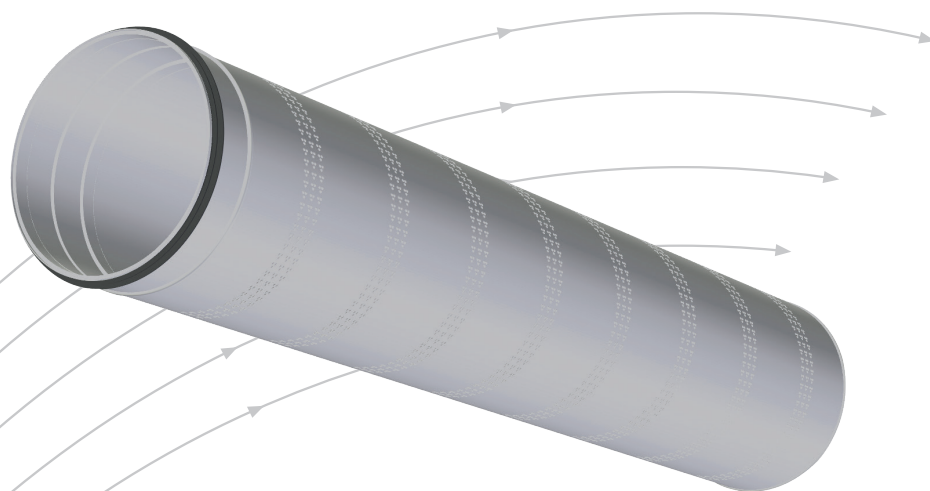


DKW

Duct diffuser for direct air supply



- Open or embedded installation
- Choice of flow patterns
- Diffuser available in 2m or 4m lengths
- Total-length adjustment with blanked-off ducts
- Dimensions: Ø160 - Ø500

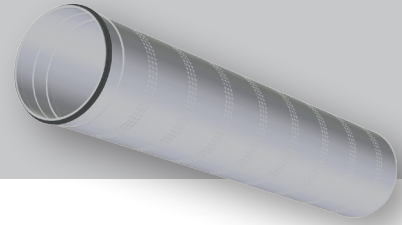
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APPLICATION

DKW is a perforated duct diffuser for freely suspended or embedded installation. The system can be adjusted to the length required by combining active parts and blanked-off ducts. With its choice of flow patterns, the DKW can be used for both under- and overheated air and is a high installation-friendly solution.

DESIGN

DKW has a diameter equivalent to standard ductwork dimensions. The unit is delivered with an active length of 2 m or 4 m. Total length required is achieved by using blanked-off ducts. Both the blanked-off ducts and active parts are available in 1m or 2m modules. Parts are joined together by means of connection nipples and a sealed end-cover. The DKW is fitted with a suspension bar at the top.

MATERIALS AND SURFACE COATING

DKW comes in a galvanised steel-plate design with a RAL 9003 - gloss 30 finish. Other colours and galvanised versions are available on request.

DIMENSIONS AND WEIGHT, DKW

DKW has a diameter equivalent to standard ductwork dimensions. The modules are available in 1m or 2m lengths.

Dim.	Weight per meter [kg]
160	2,8
200	3,5
250	4,4
315	5,5
400	6,9
500	8,7

Table 1

QUICK SELECTION

DKW	[m ³ /h]		
	25 dB(A)	30 dB(A)	35 dB(A)
Ø160, 2m	212	246	285
Ø160, 4m	237	276	320
Ø200, 2m	331	384	446
Ø200, 4m	371	431	500
Ø250, 2m	517	601	697
Ø250, 4m	579	673	781
Ø315, 2m	820	954	1106
Ø315, 4m	919	1069	1240
Ø400, 2m	1322	1538	1784
Ø400, 4m	1483	1724	2000
Ø500, 2m	2066	2403	2787
Ø500, 4m	2317	2694	3125

Table 2: The table shows air flow rate at given sound power levels.

FLOW PATTERNS

To accommodate for room geometry and positioning, the following flow patterns are available.

Type and dispersion angle must be included in the order code.

* = only as 4m diffuser for Ø315-500

** = only as 4m diffuser for Ø500

Type 1	Type 2	Type 3	Type 4	Type 5	Type 6
360°	240° 180° 120°	240° 180° 120°	2x120° 2x90° 2x60°	120° 90° ** 60° *	180° 120°

Fig. 1: Flow patterns and types

POSITIONING IN ROOM

Air velocities in the occupied zone will, in addition to air flow rate and temperature, depend on solid geometry, heat sources and the positioning of these. In order to limit the risk of draft in the occupied zone, the diffuser should have 3 x ØD from the wall, see fig. 2. For undercooled air, mounting height to the diffuser's lower part should be at least 2.5 m at Dt=3°, and at least 3.5 at Dt=10°.

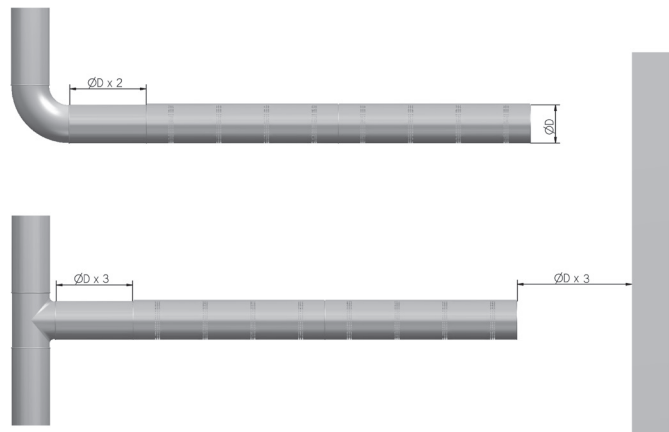
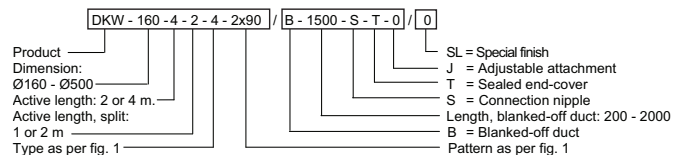


Fig. 2: Spacing for positioning in room

ORDER CODE



Example:
DKW-160-4-2-4-2x90 / B-1500-S-T-0 / 0

Explanation:
DKW, dim. Ø160, 4m length, two 2m units, type 4, pattern: 2x90°. Blanked-off duct, length: 1500, connection nipple and sealed end-cover.

Number of connection nipples and sealed end-covers is determined by the total length required. For suspension purposes, each length is delivered with one M6 nut as standard.

DKW

ACOUSTIC DATA

The diagram provides a summary of the A-weighted sound power level from diffuser, L_{WA} . Correction factors in table 3 are used to calculate emitted sound power level at the respective frequencies, $L_w = L_{WA} + KO$. A room with absorption equivalent to 10 m² Sabine will have a sound pressure level which is 4 dB below the sound power level emitted.

Example:

DKW 315 2 m, 300 l/s

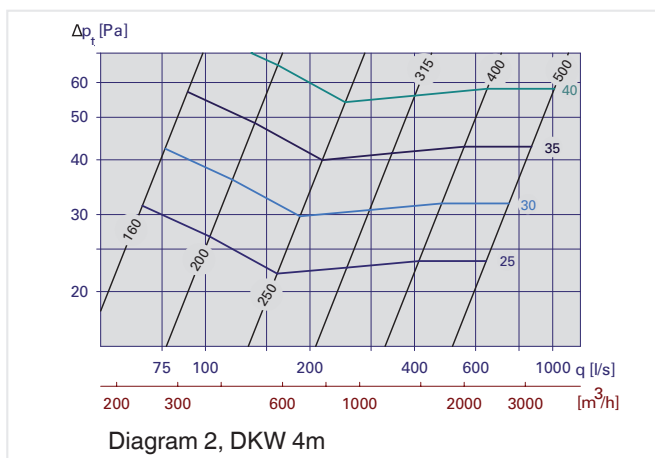
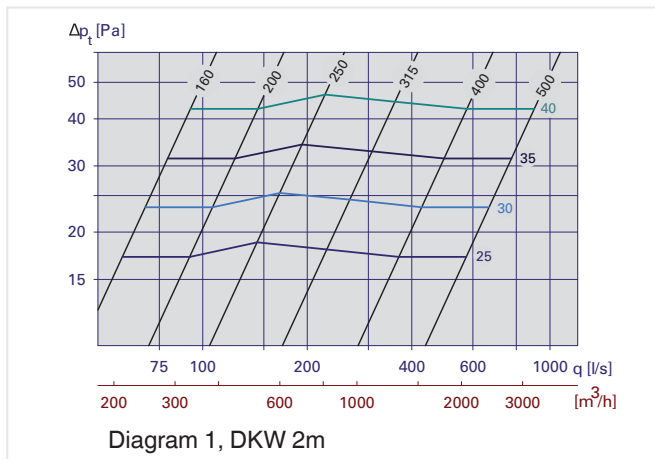
According to the diagram, $L_{WA} = 34 \text{ dB(A)}$.

We aim to find:

- Emitted sound power level at 250 Hz
- A-weighted sound pressure level in an office.
 - The correction factor is -2 dB. Emitted sound power level at 250 Hz is thus: $L_w = L_{WA} + KO = 34 + (-2) = 32 \text{ dB}$
 - If we assume a room absorption equivalent to 10m² Sabine, the A-weighted sound pressure level will be $34 - 4 = 30 \text{ dB(A)}$.



CALCULATION DIAGRAMS



Correction factor [KO], DKW

DKW		KO [dB]							
Dim.	Type	63	125	250	500	1k	2k	4k	8k
160	2 m	2	-5	-4	-2	-5	-11	-20	-21
	4 m	8	-3	-3	-2	-5	-10	-15	-14
200	2 m	0	-7	-4	-1	-5	-10	-20	-22
	4 m	4	-3	-2	-2	-5	-10	-15	-15
250	2 m	-4	-3	-3	-1	-5	-11	-20	-20
	4 m	-3	-3	-1	-2	-5	-9	-18	-18
315	2 m	-1	-2	-2	-2	-4	-11	-20	-20
	4 m	-1	-3	-1	-2	-5	-9	-18	-19
400	2 m	2	-2	-1	-2	-4	-11	-20	-21
	4 m	0	-3	-2	-3	-5	-9	-15	-18
500	2 m	4	-2	-2	-3	-4	-11	-20	-21
	4 m	1	-3	-2	-3	-5	-9	-15	-19

Table 3

Static sound attenuation incl. end reflection, DKW

DKW		Attenuation [dB]							
Dim.	Type	63	125	250	500	1k	2k	4k	8k
160		20	14	7	4	3	4	4	4
200		18	12	6	2	2	3	3	4
250		14	9	4	2	1	2	2	3
315		13	8	3	2	1	2	2	3
400		11	7	2	1	1	2	2	3
500		10	5	1	1	1	1	2	1

INSTALLATION

The various modules are joined together by using the connection nipples supplied, which are held in place by the enamelled screws provided. DKW can be suspended from the ceiling by using a M6 threaded rod screwed directly into the square nuts fitted to the mounting bar (fig. 4). Adjustable eye bolts for threaded rod suspension are available as accessory items (fig. 5).

COMMISSIONING

Commissioning and air flow measurements are carried out by using a separate damper and measuring station.

MAINTENANCE

The diffuser can be cleaned by using a damp cloth. Access to the duct network is obtained by removing the end cover.

ENVIRONMENT

Enquiries regarding product declaration can be directed to our sales team, or information can be found at our website: www.trox.no

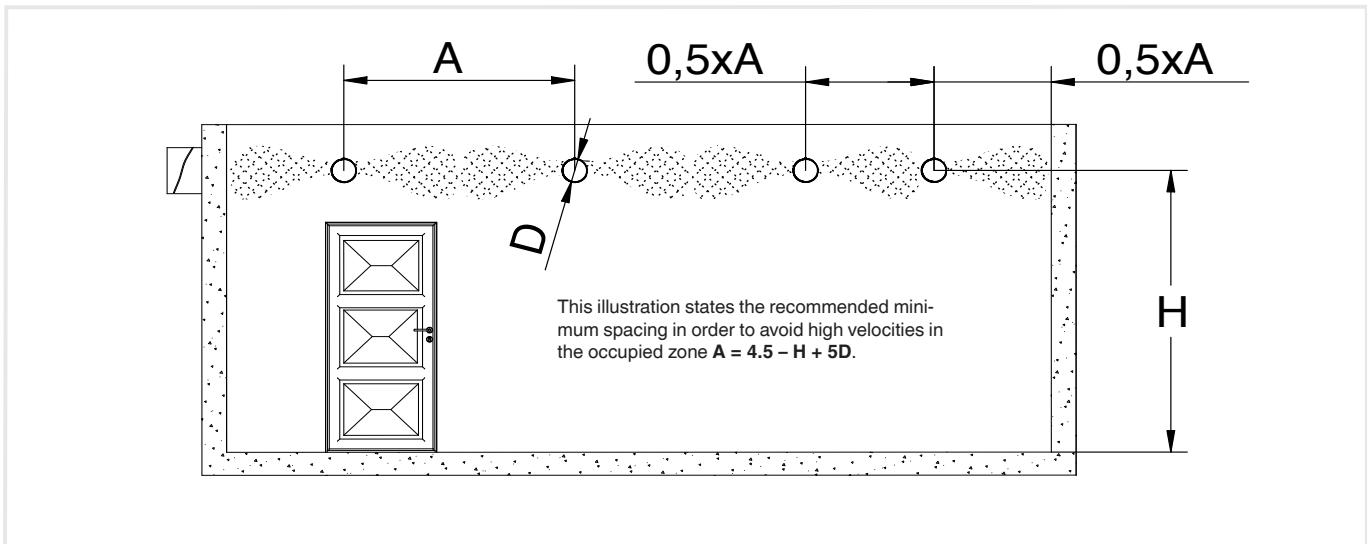


Fig. 3: Installation

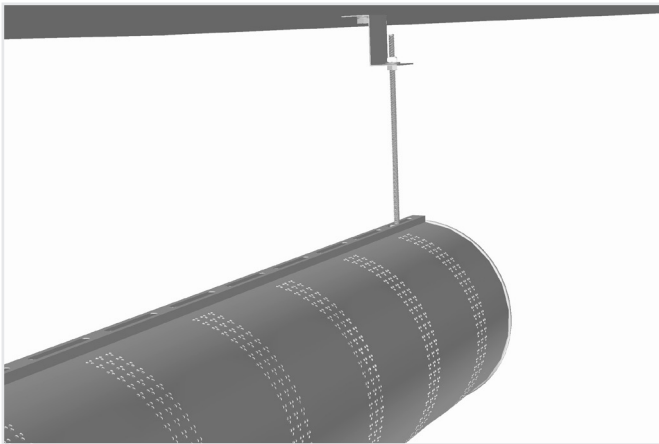


Fig. 4: Installation

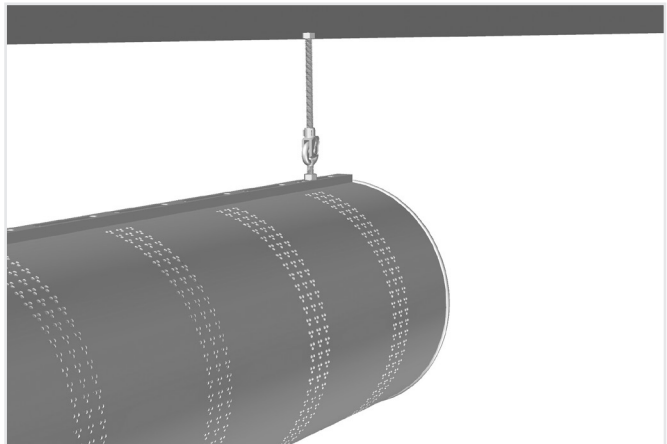


Fig. 5: Installation

DKW is developed and manufactured by:

The company reserves the right to make amendments without prior notice.