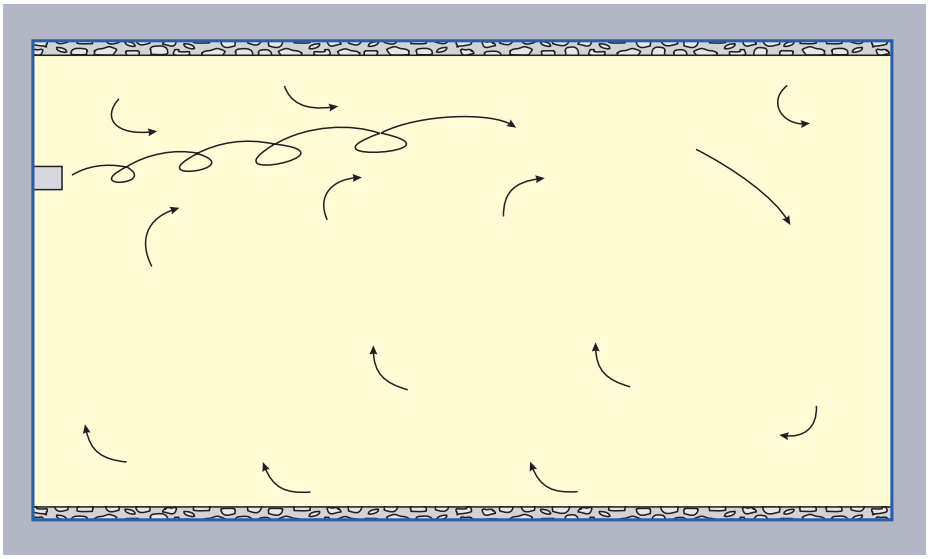
Sidewall air outlets

Turbulent mixing air flow

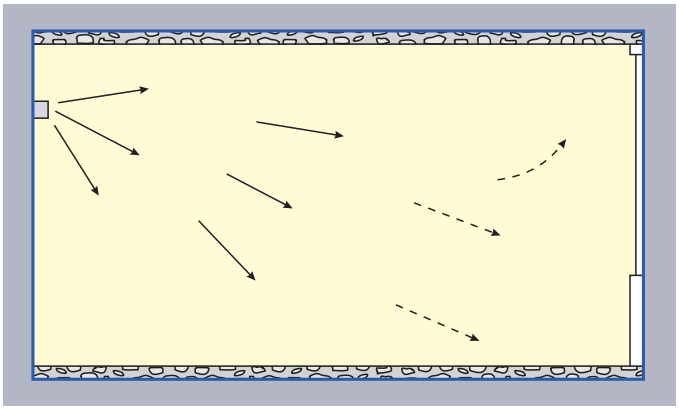
Turbulent mixing air flow
Sidewall air outlets



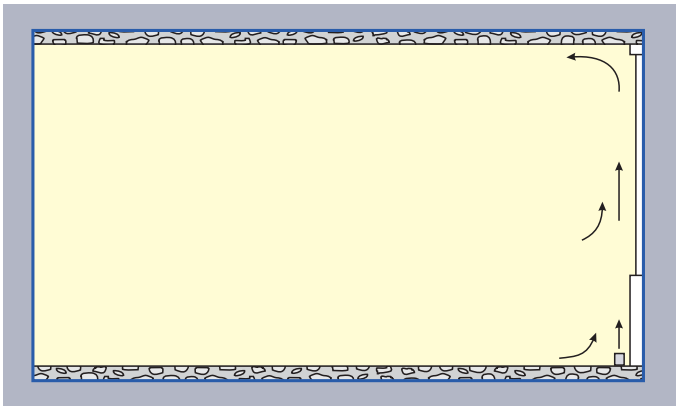
1) Discharge elements adjustable individually
2) Penetration height (vertical jet)
3) Per metre of length
4) Double-row design up to 51.5 l/(s · m) [185 m³/(h · m)]
5) Sound power level
6) Also applies for the combined multiplex outlet



1
Long throws in halls



2
Pronounced jet spread
in individual rooms



3
Vertical air jet
to screen off window

KRANTZ KOMPONENTEN provides sidewall air outlets for turbulent mixing air flow for all kinds of commercial rooms as well as for large halls requiring long jet throws.

Sidewall air outlets for commercial rooms have a very low sound power level, i.e. they are ideal for rooms with high acoustic requirements such as assembly rooms, meeting rooms, exhibition spaces, etc.

These outlets generate a diffuse indoor air flow with rapid equalization of jet temperature and indoor air temperature. The indoor air flow in the occupied zone is draught-free.

In large halls such as exhibition halls, sports halls, airport terminals, warehouses, industrial halls, etc., our sidewall air outlets easily achieve the requisite long throws of 30, 40, or even 50 m.

Sidewall air outlets are also particularly suitable for industrial halls that require an even temperature or humidity distribution (e.g. warehouses, specific manufacturing buildings). The very high induction effect of the supply air jets enables to comply with narrow tolerance ranges for temperature and humidity distribution.

Multiplex outlet
Types FA-VT and FA-VTL

For installation in corridor walls of offices, meeting rooms, etc., to provide the occupied zone with supply air spread out into thin single jets.

The jet bundle elements are the main component of this air outlet. These are disks - each fitted with 7 thin jet channels - that can be manually rotated through 360° in 30° angle steps. This way, the entire supply air jet can be spread as broadly as required. Spreading the single thin, circular free jets quickly reduces the air velocity and the temperature difference to indoor air.

For unity of appearance the jet bundle elements and the faceplate are available with the same hole pattern.

Features:

- Bundles of thin, free single jets
- Jet bundle elements manually rotatable through 360°
- Pronounced spread of supply air jets
- Rapid reduction of jet velocity and temperature difference
- Single-row or double-row arrangement of jet bundle elements (with double row: $\dot{V}$ = up to 51.5 l/(s · m) [185 m³/(h · m)])
- With connection box for flexible duct connection
- Also usable as return air inlet

Volume flow rate range:	up to 43 l/(s · m) up to 155 m³/(h · m)
Standard lengths:	0.6; 0.8 and 1.0 m
Height of air outlet:	140 mm
Discharge height:	2.5 – 4 m
Max. temp. difference supply air – indoor air:	–12 K when cooling +15 K when heating

Technical layout to DS 4064

Multiplex outlet, type FA-VT

Type FA-VTL with perforated faceplate

Air jet pattern of FA-VT and FA-VTL

Specially designed Multiplex outlet, type FA-VT, in an office area at Stuttgart Airport / D

Multiplex outlet, type FA-VT, single-row design, in the entrance hall of the Ogilvy Marketing Agency, Amsterdam / NL

Combined multiplex outlet
Types FA-VK, FA-VKL

For installation in corridor walls of offices, meeting rooms, etc., to discharge supply air in thin single jets into the occupied zone and to remove return air via a combined return air segment.

The housing is divided into a lower supply air segment and an upper return air segment. The faceplate is available with or without perforations.

The supply air segment is fitted with jet bundle elements; it is constructed and works like the single-row multiplex outlet (see p. 4). The return air flows into the return air segment via single-row jet bundle elements (with non-perforated faceplate) or via free perforations (with the perforated faceplate).

Features:

- Multiplex outlet for both supply air and return air
- Bundles of thin, free single supply air jets
- Jet bundle elements manually rotatable through 360°
- Pronounced spread of supply air jets
- Rapid reduction of jet velocity and temperature difference
- Jet bundle elements for supply air and return air respectively arranged in one row
- Return air segment also available without jet bundle elements; then, return air intake via free perforations
- Connection box with supply air and return air spigots for flexible duct connection

Volume flow rate range: (for supply air and return air respectively)	up to 43 l/(s · m) up to 155 m³/(h · m)
Standard lengths:	0.6; 0.8 and 1.0 m
Height of air outlet:	260 mm
Discharge height:	2.5 – 4 m
Max. temp. difference supply air – indoor air:	–12 K when cooling +15 K when heating

Technical to DS 4064 layout

Combined multiplex outlet, type FA-VK, in a training room at Bain & Company Germany Inc., Munich / D

Combined multiplex outlet, type FA-VKL, in a meeting room at the Zürich Agrippina insurance firm in Frankfurt / D

Combined multiplex outlet, type FA-VK, in a sickroom at the Viennese Private Hospital, Vienna / A

Combined multiplex outlet, type FA-VK

Type FA-VKL with perforated faceplate for unity of appearance

Air jet pattern of FA-VK

Linear whirl outlet
Type WL

For mounting on walls or galleries, with nearly horizontal discharge direction, where penetration depths of 4 to 16 m are required.

Depending on design, the discharge element of this air outlet has 5 to 7 rectangular discharge chambers that are fed with supply air via openings positioned on their top sides. The dimensions of the discharge chambers and the openings are matched so as to generate two air jets whirling against each other when leaving a discharge chamber. This results in great jet stability and high induction of indoor air.

Features:
- Linear free jet
- Discharge direction nearly horizontal
- Low sound power level
- 3 sizes available for different penetration depths
- Slim linear whirl outlet also available for low plenum heights
- With connection box for flexible duct connection, or direct connection to main air duct

Volume flow rate range:	28 – 300 l/s 100 – 1 100 m³/h
Nominal sizes: (Height of discharge chamber)	30; 45 and 65 mm
Jet length:	4 – 16 m
Discharge height:	2.6 – 6 m
Standard length:	1 – 1.1 m
Max. temp. difference supply air – indoor air:	–8 K when cooling +5 K when heating

Technical layout to DS 4029

Linear whirl outlet, type WL, in the canteen of the Gruner & Jahr publishing house in Hamburg / D

Linear whirl outlet, type WL-E, with connection box

Slim linear whirl outlet, type WL-EN

Air jet pattern of WL

Linear whirl outlet, type WL, in the entrance hall of the insurance company 'AachenMünchener Versicherung AG' in Aachen / D

Linear whirl outlet, type WL, in the canteen of the Bavarian Office for Environmental Protection in Augsburg / D

Swivel jet nozzle Type DW-V2
Twist nozzle Type DW-V2-....-DR

Swivel jet nozzle, type DW-V2, in the entrance hall of the Dresdner Bank AG in Frankfurt / D

For installation at walls, pillars, or galleries where adjustment of the discharge direction by servomotor or by hand is required.
The conical nozzle is housed in a swivel hemispheric casing. The adjusting range is ± 30° around the horizontal swivel axis and in the vertical plane. This enables to adjust the discharge direction as required both horizontally and vertically. The circular free jet generated has a long throw; the sound power level is very low.
If the swivel jet nozzle is fitted with a twist element, thus becoming a twist nozzle, the jet throw is significantly reduced while the air flow rate is the same.

Features:

- Circular free jet
- Discharge direction adjustable by ± 30° around the swivel axis, by servomotor or by hand
- Position of swivel axis also adjustable in the vertical plane, enabling to alter the discharge direction sideways
- Low sound power level
- Low pressure loss
- Direct connection to main supply air duct or pressurized plenum, or connection with push-in end for spiral-seam duct and with slip-on end for shaped part
- Twist nozzle DW-V2-....-DR with built-in twist element for shorter jet throws, especially for air distribution in narrow spaces

Swivel jet nozzle, type DW-V2

with flange for duct installation

with push-in end for spiral-seam duct

with slip-on end for shaped part

Twist nozzle, type DW-V2-....-DR

Type DW-V2	
Volume flow rate range:	11 – 590 l/s 40 – 2 120 m³/h
Nominal sizes:	DN 60 to DN 250
Throw:	3 – 50 m
Discharge height:	2.5 – 10 m
Max. temp. difference supply air – indoor air:	–8 K when cooling +6 K when heating
Type DW-V2-....-DR	
Volume flow rate range:	up to 392 l/s up to 1 420 m³/h
Nominal sizes:	DN 80 to DN 250
Throw:	1 – 17 m
Discharge height:	2.8 – 10 m
Max. temp. difference supply air – indoor air:	–8 K when cooling +6 K when heating

Air jet pattern of DW-V2

Air jet pattern of DW-V2-....-DR

Swivel jet nozzle, type DW-V2, in the entrance hall of 'Öffentliche Versicherung' in Braunschweig / D

Swivel jet nozzle, type DW-V2, in the restaurant of the multiplex 'Filmpalast-am-ZKM' in Karlsruhe / D

Technical layout to DS 1235

Jet nozzle
Type DW-N2

For installation at walls, pillars, or galleries; particularly suitable for rooms with very high acoustic requirements and where the requisite discharge angle can be predetermined.

In the conical nozzle with rounded intake, the supply air is accelerated to the discharge velocity with almost no pressure loss. The resulting circular free jet can achieve a velocity of 10 to 12 m/s without noticeable noise.

Features:

- Circular free jet
- Fixed discharge direction
- Extremely low sound power level
- Very low pressure loss
- Direct connection to main supply air duct or pressurized plenum, or connection with push-in end for spiral-seam duct and with slip-on end for shaped part

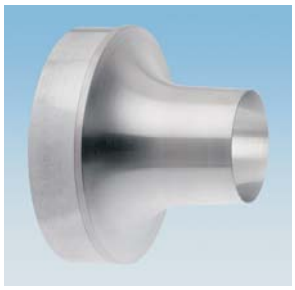
Volume flow rate range:	11 – 590 l/s 40 – 2 120 m³/h
Nominal sizes:	DN 60 to DN 250
Throw:	3 – 50 m
Discharge height:	2.5 – 10 m
Max. temp. difference supply air – indoor air:	–8 K when cooling +6 K when heating

Technical layout to DS 1235

Jet nozzle, type DW-N2
with flange
for duct connection

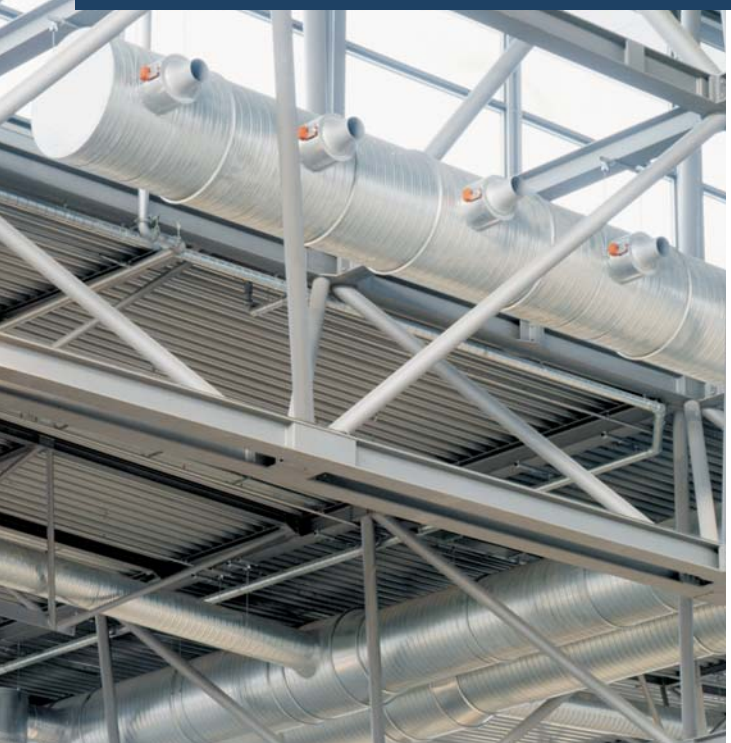
with push-in end
for spiral-seam duct

with slip-on end
for shaped part



Air jet pattern of DW-N2

Jet nozzle, type DW-N2, at Leipzig Fairgrounds / D



Jet nozzle, type DW-N2, in the Vienna Concert Hall, Vienna / A

Swivel jet outlet
Type SW

For mounting at walls, pillars, or galleries where large penetration depths and high volume flow rates per air outlet are required.

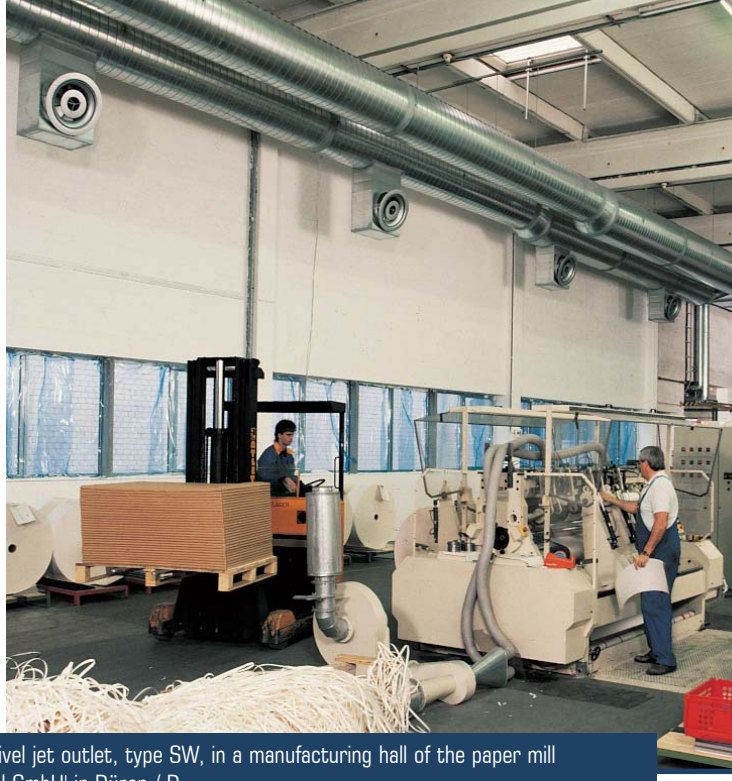
The basic element of the swivel jet outlet is a variable twist outlet with core tube. A swivel mechanism enables the adjustment of the outlet in the vertical plane in a range of ± 20°. The jet direction can thus be set as required, and even subsequently corrected. The penetration depth of the supply air jets is varied by opening or closing the core tube. To achieve very large penetration depths, the outlet throw can be considerably increased by inserting a ring into the staggered exit.

Features:

- Circular, high-turbulence free jet
- Discharge direction adjustable by ± 20° in the vertical plane, by servomotor or by hand
- Penetration depth adjustable by opening or closing the core tube
- With ring for very long throws
- Connection to side of main supply air duct or to connection box

Volume flow rate range:	110 – 2 800 l/s 400 – 10 000 m³/h
Nominal sizes:	DN 315, 400, 600 and 710
Penetration depth:	up to 30 m
Discharge height:	4 – 6 m
Max. temp. difference supply air – indoor air:	–10 K when cooling +6 K when heating

Technical layout to DS 1249



Swivel jet outlet, type SW, in a manufacturing hall of the paper mill 'Sihl GmbH' in Düren / D

Swivel jet outlet, type SW

Air jet pattern of SW
Jet slightly inclined upwards
(Cooling mode)

Air jet pattern of SW
Jet inclined downwards
(Heating mode)

Swivel jet outlet, type SW,
at the 'Design Center Linz', Linz / A

Swivel jet outlet, type SW,
in the Albert Schultz Ice Skating Hall, Vienna / A

Window air curtain unit
Type FSG

Unit for installation in a window parapet for generating an upward air curtain to compensate for heat transmission through the window when cooling or heating.

The main components of the window air curtain unit are the air discharge element with cover profile fitted with slots and the connection box with round spigot. The slot width depends on the height of the window to be screened off and the air flow rate required. The air curtain generated glides upwards along the window pane to the ceiling. The return air is extracted in the ceiling zone.

Features:
- Linear air curtain
- Installation in window parapet or floor, along the facade
- Maximum distance to glass pane: 200 mm
- Small space required (width 55 mm, height 260 - 310 mm)
- With connection box for flexible duct connection

Volume flow rate range:	8 – 25 l/(s · m)[1)] 30 – 90 m³/(h · m)[1)]
Slot width:	3 – 10 mm
Nominal lengths:	1.0; 1.2; 1.4 and 1.6 m
Penetration height:	2 – 10 m
Supply air temperature:	max. 45 °C min. 15 °C

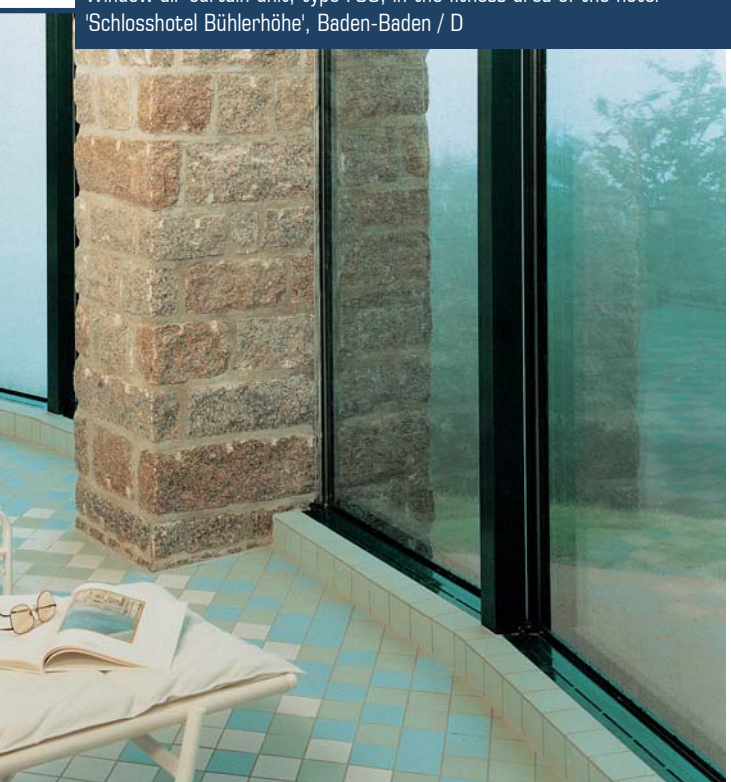
[1)] For higher volume flow rates, consult us

Technical layout to DS 1286

Air jet pattern of FSG

Window air curtain unit, type FSG

Window air curtain unit, type FSG, in the fitness area of the hotel 'Schlosshotel Bühlerhöhe', Baden-Baden / D



Window air curtain unit, type FSG, in a hotel on Majorca / E

Broad multiplex outlet
Type BF

For installation in the upper wall area of a room, e.g. hotel room, for draught-free, broadly spread supply air jets.

The main component of this sidewall outlet is the perforated faceplate with built-in double-row nozzle disks. The nozzle disks and the faceplate are simultaneously fed with supply air. The jet bundles discharged by the nozzle disks have higher momentum and induce the supply air flowing out of the surrounding faceplate. By rotating the nozzle disks, the jet bundles can be spread as required and discharged in predetermined directions. This is an advantage with asymmetrical outlet arrangement in 3.5 to 5 m wide rooms. With appropriate adjustment of the nozzle disks, the supply air can be distributed over the entire room width.

Features:

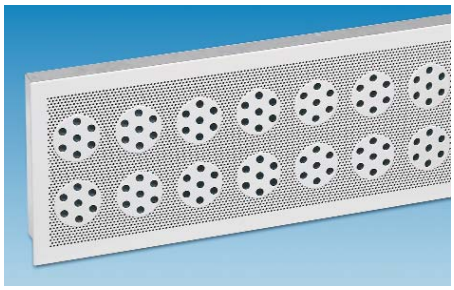
- Sidewall air outlet with perforated faceplate and built-in double-row nozzle disks
- Bundles of thin, free single jets discharged by nozzle disks
- Additional air flow through free perforations of faceplate
- Pronounced spread of total supply air flow thanks to manually rotatable nozzle disks
- Symmetrical or asymmetrical arrangement in room wall
- Easy to install, with mounting frame and push-in connectors
- Low sound power level and pressure loss

Volume flow rate range:	55 – 140 l/s 200 – 500 m³/h
Standard lengths:	0.58; 0.76 and 0.94 m
Height of air outlet:	268 mm
Mounting height:	≥ 2.2 m
Max. temp. difference supply air – indoor air:	± 10 K

Technical layout to DS 4101

Broad multiplex outlet, type BF, in an office

Broad multiplex outlet, type BF



Air jet pattern of BF
Asymmetrical jet direction

Broad multiplex outlet, type BF,
in a room at Hotel Exel, Linz / A

Parapet outlet
Type BL

For installation in window parapets above existing induction units or fan coil units. Designed for facade screening when cooling or heating, it also enables the ventilation of workplaces next to the facade.

The main components are an adjustable two-row induction outlet and a multiplex outlet. The induction outlet generates a vertical flow for facade screening. For ventilating workplaces next to the facade, the supply air jet from the internal induction outlet row can be inclined towards the inside of the room. The intensity of air flow at those workplaces can be adjusted by rotating individual multiplex elements.

Features:

- Parapet outlet made up of adjustable two-row induction outlet and multiplex outlet
- Vertical jet for facade screening and, where required, broadly spread air jet inclined towards room for individual workplace ventilation
- No tangential air patterns to cause thermal discomfort
- Ideal for replacing simple grilles in window parapets so as to improve indoor air flow

Volume flow rate range:	up to 210 l/s up to 750 m³/h
Nominal lengths:	800, 1 025, 1 250, 1 550 mm
Width of air outlet:	202 mm

Technical layout to DS 4102

Parapet outlet, type BL

Parapet outlet, type BL, at the facade of an office at ING Bank, Arnhem / NL

Facade jet (right) and jet inclined towards room (left) for direct workplace ventilation

Slim vertical jet
(viewed towards facade)

Laterally spread jet
(viewed towards facade)

Wall slot diffuser
Type WSD

The wall slot diffuser is a slim air diffuser with aesthetic design which is intended for installation in standard gypsum plasterboard walls, i.e. inside or behind such walls. It can also be combined with a chilled ceiling or installed in a room with concrete slab cooling.

The wall slot diffuser is available for supply air or return air, or for both combined.

The supply air jet spreads out evenly. After 1 to 2 m the air flow gets diffuse, spreading at floor level towards the facade like a displacement flow. The wall slot diffuser is particularly suitable for commercial applications, e.g. offices or meeting rooms.

The slot element is inserted into the connection box upon completion of the room construction. It is easy to take off for cleaning purposes to VDI 6022. Owing to its construction the wall slot diffuser has a high insertion loss. If fitted with acoustic lining, in many cases there is no need for a crosstalk silencer.

Features:

- 1-row or 2-row design for supply air or return air, or for both combined
- Slot element easy to take off for cleaning as per VDI 6022
- Connection box suitable for installation inside or behind a gypsum plasterboard wall; optional V̇ damper adjustable from room
- High thermal comfort: cooling capacity up to 120 W/m²
- Particularly high insertion loss with abrasion-resistant acoustic lining of class A2 to DIN 4102, Part 1 (optional); this obviates the need for a crosstalk silencer

Wall slot diffuser, type WSD,
in an office building of Mercer Oliver Wyman, Frankfurt am Main / D

Volume flow rate range:	up to 67 l/(s · m) up to 240 m³/(h · m)
Nominal lengths:	525, 1 050 and 1 125 mm
Discharge height:	2.4 – 3.5 m
Max. temp. difference supply air – indoor air:	–10 K when cooling +6 K when heating

Technical layout to DS 4119

Wall slot diffuser, type WSD

Air jet pattern of WSD
above: horizontal air jet
left: one jet inclined upwards and one jet downwards

Customized sidewall air outlets

Multiplex outlets, type FA-VT in single-row design, in the entrance area of 'Daikin Airconditioning Central Europe Handels-GmbH', Brunn / A

Swivel jet outlets, type SW, in the glass supply air duct, Hall 26, at Hanover Fairgrounds / D

Linear whirl outlets, type WL, in the entrance hall of 'Stadhuis Complex', The Hague / NL

Linear whirl outlets, type WL, in the foyer of 'Theater am Kornmarkt', Bregenz / A

Swivel jet nozzles of type DW-V2 combined with linear whirl outlets of type WL in the Mercedes-Benz Customer Centre, Rastatt / D

Linear whirl outlets, type WL,
in the swimming pool of a hotel on Majorca / E

Twist outlets with sharp-edged exits, type D-NE,
in the 'Art Cult Center' museum, Vienna / A

Swivel jet nozzles, type DW-V2, in swivel connection boxes in the 'New Metropolis' science and technology centre, Amsterdam / NL

Window air curtain unit, type FSG, in an office of the Dresdner Bank AG in Frankfurt am Main / D

Swivel jet nozzles, type DW-V2,
at the 'Atrium medisch centrum', Heerlen / NL

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Applied system solutions

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