Halton DCS
Ceiling Diffuser

- Horizontal air supply, suitable also for exhaust
- Modular construction with five different, interchangeable front panel options suited for modular 600 x 600, 625x625, 675x675 mm ceilings, providing different appearance and performance characteristics
- Adaptation of the diffuser to changing ventilation rate requirements thanks to a adjustable air flow range allowing space layout and space programme changes
- Detachable front panel enabling the cleaning of the diffuser and ductwork

- Connection to ductwork using integrated balancing plenum with optional duct connection dimensions and plenum heights
- Circular duct connection with integral gasket
- Balancing plenum with an air flow rate measurement function

Accessories
- Air flow range adapter and front panel options
- Deflectors for the direction of the flow pattern for models DCS/C and DCS/P
- Sound attenuation options
MATERIAL AND FINISHING

<table>
<thead>
<tr>
<th>PART</th>
<th>MATERIAL</th>
<th>NOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perforated front panel</td>
<td>Perforated steel</td>
<td></td>
</tr>
<tr>
<td>Conical front panels</td>
<td>Aluminium</td>
<td></td>
</tr>
<tr>
<td>Swirl diffuser front panel</td>
<td>Steel</td>
<td></td>
</tr>
<tr>
<td>Multi-nozzle front panel</td>
<td>Steel</td>
<td></td>
</tr>
<tr>
<td>Nozzles</td>
<td>Plastic</td>
<td>The maximum recommended temperature for plastic nozzle material is 60°C. Nozzle colour options: White RAL 9010, Grey RAL 7040, Black</td>
</tr>
<tr>
<td>Balancing plenum</td>
<td>Galvanized steel</td>
<td></td>
</tr>
<tr>
<td>Sound attenuation–material</td>
<td>Dacron</td>
<td>2 options</td>
</tr>
<tr>
<td></td>
<td>Mineral wool</td>
<td></td>
</tr>
<tr>
<td>Spigot</td>
<td>Galvanized steel</td>
<td></td>
</tr>
<tr>
<td>Coupling sleeve with gasket</td>
<td>Hot galvanized steel</td>
<td>Rubber compound gasket</td>
</tr>
<tr>
<td>Adjustment module MSC, MEC</td>
<td>Body: Aluminium</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Blade; Galvanised</td>
<td></td>
</tr>
<tr>
<td></td>
<td>steel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Brackets; Galvanised</td>
<td></td>
</tr>
<tr>
<td></td>
<td>steel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Plastic parts; Polypropylene (PP)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spindle; Stainless steel</td>
<td></td>
</tr>
<tr>
<td>Airflow equalizer</td>
<td>Steel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Plastic parts; Polypropylene (PP)</td>
<td></td>
</tr>
<tr>
<td>Ceiling adapter</td>
<td>Steel</td>
<td></td>
</tr>
<tr>
<td>Finishing of perforated front panel DCS/P</td>
<td>Epoxy painted; White RAL 9010 / 50 % gloss</td>
<td>Special colours available</td>
</tr>
<tr>
<td>Finishing of conical front panels DCS/C, DCS/A</td>
<td>Epoxy painted; White RAL 9010 / 50 % gloss</td>
<td>Epoxy painting (100 %) available</td>
</tr>
<tr>
<td>Finishing of multi-nozzle front panel DCS/N</td>
<td>Epoxy painted; White RAL 9010 / 50 % gloss</td>
<td>Special colours available</td>
</tr>
<tr>
<td>Finishing of swirl jet front panel DCS/J</td>
<td>Epoxy painted; White RAL 9010 / 50 % gloss</td>
<td>Special colours available</td>
</tr>
</tbody>
</table>

ACCESSORIES

<table>
<thead>
<tr>
<th>ACCESSORY</th>
<th>CODE</th>
<th>DESCRIPTION</th>
<th>NOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duct connection with spigot</td>
<td>SP/DCS</td>
<td>Interchangeable duct size</td>
<td></td>
</tr>
<tr>
<td>Air flow range adapter</td>
<td>N/DCS</td>
<td>Adaptation of air flow range</td>
<td></td>
</tr>
<tr>
<td>Sound attenuation</td>
<td>AT/DCS</td>
<td>Sound absorption material for duct noise attenuation</td>
<td>Material options: Dacron, mineral wool</td>
</tr>
<tr>
<td>Perforated front panel, conical front panel, conical solid centre front panel, multi-nozzle front panel, swirl diffuser front panel</td>
<td>P/DCS, C/DCS, A/DCS, N/DCS, J/DCS</td>
<td>Exchangeable front panels</td>
<td></td>
</tr>
</tbody>
</table>

DIMENSIONS

<table>
<thead>
<tr>
<th>NS</th>
<th>H1</th>
<th>H2</th>
<th>W1</th>
<th>ØD</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>163</td>
<td>135</td>
<td>555</td>
<td>99</td>
</tr>
<tr>
<td>125</td>
<td>163</td>
<td>135</td>
<td>555</td>
<td>124</td>
</tr>
<tr>
<td>160</td>
<td>263</td>
<td>189</td>
<td>555</td>
<td>159</td>
</tr>
<tr>
<td>200</td>
<td>263</td>
<td>189</td>
<td>555</td>
<td>199</td>
</tr>
<tr>
<td>250</td>
<td>363</td>
<td>239</td>
<td>555</td>
<td>249</td>
</tr>
<tr>
<td>315</td>
<td>363</td>
<td>239</td>
<td>555</td>
<td>314</td>
</tr>
</tbody>
</table>

DCS - Ceiling Diffuser
Function

The diffuser allows both appearance and performance to be changed and adapted to new requirements and operation conditions.

DCS/P
Air is supplied to the space through the perforated front panel and mixed into the room air outside the diffuser. The recommended maximum air temperature difference between supply and room air is -8 °C.

DCS/C
Air is supplied to the space through the slots of the conical front panel and mixed into the room air outside the diffuser. The recommended maximum air temperature difference between supply and room air is -12 °C.

DCS/A
Air is supplied to the space through the slots of the conical front panel and mixed into the room air outside the diffuser. The recommended maximum air temperature difference between supply and room air is -12 °C.

DCS/N
Air is supplied both horizontally and vertically to the space through the front panel of the diffuser. The supply air pattern can be radially directed in the direction(s) desired (1, 2, 3, and 4) by manually rotating the nozzles. Horizontal swirl jet and later vertical air patterns can also be achieved by adjusting the nozzles. The direction of the supply air has no effect on the pressure drop or the air flow rate. The recommended maximum air temperature difference between supply and room air is -10 °C.

DCS/J
The horizontal radial swirl jet air is supplied to the space through the profiled spiral blades of the diffuser. The recommended maximum air temperature difference between supply and room air is -12 °C. The supply air jet velocity is effectively reduced because of the high mixing effect.

The balancing plenum equalises the air flow by reducing the flow velocity. Air is spread evenly into the diffuser, ensuring proper function.
Air flow range can be adapted to the actual demand by changing the air flow range adapter, by which means proper air distribution for a wide operation range is ensured. (DCS/P, DCS/C, DCS/A, DCS/J)
The air flow rate can be adjusted by using the detachable measurement and adjustment module. The balancing plenum also attenuates duct noise. The diffuser can also be used as an exhaust unit.
Installation

<table>
<thead>
<tr>
<th>CODE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Front panel</td>
</tr>
<tr>
<td>2</td>
<td>Ceiling adapter</td>
</tr>
<tr>
<td>3</td>
<td>Balancing plenum</td>
</tr>
<tr>
<td>4</td>
<td>Duct connection with spigot</td>
</tr>
<tr>
<td>5</td>
<td>Air flow range adapter</td>
</tr>
</tbody>
</table>

As needed, the duct connection size and air flow range adapter can be changed in order to adapt the installed diffuser to a significantly reduced or increased air flow rate. Multi-nozzle diffusers do not have air flow range adapters. Instead, front panels with more or fewer nozzles are changed in this context in the stead of an air flow range adapter change.

The diffuser is connected to the balancing plenum via fastening plates and screws.
Adjustment

The supply and the exhaust flow rates are determined by measuring the differential pressure from the measurement nipple with a manometer.

The air flow rate is calculated by using the formula below.

\[ q_s = k \times \sqrt{\Delta p_m} \]

k-values are presented in the table below:

**k-values for exhaust**

<table>
<thead>
<tr>
<th>Neck</th>
<th>DCS/A</th>
<th>DCS/C</th>
<th>DCS/S</th>
<th>DCS/P</th>
</tr>
</thead>
<tbody>
<tr>
<td>340</td>
<td>32.3</td>
<td>69.6</td>
<td>28.9</td>
<td>79.3</td>
</tr>
<tr>
<td>250</td>
<td>27.9</td>
<td>47.2</td>
<td>21.2</td>
<td>51.8</td>
</tr>
<tr>
<td>160</td>
<td>17.6</td>
<td>21.4</td>
<td>13.6</td>
<td>23.2</td>
</tr>
<tr>
<td>125</td>
<td>9.7</td>
<td>11.1</td>
<td>8</td>
<td>12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nozzles</th>
<th>DCS/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td>52.8</td>
</tr>
<tr>
<td>36</td>
<td>27.2</td>
</tr>
<tr>
<td>16</td>
<td>12.9</td>
</tr>
</tbody>
</table>

**k-values for supply**

**DCS/A**

<table>
<thead>
<tr>
<th>Neck</th>
<th>k-value</th>
<th>k-value 0-opening</th>
</tr>
</thead>
<tbody>
<tr>
<td>340</td>
<td>33.1</td>
<td>27.7</td>
</tr>
<tr>
<td>250</td>
<td>26.6</td>
<td>0.073xD + 2.82</td>
</tr>
<tr>
<td>160</td>
<td>13.8</td>
<td>11.3</td>
</tr>
<tr>
<td>125</td>
<td>8.2</td>
<td>6.6</td>
</tr>
</tbody>
</table>

**DCS/C**

<table>
<thead>
<tr>
<th>Neck</th>
<th>Directioning</th>
<th>k-value</th>
<th>k-value 0-opening</th>
</tr>
</thead>
<tbody>
<tr>
<td>340</td>
<td>R4</td>
<td>52.9</td>
<td>0.24 x D - 31.76</td>
</tr>
<tr>
<td>340</td>
<td>R3</td>
<td>49.7</td>
<td>0.24 x D - 31.76</td>
</tr>
<tr>
<td>340</td>
<td>R2</td>
<td>44</td>
<td>0.24 x D - 31.76</td>
</tr>
<tr>
<td>250</td>
<td>R4</td>
<td>32</td>
<td>0.08 x D + 2.73</td>
</tr>
<tr>
<td>250</td>
<td>R3</td>
<td>32.6</td>
<td>0.08 x D + 2.73</td>
</tr>
<tr>
<td>250</td>
<td>R2</td>
<td>29.2</td>
<td>0.08 x D + 2.73</td>
</tr>
<tr>
<td>160</td>
<td></td>
<td>14.5</td>
<td>11.4</td>
</tr>
<tr>
<td>125</td>
<td></td>
<td>8.3</td>
<td>6.6</td>
</tr>
</tbody>
</table>

**DCS/N**

<table>
<thead>
<tr>
<th>Nozzles</th>
<th>Duct connection</th>
<th>k-value</th>
<th>k-value 0-opening</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td>315, 250</td>
<td>48.1</td>
<td>0.19 x D - 13.12</td>
</tr>
<tr>
<td>80</td>
<td>200</td>
<td>40.5</td>
<td>0.19 x D - 13.12</td>
</tr>
<tr>
<td>36</td>
<td></td>
<td>27.4</td>
<td>0.08 x D + 2.37</td>
</tr>
<tr>
<td>16</td>
<td></td>
<td>13.2</td>
<td>0.06 x D + 1.00</td>
</tr>
</tbody>
</table>

**DCS/P**

<table>
<thead>
<tr>
<th>Neck</th>
<th>Direction</th>
<th>k-value</th>
<th>k-value 0-opening</th>
</tr>
</thead>
<tbody>
<tr>
<td>340</td>
<td>R4</td>
<td>50.6</td>
<td>0.22 x D - 26.91</td>
</tr>
<tr>
<td>340</td>
<td>R3</td>
<td>47.7</td>
<td>0.22 x D - 26.91</td>
</tr>
<tr>
<td>340</td>
<td>R2</td>
<td>46.3</td>
<td>0.22 x D - 26.91</td>
</tr>
<tr>
<td>250</td>
<td>R4</td>
<td>30.3</td>
<td>0.08 x D + 3.94</td>
</tr>
<tr>
<td>250</td>
<td>R3</td>
<td>29.6</td>
<td>0.08 x D + 3.94</td>
</tr>
<tr>
<td>250</td>
<td>R2</td>
<td>28.6</td>
<td>0.08 x D + 3.94</td>
</tr>
<tr>
<td>160</td>
<td></td>
<td>13.4</td>
<td>11.10</td>
</tr>
<tr>
<td>125</td>
<td></td>
<td>8.0</td>
<td>6.30</td>
</tr>
</tbody>
</table>

ATTN: D = diameter of duct connection

Adjust the air flow rate by rotating the control spindle of the MSC/MEC unit until the desired setting is achieved.

Lock the damper in position with a screw.

Replace the spindle in the plenum.
Pressure drop, throw pattern and sound data, supply
DCS/A-S1

Selection example:

Requirements:
- $q_v = 40 \text{ l/s}$
- $L_{PA} < 35 \text{ dB(A)}$
- $L_{0,2} < 3,0 \text{ m}$
- 4-way pattern

Selection:
- DCS/A1-100-125-S1(R4)
- $L_{PA} < 35 \text{ dB(A)}$
- $L_{0,2} < 2,6 \text{ m}$
- $\Delta P_{tot} = 51 \text{ Pa}$

DCS - Ceiling Diffuser
Pressure drop, throw pattern and sound data, supply

DCS/A-S1

DCS/A2-200-160-S1(R4)

DCS/A3-200-250-S1(R4)

DCS/A3-250-250-S1(R4)

DCS/A3-250-340-S1(R4)

DCS/A3-315-250-S1(R4)

DCS/A3-315-340-S1(R4)

DCS - Ceiling Diffuser

Halton
Pressure drop, throw pattern and sound data, supply

**DCS/A-S2**

DCS/A1-100-125-S2, DCS/A1-125-125-S2, DCS/A2-160-160-S2, DCS/A3-160-250-S2 4-way pattern

DCS/A2-200-160-S2, DCS/A3-200-250-S2, DCS/A3-250-250-S2, DCS/A3-250-340-S2 4-way pattern

Selection example:

Requirements: qv = 60 l/s
LpA < 30 dB(A)
4-way pattern

Selection: DCS/A2-160-160-S2
LpA < 30 dB(A)
ΔPtot = 25 Pa

**DCS - Ceiling Diffuser**
Pressure drop, throw pattern and sound data, exhaust

DCS/A-E1

DCS/A1-100-125-E1

DCS/A1-125-125-E1

DCS/A2-160-160-E1

DCS/A2-200-160-E1

DCS/A3-160-250-E1

DCS/A3-200-250-E1

DCS - Ceiling Diffuser
Pressure drop, throw pattern and sound data, exhaust
DCS/A-E1

DCS/A3-250-250-E1

DCS/A3-315-250-E1

DCS/A3-315-340-E1

DCS/A3-250-340-E1
Pressure drop, throw pattern and sound data, exhaust


DCS/A3-315-250-E2, DCS/A3-315-340-E2


DCS/A3-315-250-E2, DCS/A3-315-340-E2

DCS - Ceiling Diffuser
Pressure drop, throw pattern and sound data, supply

DCS/C-S1

DCS/C-100-125-S1(R4)

Selection example:

Requirements:
- $q_v = 40 \text{ l/s}$
- $L_{pa} < 35 \text{ dB(A)}$
- $L_{0.2} < 4.5 \text{ m}$
- 4-way pattern

Selection: DCS/C-100-125-S1(R4)
- $L_{pa} < 35 \text{ dB(A)}$
- $L_{0.2} < 4.3 \text{ m}$
- $\Delta P_{tot} = 48 \text{ Pa}$

DCS/C-100-125-S1(R3)

DCS/C-100-125-S1(R2)

DCS/C-125-125-S1(R4)
Pressure drop, throw pattern and sound data, supply

DCS/C-S1

DCS/C-125-125-S1(R3)

DCS/C-125-125-S1(R2)

DCS/C-160-160-S1(R3)

DCS/C-160-160-S1(R4)

DCS/C-160-160-S1(R2)

DCS/C-160-250-S1(R4)

DCS - Ceiling Diffuser
Pressure drop, throw pattern and sound data, supply

DCS/C-S1

DCS/C-160-250-S1(R3)

DCS/C-200-160-S1(R4)

DCS/C-200-160-S1(R2)

DCS/C-160-250-S1(R2)

DCS/C-200-250-S1(R4)

DCS - Ceiling Diffuser
Pressure drop, throw pattern and sound data, supply

DCS/C-S1

DCS/C-200-250-S1(R3)

DCS/C-200-250-S1(R2)

DCS/C-250-250-S1(R4)

DCS/C-250-250-S1(R3)

DCS/C-250-250-S1(R2)

DCS/C-250-340-S1(R4)

DCS - Ceiling Diffuser

Halton

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Pressure drop, throw pattern and sound data, supply

DCS/C-S1

DCS/C-250-340-S1(R3)

DCS/C-315-250-S1(R4)

DCS/C-315-250-S1(R2)

DCS/C-315-340-S1(R4)

DCS/C-250-340-S1(R2)

DCS/C-315-250-S1(R3)
Pressure drop, throw pattern and sound data, supply

DCS/C-S1

DCS/C-315-340-S1(R3)

DCS/C-315-340-S1(R2)

ΔL = ΔΔ [dB]

qL [dm³/s]

qL [m³/h]

ΔH [Pa]

L [m]
Pressure drop, throw pattern and sound data, supply
DCS/C-S2

DCS/C-100-125-S2, DCS/C-125-125-S2,
DCS/C-160-160-S2, DCS/C-160-250-S2 4-way pattern

DCS/C-100-125-S2, DCS/C-125-125-S2,
DCS/C-160-160-S2, DCS/C-160-250-S2 3-way pattern

DCS/C-100-125-S2, DCS/C-125-125-S2,
DCS/C-160-160-S2, DCS/C-160-250-S2 2-way pattern

DCS/C-200-160-S2, DCS/C-200-250-S2,
DCS/C-250-250-S2, DCS/C-250-340-S2 4-way pattern

Selection example:
Requirements:  
qv = 60 l/s  
LpA < 35 dB(A)
4-way pattern

Selection:  
DCS/C-160-160-S2  
LpA < 35 dB(A)  
ΔPtot = 27 Pa

DCS - Ceiling Diffuser
Pressure drop, throw pattern and sound data, supply

DCS/C-S2

DCS/C-200-160-S2, DCS/C-200-250-S2,
DCS/C-250-250-S2, DCS/C-250-340-S2 3-way pattern

DCS/C-200-160-S2, DCS/C-200-250-S2,
DCS/C-250-250-S2, DCS/C-250-340-S2 2-way pattern

DCS/C-315-250-S2, DCS/C-315-340-S2 4-way pattern

DCS/C-315-250-S2, DCS/C-315-340-S2 3-way pattern

DCS - Ceiling Diffuser
Pressure drop, throw pattern and sound data, supply

DCS/C-S2

DCS/C-315-250-S2, DCS/C-315-340-S2 2-way pattern

\[ \Delta P_{\text{ref}} \text{ [Pa]} \]

\[ q_v \text{ [l/s]} \]

\[ q_v \text{ [m}^3\text{/h]} \]

\[ \Delta L_{\text{in}} = 4 \text{ [dB]} \]
Pressure drop, throw pattern and sound data, exhaust

DCS/C-E1

DCS/C-100-125-E1

DCS/C-125-125-E1

DCS/C-160-160-E1

DCS/C-160-250-E1

DCS/C-200-160-E1

DCS/C-200-250-E1

DCS - Ceiling Diffuser

Halton
Pressure drop, throw pattern and sound data, exhaust

DCS/C-E1

DCS/C-250-250-E1

DCS/C-250-340-E1

DCS/C-315-250-E1

DCS/C-315-340-E1

DCS - Ceiling Diffuser
Pressure drop, throw pattern and sound data, exhaust

DCS/C-E2

DCS/C-100-125-E2, DCS/C-125-125-E2,
DCS/C-160-160-E2, DCS/C-160-250-E2

DCS/C-200-160-E2, DCS/C-200-250-E2,
DCS/C-250-250-E2, DCS/C-250-340-E2

DCS/C-315-250-E2, DCS/C-315-340-E2

DCS - Ceiling Diffuser
Pressure drop, throw pattern and sound data, supply
DCS/J-S1

Selection example:

Requirements:
- $q_v = 40 \text{ l/s}$
- $L_{PA} < 35 \text{ dB(A)}$
- $L_{0.2} < 1.8 \text{ m}$
- 4-way pattern

Selection:
- DCS/J-100-125-S1(R4)
- $L_{PA} < 35 \text{ dB(A)}$
- $L_{0.2} < 1.5 \text{ m}$
- $\Delta P_{tot} = 49 \text{ Pa}$

DCS/J-100-125-S1(R4)
Pressure drop, throw pattern and sound data, supply

DCS/J-S1

DCS/J-200-160-S1(R4)

DCS/J-200-250-S1(R4)

DCS/J-250-250-S1(R4)

DCS/J-250-340-S1(R4)

DCS/J-315-250-S1(R4)

DCS/J-315-340-S1(R4)

DCS - Ceiling Diffuser
Pressure drop, throw pattern and sound data, supply

DCS/J-S2

DCS/J-100-125-S2, DCS/J-125-125-S2,
DCS/J-160-160-S2, DCS/J-160-250-S2 4-way pattern

DCS/J-200-160-S2, DCS/J-200-250-S2,
DCS/J-250-250-S2, DCS/J-250-340-S2 4-way pattern

DCS/J-315-250-S2, DCS/J-315-340-S2 4-way pattern

Select example:

Requirements:
- $q_v = 60 \text{ l/s}$
- $L_{pA} < 30 \text{ dB(A)}$
- 4-way pattern

Selection: DCS/J-160-160-S2
- $L_{pA} < 30 \text{ dB(A)}$
- $\Delta P_{tot} = 26 \text{ Pa}$

DCS - Ceiling Diffuser
Pressure drop, throw pattern and sound data, exhaust

DCS/J-E1

DCS/J-100-125-E1

DCS/J-125-125-E1

DCS/J-160-160-E1

DCS/J-125-160-E1

DCS/J-200-160-E1

DCS/J-200-250-E1

DCS - Ceiling Diffuser
Pressure drop, throw pattern and sound data, exhaust

DCS/J-E1

DCS/J-250-250-E1

DCS/J-250-340-E1

DCS/J-315-250-E1

DCS/J-315-340-E1

DCS - Ceiling Diffuser

Halton
Pressure drop, throw pattern and sound data, exhaust

DCS/J-E2


DCS - Ceiling Diffuser
Pressure drop, throw pattern and sound data, supply

DCS/N-S1

Selection example:

Requirements: 
- $q_v = 40$ l/s
- $L_{pA} < 35 \text{ dB(A)}$
- $L_{0,2} < 3,2 \text{ m}$
- 4-way pattern

Selection: DCS/N1-100-N-S1(R4)

- $L_{pA} < 30 \text{ dB(A)}$
- $L_{0,2} = 3,0 \text{ m}$
- $\Delta P_{\text{tot}} = 35 \text{ Pa}$
Pressure drop, throw pattern and sound data, supply
DCS/N-S1

DCS/N2-160-N-S1(R4)

DCS/N2-200-N-S1(R4)

DCS/N2-250-N-S1(R4)

DCS/N2-315-N-S1(R4)

DCS - Ceiling Diffuser
Pressure drop, throw pattern and sound data, supply
DCS/N-S1

DCS/N3-200-N-S1(R4)

DCS/N3-200-N-S1(R4)

DCS/N3-315-N-S1(R4)

DCS - Ceiling Diffuser
Pressure drop, throw pattern and sound data, supply

DCS/N-S2

DCS/N1-100-N-S2, DCS/N1-125-N-S2, DCS/N1-160-N-S2 4-way pattern

DCS/N2-125-N-S2, DCS/N2-160-N-S2, DCS/N2-200-N-S2, DCS/N2-250-N-S2, DCS/N2-315-N-S2 4-way pattern

DCS/N3-200-N-S2, DCS/N3-250-N-S2, DCS/N3-315-N-S2 4-way pattern

Selection example:
Requirements: $q_v = 60 \text{ l/s}$
- $L_{PA} < 35 \text{ dB(A)}$
- 4-way pattern
- $\Delta P_{tot} = 25 \text{ Pa}$

Selection: DCS/N1-160-N-S2
Pressure drop, throw pattern and sound data, exhaust

DCS/N1-125-N-E1

DCS/N1-100-N-E1

DCS/N1-160-N-E1

DCS/N2-125-N-E1

DCS/N2-100-N-E1

DCS/N2-200-N-E1

DCS - Ceiling Diffuser
Pressure drop, throw pattern and sound data, exhaust

DCS/N-E1

DCS/N2-250-N-E1

DCS/N2-315-N-E1

DCS/N3-200-N-E1

DCS/N3-250-N-E1

DCS/N3-315-N-E1

DCS - Ceiling Diffuser
Pressure drop, throw pattern and sound data, exhaust

DCS/N-E2

DCS/N1-100-N-E2, DCS/N1-125-N-E2, DCS/N1-160-N-E2

DCS/N2-125-N-E2, DCS/N2-160-N-E2, DCS/N2-200-N-E2, DCS/N2-250-N-E2, DCS/N2-315-N-E2

DCS/N3-200-N-E2, DCS/N3-250-N-E2, DCS/N3-315-N-E2

DCS/N1-100-N-E2, DCS/N1-125-N-E2, DCS/N1-160-N-E2

DCS/N3-200-N-E2, DCS/N3-250-N-E2, DCS/N3-315-N-E2

DCS - Ceiling Diffuser

Halton
Pressur drop, throw pattern and sound data, supply

DCS/P-S1

Selection example:

Requirements:
- \( qv = 30 \) l/s
- \( LpA < 35 \) dB(A)
- \( L0,2 < 1,5 \) m
- 4-way pattern

Selection:
- DCS/P-100-125-S1(R4)
- \( LpA < 35 \) dB(A)
- \( L0,2 < 1,3 \) m

4-way pattern

\( \Delta P_{ot} = 31 \) Pa
Pressure drop, throw pattern and sound data, supply

DCS/P-S1

DCS/P-125-125-S1(R3)

DCS/P-125-125-S1(R2)

DCS/P-160-160-S1(R4)

DCS/P-160-160-S1(R3)

DCS/P-160-160-S1(R2)

DCS/P-160-250-S1(R4)

DCS - Ceiling Diffuser
Pressure drop, throw pattern and sound data, supply

DCS/P-S1

DCS/P-160-250-S1(R3)

DCS/P-160-250-S1(R2)

DCS/P-200-160-S1(R4)

DCS/P-200-160-S1(R3)

DCS/P-200-160-S1(R2)

DCS/P-200-250-S1(R4)

DCS - Ceiling Diffuser
Pressure drop, throw pattern and sound data, supply

DCS/P-S1

DCS/P-200-250-S1(R3)

DCS/P-250-250-S1(R2)

DCS/P-250-250-S1(R3)

DCS/P-250-340-S1(R4)

DCS - Ceiling Diffuser
Pressure drop, throw pattern and sound data, supply

DCS/P-S1

DCS/P-250-340-S1(R3)

DCS/P-315-250-S1(R4)

DCS/P-315-250-S1(R3)

DCS/P-315-250-S1(R2)

DCS/P-315-340-S1(R4)

DCS - Ceiling Diffuser
Pressure drop, throw pattern and sound data, supply

DCS/P-S1

DCS/P-315-340-S1(R3)

DCS/P-315-340-S1(R2)

DCS - Ceiling Diffuser
Pressure drop, throw pattern and sound data, supply
DCS/P-S2

DCS/P-100-125-S2, DCS/P-125-125-S2, DCS/P-160-160-S2, DCS/P-160-250-S2 4-way pattern

DCS/P-100-125-S2, DCS/P-125-125-S2, DCS/P-160-160-S2, DCS/P-160-250-S2 3-way pattern

DCS/P-100-125-S2, DCS/P-125-125-S2, DCS/P-160-160-S2, DCS/P-160-250-S2 2-way pattern

DCS/P-200-160-S2, DCS/P-200-250-S2, DCS/P-250-250-S2, DCS/P-250-340-S2 4-way pattern

Selection example:

Requirements: qv = 100 l/s  
LpA < 35 dB(A)  
4-way pattern

Selection: DCS/P-160-250-S2  
LpA < 35 dB(A)  
ΔPtot = 19 Pa

DCS - Ceiling Diffuser
Pressure drop, throw pattern and sound data, exhaust

DCS/P-S2

DCS/P-200-160-S2, DCS/P-200-250-S2, DCS/P-250-250-S2, DCS/P-250-340-S2 3-way pattern

DCS/P-315-250-S2, DCS/P-315-340-S2 4-way pattern

DCS/P-315-250-S2, DCS/P-315-340-S2 3-way pattern

DCS/P-315-250-S2, DCS/P-315-340-S2 2-way pattern

DCS - Ceiling Diffuser
Pressure drop, throw pattern and sound data, exhaust
DCS/P-E1

DCS/P-100-125-E1

DCS/P-160-160-E1

DCS/P-200-160-E1

DCS/P-200-250-E1

DCS/P-125-125-E1

DCS/P-160-250-E1

DCS/P-200-250-E1

DCS - Ceiling Diffuser

Halton
Pressure drop, throw pattern and sound data, exhaust

DCS/P-E1

DCS/P-250-250-E1

DCS/P-250-340-E1

DCS/P-315-250-E1

DCS/P-315-340-E1
Pressure drop, throw pattern and sound data, exhaust

DCS/P-E2

DCS/P-100-125-E2, DCS/P-125-125-E2, DCS/P-160-160-E2, DCS/P-160-250-E2

DCS/P-200-160-E2, DCS/P-200-250-E2, DCS/P-250-250-E2, DCS/P-250-340-E2

DCS/P-315-250-E2, DCS/P-315-340-E2

DCS - Ceiling Diffuser

Halton
**Servicing**

Open the front panel of the diffuser. Detach the air flow range adapter by unscrewing the four screws.

Remove the air flow adjustment module by pulling gently on the shaft (not the control spindle). Wipe the parts with a damp cloth, instead of immersing in water.

The washable Dacron sound attenuation material within the plenum can be removed to enable cleaning of the inner side of the plenum.

**Remount the measurement and adjustment module by pushing on the shaft until the unit meets the stop. Fix the air flow range adapter in place by screwing in the four screws. Push the front panel back into its place so that the springs lock.**

**Suggested Specifications**

The diffuser shall be of the modular type and comprise a diffuser and balancing plenum.

The front panel dimensions shall be adapted to a modular 600 x 600 mm suspended ceiling. The front panel of the diffuser shall be changeable, providing different appearance options.

The air flow operating range shall be adaptable by replacing an exchangeable air flow range adapter, independently of the diffuser size. (DCS/P, DCS/C, DCS/A, DCS/J)

The duct connection shall have optional dimensions, for adaptation to different air flow rates.

The balancing plenum shall be made of galvanised steel, comprising a changeable spigot in different sizes with integral gasket for airtight duct connection.

The front panel of the diffuser shall be detachable for access to the balancing plenum, the air flow range adapter, ductwork and the air flow measurement and adjustment module.

**DCS/P**

The perforated front panel of the diffuser shall be made of epoxy-painted steel with white (RAL 9010) as the standard colour.

**DCS/C DCS/A**

The conical front panel of the diffuser shall be made of extruded aluminium, with polyesterpainted white (RAL 9010) as standard colour.

**DCS/J**

The swirl front panel of the diffuser shall be made of epoxy-painted steel with a white (RAL 9010) standard colour. The swirl diffuser comprises fixed spiral blades to ensure a high mixing rate.

**DCS/N**

The multi-nozzle front panel of the diffuser shall be made of epoxy-painted steel with a white (RAL 9010) standard colour. The nozzles shall have a two-slot design in order to ensure efficient mixing of supply air. Nozzles shall also be individually adjustable in order to provide high flexibility for the adjustment of the throw pattern.
Product Code

DCS/F -D-N-M

F = Front panel
   C = Conical
      A1 = Conical with centre plate, 1
      A2 = Conical with centre plate, 2
      A3 = Conical with centre plate, 3
   P = Perforated
   J = Swirl
N1 = Nozzle, 16 pcs
N2 = Nozzle, 36 pieces
N3 = Nozzle, 80 pieces

D = Diameter of duct connection
   100, 125, 160, 200, 250, 315

N = Air flow range adapter
   125, 160, 250, 340
   N = None, if F = N1, N2 or N3

M = Model
   S1 = Supply + MSC
   S2 = Supply + Airflow equaliser
   E1 = Exhaust + MEC
   E2 = Exhaust + Airflow equaliser

Specifics and accessories

J = Jet direction
   R2 = 2 directions
   R3 = 3 directions
   R4 = 4 directions

IO = Ceiling type installation option
   NA = Standard for T-profile 600
   AM = Armstrong Orca ceiling
   DC = Dampa ceiling
   FL = Fineline ceiling 600
   TP = T-profile 625
   T2 = T-profile 675
F2 = Fineline ceiling 675

AT = Sound attenuation material
   N = No attenuation material
   D = Dacron
   W = Mineral wool

CO = Colour
   W = White, RAL 9010
   X = Special colour

Code example

DCS/C-315-250-S1, J=R3, IO=NA, AT=D, CO=W,