Krantz Komponenten

Krantz Komponenten in Germany, an international leader in the manufacture of specialised air diffusion products for over 35 years, was the first to develop and introduce the swirl diffuser system and other high induction air distribution technologies to Europe and to the Pacific – initially to New Zealand and Australia and then to the rest of the Asia-Pacific region.

“An international leader in the manufacture of specialised air diffusion products for over 35 years”

Green Star

Krantz is committed to designing air distribution systems that provide a healthy and comfortable indoor environment in an environmentally responsible manner.

“Low temperature swirl diffusers have been developed specifically for the Asia-Pacific region’s five and six star Green Star sustainability buildings”

As an example a range of low temperature swirl diffusers has been developed specifically for the Asia-Pacific region’s five and six star Green Star sustainability buildings – a highly successful range which not only looks good but also provides both enhanced levels of comfort (ADPI > 90%) and high indoor quality (ACE ~ 1).

Consequently, Krantz floor swirl diffusers were used throughout the Civic Centre in Christchurch which was completed in 2010 and was the first project in New Zealand to be awarded the maximum 6-star green design rating.

Research and Development

Krantz has extensive laboratory facilities in Aachen, Germany, in which smoke, thermal comfort, indoor air quality and acoustical testing is conducted on products and full-scale mock-ups are set-up to develop and test air distribution products for the future. Krantz also has a smaller testing facility in Sydney, Australia which is often used for commercial mock-up tests for Asia-Pacific.
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Refer to www.krantz.co.nz
Ceiling Air Outlets

Swirl diffusers and adjustable induction diffusers discharge supply air with intense induction and high momentum which quickly mixes with the room air to provide uniform temperature distribution, enhanced thermal comfort and a draught-free environment during either cooling or heating.

Refer to www.krantz.co.nz for further information.

**RA-N3 Radial outlet** *(Available ex-stock Auckland)*

For installation flush with ceiling or freely suspended.

**Volume flow rate range** 12 – 400 l/s [90 – 1,440 m³/h]

**Nominal Sizes** DN 200, DN 350 and DN 500

**Discharge height** 2.4 – 4.5 m

**Technical layout to DS 4131**

**Features**
- Radial, horizontal jet dispersion, therefore high level of thermal comfort
- Available in 3 sizes, with square or circular face
- Large volume flow rate range for each size
- Low height
- Connection to flexible or spiral seam duct via reducer or connection box
- Easy screw fastening from below
- Can also be used as a return air inlet

**RA-V Adjustable radial outlet**

For installation flush with ceiling or freely suspended in high halls, particularly suitable for large thermal load fluctuations.

**Volume flow rate range** 61 – 1,530 l/s [220 – 5,500 m³/h]

**Nominal sizes** DN 200 – DN 500

**Discharge height** 2.5 – 13 m

**Technical layout to DS 4063**

**Features**
- Stepless discharge direction adjustment from horizontal to vertical, manually or with electric servomotor
- Radial jet dispersion
- Shorter heating-up period with vertical discharge direction
- Connection to spiral seam duct or via connection box
- Low height

**RA-V2 Adjustable radial outlet with core tube**

For installation flush with ceiling or freely suspended in industrial or commercial buildings, with continuous adjustment of air jets for heating or cooling.

**Volume flow rate range** 83 – 3,055 l/s [300 – 11,000 m³/h]

**Nominal sizes** DN 250 – DN 710

**Discharge height** 2.8 – 14 m

**Technical layout to DS 4122**

**Features**
- Stepless discharge direction adjustment from horizontal to vertical
- With self-acting thermostatic adjusting unit, or adjustment via electric servomotor or manual device
- With circular face; square face available on request
- Radial jet dispersion when cooling
- Shorter heating-up period with vertical discharge direction when heating
- Connection to spiral seam duct or via connection box

**Swirl diffusers and adjustable induction diffusers** discharge supply air with intense induction and high momentum which quickly mixes with the room air to provide uniform temperature distribution, enhanced thermal comfort and a draught-free environment during either cooling or heating.

Refer to www.krantz.co.nz for further information.
**Ceiling Air Outlets**

**DD-VK Variable twist outlet with core tube**

For installation flush with ceiling or freely suspended in high halls, particularly suitable for large thermal load fluctuations.

- **Volume flow rate range**: 125 – 3,050 l/s (450 – 11,000 m³/h)
- **Nominal sizes**: DN 315, DN 400, DN 600 and DN 710
- **Discharge height**: 3 – 15 m

Technical layout to DS 1256

- **Features**:
  - Discharge direction adjustable from horizontal to vertical, manually or with servomotor
  - Radial jet dispersion
  - Shorter heating-up period with vertical discharge direction
  - Connection to spiral seam duct or via connection box
  - Available with curved intake to meet high acoustic requirements

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**DD-VG Variable twist outlet with jet straightener**

For installation flush with ceiling or freely suspended in very high halls, particularly suitable for large thermal load fluctuations combined with a high temperature difference between supply air and indoor air when heating.

- **Volume flow rate range**: 170 – 2,500 l/s (600 – 9,000 m³/h)
- **Nominal sizes**: DN 315, DN 400 and DN 600
- **Discharge height**: 5 – 25 m

Technical layout to DS 4033

- **Features**:
  - Discharge direction adjustable from horizontal to vertical, manually or with servomotor
  - Radial jet dispersion
  - Shorter heating-up period with vertical discharge direction
  - Connection to spiral seam duct or via connection box
  - Same construction as DD-VL, but in addition with jet straightener
  - Very large penetration depth when heating

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**RL Radial slot outlet**

For installation flush with ceiling or freely suspended.

- **Volume flow rate range**: 20 – 330 l/s (75 – 1,200 m³/h)
- **Sizes**: 300 – 800
- **Discharge height**: 2.5 – 4.5 m

Technical layout to DS 4081

- **Features**:
  - Discharge direction manually adjustable from horizontal to downward incline
  - With square face
  - With square or circular bar array
  - Radial jet dispersion
  - Individual slots can be closed, thus enabling asymmetric jet dispersion
  - With rectangular connection box
  - Convenient screw fastening from below
  - Also available as return air inlet

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**IN-V Adjustable induction outlet**

For installation flush with ceiling and where manual adjustment of discharge direction is required.

- **Volume flow rate range**: 2.8 – 110 l/(s · m) (10 – 400 m³/(h · m))
- **Element width**: 15 or 28 mm
- **Length**: 1,050, 1,200, 1,350 and 1,500 mm
- **Discharge height**: 2.5 – 5 m

Technical layout to DS 4082

- **Features**:
  - Stable single jets with alternate or one-sided discharge, for all ceilings
  - Discharge direction adjustment from horizontal to nearly vertical
  - Type IN-V2: element width: 28 mm per row; also available in 2, 3 or 4 rows
  - Type IN-V3: element width: 15 mm; 1 row
  - With connection box and circular connection spigot
  - Also available as return air inlet
Sidewall Air Outlets

Highly inductive discharged supply air draws in and mixes with the room air to provide uniform temperature distribution to prevent cold air dumping or hot air stagnation during heating or cooling. The high momentum, but low velocity, airflow ensures most of the diffusers are suitable for both long and short throw applications.

Refer to www.krantz.co.nz for further information.

**DW-N2 Jet nozzle**

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

- **Volume flow rate range**: 11 – 599 l/s [40 – 2,120 m³/h]
- **Nominal sizes**: DN 60 – DN 250
- **Throw**: 3 – 50 m
- **Discharge height**: 2.5 – 10 m

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

**DW-V2 Swivel jet nozzle**

For installation on walls, pillars or galleries, where adjustment of discharge direction with servomotor or by hand is required.

- **Volume flow rate range**: 11 – 599 l/s [40 – 2,120 m³/h]
- **Nominal sizes**: DN 60 – DN 250
- **Throw**: 3 – 50 m
- **Discharge height**: 2.5 – 10 m

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 supply air duct or pressurized plenum, or connection with push-in end for spiral seam duct and with slip-on end for shaped part

**DW-V2-..-DR Twist nozzle**

For installation on walls, pillars or galleries, where adjustment of discharge direction with servomotor or by hand is required.

- **Volume flow rate range**: ≤ 395 l/s [1,420 m³/h]
- **Nominal sizes**: DN 60 – DN 250
- **Throw**: 1 – 17 m
- **Discharge height**: 2.8 – 10 m

Features:
- Nozzle with built-in twist element for shorter jet throws, especially for air distribution in narrow spaces
- 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
WL  Linear whirl outlet

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

Volume flow rate range  28 – 300 l/s [100 – 1 000 m³/h]
Nominal size  30, 45 & 65 mm (height of discharge chamber)
Jet length  4 – 16 m
Discharge height  2.6 – 6 m
Standard outlet length  1 – 1.1 m

Features
- Linear free jet consisting of 5 to 7 single jets, depending on type
- Discharge direction nearly horizontal
- Low sound power level
- 3 sizes for different penetration depths
- Slim type available for low plenum heights
- Connection box for flexible duct connection, or direct connection to main air duct

Technical layout to DS 4029

FA-VT  Multiplex outlet

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

Volume flow rate range  ≤ 43 l/(s · m) [155 m³/(h · m)]
Nominal size  65 mm
Height of outlet  140 mm
Discharge height  2.5 – 4 m

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: volume flow rate up to 51 l/(s · m) [185 m³/(h · m)]
- With connection box for flexible duct connection
- Also usable as return air inlet

Technical layout to DS 4064

FA-VK  Combined multiplex outlet

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.

Volume flow rate range  ≤ 43 l/(s · m) [155 m³/(h · m)]
Nominal size  65 mm
Height of outlet  260 mm
Discharge height  2.5 – 4 m

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

Technical layout to DS 4064

SW  Swivel jet outlet

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

Volume flow rate range  110 – 2 800 l/s [400 – 10 000 m³/h]
Nominal sizes  DN 315, DN 400, DN 600 and DN 710
Penetration depth  ≤ 30 m
Discharge height  4 – 6 m

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
- Available with ring for very long throws
- Connection to side of main supply air duct or to connection box

Technical layout to DS 1249
Displacement Outlets

Supply air, typically at 20°C, oozes from the displacement diffuser, which is mounted on or near the floor, to create a lake of cool air. Occupants are cocooned in the high quality air while heat and contaminants, displaced by convective currents and low level displacement ventilation, rise to a high level above the occupied zone where they are extracted close to the ceiling level.

Refer to www.krantz.co.nz for further information.

**Q-ZH Semi-circular displacement outlet**

- For mounting on walls or pillars.
- Features: Even, horizontal low-turbulence discharge flow, Connection from above or below, depending on type
- Volume flow rate range: \( \leq 360 \text{ L/s} \) [1 300 m³/h]
- Discharge velocity: \( \leq 0.25 \text{ m/s} \)
- Coverage: 5 – 15 m
- Sound power level: \( \leq 35 \text{ dB(A)} \) ref. 10⁻¹²W
- Diameter: 250 – 630 mm
- Height: 400 – 1 500 mm
- Technical layout to DS 4022

**Q-Z Circular displacement outlet**

- For free-standing placement in room.
- Features: Even, horizontal low-turbulence discharge flow, Connection from above or below, depending on type
- Volume flow rate range: \( \leq 720 \text{ L/s} \) [2 600 m³/h]
- Discharge velocity: \( \leq 0.25 \text{ m/s} \)
- Coverage: 5 – 15 m
- Sound power level: \( \leq 35 \text{ dB(A)} \) ref. 10⁻¹²W
- Diameter: 250 – 630 mm
- Height: 400 – 1 500 mm
- Technical layout to DS 4022

**Q-R Rectangular displacement outlet**

- Installation on the floor in front of a wall, parapet or pillar, or free-standing in room, or integration into furniture.
- Features: Single installation or in rows side by side, Even, horizontal low-turbulence discharge flow, Easy to integrate into furniture, Connection from above or below
- Volume flow rate range: \( \leq 445 \text{ L/s} \) [1 600 m³/h]
- Discharge velocity: \( \leq 0.25 \text{ m/s} \)
- Coverage: 5 – 15 m
- Sound power level: \( \leq 30 \text{ dB(A)} \) ref. 10⁻¹²W
- Technical layout to DS 4021
**Q-WL/Q-WR/Q-WK**  
**Wall displacement outlet**

Installation in upper section of room wall (ideally corridor wall) below ceiling.

**Type Q-WL**
- Volume flow rate range: ≤ 28 l/(s · m) [100 m³/(h · m)]
- Discharge velocity: ≤ 0.19 m/s
- Sound power level: ≤ 33 dB(A) ref. 10-12W
- Nominal diameter: DN 80, DN 100 and DN 125

**Type Q-WR**
- Volume flow rate range: ≤ 36 l/s [130 m³/h]
- Discharge velocity: ≤ 1 m/s
- Sound power level: ≤ 34 dB(A) ref. 10-12W
- Nominal diameter: DN 80, DN 100 and DN 125

**Type Q-WK**
- Volume flow rate range: ≤ 28 l/(s · m) [100 m³/(h · m)]
- Discharge velocity: ≤ 0.19 m/s
- Sound power level: ≤ 32 dB(A) ref. 10-12W

**Technical layout to DS 4055**

**Q-SH**  
**Plinth displacement outlet c/w built-in heater**

For air supply in rooms with raised floors; installation directly at wall base above a floor opening.

**Size 1**
- Height / Depth / Length: 150 / 150 / 1500/1000/1250/1500 mm
- Volume flow rate, max: 21 l/s · m [75 m³/(h · m)]
- Coverage: 6 m
- Sound power level: ≤ 30 dB(A) ref. 10-12W

**Size 2**
- Height / Depth / Length: 300 / 200 / 1500/1000/1250/1500 mm
- Volume flow rate, max: 42 l/s · m [150 m³/(h · m)]
- Coverage: 6 m
- Sound power level: ≤ 35 dB(A) ref. 10-12W

**Technical layout to DS 4059**

**Q-S**  
**Plinth displacement outlet**

For air supply in rooms with raised floors; installation directly at wall base above a floor opening.

**Volume flow rate range**: ≤ 28 l/(s · m) [100 m³/(h · m)]

**Coverage**: 6 m

**Sound power level**: ≤ 35 dB(A) ref. 10-12W

**Height**: 100 - 150 mm

**Depth**: ≤ 100 mm

**Length**: 475 - 1600 mm

**Technical layout to DS 4008**

**Features**
- Single installation or in rows side by side
- Horizontal discharge direction

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**Q-WL/Q-WR/Q-WK**  
**Wall displacement outlet**

**Features**
- Installation height 2 to 4 m
- Jet pattern downwards along the wall, then over the floor and finally vertical upflow through the occupied zone to the ceiling
- Minimum supply air temperature 16 °C
- Minimum distance to ceiling 120 mm
- Connection from behind
- Type Q-WL: Rectangular outlet
- Type Q-WR: Circular outlet
- Type Q-WK: Combined outlet with supply air and return air segments

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**Q-SH**  
**Plinth displacement outlet c/w built-in heater**

**Features**
- Single installation or in rows side by side
- Well suited for both room cooling and heating
- Discharge simultaneously horizontal and vertical when heating, otherwise horizontal

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**Q-S**  
**Plinth displacement outlet**

**Features**
- Single installation or in rows side by side
- Horizontal discharge direction
Floor Air Outlets

These swirl diffusers are designed to combine the concept of high volume flow rate mixed airflow in the occupied space, required to remove the high solar and IT equipment heat loads in many offices, with the displacement airflow concept of stratification above head height. Highly inductive supply air draws in large quantities of room air to produce a slow diverging airstream, diluted to room temperature, which maintains the stratification of displacement airflow to provide a draught-free uniform temperature distribution around the occupants. Refer to www.krantz.co.nz for further information.

**DB-A Adjustable floor swirl outlet**

- Installation in raised floors; air supply from below with high induction effect in floor zone.
- User adjustable airflow rate and air pattern (vertical or inclined air jet axis).
- Volume flow rate range: 10 - 60 l/s
- Nominal size: DN 200
- Features:
  - Vertically or diagonally directed high induction swirl (helical) discharge pattern.
  - Choice of three discharge configurations for high to low air motion, reconfigurable on site.
  - Dampers, to provide flow and discharge pattern regulation, user adjustable without removing core.
  - Visible indicator for visual determination of configuration, discharge pattern and airflow rate.
  - Low inlet pressure and quiet operation at an airflow rate of up to 60 l/s (216 m³/h or 127 cfm).
  - Shallow saw-tooth profile dust receptacle basket, extending just 97 mm (3.82 in) from the floor panel.
  - Mounting ring includes a quick mount double lipped rubber collar that wedges into the floor penetration for rapid installation (no access from below required).
  - Wide flange mounting ring clamps carpet to floor. Dust receptacle basket, as well as airflow and air pattern dampers made of black ABS.
  - Swirl discharge element and mounting ring made of high-impact polycarbonate, all parts are V0 fire rated (standard colour grey, custom colours available on request) or Aluminium (optionally powder coated).

**DB-D Rotary floor twist outlet**

- Installation in raised floors; air supply from below with large induction effect in floor zone, with inclined air jet axis.
- Volume flow rate range: 5.5 - 50 l/s (20 – 180 m³/h)
- Nominal sizes: DN 125 and DN 200
- Technical layout to DS 4074
- Features:
  - High-induction air jet inclined at 30° to vertical; rotatable outlet element for individual adjustment of air velocities at head level of seated person.
  - For installation with clamp insert in a through bore of the floor tile; DN 200 also designed for insertion in a stepped bore.
  - Twist element and clamp insert available in plastic & aluminium.
  - Depending on type, air outlet element fitted with lock against unauthorized removal.
  - Suitable for connection to a ‘pressurized plenum’ system or, with connection box, to a ‘duct connection’ system.
  - With distributor basket for even air supply, with or without throttle device (adjustable from room) for volume flow rate adjustment.

**DB-E Floor twist outlet**

- Installation in raised floors; air supply from below with high-turbulence vertical flow and large induction effect in floor zone.
- Volume flow rate range: 5.5 – 50 l/s (20 – 180 m³/h)
- Nominal sizes: DN 150 and DN 200
- Technical layout to DS 1146
- Features:
  - High-induction, stable vertical jet with symmetric rotation.
  - For installation either in a stepped bore or, with clamp insert, in a through bore of the floor tile.
  - Twist element and clamp insert available in plastic for DN 150 and in plastic or aluminium for DN 200.
  - Depending on type, air outlet element fitted with lock against unauthorized removal.
  - Suitable for connection to a ‘pressurized plenum’ system or, with connection box, to a ‘duct connection’ system.
  - With distributor basket for even air supply, with or without throttle device (adjustable from room) for volume flow rate adjustment.
**Assembly Air Outlets**

**Air Outlets for Assembly Rooms**

These diffusers are designed to supply air to theatres, auditoriums and assembly halls utilising the displacement or semi-displacement concept to create a high quality microclimate for occupants. Heat and contaminants rise by convection to stratify at a high level in the space where they are extracted to exhaust. Refer to www.krantz.co.nz for further information.

### Q-SR/Q-SL Step displacement outlet

For air distribution in assembly rooms with raised, stepped floors. Air supply from step front; linear and circular shape.

**Type Q-SR** (round frontal plate)
- Volume flow rate range
  - DN 80 \( \leq 10 \text{ l/s} \) [35 m³/h]
  - DN 100 \( \leq 16.5 \text{ l/s} \) [60 m³/h]
- Sound power level \( \leq 27 \text{ dB(A)} \) ref. \( 10^{-12} \text{W} \)
- Depth 80 mm

**Type Q-SL** (rectangular frontal plate)
- Volume flow rate range \( \leq 21 \text{ l/s} \times \text{m} \) [75 m³/(h \times m)]
- Sound power level \( \leq 15 \text{ dB(A)} \) ref. \( 10^{-12} \text{W} \)
- Length variable
- Depth 75 mm
- Standard height 120 mm

Technical layout to DS 4054

### DS Step twist outlet

For air distribution in assembly rooms with raised, stepped floors. Air supply from step front; three outlet options.

**Volume flow rate range**
- Type DS-DD-DN 63 \( \leq 3.3 \text{ l/s} \) [12 m³/h]
- Type DS-DD-DN 100 \( \leq 10 \text{ l/s} \) [35 m³/h]
- Type DS-RA-DN 100 \( \leq 10 \text{ l/s} \) [35 m³/h]
- Type DS-BA-DN 150 \( \leq 10 \text{ l/s} \) [35 m³/h]
- Sound power level \( \leq 18 \text{ dB(A)} \) ref. \( 10^{-12} \text{W} \)

Technical layout to DS 4065

### M-HP Microclimate fixed desk outlet

For air supply direct to the microclimate space of the seated person. Air outlet placement in desk front. Indoor air admixture.

**Volume flow rate range**
- (primary air flow) \( 5.5 – 11 \text{ l/s} \) [20 – 40 m³/h]
- Induction ratio approx. 1:3
- Max. sound power level 20 – 26 dB(A) ref. \( 10^{-12} \text{W} \)

Technical layout to DS 4098
A Truly Versatile Air Regulating Damper

The TRD air regulating damper was originally developed to control the volume and/or pressure within air conditioning and ducted ventilation systems and in the economisers used in temperzone air conditioning units.

‘Now used in many applications which seek to create a sustainable environment and reduce the energy-costs of buildings’

Today, owing to its reliability, modularity and modern engineered simplicity it is now used in many applications which seek to create a sustainable environment and reduce the energy-costs of buildings.

As an example hundreds of TRD dampers, anodised to suit the design, controlled by the Building Management System are installed in the 6-Green Star Christchurch Civic Building to regulate the airflow and cavity temperature of the double-skin thermal/solar buffer façade which is such a feature of this building.

For more information contact temperzone Air Distribution on 09 279 5250 or by email on Air.Distribution@temperzone.co.nz or visit www.temperzone.biz