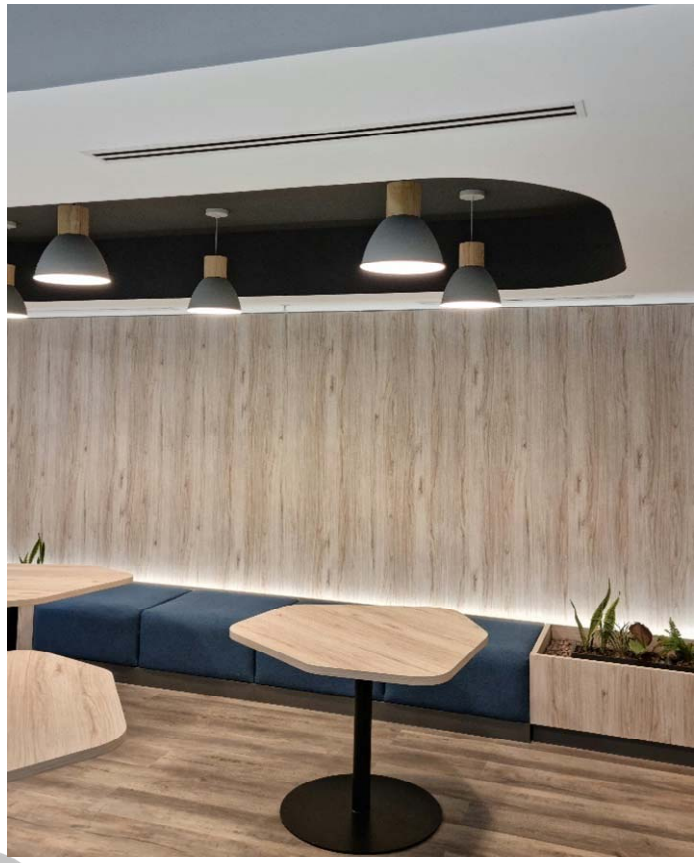
LAV-15 High induction linear slot diffusers – Slot 15

The high induction linear diffusers **LAV-15** series have been designed to combine aesthetics with technical performance in HVAC systems.

- 15 mm slot. Adjustable vanes every 100 mm to modify the air direction without changing the air flow.
- Wall or false ceiling mounting.
- Optimum performance in CAV or VAV systems.
- Designed for installations between 2.6 and 4 m high, with a temperature differential of up to 12 Cº.
- Suitable for both, air supply and return.

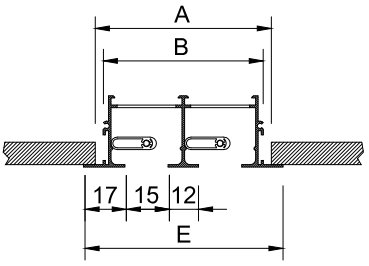
Product advantages:

- High induction rate.
- Allows the formation of continuous diffuser lines, with active and inactive zones, without breaking the aesthetic uniformity of the whole.
- Low visual impact of flat design of the vanes.

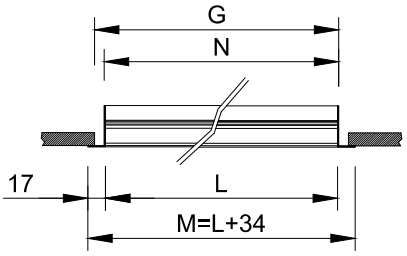


- ❑ Offices
- ❑ Hotels
- ❑ All kinds of buildings

LAV-15

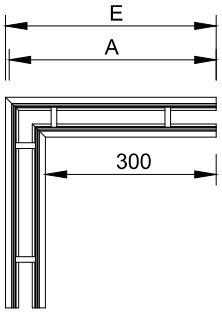


	E	A	B
1	49	43	34
2	76	70	61
3	103	97	88
4	130	124	115



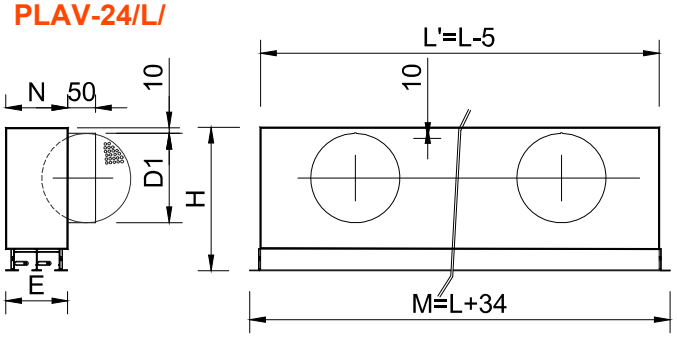
L	M	N	G
500	534	502,4	521
1000	1034	1002,4	1021
1200	1234	1202,4	1221
1500	1534	1502,4	1521
2000	2034	2002,4	2021

A90-LAV-15



	E	A
1	349	342,5
2	376	369,5
3	403	396,5
4	430	423,5

PLAV-24/L/



	L ≤ 0.5		L ≤ 1		L < 1,5		L ≥ 1,5		L ≤ 2			
	H´	D1	H´	D1	H´	D1	H´	D1	H´	D1	N	E
1	256	1/158	256	1/158	256	1/158	256	2/158	256	2/158	69	49
2	256	1/158	256	1/158	256	1/158	256	2/158	256	2/158	108	76
3	256	1/198	256	1/198	256	1/198	256	2/198	256	2/198	108	103
4	296	1/198	296	1/198	296	1/198	296	2/198	296	2/198	147	130

CLASSIFICATION

LAV-15 High induction linear slot diffuser. 15 mm slot.

…-AR Diffuser with end borders included. Suitable for lengths ≤ 2 m.
…-INT Diffuser without end borders, required to form lines > 2 m. (In case of needing sections of equal length, it must be indicated)

MATERIAL

Diffuser constructed from aluminium and deflection vanes in black colour PVC.

ACCESSORIES

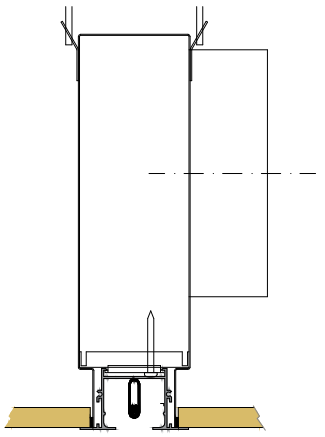
PLAV-15/L/ Plenum box with a lateral circular connection. It incorporates supports for ceiling suspension. Made in galvanised steel.

…-R Plenum box with an air flow damper in the spigot.
…/AIS/ Plenum box with thermal insulation inside. Foam density 25 kg / m3 ISO 845. Thermal conductivity 10º C_0,040 W / mºK EN 12667. Classified reaction to fire B-s1, d0 EN 13501-1.

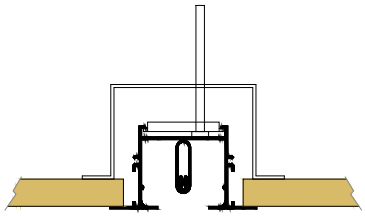
ARV-15 End borders.

A90/LAV-15 Inactive diffuser without end borders, forming a 90º angle.

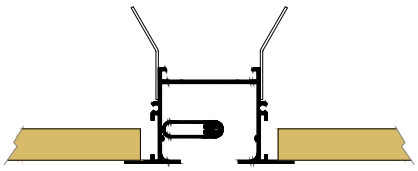
(PL)



(PM)



(D)



FIXING SYSTEMS

(PL) Diffuser to screw to plenum box and suspension of the assembly to the ceiling or wall.

(PM) Diffuser with crossbars to install in a false ceiling or wall. Fixing by screws.

(D) Diffuser with brackets for ceiling suspension using threaded rods.

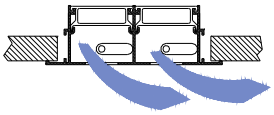
FINISHES

R9016S Painted white RAL 9016 (60-70% gloss)
R9010S Painted white RAL 9010 (60-70% gloss)
RAL... Painted other RAL.
.../AB/ Vanes in white colour.

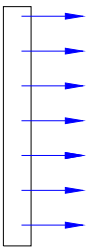
SPECIFICATION TEXT

Supply and mounting of high induction linear slot diffuser, 15 mm slot, **LAV-15-AR+PLAV-15/L/-R R9016S 2x1000** series, made of aluminum and steel, painted white RAL 9016 (60-70% gloss) Plenum box with lateral circular connection, air flow damper in the spigot and necessary elements for assembly.Brand **MADEL**.

LAV15 SERIES



RECOMMENDED VELOCITY.



SLOTS	Vmin (m/s)	Vmax (m/s)
1	2,5	5,5
2	2,5	5,5
3	2,5	5,5
4	2,5	4,7

$V(m/s) \times 3600 = Q(m^3/h) / A(m^2)$

FREE FACE AREA (m2).

	0.5 m	1 m	1.5 m	2 m
1	0,0032	0,0064	0,0096	0,0128
2	0,0064	0,0128	0,0192	0,0256
3	0,0096	0,0192	0,0288	0,0384
4	0,0128	0,0256	0,0384	0,0512

CORRECTON FACTOR FOR THROW KL

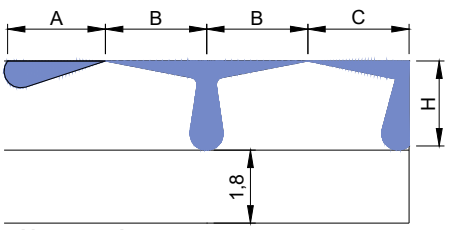
	0.5 m	1 m	1.5 m	2 m
1	0,71	1	1,07	1 ,14
2	0,73	1	1,09	1,15
3	0,74	1	1,11	1,20
4	0,75	1	1,25	1,25

CORRECTION FACTOR FOR DPt AND Lwa1.

		0.5 m			1 m			1.5 m			2 m		
		100%	50%	25%	100%	50%	25%	100%	50%	25%	100%	50%	25%
1	Dpt	0,95	2,35	3,15	1	1,4	2,2	1	1,4	2,2	1,1	2,1	3,1
	Lwa1	-	1,5	3,5	-	1,5	3,5	2,1	5,6	3	3	4,5	6,5
2	Dpt	0,98	2,48	3,25	1	1,4	2,2	1	1,4	2,2	1,1	2,1	3,1
	Lwa1	-	1,5	3,5	-	1,5	3,5	2,1	3,6	5,6	3	4,5	6,5
3	Dpt	0,96	2,26	3,36	1	1,3	2,4	1	1,3	2,4	1,3	2,4	3,5
	Lwa1	-	1,5	3,5	-	1,5	3,5	2,1	3,6	5,6	3	4,5	6,5
4	Dpt	0,95	2,35	3,05	1	1,4	2,1	1	1,4	2,2	1,1	2,1	3,1
	Lwa1	-	1,5	3,5	-	1,5	3,5	2,1	3,6	5,6	3	4,5	6,5

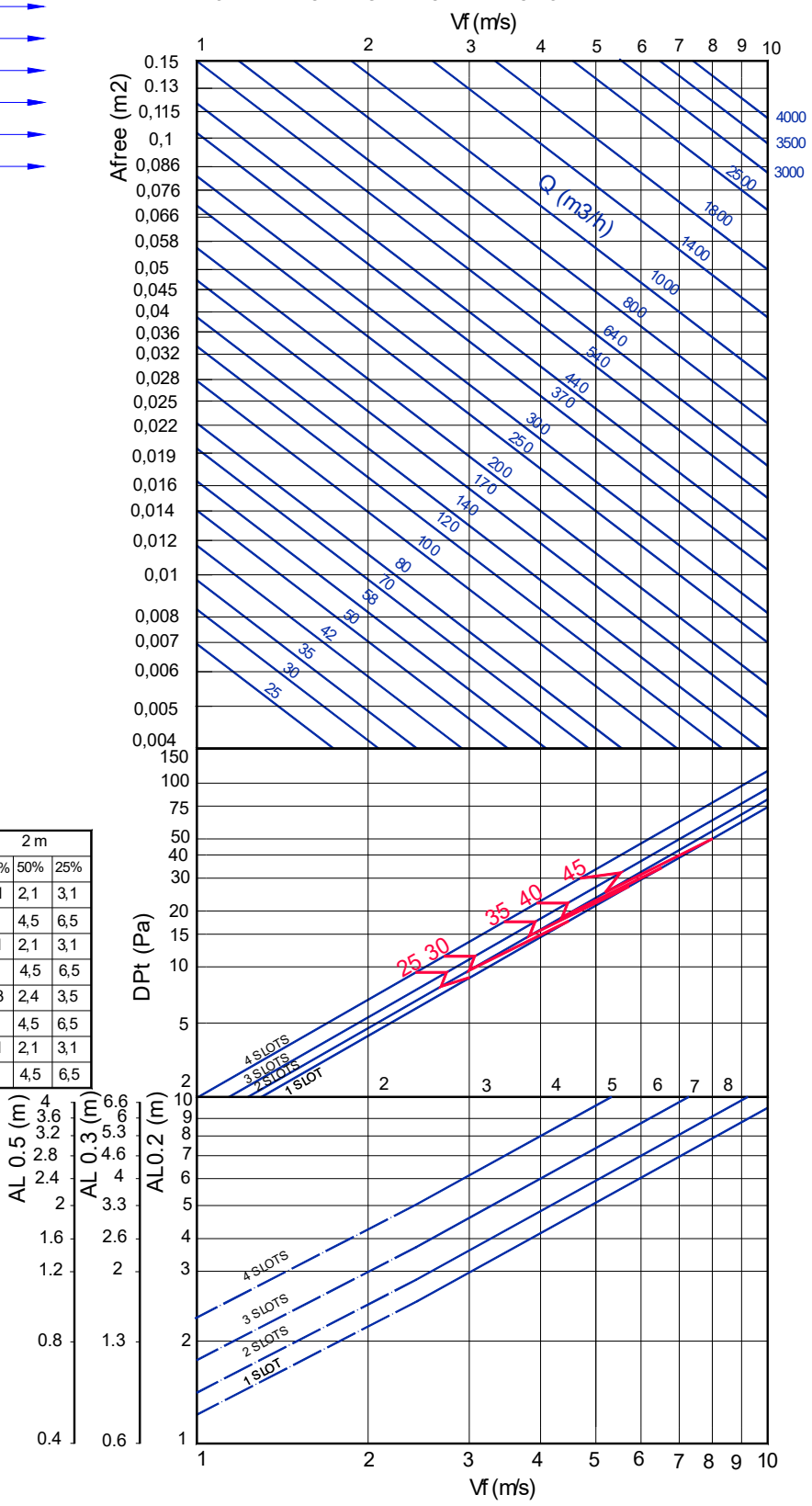
$DPt1 = Kp \times DPt$ $Lwa1 = Lwa + Kf$

$AL`02 = Kl \times AL02$

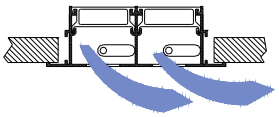


$AL\ 0.2 = A$
$AL\ 0.2 = B+H$
$AL\ 0.2 = C+H$

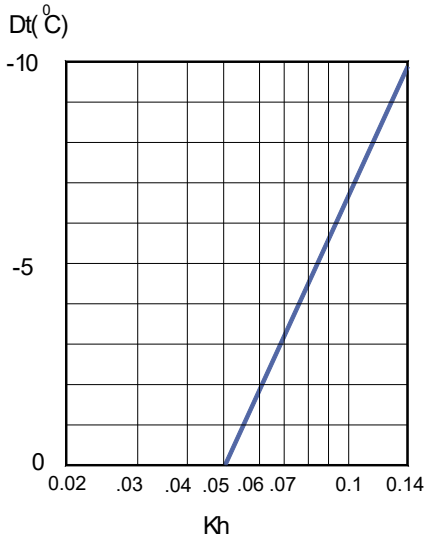
FREE VELOCITY, PRESSURE LOSS AND SOUND POWER LEVEL, THROW WITH CEILING EFFECT: 1 DIRECTION.



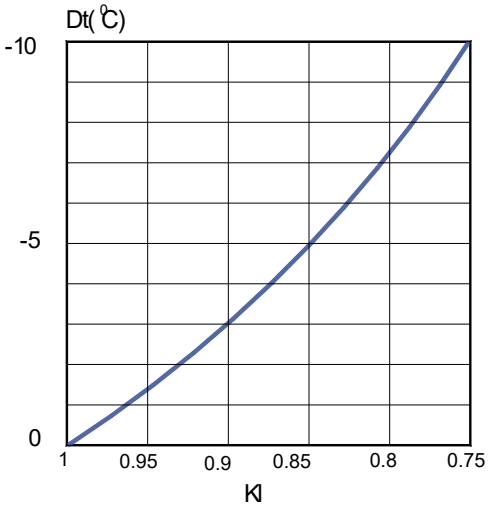
LAV15 SERIES



CORRECTION FACTOR FOR VERTICAL DIFFUSION (bV) FOR DT (-).

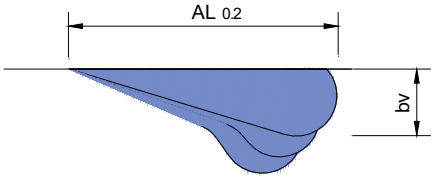


CORRECTON FACTOR FOR THROW (L0.2) DT (-).



Kh = Correction factor for the vertical diffusion.

Kl = Correction factor for the throw.



$$bv = Kh \times Al_{0.2}$$

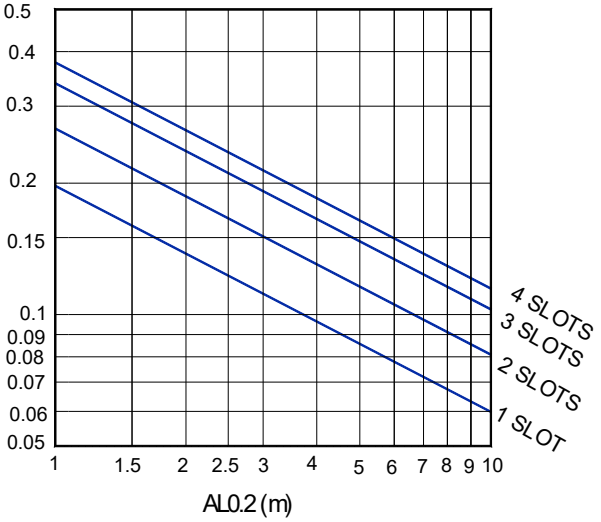
$$AL'_{0.2}\,(Dt<0) = Kl \times AL_{0.2}$$

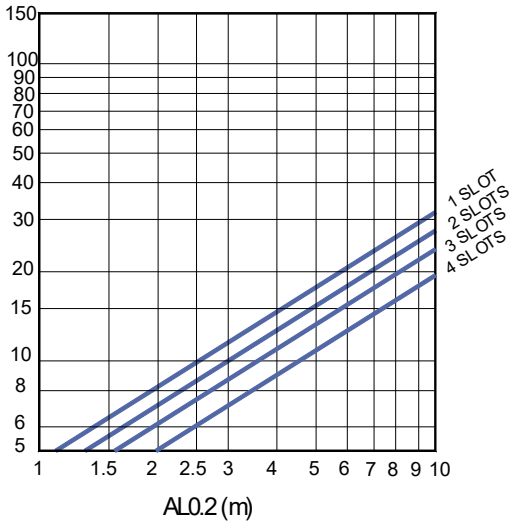
TEMPERATURE RATIO.

$$\frac{Dtl}{Dtz} = \frac{t\ room - t\ x}{t\ room - t\ supply}$$

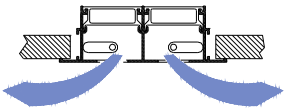
INDUCTION RATIO.

$$i = \frac{Qr}{Q_0} = \frac{Q\ total\ at\ x}{Q\ of\ supply}$$



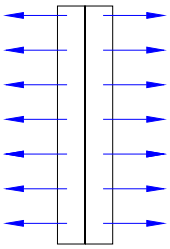


LAV15 SERIES



RECOMMENDED VELOCITY.

SLOTS	Vmin (m/s)	Vmax (m/s)
2	2,5	5,5
4	2,5	4,7



$$V\,(m/s) \times 3600 = Q\,(m^3/h) / A\,(m^2)$$

FREE FACE AREA (m2).

	0.5 m	1 m	1.5 m	2 m
2	0,0064	0,0128	0,0192	0,0256
4	0,0128	0,0256	0,0384	0,0512

CORRECTION FACTOR FOR DPt AND Lwa1.

		0.5 m			1 m			1.5 m			2 m		
		100%	50%	25%	100%	50%	25%	100%	50%	25%	100%	50%	25%
2	Dpt	0,98	2,48	3,25	1	1,4	2,2	1	1,4	2,2	1,1	2,1	3,1
	Lwa1	-	1,5	3,5	-	1,5	3,5	2,1	3,6	5,6	3	4,5	6,5
4	Dpt	0,95	2,35	3,05	1	1,4	2,1	1	1,4	2,2	1,1	2,1	3,1
	Lwa1	-	1,5	3,5	-	1,5	3,5	2,1	3,6	5,6	3	4,5	6,5

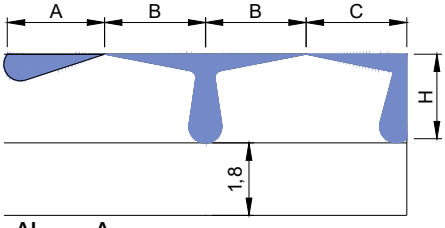
$$DPt1 = Kp \times DPt$$

$$Lwa1 = Lwa + Kf$$

CORRECTON FACTOR FOR THROW KL

	0.5 m	1 m	1.5 m	2 m
2	0,73	1	1,09	1,15
4	0,75	1	1,25	1,25

$$AL`02 = KI \times AL02$$

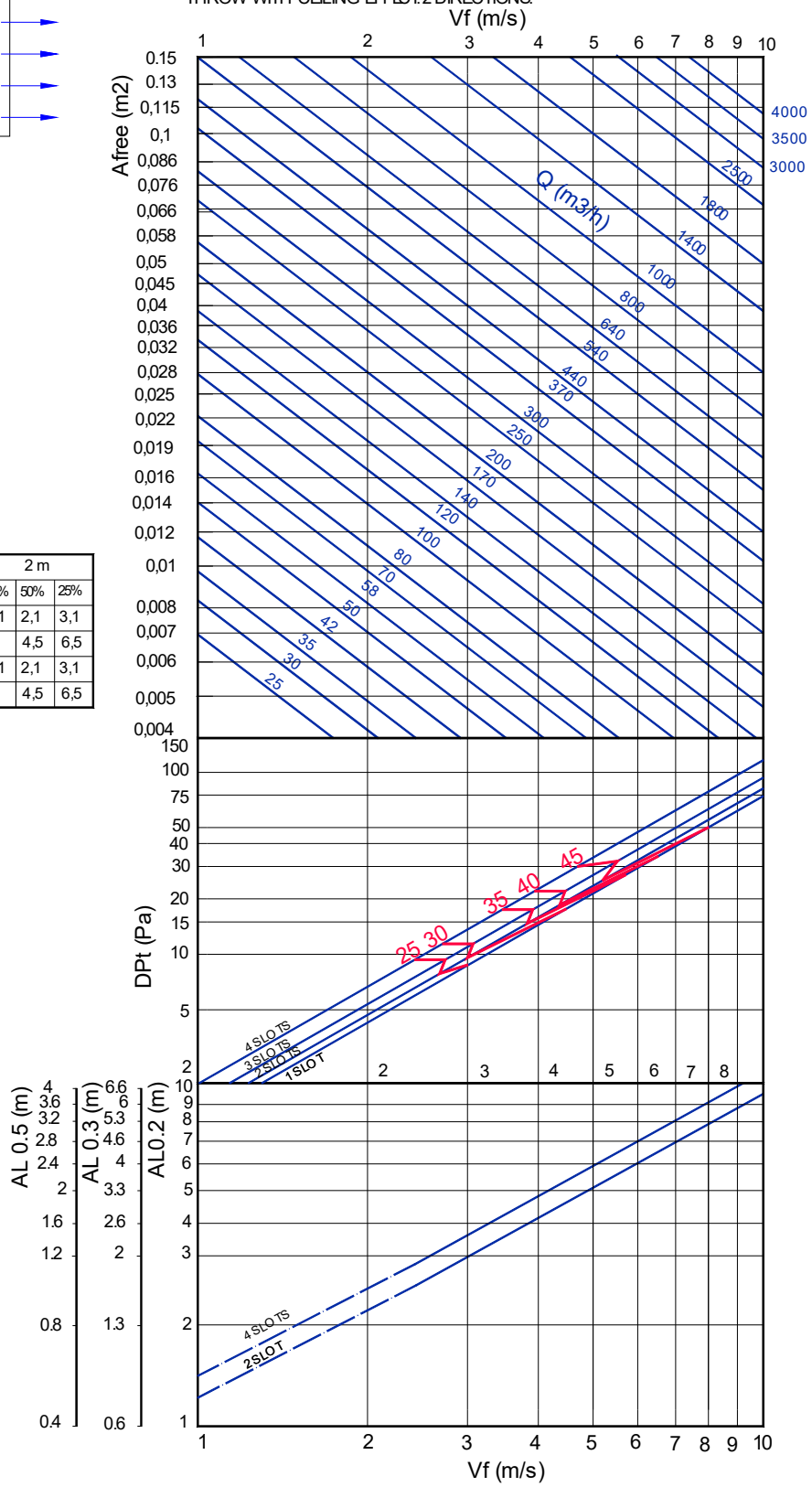


$AL_{0.2} = A$

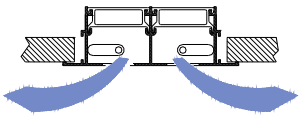
$AL_{0.2} = B+H$

$AL_{0.2} = C+H$

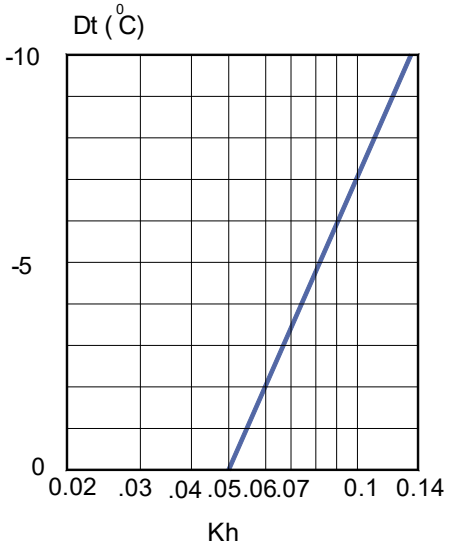
FREE VELOCITY, PRESSURE LOSS AND SOUND POWER LEVEL, THROW WITH CEILING EFFECT: 2 DIRECTIONS.



LAV15 SERIES

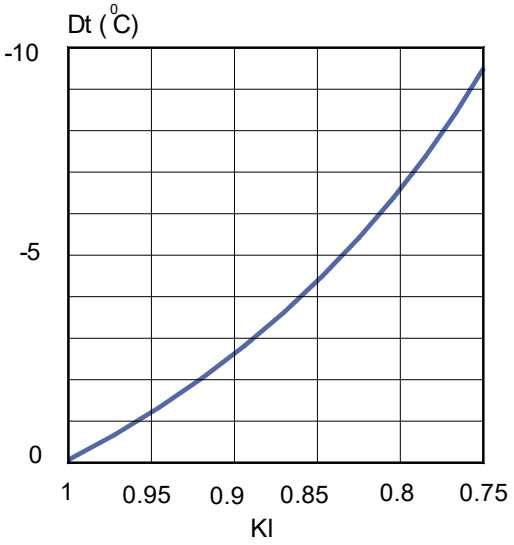


CORRECTION FACTOR FOR VERTICAL DIFFUSION (bV) FOR DT (-).

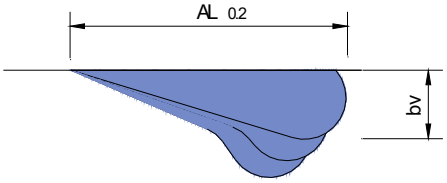


Kh = Correction factor for the vertical diffusion.

CORRECTON FACTOR FOR THROW (L0.2) DT (-).



Kl = Correction factor for the throw.

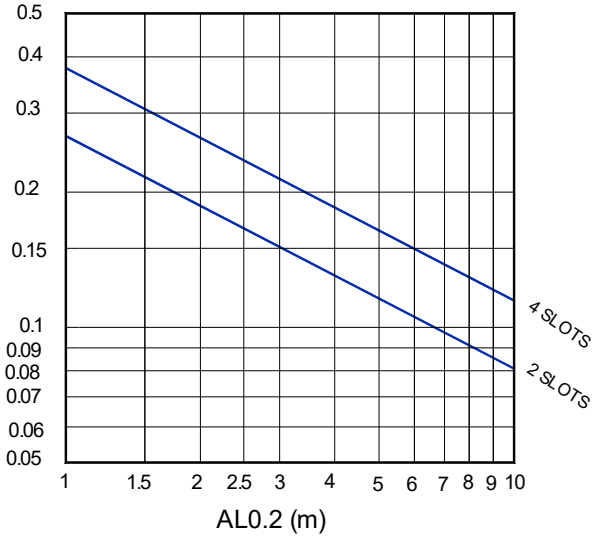


$$bv = Kh \times Al_{0.2}$$

$$AL'_{0.2}(Dt<0) = Kl \times AL_{0.2}$$

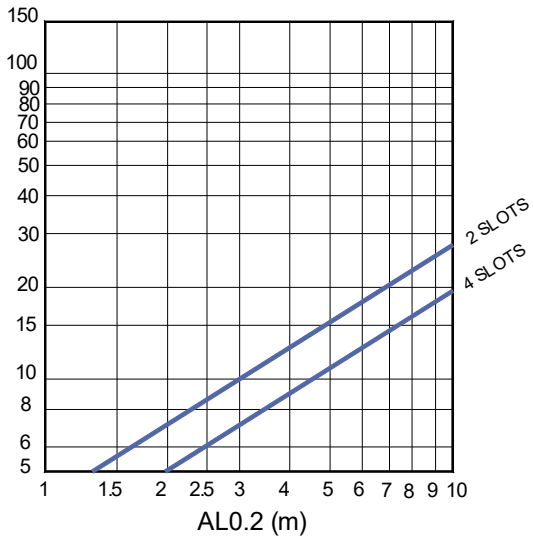
TEMPERATURE RATIO.

$$\frac{Dtl}{Dtz} = \frac{t\ room - t\ x}{t\ room - t\ supply}$$

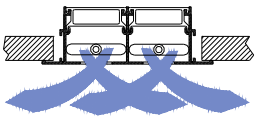


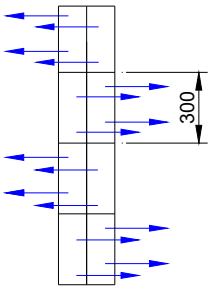
INDUCTION RATIO.

$$i = \frac{Qr}{Q_0} = \frac{Q\ total\ at\ x}{Q\ of\ supply}$$



LAV15 SERIES





RECOMMENDED VELOCITY.

SLOTS	Vmin (m/s)	Vmax (m/s)
1	2,5	5,5
2	2,5	5,5
3	2,5	5,5
4	2,5	4,7

$V(m/s) \times 3600 = Q(m^3/h) / A(m^2)$

FREE FACE AREA (m2).

	0.5 m	1 m	1.5 m	2 m
1	0,0032	0,0064	0,0096	0,0128
2	0,0064	0,0128	0,0192	0,0256
3	0,0096	0,0192	0,0288	0,0384
4	0,0128	0,0256	0,0384	0,0512

CORRECTON FACTOR FOR THROW KL

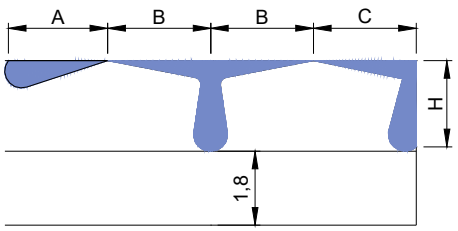
	0.5 m	1 m	1.5 m	2 m
1	0,71	1	1,07	1 ,14
2	0,73	1	1,09	1,15
3	0,74	1	1,11	1,20
4	0,75	1	1,25	1,25

CORRECTION FACTOR FOR DPt AND Lwa1.

		0.5 m			1 m			1.5 m			2 m		
		100%	50%	25%	100%	50%	25%	100%	50%	25%	100%	50%	25%
1	Dpt	0,95	2,35	3,15	1	1,4	2,2	1	1,4	2,2	1,1	2,1	3,1
	Lwa1	-	1,5	3,5	-	1,5	3,5	2,1	5,6	3	3	4,5	6,5
2	Dpt	0,98	2,48	3,25	1	1,4	2,2	1	1,4	2,2	1,1	2,1	3,1
	Lwa1	-	1,5	3,5	-	1,5	3,5	2,1	3,6	5,6	3	4,5	6,5
3	Dpt	0,96	2,26	3,36	1	1,3	2,4	1	1,3	2,4	1,3	2,4	3,5
	Lwa1	-	1,5	3,5	-	1,5	3,5	2,1	3,6	5,6	3	4,5	6,5
4	Dpt	0,95	2,35	3,05	1	1,4	2,1	1	1,4	2,2	1,1	2,1	3,1
	Lwa1	-	1,5	3,5	-	1,5	3,5	2,1	3,6	5,6	3	4,5	6,5

$DPt1 = Kp \times DPt$ $Lwa1 = Lwa + Kf$

$AL`02 = Kl \times AL02$

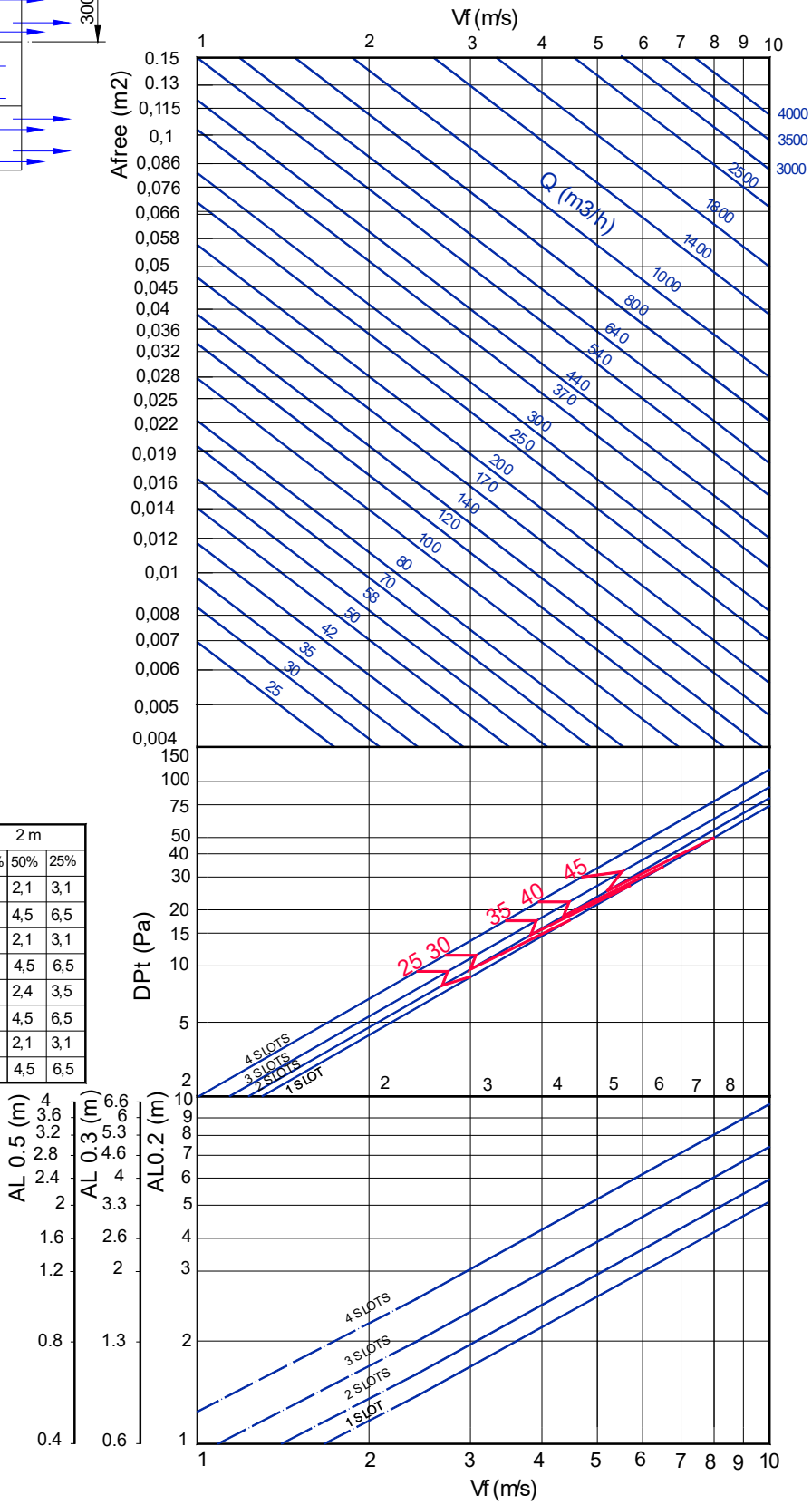


$AL_{0.2} = A$

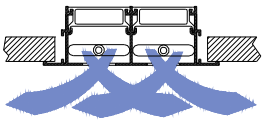
$AL_{0.2} = B+H$

$AL_{0.2} = C+H$

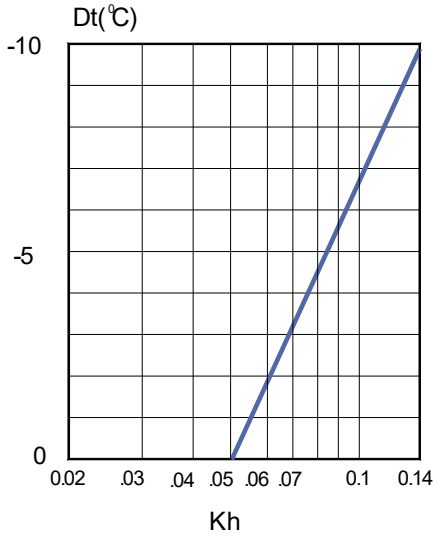
FREE VELOCITY, PRESSURE LOSS AND SOUND POWER LEVEL, THROW WITH CEILING EFFECT: 2 DIRECTION.



LAV15 SERIES

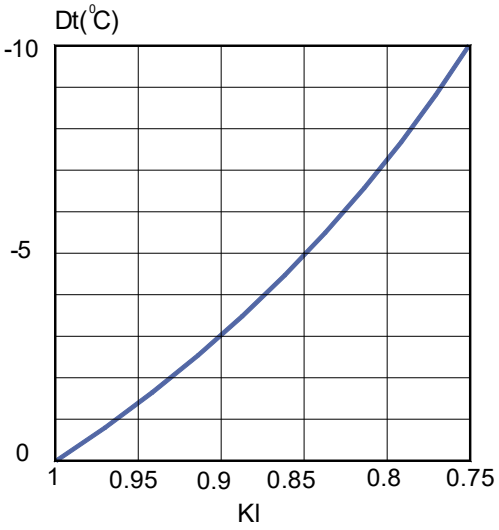


CORRECTION FACTOR FOR VERTICAL DIFFUSION (bV) FOR DT (-).

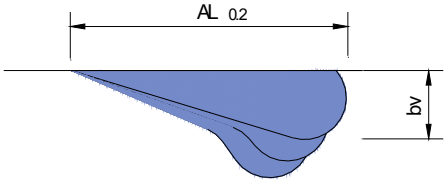


Kh = Correction factor for the vertical diffusion.

CORRECTON FACTOR FOR THROW (L0.2) DT (-).



Kl = Correction factor for the throw.



$$bv = Kh \times Al_{0.2}$$

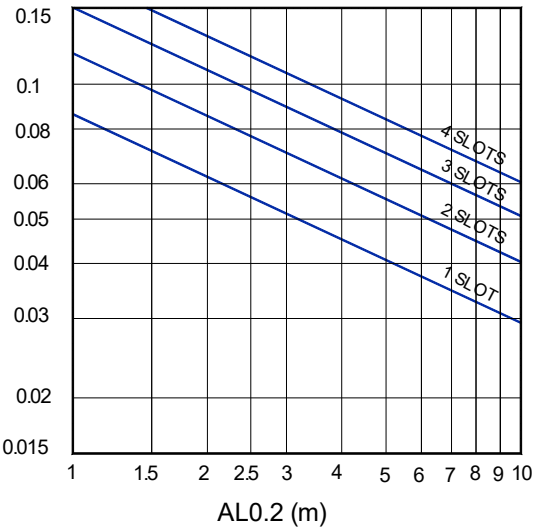
$$AL'_{0.2}(Dt<0) = Kl \times AL_{0.2}$$

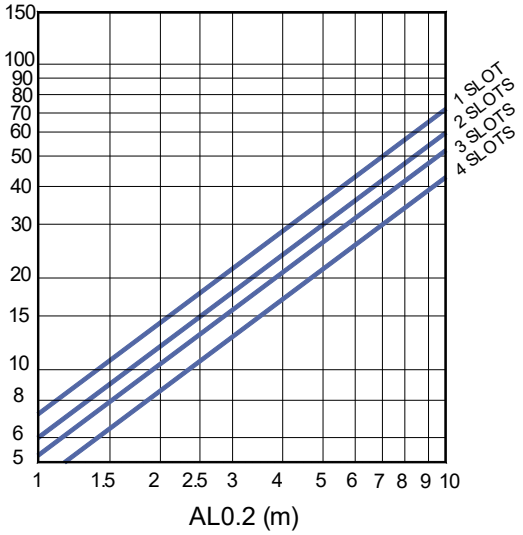
TEMPERATURE RATIO.

$$\frac{Dtl}{Dtz} = \frac{t\ room - t\ x}{t\ room - t\ supply}$$

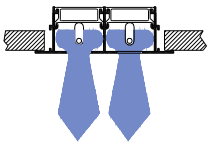
INDUCTION RATIO.

$$i = \frac{Qr}{Q_0} = \frac{Q\ total\ at\ x}{Q\ of\ supply.}$$





LAV15 SERIES



RECOMMENDED VELOCITY.

	0.5m	1m	1.5m	2m
1	0,0062	0,0125	0,0187	0,0249
2	0,0125	0,0249	0,0374	0,0498
3	0,0187	0,0374	0,0561	0,0748
4	0,0249	0,0498	0,0748	0,0997

$$V(m/s) \times 3600 = \frac{Q(m/h)^3}{A(m)^2}$$

FREE FACE AREA (m2).

	0.5m	1m	1.5m	2m
1	0,0062	0,0125	0,0187	0,0249
2	0,0125	0,0249	0,0374	0,0498
3	0,0187	0,0374	0,0561	0,0748
4	0,0249	0,0498	0,0748	0,0997

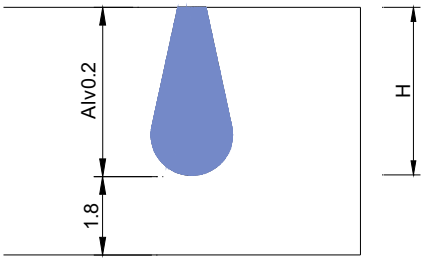
CORRECTON FACTOR FOR THROW KL

	0.5 m	1 m	1.5 m	2 m
1	0,71	1	1,07	1 ,14
2	0,73	1	1,09	1,15
3	0,74	1	1,11	1,20
4	0,75	1	1,25	1,25

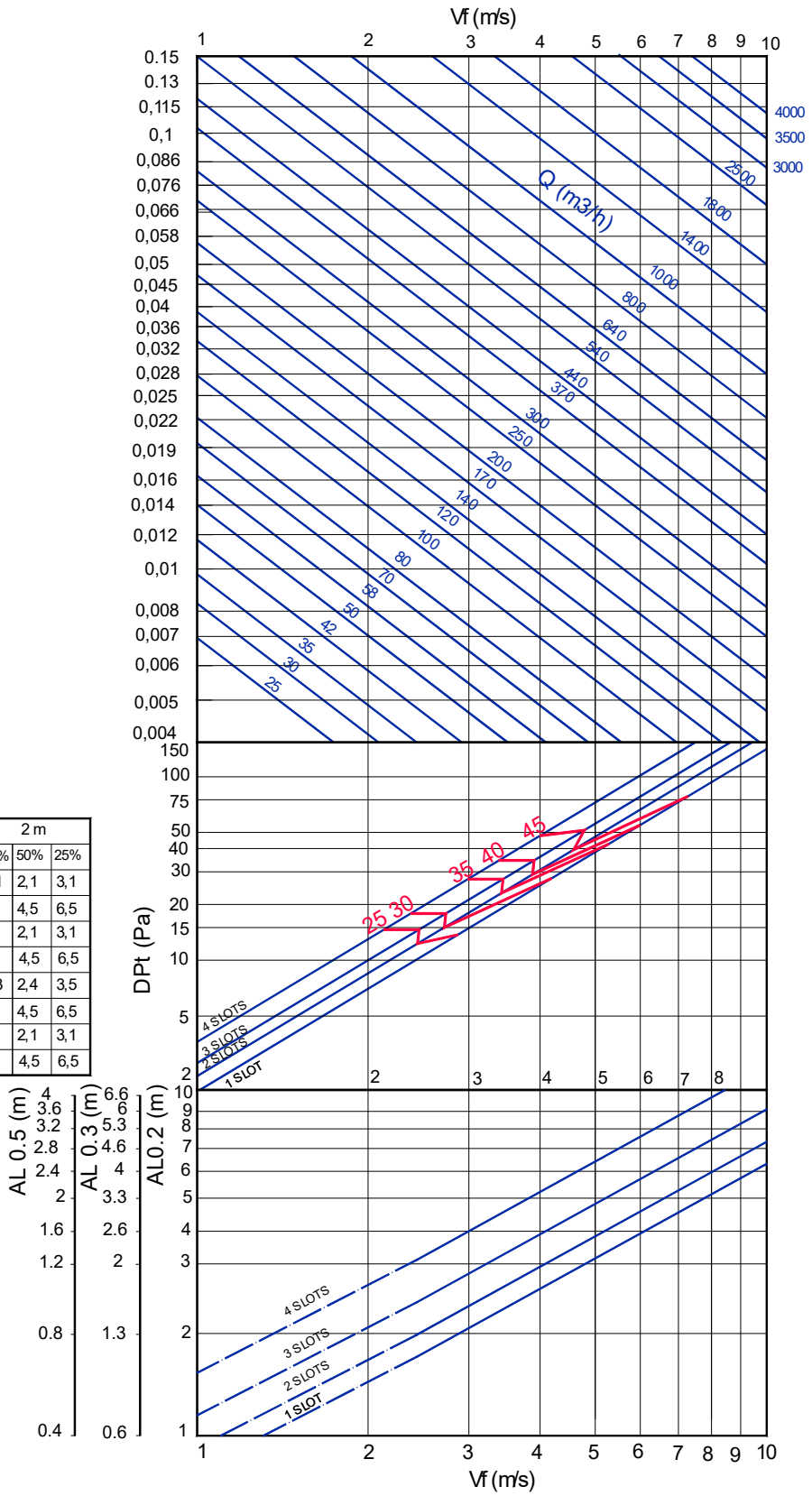
CORRECTION FACTOR FOR DPt AND Lwa1.

		0.5 m			1 m			1.5 m			2 m		
		100%	50%	25%	100%	50%	25%	100%	50%	25%	100%	50%	25%
1	Dpt	0,95	2,35	3,15	1	1,4	2,2	1	1,4	2,2	1,1	2,1	3,1
	Lwa1	-	1,5	3,5	-	1,5	3,5	2,1	5,6	3	3	4,5	6,5
2	Dpt	0,98	2,48	3,25	1	1,4	2,2	1	1,4	2,2	1,1	2,1	3,1
	Lwa1	-	1,5	3,5	-	1,5	3,5	2,1	3,6	5,6	3	4,5	6,5
3	Dpt	0,96	2,26	3,36	1	1,3	2,4	1	1,3	2,4	1,3	2,4	3,5
	Lwa1	-	1,5	3,5	-	1,5	3,5	2,1	3,6	5,6	3	4,5	6,5
4	Dpt	0,95	2,35	3,05	1	1,4	2,1	1	1,4	2,2	1,1	2,1	3,1
	Lwa1	-	1,5	3,5	-	1,5	3,5	2,1	3,6	5,6	3	4,5	6,5

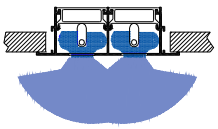
AL`02 = KI x AL02

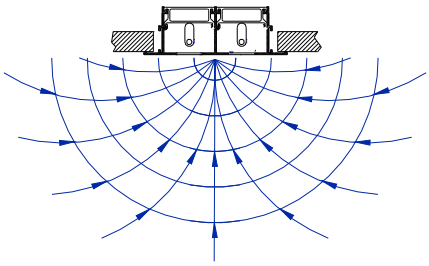


FREE VELOCITY, PRESSURE LOSS AND SOUND POWER LEVEL, THROW WITH CEILING EFFECT: 1 DIRECTION.



LAV15 SERIES





RECOMMENDED VELOCITY.

SLOTS	Vmin (m/s)	Vmax (m/s)
1	2,5	4,5
2	2,5	4,5
3	2,5	4,5
4	2,5	4

$$V(m/s) \times 3600 = Q(m^3/h) / A(m^2)$$

FREE FACE AREA (m2).

	0.5 m	1 m	1.5 m	2 m
1	0,0062	0,0125	0,0187	0,0249
2	0,0125	0,0249	0,0374	0,0498
3	0,0187	0,0374	0,0561	0,0748
4	0,0249	0,0498	0,0748	0,0997

CORRECTION FACTOR FOR DPt AND Lwa1.

		0.5 m			1 m			1.5 m			2 m		
		100%	50%	25%	100%	50%	25%	100%	50%	25%	100%	50%	25%
1	Dpt	0,95	2,35	3,15	1	1,4	2,2	1	1,4	2,2	1,1	2,1	3,1
	Lwa1	-	1,5	3,5	-	1,5	3,5	2,1	5,6	3	3	4,5	6,5
2	Dpt	0,98	2,48	3,25	1	1,4	2,2	1	1,4	2,2	1,1	2,1	3,1
	Lwa1	-	1,5	3,5	-	1,5	3,5	2,1	3,6	5,6	3	4,5	6,5
3	Dpt	0,96	2,26	3,36	1	1,3	2,4	1	1,3	2,4	1,3	2,4	3,5
	Lwa1	-	1,5	3,5	-	1,5	3,5	2,1	3,6	5,6	3	4,5	6,5
4	Dpt	0,95	2,35	3,05	1	1,4	2,1	1	1,4	2,2	1,1	2,1	3,1
	Lwa1	-	1,5	3,5	-	1,5	3,5	2,1	3,6	5,6	3	4,5	6,5

FREE VELOCITY, PRESSURE LOSS AND SOUND POWER LEVEL.