



Opera House, Copenhagen

Lindab Theatre diffusers theory

Displacement diffusers



Displacement diffusers

Theatre diffusers

Theatre diffusers

Circular and square diffusers

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	CCU	

Theatre diffusers

For ventilation in auditoriums, theatres, cinemas etc., where many people sit together, it is a great advantage to use the displacement principle and diffusers especially for that purpose.

Typically diffusers are either placed in the stairs or in the floor under the rows of seats. Normal small air volumes (10-14 l/s) are supplied with a limited cooling temperature, usually distributed in the ratio of one diffuser per person. This ensures the best division of layers. An added bonus is that the thermal load from the people is removed.

The velocity of the air in the diffusers near-zone is an important parameter in planning. Normally 0,20 m/s at a temperature gradient of 1,5 K is acceptable. The velocity depends on how much air is supplied per metre of chair-rows in the room, in addition to the air diffusion. Usually air diffusion pattern is directed so the air is supplied in the direction of the chairs. This ensures a reduction in the velocity before the air is spread throughout the room.

Unique solutions

In the series of theatre diffusers are also diffusers for displacement ventilation. The theatre diffusers come in circular and rectangular with the possibility of being mounted directly in the air duct system or pressure chamber.

The diffusers are delivered with perforated front plates and blending profiles, which makes it possible to direct the air flow patterns to small near-zones. The diffusers are delivered pre-set for chosen pressure and air flow, so adjustment is not necessary.

In many instances, it is necessary to create especially designed solutions due to the increased requirements for acoustics, architecture, constructional needs etc.

The diffusers are therefore available in a number of special designs and varieties. Please contact Lindab for further information.



CCU, theatre diffuser



Most of us spend the majority of our time indoors. Indoor climate is crucial to how we feel, how productive we are and if we stay healthy.

We at Lindab have therefore made it our most important objective to contribute to an indoor climate that improves people's lives. We do this by developing energy-efficient ventilation solutions and durable building products. We also aim to contribute to a better climate for our planet by working in a way that is sustainable for both people and the environment.

[Lindab | For a better climate](#)