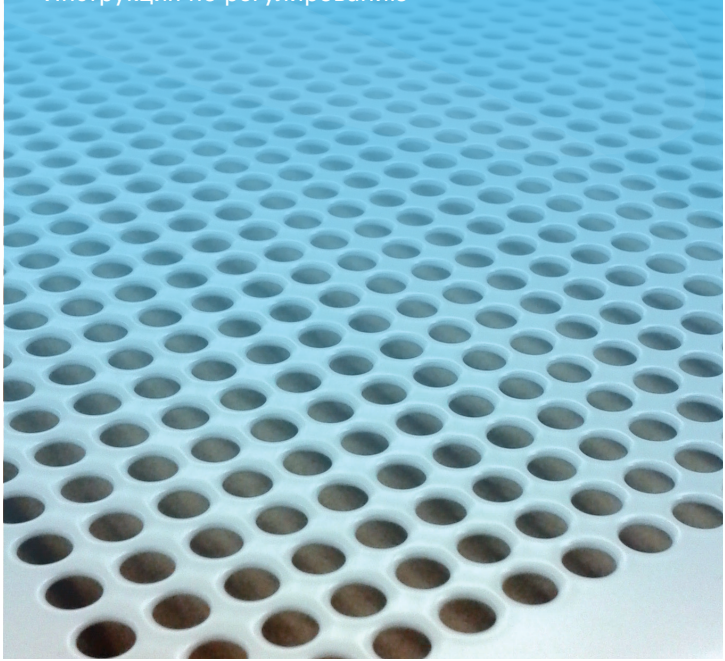
Testing and Balancing Guide 2015

Halton Säätöopas
Guide de mesure et d'équilibrage
Handbuch für Einregulierung und Prüfung
Halton Injusteringsguide
Инструкция по регулированию



Enabling Wellbeing

Halton

Diffusers and terminal units
Hajottimet ja pääteyksiköt
Diffuseurs et unités terminales
Zuluftdurchlässe und Anschlussteile
Tilluftsdon
Диффузоры и воздухораспределители

Grilles
Säleiköt
Grilles
Gitter
Galler
Решетки

Plenums
Liitäntälaatikot
Plénums
Balken
Lådor
Статические камеры

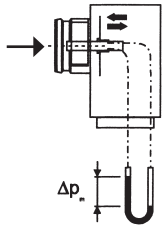
Valves
Venttiilit
Bouches petit débit
Ventile
Ventiler
Клапаны

Chilled beams
Ilmastointi- ja jäähdytyspalkit
Poutres de refraîchissement et de chauffage ventilées
Kühlbalken
Kylbafflar
Охладительные блоки

Air flow management
Ilmavirtojen hallinta
Systèmes de débit variable ou constant
Luftstromsteuerung
Luftflödes injustering
Регулирование воздушных потоков

Kitchen ventilation/Keittiöilmanvaihto
Ventilation des cuisines
Küchenlüftung/Köksventilation
Кухонная вентиляция

SLL+PLL
SLL+ PLD
SLN+PLL
SLN+PLD



Supply air
Tuloilma
Soufflage
Zuluft
Tilluft
Приток

Pituus Längd Lenght Longueur Länge Длина	Rako Spalt Slot Fente Schlitz Щель	ø D	>6xD k	min. 3xD k
572	1	1 x 160	19	22
	2-3	1 x 200	28	32
	4	1 x 250	49	51
872	1	1 x 160	19	22
	2-3	1 x 200	28	32
	4	1 x 250	49	51
1172	1	1 x 160	19	22
	2-3	1 x 200	28	32
	4	1 x 250	49	51
1472	1	2 x 160	19	22
	2-3	2 x 200	28	32
	4	2 x 250	49	51
1772	1	2 x 160	19	22
	2-3	2 x 200	28	32
	4	2 x 250	49	51

$q_v = k \times \sqrt{\Delta p_m}$

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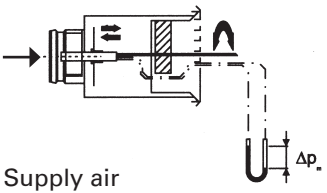
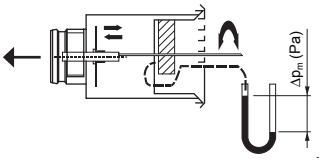
TLB



TLB/B TLB/E	k	k
80	3,8	4,3
100	6,2	6,8
125	10,5	12,9
160	18,8	22,4
200	27,8	32,9

Supply air
Tuloilma
Soufflage
Zuluft
Tilluft
Приток

TLB



TLB/C	k
100	5,1
125	8,2
160	9,7
200	12,1
250	21,5

TLB/F	k
80	5,2
100	8,2
125	9,2
160	13,4
200	23,5

Exhaust air
Poistoilma
Extraction
Abluft
Frånluft
Вытяжка

$q_v = k \times \sqrt{\Delta p_m}$

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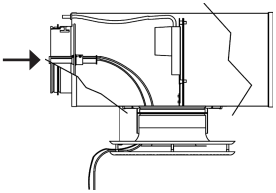
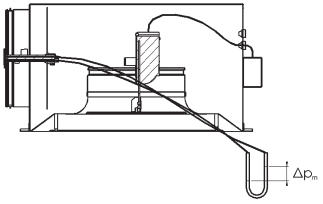
VHB / VHD



VHB/VHD	k
160	15,9
200	26,2
250	44,5

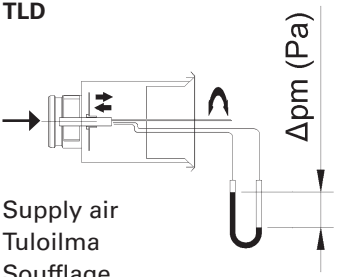
VHC



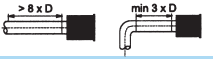
VHC	k > 8 * D
125	9,5
160	18,0
200	28,6
250	44,6

VHC	k min 3 * D
125	12,6
160	22,2
200	32,9
250	49,0

TLD

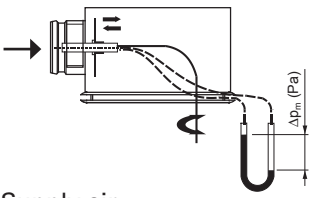


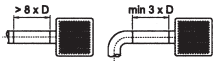
Supply air
Tuloilma
Soufflage
Zuluft
Tilluft
Приток



TLD ø D	k	k
100	5,8	6,4
125	9,4	12,6
160	16,1	22,0
200	26,9	32,7

TBV

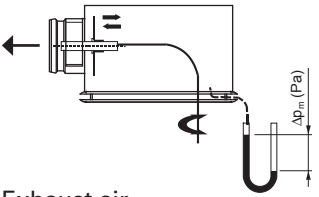




TBV ø D	k	k
100	6,0	8,5
125	10,0	13,0
160	17,1	22,8
200	27,5	32,1
250	47,9	55,5

Supply air
Tuloilma
Soufflage
Zuluft
Tilluft
Приток

TBV



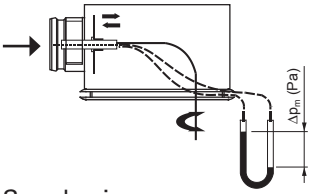
TBV ø D	k
100	8,8
125	21,8
160	21,8
200	51,2
250	53,2

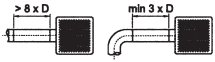
Exhaust air
Poistoilma
Extraction
Abluft
Frånluft
Вытяжка

$q_v = k \times \sqrt{\Delta p_m}$

Halton

TCV, DRV

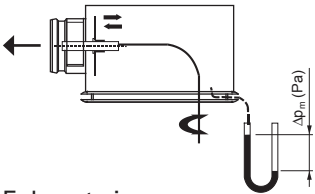




TCV DRV ø D	k	k
100	6,0	8,5
125	10,0	13,0
160	17,1	22,8
200	27,5	32,1
250	47,9	55,5

Supply air
Tuloilma
Soufflage
Zuluft
Tilluft
Приток

TCV

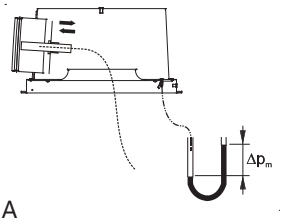


TCV ø D	k
100	8,7
125	21,6
160	21,6
200	53,1
250	53,1

Exhaust air
Poistoilma
Extraction
Abluft
Frånluft
Вытяжка

DCS

Supply air
Tuloilma
Soufflage
Zuluft
Tilluft



A

A = Conical with centre plate
A = Kartio, jossa on keskilevy
A = Directionnel avec plaque centrale
A = Abgeschrägt mit Mittelplatte
A = Konisk med central platta
A = Конический с центральной пластиной

Neck	K-value	K-value 0-opening
340	33,1	27,7
250	26,6	0.07 x D + 2.82
160	13,8	11,3
125	8,2	6,6

J

(J = Swirl, J = Pyörre, J = Jet rotatif,
J = Wirbel, J = Virvel, J = Вихревой)

Neck	K-value	K-value 0-opening
340	33,1	26,3
250	26,1	0.06 x D + 4.31
160	14,1	11,4
125	8,4	6,6

C

(C = Conical, C = Kartio, C = Directionnel, C = Abgeschrägt, C = Konisk, C = Конический)

Neck	Directioning	K-value	K-value 0-opening
340	R4	52,9	0.24 x D - 31.75
340	R3	49,7	0.24 x D - 31.75
340	R2	44	0.24 x D - 31.75
250	R4	32	0.08 x D + 2.73
250	R3	32,6	0.08 x D + 2.73
250	R2	29,2	0.08 x D + 2.73
160		14,5	11,4
125		8,3	6,6

$q_v = k \times \sqrt{\Delta p_m}$

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N

(N = Nozzle, N = Suutin, N = Buse, N = Düse, N = Dysa, N = Сопло)

Neck	Directioning	K-value	K-value 0-opening
80	315, 250	48,1	0.18 x D - 13.12
80	200	40,5	0.18 x D - 13.12
36		27,4	0.08 x D + 2.37
16		13,2	0.06 x D + 1.00

P

(P = Perforated, P = Rei'itetty, P = Perforé, P = perforiert, P = Perforerad, P = Перфорированный)

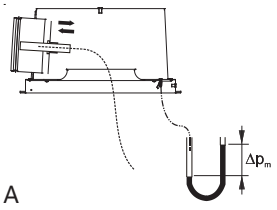
Neck	Directioning	K-value	K-value 0-opening
340	R4	50,6	0.22 x D - 26.91
340	R3	47,7	0.22 x D - 26.91
340	R2	46,3	0.22 x D - 26.91
250	R4	30,3	0.08 x D + 3.94
250	R3	29,6	0.08 x D + 3.94
250	R2	28,6	0.08 x D + 3.94
160		13,4	11,1
125		8	6,3

A, C, J, N, P =Type of front panel
A, C, J, N, P = Etulevy malli
A, C, J, N, P =Type de panneau de façade
A, C, J, N, P = Art des Frontpaneels
A, C, J, N, P =Typ av frontpanel
A, C, J, N, P = Тип передней панели

ATTN: D = diameter of duct connection in mm
Huom: D = Lähtökauluksen halkaisija millimetreissä
ATTN : D = diametre de la connection réseau en mm
ATTN: D = Durchmesser des Kanalanschlusses in mm
Obs: D = kanalanslutningsdiameter i mm
ATTN : D =Размер соединительного патрубка мм

$q_v = k \times \sqrt{\Delta p_m}$

DCS



Exhaust air
Poistoilma
Extraction
Abluft
Frånluft
Вытяжка

A

A = Conical with centre plate
A = Kartio, jossa on keskilevy
A = Directionnel avec plaque centrale
A = Abgeschrägt mit Mittelplatte
A = Konisk med central platta
A = Конический с центральной пластиной

Ø	k
340	32,3
250	27,9
160	17,6
125	9,7

J

(J = Swirl, J = Pyörre, J = Jet rotatif,
J = Wirbel, J = Virvel, J = Вихревой)

Ø	k
340	28,9
250	21,2
160	13,6
125	8

A, C, J, N, P = Type of front panel
A, C, J, N, P = Etulevy malli
A, C, J, N, P = Type de panneau de façade
A, C, J, N, P = Art des Frontpaneels
A, C, J, N, P = Typ av frontpanel
A, C, J, N, P = Тип передней панели

C

(C = Conical, C = Kartio, C = Directionnel,
C = Abgeschrägt, C = Konisk, C = Конический)

Ø	k
340	69,6
250	47,2
160	21,4
125	11,1

N

(N = Nozzle, N = Suutin, N = Buse, N = Düse,
N = Dysa, N = Сопло)

Ø	k
80	52,8
36	27,2
16	12,9

P

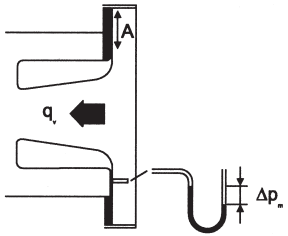
(P = Perforated, P = Rei'itetty,
P = Perforé, P = perforiert, P = Perforerad,
P = Перфорированный)

Ø	k
340	79,3
250	51,8
160	23,2
125	12

$q_v = k \times \sqrt{\Delta p_m}$

Halton

EVA



Exhaust air
Poistoilma
Extraction
Abluft
Frånluft
Вытяжка

300 x 150

A	k
0	1,90
1	2,68
2	4,02
3	5,77
4	7,07
5	9,00
6	10,61
7	12,50

500 x 150

A	k
0	3,54
1	5,66
2	8,49
3	11,18
4	14,14
5	16,43
6	18,97
7	21,00

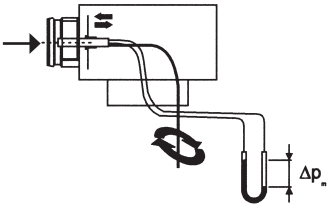
800 x 150

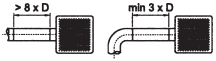
A	k
0	6,00
1	10,95
2	14,61
3	18,26
4	23,57
5	28,00
6	32,27
7	35,00

$q_v = k \times \sqrt{\Delta p_m}$

Halton

TRI / S

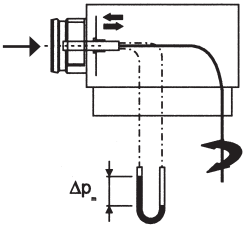




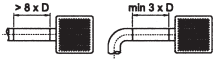
TRI ø D	k	k
100	6,0	7,5
125	9,9	12,6
160	16,9	21,9
200	28,3	32,0
250	47,9	51,5
315	78,6	-

$q_v = k \times \sqrt{\Delta p_m}$

PRI / S



Supply air
Tuloilma
Soufflage
Zuluft
Tilluft
Приток

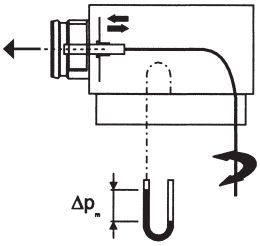


PRI/S	k	k
200x100 ø 125	10,1	12,6
300x100 ø 160	17,0	21,7
400x100 ø 160	17,0	21,7
500x100 ø 200	27,7	33,9
300x150 ø 200	27,8	33,9
400x150 ø 250	47,2	55,5
500x150 ø 250	46,2	50,1
600x150 ø 250	45,8	51,1
800x150 ø 315	80,8	83,3
400x200 ø 250	51,2	55,5
500x200 ø 315	92,9	83,3
600x200 ø 315	82,7	93,1
800x200 ø 315	79,3	83,3

$q_v = k \times \sqrt{\Delta p_m}$

Halton

PRI / E



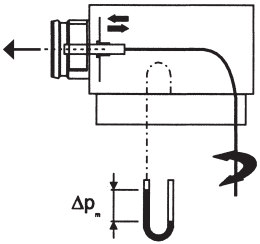
Exhaust air
Poistoilma
Extraction
Abluft
Frånluft
Вытяжка

A	PRI/E + AGC k
300x100 ø 160	17,9
400x150 ø 250	40,5
400x200 ø 250	58,0
500x100 ø 250	30,8
500x200 ø 315	71,7
600x200 ø 315	88,9

$q_v = k \times \sqrt{\Delta p_m}$

Halton

PRI / E



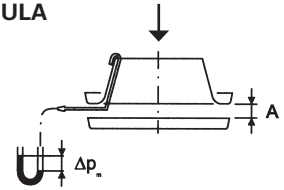
Exhaust air
Poistoilma
Extraction
Abluft
Frånluft
Вытяжка

PRI/E	PRI/E + WDD/WTS k	PRI/E + ALE/FLU k
200x100 ø 125	12,4	9,9
300x100 ø 160	19,7	14,2
400x100 ø 160	26,9	18,3
500x100 ø 200	33,1	19,1
300x150 ø 200	31,1	21,9
400x150 ø 250	43,3	30,7
500x150 ø 250	54,5	39,0
600x150 ø 250	61,9	52,6
800x150 ø 315	86,9	54,9
400x200 ø 250	53,7	39,9
500x200 ø 315	64,3	62,9
600x200 ø 315	85,6	72,3
800x200 ø 315	116,4	84,2

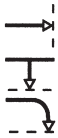
$q_v = k \times \sqrt{\Delta p_m}$

Halton

ULA



Supply air
Tuloilma
Soufflage
Zuluft
Tilluft
Приток



ø 100 360°

A	k
3	1,40
6	3,09
9	4,52
12	5,61

ø 100 180°

A	k
3	0,82
6	1,65
9	2,33
12	3,00

ø 100 360°

A	k
3	1,41
6	3,05
9	4,38
12	5,31

ø 100 180°

A	k
3	0,90
6	1,64
9	2,31
12	2,90

ø 100 360°

A	k
3	1,41
6	3,06
9	4,40
12	5,36

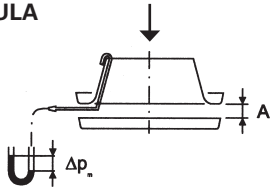
ø 100 180°

A	k
3	0,90
6	1,63
9	2,31
12	2,95

$q_v = k \times \sqrt{\Delta p_m}$

Halton

ULA



Supply air
Tuloilma
Soufflage
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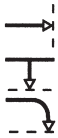
Приток



ø 125 360°

A	k
3	1,61
6	3,52
9	5,39
12	8,25

ø 125 180°

A	k
3	1,04
6	1,98
9	2,82
12	4,45

ø 125 360°

A	k
3	1,60
6	3,51
9	5,33
12	8,07

ø 125 180°

A	k
3	1,03
6	1,95
9	2,84
12	4,46

ø 125 360°

A	k
3	1,60
6	3,51
9	5,33
12	8,07

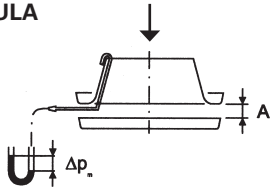
ø 125 180°

A	k
3	1,03
6	1,95
9	2,84
12	4,46

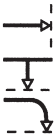
$q_v = k \times \sqrt{\Delta p_m}$

Halton

ULA



Supply air
Tuloilma
Soufflage
Zuluft
Tilluft
Приток



ø 160 360°

A	k
3	2,00
6	4,11
9	6,61
12	8,78
18	12,92

ø 160 180°

A	k
3	1,18
6	2,41
9	3,47
12	4,55
18	6,65

ø 160 360°

A	k
3	2,01
6	4,13
9	6,78
12	8,86
18	12,85

ø 160 180°

A	k
3	1,23
6	2,42
9	3,41
12	4,39
18	6,68

ø 160 360°

A	k
3	2,01
6	4,13
9	6,78
12	8,86
18	12,85

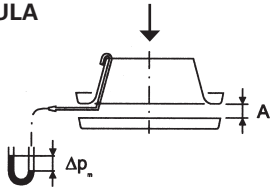
ø 160 180°

A	k
3	1,23
6	2,42
9	3,41
12	4,39
18	6,68

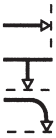
$q_v = k \times \sqrt{\Delta p_m}$

Halton

ULA



Supply air
Tuloilma
Soufflage
Zuluft
Tilluft
Приток



ø 200 360°

A	k
3	2,46
6	5,11
9	8,01
12	10,96
20	17,90

ø 200 180°

A	k
3	1,39
6	2,96
9	4,37
12	5,78
20	9,30

ø 200 360°

A	k
3	2,44
6	5,16
9	8,00
12	10,69
20	17,65

ø 200 180°

A	k
3	1,44
6	3,06
9	4,36
12	5,79
20	9,26

ø 200 360°

A	k
3	2,44
6	5,16
9	8,00
12	10,69
20	17,65

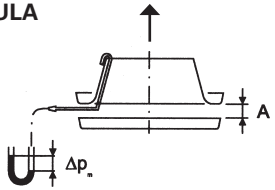
ø 200 180°

A	k
3	1,44
6	3,06
9	4,36
12	5,79
20	9,26

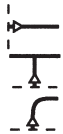
$q_v = k \times \sqrt{\Delta p_m}$

Halton

ULA



Exhaust air
Poistoilma
Extraction
Abluft
Frånluft
Вытяжка



ø 100

A	k
3	1,43
6	2,63
9	3,52
12	4,16

ø 125

A	k
3	1,65
6	2,99
9	3,96
15	5,85

ø 100

A	k
3	1,44
6	2,64
9	3,52
12	4,14

ø 125

A	k
3	1,65
6	2,99
9	3,97
15	5,85

ø 100

A	k
3	1,45
6	2,63
9	3,53
12	4,17

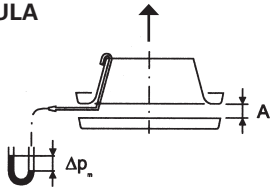
ø 125

A	k
3	1,65
6	2,99
9	3,97
15	5,85

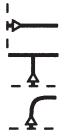
$q_v = k \times \sqrt{\Delta p_m}$

Halton

ULA



Exhaust air
Poistoilma
Extraction
Abluft
Frånluft
Вытяжка



ø 160

A	k
3	1,58
6	3,61
9	5,19
15	7,56

ø 200

A	k
3	2,53
6	4,72
9	6,48
15	10,11

ø 160

A	k
3	1,54
6	3,60
9	5,19
15	7,58

ø 200

A	k
3	2,28
6	4,80
9	6,55
15	10,13

ø 160

A	k
3	1,54
6	3,60
9	5,19
15	7,58

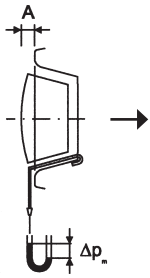
ø 200

A	k
3	2,40
6	4,75
9	6,60
15	10,13

$q_v = k \times \sqrt{\Delta p_m}$

Halton

URH, FDV



Exhaust air
Poistoilma
Extraction
Abluft
Frånluft
Вытяжка

$\Delta p_m = \Delta p$

$\Delta p_m = \Delta p$

ø 100

A	k
-15	0,43
-12	0,63
-9	0,83
-6	1,02
-3	1,22
0	1,42
3	1,65
6	1,88
9	2,11
12	2,33

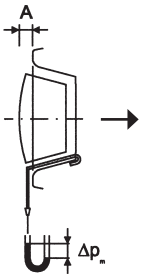
$\Delta p_m = \Delta p$

$\Delta p_m = 0{,}98\ \Delta p$

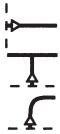
ø 125

A	k
-15	0,65
-12	0,92
-9	1,22
-6	1,53
-3	1,84
0	2,17
3	2,52
6	2,83
9	3,14
12	3,46
15	3,77

URH, FDV



Exhaust air
Poistoilma
Extraction
Abluft
Frånluft
Вытяжка



$\Delta p_m = \Delta p$

$\Delta p_m = 1{,}03\ \Delta p$

ø 150

A	k
-12	1,17
-9	1,53
-6	1,91
-3	2,34
0	2,73
3	3,16
6	3,58
9	4,01
12	4,46
15	4,87
18	5,28

ø 160

A	k
-12	1,16
-9	1,51
-6	1,90
-3	2,31
0	2,75
3	3,25
6	3,73
9	4,22
12	4,67
15	5,12
18	5,58

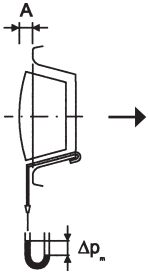
$\Delta p_m = \Delta p$

$\Delta p_m = 1{,}04\ \Delta p$

$q_v = k \times \sqrt{\Delta p_m}$

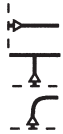
Halton

URH, FDV



$q_v = k \times \sqrt{\Delta p_m}$

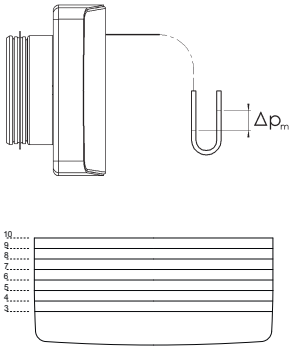
Exhaust air
Poistoilma
Extraction
Abluft
Frånluft
Вытяжка



ø 200

A	k
3	1,78
6	2,46
9	3,24
12	3,97
15	4,69
20	5,88
25	6,95

BOS

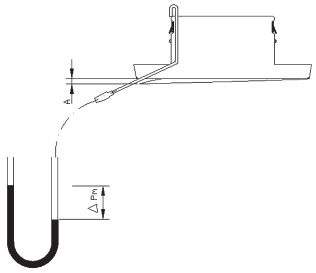


BOS-100/125 kuristinlevy trimming plate justeringsplatta plaque de fixation einstellplatte регулировочная пластина	k
10	1,60
9	1,80
8	2,11
7	2,39
6	2,66
5	2,91
4	3,22
3	3,45
Auki/open/öppet/ouvert/geöffnet/открыто	4,08

$q_v = k \times l_{eff} \sqrt{\Delta p_m}$

Halton

ULC



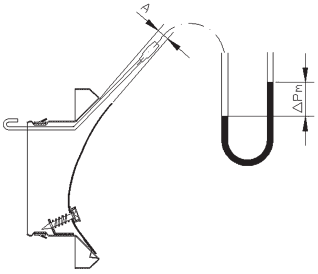
ULC-100

A	k
3	0,75
4	1,11
5	1,56
6	1,90
8	2,32
10	2,77
11	3,16
12	3,53
13	3,88

ULC-125

A	k
4	1,34
6	1,98
8	2,71
10	3,40
12	4,01
14	4,43
16	4,69
18	5,01
20	5,49

ULE



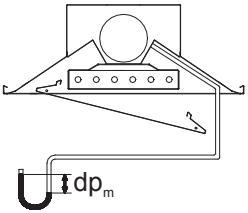
ULE-100

A	k
3	0,80
4	1,05
5	1,30
6	1,49
7	1,74
8	1,98
10	2,48
12	2,96
15	3,50

ULE-125

A	k
4	1,11
6	1,63
8	2,21
10	2,77
12	3,33
14	3,92
16	4,42
18	4,86
20	5,75

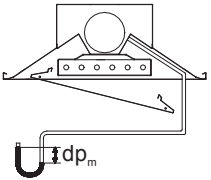
Halton Rex 600 Basic



R6B	k / m
A	0,71
B	0,99
C	1,36
D	2,09
E	3,33

$$q_v = k \times l_{eff} \sqrt{\Delta p_m}$$

Halton Rex 600



RE6	k / m
A	0,71
B	0,99
C	1,36
D	2,09
E	3,33

$$q_{v1} = k \times l_{eff} \sqrt{\Delta p_m}$$

RE6 & HAQ

$$q_{v2} = a \times k \times \sqrt{\Delta p_m}$$

$$q_v = q_{v1} + q_{v2}$$

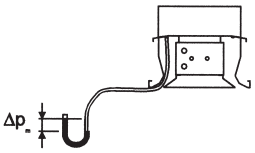
a = HAQ position
a = HAQ asento
a = HAQ position

a = HAQ position
a = HAQ позиция

HAQ airflow rate
HAQ ilman tilavuusvirta
HAQ débit d'air

HAQ luftflödet
HAQ расход воздуха

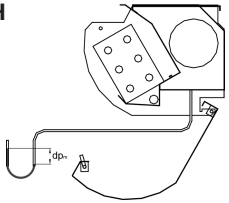
CBD



CBD	k / m
CBD/A	0,71
CBD/B	0,99
CBD/C	1,33
CBD/D	2,00

$$q_v = k \times l_{eff} \sqrt{\Delta p_m}$$

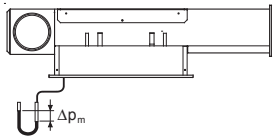
CBH



CBH	k /m
CBH/F,K	0,73
CBH/G,M	1,04

$$q_v = k \times l_{eff} \sqrt{\Delta p_m}$$

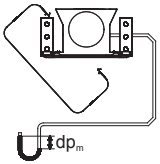
CHH



CHH	k
CHH/A	2,11
CHH/B	3,03
CHH/C	4,15

$$q_v = k \times \sqrt{\Delta p_m}$$

CCE



CCE	k / m
CCE/A	0,67
CCE/B	0,96
CCE/C	1,31
CCE/D	1,92

$$q_{v1} = k \times l_{eff} \sqrt{\Delta p_m}$$

CCE & HAQ

$$q_{v2} = a \times 0,17 \times \sqrt{\Delta p_m}$$

a = HAQ position
a = HAQ asento
a = HAQ position

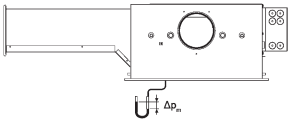
a = HAQ position

$$q_v = q_{v1} + q_{v2}$$

HAQ airflow rate
HAQ ilman tilavuusvirta
HAQ débit d'air

HAQ luftflödet
HAQ расход воздуха

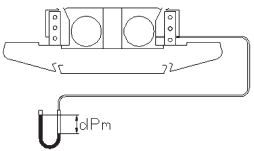
CHB



$$q_v = k \times \sqrt{\Delta p_m}$$

CHB	k [l/s]
CHB/A-1000	2,14
CHB/A-1200	2,83
CHB/A-1400	3,59
CHB/B-1000	2,93
CHB/B-1200	3,90
CHB/B-1400	4,97
CHB/C-1000	4,00
CHB/C-1200	5,39
CHB/C-1400	6,94

CBQ



$$q_{v1} = k \times l_{eff} \sqrt{\Delta p_m}$$

CBQ	k / m
CBQ/A	0,72
CBQ/B	0,98
CBQ/C	1,38
CBQ/D	1,94

CBQ & HAQ

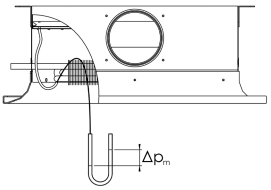
$$q_{v2} = a \times 0{,}31 \times \sqrt{\Delta p_m}$$

a = HAQ position
a = HAQ position
a = HAQ position
a = HAQ position

$$q_v = q_{v1} + q_{v2}$$

HAQ airflow rate
HAQ ilman tilavuusvirta
HAQ débit d'air
HAQ luftflödet
HAQ расход воздуха

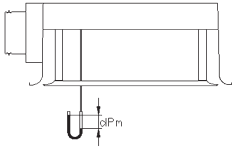
CBX



$$q_v = k \times \sqrt{\Delta p_m}$$

Nozzle	Size	k
A	600	0,64
A	1200	1,30
B	600	0,85
B	1200	1,47
C	600	1,16
C	1200	1,93
D	600	1,73
D	1200	2,95
E	600	2,87
E	1200	4,75

CSW



CSW	k
k1	0,73
k2	0,097

$q_{v1} = (k1 + k2 \times N) \times \sqrt{\Delta p_m}$

CSW & HAQ

$q_{v2} = a \times k \times \sqrt{\Delta p_m}$

$q_v = q_{v1} + q_{v2}$

a = HAQ position
a = HAQ asento
a = HAQ position

a = HAQ position

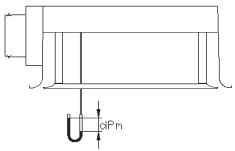
HAQ airflow rate
HAQ ilman tilavuusvirta
HAQ débit d'air

HAQ luftflödet
HAQ расход воздуха

Nozzle	k
k1	0.73
k2	0.097
$q_{v1} = (k1 + k2 \times N) \times \sqrt{\Delta P_m}$	
k1 = 24 small nozzles	
k2 = 1 big nozzles	
N = number of open big nozzles	

CSW + HAQ
$q_{v2} = a \times k \times \sqrt{\Delta P_m}$
a = HAQ position
HAQ k = 0.08
$q_v = q_{v1} + q_{v2}$

CSW exhaust



Exhaust air
Poistoilma
Extraction
Abluft
Frånluft
Вытяжка

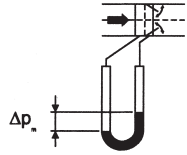
HAQ exhaust			
q_v	$k \times (a_1 + a_2) \times \sqrt{\Delta p_m}$	a_2	HAQ_2 position
a_1	HAQ_1 position	k	0,165

$q_v = k \times \sqrt{\Delta p_m}$

Halton

PRA

100 ... 315



ø 100

A	k
1	1,8
1,5	2,1
2	2,4
2,5	2,7
3	3,1
3,5	3,6
4	4,1
4,5	4,7
5	5,5
5,5	6,4
6	7,8

ø 125

A	k
1	2,5
1,5	2,9
2	3,3
2,5	3,8
3	4,4
3,5	5,0
4	5,9
4,5	6,8
5	7,9
5,5	9,5
6	11,6

ø 160

A	k
1	4,5
1,5	5,1
2	5,7
2,5	6,7
3	7,6
3,5	8,9
4	10,3
4,5	12,2
5	14,2
5,5	17,7
6	21,2

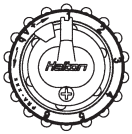
ø 200

A	k
1	7,1
1,5	8,0
2	8,8
2,5	10,0
3	11,4
3,5	13,1
4	15,1
4,5	17,5
5	20,5
5,5	24,2
6	29,0

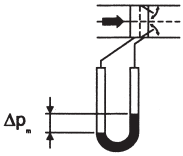
$q_v = k \times \sqrt{\Delta p_m}$

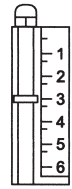
Halton

PRA



100 ... 315





350 ... 1000

ø 250

A	k
1	10,5
1,5	11,9
2	13,8
2,5	16,1
3	18,9
3,5	22,0
4	25,6
4,5	30,1
5	35,8
5,5	42,9
6	52,8

ø 315

A	k
1	18,3
1,5	21,8
2	26,0
2,5	30,7
3	36,5
3,5	43,3
4	51,3
4,5	61,5
5	74,3
5,5	92,6
6	120,2

ø 350

A	k
1	17,6
2	24,3
3	35,2
4	50,0
5	71,6
6	99,0

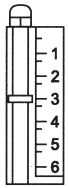
ø 400

A	k
1	20,5
2	26,5
3	36,0
4	55,0
5	86,0
6	137,0

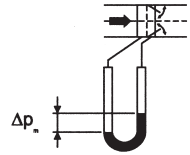
$q_v = k \times \sqrt{\Delta p_m}$

Halton

PRA



350 ... 1000



ø 500

A	k
1	27,5
2	39,0
3	59,0
4	86,0
5	123,0
6	175,0

ø 630

A	k
1	65,0
2	90,0
3	115,0
4	154,0
5	202,0
6	295,0

ø 800

A	k
1	98,0
2	137,0
3	198,0
4	280,0
5	393,0
6	570,0

ø 1000

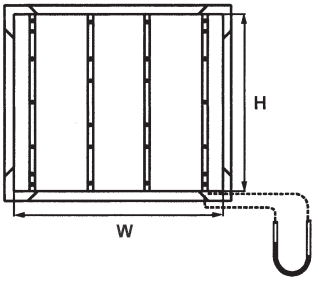
A	k
1	144,0
2	220,0
3	310,0
4	440,0
5	620,0
6	890,0

$q_v = k \times \sqrt{\Delta p_m}$

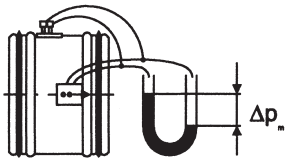
MSA

$q_v = k \times \sqrt{\Delta p_m}$

k = W (mm) x H (mm) x 0,001054

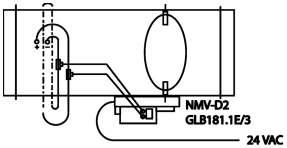


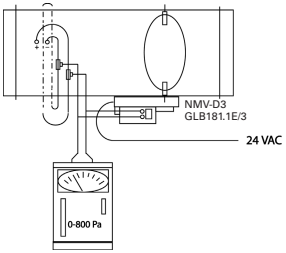
MSD



MSD	k
100	5,7
125	9,4
160	17,2
200	27,8
250	43,9
315	72,3
400	127,00
500	200,00

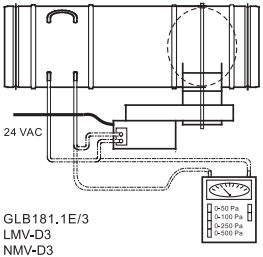
HFR / BOX





HFR	k	BOX	k
100	6,0	100	6,5
125	9,9	125	10,6
160	17,0	160	18,3
200	27,44	200	27,4
250	44,00	250	44,0
315	71,33	315	71,3
355	91,42	355	91,4
400	117,01	400	117,0
500	185,07	500	185,1

HFB



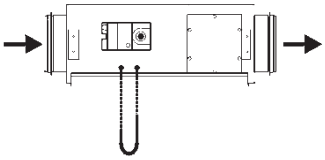
GLB181.1E/3
LMV-D3
NMV-D3

HFB	k
100	5,7
125	9,4
160	17,2
200	27,8
250	43,9
315	72,3
400	127,00
500	200,00

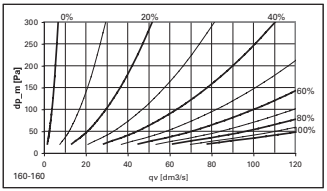
$q_v = k \times \sqrt{\Delta p_m}$

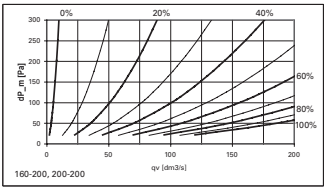
Halton

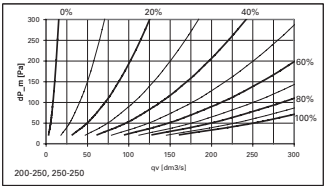
HFL

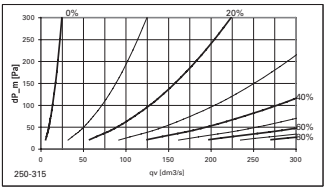


Unit size	Position %, (Indicator value)					
	0% (1)	20%	40%	60%	80%	100% (0)
160-160	0.4	4.0	6.8	9.9	13.5	17.3
160-200, 200--200	0.7	8.6	13.1	17.8	21.8	24.7
200-250, 250-250	0.7	11.5	18.0	24.3	30.1	35.1
250-315	0.8	20.1	30.6	42.0	54.3	66.7









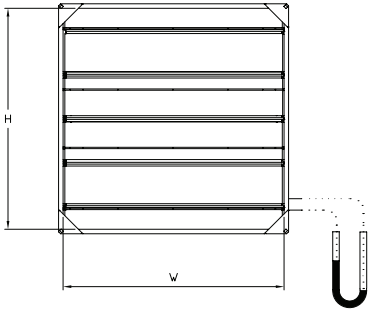
$q_v = k \times \sqrt{\Delta p_m}$

Halton

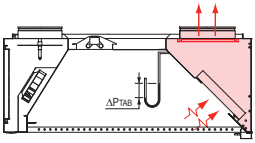
UKV

$q_v = k \times \sqrt{\Delta p_m}$

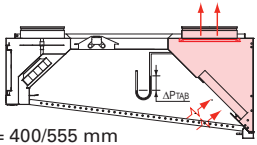
k = W (mm) x H (mm) x 0,001054



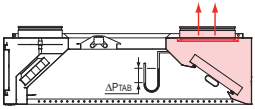
KVF (Canopies)



H = 555 mm



H = 400/555 mm



H = 400 mm

Exhaust air
Poistoilma
Extraction
Abluft
Frånluft
Вытяжной воздух

Number of filter(s) Suodattimien määrä Nombre de filtre(s) Anzahl der Filter Filter kvantitet Число фильтра (ов)	k [m^3/h]	k [l/s]
2	143,5	39,9
3	215,2	59,8
4	287	79,7
5	358,8	99,7
6	430,5	119,6

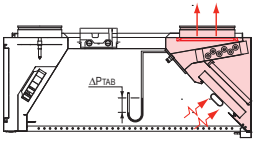
Filter Height = 330 mm
Suodattimen korkeus = 330 mm
Hauteur de Filtre = 330 mm
Bauhöhe des Filters = 330 mm
Filter höjd = 330 mm
Высота фильтра = 330 mm

Minimum pressure loss over filter = 50 Pa
Minimi painehäviö filterin yli = 50 Pa
Perte de charge minimale des filtres = 50 Pa
Minimum an Druckverlust am Filter = 50 Pa
Minimum tryckfall over filtret = 50 Pa
Минимальная потеря давления на фильтре = 50 Па

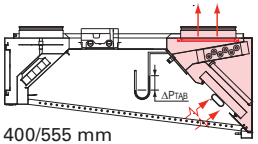
$q_v = k \times \sqrt{\Delta p_m}$

Halton

UVF (Canopies)



H = 555 mm



H = 400/555 mm

Exhaust air
Poistoilma
Extraction
Abluft
Frånluft
Вытяжной воздух

Number of filter(s) Suodattimien määrä Nombre de filtre(s) Anzahl der Filter Filter kvantitet Число фильтра (ов)	k [m^3/h]	k [l/s]
2	99,4	27,6
3	149,1	41,4
4	198,8	55,1
5	248,5	68,9
6	298,2	82,7

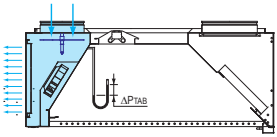
Filter Height = 330 mm
Suodattimen korkeus = 330 mm
Hauteur de Filtre = 330 mm
Bauhöhe des Filters = 330 mm
Filter höjd = 330 mm
Высота фильтра = 330 mm

Minimum pressure loss over filter = 105 Pa
Minimi painehäviö filterin yli = 105 Pa
Perte de charge minimale des filtres = 105 Pa
Minimum an Druckverlust am Filter = 105 Pa
Minimum tryckfall over filtret = 105 Pa
Минимальная потеря давления на фильтре = 105 Па

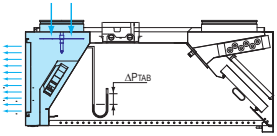
$q_v = k \times \sqrt{\Delta p_m}$

Halton

KVF / UVF (Canopies)



KVF - H = 555 mm



UVF - H = 555 mm

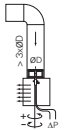
Supply air
Tuloilma
Soufflage
Zuluft
Tilluft
Приточный воздух

Length of the hood Huuvan pituus Longueur de la hotte Länge der Haube Längden av kåpan Длина зонта	k [m³/h]	k [l/s]
1000	121,7	33,8
1500	182,6	50,7
2000	243,4	67,6
2500	304,2	84,5
3000	365,1	101,4

- Supply airflow rate measurement using k factors
- Tuloilmavirranmittaus k-kertoimien avulla
- Mesure du débit soufflé à l'aide des facteurs k
- Messung des Zuluftstroms unter Verwendung des K-Faktors
- Tilluftflöde mätt med k faktor
- Измерение расхода приточного воздуха, используя k факторы

$$q_s = k \times \sqrt{\Delta P_{TAB}}\ [Pa]$$

- Supply airflow rate measurement using MSM
- Tuloilmavirranmittaus MSM:n avulla
- Mesure du débit soufflé à l'aide des MSM
- Messung des Zuluftstroms unter Verwendung eines MSM
- Tilluftflöde mätt med MSM
- Измерение расхода приточного воздуха, используя MSM

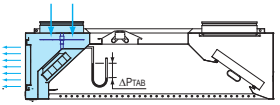


MSM 250

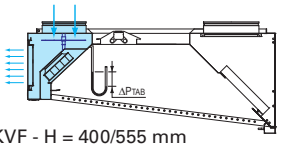
$$q_s\ [l/s] = 51 \times \sqrt{\Delta P_{TAB}}\ [Pa]$$

$$q_s\ [m^3/h] = 183{,}6 \times \sqrt{\Delta P_{TAB}}\ [Pa]$$

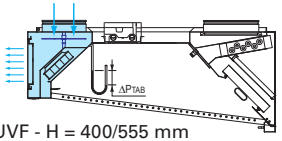
KVF / UVF (Canopies)



KVF - H = 400 mm



KVF - H = 400/555 mm



UVF - H = 400/555 mm

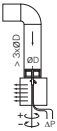
Supply air
Tuloilma
Soufflage
Zuluft
Tilluft
Приточный воздух

Length of the hood Huuvan pituus Longueur de la hotte Länge der Haube Längden av kåpan Длина зонта	k [m³/h]	k [l/s]
1000	95,5	26,5
1500	143,3	39,7
2000	191	53,1
2500	238,7	66,3
3000	286,5	79,6

- Supply airflow rate measurement using k factors
- Tuloilmavirranmittaus k-kertoimien avulla
- Mesure du débit soufflé à l'aide des facteurs k
- Messung des Zuluftstroms unter Verwendung des K-Faktors
- Tilluftflöde mätt med k faktor
- Измерение расхода приточного воздуха, используя k факторы

$$q_s = k \times \sqrt{\Delta P_{TAB}}\ [Pa]$$

- Supply airflow rate measurement using MSM
- Tuloilmavirranmittaus MSM:n avulla
- Mesure du débit soufflé à l'aide des MSM
- Messung des Zuluftstroms unter Verwendung eines MSM
- Tilluftflöde mätt med MSM
- Измерение расхода приточного воздуха, используя MSM

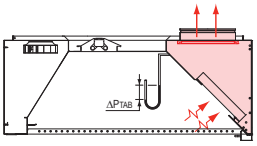


MSM 250

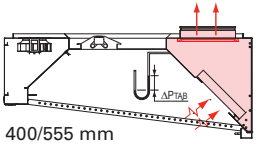
$$q_s\ [l/s] = 51 \times \sqrt{\Delta P_{TAB}}\ [Pa]$$

$$q_s\ [m^3/h] = 183{,}6 \times \sqrt{\Delta P_{TAB}}\ [Pa]$$

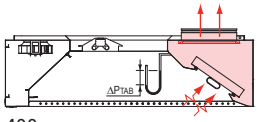
KVI (Canopies)



H = 555 mm



H = 400/555 mm



H = 400 mm

Exhaust air
Poistoilma
Extraction
Abluft
Frånluft
Вытяжной воздух

Number of filter(s) Suodattimien määrä Nombre de filtre(s) Anzahl der Filter Filter kvantitet Число фильтра (ов)	k [m^3/h]	k [l/s]
2	143,5	39,9
3	215,2	59,8
4	287	79,7
5	358,8	99,7
6	430,5	119,6

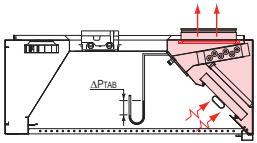
Filter Height = 330 mm
Suodattimen korkeus = 330 mm
Hauteur de Filtre = 330 mm
Bauhöhe des Filters = 330 mm
Filter höjd = 330 mm
Высота фильтра = 330 mm

Minimum pressure loss over filter = 50 Pa
Minimi painehäviö filterin yli = 50 Pa
Perte de charge minimale des filtres = 50 Pa
Minimum an Druckverlust am Filter = 50 Pa
Minimum tryckfall over filtret = 50 Pa
Минимальная потеря давления на фильтре = 50 Па

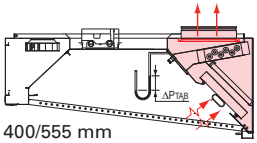
$q_v = k \times \sqrt{\Delta p_m}$

Halton

UVI (Canopies)



H = 555 mm



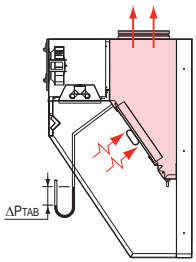
H = 400/555 mm

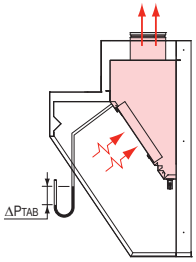
Exhaust air
Poistoilma
Extraction
Abluft
Frånluft
Вытяжной воздух

Number of filter(s) Suodattimien määrä Nombre de filtre(s) Anzahl der Filter Filter kvantitet Число фильтра (ов)	k [m^3/h]	k [l/s]
2	99,4	27,6
3	149,1	41,4
4	198,8	55,1
5	248,5	68,9
6	298,2	82,7

Filter Height = 330 mm
Suodattimen korkeus = 330 mm
Hauteur de Filtre = 330 mm
Bauhöhe des Filters = 330 mm
Filter höjd = 330 mm
Высота фильтра = 330 mm

Minimum pressure loss over filter = 105 Pa
Minimi painehäviö filterin yli = 105 Pa
Perte de charge minimale des filtres = 105 Pa
Minimum an Druckverlust am Filter = 105 Pa
Minimum tryckfall over filtret = 105 Pa
Минимальная потеря давления на фильтре = 105 Па





Exhaust air
Poistoilma
Extraction
Abluft
Frånluft
Вытяжной воздух

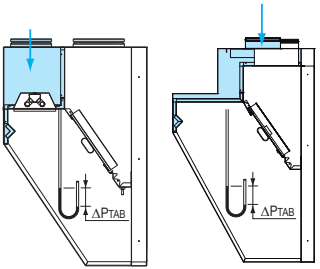
Filter Height = 330 mm
Suodattimen korkeus = 330 mm
Hauteur de Filtre = 330 mm
Bauhöhe des Filters = 330 mm
Filter höjd = 330 mm
Высота фильтра = 330 mm

Minimum pressure loss over filter = 50 Pa
Minimi painehäviö filterin yli = 50 Pa
Perte de charge minimale des filtres = 50 Pa
Minimum an Druckverlust am Filter = 50 Pa
Minimum tryckfall over filtret = 50 Pa
Минимальная потеря давления на фильтре = 50 Па

Number of filter(s) Suodattimien määrä Nombre de filtre(s) Anzahl der Filter Filter kvantitet Число фильтра (ов)	k [m^3/h]	k [l/s]
2	143,5	39,9
3	215,2	59,8
4	287	79,7
5	358,8	99,7
6	430,5	119,6

$q_v = k \times \sqrt{\Delta p_m}$

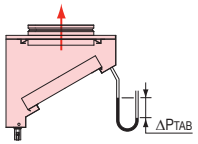
KVL (Canopies)



Capture Jets
Sieppausilma
Jets de Captation
Capture Jets
Ejektorluft
Захватные Струи

Required running pressure = 140 Pa
Tarvittava painetaso = 140 Pa
Pression de fonctionnement requise = 140 Pa
Erforderlicher kontinuierlicher Druck = 140 Pa
Erforderligt drifttryck = 140 Pa
Необходимое рабочее давление = 140 Па

KSK (Canopies)



Exhaust air
Poistoilma
Extraction
Abluft
Frånluft
Вытяжной воздух

Number of filter(s) Suodattimien määrä Nombre de filtre(s) Anzahl der Filter Filter kvantitet Число фильтра (ов)	k [m^3/h]	k [l/s]
2	143,5	39,9
3	215,2	59,8
4	287	79,7
5	358,8	99,7
6	430,5	119,6

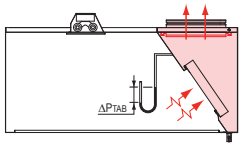
Filter Height = 330 mm
Suodattimen korkeus = 330 mm
Hauteur de Filtre = 330 mm
Bauhöhe des Filters = 330 mm
Filter höjd = 330 mm
Высота фильтра = 330 mm

Minimum pressure loss over filter = 50 Pa
Minimi painehäviö filterin yli = 50 Pa
Perte de charge minimale des filtres = 50 Pa
Minimum an Druckverlust am Filter = 50 Pa
Minimum tryckfall over filtret = 50 Pa
Минимальная потеря давления на фильтре = 50 Па

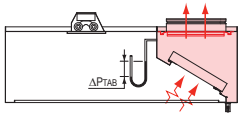
$q_v = k \times \sqrt{\Delta p_m}$

Halton

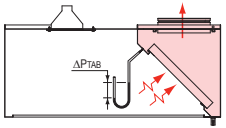
KVX (Canopies)



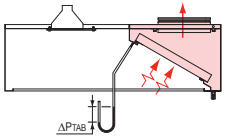
H = 555 mm / KSA 330



H = 400 mm / KSA 330



H = 555 mm / KSA 500



H = 400 mm / KSA 500

Exhaust air
Poistoilma
Extraction
Abluft
Frånluft
Вытяжной воздух

Minimum pressure loss over filter = 50 Pa
Minimi painehäviö filterin yli = 50 Pa
Perte de charge minimale des filtres = 50 Pa
Minimum an Druckverlust am Filter = 50 Pa
Minimum tryckfall over filtret = 50 Pa
Минимальная потеря давления на фильтре = 50 Па

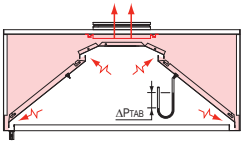
Number of filter(s) Suodattimien määrä Nombre de filtre(s) Anzahl der Filter Filter kvantitet Число фильтра (ов)	KSA 330 k [m³/h]	 k [l/s]
2	143,5	39,9
3	215,2	59,8
4	287	79,7
5	358,8	99,7
6	430,5	119,6

Number of filter(s) Suodattimien määrä Nombre de filtre(s) Anzahl der Filter Filter kvantitet Число фильтра (ов)	KSA 500 k [m³/h]	 k [l/s]
2	180	50
3	270	75
4	360	100
5	450	125
6	540	150

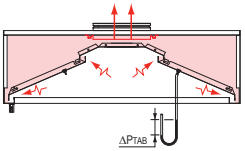
$q_v = k \times \sqrt{\Delta p_m}$

Halton

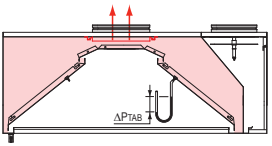
KVV / KVD (Canopies)



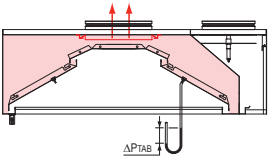
KVV / H = 555 mm



KVV / H = 400 mm



KVD / H = 555 mm

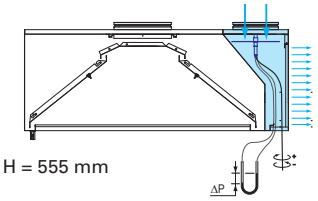


KVD / H = 400 mm

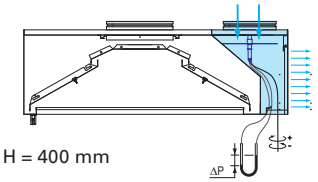
Exhaust air
Poistoilma
Extraction
Abluft
Frånluft
Вытяжной воздух

Huuvan pituus Length of the hood Longueur de la hotte Länge der Haube Längden av kåpan Длина зонта	KVV / KVD k [m^3/h]	 k [l/s]
1000	178,9	49,7
1500	268,6	74,6
2000	357,8	99,4
2500	447,1	124,2
3000	536,8	149,1

KVD (Canopies)



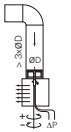
H = 555 mm



H = 400 mm

Supply air
Tuloilma
Soufflage
Zuluft
Tilluft
Приточный воздух

- Supply airflow rate measurement using MSM
- Tuloilmavirranmittaus MSM:n avulla
- Mesure du débit soufflé à l'aide des MSM
- Messung des Zuluftstroms unter Verwendung eines MSM
- Tilluftflöde mätt med MSM
- Измерение расхода приточного воздуха, используя MSM

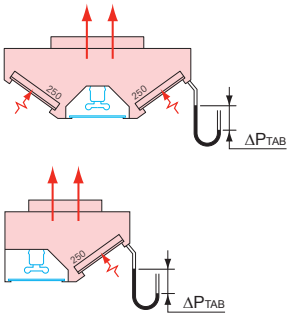


MSM 250

$q_S\ [m^3/h] = 183{,}6 \times \sqrt{\Delta P_{TAB}\ [Pa]}$

$q_S\ [l/s] = 51 \times \sqrt{\Delta P_{TAB}\ [Pa]}$

KCJ (Ventilated ceilings)



Exhaust air
Poistoilma
Extraction
Abluft
Frånluft
Вытяжной воздух

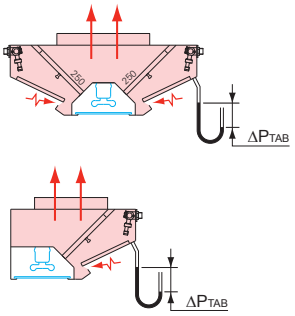
Filter Height = 250 mm
Suodattimen korkeus = 250 mm
Hauteur de Filtre = 250 mm
Bauhöhe des Filters = 250 mm
Filter höjd = 250 mm
Высота фильтра = 250 mm

Number of filter(s) Suodattimien määrä Nombre de filtre(s) Anzahl der Filter Filter kvantitet Число фильтра (ов)	KSA 250 (50<ΔP<120 Pa)		FC 250 (15<ΔP<40 Pa)		TFC 250 (30<ΔP<65 Pa)	
	k [m^3/h]	k [l/s]	k [m^3/h]	k [l/s]	k [m^3/h]	k [l/s]
1	63	17,5	54,5	15,2	46,1	12,8
2	126	35	109	30,2	92,2	25,6
3	189	52,5	163,5	45,3	138,3	38,4
4	252	70	218	60,4	184,4	51,2
5	315	87,5	272,5	75,5	230,5	64
6	378	105	327	90,6	276,6	76,8
7	441	122,5	381,5	105,7	322,7	89,6
8	504	140	436	120,8	368,8	102,4
9	567	157,5	490,5	135,9	414,9	115,2
10	630	175	545	151	461	128
11	693	192,5	599,5	166,1	507,1	140,8
12	756	210	654	181,2	553,2	153,6
13	819	227,5	708,5	196,3	599,3	166,4
14	882	245	763	211,4	645,4	179,2

$q_v = k \times \sqrt{\Delta p_m}$

Halton

KCW (Ventilated ceilings)



Exhaust air
Poistoilma
Extraction
Abluft
Frånluft
Вытяжной воздух

Filter Height = 250 mm
Suodattimen korkeus = 250 mm
Hauteur de Filtre = 250 mm
Bauhöhe des Filters = 250 mm
Filter höjd = 250 mm
Высота фильтра = 250 mm

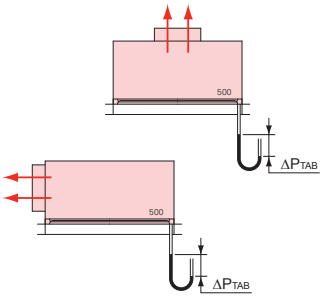
Number of filter(s) Suodattimien määrä Nombre de filtre(s) Anzahl der Filter Filter kvantitet Число фильтра (ов)	FC 250	
	k [m³/h]	k [l/s]
1	44,5	12,4
2	89	24,8
3	133,5	37,2
4	178	49,6
5	222,5	62
6	267	74,4
7	311,5	86,8

Number of filter(s) Suodattimien määrä Nombre de filtre(s) Anzahl der Filter Filter kvantitet Число фильтра (ов)	FC 250	
	k [m³/h]	k [l/s]
8	356	99,2
9	400,5	111,6
10	445	124
11	489,5	136,4
12	534	148,8
13	578,5	161,2
14	623	173,6

$q_v = k \times \sqrt{\Delta p_m}$

Halton

Extraction Box (Ventilated ceilings)



Exhaust air
Poistoilma
Extraction
Abluft
Frånluft
Вытяжной воздух

Number of filter(s) Suodattimien määrä Nombre de filtre(s) Anzahl der Filter Filter kvantitet Число фильтра (ов)	FC 250 (15<ΔP<40 Pa) k [m³/h]	 k [l/s]
1	54,5	15,2
2	109	30,2
3	163,5	45,3
4	218	60,4
5	272,5	75,5

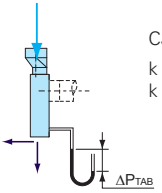
Number of filter(s) Suodattimien määrä Nombre de filtre(s) Anzahl der Filter Filter kvantitet Число фильтра (ов)	FC 350 (15<ΔP<40 Pa) k [m³/h]	 k [l/s]
1	72	20
2	144	40
3	216	60
4	288	80
5	360	100

Number of filter(s) Suodattimien määrä Nombre de filtre(s) Anzahl der Filter Filter kvantitet Число фильтра (ов)	FC 500 (15<ΔP<40 Pa) k [m³/h]	 k [l/s]
1	92,8	25,8
2	185,6	51,6
3	278,4	77,4
4	371,2	103,2
5	464	129

$q_v = k \times \sqrt{\Delta p_m}$

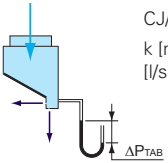
Halton

KCJ/KCW (Ventilated ceilings)



CJ/B

k [m³/h] = 7,8
k [l/s] = 2,2

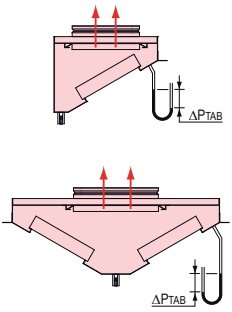


CJ/D

k [m³/h] = 8,5
[l/s] = 2,4

Capture Jets (S1/S2)
Sieppausilma
Jets de Captation
Capture Jets
Ejektorluft
Захватные Струи

KCF (Ventilated ceilings)



Exhaust air
Poistoilma
Extraction
Abluft
Frånluft
Вытяжной воздух

Minimum pressure loss over filter = 50 Pa
Minimi painehäviö filterin yli = 50 Pa
Perte de charge minimale des filtres = 50 Pa
Minimum an Druckverlust am Filter = 50 Pa
Minimum tryckfall over filtret = 50 Pa
Минимальная потеря давления на фильтре = 50 Па

Filter Height = 250 mm
Suodattimen korkeus = 250 mm
Hauteur de Filtre = 250 mm
Bauhöhe des Filters = 250 mm
Filter höjd = 250 mm
Высота фильтра = 250 mm

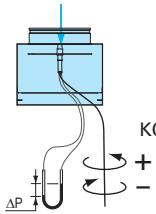
Number of filter(s) Suodattimien määrä Nombre de filtre(s) Anzahl der Filter Filter kvantitet Число фильтра (ов)	k [m^3/h]	k [l/s]
2	129,6	36
3	194,4	54
4	259,2	72
5	324	90
6	388,8	108

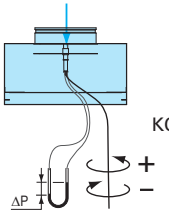
Number of filter(s) Suodattimien määrä Nombre de filtre(s) Anzahl der Filter Filter kvantitet Число фильтра (ов)	k [m^3/h]	k [l/s]
2	129,6	36
3	194,4	54
4	259,2	72
5	324	90
6	388,8	108
7	453,6	126
8	518,4	144
9	583,2	162
10	684	180
11	712,8	198
12	777,6	216

$q_v = k \times \sqrt{\Delta p_m}$

Halton

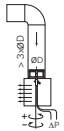
KCF (Ventilated ceilings)





Supply air
Tuloilma
Soufflage
Zuluft
Tilluft
Приточный воздух

- Supply airflow rate measurement using MSM
- Tuloilmavirranmittaus MSM:n avulla
- Mesure du débit soufflé à l'aide des MSM
- Messung des Zuluftstroms unter Verwendung eines MSM
- Tilluftflöde mätt med MSM
- Измерение расхода приточного воздуха, используя MSM

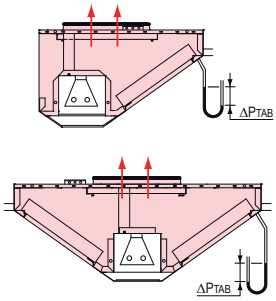


MSM 250

q_s [m³/h] = 183,6 x $\sqrt{\Delta P_{TAB}\ [Pa]}$

q_s [l/s] = 51 x $\sqrt{\Delta P_{TAB}\ [Pa]}$

KCE (Ventilated ceilings)



Exhaust air
Poistoilma
Extraction
Abluft
Frånluft
Вытяжной воздух

Minimum pressure loss over filter = 50 Pa
Minimi painehäviö filterin yli = 50 Pa
Perte de charge minimale des filtres = 50 Pa
Minimum an Druckverlust am Filter = 50 Pa
Minimum tryckfall over filtret = 50 Pa
Минимальная потеря давления на фильтре = 50 Па

Filter Height = 330 mm
Suodattimen korkeus = 330 mm
Hauteur de Filtre = 330 mm
Bauhöhe des Filters
Filter höjd = 330 mm
Высота фильтра = 330 mm

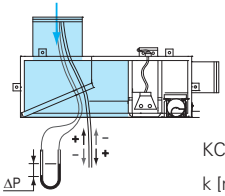
Number of filter(s) Suodattimien määrä Nombre de filtre(s) Anzahl der Filter Filter kvantitet Число фильтра (ов)	k [m³/h]	k [l/s]
2	143,5	39,9
3	215,2	59,8
4	287	79,7
5	358,8	99,7
6	430,5	119,6

Number of filter(s) Suodattimien määrä Nombre de filtre(s) Anzahl der Filter Filter kvantitet Число фильтра (ов)	k [m³/h]	k [l/s]
2	143,5	39,9
3	215,2	59,8
4	287	79,7
5	358,8	99,7
6	430,5	119,6
7	501,5	139,3
8	573,1	159,2
9	644,8	179,1
10	716,4	199
11	788	218,9
12	859,7	238,8

$q_v = k \times \sqrt{\Delta p_m}$

Halton

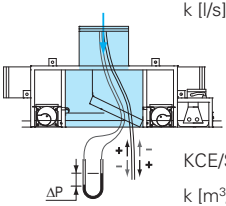
KCE (Ventilated ceilings)



KCE/S1

k [m³/h] = 88,9

k [l/s] = 24,7

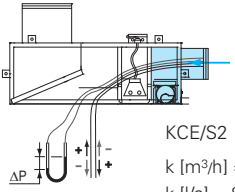


KCE/S2

k [m³/h] = 88,9

k [l/s] = 24,7

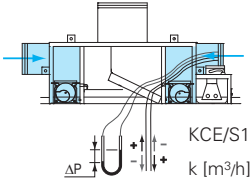
Supply air
Tuloilma
Soufflage
Zuluft
Tilluft
Приточный воздух



KCE/S2

k [m³/h] = 29,9

k [l/s] = 8,3

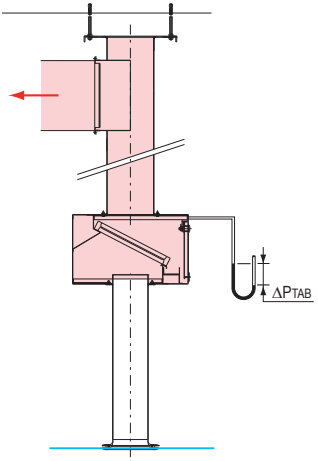


KCE/S1

k [m³/h] = 29,9

k [l/s] = 8,3

Capture Jets (S1/S2)
Sieppausilma
Jets de Captation
Capture Jets
Ejektorluft
Захватные Струи



Exhaust air
Poistoilma
Extraction
Abluft
Frånluft
Вытяжной воздух

Number of nozzle(s) Suodattimien imuputki(et) Nombre de tuyère(s) Anzahl der Düsen Antalet dysor Тип сопла(ел)	k [m^3/h]	k [l/s]
1	62	17,2
2	124	34,4
3	186	51,6

$q_v = k \times \sqrt{\Delta p_m}$

Notes

For Halton's sales unit and distributor contact details please refer to our website: www.halton.com