



LNG Linear slot diffusers

MADEL®

The **LNG** series linear diffusers are designed to combine the aesthetics with the technical performance.

They can be mounted in false ceilings or suspended from the ceiling.

They allow the formation of diffuser continuous lines, with active and inactive areas, without breaking the uniformity of the whole.

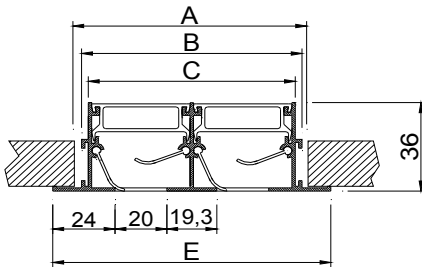
They are suitable both for supply and return. By adjusting their blades it is possible to obtain a horizontal distribution of the air in one or the other direction or its vertical projection without change the volume of air.

The **LNG** series diffusers are designed for both CAV and VAV installations. These diffusers can be used from 2.6 up to 4 meters high and at a temperature differential up to 12° C.



LNG-AR

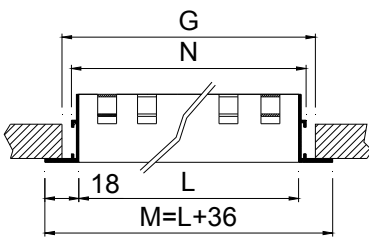
MAD E L[®]



N°VIAS	E	A	B	C
1	68	55	47	40
2	107	95	86	80
3	147	134	125	119
4	186	173	165	159

CLASSIFICATION

- LNG-AR** Diffuser with end borders included. Suitable for lengths ≤ 2 m.
- ...-ARI** Diffuser with an end border on the left side, required to form lines > 2 m.
- ...-ARD** Diffuser with an end border on the right side, required to form lines > 2 m.
- ...-INT** Diffuser without end borders, required to form lines > 4 m. (in case of needing sections of equal length, it must be indicated)



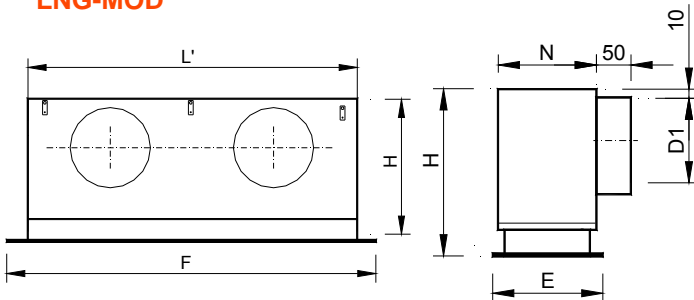
L	M	N	G
500	536	507	516
1000	1036	1007	1016
1200	1236	1207	1216
1500	1536	1507	1516
2000	2036	2007	2016

LNG-MOD Modular linear diffuser. Specially designed to replace a false ceiling tile.

MATERIAL

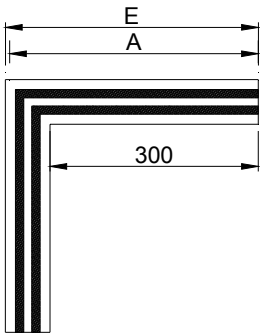
Diffuser constructed from aluminium and deflection vanes from aluminium in black colour.

LNG-MOD



MOD	SLOTS	F	E	L'	H	D1	N
1200x300	1	1195	295	1145	256	1/158	69
1200x300	2	1195	295	1145	256	1/158	108
1200x300	3	1195	295	1145	296	2/198	147
1200x300	4	1195	295	1145	296	2/198	186
1200x600	1	1195	595	1145	256	1/158	69
1200x600	2	1195	595	1145	256	1/158	108
1200x600	3	1195	595	1145	296	2/198	147
1200x600	4	1195	595	1145	296	2/198	186
1250x310	1	1245	305	1195	256	1/158	69
1250x310	2	1245	305	1195	256	1/158	108
1250x310	3	1245	305	1195	296	2/198	147
1250x310	4	1245	305	1195	296	2/198	186
1250x625	3	1245	620	1195	256	1/158	69
1250x625	4	1245	620	1195	256	1/158	108
1250x625	3	1245	620	1195	296	2/198	147
1250x625	4	1245	620	1195	296	2/198	186
1350x335	1	1345	330	1295	256	1/158	69
1350x335	2	1345	330	1295	256	1/158	108
1350x335	3	1345	330	1295	296	2/198	147
1350x335	4	1345	330	1295	296	2/198	186
1350x675	1	1345	670	1295	256	1/158	69
1350x675	2	1345	670	1295	256	1/158	108
1350x675	3	1345	670	1295	296	2/198	147
1350x675	4	1345	670	1295	296	2/198	186

A90/LNG



N°VIAS	E	A
1	368	358
2	407	397
3	447	437
4	486	476

ACCESSORIES

A90/LNG Inactive diffuser without end borders, making a 90° angle.

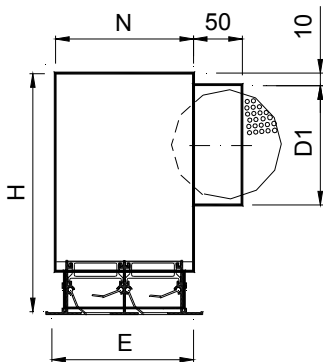
PLSD Plenum box with lateral circular connection. It includes supports to hang from the ceiling. Made in galvanised steel.

...-R Plenum box with a flow damper in the spigot.

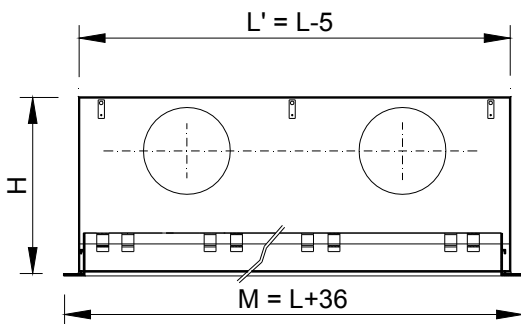
.../AIS/ Thermally insulated plenum box with foam. Density 30 kg / m³ ISO 845. Thermal conductivity 20° C_0,040 W / m°K ISO 3386/1.

Classified reaction to fire B-s2, d0 EN 13501-1.

LNG-AR + PLSD...-R



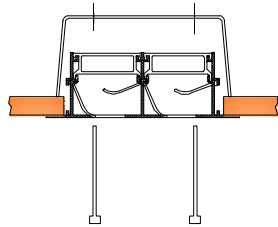
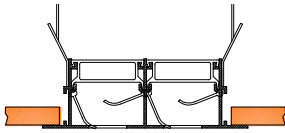
	N	E
1	69	68
2	108	107
3	147	147
4	186	186



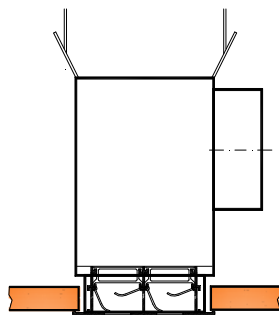
	L ≤ 0,5		L ≤ 1		L ≤ 1,2		L ≤ 1,5		L ≤ 2	
	H	D1	H	D1	H	D1	H	D1	H	D1
1	256	1/158	256	1/158	256	1/158	256	1/158	256	2/158
2	256	1/158	256	1/158	256	1/158	256	2/158	256	2/158
3	296	1/198	296	1/198	296	2/198	296	2/198	296	2/198
4	296	1/198	296	1/198	296	2/198	296	2/198	296	2/198

D

PM



PLSD



FIXING SYSTEMS

(D) Support brackets to hang LNG or LNG+PLSD from the ceiling.

(PL) Connection into PLSD+PML plenum box by screws, to hang from the ceiling. This system simplifies and facilitates the assembly and disassembling of the diffuser into the plenum box.

(PM) Set of crossbars for installation of the diffuser without plenum in false ceiling.

FINISHES

AA Matt silver anodised.

M9016 Painted white similar to RAL 9016 (85-95% gloss)

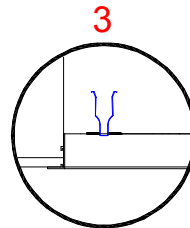
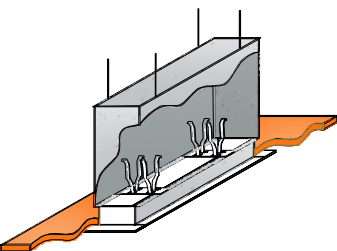
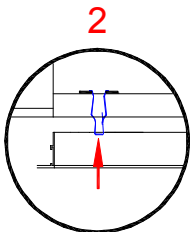
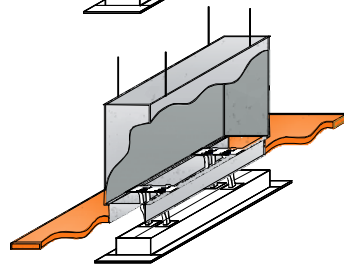
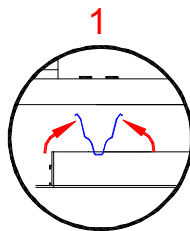
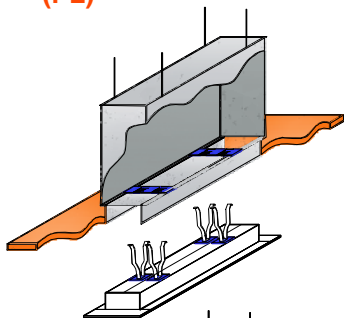
R9016S Painted white RAL 9016 semi-matt (60-70% gloss)

R9010S Painted white RAL 9010 semi-matt (60-70% gloss)

RAL... Painted in other RAL colours.

.../AB/ Vanes in white colour.

(PL)



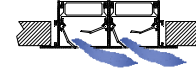
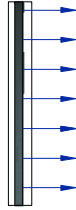
SPECIFICATION TEXT

Supply and mounting of linear slot diffuser with directional vanes series **LNG-AR+PLSD-R AA 1x558** constructed from aluminium and anodised in matt silver **AA**. With lateral circular connection plenum box and air flow damper in the spigot **PLSD-R**. Manufacturer **MADEL**.

LNG

VELOCIDAD RECOMENDADAS.

	Vmin (m/s)	Vmax (m/s)
1	2.5	4.5
2	2.5	4.5
3	2.5	4
4	2.5	4



VELOCIDAD LIBRE, PERDIDA DE CARGA Y POTENCIA SONORA, ALCANCE CON EFECTO TECHO: 1 DIRECCIÓN.

SECCION LIBRE DE SALIDA DEL AIRE (m2).

	0.5 m	1 m	1.5 m	2 m
1	0.0043	0.0087	0.013	0.0174
2	0.0087	0.0174	0.0261	0.0348
3	0.013	0.0261	0.0391	0.0522
4	0.0172	0.0348	0.052	0.0696

VALORES DE CORRECCION PARA Dpt Y Lwa1.

LNG-AR + PLSD-R

		0.5 m			1 m			1.5 m			2 m		
		100%	50%	0%	100%	50%	0%	100%	50%	0%	100%	50%	0%
1	Dpt	0.95	2.35	3.15	1	1.4	2.2	1	1.4	2.2	1.1	2.5	3.3
	Lwa1	-6	-3	-3.6	0	0.8	0.4	+1.2	+1.9	+1.4	-2	-	-1.6
2	Dpt	0.98	2.48	3.25	1	1.5	2.3	1	1.5	2.3	1.2	2.7	3.5
	Lwa1	-4	-3.6	-3.1	0	+0.6	+0.6	+2.3	+3.2	+3.1	0	+1	+1.2
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	-7	-6	-6	0	+0.9	+0.5	-2.7	-2.6	-2.7	-1.4	-1.1	-1.1
4	Dpt	0.95	2.35	3.05	1	1.4	2.1	1	1.4	2.1	1.1	2.5	3.2
	Lwa1	-3.4	-1.4	-2.5	0	+1.5	+1.2	-1.8	-1.1	-1.2	-1.7	-1	-1.1

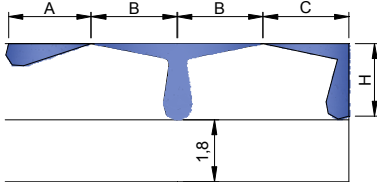
$Dpt1 = Kp \times Dpt$

$Lwa1 = Lwa + Kf$

FACTOR DE CORRECCION DEL ALCANCE 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	1.2
4	0.75	1	1.25	1.25

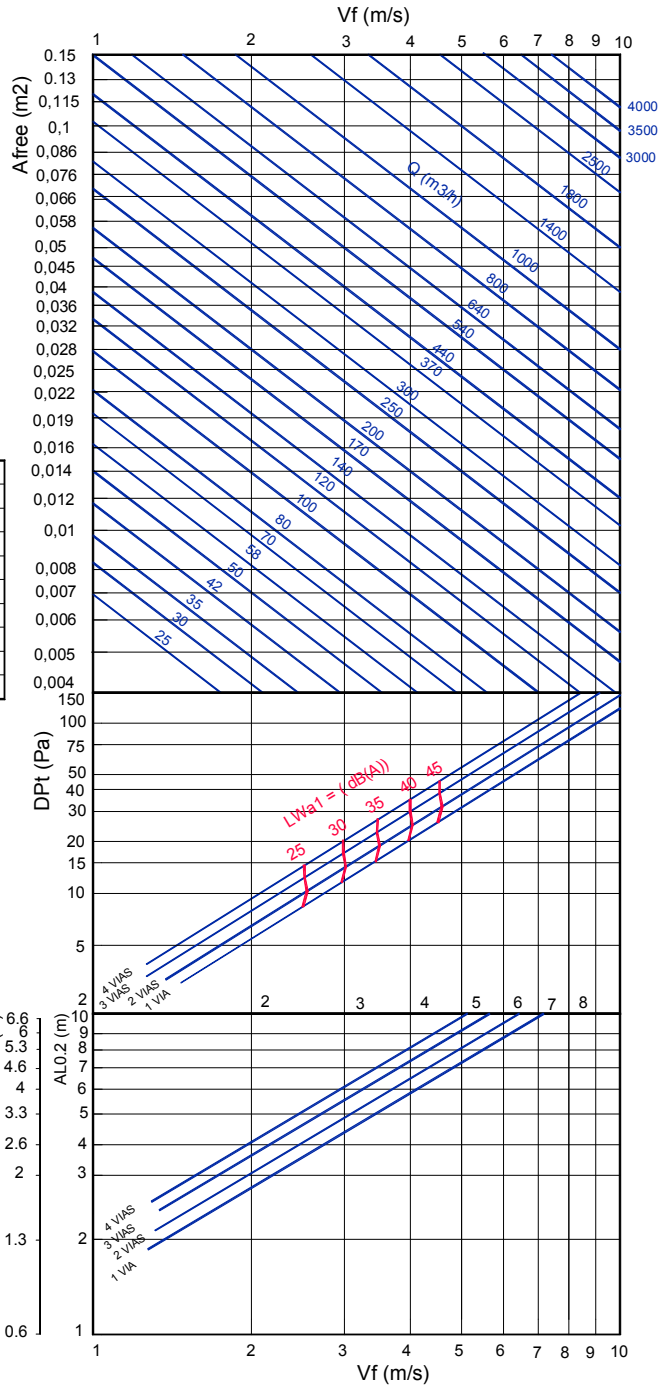
$AL'02 = Kl \times AL02$



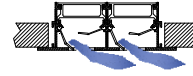
$AL_{0.2} = A$

$AL_{0.2} = B + H$

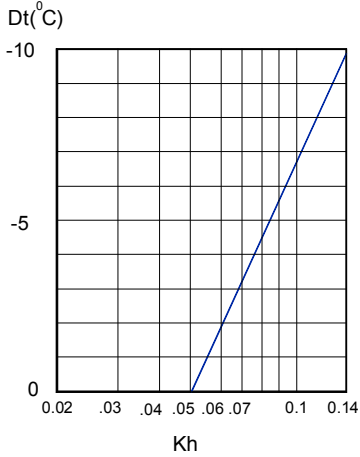
$AL_{0.2} = C + H$



LNG

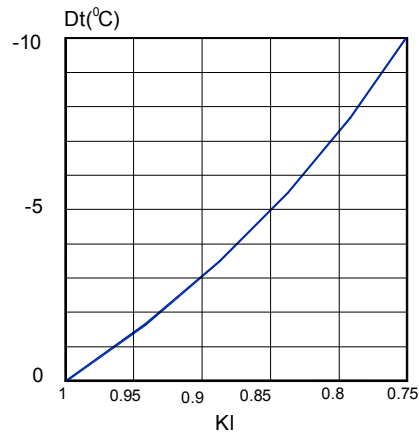


FACTOR DE CORRECCION DE LA DIFUSIÓN VERTICAL (bv) PARA DT (-).

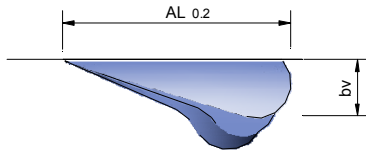


Kh = Factor de corrección de la difusión vertical.

FACTOR DE CORRECCION DEL ALCANCE (L0.2) DT (-).



Kl = Factor de corrección del alcance.

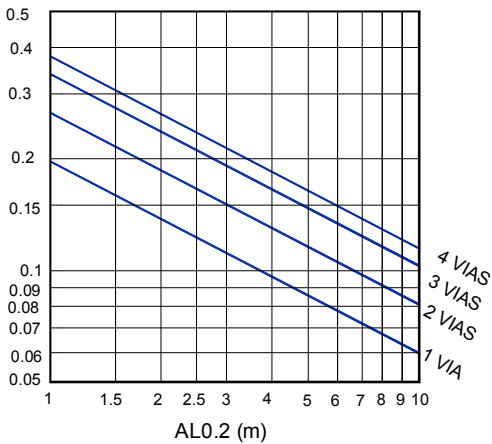


$$bv = Kh \times Al_{0.2}$$

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

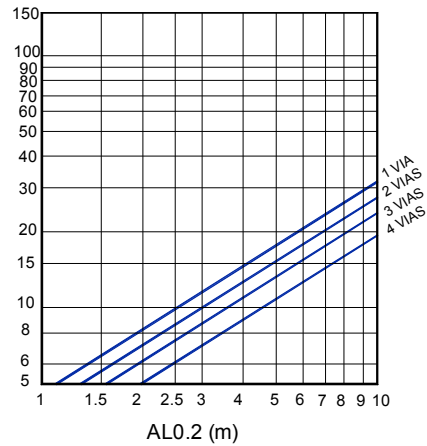
RELACION DE TEMPERATURAS.

$$\frac{Dtl}{Dtz} = \frac{t_{local} - t_x}{t_{local} - t_{imp}}$$

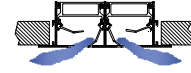


RELACION DE INDUCCION.

$$i = \frac{Q_r}{Q_0} = \frac{Q_{total\ en\ x}}{Q_{de\ impulsión}}$$

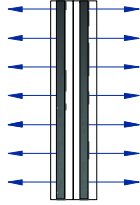


LNG



VELOCIDAD RECOMENDADAS.

	Vmin (m/s)	Vmax (m/s)
2	2.5	4.5
4	2.5	4



SECCION LIBRE DE SALIDA DEL AIRE (m2).

	0.5 m	1 m	1.5 m	2 m
1	0.0043	0.0087	0.013	0.0174
2	0.0087	0.0174	0.0261	0.0348
3	0.013	0.0261	0.0391	0.0522
4	0.0172	0.0348	0.052	0.0696

VALORES DE CORRECCION PARA Dpt Y Lwa1.

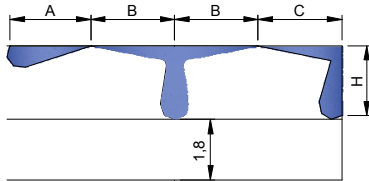
	0.5 m			1 m			1.5 m			2 m			
	100%	50%	0%	100%	50%	0%	100%	50%	0%	100%	50%	0%	
2	Dpt	0.98	2.48	3.25	1	1.5	2.3	1	1.5	2.3	1.2	2.7	3.5
	Lwa1	-3.9	-3.5	-3	0	+0.6	+0.6	+2.3	+3.2	+3.1	-0.3	+0.9	+1.1
4	Dpt	0.95	2.35	3.05	1	1.4	2.1	1	1.4	2.1	1.1	2.5	3.2
	Lwa1	-3.6	-1.5	-2.5	0	+1.5	+1.1	-1.5	-1.3	-1.4	-1.8	-1.2	-1.3

$DPT1 = Kp \times DPT$
 $Lwa1 = Lwa + Ff$

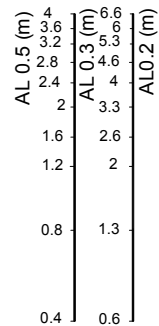
FACTOR DE CORRECCION DEL ALCANCE KL

	0.5 m	1 m	1.5 m	2 m
2	0.6	1	1.17	1.3
4	0.767	1	1.2	1.17

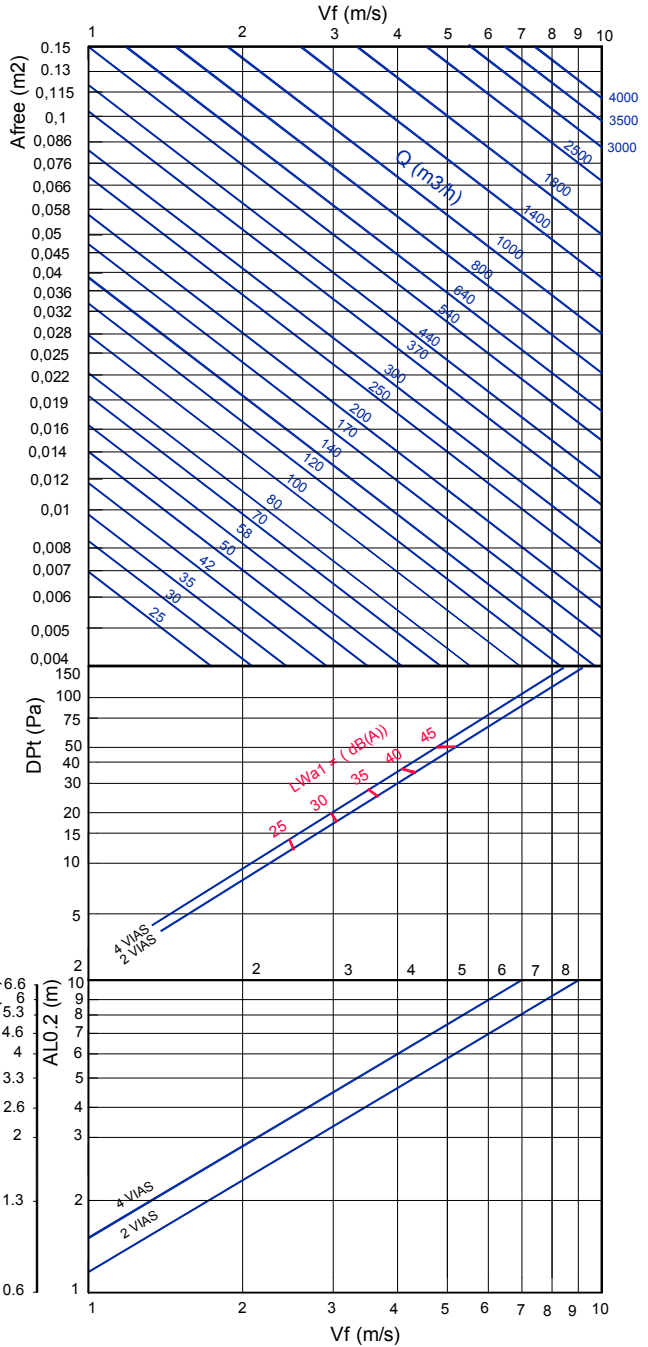
$AL'02 = KI \times AL02$



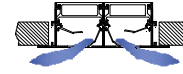
$AL_{0.2} = A$
 $AL_{0.2} = B+H$
 $AL_{0.2} = C+H$



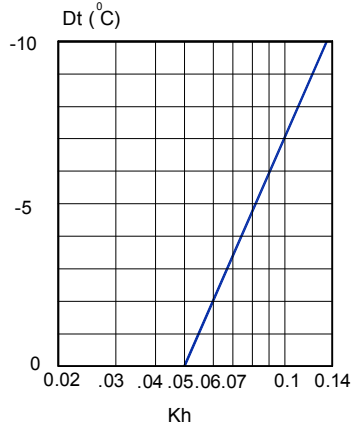
VELOCIDAD LIBRE, PERDIDA DE CARGA Y POTENCIA SONORA, ALCANCE CON EFECTO TECHO: 2 DIRECCIONES.



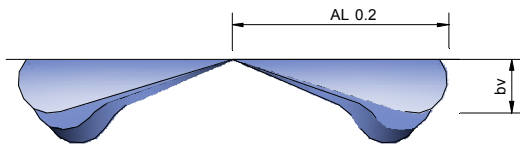
LNG



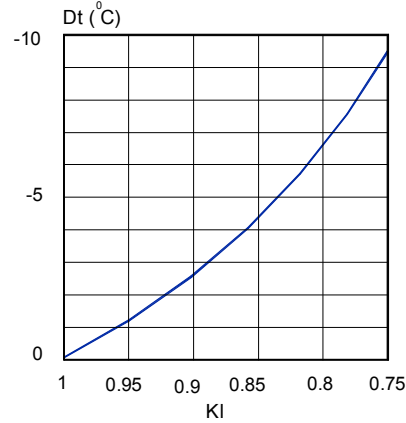
FACTOR DE CORRECCION DE LA DIFUSIÓN VERTICAL (bv) PARA DT (-).



Kh = Factor de corrección de la difusión vertical.



FACTOR DE CORRECCION DEL ALCANCE (L0.2) DT (-).



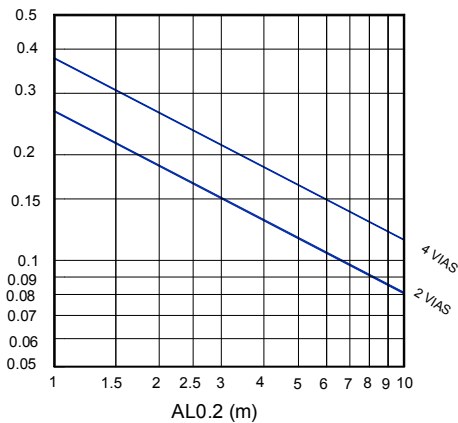
kl = Factor de corrección del alcance.

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

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

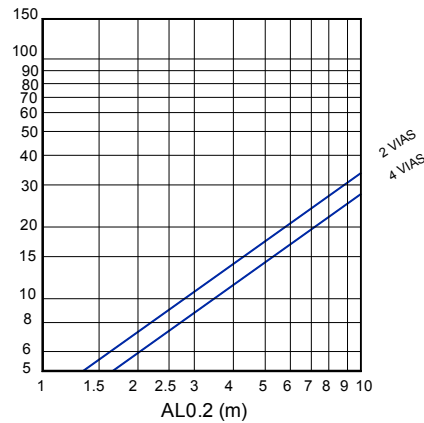
RELACION DE TEMPERATURAS.

$$\frac{Dtl}{Dtz} = \frac{t_{local} - t_x}{t_{local} - t_{imp}}$$

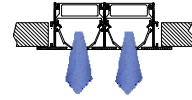


RELACION DE INDUCCION.

$$i = \frac{Q_r}{Q_0} = \frac{Q_{total\ en\ x}}{Q_{de\ impulsión}}$$



LNG



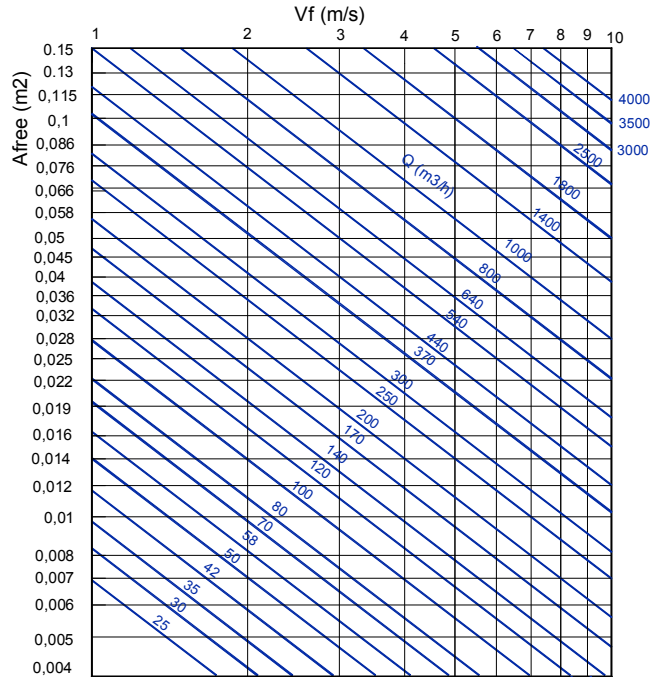
VELOCIDAD RECOMENDADAS.

	Vmin (m/s)	Vmax (m/s)
1	2.5	4.5
2	2.5	4.5
3	2.5	4
4	2.5	4

VELOCIDAD LIBRE, PERDIDA DE CARGA Y POTENCIA SONORA:
IMPULSION VERTICAL.

SECCION LIBRE DE SALIDA DEL AIRE (m2).

	0.5 m	1 m	1.5 m	2 m
1	0.0043	0.0087	0.013	0.0174
2	0.0087	0.0174	0.0261	0.0348
3	0.013	0.0261	0.0391	0.0522
4	0.0172	0.0348	0.052	0.0696



VALORES DE CORRECCION PARA Dpt Y Lwa1.

	0.5 m			1 m			1.5 m			2 m			
	100%	50%	0%	100%	50%	0%	100%	50%	0%	100%	50%	0%	
1	Dpt	0.95	2.35	3.15	1	1.4	2.2	1	1.4	2.2	1.1	2.5	3.3
	Lwa1	-6.1	-3.1	-3.6	0	+0.8	+0.4	+0.9	+1.6	+1	-2.1	-0.5	-1.9
2	Dpt	0.98	2.48	3.25	1	1.5	2.3	1	1.5	2.3	1.2	2.7	3.5
	Lwa1	-3.8	-3.4	-2.9	0	+0.6	+0.6	+2.4	+3.3	+3.2	-0.3	+0.9	+1.1
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	-7	-6.3	-6	0	+0.9	+0.5	-2.8	-2.8	-2.9	-1.5	-1.2	-1.3
4	Dpt	0.95	2.35	3.05	1	1.4	2.1	1	1.4	2.1	1.1	2.5	3.2
	Lwa1	-3.4	-1.5	-2.5	0	+1.6	+1.2	-1.9	-1.3	-1.4	-1.9	-1.2	-1.3

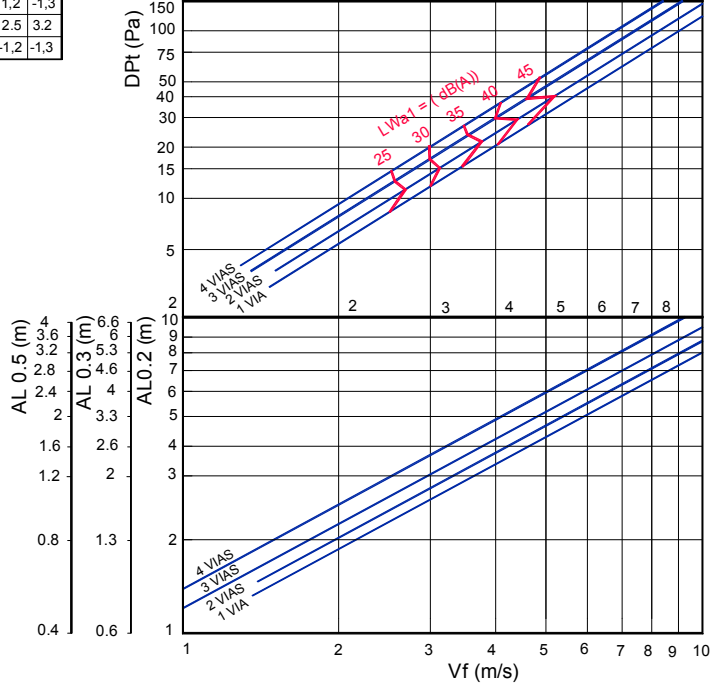
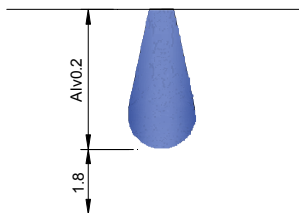
$Dpt1 = Kp \times DPT$

$Lwa1 = Lwa + Kf$

FACTOR DE CORRECCION DEL
ALCANCE KL

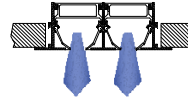
	0.5 m	1 m	1.5 m	2 m
1	0.7	1	1.1	1.2
2	0.72	1	1.15	1.25
3	0.72	1	1.12	1.2
4	0.74	1	1.25	1.25

$ALv' 0.2 = KI \times ALv 02$



Nota: En MadelMedia Espectro por banda de octava en Hz.

LNG



FACTOR DE CORRECCION DEL ALCANCE VERTICAL (Alv 0,2) DT(+).

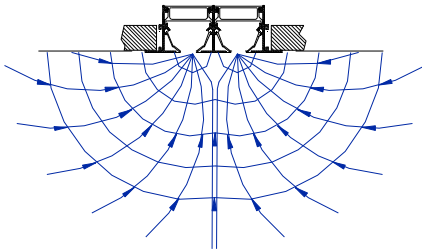
	D T(+5)	DT(+10)
1 VIA	0.75	0.64
2 VIAS	0.76	0.65
3 VIAS	0.77	0.66
4 VIAS	0.8	0.64

DT = T impulsión - T ocal.

Alv 0,2 (DT +) = Kv x Al 02

EJEMPLO:

LNG 2VIAS x 2m
 Afree = 0.0348 m2.
 Vf = 3.1 m/s.
 ALv 0,2 = 2.9 m.
 ALv'02 = 1.1 x 2.9 = 3.19 m.
 DT(+5) = 0.76 x 3.19 = 2.42 m.
 DT (+10) = 0.65 x 3.19 = 2.07m.



VELOCIDAD RECOMENDADAS.

	Vmin (m/s)	Vmax (m/s)
1	2	3.5
2	2	3.5
3	2	3
4	2	3

SECCION LIBRE DE SALIDA DELAIRE (m2).

	0.5 m	1 m	1.5 m	2 m
1	0.0043	0.0087	0.013	0.0174
2	0.0087	0.0174	0.0261	0.0348
3	0.013	0.0261	0.0391	0.0522
4	0.0172	0.0348	0.052	0.0696

VALORES DE CORRECCION PARA Dpt Y Lwa1.

	0.5 m			1 m			1.5 m			2 m			
	100%	50%	0%	100%	50%	0%	100%	50%	0%	100%	50%	0%	
1	Dpt	0.88	2.28	3	1	1.4	2.2	1.3	2.7	3.5	1.5	2.9	3.7
	Lwa1	-	3	5	-	4	7	-	3	5	-	3	7
2	Dpt	0.85	2.35	3.15	1	1.5	2.3	1.4	2.9	3.7	1.66	3.16	3.96
	Lwa1	-	3	5	-	4	7	-	4	7	-	3	8
3	Dpt	0.8	2.1	3.2	1	1.3	2.4	1.2	2.5	3.6	1.4	2.7	3.8
	Lwa1	-	4	5	-	5	8	-	5	8	-	4	8
4	Dpt	0.7	2.1	2.8	1	1.4	2.1	1.3	2.7	3.4	1.5	2.9	3.6
	Lwa1	-	4	5	-	4	8	-	5	8	-	4	8

$Dpt1 = Kp \times Dpt$

$Lwa1 = Lwa + Kf$

VELOCIDAD LIBRE, PERDIDA DE CARGA Y POTENCIA SONORA.

