

### FUNCTION

The KDYa is a rectangular disc diffuser for supply air. It is installed directly into a circular or rectangular ductwork. Suitable for constant or variable flow. The air supply can be at over- or under-temperature and both horizontal and vertical spread patterns are possible.

### QUICK FACTS

- Easy to install
- Available for both circular and rectangular ducts
- Vane control
- 100% flexible spread pattern

### QUICK GUIDE

KDYa Size	AIR FLOW - SOUND LEVEL		
	25 dB(A)	30 dB(A)	35 dB(A)
2-7	18	23	27
2-9	24	29	35
2-14	37	45	54
2-18	47	58	70
3-14	55	68	81
3-18	70	88	105
4-14	70	88	105
4-18	95	115	140

Applies to diffusers, installed in the duct with by-pass air flow.

**DESIGN**

The KDYa is a rectangular supply air terminal designed to be mounted directly in the side of either a rectangular or circular duct. The front of the diffuser is fitted with a number of aerodynamically formed discs. There is a fixed vane on the inside of the diffuser front which gives an even outward airflow through the whole unit. The diffuser is available with two, three or four rows of discs.

**MATERIALS AND SURFACE TREATMENT**

The diffuser is manufactured in sheet steel and painted in Stifab Farex interior white paint.

**SPECIAL**

In addition to standard sizes, terminals with special dimensions or a number of discs can be supplied. Please contact your nearest Stifab Farex office for further information.

**PLANNING**

The discs can be rotated through 360° which means that an infinite number of spread patterns are available, both horizontally and vertically, without changing the pressure drop or the sound level.

**INSTALLATION (See figur 1)**

A hole is cut through the side of the duct in accordance with the specified hole dimensions. The KDYa is then screwed to the duct.

**COMMISSIONING**

For commissioning and measurement we recommend that a measuring damper be installed before the first diffuser.

**MAINTENANCE**

The diffuser can be cleaned when necessary using lukewarm water and detergent.

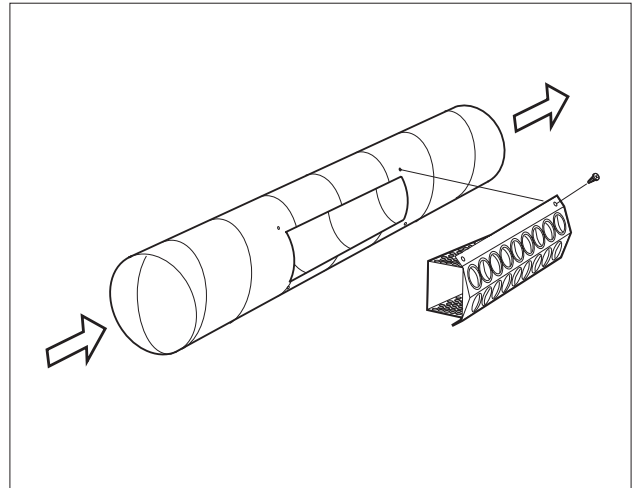
**ENVIRONMENT**

The declaration of construction goods can be found on our Internet site.

**TECHNICAL DATA**

- The sound level dB(A) applies to rooms of 10 m<sup>2</sup> equivalent absorption area.
- The throw L<sub>0,2</sub> is applicable to isothermal conditions.
- The recommended maximum under-temperature with a standard disc setting is 10°.
- The maximum recommended air velocity before the first diffuser in one branch of a duct is 5 m/s
- For calculating the width of the airstream, air velocities in the zone of occupation or sound levels in rooms with other dimensions, please refer to our calculation programmes ProAir and ProAc, which are both available on our home page on the Internet.

Figure 1



**Table 1. Maximum number of diffusers in one duct branch.**

In order to obtain an even distribution to all of the diffusers in a duct branch, the number of diffusers fitted in one branch of a duct is limited as shown below for various duct dimensions.

Size of diffuser	Number of same diffuser type	Required duct dimension
2-7	8	250
	9	315
	10	400
2-9	6	250
	8	315
	10	400
2-14	4	250
	7	315
	10	400
2-18	3	250
	5	315
	10	400
3-14	4	315
	8	400
	10	500
3-18	3	315
	6	400
	10	500
4-14	5	400
	9	500
	10	630
4-18	4	400
	7	500
	10	630

**Sound data - KDYa - supply air**

Sound power level  $L_w$  (dB)

Table  $K_{OK}$

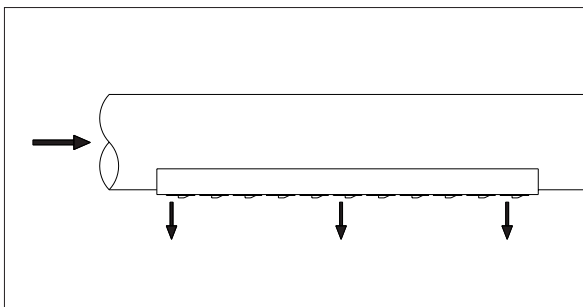
Size KDYa	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
2-7	12	15	9	0	-8	-20	-29	-31
2-9	12	15	9	0	-8	-20	-29	-31
2-14	12	15	9	0	-8	-20	-29	-31
2-18	12	15	9	0	-8	-20	-29	-31
3-14	12	15	9	0	-8	-20	-29	-31
3-18	12	15	9	0	-8	-20	-29	-31
4-14	12	15	9	0	-8	-20	-29	-31
4-18	12	15	9	0	-8	-20	-29	-31
Tol. ±	2	2	2	2	2	2	2	2

Sound attenuation  $\Delta L$  (dB)

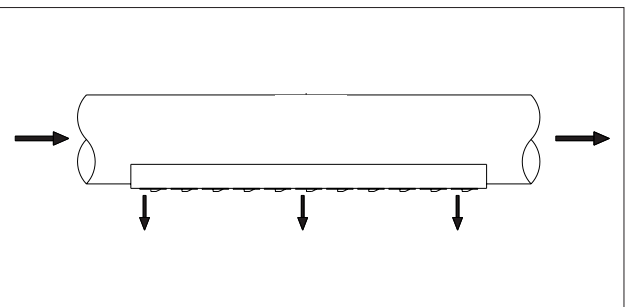
Table  $\Delta L$

Size KDYa	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
2-7	15	10	5	1	1	0	0	0
2-9	15	9	5	2	1	1	0	0
2-14	13	8	3	1	0	0	0	0
2-18	12	7	3	1	0	0	0	0
3-14	12	7	3	1	0	0	0	0
3-18	11	6	2	1	0	0	0	0
4-14	11	6	2	1	0	0	0	0
4-18	9	5	2	0	0	0	0	0
Tol. ±	2	2	2	2	2	2	2	2

**Installation without by-pass flow**



**Installation with by-pass flow**



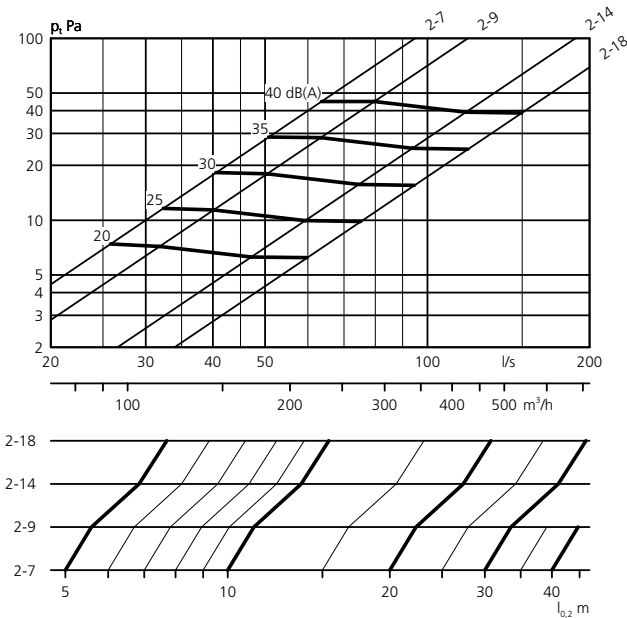
Engineering graphs - KDYa - supply air

Air flow - Pressure drop - Sound level

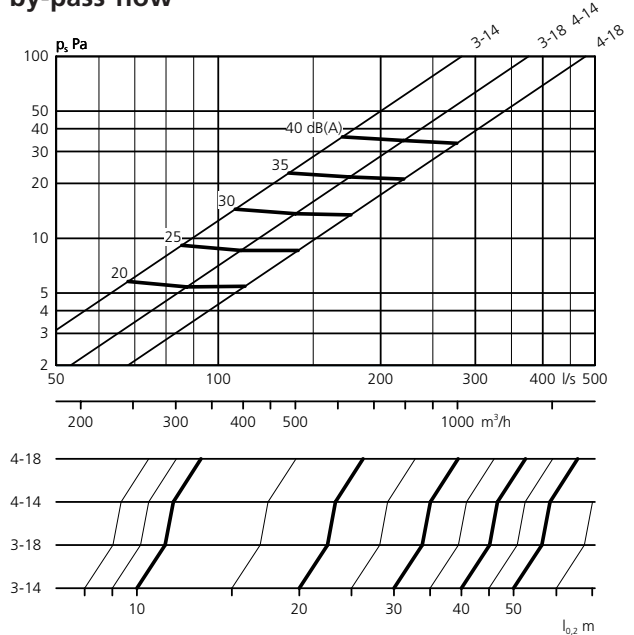
- The graphs must not be used for commissioning
- The dB(A) values are for rooms with normal acoustic absorption of 4 dB and a volume of 30 m<sup>3</sup>.

- The dB(C) value is normally 6-9 dB's higher than the dB(A) value. For more accurate calculations, see the calculation template in the chapter on Acoustics in the Technical Information section of this catalogue.

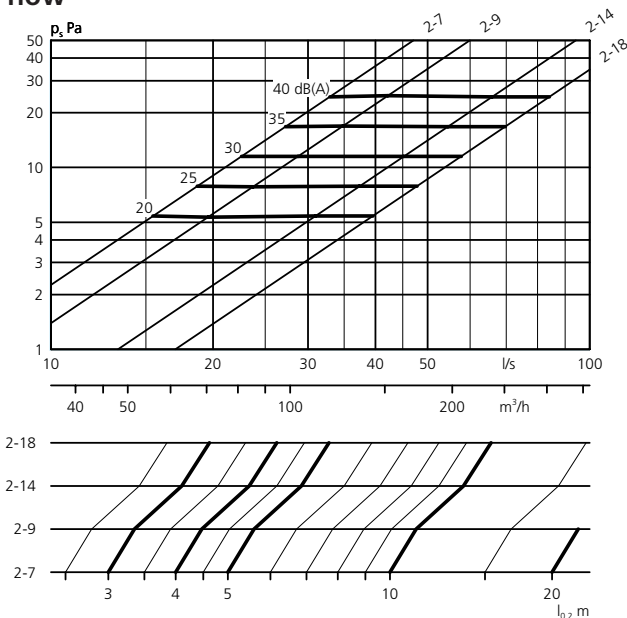
KDYa C and R, 2 rows of discs, without by-pass flow



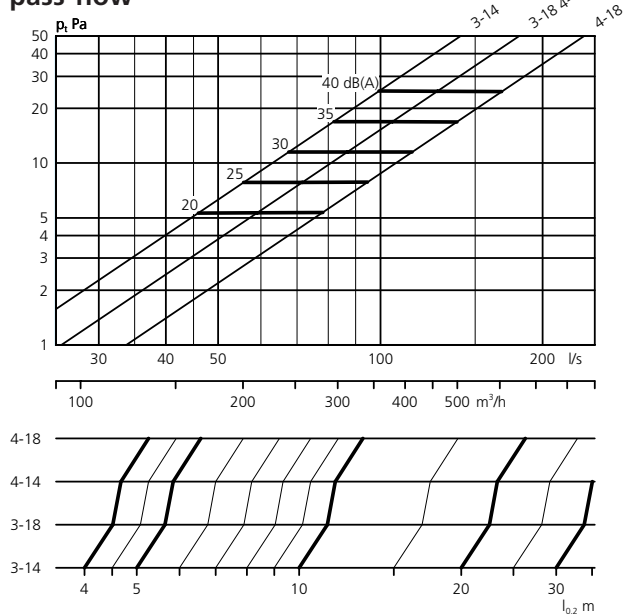
KDYa C and R, 3 resp 4 rows of discs, without by-pass flow



KDYa C and R, 2 rows of discs, with by-pass flow



KDYa C and R, 3 resp 4 rows of discs, with by-pass flow



**DIMENSIONS AND WEIGHT**

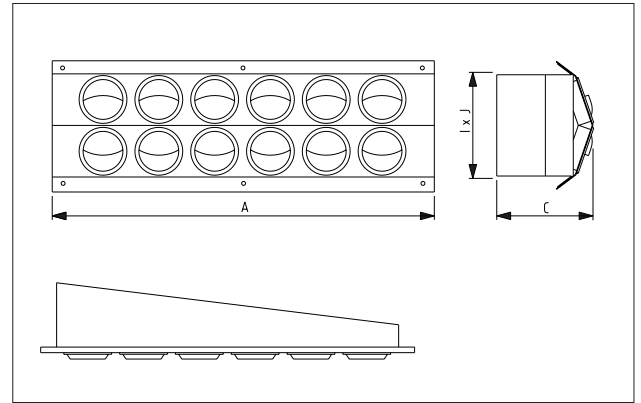
**KDYa-C**

Size	A	C	I x J	Number of discs	Weight, kg
2-7	550	126	132 x 510	14	2.0
2-9	690	150	132 x 650	18	2.4
2-14	1040	170	132 x 1000	28	3.1
2-18	1320	205	132 x 1280	36	3.7
3-14	1040	175	197 x 1000	42	3.9
3-18	1320	210	197 x 1280	54	5.0
4-14	1040	195	262 x 1000	56	4.9
4-18	1320	230	262 x 1280	72	6.7

Hole-making size = I x J

Designed to fit duct dimensions according to the specification table on the last page.

**KDYa-C**

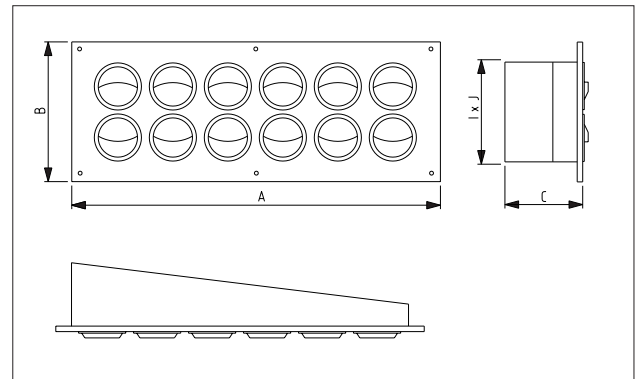


**KDYa-R**

Size	A	B	C	I x J	Number of discs	Weight, kg
2-7	540	178	95	132 x 510	14	2.0
2-9	680	178	113	132 x 650	18	2.4
2-14	1030	178	160	132 x 1000	28	3.1
2-18	1310	178	190	132 x 1280	36	3.7
3-14	1030	243	160	197 x 1000	42	3.9
3-18	1310	243	190	197 x 1280	54	5.0
4-14	1030	307	160	262 x 1000	56	4.9
4-18	1310	307	190	262 x 1280	72	6.7

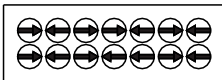
Hole-making size = I x J

**KDYa-R**

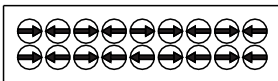


**Standard disc pattern**

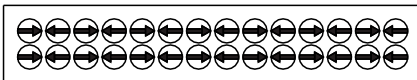
2-7



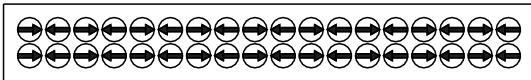
2-9



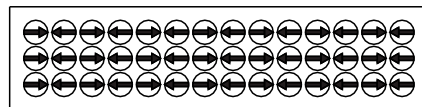
2-14



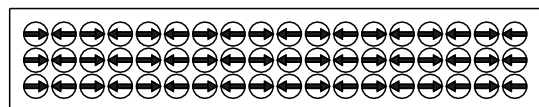
2-18



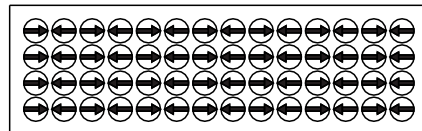
3-14



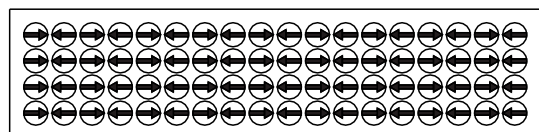
3-18



4-14



4-18



## ORDER KEY

### Product designation

Disc diffuser for duct mounting      KDYa    a - b - cc - ddd

Suitable duct type:    C    Circular  
                                   R    Rectangular

Number of discs height

Number of discs width

Dimensions in mm:

Standard range

Fits duct dimensions

Size:	Standard range	Fits duct dimensions
2-7	2-7	250, 315, 400
2-9	2-9	250, 315, 400
2-14	2-14	250, 315, 400
2-18	2-18	250, 315, 400
3-14	3-14	315, 400, 500
3-18	3-18	315, 400, 500
4-14	4-14	400, 500, 630
4-18	4-18	400, 500, 630

## SPECIFICATION EXAMPLE

SD XX

Stifab Farex rectangular diffuser of type KDYa for installation in a circular duct, with the following functions:

- 100% flexible spread pattern
- Individually adjustable discs of plastic
- Fixed vane function
- Powder-coated in white

Size:                            KDYa C - b - cc - ddd                            xx items