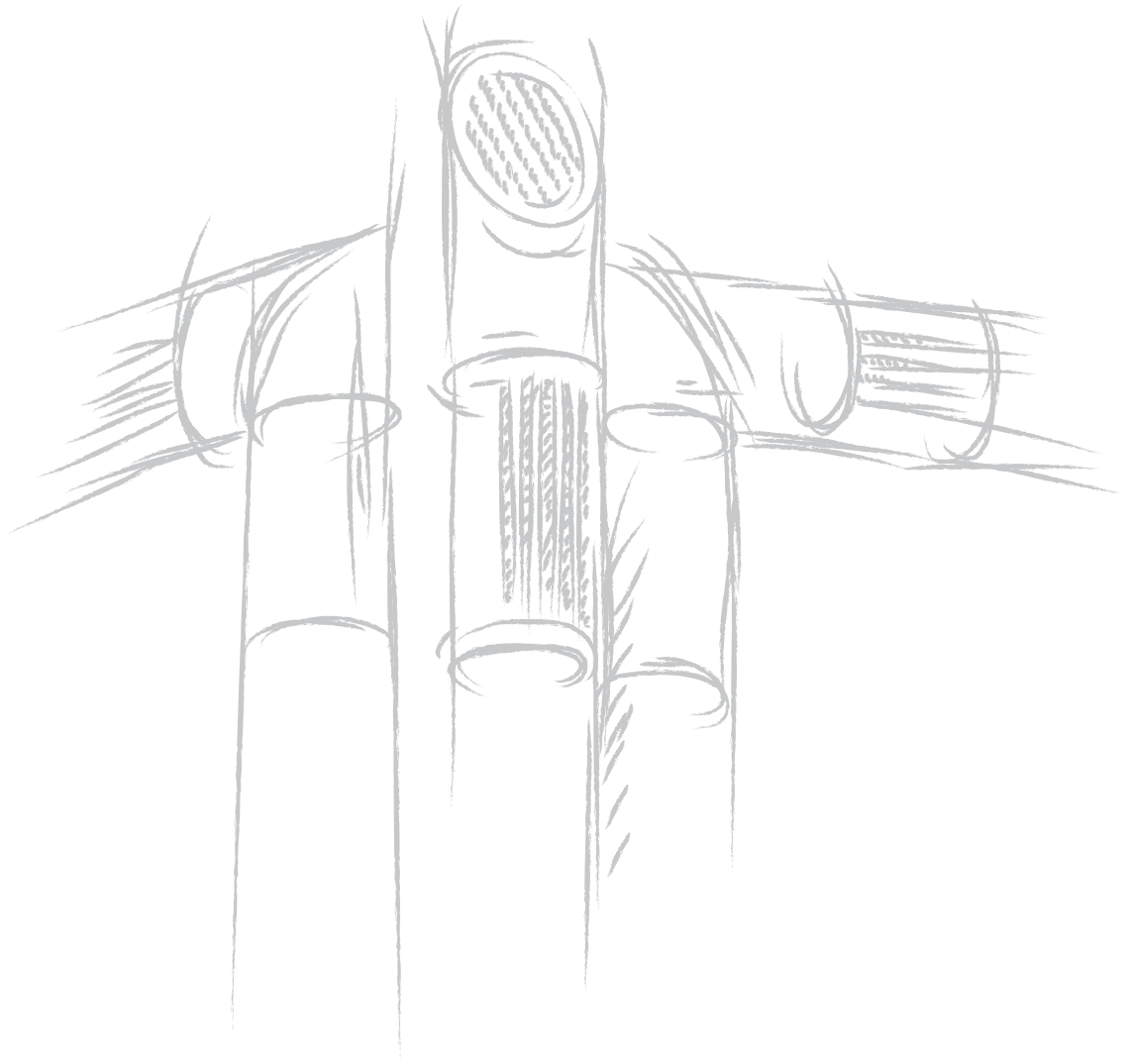


new technologies in air distribution

nad  
KLIMA





Creator of new technologies in air distribution



NAD Klima diffusers are the result of a manufacturing process in which our experts successfully meet your requirements and solve your challenges.

Our range of equipment comprises the latest technological innovations. Our passion for work well done and digital precision ensure that the resulting product will guarantee the highest standards.



Manufactured in Sherbrooke, Quebec, (Canada) and distributed all across North America, our products raise the bar in terms of standards of quality, efficiency and energy savings. Leader in air diffusers for LEED projects, NAD Klima is always striving to provide superior comfort to consumers.

In these pages, NAD Klima presents a series of achievements that are the pride of an inventive, innovative and devoted team.

Our goal is not only to supply diffusers, but to create outstanding results.

We are NAD Klima.

**Two important factors to consider when choosing a diffuser :**

- $\Delta T_{xy} / \Delta T_o$  : The temperature difference between room and air blast in an occupied zone in relation to the initial temperature difference between the discharge air at the diffuser and that of the room.
- $X_{critic}$  : The distance travelled from the ceiling by the cooling airstream.

Ratio for the maximum temperature difference in the air jet in the occupied zone

$$\frac{\Delta T_{xy}}{\Delta T_o} \leq 0.1$$

The diagram illustrates the air flow characteristics of a diffuser. On the left, a top-down view shows a diffuser with three rectangular outlets. The distance from the center of the diffuser to the center of each outlet is labeled 'x'. Below the diffuser, a blue shaded area represents the air jet, with a vertical dimension 'y' indicating the height of the air jet. On the right, a side view shows the diffuser with a blue shaded air jet extending downwards. The horizontal distance from the diffuser to the point where the air jet reaches the occupied zone is labeled 'x\_crit [m]'.



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**8 Éducational**  
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College  
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**17 Institutional**  
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## Achievements in the Cultural Sector



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### Communications

- 5 TVA television network, Montreal, Qué.

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### Arts

- 6 Orford Arts Centre, Orford, Qué.
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in green have  
received their  
LEED  
accreditation

### Other Achievements

- Société Radio-Canada TV network, Montreal and Sherbrooke, Qc  
*Société Radio-Canada TV network, Rimouski, Qc*  
Maison des arts Desjardins, Drummondville, Qc  
Musée de la civilisation, Terrasse Dufferin, Québec, Qc  
École Saint-Luc auditorium, Montreal, Qc  
Centre des arts Alcoa, Baie Comeau, Qc.  
Foreman's Art Gallery at Bishop's University, Sherbrooke, Qc  
Musée Huron-Wendat, Wendake, Qc  
Musée de la mer, Havre-Aubert, Îles-de-la-Madeleine, Qc  
Bibliothèque Memphrémagog (municipal library), Magog, Qc  
Bibliothèque de Ste Thérèse (municipal library), Ste-Thérèse, Qc  
Global TV network, Montreal, Qc





## TVA, Television network Montréal, Qué.



The TVA group is the most important private French-language broadcaster of entertainment, information and public affairs productions in America. At its headquarters in Montreal, the offices have had their ventilation system recently updated.

True to its nature, TVA's press room is a veritable hive of activity. Journalists now enjoy the benefits of ventilation using DAL 358 swirl diffusers, featuring high induction and an optimal ambient air mix. The white diffusers blend into the ceiling ductwork.

In the offices, studios and also in the press room, the RRA duct diffusers are unobtrusively situated at the top of the windows. By creating a thermal air barrier, hot or cold depending on the season, they work in unison with the DAL 358 to maintain a uniform room temperature.



RRA Duct diffuser





SAL 35 Linear diffuser



## Orford Arts Centre Orford, Qué.



The site of the Orford Arts Centre is highly valued for its cultural and architectural heritage. The dynamic forms of the pavilions and the originality of architect Paul-Marie Côté's (1921-1969) methods have earned these buildings a place of honour on the list of Québec's modern architectural masterpieces.

For example, the Gilles-Lefebvre concert hall is of particular interest: built in 1960, it is constructed in the shape of a grand piano.

It was with respect for Côté's architecture and the hall's intended musical vocation that the architects of Cimaïse-FBA proposed linear diffusers with SAL acoustic plenum. The requirements of high airflow volume and low sound power posed a challenge that was met here with efficiency and discretion.

In the adjoining service areas, the RRA diffusers, despite their bold, modern look, make no concession to their technical capacities



## Achievements in the Educational Sector



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### Universities

9 Université du Québec at Rimouski, Lévis campus, Lévis, Qué.



10 **Perform Centr, Concordia University, Montréal, Qué.**



12 **PEPS Ununiversité Laval, Québec, Qué.**

13 Pavillon Vachon, Université Laval, Québec, Qué.

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### Colleges

14 Cégep de Granby, college library, Granby, Qué.

### Technology Transfer Centre



16 **Le Centre géomatique du Québec, Chicoutimi, Qué.**

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### Other Achievements

ISIS Centre for Excellence, Université de Sherbrooke, Sherbrooke, Qué.

Pavillon de recherche en sciences humaines et sociales,

Université de Sherbrooke, Sherbrooke, Qué.

Université du Québec en Outaouais, Pavillon J, campus at St-Jérôme, Qué.

Bishop's University, Sherbrooke, Qué.

Université Laval, Pavillon J.-C. Bonenfant, Québec, Qué.

Cégep de l'Abitibi-Témiscamingue (college), Rouyn-Noranda, Qué.

Cégep de l'Outaouais (college), Campus Félix-Leclerc, Gatineau, Qué.

Cégep de Sherbrooke (college), Sherbrooke, Qué.

Collège Montmorency, Laval, Qué.

Cégep de Maisonneuve (college), Montreal, Qué.

Cégep de Chicoutimi (college), Chicoutimi, Qué.

Bibliothèque Gilles-Vigneault (college library), Cégep de Rimouski, Rimouski, Qué.

Cégep régional de Lanaudière (college), Joliette, Qué.

Cégep de St-Hyacinthe (college), St-Hyacinthe, Qué.

Cégep Limoilou (college), Québec, Qué.

Séminaire de Sherbrooke (college), Sherbrooke, Qué.

CFP des Riverains (vocational centre), Repentigny, Qué.

**Centre des technologies en aérospatiale (aerospace technology), Longueuil, Qué.**

Complexe sportif, École secondaire de La Ruche (high school), Magog, Qué.

Aréna, Centre Père-Marquette (sports centre), Montreal, Qué.

École secondaire La Ruche (high school), Magog, Qué.



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UQAR  
Lévis, Qué.



Inaugurated in 2007, the new building erected for l'Université du Québec à Rimouski, Lévis campus, was intended to resolve available space shortages for research and teaching purposes that had been plaguing the campus authorities for years. The new building was to showcase the use of the latest techniques in the field of energy efficiency. Thus, geothermal and solar energy were favoured for heating the building. In fact, the campus has become the largest geothermic complex in Quebec.

The NAD Klima DRS and DAL 358 high induction diffusers were selected.



Because of their high induction power, double that of conventional diffusers, the DRS and DAL 358 succeeded in reducing the airflow rate by 25% while conforming to the standards of recirculated air.





SAL 35 Linear diffuser

## The Perform Centre, Concordia University Montréal, Qué.



The Perform Centre at Concordia University is a 8,000 m<sup>2</sup> state-of-the-art clinical research facility. Entirely dedicated to promoting better health through prevention, the building was designed as a research and teaching facility, while providing community services for the area.

The Perform Centre's design is significant for its bold use of colour, integration of materials and innovative lighting concept.

"We have paid particular attention to the use of natural light and windows to harmonize the various parts of the building", explains Dino Barbarese, one of the architects who designed the Perform Centre.

Sobriety of form and long flowing lines required materials that could sustain this design.

The flat surface of the SAL linear diffuser seems to merge with the wall, creating continuity, even underlining it.

In the service zones, the DAL 358 high induction diffusers harmonize with the sobriety of the design.

*The Perform Centre was awarded Québec's Grand Prix du Design in the Healthcare category on December 14, 2011.*

Architects : Saia Barbarese Topouzanov architects  
Engineers : Dupras-Ledoux, Associates



PEPS at Université Laval  
Québec, Qué.  
Indoor soccer-football centre



A privileged place for physical activities and sports since 1970, the PEPS at Université Laval has added a centre for indoor soccer-football to its installations.

This new centre has propelled Laval to the top of the list of state-of-the-art sports complexes in Quebec, and even in all of Canada.

The building is covered with a large curved roof comprised of a laminated wood frame supported by 13 variable-inertia arches. Steel elements are used to secure the spring-back beams and the wooden arches, creating a hybrid structure. The RDD duct diffusers are integrated directly into the metal structure of the building in order to appear virtually invisible.

The use of wood materials was a requirement of Université Laval in that the institution wanted to construct a sustainable building. The aesthetic and acoustic qualities of this structure are some of the major reasons this stadium is a remarkable achievement. Natural ventilation of the building is enhanced by its sculpted shape, its opening windows and its westerly exposure, providing the current of dominant summer breezes. The building easily cools in summer, maximizing the intake of cool air for the players' comfort.

The array of "green" measures incorporated into the stadium's design ensure important savings in the management of the building.



Architects : H<sup>2</sup>A  
Engineers : Consortium CIMA - Genivar



RDD Duct diffuser





Université Laval,  
Québec, Qué.  
Pavillon Alex-Vachon



The revamping of the Pavillon Vachon at Université Laval in Québec City was completed with the greatest sobriety. Contrasting high induction DAL 358 diffusers boldly contrast against a stark white ceiling, then meeting a wall of lively colour. The high induction caused by these diffusers allowed to reduce their number.

In secondary areas, along windows, the RRA duct diffusers unobtrusively blend in with the various elements in place.



RRA Duct diffuser

DAL 358 Swirl diffuser

Architects : St-Gelais, Montminy, + Ass.  
Engineers : Roche Ltd, Groupe-conseil



RRA Duct diffuser



## Cégep de Granby's college library Granby, Qué.



Cégep Granby's college library was inaugurated on May 10, 2011. In order to meet with the latest Québec library standards, the extension called for adding 875 m<sup>2</sup> spread out on three levels. No effort was spared in order to supply this new space with the latest technological innovations.



Modern in design and crisp and sleek in appearance, the new library comprises a glass atrium, providing users with pleasant natural light. Among other things, the extension had to factor in the ongoing energy conservation program with an ambitious goal of heat and light savings totalling \$110,995 annually.

Optimizing full ceiling space by avoiding the conventional ceiling-to-floor gap, usually reserved for mechanical purposes, was made possible due to the use of the RRA duct diffusers. Their attractive design allows for a very apparent use of these components without sacrificing any efficiency.



Le Centre de géomatique du Québec  
Cegep de Chicoutimi  
Chicoutimi, Qué.



The new building housing the Centre de géomatique du Québec has been awarded the "silver" rating for a LEED certification (Leadership in Energy and Environmental Design) by the Canadian Green Building Council. Entirely designed and manufactured in Canada, NAD Klima diffusers contribute to better indoor environments (EAp2, EAcl, QEIp1, QEIc2, QEIc7.1).

Heating with RRA duct diffusers have made possible homogeneous air distribution in cooling mode and elimination of peripheral heating of the rooms in heating mode.

In common areas, the DAL 358 swirl airflow diffusers create the necessary induction for the users' comfort.



DAL 358 Swirl diffuser



NAD Klima is a member of the Canadian Green Building Council.



RRA Duct diffuser

## Institutional Achievements



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### Governmental



"Gold"

**18 Public Works and Government Services Canada building, Québec, Qué.**

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### Municipal

19 Pavillon Mellon (sports complex), Saguenay, Qué.

20 Centre de foires de Sherbrooke (exhibition centre), Sherbrooke, Qué.

22 Cité des arts et des sports de Salaberry-de-Valleyfield, Qué.

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### Other achievements

**Centre récréoaquatique (aquatic centre), Blainville, Qué.**

Pavillon St-Sacrement (community centre), Québec, Qué.

**Société de l'assurance automobile du Québec, head office, Montreal, Qué.**

Government of Canada, Place de la Cité, Sherbrooke, Qué.

Centre de foires ExpoCité (exhibition centre), Québec, Qué.

Palais de justice Thetford Mines (court house), Thetford Mines, Qué.

Centre communautaire de Drummondville-Sud, Drummondville, Qué.

Centre de soccer multifonctionnel de Terrebonne, Terrebonne, Qué.

Hydro-Québec, Trois-Rivières, Qué.

Hydro-Québec, St-Bruno, Qué.

Hydro-Québec, Lebourgneuf, Québec, Qué.

**Service de sécurité incendie de Sorel-Tracy, Q. G. (fire dept. H.Q.), Sorel-Tracy, Qué.**

Société immobilière du Québec, (government premises provider) Rivières-des-Prairies, Qué.

Institut de recherches d'Hydro-Québec (scientific research), Varennes, Qué.

Centre d'interprétation de la nature du lac Boivin, Granby, Qué.

Société de l'assurance automobile du Québec, Montreal, Qué.

M.R.C. de Montmagny (regional municipality), Montmagny, Qué.

**Complexe de soccer - Parc Chauveau, Montreal, Qué.**

Aréna Pierre "Pete" Morin, Lachine, Qué.

**L'Atrium, Québec, Qué.**

Centre aquatique de Drummondville, Qué.

Centre aquatique Côte St-Luc, Montreal, Qué.

**Complexe sportif et communautaire Benny, Montreal, Qué.**

**Sûreté du Québec (Quebec police regional H.Q.), MRC d'Avignon, Qué.**



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## Public Works and Government Services Canada

Québec, Qué.



This imposing building, situated on Pointe d'Estimauville in Québec City, features numerous windows, permitting daylight to inundate the grand entrance hall. The new federal building's design was conceived with a strategy of energy recovery in mind. In order to maximize energy efficiency, the designers used geothermics, variable airflow rates and thermo-aerodynamics.

All the in-house equipment contributes to the energy balance of the building. Among other features, the heat generated by the internal zones, such as the computer server room, is recovered and redirected toward peripheral zones of the structure. Heating the entire construction requires only 16 geothermal wells.

In order to achieve efficient ventilation, the architects and engineers involved chose high induction diffusers (the DAL 358), in this way optimizing the energy performance of the building (EAp2, EAc1, QElp1, QElc2, QElc7.1).

Successfully harmonizing with the ceiling of the building, the SAL 35 allows for a better handling of the heat load emanating from the abundance of windows.



Architect : Pierre Martin  
Engineers : Thermecca / Roche Ltd, Groupe-Conseil



SAL 35 Linear diffuser

Pavillon Mellon  
Saguenay, Qué.



Architect : Léo Lapointe  
Engineer : Genivar

Pavillon Mellon is part of a project launched by the city of Saguenay to refurbish Jacques-Cartier park.

The building, basically a wooden structure, houses services for the general community as well as for more than 13 clubs, organizations and sports associations from the Saguenay.

The RRA was the diffuser of choice in this case due to its great ambient air destratification capacity. Moreover, its aesthetic appearance made it possible to leave it visible, contrary to conventional ventilation components.



RRA Duct diffuser





RDD Duct diffuser



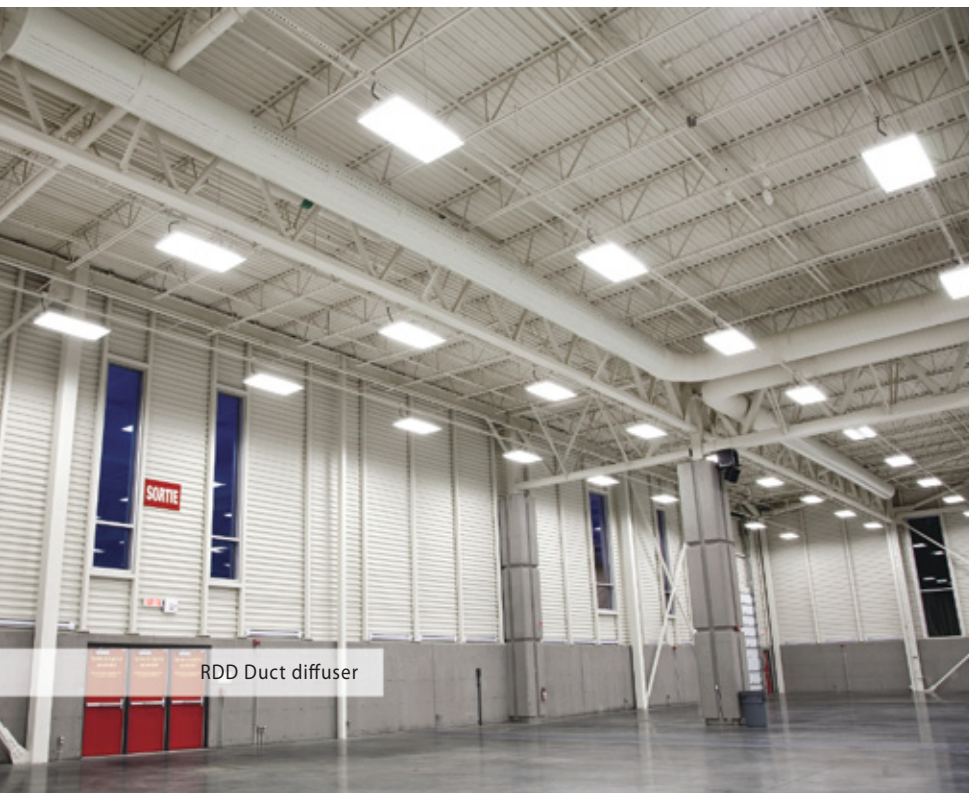
Centre de foires de Sherbrooke  
(exhibition centre)  
Sherbrooke, Qué.



Newly erected near Sherbrooke's downtown, this exhibition centre is expected to be a unique gathering and exhibition place for the region, featuring a very versatile layout plan for space rentals.

The area totals 103,000 sq ft. The main exhibition hall, totalling 60,000 sq. ft., is designed with the most stringent standards of functionality, using the very latest in equipment. It can be divided into three separate halls in order to present separate events at the same time. The great hall is equipped with an RDD duct system, allowing for ambient air homogenization and reduction of temperature range at all heights.

Using NAD Klima diffusers has dramatically reduced construction costs as well as energy operating costs.



Architect : - Design : CCM<sup>2</sup> - Côté, Chabot, Morel Architects  
- Realisation : ArchiTech Design Inc.  
Engineers : EXP - Sherbrooke

## Cité des Arts et des Sports Valleyfield, Qué.



The refurbishing and expanding of this arts and sports complex in Salaberry-de-Valleyfield were completed with the 2011 Jeux du Québec sports competitions in mind.

In order to meet the standards set for sports competitions, the swimming pool, the spring board and dehumidifying system had to undergo renovations.

The existing concrete structure represented a major obstacle for the layout of the ventilation system. The architectural team decided upon the most adequate solution for this challenging situation.

The RDD visible duct diffuser was the system of choice for this project. Certainly, it was chosen for its aesthetics, but above all, for its performance. This performance meets all standardized parameters due to an exacting perforation system that destratifies ambient air by using high induction and, in this manner, also homogenizes the room's humidity. The RDD ensures air diffusion along the windows without accelerating the swimming pool's water evaporation.







RDD Duct diffuser

## Commercial Achievements



### Financial Services

25 **SSQ Financial group, Québec, Qué.**

### Services

26 **CIMA + (engineering firm), Sherbrooke, Qué.**

### Sports and Recreation

28 **Complexe sportif Thibault-GM, Sherbrooke, Qué.**

### Food Industry

30 **Supermarché-santé Avril (supermarket), Quartier Dix30, Brossard, Qué.**

31 **Supermarché Métro (supermarket), Ste-Mélanie, Qué.**

32 **MacIntosh Pub, Bromont, Qué.**

### Transport

33 **Via Rail Train Station, Belleville, Ont.**

### Personalized Services

34 **Coopérative funéraire de l'Estrie, Sherbrooke, Qué.**

### Other Achievements

Desjardins, Cité Desjardins (H.Q of cooperative) Lévis, Qué.

«Gold» **Carrefour de la coopération (Caisses Desjardins Granby-Haute-Yamaska), Granby, Qué.**  
**Caisses populaires Desjardins de Terrebonne, Terrebonne, Qué.**

La Maison Simons (department store), Edmonton, Alta

**Polykar (plastics industry), Ville St-Laurent, Qué.**

**Société des alcools du Québec (liquor & wine store), St-Hubert, Qué.**

**Société des alcools du Québec Sélection (liquor & wine), Complexe Jules-Dallaire, Québec, Qué.**

Complexe funéraire Carl Savard (funeral home), Chicoutimi, Qué.

**Édifice Promutuel (mutual insurance H.Q.), Place de l'Escarpement, Québec, Qué.**

Videotron (integrated communications firm), Joliette, Qué.

**Édifice Fondation (union investment fund), Québec, Qué.**

Terroir Etc. (gourmet food shop), St-Hyacinthe, Qué.

**Technika HBA (engineering firm), Drummondville, Qué.**

Centre spécialisé de technologie physique du Québec (technology transfer), La Pocatière, Qué.

National Bank of Canada, Sunlife building, Montreal, Qué.

**La Clé des Champs (organic herb & spice import), Val-David, Qué.**



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DAL 358 Swirl diffuser

SSQ, Financial Group  
 Québec, Qué.



Like the corporate image of the SSQ Financial Group, the components of the interior design are a brain-wave of conformist, a good organization and respect.

Harmonizz perfectly with the design, the swirl diffuser DAL 358 distributes air thus ensuring perfect comfort. Among the criteria that led to the choice of the diffuser 358 DAL, we certainly find, the exceptional quality of the diffuser but also the energy savings it generates over its use.



Architects : Rivest, Jodoin & Associés  
 Engineer : Rodrigue Julien, Expert conseil





CIMA + , Engineering firm  
Sherbrooke, Qué.



DAL 358 Swirl diffuser



The new offices of the CIMA+ engineering firm were recently inaugurated in Sherbrooke.

The boldness of the colours, the richness of the hues and the wealth of light all contribute to this remarkable space.

From any angle, one can sense the elegance, refinement and expressiveness of this design. The planning and the interaction of the various architectural elements all indicate a very successful emphasis on corporate image.

The design creates a balance between the dynamics of bright colours and the grounding reassurance of wood.

The DAL 358 diffusers sometimes take second place as white elements on similar backgrounds, and sometimes stand out in contrast to the wood on the ceilings.

Despite their integration to the overall design, the DAL 358 diffusers contribute to the efficiency of stabilizing air distribution.

Only two diffusers are required for a conference room with a capacity of 14 people.







RRA Duct diffuser



## Complexe sportif Thibault-GM Sherbrooke, Qué.



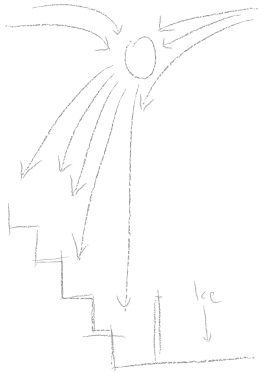
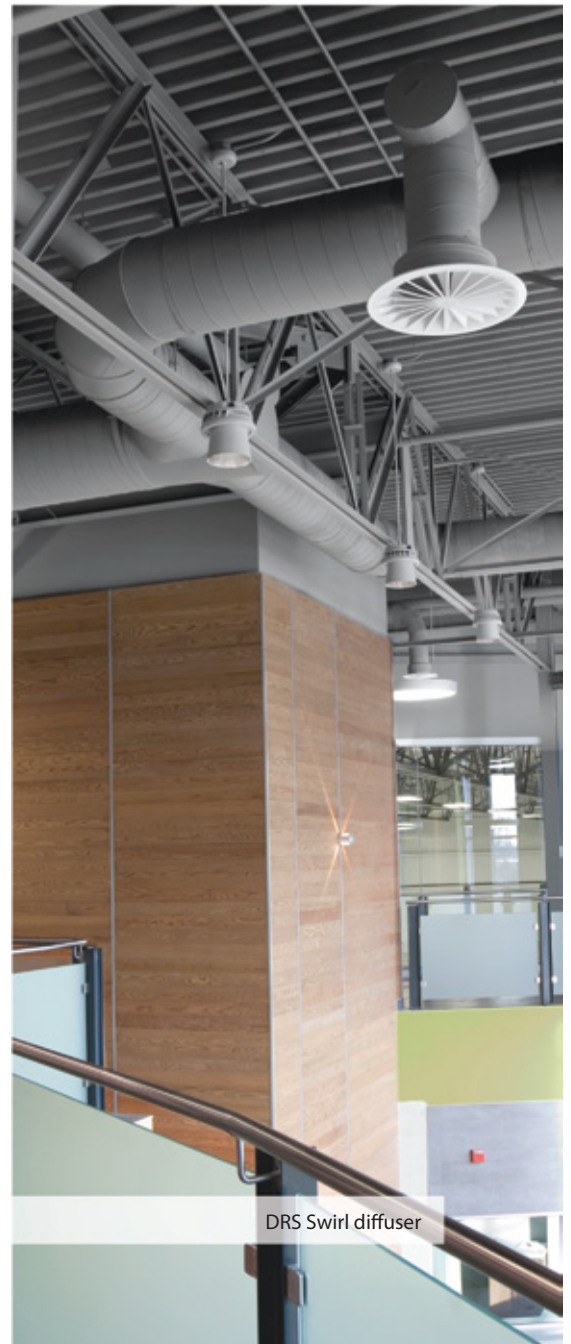
Société d'exploitation Sports Sherbrooke provides high-level sports installations, encouraging the Sherbrooke population to seek personal development.

This huge complex, housing two regulation-size skating rinks and a third for training purposes, has been designed with a focus on energy savings. Among other measures, a successfully-met challenge was the optimal recovery of compressor heat in order to warm the building.

Everywhere, NAD Klima diffusers were used for their versatility and unequalled energy performance. Blending harmoniously into the design, RRA duct diffusers recover the ceiling-level heat and accurately direct it towards the bleachers, thus avoiding the rink area. As for the RDD duct diffusers, they project air along the outside walls, reducing the possibility of condensation in cold weather.

In the foodservice area, DRS and DAL 358 diffusers create an optimal airflow while maintaining a low sound level.

In the locker room and in the adjacent corridors, the MSA ceiling diffusers provide a more efficient air change and a higher air volume while maintaining a high induction rate.



DAL 358 Swirl diffuser

Architect : ArchiTech Design inc.  
Engineer : EXP, Sherbrooke

DRS Swirl diffuser

Supermarché-santé Avril (supermarket)  
Quartier Dix30  
Brossard, Qué.



This chain of healthy choice supermarkets opened its third store on October 10, 2011, in the Quartier Dix-30 shopping centre on Montreal's south shore; the new premises are designed with a very enjoyable, illuminated, contemporary look. Supermarché Avril focuses on caring for the patrons' food-related pleasures and overall well-being.

A shopping experience must always reflect the company's philosophy. In the market space, the FDD diffusers destratify the layers of air in order to regulate the ambient air. The laser-precision perforations on the ductwork allow the system to adapt to the various layouts of the premises.

In the rest area, the RRA semi-circular duct diffusers integrate harmoniously into the design. Their easily adaptable airflow ensures maximum comfort for the patrons.



RRA Duct diffuser

Architect : Léo Lapointe  
Engineers : Aedifica



Supermarché Métro (supermarket)  
Ste-Mélanie, Qué.

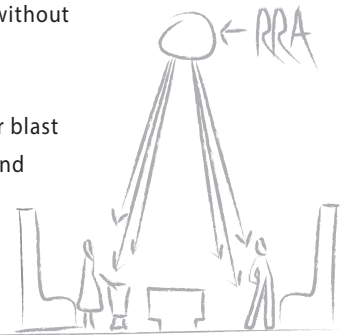


The challenge was daunting: how to maximize shopping comfort in the aisles of this Métro supermarket flanked with multiple freezers without reducing their cooling efficiency?

The solution was simple however, aim the air blast in heating mode directly on the customers and avoiding the freezers altogether.

Chosen for this very reason, the RRA duct diffusers allow for a multitude of airflow directions. A study of client and staff traffic streams undertaken throughout the supermarket permitted precisely targeting the strategic areas for proper airflow diffusion.

Moreover, the RRA diffusers made it possible to adapt various types of diffusion to the variety of client or staff activities, either active or passive.



RRA Duct diffusers



Architects : Louise Roy  
Engineers : Rodrigue Julien

MacIntosh Pub,  
Bromont, Qué.



It goes without saying that the what's important to the MacIntosh Pub is the atmosphere.

To welcome its customers and to provide them with the MacIntosh Pub experience, the designers did not hesitate to make use of choice materials conveying warm and relaxed atmosphere, yet quite contemporary. This tour de force was achieved by subtly opposing contrasting materials and colours. The RRA duct diffusers stand out with their unique design. But above all, they bring uniformity to the ambient air, both in heating and cooling modes, and always without relying on peripheral heating elements.



In the kitchen area, the influx of new air and the ensuing air mix add to the efficiency of the range hood exhaust. In this manner, the RRA diffusion system does not expose staff members or prepared dishes to unwanted drafts.



RRA Duct diffuser





## Via Rail Train Station, Belleville, Ont.



The new station in Belleville (Ontario) is grandiose, with its high ceilings, modern masonry and intense colours. A glass wall in the waiting area offers a clear view to the walkway, central platform and tracks, allowing passengers the opportunity of awaiting the train while enjoying the natural light.

SAL 35 Linear diffuser

RRA Duct diffuser

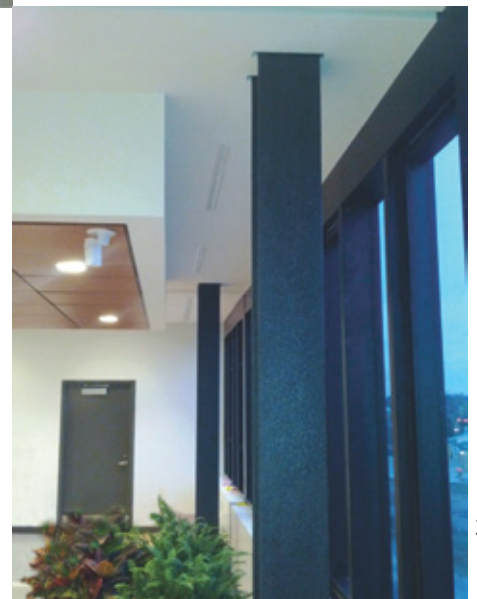


The new structure is also more energy efficient. The Via Rail station is equipped with high energy-efficient windows and a high induction heating system. Also, all lampposts are equipped with LED lighting.

The RRA diffusers are visibly placed along the walls, directing the necessary airflow to the critical point of temperature variation. Less evident is the ensuing absence of any peripheral heating at floor level.

Due to a cable suspension system, the RRA duct diffusers give the impression of floating on air.

In the adjacent rooms, SAL linear diffusers, positioned at ceiling level, blend unobtrusively with the décor without revealing any dark vent slits. In comparison, on the walkway the diffusers contrast with the wood surface; they are regulated for optimal airflow penetration and performance along the window side.



Coopérative funéraire de l'Estrie  
Sherbrooke, Qué.



The third most important cooperative funeral home in Quebec is situated in Sherbrooke. Its 20,500 members wanted a funeral home conveying peace and tranquility, with noble architecture, displaying simplicity of form and inspiring respect.

Everything has been done to welcome families and to accompany them in their time of grief, with a focus on rich, warm colours and a peaceful atmosphere.

In traffic areas, DAL 358 swirl diffusers discharge high induction while quietly stabilizing temperature.

In rooms with high ceilings, DRS diffusers produce optimal airflow with a stable swirl air blast.

DAL 358 Swirl diffuser



DRS Swirl diffuser



## Industrial Achievements



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### Transport

36 Bombardier Aerospace paint shop, Ville St-Laurent, Qué.

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### Food products

37 Kraft Foods warehouse, Montreal, Qué.

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### Print Shop

38 Transcontinental print shop, Boucherville, Qué.

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### Other Achievements



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«Silver»

Osram Sylvania lighting, Montréal, Qué.  
Transcontinental-Promag, Montreal, Qué.  
Élopak Canada Inc, Montreal, Qué.  
Baxter Canada, Sherbrooke, Qué.  
La sélection Twinpack Inc, Ste-Adèle, Qué.  
General Electric Bromont, Bromont, Qué.  
**AkzoNobel distribution centre, St-Hubert, Qué.**  
Camoplast Inc, Richmond, Qué.  
TransMag, Ville d'Anjou, Qué.  
Vachon/Groupe Saputo, Ste-Marie-de-Beauce, Qué.  
Molson/Coors Brewery, Montreal, Qué.  
Symcor Inc, Ville St-Laurent, Qué.  
Wiptec Inc, Sherbrooke, Qué.  
Rio Tinto Alcan, Alma, Qué.  
IBM-MiQro Innovation Collaborative Centre, Bromont, Qué.  
Alcoa Inc, Deschambault, Qué.  
Pratt & Whitney Canada, Longueuil, Qué.  
Norgate Metal Inc., Ville St-Georges, Beauce, Qué.  
Norampac/Cascades Canada, St-Bruno, Qué.  
Industries Lassonde Inc., Rougemont, Qué.  
Entrepôts Harnois, Joliette, Qué.

## Paint shop, finishing centre Bombardier Aeronautics



Bombardier's Montreal finishing centre for business aircraft is designed to accommodate 14 aircraft at a time. The centre also houses a paint shop allowing work on three airplanes, simultaneously.



The aeronautics giant wanted to maximize the centre's efficiency and performance. It also had to scrupulously comply with the multiple rulings on environmental protection.

The WKD industrial diffusers by NAD Klima adequately complied with the specific requirements demanded by complex environmental safeguards. This was achieved by reducing standard air volume to one fifth. Modulating the air blast has allowed for faster paint drying, reducing drying time needed to one third.





Kraft Foods warehouse  
Montréal, Qué.



By its size and functionality, the warehouse constructed for Kraft Canada was a veritable challenge of logistic solutions for the firm. The imperative need to manage the huge storage stockflow and the fragile nature of the food products required stringent maintenance of a stable ambient temperature throughout the entire warehouse.

Installation of the RDD duct diffusers appeared to be the ideal solution to this problem.

The RDD duct diffusers, by producing a very high induction rate, recovers the accumulated air at the ceiling and mix it into the ambient air. The mixed air, now destratified and made uniform, facilitates controlling the temperature of the entire warehouse. This advantage signifies important energy savings for the company.



## Transcontinental print shop Boucherville and St-Hyacinthe, Qué.



One of the foremost consumer magazine publishers and the largest printing establishment in Canada, Transcontinental had a constant problem of temperature instability at its large print shops in Boucherville and St-Hyacinthe (Quebec).

Maintaining a stable temperature is most important in a print shop because variations can directly alter the quality of the printed product. Moreover, the heat produced by the printing presses contributes largely to the problem of regulating the print shop's temperature and humidity.

Destratifying the air by means of the high induction is a process by which heat otherwise lost to the ceiling is recovered and mixed with new air, allowing the system to regulate the print shop temperature.

In this manner, the company has made significant heating energy savings by recovering the process heat of its own presses.

In addition, by regulating the print shops' ambient temperature, the printing firm has created a more comfortable workplace for its staff to enjoy.

Another interesting feature was the FDD flexible diffusers' ease of installation, credited to its suspension track system.





## Achievements in Health Care



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### Hospital

40 Centre hospitalier universitaire de Sherbrooke, Hotel-Dieu, Sherbrooke, Qué.

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### Pharmaceuticals

41 McKesson, Montréal, Qué.

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### Specialized Residences

42 Foyer Sutton Manor (senior citizens' residence), Sutton, Qué.

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### Other Achievementss

Hôpital de Brome-Mississiquoi-Perkins, Cowansville, Qué.  
Centre hospitalier universitaire Ste-Justine, Montreal, Qué.  
Centre hospitalier universitaire Sherbrooke, Fleurimont site, Sherbrooke, Qué.  
Centre d'optique, photonique et laser, Université Laval, Québec, Qué.  
Hôpital de Thetford Mines, Thetford Mines, Qué.  
Centre hospitalier universitaire vétérinaire, St-Hyacinthe, Qué.  
C.S.S.S. de Chicoutimi (health and social services), Chicoutimi, Qué.  
C.S.S.S. de Thetford Mines (health and social services), Thetford Mines, Qué.  
Foyer Beauharnois (senior citizens' residence), ville de Saguenay, Qué.  
C.H.S.L.D. Heather Lodge (long-term care residence), Rawdon, Qué.  
Hôpital de Granby-Médecine nucléaire, Granby, Qué.

Centre hospitalier universitaire de Sherbrooke  
Sherbrooke, Qué.  
Hôtel-Dieu site



On September 5, 2008, a new 18,000 m<sup>2</sup>, was inaugurated, providing an additional 40% floor space to the CHUS's Hôtel-Dieu complex. Because of this major expansion achievement, CHUS's downtown Sherbrooke site, Hôtel-Dieu, is now positioned to provide the community with improved accessibility to quality specialized health care.

The workspace of the new hospital wing has considerably increased. The new premises allow more research and teaching activities that will benefit patients, innovative approaches and scientific progress. Quality of air and its proper diffusion are both essential healthcare priorities.



DAL 358 swirl diffusers, with their high induction effect, have made very high air stability possible. Precise airflow direction allowed for installation of diffusers at strategic locations without the unwanted effects of potential drafts.

The high induction provided by the DAL 358 has also reduced the required number of diffusers.

Architects : Cimaise-FBA / Lemay / DMG, Consortium

Engineers : EXP, Sherbrooke



McKesson distribution centre  
Montréal, Qué.



For over a century, McKesson has been providing the healthcare supply chain by furnishing, when needed, solutions to health-related product management across Canada.

With its expertise in sensitive product management, notably with cytotoxic, narcotic and refrigerated products, controlled substances and hazardous materials, the McKesson firm must maintain a permanently controlled temperature in its storage space.



Air curtain

McKesson opted for the FDD flexible ductwork in order to destratify and bring uniformity to the ambient air at all heights of its enormous warehouse. In addition, to avoid temperature variations when the loading doors are open, the firm has installed air curtains using low-volume air displacement.

These two air diffusion systems have made an important contribution to stabilizing the indoor temperature of the warehouse in Montreal.



FDD Flexible diffuser

## Retirement home Sutton Manor Sutton, Qué.



This home for the elderly in Sutton (Quebec) is focussed on creating an environment favourable to the residents' personal development and autonomy..

All is calm and quiet.

The home's 71 residents can enjoy the view of lush gardened grounds admired through the numerous ample windows.

This project consisted of replacing existing diffusers to eliminate discomfort issues plaguing the residents as well as the unpleasant noise of swinging venetian blinds.

The versatility of the airflow rate adjustments of the SAL 35 diffusers mounted above the windows made it possible to direct air blasts down the windowpanes while guiding others towards the centre of the rooms.

In this residence, the influence of the induction phenomenon on the major temperature variations by the windows permitted a new level of comfort that before seemed impossible to achieve.



SAL 35 Linear diffusers



## Residential Achievements



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### Private Homes

- 44 Heritage home
- 45 The perfect harmony

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### Other Achievements

Southam Lofts condos

## Heritage home



This residence has an architectural style faithfully reflecting Victorian values as well as the impressive character typical of turn-of-the-19th-century homes.

In ideal harmony with the rest of the house, a room has been added above the carriage entrance. Creating perfect symmetry with the lights, the diffusers discretely blend into the room's ceiling.

Due to new technologies, it was possible to integrate a ventilation system without altering the character of the residence. The DAL 358 diffusers contribute to the comfort and uniformity of the temperature by inducing air directly from the airflow discharge.





## The perfect harmony



Built with quality materials such as stone, solid wood, cement and steel, this residence offers respect to its environment. Located in a forest clearing, the house benefits from an abundance of windows offering a scenic view.

To counteract temperature variations caused by these same windows, the architect Paul Bernier opted for air induction diffusion. Thus, Nad Klima's RRA diffuser was the perfect choice. It managed with great effectiveness in stabilizing these temperature fluctuations.

Also, the architect has brilliantly integrated the glossy metal aspect of this diffuser. The RRA delivers elegance and functionality with pure design within this magnificent residence.



Architect : Paul Bernier

**DRS**



The DRS is a high induction swirl air diffuser with a square or circular front plate. It is equipped with embossed air control blades dividing the airflow into many smaller high induction airflows.

It can be installed in areas where maximum comfort is required or used for commercial and industrial applications. It can be installed above a gypsum ceiling or in free-suspension.

The DRS can be installed with a plenum or directly on the air duct via an adapted connector (spigot).

**Product benefits**

- Maximum air flow
- Low sound level for high-volume air flow rates
- Rapid reduction of speeds and temperature variations via strong induction
- Twice as much induction as that of a conventional 4-way air diffuser
- Possibility of reducing total airflow rate to 25% in variable volume

**DAL 358**



Diffuser type DAL 358 is a highly inductive swirl diffuser with a round or square front plate and integrated ABS eccentric cylinders with straightening profiles. It is suitable use in both closed and open ceiling systems. The ability to rotate the eccentric cylinder after installation makes it possible to achieve any desired airstream pattern. DAL 358 allows optimal adaptation of the air distribution system to the prevailing site conditions.

The cylinder elements, integrated into the front plate, make it possible to adjust the airstream to any desired pattern, even after installation has taken place. The favorable air distribution at the cylinder elements allows high discharge velocities with low noise power levels.

The stable jet distribution, high induction at the discharge slot (as a result of circulating flow around the cylinders) as well as the stable airstream characteristics make these swirl diffusers well suited for variable volume flow.

**Area of application**

- High volume flow areas
- Comfort areas
- Offices with workstation partitioned
- Clean rooms
- Administration centers
- Computer rooms
- Meeting rooms
- Multipurpose rooms
- Systems with constant and variable volume flow
- Hall (vertical stream)

**Product benefits**

- Rapid reduction of velocity and temperature due to a high induction
- Low acoustic power level in high volume flow
- Regular diffusion of air flow
- 360° rotating eccentric cylinder
- On-site change of airstream pattern possible
- Specific change of discharge up to 25% of velocity possible
- 3 times more effective in induction than a conventional 4-way diffuser
- Possible to eliminate peripheral heating and to do it by the diffuser
- Decrease the amount of required diffusers
- Allows to reduce the total volume of air flow by diffuser while maintaining the quantities of air to stir.

**DAL 359**



Diffuser type DAL 359 is a highly inductive swirl diffuser with a round or square front plate and fitted air control blades of ABS. It is suitable for use in both closed and open ceiling systems and allows optimal adaptation of the air distribution system to the prevailing site conditions.

The large number of air conducting elements, with optimized airflow and acoustic characteristics, makes this device visually attractive and effective in managing high cooling loads in low ceiling heights.

Step-by-step reduction of the discharge free area makes it possible to adjust the device to meet changes in volume flow and discharge temperatures even after installation. The use of blind elements or so-called double clips allows the discharge direction, length or airstream thickness to be varied while maintaining optical appearance.

**Area of application**

- Comfort zone
- Clean rooms
- Administration areas
- Computer rooms
- Meeting rooms
- Multipurpose hall
- Department stores
- Systems with constant and variable volume flow

**Product benefits**

- Low acoustic power level in high volume flow
- Rapid reduction of velocity and temperature differences through high induction
- Change of airflow direction and air stream pattern possible
- Ability to influence the discharge velocity and thus penetration depth

**DAL 382**

Diffuser type DAL 382 is a highly inductive swirl diffuser with a square front plate and integrated slot profiles with ABS eccentric cylinders (drums) and straightening profiles. It is suitable for use in both closed and open ceiling systems. The ability to rotate the eccentric cylinder after installation makes it possible to achieve any desired airstream pattern. DAL 382 allows optimal adaptation of the air distribution system to the prevailing site conditions. The clips, integrated into the front plate, make it possible to adjust the airstream to any desired pattern, even after installation has taken place.

The favorable air distribution at the cylinder elements allows high discharge velocities with low sound power levels. The stable jet distribution, high induction at the discharge slot (as a result of circulating flow around the cylinders) as well as the stable airstream characteristics make these swirl diffusers well suited for variable volume flow. A reduction of the volume flow to 30% is possible without changing the airstream pattern. The swirling effect and induction ratio remain unchanged.

**Area of application**

- Commercial areas
- Offices
- Clean rooms
- Administration areas
- Computer rooms
- Department stores
- Assembly rooms
- Multipurpose halls
- Systems with constant and variable volume flow

**Product benefits**

- Low acoustic power level in high volume flow
- Rapid reduction of velocity and temperature
- 360° rotating eccentric cylinder
- On-site change of airstream pattern possible
- Specific change of discharge velocity possible

**MSA**

Type MSA is an adjustable ceiling diffuser with a square front plate and integrated, parallel slot sections with eccentric cylinder of ABS and straightening profiles. The diffuser can be used in both continuous and open ceilings. The ability to rotate the eccentric cylinder, even after installation, makes it possible to achieve any desired type of jet.

Diffuser type MSA can be adapted as required to the prevailing room conditions and thus makes it possible to achieve just about any desired type of jets, from bundled wide-angle to ceiling jets; retroactive adjustment after installation is possible.

The favorable airflow control at the drums makes possible high discharge velocities with low sound power levels. The stable jet control, high induction at the discharge slot (created by circulating flow around the cylinders) and stable jet characteristics make this diffuser especially suitable for use where variable volume flow rates are present.

It is possible to reduce the volume flow rate to 30% without changing the discharge pattern. Jet dispersion and induction ratio remain unchanged.

**Area of application**

- Commercial areas
- Offices
- Administration areas
- Department stores
- Assembly rooms
- Multipurpose halls
- Systems with constant and variable volume flow

**Product benefits**

- Rapid temperature and velocity reduction according to the jet setting
- Low sound power level in high volume flow
- Particular stability due to form-fitting integrated slot sections and rear-mounted cross traverse (from size 500)
- 360° rotating eccentric cylinder
- On-site change of airstream pattern possible
- Specific change of discharge velocity possible

**VAL**

Variable air diffuser VAL consists of an interior air control ring and manually or motor operated adjustment mechanism that allows the discharge direction to be adapted to the specific situation. The distinctive jet characteristics makes it possible to install this diffuser in flush or suspended at heights of up to 15 m and with supply air volume flow of up to approx. 3000 m<sup>3</sup>/h.

The diffuser is installed without an additional plenum box and connected to the ductwork via a curved or straight piece.

Air diffuser VAL combines optimal air flow method of operation with a pleasing appearance. The three air control rings with varying outer diameter give the diffuser a three-dimensional appearance, making it possible to be an appealing part of the room design. An integrated port plate in the connecting piece makes it possible to adjust the jet pattern even after installation has taken place.

**Area of application**

- Individual offices
- Offices
- Administration areas
- Department stores
- Assembly rooms
- Multipurpose halls
- Cinemas
- Sports halls
- Industrial halls
- Conference and convention halls

**Product benefits**

- Large adjustable penetration depth
- Flush or suspended installation
- Suitable for heating and cooling
- Discharge adjustable manually or motorized
- Appealing designer appearance



**SAL 35**

Linear diffuser SAL is a linear diffuser available with profile widths of 35. It consists of aluminum extruded profiles with inserted eccentric cylinders of ABS and is operated via a plenum box.

Diffuser SAL 35 is available in single or multirow version, depending on the situation and air volume, and can be joined together to make slot bands of any desired length.

**Area of application**

- Cooling and heating in commercial areas with average room heights
- Areas with high air change rates and low air velocities
- Situations in which the diffuser must fit both the form and color of the room
- Systems with variable air volume flow
- Offices, conference rooms, computer rooms, clean rooms, department stores, cinemas and theaters.

**Product benefits**

- Full control of the discharge velocity and volume flow by changing the diameter at the air control cylinder
- Ability to influence the critical throw (e.g. extend)
- Ability to influence the induction characteristics
- Adjustable penetration depth
- Optional adjustment of Coanda effect
- Full ability to vary the discharge direction up to 180°
- Repeatable diffuser settings
- Can be manufactured with defined, project-specific diffuser settings
- Ability to adjust even after installation
- Settings remain in place even during cleaning

**RRA**

The RRA is a diffuser used for visible mounting in the commercial and industrial sectors as well as in zones of comfort. It is perfectly suited to the applications where the technique must not only be effective but where it also requires for the diffuser to be integrated into the architectural design.

Owing to the integration of the eccentric drums proper to NAD Klima's technology, the RRA duct diffuser proposes a multitude of choices of direction for air discharge. All the air conditioning and heating solutions benefit from this diffuser which unites technical, aesthetic and comfort aspects.

**Area of application**

- Commercial sectors
- Large space ventilation
- Office spaces
- Lobby, Atrium
- Commercial and industrial spaces
- Residential spaces
- Buildings with visible wood structures
- Agora

**Product benefits**

- Adjustment of air discharge between diffused, diverging and vertical, or any other position
- Discharge is easily adaptable to various uses of the space
- Combination of all discharge patterns into one diffuser
- Rapid velocity and temperature reduction
- Installation in any part of a duct system (horizontal, vertical, etc.)
- Can be connected to any duct or fittings with SMACNA standards
- Thermostatic paint in the colours of the RAL chart
- Easy-care finish (multifilament broom)
- Eliminates secondary connections and traditional diffusers

**RDD**

The RDD diffuser is made from galvanized steel sheet and coated according to RAL Chart. In standard size, it is provided in section of 1500 mm long. However, it may be available in different lengths. Each section of the RDD comes with interior reinforcement and assembled together with gaskets in EPDM for sealing.

Precise perforation of the RDD, performed by laser according to the data software simulation, allows air distribution that provides homogeneity (temperature, humidity, density) and ensures comfort to occupants.

**Area of application**

- Commercial
- Manufacturing sector
- Agri-food and Pharmaceutical sector
- Warehouses
- Sports complexes : arenas, swimming pools
- Games room

**Product benefits**

- High induction diffuser to the homogenization of the air in the room: temperature, humidity and air density
- Occupied area increased comfort
- More great movement of air without draft
- Low temperature difference and low noise
- Energy efficiency by recuperation of stratified heat
- > 30% saving of destratification of a ceiling height greater than 6 m.
- > 75% saving for the heating of the fresh air (recuperation of heat gains)
- Perforation according to the space needs
- Depends on the length, width, and height of the space
- Airflow rate
- Ventilation mode (heating, cooling)
- Easy maintenance
- Painting according to RAL chart that minimizes the adhesion of dust and facilitates its cleaning (Swiffer)
- Low accumulation within the duct because the dust is served by the holes
- Sustainability
- RAL coating avoids chipping
- EPDM sealing prevents leaks and cracking
- Suspension by rail made from aluminum and galvanized steel sheet duct and it can be coated according to RAL Chart
- Easy installation
- Installation with suspension rail
- not sealing necessary
- Less hardware required for installation

**FDD**

The FDD is an air diffuser with high induction made from polyester impregnated PVC (Polyvinyl Chloride) entirely impermeable. The mechanism of the rail, flexibility and lightness of material PVC allow a rapid installation of the FDD.

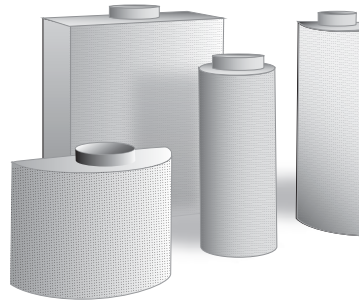
It's applicable in all the configurations of the building. Also, It's easy to swiffer.

**Area of application**

- Manufacturing sector
- Agro-alimentary sector
- Pharmaceutical secto
- Hall ventilation
- Shopping areas
- Warehouse
- theatres, cinemas
- Arenas, gaming rooms,...
- interior swimming pools

**Product benefits**

- Very silent
- Economic
- Great rang of diffusion
- Applicable in heating, isothermal and cooling mode
- Esthetics by the variety of the colours
- Hygienic, a healthier ambient air
- Weak weight, easy to transport
- Assembly very easily and in little time
- Unequalled lifespan
- Improve the work condition
- 100% recyclable
- energy efficiency by recovering heat
- >30% saving heating on destratification
- >70% saving on heating of fresh air (by recuperation of heat load)

**QAL**

Displacement flow diffusers QAL are used both in commercial and industrial areas. Depending on the specific structural requirements, the diffuser is available in cylindrical, semi-circle, quarter-circle or linear design. The diffuser consists of a front plate of coated steel, ceiling and floor panels as well as a distribution mechanism.

Blowing takes place through a spigot in the upper cover plate. Depending on the ceiling height and the degree of activity among the occupants, diffuser QAL can remove cooling loads between 30 W/m<sup>2</sup> and 50 W/m<sup>2</sup>.

Because they direct the air from bottom to top, displacement flow diffusers are suitable for ventilation and cooling only, whereby depending on the degree of activity among the occupants, the temperature differences in the inlet air should not fall below -6°C.

**Area of application**

- Single offices
- Open plan offices
- Conference rooms
- Administration areas
- Cinemas
- Restaurants
- Sport halls
- Industrial halls
- Laboratories
- Contaminated work areas

**Product benefits**

- Low flow velocities in occupied areas
- Increased air quality in occupied areas
- Removal capacity of 30 W/m<sup>2</sup> and 50 W/m<sup>2</sup> (depending on degree of activity)

**WKD 380**

WKD 380 is a high induction swirl diffuser with a circular front plate, a turbulence chamber integrated in the plenum box and a steering nozzle. The turbulence chamber is made of high-grade slotted steel (powder-coated black). This diffuser is an excellent choice for heating and cooling applications in commercial and industrial ventilation. Jet dispersion can be adjusted manually or via actuator as needed to fit the actual load.

The adjustment mechanisms allow the WKD 380 diffuser to operate with constant adjustment of the discharge direction (horizontal to vertical) and penetration depths to the thermal load and room height. Its high degree of flexibility makes this diffuser well suited for rooms with big heights. The integrated wideangle nozzles achieve large vertical penetration depths in heating

**Area of application**

- Commercial areas
- Offices
- Assembly rooms
- Computer rooms
- Exhibition halls
- Department stores
- Commercial and industrial rooms
- Clean rooms
- Volume flow from 700 m<sup>3</sup>/h to 10,000 m<sup>3</sup>/h at room heights of 3 to 20 m and temperature differences of -15°C to +30°C.

**Product benefits**

- Constant adjustment of discharge direction from horizontal to vertical.
- Constant modification of horizontal and vertical jet penetration depth by manipulation of the swirl intensity and induction.
- Highest possible vertical penetration depths through integrated wide-angle nozzle.
- Adjustable primary induction
- Simple manual or motorized adjustment.
- Easily combined with temperature difference measurement for fully automated control of multiple diffusers.

**WKD 381**

WKD 381 is a high induction swirl diffuser with a square front plate, a turbulence chamber integrated in the plenum box and a steering nozzle. The turbulence chamber contains a ring-shaped eccentric air control cylinder of ABS with straightening segments.

This diffuser is an excellent choice for heating and cooling applications in commercial and industrial ventilation projects where the ceiling is more than 5 m high.

Jet dispersion can be adjusted manually or via actuator when needed to fit the actual load.

**Area of application**

- Commercial areas
- Offices
- Assembly rooms
- Computer rooms
- Exhibition halls
- Department stores
- Commercial and industrial rooms
- Clean rooms

**Product benefits**

- Constant adjustment of discharge direction from horizontal to vertical.
- Constant modification of horizontal and vertical jet penetration depth by manipulation of the swirl intensity and induction.
- Highest possible vertical penetration depths through integrated wide-angle nozzle.
- Adjustable primary induction
- Simple manual or motorized adjustment.
- High volume flow at low sound power levels.
- Easily combined with temperature difference measurement for fully automated control of multiple diffusers.

**LDI/ LDK**

Diffuser LDI was specially developed for challenging air conditioning applications in rooms with high ceilings. It is suitable for free installation without any ceiling connection and a downward discharge opening, but can also be used in special cases for lateral installations.

The individual diffuser consists of a circular metal nozzle with a radial wide edge that shallows out to make use of the Coanda effect. Air is generally supplied to the diffuser via tubes or ducts and flows through a control mechanism that is integrated into the diffuser before entering the room. The control mechanism is made up of six continuously adjustable blades. The ability to continually adjust the supply air makes it possible to adapt velocity, penetration depth and induction ratio as needed to the actual conditions.

**Area of application**

- Production halls.
- Administration areas.
- Department stores.
- Assembly rooms.
- Multi-purpose halls.
- Printing facilities.

**Product benefits**

- Continuous adjustment of air control to planned or unplanned changes of conditions while maintaining velocity critical values
- Systematic and thus energetically efficient supply of fresh air volume flow to the occupied areas
- Low installation costs due to easy mounting
- No drafts or cold air areas near the floor in occupied areas
- Reduction of energy costs for conditioning and handling of air
- Significantly shorter preheating phases by deliberately increasing the jet's penetration depth.

**VLD / VLV**

VLD

VLV

The discharge patterns available with diffuser models VLD and VLV make them well suited for use in commercial and industrial applications. Both horizontal (cooling) and vertical (heating) jets as well as localized displacement flow are possible. The latter being especially important for areas that are thermally loaded or polluted.

These diffusers can be deployed directly under the ceiling or in a suspended installation. It is connected directly to the duct.

VLD is designed to meet all demands that commercial and industrial sectors require. Large vertical penetration depths can be achieved when heating and the cool air is supplied with highinduction to the room.

VLV is especially designed to supply air to polluted workspaces. Air is supplied at low momentum, allowing noxious matter to be systematically discharged and at the same time reducing the concentrations of noxious matter more than with conventional mixed air systems.

**Area of application**

- Industrial halls
- Shops
- Commercial space
- Laboratories
- Polluted workspace
- Sport halls
- Rooms with heights of 3 to 15 m

**Product benefits**

- Adjustable jet settings from horizontal to vertical
- Rapid reduction of temperature and velocity
- Draft-free supply of air when cooling
- Localized displacement ventilation in polluted areas, especially in model VLV
- Low pressure drop and sound power level
- Comfortable manual adjustment via cord pull mechanism
- Easily re-equipped from manual to motorised adjustment (even after installation)
- Can be operated without a plenum box





LEED is a third-party certification program and an internationally accepted benchmark for the design, construction and operation of high performance green buildings. It provides building owners and operators the tools they need to have an immediate and measurable impact on their buildings' performance.

LEED promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health:

- sustainable site development
- water efficiency
- energy efficiency
- materials selection
- indoor environmental quality

Credits and Prerequisites are organized into these five categories. An additional category, focusing on innovation, addresses sustainable building expertise, exemplary performance, and design (or operational) measures not covered under these five environmental categories.

Certification is based on the total point score achieved, following an independent review. With four possible levels of certification (certified, silver, gold and platinum), LEED is flexible enough to accommodate a wide range of green building strategies that best fit the constraints and goals of particular projects.

The Canadian rating systems are an adaptation of the US Green Building Council's (USGBC) LEED Green Building Rating System, tailored specifically for Canadian climates, construction practices and regulations. The rating systems are adapted to the Canadian market through an inclusive process that engages stakeholders and experts representing the various sectors of the Canadian industry.

The swirl diffuser DAL 358 can contribute to achieving the requirements of two (2) prerequisites and five (5) credits thus to a potential of fourteen (14) possible points for a proposed new construction or major renovation to a LEED Canada- NC version 1.0.

# Crédit	Name of credit	Potential Point	NAD Klima Contribution of diffusers DAL358
<b>Energy and atmosphere</b>			
EAp2	Minimum Energy Performance	0 (required)	Air diffusers DAL358 contribute to reach the minimum energy efficiency for the building.
EAc1	Optimise Energy performance	1 to 10 points possible according to energy performance of the building	Air diffusers DAL358 help obtaining an energy performance higher standards for construction.  *Note : a unique product can not determine the achievement of LEED® credits; they depend on the design project and strategies used.
<b>Indoor environmentals quality</b>			
QEIp1	Minimum IAQ Performance	0 (Required)	Air diffusers DAL358 help establish a minimum level of performance regarding the indoor air quality.
QEIc2	Ventilation Effectiveness	1	Air diffusers DAL358 help ensure the effectiveness of the input and the air distribution to the occupants of the building.
QEIc7.1	Thermal confort : Compliance ASHRAE 55-2004	1	Air diffusers DAL358 help provide a comfortable environment terms of temperature of the building.
<b>Materials &amp; resources*</b>			
* The mechanical and electric credit is excluded from the category of Materials and Resources, who is only interested in Divisions 2 through 12 of the Construction Specifications. Thus, the air diffusers never contribute to achieving the requirements of these credits.			
<b>Innovation &amp; design process</b>			
IPDc1.1	Innovation in design	1	Exemplary performance for EAc1 : Optimise energy performance.
IPDc1.2	Innovation in design	1	Exemplary performance for QEIc2 : Increasing the efficiency of ventilation..

new technologies in air distribution



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