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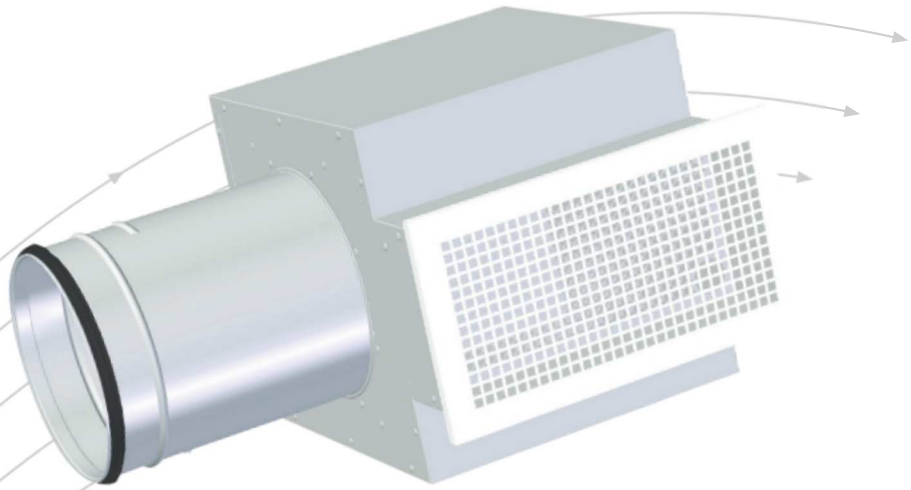
UPK

Extract-air grille with ATK plenum box



- Grille with mounting frame
- Removable damper for easy cleaning
- ATK box lined with Ecoson attenuation material

TROX® TECHNIK

Auranor

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UPK grille

APPLICATION

UPK-R is a rectangular extract-air grille for integrated wall or ceiling installation. UPK-H is suitable for T-profile ceiling systems, 600 x 600.

DESIGN

The UPK-R grille features square perforation and a fitted frame for ATK box mounting.

MATERIALS AND SURFACE COATING

UPK-R panel and frame are made of steel, and are delivered in a RAL 9010 finish. Panel in other materials and/or colours are available on request.

QUICK SELECTION

UPK-R	[m³/h]		
B x H	30dB(A)	35dB(A)	40dB(A)
200-100	200	245	300
300-100	315	390	455
400-100	395	470	575
500-100	460	575	685
300-150	450	560	675
400-150	520	655	800
500-150	700	885	1060
400-200	790	970	1190
500-200	965	1160	1420
600-200	1090	1315	1620
500-300	1270	1600	1945
600-300	1440	1800	2160

Table 1: The table provides air flow rates at given sound power levels.

DIMENSIONS AND WEIGHT, UPK-R

UPK-R	
W x H	Weight [kg]
200x100	0,50
300x100	0,55
400x100	0,60
500x100	0,65
300x150	0,70
400x150	0,75
500x150	0,95
400x200	1,00
500x200	1,15
600x200	1,20
500x300	1,50
600x300	1,65

Table 2

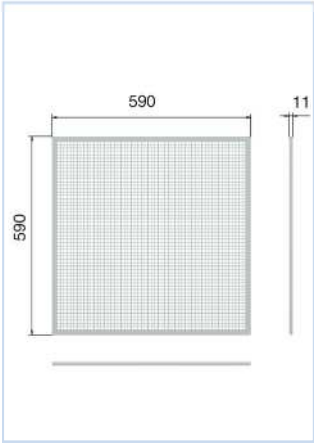


Fig. 1, UPK-H

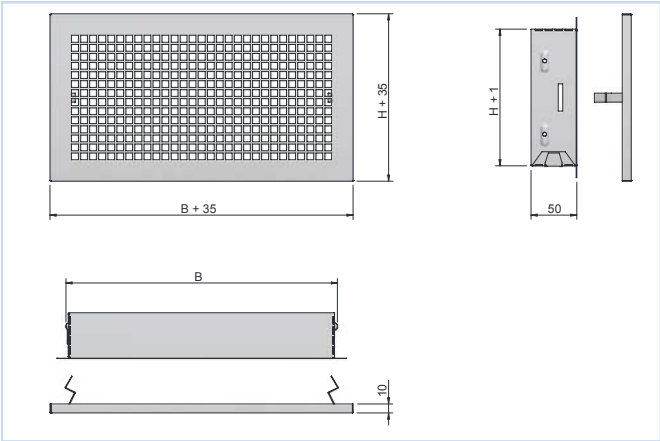


Fig 2, UPK-R

ORDER CODE, UPK-R

UPK-R - 400 - 200 / 0 - 0

Product
B = Width
H = Height

SL = Special finish
SM = Special material

Example:
UPK-R-400-200 / 0-0
Explanation:
UPK-R extract-air grille. 400 width and 200 hight

ORDER CODE, UPK-H

UPK-H / 0 - 0

Product

SL = Special finish
SM = Specia material

Example:
UPK-H / 0-0
Explanation:
UPK-H extract-air grille for T-profile ceiling system, 600x600.

ORDER CODE, ATK

ATK - S - 250 - 500 - 150 / 0

Product
Connection outlet:
B = Rear-entry spigot
S = Rear-entry spigot
LS = Long-side spigot entry:

SM = Special dimensions
Grille attachment dimensions:
H = Height
B = Width

Dimension outlet: Ø125—Ø315

Example:
ATK-S-250-500-150/0
Explanation:
ATK extraction box with side-entry spigot and Ø250 outlet, 500 width and 150 height for grille attachment.

ORDER CODE, ATK-H

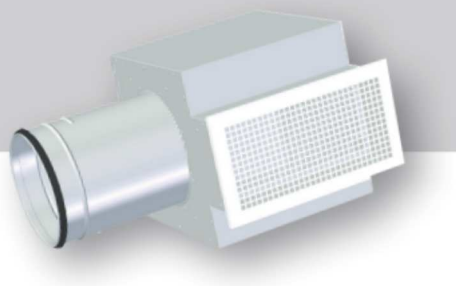
ATK-H - S - 160

Product
Anslutning utløp:
B = Bakanslutning
S = Sideanslutning

Dimensjon utløp:
Ø 160 - Ø400

Eksempel:
ATK-H-S-160
Forklaring:
ATK-H avtrekkskammer for profilhimling 600x600 med sideanslutning Ø160.

UPK grille with ATK box



APPLICATION

The ATK plenum box is used for improved sound attenuation and commissioning options. This rectangular box is fitted with a removable damper which provides access to the connecting duct.

DESIGN

The ATK box features a damper for commissioning. ATK-B, S and LS are equipped with measuring point. The box is insulated with Ecoson.

MATERIALS AND SURFACE COATING

The ATK box is made in galvanised steel, and is lined with Ecoson fibre-free insulation inside. Its connection collar is fitted with an EPDM rubber gasket.

ORDER CODE, UPK-R with ATK box

UPK-R - 500 - 150 - K / 0 - 0

Product:
B = Width grille
H = Height grille

SL = Special finish
SM = Special material

K - S - 250

Produkt: K = ATK box
Connection collar:
B = Rear-entry spigot
S = Side-entry spigot
LS = Long-side spigot entry

Dimension outlet:
Ø125 - Ø315

Example:
UPK-R-500-150-K-S-250/0-0
Explanation:
UPK-R extrac-air grille with frame, 500 widt and 150 height, equipped with ATK box with side-entry spigot dim. Ø250, UPK grille in standard white RAL 9010

ORDER CODE, UPK-H with ATK box

UPK-H - K / 0 - 0

Product

SL = Special finish
SM = Special material

K - S - 315

Product:
K = ATK-H box
Connection collar:
B = Rear-entry spigot
S = Side-entry spigot

Dimension outlet:
Ø160 - Ø400

Example:
UPK-H-K-S-315/0-0
Explanation:
UPK-H extrac-air grille for profile ceiling 600x600, equipped with ATK box with side-entry spigot dim. Ø315, UPK grille in standard white RAL 9010 finish

QUICK SELECTION, UPK-H

ATK-H box		UPK-H	m^3/h		
Dim.	Spigot ent.	Dim.	25 dB(A)	30 dB(A)	35 dB(A)
160	B	600 x 600	133	169	238
160	S	600 x 600	126	234	353
200	B	600 x 600	209	299	418
200	S	600 x 600	201	324	436
250	B	600 x 600	338	504	648
250	S	600 x 600	346	594	756
315	B	600 x 600	475	774	1415
315	S	600 x 600	810	947	1098
400*	B	600 x 600	2430	2970	3618
400*	S	600 x 600	2088	2412	2808

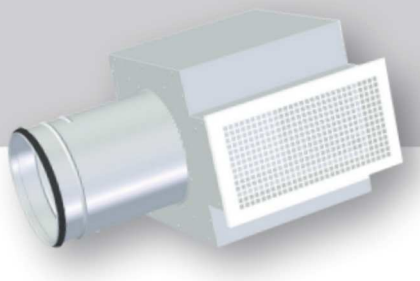
*Table 3: The table provides air flow rates at given sound power levels and 50 Pa total pressure loss. * = Ø400 is without damper.*

QUICK SELECTION

ATK box		UPK-R	m^3/h		
Dim.	Spigot entl.	B x H	25 dB(A)	30 dB(A)	35 dB(A)
125	B	200x100	68	119	180
125	S	200x100	86	133	184
125	LS	200x100	68	119	184
160	B	300x100	-	126	256
160	S	300x100	126	187	263
160	LS	300x100	130	212	281
160	B	400x100	137	198	295
160	S	400x100	126	205	295
160	LS	400x100	133	202	320
200	B	500x100	252	360	454
200	S	500x100	216	284	392
200	LS	500x100	-	270	396
200	B	300x150	220	324	432
200	S	300x150	216	317	421
200	LS	300x150	191	306	436
250	B	400x150	-	414	533
250	S	400x150	-	436	580
250	LS	400x150	360	493	587
250	B	500x150	-	468	684
250	S	500x150	-	436	648
250	LS	500x150	-	446	655
250	B	400x200	-	529	738
250	S	400x200	324	450	648
250	LS	400x200	335	446	601
315	B	500x200	468	828	1098
315	S	500x200	461	720	918
315	LS	500x200	454	713	918
315	B	600x200	720	1098	1368
315	S	600x200	720	972	1260
315	LS	600x200	720	900	1260
315	B	500x300	648	900	1098
315	S	500x300	-	774	1116
315	LS	500x300	468	774	1116
315	B	600x300	846	972	1152
315	S	600x300	648	900	1224
315	LS	600x300	612	774	936

Table 4: The table provides air flow rates at given sound power levels and 50 Pa total pressure loss.

UPK grille with ATK box



DIMENSIONS AND WEIGHT - ATK, S AND LS

ATK				
Dim.	BFxHF	D	A	Weight[kg]
125	200x100	124	180	2,8
160	300x100	159	215	4,3
160	400x100	159	215	5,3
200	500x100	199	305	8,5
200	300x150	199	305	6,5
250	400x150	249	355	9
250	500x150	249	355	10,4
250	400x200	249	355	9,5
315	500x200	314	415	12,7
315	600x200	314	415	14
315	500x300	314	415	12,8
315	600x300	314	415	13,7

Table 5

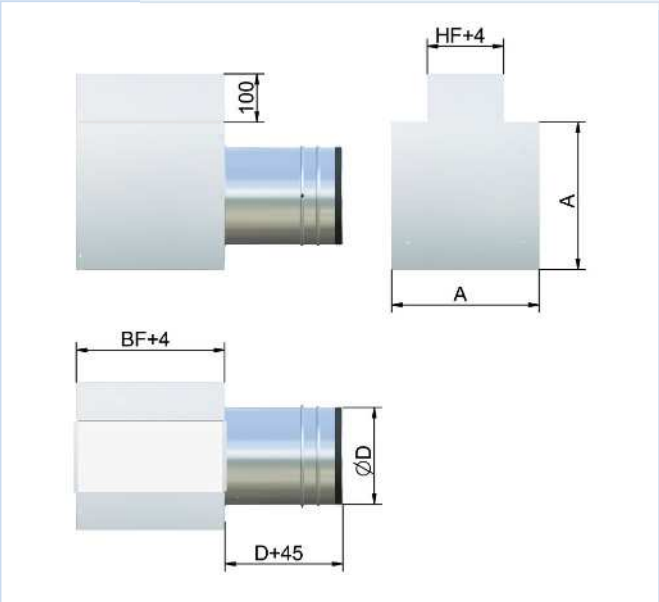


Fig. 4, ATK-S

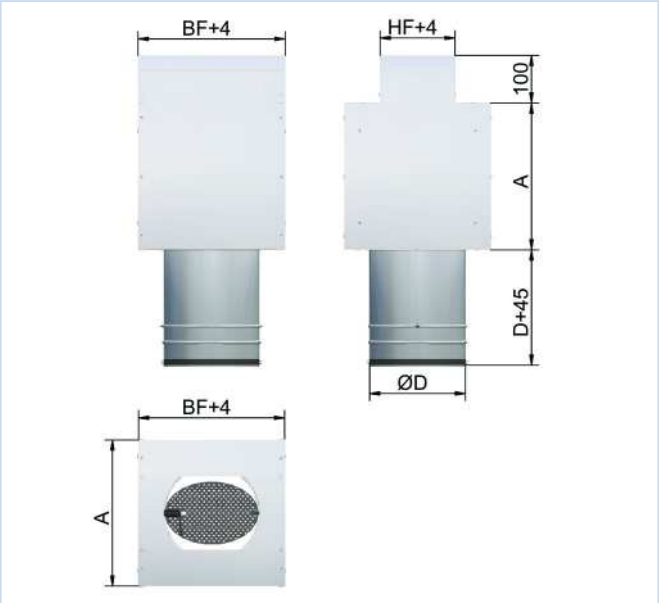


Fig. 3, ATK-B

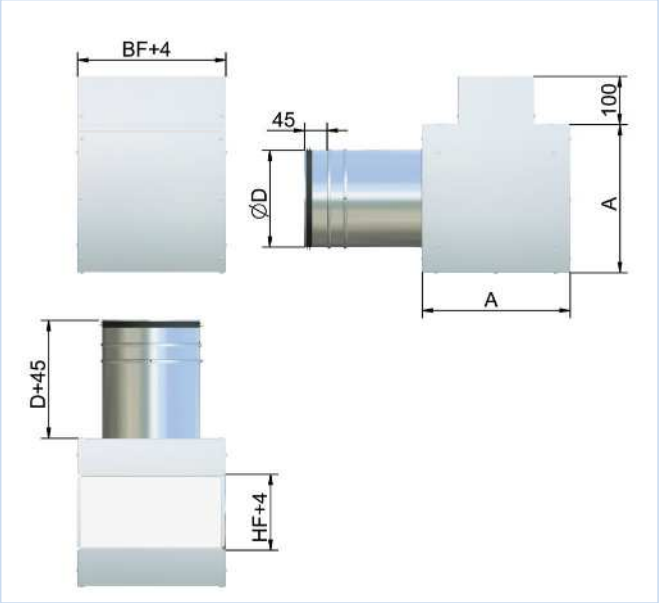
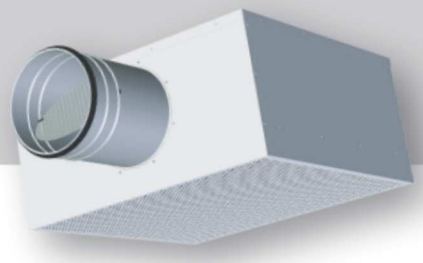


Fig. 5, ATK-LS

UPK-H with ATK box



DIMENSIONS AND WEIGHT ATK-H-S/B

ATK-H-S/B			
Dim.	D	H	Weight[kg]
160	159	245	7,8
200	199	285	8,2
250	249	335	8,9
315	314	400	10,1
400	399	485	11,2

Table 6

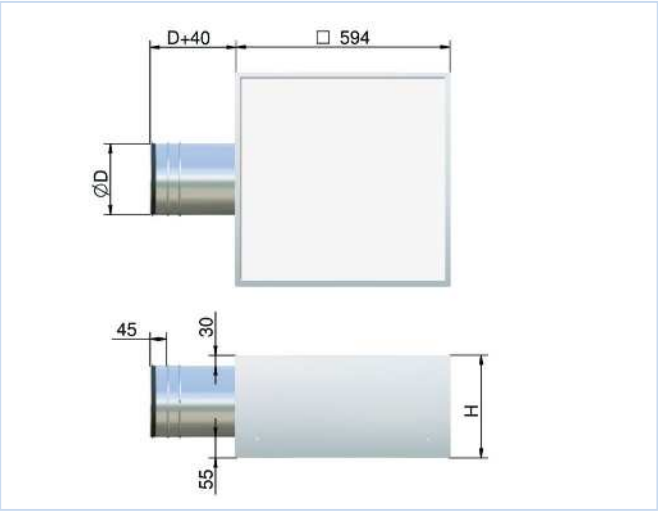


Fig. 6, ATK-H-S

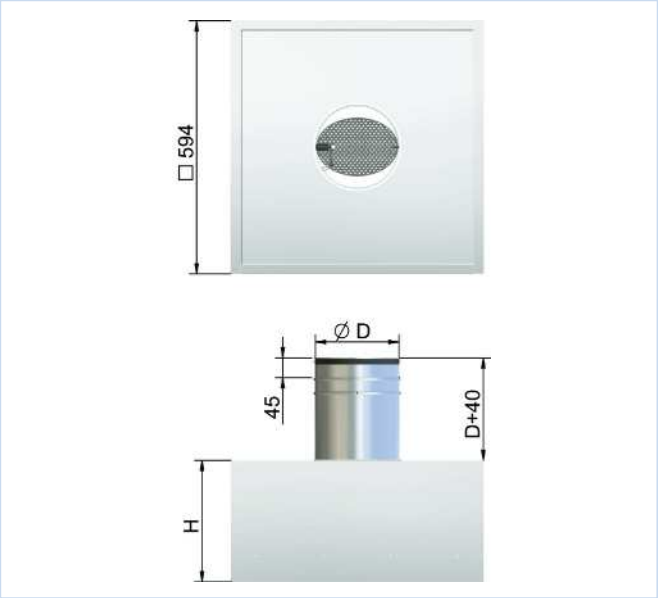


Fig. 7, ATK-H-B

ACOUSTIC DATA

The diagrams provide a summary of the A-weighted sound power level from air-extract unit, L_{WA}. Correction factors in table 8, page 15, are used to calculate emitted sound power level at the respective frequencies, $L_W = L_{WA} + KO$. A room with absorption equivalent to $10m^2$ Sabine will have a sound pressure level which is 4 dB below the sound power level emitted.

Example:
A room requires an indoor air extraction level of 80 l/s, and for this purpose a UPK-R 300x100 and ATK with rear-entry spigot is used. Room attenuation is 4 dB, and the damper is to be chocked 20 Pa. According to diagram 4, L_{WA} = 32 dB(A) with open damper and 21 Pa total pressure loss.

We aim to find:
a) Emitted sound power level from air-extract unit at 250 Hz, damper open.
b) A-weighted sound pressure level in the room with damper open.
c) A-weighted sound pressure level in the room with damper chocked.
d) Emitted sound power level from air-extract unit at 250 Hz, damper chocked.

Solution:
a) According to table 8, the correction factor for 250 Hz is -2 dB. L_W at 250 Hz is thus: $L_{WA} + KO = 33 + (-2) =$ 31 dB
b) A room attenuation equivalent to 4 dB provides a sound pressure level in the room of: 31 - 4 = 27 dB(A)
c) 20 Pa chocking produces 41 Pa, and the diagram shows an increase in L_{WA} of 3dB. The sound pressure level is thus: 27 + 3 = 30 dB(A)
d) According to table 8, the correction factor for 250 Hz is -6 with damper closed and -2 with damper open. The factor to be used for our working point position is thus +3. Emitted sound power level L_W at 250 Hz is then: $L_{WA} + KO = 33 + (-3) =$ 30 dB(A)

CALCULATION DIAGRAMS

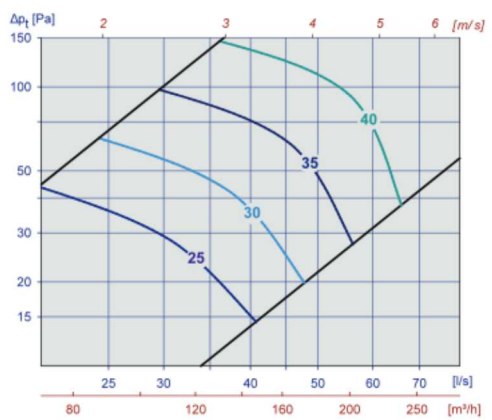


Diagram 1, UPK-R w / ATK-B 200x100 Ø125

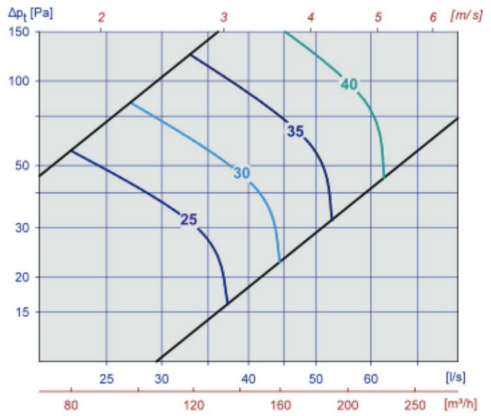


Diagram 2, UPK-R w / ATK -S 200x100 Ø125

UPK

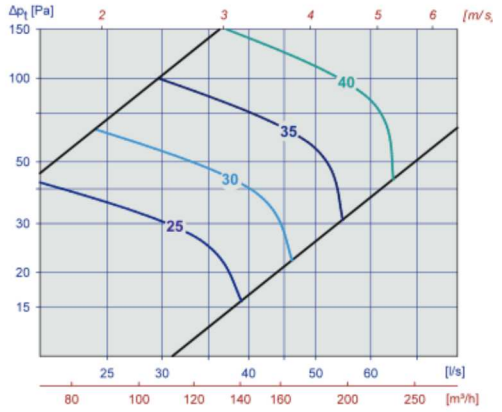


Diagram 3, UPK-R w / ATK-LS 200x100 Ø125

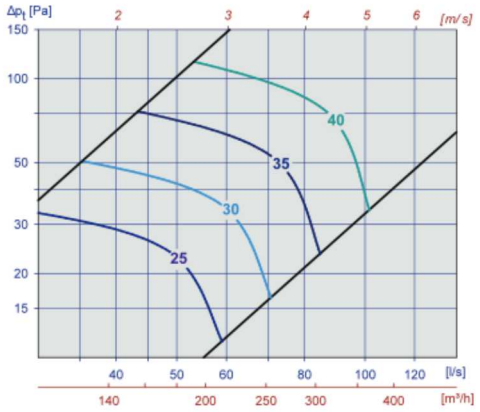


Diagram 4, UPK-R w / ATK-B 300x100 Ø160

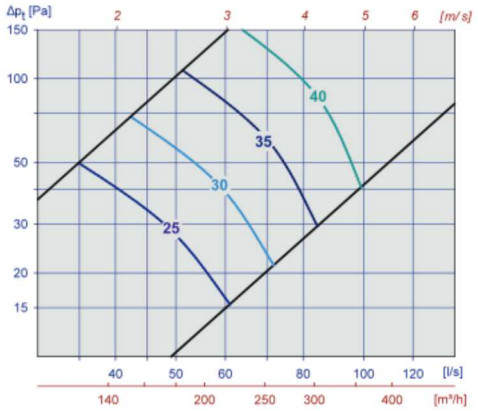


Diagram 5, UPK-R w / ATK-S 300x100 Ø160

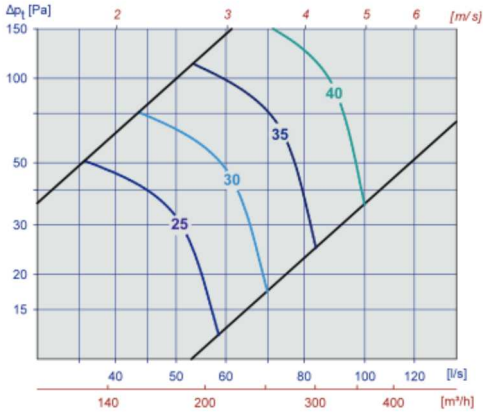


Diagram 6, UPK-R w / ATK-LS 300x100 Ø160

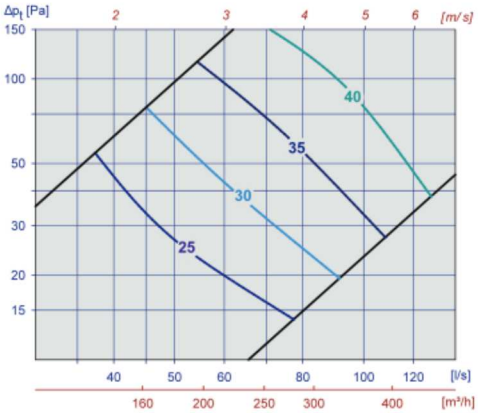


Diagram 7, UPK-R w / ATK-B 400x100 Ø160

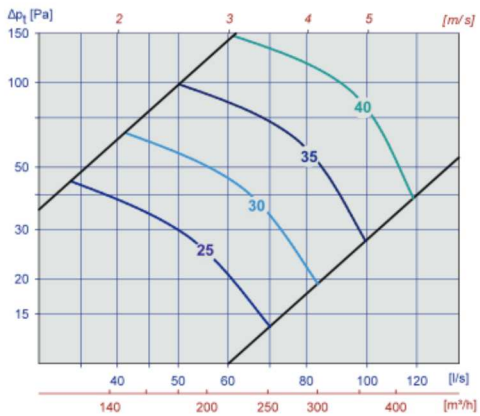


Diagram 8, UPK-R w / ATK-S 400x100 Ø160

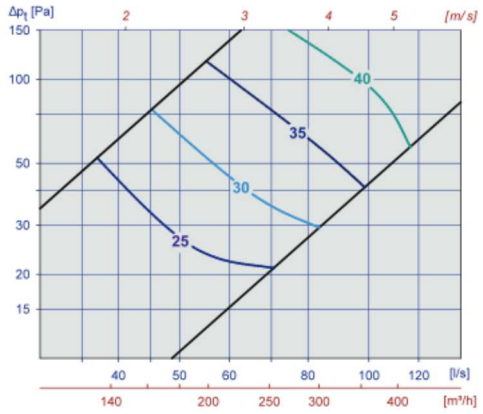


Diagram 9, UPK-R w / ATK-LS 400x100 Ø160

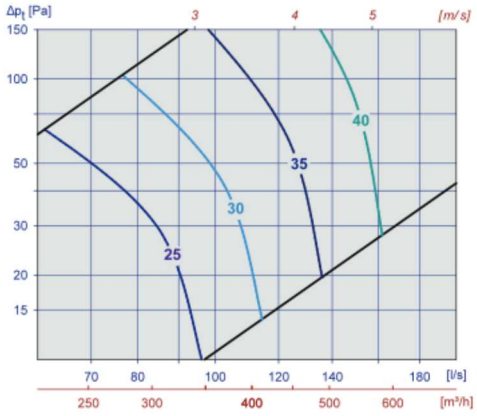


Diagram 10, UPK-R w / ATK-B 500x100 Ø160

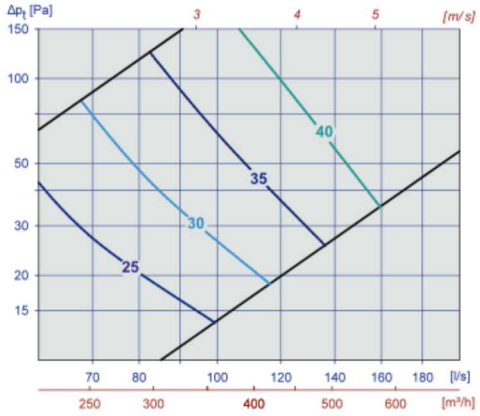


Diagram 11, UPK-R w / ATK-S 500x100 Ø200

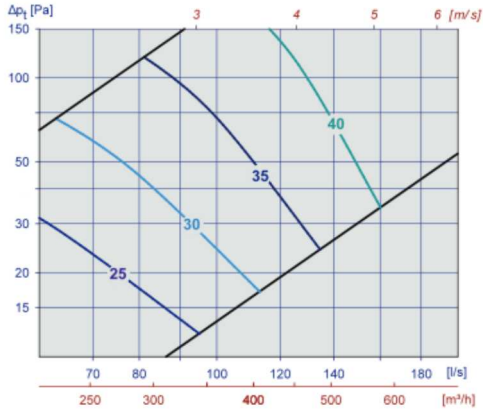


Diagram 12, UPK-R w / ATK-LS 500x100 Ø200

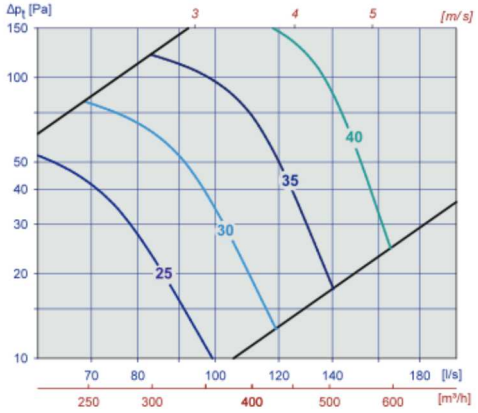


Diagram 13, UPK-R w / ATK-B 300x150 Ø200

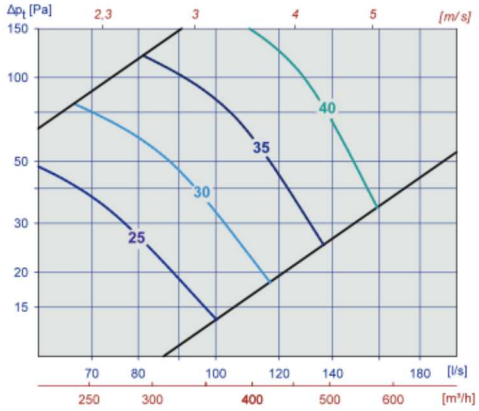


Diagram 14, UPK-R w / ATK-S 300x150 Ø200

UPK

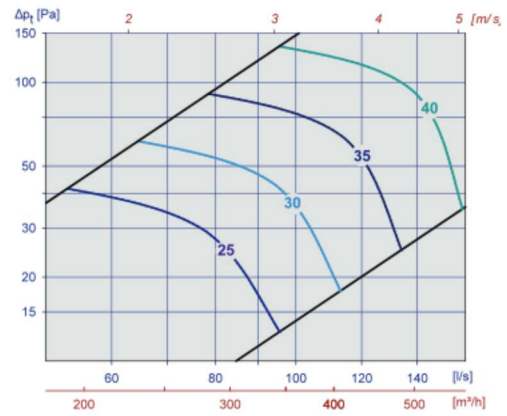


Diagram 15, UPK-R w / ATK-LS 300x150 Ø200

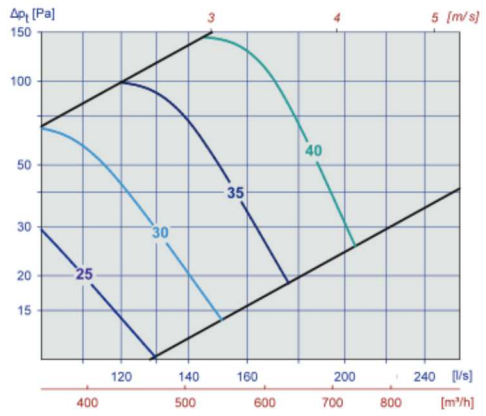


Diagram 16, UPK-R w / ATK-B 400x150 Ø250

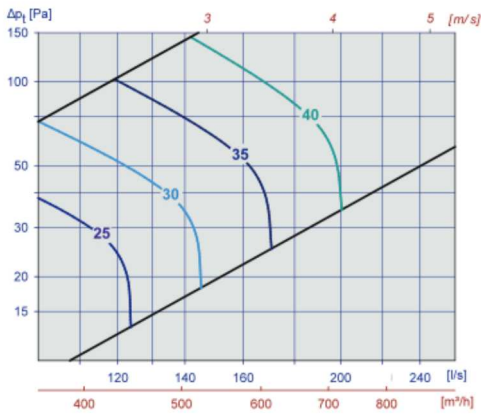


Diagram 17, UPK-R w / ATK-S 400x150 Ø250

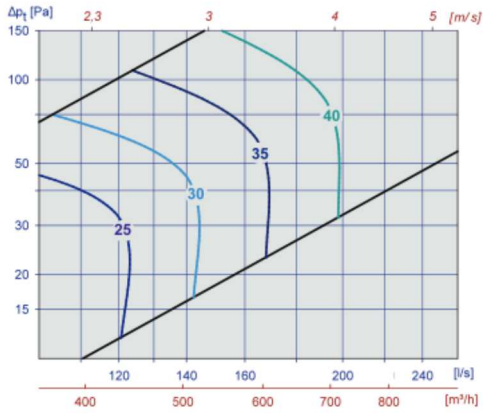


Diagram 18, UPK-R w / ATK-LS 400x150 Ø250

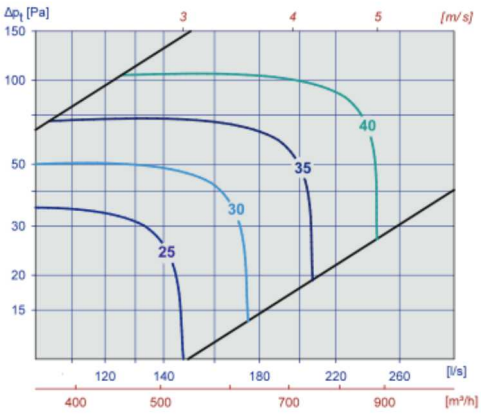


Diagram 19, UPK-R w / ATK-B 500x150 Ø250

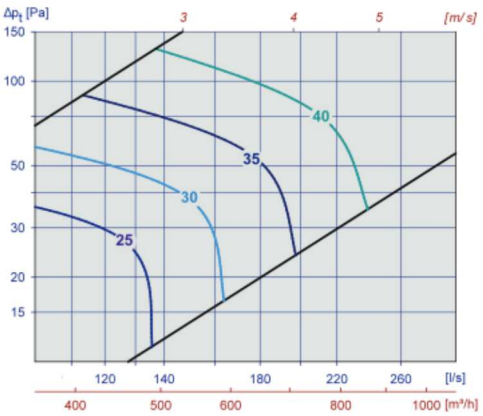


Diagram 20, UPK-R w / ATK-S 500x150 Ø250

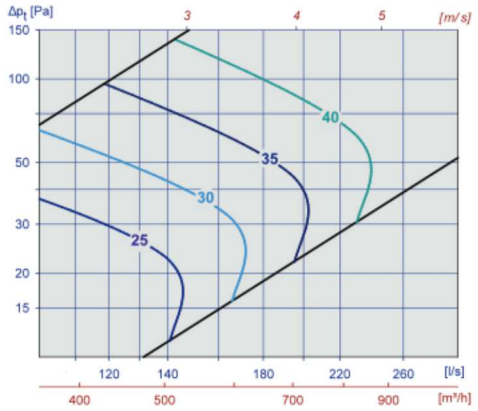


Diagram 21, UPK-R w / ATK-LS 500x150 Ø250

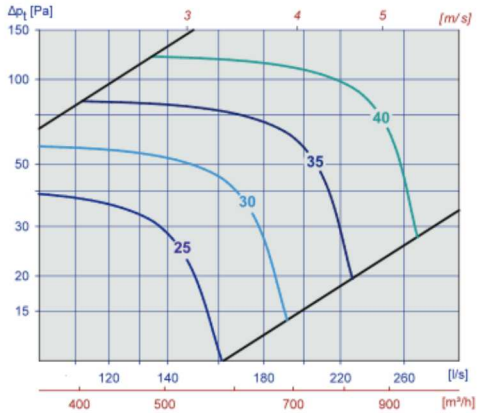


Diagram 22, UPK-R w / ATK-B 400x200 Ø250

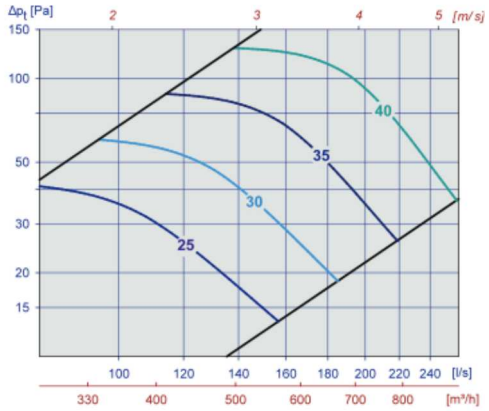


Diagram 23, UPK-R w / ATK-S 400x200 Ø250

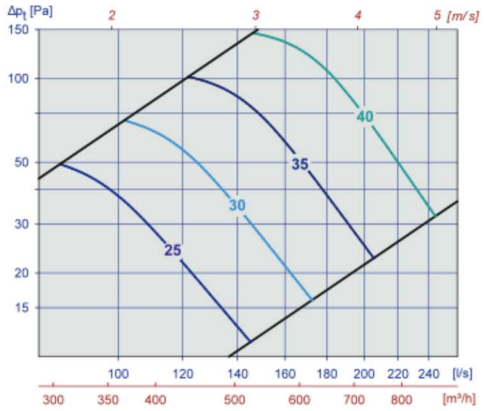


Diagram 24, UPK-R w / ATK-LS 400x200 Ø250

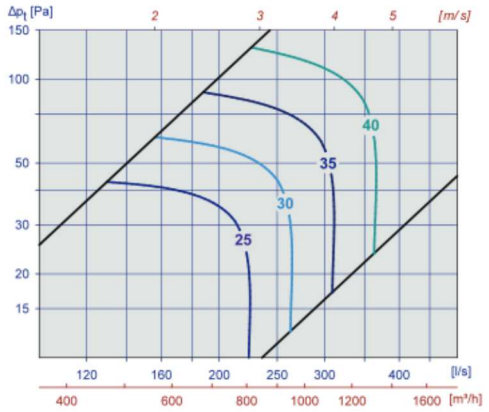


Diagram 25, UPK-R w / ATK-B 500x200 Ø315

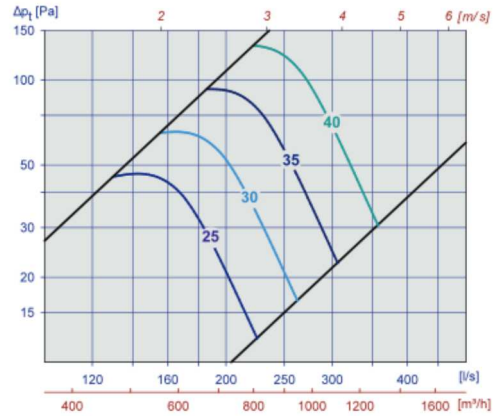


Diagram 26, UPK-R w / ATK-S 500x200 Ø315

UPK

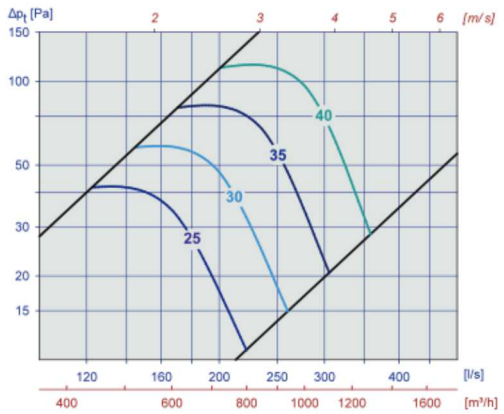


Diagram 27, UPK-R w / ATK-LS 500x200 Ø315

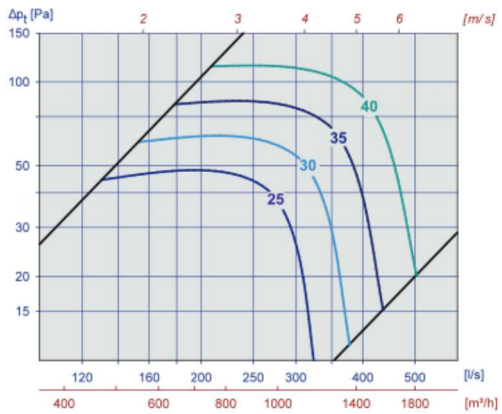


Diagram 28, UPK-R w / ATK-B 500x300 Ø315

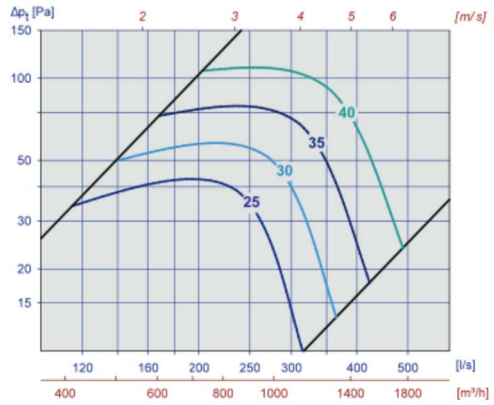


Diagram 29, UPK-R w / ATK-S 500x300 Ø315

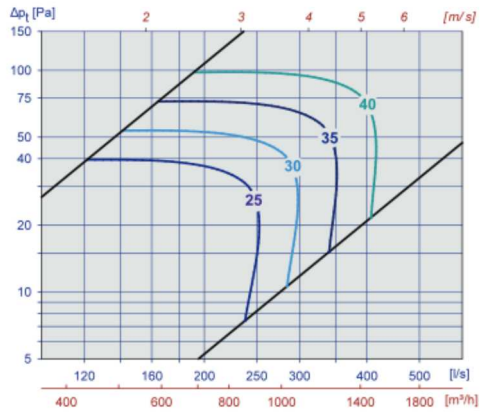


Diagram 30, UPK-R w / ATK-LS 500x300 Ø315

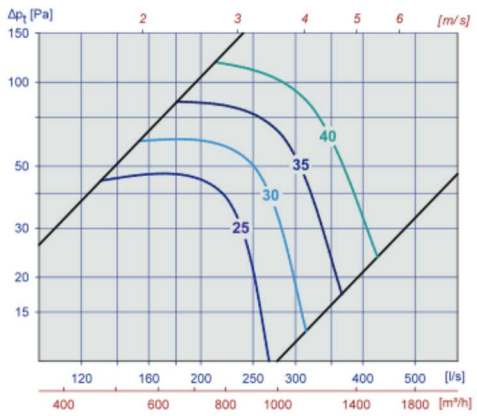


Diagram 31, UPK-R w / ATK-B 600x200 Ø315

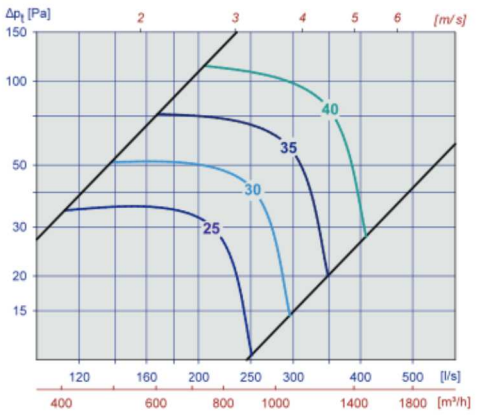


Diagram 32, UPK-R w / ATK-S 600x200 Ø315

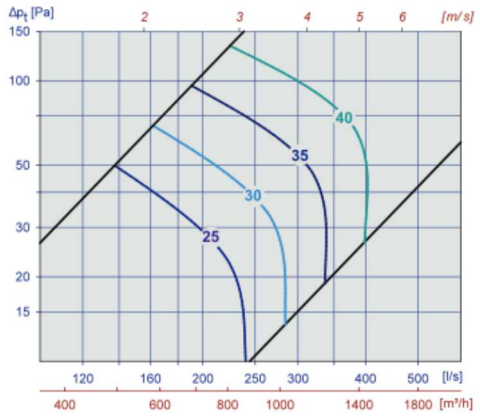


Diagram 33, UPK-R w / ATK-LS 600x200 Ø315

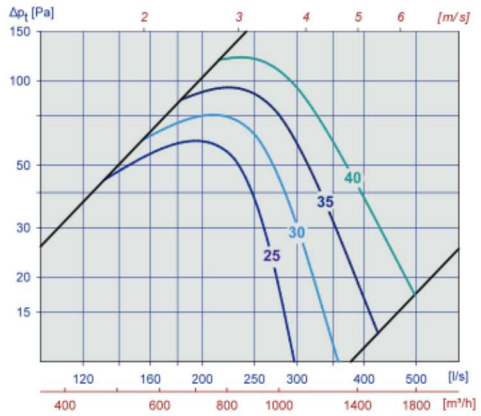


Diagram 34, UPK-R w / ATK-B 600x300 Ø315

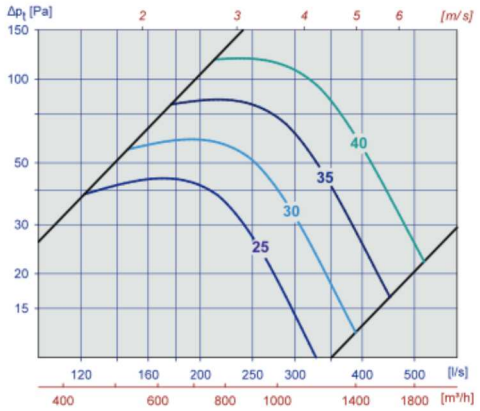


Diagram 35, UPK-R w / ATK-S 600x300 Ø315

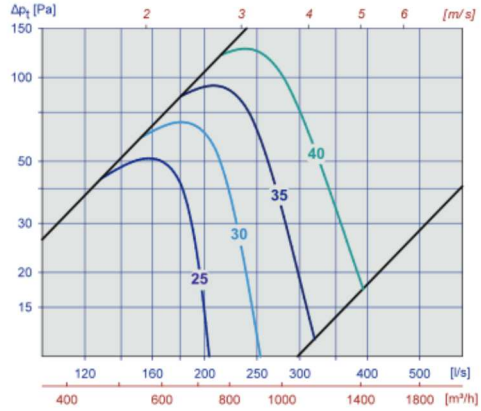


Diagram 36, UPK-R w / ATK-LS 600x300 Ø315

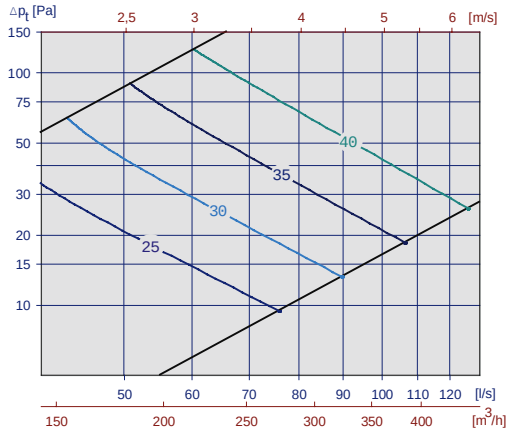


Diagram 37, UPK-R w / ATK-H-B 600x600 Ø160

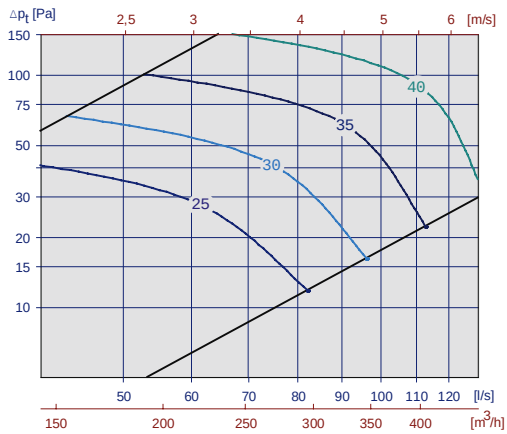


Diagram 38, UPK-R w / ATK-H-S 600x600 Ø160

UPK

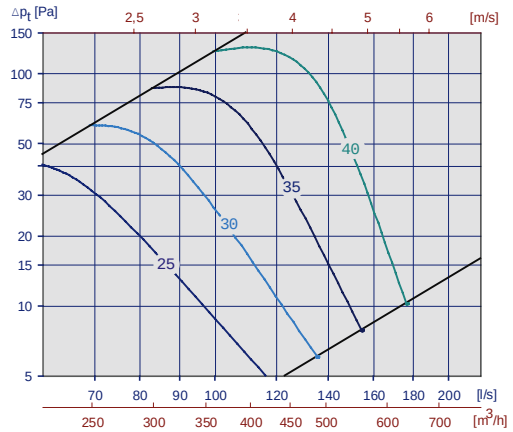


Diagram 39, UPK-H-B 600x600 Ø200

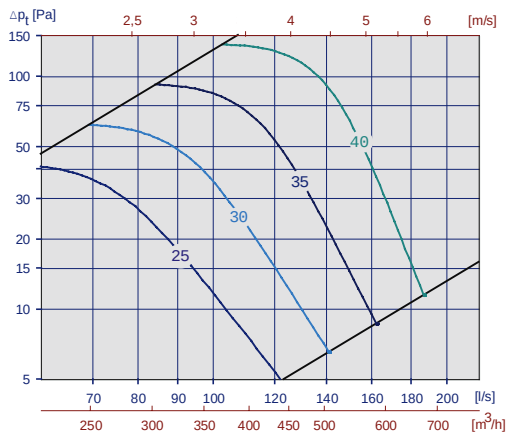


Diagram 40, UPK-H-S 600x600 Ø200

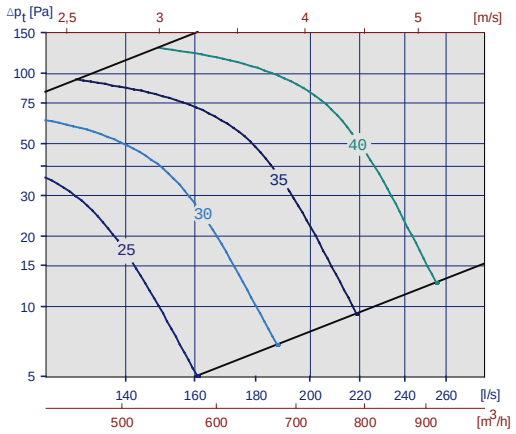


Diagram 41, UPK-R w / ATK-H-B 600x600 Ø250

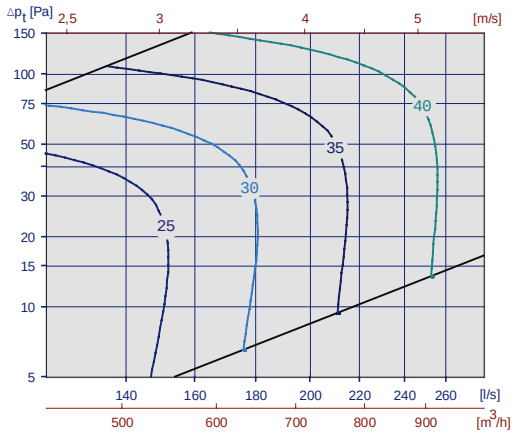


Diagram 42, UPK-R w / ATK-H-S 600x600 Ø250

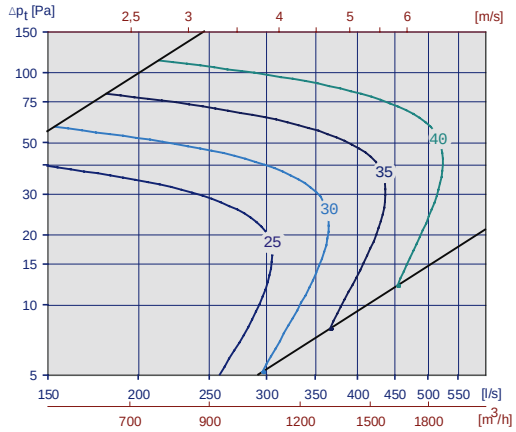


Diagram 43, UPK-R w / ATK-H-B 600x600 Ø315

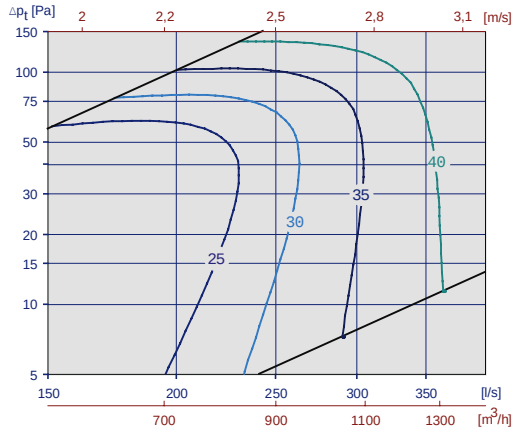


Diagram 44, UPK-R w / ATK-H-S 600x600 Ø315

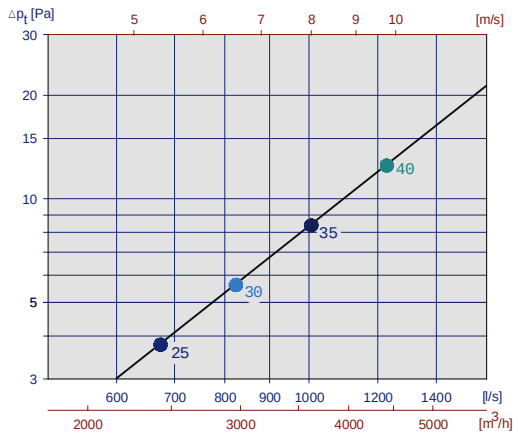


Diagram 45, UPK-R w / ATK-H-B 600x600 Ø400

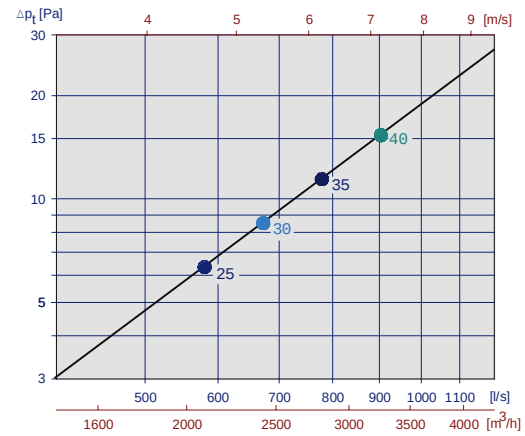


Diagram 46, UPK-R w / ATK-H-S 600x600 Ø400

Static sound attenuation incl. end reflection for UPK-R and UPK-H with box

Grille	Box		Attenuation [dB]							
Dim.	Spigot entry		63	125	250	500	1k	2k	4k	8k
200x100	125	B	20	13	11	10	6	7	4	4
200x100	125	S	20	13	11	12	11	5	4	1
200x100	125	LS	22	12	12	14	12	8	11	13
300x100	160	B	19	11	9	8	5	7	3	1
400x100	160	B	17	11	9	9	9	9	4	5
300x100	160	S	20	12	10	16	14	11	9	12
400x100	160	S	18	10	10	13	13	9	9	11
300x100	160	LS	19	13	10	14	12	8	13	13
400x100	160	LS	19	11	11	12	8	4	6	1
500x100	200	B	15	8	11	10	8	4	2	0
300x150	200	B	16	8	9	7	6	1	0	-4
500x100	200	S	15	9	11	12	9	8	7	3
300x150	200	S	17	8	9	12	8	7	7	3
500x100	200	LS	16	9	14	14	8	6	7	4
300x150	200	LS	17	8	11	14	8	8	9	6
400x150	250	B	14	10	9	9	13	6	4	4
500x150	250	B	13	10	10	9	10	3	2	2
400x200	250	B	13	10	8	7	10	3	1	0
400x150	250	S	14	10	13	14	13	7	9	7
500x150	250	S	14	9	13	13	11	7	8	10
400x200	250	S	15	9	11	13	11	7	8	8
400x150	250	LS	16	10	12	10	6	2	3	0
500x150	250	LS	14	10	13	14	9	9	11	12
400x200	250	LS	15	10	11	11	8	6	8	7
500x200	315	B	9	10	8	9	10	5	3	3
600x200	315	B	8	10	9	10	10	5	3	3
500x300	315	B	10	9	9	10	9	8	5	6
600x300	315	B	8	8	7	8	8	3	2	1
500x200	315	S	11	9	11	11	11	7	7	7
600x200	315	S	10	9	10	9	10	8	9	9
500x300	315	S	11	8	10	12	11	9	9	10
600x300	315	S	11	8	10	12	11	7	7	8
500x200	315	LS	11	10	13	11	9	9	10	9
600x200	315	LS	10	10	13	12	7	6	4	4
500x300	315	LS	10	9	11	11	8	9	10	8
600x300	315	LS	10	9	11	11	7	7	7	6
600x600	160	S	19	9	7	9	8	4	6	10
600x600	200	S	17	7	7	9	7	4	7	10
600x600	250	S	14	5	6	11	6	5	8	11
600x600	315	S	13	3	6	11	4	5	9	11
600x600	400	S	11	2	5	11	3	6	10	12
600x600	160	B	17	8	7	8	3	2	1	2
600x600	200	B	16	6	6	8	3	1	1	1
600x600	250	B	15	4	5	8	3	2	1	1
600x600	315	B	13	2	5	9	3	1	1	1
600x600	400	B	11	1	4	9	3	1	1	1

Table 7

UPK

Correction factor [KO], UPK-R and UPK-H with ATK box

			KO [dB]															
Grille	Box		Damper closed								Damper open							
Dim.	Spigot entry		63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8k
200x100	125	B	0	-7	-4	-5	-5	-16	-8	-6	1	-4	-5	-7	-6	-7	-9	-14
200x100	125	S	-4	-5	-2	-6	-9	-13	-6	-5	-3	-5	-4	-5	-5	-7	-10	-12
200x100	125	LS	0	-4	-2	-6	-9	-10	-6	-6	-1	-5	-4	-5	-5	-8	-11	-12
300x100	160	B	-8	-6	-6	-7	-9	-15	-5	-5	-1	-6	-2	-4	-5	-10	-12	-10
400x100	160	B	-8	-5	-7	-7	-11	-14	-5	-4	-3	-4	-4	-5	-4	-8	-12	-14
300x100	160	S	-7	-4	-4	-9	-11	-11	-5	-5	-2	-4	-4	-5	-4	-8	-11	-13
400x100	160	S	-5	-3	-5	-9	-14	-12	-5	-4	-1	-2	-3	-6	-4	-7	-12	-14
300x100	160	LS	-6	-4	-5	-9	-12	-9	-5	-5	-1	-4	-2	-4	-4	-9	-12	-12
400x100	160	LS	-6	-3	-5	-11	-13	-8	-5	-5	-2	0	-2	-6	-6	-7	-10	-13
500x100	200	B	-1	-3	-8	-9	-16	-11	-5	-4	0	-2	-5	-4	-4	-9	-14	-13
300x150	200	B	-7	-4	-6	-7	-15	-12	-5	-3	-5	-4	-4	-4	-4	-8	-13	-13
500x100	200	S	-5	3	-4	-8	-11	-9	-6	-5	-5	0	-5	-5	-4	-9	-13	-13
300x150	200	S	-6	0	-5	-10	-13	-10	-5	-4	-6	-4	-6	-7	-5	-7	-10	-16
500x100	200	LS	-6	0	-5	-11	-9	-9	-6	-4	-1	1	-3	-3	-4	-11	-13	-11
300x150	200	LS	-7	0	-5	-10	-6	-7	-7	-7	-3	-2	-2	-5	-5	-9	-11	-13
400x150	250	B	-2	-4	-7	-6	-13	-11	-6	-4	0	-4	-5	-5	-4	-7	-11	-15
500x150	250	B	-4	-5	-7	-6	-15	-11	-5	-4	-1	-2	-4	-3	-4	-11	-14	-12
400x200	250	B	-8	-1	-5	-5	-15	-12	-5	-4	-5	-1	-3	-4	-4	-10	-13	-12
400x150	250	S	-4	-1	-6	-8	-10	-8	-6	-5	1	-2	-4	-4	-4	-8	-13	-13
500x150	250	S	2	-1	-8	-10	-10	-8	-5	-5	1	2	-2	-3	-5	-11	-13	-10
400x200	250	S	-6	1	-4	-9	-11	-10	-5	-5	-3	2	-3	-4	-4	-9	-13	-13
400x150	250	LS	2	-2	-7	-8	-6	-10	-7	-5	0	-1	-3	-5	-4	-8	-13	-14
500x150	250	LS	0	-2	-7	-9	-7	-10	-7	-5	3	0	-4	-5	-3	-9	-14	-14
400x200	250	LS	-7	0	-5	-8	-6	-10	-7	-6	-1	2	-4	-5	-3	-11	-14	-13
500x200	315	B	-7	-5	-7	-8	-11	-9	-5	-6	-4	-4	-6	-4	-5	-8	-12	-13
600x200	315	B	-6	-6	-8	-10	-12	-7	-5	-6	-5	-4	-6	-4	-4	-8	-14	-16
500x300	315	B	-5	-5	-7	-7	-14	-9	-5	-5	-6	-3	-7	-4	-4	-8	-12	-16
600x300	315	B	-12	-7	-7	-9	-14	-10	-5	-4	-7	-3	-8	-6	-6	-6	-9	-15
500x200	315	S	-7	-2	-9	-11	-10	-8	-5	-6	-4	-2	-6	-5	-5	-7	-12	-15
600x200	315	S	-1	-2	-8	-10	-10	-8	-5	-6	0	0	-4	-3	-5	-10	-14	-12
500x300	315	S	-11	-7	-13	-13	-10	-8	-5	-6	-7	-4	-8	-5	-5	-6	-11	-16
600x300	315	S	-11	-6	-11	-13	-10	-8	-5	-6	-5	-3	-7	-6	-5	-7	-11	-14
500x200	315	LS	-5	-3	-10	-10	-7	-9	-6	-6	-3	-1	-7	-4	-4	-8	-13	-15
600x200	315	LS	-7	-5	-11	-11	-5	-9	-7	-7	-1	-1	-5	-3	-3	-10	-15	-15
500x300	315	LS	-12	-8	-13	-12	-7	-7	-6	-7	-5	-1	-8	-5	-3	-8	-13	-16
600x300	315	LS	-10	-5	-11	-12	-8	-9	-5	-5	-5	-3	-10	-6	-2	-10	-13	-14
600x600	160	S	0	-6	-2	-6	-11	-7	-7	-8	1	-6	-6	-12	-2	-7	-17	-18
600x600	200	S	0	-1	-1	-4	-7	-8	-9	-11	1	-5	-8	-12	-2	-8	-17	-18
600x600	250	S	-6	-3	-3	-8	-6	-7	-8	-10	-10	-9	-11	-14	-7	-4	-9	-21
600x600	315	S	-7	-5	-6	-10	-6	-6	-8	-10	-7	-8	-11	-4	-2	-12	-19	-22
600x600	400*	S	-	-	-	-	-	-	-	-	6	4	-3	-4	-5	-7	-16	-18
600x600	160	B	-3	-6	-2	-7	-7	-8	-7	-7	-2	-7	-7	-15	-3	-5	-16	-20
600x600	200	B	1	0	0	-3	-6	-9	-10	-12	-1	-7	-10	-16	-1	-11	-19	-20
600x600	250	B	-4	-2	-5	-5	-9	-8	-7	-7	-1	-2	-5	-5	-4	-6	-17	-20
600x600	315	B	-4	-2	-3	-7	-8	-7	-6	-9	-5	-7	-10	-7	-4	-7	-15	-21
600x600	400*	B	-	-	-	-	-	-	-	-	8	10	1	-3	-10	-12	-12	-12

*Table 8 (*Ø400 without damper)*

INSTALLATION

ATK box and mounting frame are assembled as shown in fig. 8, and the air-extract grille is then positioned in the mounting frame. Installation principle for ATK-H is illustrated in fig. 9.

Fig. 8: Installation UPK-R with ATK box

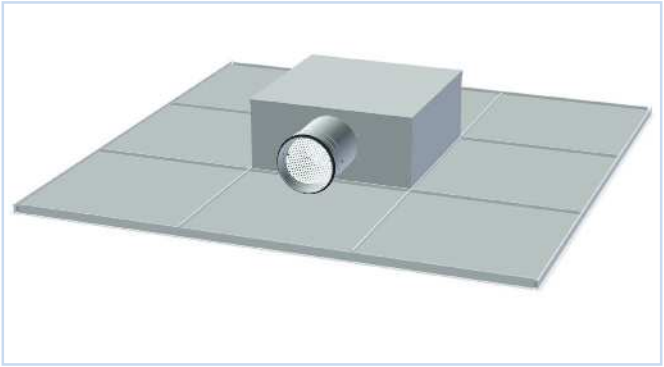


Fig. 9: Installation ATK-H

COMMISSIONING

During commissioning, the unit front must be fitted. The adjustment wire is pulled out through the front. For ATK-B, S and LS, the measuring tube is pulled through the front as well. The damper is secured by using a clamping nut on the wire.

MAINTENANCE

The unit should be cleaned by using a damp cloth. When cleaning the duct network, the diffuser front must be removed in order to gain access to the duct. In a plenum box is used, the damper must be removed in order to gain free access to the duct.

ENVIRONMENT

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

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