TYPE DLQL

FOR HORIZONTAL ONE-WAY TO FOUR-WAY AIR DISCHARGE, FOR COMFORT ZONES, WITH FIXED BAFFLE ELEMENT

Square ceiling diffusers
- Nominal sizes 250, 300, 400, 500, 600
- Volume flow rate range 6 – 285 l/s or 22 – 1026 m³/h
- Square diffuser face
- Diffuser face made of galvanised sheet steel, powder-coated
- For supply and extract air
- For variable and constant volume flows
- For all types of ceiling systems
- Perforated diffuser face with special baffle element for horizontal air discharge and high induction levels

Optional equipment and accessories
- Exposed diffuser face available in RAL CLASSIC colours
- Horizontal or vertical duct connection
- Blanking plates for adjusting the discharge direction
- Plenum box with damper blade
Application

Type DLQL ceiling diffusers are used as supply air or extract air diffusers for comfort zones

- Perfect integration with suspended perforated sheet metal ceilings
- Horizontal one-way to four-way supply air discharge for mixed flow ventilation
- High induction results in a rapid reduction of the temperature difference and airflow velocity (supply air variant)
- For variable and constant volume flows
- For supply air to room air temperature differences from −10 to +10 K
- For room heights up to 4 m (lower edge of suspended ceiling)
- For all types of ceiling systems

Special characteristics

- Horizontal one-way to four-way supply air discharge
- Perforated diffuser face made of galvanised sheet steel
- For all types of ceiling systems
- Horizontal or vertical duct connection

Nominal sizes

Ceiling tile

- 248, 298, 398, 498, 598, 623 (intermediate sizes 249 to 622, in increments of 1 mm)

Air terminal device

- 250, 300, 400, 500, 600

DESCRIPTION

Variants

- DLQL-P: Grid ceilings and continuous plasterboard ceilings
- DLQL-T: T-bar ceilings
- DLQL-*-Z: Supply air
- DLQL-*-A: Extract air
Connection
- H: Horizontal duct connection
- V: Vertical duct connection

Parts and characteristics
- Perforated square diffuser face with special baffle element
- Simple installation of the diffuser face due to central fixing screw with decorative cap (variant -P)

Attachments
- M: Damper blade for volume flow rate balancing with horizontal connection

Accessories
- Lip seal

Useful additions
- Blanking plates

Construction features
- Spigot suitable for circular ducts to EN 1506 or EN 13180
- Spigot with groove for lip seal (if accessory lip seal has been ordered)
- Perforated plate has a free cross section of approx. 46 %
- Hole diameter is 5 mm, the rows of holes are offset from each other

Materials and surfaces
- Perforated diffuser face made of galvanised sheet steel
- Casing, damper blade and plenum box made of galvanised sheet steel
- Baffle element made of acoustic fleece
- Lip seal made of rubber
- Casing powder-coated RAL 9005, jet black
- Diffuser face dip coated RAL 9010, pure white
- P1: Powder-coated, RAL CLASSIC colour

Standards and guidelines
- Sound power level of the air-regenerated noise measured according to EN ISO 5135

Maintenance
- Maintenance-free as construction and materials are not subject to wear
- Inspection and cleaning to VDI 6022

TECHNICAL INFORMATION

Functional description
Ceiling diffusers direct the air from air conditioning systems into the room. The resulting airflow induces high levels of room air, thereby rapidly reducing the airflow velocity and the temperature difference between supply air and room air. Ceiling diffusers allow for large volume flow rates. The result is a mixed flow ventilation in comfort zones, with good overall room ventilation, creating only very little turbulence in the occupied zone.

Type DLQL ceiling diffusers are fitted with a special baffle element that creates a horizontal air discharge and high induction levels. Horizontal air discharge is one-way to four-way. The supply air to room air temperature difference may range from −10 to +10 K.
To give rooms an aesthetic, uniform look, Type DLQL diffusers may also be used for extract air.

**Schematic illustration of the DLQL for supply air with one blanking plate**

① Diffuser face  
② Central fixing screw  
③ Baffle element (only for supply air)  
④ Casing  
⑤ Plenum box  
⑥ Cross bar  
⑦ Suspension hole  
⑧ Spigot

Optional  
⑨ Lip seal  
⑩ Damper blade for volume flow rate balancing  
Blanking plate

**One-way air discharge with three blanking plates**

**Two-way air discharge with two blanking plates**
Three-way air discharge with one blanking plate

Four-way air discharge without blanking plate
<table>
<thead>
<tr>
<th>Nominal sizes – ceiling tile</th>
<th>248, 298, 398, 498, 593, 598, 618, 623 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal sizes – diffuser</td>
<td>250, 300, 400, 500, 600 mm</td>
</tr>
<tr>
<td>Minimum volume flow rate</td>
<td>6 – 145 l/s or 22 – 522 m³/h</td>
</tr>
<tr>
<td>Maximum volume flow rate, with $L_{WA} \equiv 50$ dB(A)</td>
<td>275 – 285 l/s or 990 – 1026 m³/h</td>
</tr>
<tr>
<td>Supply air to room air temperature difference</td>
<td>~10 to +10 K</td>
</tr>
</tbody>
</table>

Quick sizing tables provide a good overview of the volume flow rates and corresponding sound power levels and differential pressures.

The minimum volume flow rates apply to a supply air to room air temperature difference of ~6 K.

The maximum volume flow rates apply to a sound power level of approx. 50 dB (A) (DLQL-[]-Z·H: with damper blade position 0°).

Exact values for all parameters can be determined with our Easy Product Finder design programme.
Ceiling diffusers with perforated square diffuser face. Supply air and extract air variants for comfort zones. Diffuser face with baffle element for horizontal one-way to four-way supply air discharge. For flush installation into all kinds of suspended grid or continuous plasterboard ceilings.

Ready-to-install component which consists of the diffuser face with baffle element (only for supply air), and either a casing with top entry spigot or a plenum box with side entry spigot.

Perforated diffuser face suitable for central screw fixing (variant -P). The perforated plate has a free cross-section of approx. 46 %. The hole diameter is 5 mm and the rows of holes are offset from each other.

Spigot suitable for ducts to EN 1506 or EN 13180.

Sound power level of the air-regenerated noise measured according to EN ISO 5135.

Special characteristics
- Horizontal one-way to four-way supply air discharge
- Perforated diffuser face made of galvanised sheet steel
- For all types of ceiling systems
- Horizontal or vertical duct connection

Materials and surfaces
- Perforated diffuser face made of galvanised sheet steel
- Casing, damper blade and plenum box made of galvanised sheet steel
- Baffle element made of acoustic fleece
- Lip seal made of rubber
- Casing powder-coated RAL 9005, jet black
- Diffuser face dip coated RAL 9010, pure white
- P1: Powder-coated, RAL CLASSIC colour

Technical data
- Nominal sizes – ceiling tile: 248, 298, 398, 498, 593, 598, 618, 623 mm
- Nominal sizes – diffuser: 250, 300, 400, 500, 600 mm
- Minimum volume flow rate: 6 – 145 l/s or 22 – 522 m³/h
- Maximum volume flow rate, with \(L_{WA} \leq 50 \text{ dB(A)}\): 275 – 285 l/s or 990 – 1026 m³/h
- Supply air to room air temperature difference: –10 to +10 K

Sizing data
- \(V\) \[\text{m}^3/\text{h}\]
- \(\Delta p\) \[\text{Pa}\]

Air-regenerated noise
- \(L_{WA}\) \[\text{dB(A)}\]
**Order example:** DLQL-T-Z-H-M-L/600×593

<table>
<thead>
<tr>
<th>Variants</th>
<th>Dimensions</th>
<th>Product details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceiling system</td>
<td>T-bar ceiling</td>
<td></td>
</tr>
<tr>
<td>System</td>
<td>Supply air</td>
<td></td>
</tr>
<tr>
<td>Connection</td>
<td>Horizontal</td>
<td></td>
</tr>
<tr>
<td>Damper blade for volume flow rate balancing</td>
<td>With</td>
<td></td>
</tr>
<tr>
<td>Accessories</td>
<td>With lip seal</td>
<td></td>
</tr>
<tr>
<td>Nominal size</td>
<td>600</td>
<td></td>
</tr>
<tr>
<td>Size of diffuser face plate</td>
<td>593</td>
<td></td>
</tr>
<tr>
<td>Exposed surface</td>
<td>RAL 9010, pure white, gloss level 50 %</td>
<td></td>
</tr>
</tbody>
</table>

**DLQL – T – Z – H – M – L / 600 x 593 / P1 – RAL …**

| 1 Type | DLQL: Ceiling diffuser |
| 2 Ceiling system | P: Grid or plasterboard ceiling | T: T-bar ceiling |
| 3 System | Z: Supply air | A: Extract air |
| 4 Connection | H: Horizontal | V: Vertical |
| 5 Damper blade for volume flow rate balancing | No entry: none |
| | M: With (only for connection type H) |
| 6 Accessories | No entry: none |
| | L: With lip seal |
| 7 Nominal size [mm] | 250 | 300 | 400 | 500 | 600 |
| 8 Size of diffuser face plate [mm] | DLQL-P: No entry: size of diffuser face plate = nominal size – 2 mm |
| | 598: For grid size 600 |
| | 623: For grid size 625 |
| | ...: Other dimensions, 623 mm max. |
| | DLQL-T: 593: For T-bar ceilings, grid size 600 |
| | 618: For T-bar ceilings, grid size 625 |
| 9 Exposed surface | No entry: powder-coated RAL 9010, pure white |
| | P1: Powder-coated, specify RAL CLASSIC colour |
| | Gloss level |
| | RAL 9010 50 % |
| | RAL 9006 30 % |
| | All other RAL colours 70 % |

**Variants, Dimensions and weight, Product details**

**DLQL-...-H**

**Designed for high comfort**

Together with renowned designers and architects we have developed ceiling, wall, staircase and floor diffusers and grilles that are not only aesthetic design elements, but also meet demanding ventilation and acoustic requirements.
Variant

- Ceiling diffuser with square diffuser face
- With plenum box for horizontal duct connection

Nominal sizes

Ceiling tile

- 248, 298, 398, 498, 598, 623 (intermediate sizes 249 to 622, in increments of 1 mm)

Air terminal device

- 250, 300, 400, 500, 600

Parts and characteristics

- Perforated square diffuser face with special baffle element
- Simple installation of the diffuser face due to central fixing screw with decorative cap (variant -P)

Construction features

- Spigot suitable for circular ducts to EN 1506 or EN 13180
- Spigot with groove for lip seal (if accessory lip seal has been ordered)

DLQL-...-V

Variant

- Ceiling diffuser with square diffuser face
- With plenum box for vertical duct connection

Nominal sizes

Ceiling tile

- 248, 298, 398, 498, 598, 623 (intermediate sizes 249 to 622, in increments of 1 mm)

Air terminal device

- 250, 300, 400, 500, 600

Parts and characteristics

- Square diffuser face
- Plenum box for vertical duct connection

Construction features

- Spigot suitable for circular ducts to EN 1506 or EN 13180

DLQL-Z-H
DLQL-Z-V

DLQL-...-V

DLQL-...-H

<table>
<thead>
<tr>
<th>Nominal size</th>
<th>DLQL-P □ Q1 □ mm</th>
<th>DLQL-T □ Q1 □ mm</th>
<th>ØD mm</th>
<th>H1 □ mm</th>
<th>H2 □ mm</th>
<th>H □ mm</th>
<th>A □ mm</th>
<th>C □ mm</th>
<th>Plenum box</th>
<th>m kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>250</td>
<td>248</td>
<td>593</td>
<td>158</td>
<td>8</td>
<td>216</td>
<td>250</td>
<td>139</td>
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<tr>
<td>300</td>
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<td>593</td>
<td>158</td>
<td>8</td>
<td>372</td>
<td>295</td>
<td>164</td>
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<td>398</td>
<td>593</td>
<td>198</td>
<td>8</td>
<td>476</td>
<td>345</td>
<td>189</td>
<td>48</td>
<td>AK-Uni-010</td>
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<td>500</td>
<td>498</td>
<td>593</td>
<td>248</td>
<td>8</td>
<td>590</td>
<td>410</td>
<td>222</td>
<td>50</td>
<td>AK-Uni-012</td>
<td>9.6</td>
</tr>
</tbody>
</table>

DLQL-T: □ Q1 = 618 is available for T-bar ceilings with grid size 625
DLQL-P : □ Q1 to 623 mm available

DLQL-...-V
DLQL-T: □Q1 = 618 is available for T-bar ceilings with grid size 625DLQL-P: □Q1 to 623 mm available

Square diffuser face with plenum box for horizontal duct connection
DLQL

<table>
<thead>
<tr>
<th>Nominal size</th>
<th>DLQL-P</th>
<th>DLQL-T</th>
<th>Aeff</th>
</tr>
</thead>
<tbody>
<tr>
<td>250 mm</td>
<td>248</td>
<td>593</td>
<td>0.0100</td>
</tr>
<tr>
<td>300 mm</td>
<td>298</td>
<td>593</td>
<td>0.0145</td>
</tr>
<tr>
<td>400 mm</td>
<td>396</td>
<td>593</td>
<td>0.0259</td>
</tr>
<tr>
<td>500 mm</td>
<td>498</td>
<td>593</td>
<td>0.0403</td>
</tr>
<tr>
<td>600 mm</td>
<td>598</td>
<td>593</td>
<td>0.0580</td>
</tr>
</tbody>
</table>

Aeff applies to four-way air discharge

Diffuser face DLQL

Installation in T-bar ceilings
Installation and commissioning

- Preferably for rooms with a clear height up to 4.0 m
- Installation in plasterboard, grid and T-bar ceilings
- Horizontal or vertical duct connection
- If necessary, carry out volume flow rate balancing with the damper blade

These are only schematic diagrams to illustrate installation details.

Flush ceiling installation with square plenum box

1. Duct
2. Suspension hole
3. Diffuser face

- Horizontal duct connection
- Four suspension holes
- Suspension with cords, wires or hangers, to be provided by others

Flush ceiling installation with vertical connection
- Duct
- Suspension lug
- Diffuser face

- Vertical duct connection
- Three suspension lugs
- Suspension with cords, wires or hangers, to be provided by others

**Installation into grid ceilings**

- Fix the plenum box to the ceiling
- The ceiling tile of the grid ceiling is independent of the ceiling diffuser
- Fix the diffuser face after the ceiling has been completed

**Installation in continuous ceilings**
- Fix plenum box (including diffuser face, if necessary) to the ceiling
- Adjust plasterboard ceiling tile as required
- If necessary, fix the diffuser face after the ceiling has been completed

Installation in T-bar ceilings

- Fix the plenum box to the ceiling
- The T-bar ceiling is independent of the ceiling diffuser
- Fix the diffuser face below the T-bars after the ceiling has been completed

Installation in T-bar ceilings, diffuser face rests on T-bars

- Fix the plenum box to the ceiling, if necessary
- The diffuser rests on the T-bars
Principal dimensions

ØD [mm]
Outer diameter of the spigot

ØD₁ [mm]
Outer diameter of a circular diffuser face

ØD₂ [mm]
Diameter of a circular diffuser face style

ØD₃ [mm]
Diameter of a circular plenum box

□Q₁ [mm]
Outer diameter of a square diffuser face

□Q₂ [mm]
Dimensions of a square diffuser face style

□Q₃ [mm]
Dimensions of a square plenum box

H₁ [mm]
Distance (height) from the lower edge of the suspended ceiling to the lower edge of the diffuser face

H₂ [mm]
Height of a ceiling diffuser, from the lower edge of the suspended ceiling to the upper edge of the spigot

H₃ [mm]
Height of a ceiling diffuser with plenum box, from the lower edge of the suspended ceiling to the upper edge of the plenum box or of the spigot

A [mm]
Position of the spigot, defined by the distance of the spigot centre line to the lower edge of the suspended ceiling

C [mm]
Length of the spigot

m [kg]
Weight

Nomencature

LWA [dB(A)]
A-weighted sound power level of air-regenerated noise

V [m³/h] and [l/s]
Volume flow rate

ΔT₂ [K]
Supply air to room air temperature difference, i.e. supply air temperature minus room temperature

Δp [Pa]
Total differential pressure

Aₑₑₑ [m²]
Effective air discharge area

All sound power levels are based on 1 pW.