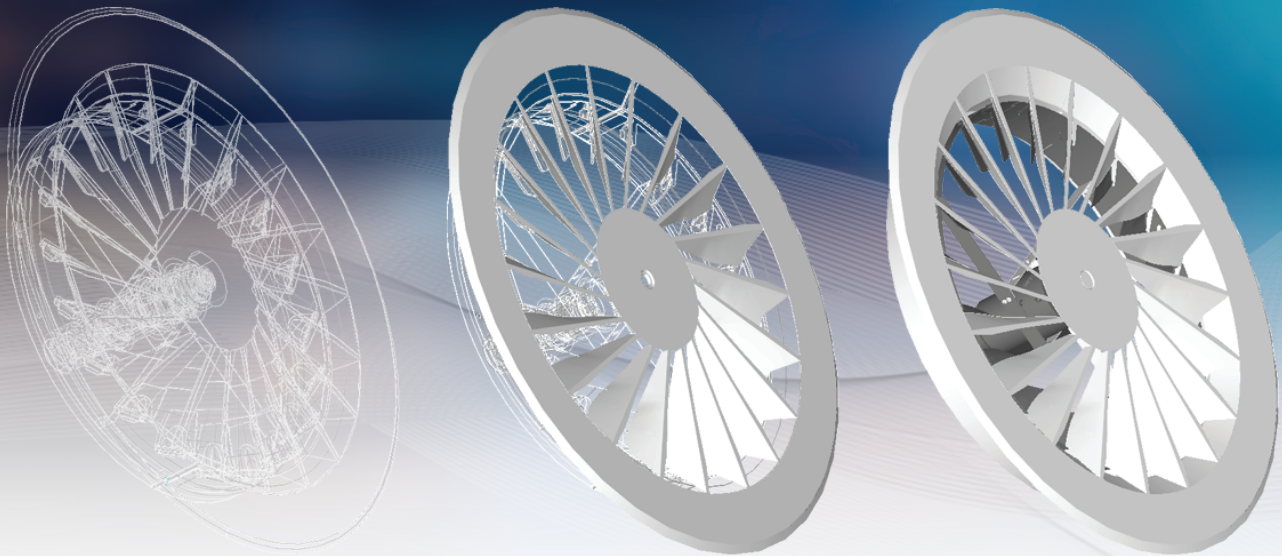


**SMARTAIR**<sup>®</sup>  
DIFFUSION

**PRODUCT CATALOGUE**



SMARTEMP® products provide high quality, premium air diffusion solutions that are well suited to demanding applications or where superior performance is required. This typically includes elevated comfort, enhanced indoor air quality, high energy efficiency, low pressure characteristics, quiet operation, or suitability to low temperature VAV applications or thermal displacement systems. Key SMARTEMP products have been developed for the higher heat loads and elevated humidity levels typically found in the tropics.

SMARTEMP also provides engineering and technical services such as selection programs, technical brochures and direct client advice in relation to specialised air diffusion performance, indoor air quality, diffuser layout, and associated acoustics and system design. These services include solution testing and airflow visualisation in SMARTEMP's Sydney laboratory.

## **SMARTEMP UNIQUE DESIGNS**

- The world's largest swirl diffuser, discharging up to 7,000 l/s – patents pending.
- The world's only constant throw side-blow VAV swirl diffuser – patents pending.
- The world's only floor swirl diffuser with user-adjustability of discharge direction, air pattern and airflow rate; also with constant throw height as airflow rate varies – patents pending.

LTG® *Aktiengesellschaft* in Germany designs and produces high end, highly energy efficient and sustainable, superior quality HVAC products for optimum performance, enhanced indoor air quality and superior comfort. LTG has a multitude of patented HVAC systems and solutions, and additionally offers bespoke system and project solution testing in its R&D facility and laboratory located in Stuttgart. Innovations from LTG include micro-jet linear diffuser technology with SystemClean™ to minimise ceiling soiling and reduce the risk of condensation. SystemClean™ enhances hygiene and reduces maintenance costs, whilst ensuring an on-going pristine aesthetic.



# PROJECTS



National University of Singapore



LinkedIn Offices, Sydney, Australia



Zaantheater, Zaandam, The Netherlands



Xiamen, Xinglin Bay Business Center, China



Alexander Theatre, Monash University, Melbourne, Australia



V&A Museum, Dundee, Scotland, United Kingdom



Calvary Convention Centre, Kuala Lumpur, Malaysia





West Mira Drill Rig, South Korea



Te Rapa, Hamilton, New Zealand



University of Lisbon, Portugal



Sofitel, Brisbane, Australia



IKEA, China



Turanga Library, Christchurch, New Zealand



Eternity Playhouse, Sydney, Australia



BBC HQ, Wales, United Kingdom





## SMARTEMP HSC-FD Fixed Helical Swirl Diffuser

The SMARTEMP HSC-FD has fixed horizontal discharge, with optional blanking segments for two or three-way blow patterns.

- Nominal neck sizes: DN250, DN355, DN500.
- Maximum permissible  $\Delta T$  when cooling is -16 K.
- Suitable for VAV with turndown to 25%.
- Square or round face available.
- Aesthetic matches HSC-AD.
- High capacity, highly inductive discharge for high comfort.
- Discharge height: 2.4 - 4.5m



## SMARTEMP HSC-AD Adjustable Helical Swirl Diffuser

The SMARTEMP HSC-AD offers discharge direction adjustment from horizontal to vertical, suitable for cooling and heating in high spaces.

- Nominal neck sizes: DN250, DN355, DN500, DN710, DN1000.
- Adjustable guide ring with guide vanes (patents pending).
- Manual adjustment with optional thermal or electric adjustment kits.
- Low and substantially constant pressure loss for all direction settings.
- Low profile design.
- Square or round face available, depending on size.
- Aesthetic matches HSC-FD.
- Highly inductive swirl discharge for high comfort.
- Discharge height: 2.5 - 15 m.



## SMARTEMP SSC-AD Slotted Swirl Diffuser

The SMARTEMP SSC-AD offers manually adjustable discharge direction from horizontal to vertical, as well as manually adjustable discharge pattern from 4-way to 3-way and 2-way blow.

- Nominal face sizes: 300, 400, 500, 600 mm.
- Maximum permissible  $\Delta T$  when cooling is -16 K.
- Suitable for VAV with turndown to 25%.
- Vanes with pilot slots provide high capacity - patents pending.
- Vanes optionally adjustable - discharge vertical, horizontal or closed.
- Circular or square radial array options.
- Highly inductive swirl discharge for high comfort.

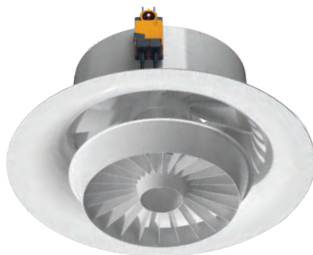




## SMARTEMP LMC-AD Linear Multistream Ceiling Diffuser

The SMARTEMP LMC-AD is a multi-stream linear slot diffuser with adjustable discharge direction, from horizontal to vertical, that is available with 1-way or 2-way discharge patterns.

- One to six slots available, with or without side flanges.
- Maximum permissible  $\Delta T$  when cooling is -16 K.
- Suitable for VAV with turndown to 25%.
- Highly inductive multi-stream discharge provides high comfort.
- Low profile, slim architecturally appealing design.
- Each barrel has five adjustment settings from horizontal to vertical, and can be closed.
- Discharge direction is adjusted by means of a vane in each barrel, providing easier adjustment when compared to any other high induction linear diffuser.

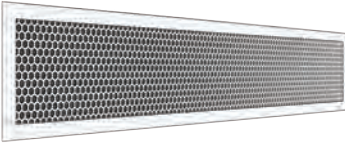


## SMARTEMP JSC-AD Jet Swirl Diffuser

The SMARTEMP JSC-AD offers adjustable discharge direction from horizontal to vertical for extremely high discharge heights of up to 25 m. In cooling mode, horizontal discharge with strong swirl produces high induction. In heating mode, concentrated vertical supply air is discharged to achieve exceptionally long downward throw.

- Nominal neck sizes DN400 and DN630.
- Volume flow range 300 - 2,400 l/s.
- Discharge height 8 - 25 m.
- Very large penetration depth when heating.
- Adjustable discharge direction either manually or with actuator.

## SMARTEMP PMW-AD Perforated Multistream Wall Diffuser



The SMARTEMP PMW-AD is a side-wall diffuser with a patent pending design that provides high levels of draught-free thermal comfort. It is well suited to such spaces as hotel rooms, apartments, restaurants and commercial offices.

- The diffuser discharges a multitude of individual, high momentum air jets, each one of which is highly inductive.
- Throw, spread and discharge direction (up, down, left and right) adjustable through the perforated diffuser face via rotatable hexagonal nozzle plates - patents pending.
- Each hexagonal nozzle plate may be rotated through 360 degrees.
- Perforated face design is aesthetically pleasing and easy to clean.

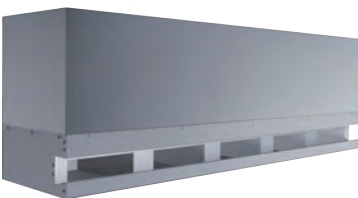
## SMARTEMP CNW-AD Circular Nozzle



The SMARTEMP CNW-AD provides side-blow discharge with extremely long throw and exceptionally quiet operation.

- Nominal neck sizes: DN200, DN250, DN315, DN400, DN630.
- Nozzle can be swivelled over an arc of 60° (+/-30° from central axis).
- Swivel adjustment manual, electric or thermal.
- Discharge direction adjustment is typically used to swivel the nozzle upwards for cooling and downwards in heating mode.

## SMARTEMP LSW-FD Linear Swirl Diffuser



The SMARTEMP LSW-AD has a row of rectangular chambers located in a recessed slot of galvanised sheet metal. Each chamber discharges a pair of highly inductive, counter-rotating supply air vortices.

- Maximum throw 12-16 m (LSW-250, LSW-300 respectively).
- Stable discharge characteristics.
- $\Delta T_{\text{supply-room}} = -12 \text{ K}$ .
- Recessed installation possible for premium installations.
- Connection from above, below or behind.



## SMARTEMP LMW-AD Linear Multistream Wall Diffuser

The SMARTEMP LMW-AD is a multi-nozzle linear slot diffuser with adjustable discharge direction that can be flush mounted to the side of a wall or bulkhead.

- Each nozzle can be easily adjusted to alter discharge direction up or down.
- 1 to 4-row configuration.
- Maximum throw of 8 m.
- Maximum  $\Delta T$  in heating +8 K (<3 m installation height), resp +5 K (<4 m installation height).
- Maximum  $\Delta T$  in cooling -12 K.





## SMARTEMP ISF-AD Inclined Floor Swirl Diffuser

The SMARTEMP ISF-AD is a high induction, low air velocity floor swirl diffuser to optimise occupant thermal comfort in “task-ambient” underfloor air distribution applications.

- Nominal neck diameter: DN200.
- Face material: aluminium or polycarbonate.
- Vertical or inclined discharge direction.
- User adjustment of both diffuser airflow rate and airflow direction.
- Inclined pattern with substantially constant throw height regardless of diffuser damper airflow setting - no "cold feet / warm head".
- Optional electric actuator available for VAV applications.
- Patents pending.



## SMARTEMP ASF-AD Auditorium Floor Swirl Diffuser

The SMARTEMP ASF-AD is suited to auditorium displacement applications in which air is supplied from under seats. The highly inductive swirl discharge is inclined towards the rear to ensure draught-free air supply in the ankle regions of seated occupants.

- Nominal neck diameter: DN200.
- Face material: aluminium or polycarbonate.
- Draught-free design: swirl discharge inclined towards rear - away from sensitive ankle regions.
- Airflow adjustable from 40-100% via integrated damper.



## SMARTEMP CSS-FD Auditorium Step Swirl Diffuser

The SMARTEMP CSS-FD is suited to auditorium displacement applications with air supply from the vertical step faces behind tiered seats.

- Nominal neck sizes: DN100, DN125.
- Intense mixing of room air into the supply air stream to raise the supply air temperature and to ensure low ankle-level velocities.
- Creates a low level microclimate of enhanced indoor air quality for auditorium displacement applications.



## HARMONY FSD Floor Swirl Diffuser

The HARMONY FSD is a polycarbonate floor swirl diffuser with vertical discharge and user-adjustable airflow rate from 100% to one of a multitude of preset stops (30%, 35%, 40%, 45% or 50%). The diffuser is suitable for use in pressurised access floor air distribution systems. High induction floor level discharge ensures draught-free cooling and extremely effective heating performance.

- Vertical air pattern with high induction airflow.
- Combined damper / detritus tray with user-adjustable damper positioning.
- Minimum airflow stop at 30%, 35%, 40%, 45%, 50% or 100%.
- Heavy duty glass reinforced polycarbonate construction, designed to resist central loads up to 400 kg.
- The mounting arm attached to the trim ring is designed for rapid and secure press fit installation in raised floor panels.



## LTG LDU Linear Multistream Floor Diffuser

The LTG Linear Multistream Floor Diffuser, is a 1, 2 or 3 slot linear diffuser with alternating jet discharge to produce vertically directed low velocity multi-stream airflow along facades with displacement airflow spread across the floor.

- Alternating multi-jets.
- High induction multi-stream air pattern.
- Flanged side and end profiles.
- Installation flush with floor.



## LTG HFB Floor Induction Unit

Induction units feature many advantages, such as high cooling and heating capacities, low sound levels, long service life and low maintenance requirements. Optional on-demand control, thanks to LTG's SmartFlow technology, for even greater comfort and efficiency.

- Aerodynamically shaped nozzles for lower sound level and higher induction.
- Optimised dimensioning for users due to flexible nozzle assembly.
- Air guiding elements for optimised, patented LTG mixed displacement air ventilation, adjustable to a variety of room geometries.

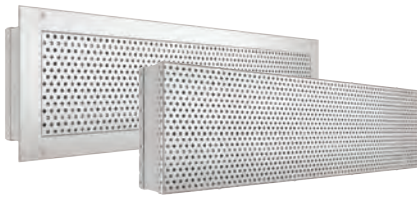




## SMARTEMP RDW-FD Rectangular Displacement Diffuser

The SMARTEMP RDW-FD produces a low velocity horizontal airflow pattern from a perforated rectangular discharge face made of powder coated galvanised steel.

- The perforated front is removable to access the air distribution mat and flow equalisation plate.
- The outlet can be installed fully exposed with the plenum powder coated, or installed in a wall with a galvanised sheet-metal plenum finish, or the displacement cassette may be integrated into a builder's plenum or into joinery.
- The front panel of the unit is optionally available in 1.5 mm thick galvanised steel for demanding spaces like sports centres or schools.



## SMARTEMP ADS-FD Auditorium Displacement Diffuser

The SMARTEMP ADS-FD, mounted in the vertical face of auditorium steps, produces low level displacement airflow for enhanced indoor air quality.

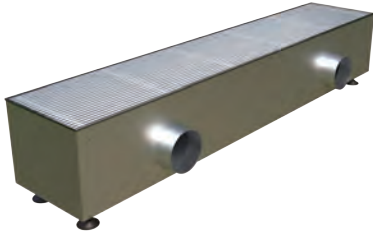
- Displacement outlets allow supply air at 19 to 20°C to ooze out with minimal turbulence.
- Occupants are enveloped in a cool fresh microclimate of supply air discharged directly under each seat.
- Quiet operation.



## SMARTEMP DDF-FD Drum Displacement Diffuser

The SMARTEMP DDF-FD produces low turbulence displacement airflow in a 360° pattern from the diffuser.

- Nominal neck sizes: DN250, DN315, DN400, DN500.
- Displacement outlets allow supply air at 19 to 20°C to ooze out with minimal turbulence.
- Connection from above or below.



## SMARTEMP BDF-FD Bar Displacement Diffuser

The SMARTEMP BDF-FD is suitable for air supply into rooms with raised floors. Air is spread evenly across a double-layer displacement cassette and oozes out of a heavy duty bar grille with minimal mixing, to produce a low velocity, low level lake of high quality supply air that floods the floor with displacement airflow.

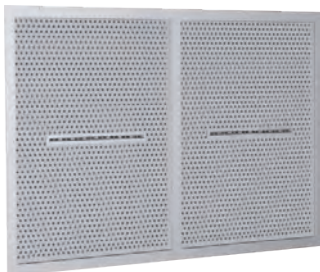
- Available in widths of 100, 200, 300 mm.
- Coverage of up to 7 m.
- Flanged and flangless designs available.



## SMARTEMP CP-AD Cylindrical Plug-flow Diffuser

The SMARTEMP CP-AD is designed to be used in industrial areas with floor to ceiling heights of up to 10 m. These diffusers can be installed freely suspended or mounted to columns or walls. The discharge direction can be adjusted from horizontal to vertical - ideal for both cooling and heating applications.

- Low-turbulence displacement flow.
- Radial discharge direction.
- Stepless adjustment of discharge direction from horizontal to vertical.
- Adjustable discharge direction either manually or with electric or thermal actuator.
- Well suited for cooling and heating from up to 3 m discharge height.



## SMARTEMP FPW-FD Firing Range Plug-flow Wall Difuser

The SMARTEMP FPW-FD provides an even plug-flow air pattern throughout the cross-section of the space. This protects the occupants of indoor firing ranges from contaminants such as vaporised lead and powder.

- Even airflow pattern throughout the cross-section of the space.
- Recommended velocity across the room height is 0.25-0.33 m/s.
- Integrated adjustable slot diffusers provide forward momentum, stabilising the air stream.
- The height and width of Smartemp shooting range air supply systems are designed individually on a project specific basis.





## SMARTEMP CACB Chilled Active Chilled Beam

The SMARTEMP CACB is a high capacity, ceiling mounted active chilled beam, suitable for cooling only or cooling and heating applications.

- Nominal width: 600 mm.
- Nominal length: 1200, 1500, 1800 mm.
- Air pattern controller: adjustable left-right guide vanes optionally available.
- 2-pipe or 4-pipe configurations.
- Thermally insulated primary air plenum.



## LTG VKB Floor Fan Coil

LTG fan convectors with cross-flow technology are characterised by a particularly even and large-area flow through the heat exchanger. Low pressure loss and low noise level with high cooling or heating output.

- Low-noise and efficient thanks to energy-saving high-output fan (EC motor optional).
- Compact size for use even under limited room conditions (low profile version).
- Perfect thermal shielding due to direct air supply at the facade and mixed/displacement airflow.



## LTG HFF Active Chilled Beam

Side-blow active chilled beam for efficient and silent ventilation, heating and cooling without a fan.

- Extremely quiet even at maximum power: 24 dB(A).
- Maximum thermal comfort: induction control for individualised user control, adjustable air baffle elements.
- Very low operating costs: energy-saving, maintenance-free and hard-wearing induction technology.



For additional information, please contact [info@smartemp.com](mailto:info@smartemp.com)

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