

**MADÉL**®



**BENEDITO**  
Design



SELECCIÓN  
ADI · FAD 2005

Patented



**klin**  
SYSTEM

## PLAY adjustable sectors diffuser

**MADÉL**®

The multi-directional diffusers of the **PLAY** series are designed to be used, in air conditioning, ventilation and heating systems at a temperature differential up to 12°C. They can be mounted in false ceilings or suspended from the ceiling, from 2,6 up to 4 metres high.

**PLAY** diffusers respond to different functional and architectural requirements thanks to their manually adjustable sectors of diffusion in different directions. The adjustment of each sector is made easily by means of marks that indicate the different positions. According to the direction of the sectors, **PLAY** diffusers can act like a 1, 2, 3 or 4-way diffuser, as well as a swirl diffuser.

In any one of their configurations, **PLAY** diffusers create a uniform airflow in all the effective areas, with coanda effect. This provides a high induction air rate level, reducing stratification. These diffusers are designed for both CAV and VAV installations.

As a result of the collaboration with **Benedito Design**, the original concept of **PLAY** diffusers represents, not only an innovative technical solution for present architecture, but is also a vanguard in design of air diffusers.

**Models:**

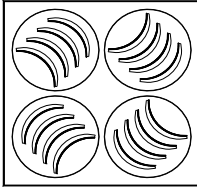
**PLAY-S**

**PLAY-KLIN**

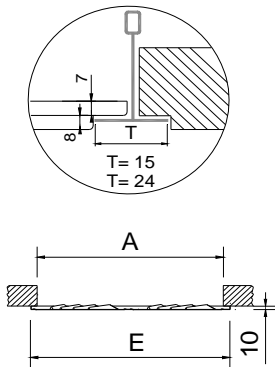
**PLAY-C**

**PLAY-R**

**PLAY-S**



**PLAY-S.../T.../**



	E	A
600	595	576
610	605	586
625	620	601
675	670	651

**PLAY-S**

**Classification**

**PLAY-S** Square diffuser able to act like a 1, 2, 3, 4-way or swirl diffuser.

**.../T15/** Panel with angled borders to replace an angled ceiling tile profile 15 mm.

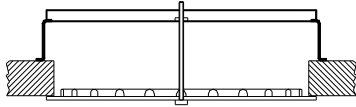
**.../T24/** Panel with angled borders to replace an angled ceiling tile profile 24 mm.

**Material**

Diffusers are constructed from galvanised steel and nylon bearings.

All diffusers are provided with a seal on the back of the frame in order to ensure airtight contact of the perimeter, with the plenum box or ceiling.

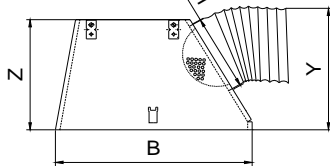
**PMXO**



**Accessories**

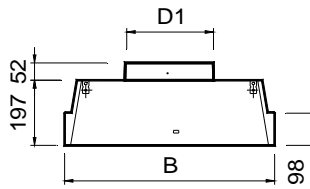
**PMXO** Crossbar suitable for mounting in false ceiling with rectangular duct.

**BOXSTAR**



**BOXSTAR** Pyramidal plenum box with a lateral circular connection. It includes supports to hang from the ceiling. The crossbar is supplied separately to be assembled manually on the work site. Made in galvanised steel.

**BOXSTAR/S**



**...-R** Plenum box with a flow damper in the spigot. The AXO diffusers incorporate a vane, indicated by means of a point, that can be positioned totally in vertical to allow the access to the regulator once the diffuser is mounted.

**.../S/** Upper circular connection plenum box .

**.../AIS/** Thermally insulated plenum box with foam. Density 30 kg / m<sup>3</sup> ISO 845.

Thermal conductivity 20° C\_0,040 W / m°K ISO 3386/1. Classified reaction to fire B-s2, d0 EN 13501-1.

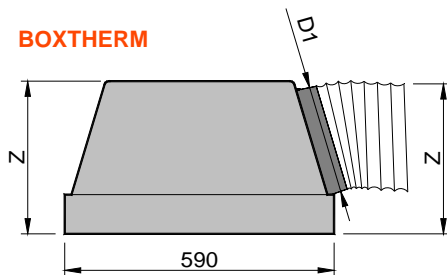
B	B	Z	Y	D1
600-D1:250	590	350	375	248
600-D1:200	590	300	325	198
610-D1:250	600	350	375	248
610-D1:200	600	300	325	198
625-D1:250	615	350	375	248
625-D1:200	615	300	325	198
675-D1:250	665	350	375	248
675-D1:200	665	300	325	198

**BOXTHERM** Plenum box thermo acoustically insulated with a lateral circular connection.

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

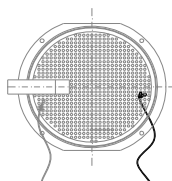
**COR** Set of 2 cords to regulate the plenum damper type-R from the face of the diffuser.

**BOXTHERM**



	Z	D1
BOXTHERM 600-DIAM250	350	248
BOXTHERM 600-DIAM200	300	198

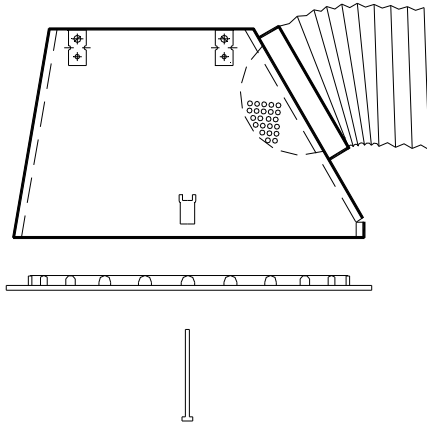
**COR**



Blanca abrir  
White open

Negra cerrar  
Black close

1)



### Fixing systems

1) Connection into the crossbar or to the plenum box by means of central screw.

### Finishes

**M9016** Painted in white similar to RAL 9016.

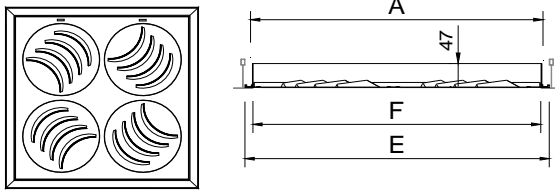
**R9010** Painted in white RAL 9010.

**RAL...** Painted in other RAL colours.

### Specification text

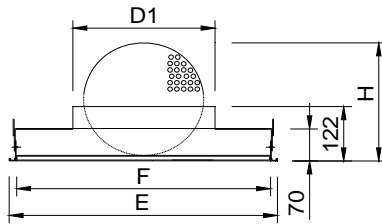
Supply and mounting of square multi-directional diffuser by 4 adjustable sectors able to act like a 1, 2, 3, 4-way or swirl series **PLAY-S+BOXSTAR M9016 dim. 600** constructed from galvanised steel paint in white **M9016**. With lateral circular connection pyramidal plenum box **BOXSTAR**. Manufacturer **MADEL**.

**PLAY-S-KLIN**



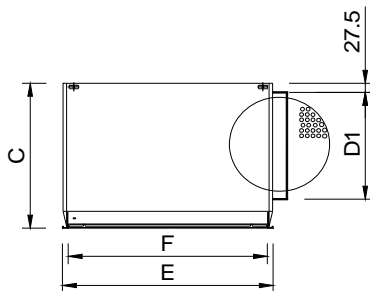
	E	F	A
600	595	565	569
610	605	575	579
625	620	590	594
675	670	640	544

**PLAY-S-KLIN+PLK...-R**



	E	F	D1	H
600	595	563	313	353
610	605	573	313	353
625	620	588	313	353
675	670	638	313	353

**PLAY-S-KLIN+PLK/L/...-R**



	E	F	D1	C
600	595	563	313	435
610	605	573	313	435
625	620	588	313	435
675	670	638	313	435

**PLAY-S-KLIN**

**Classification**

**PLAY-S-KLIN** Hinged removable core diffuser for the easy access to the installations above the ceiling with no need of tools, by means of PUSH fasteners.

By slightly pressing on the invisible latch, the core opens, remaining hinged on one side. If necessary the core can be easily removed for maintenance of HVAC installations.

**Material**

Diffusers are constructed from galvanised steel and nylon bearings.

**Accesorios acoplables**

**PLK** Plenum box fixed to the diffuser with an upper connection. Made in galvanised steel.

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

**.../L/** Plenum box with a lateral connection.

**.../AIS/** Thermally insulated plenum box with foam.

Density 30 kg / m<sup>3</sup> ISO 845.

Thermal conductivity 20° C\_0,040 W / m°K ISO 3386/1.

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

### Fixing systems

1)



1) Fixing with supports to hang from the ceiling with drops rods.

### Finishes

**M9016** Painted in white similar to RAL 9016.

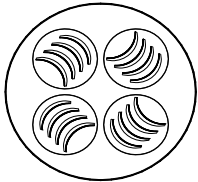
**R9010** Painted in white RAL 9010.

**RAL...** Painted in other RAL colours.

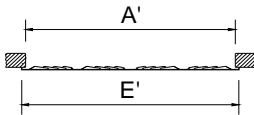
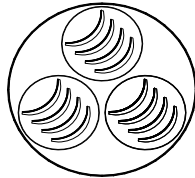
### Specification text

Supply and mounting of square multi-directional diffuser by 4 adjustable sectors able to act like a 1, 2, 3, 4-way or swirl, with hinged removable core without tools, by pressing on the invisible PUSH fasteners, series **PLAY-S-KLIN+PLK-R M9016 dim. (mm)** constructed from galvanised steel paint in white **M9016**. With upper circular connection plenum box and air flow damper in the spigot **PLK-R**. Manufacturer **MADEL**.

**PLAY-C - 825**

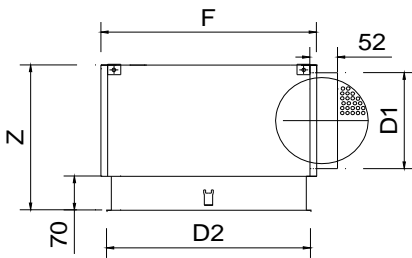


**PLAY-C - 625**



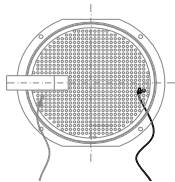
	E	A
625	625	601
825	825	801

**PLXOC**



	D2	F	Z	D1
625	620	640	350	248
825	820	840	415	313

**COR**



Blanca abrir      Negra cerrar  
 White open      Black close

**PLAY-C**

**Classification**

**PLAY-C** Circular diffuser able to act like a 1, 2, 3, 4-way or swirl diffuser.

**Material**

Diffusers are constructed from galvanised steel and nylon bearings. All diffusers are provided with a seal on the back of the frame in order to ensure airtight contact of the perimeter, with the plenum box or ceiling.

**Accessories**

**PMXO** Crossbar suitable for mounting in false ceiling with rectangular duct.

**PLXOC** Plenum box with a lateral circular connection. Made in galvanised steel.

**...-R** Plenum box with a flow damper in the spigot. The AXO diffusers incorporate a vane, indicated by means of a point, that can be positioned totally in vertical to allow the access to the regulator once the diffuser is mounted.

**.../S/** Plenum box with an upper connection.

**.../AIS/** Thermally insulated plenum box with foam. Density 30 kg / m<sup>3</sup> ISO 845.

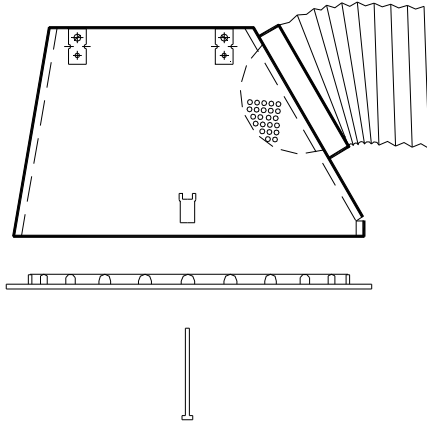
Thermal conductivity 20° C\_0,040 W / m°K ISO 3386/1. Classified reaction to fire B-s2, d0 EN 13501-1.

**COR** Set of 2 cords to regulate the plenum damper type-R from the face of the diffuser.

### Fixing systems

- 1) Connection into the crossbar or to the plenum box by means of central screw.

1)



### Finishes

**M9016** Painted in white similar to RAL 9016.

**R9010** Painted in white RAL 9010.

**RAL...** Painted in other RAL colours.

### Specification text

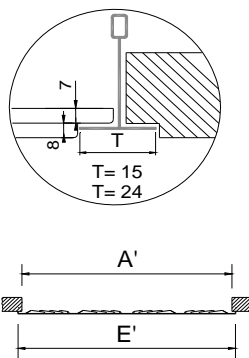
Supply and mounting of circular multi-directional diffuser by adjustable sectors able to act like a 1, 2, 3, 4-way or swirl series **PLAY-C+PLXOC M9016 dim. 625** constructed from galvanised steel paint in white M9016. With lateral circular connection plenum box **PLXOC**. Manufacturer **MADEL**.



PLAY-R



AXO-R.../T.../



	E	A	E'	A'
1000 300	1000	981	295	276
1000 310	1000	981	308	289
1200 300	1195	1176	295	276
1250 310	1245	1226	308	289

PLAY-R

Classification

**PLAY-R** Rectangular diffuser able to act like a 1 or 2-way diffuser.

**.../T15/** Panel with angled borders to replace an angled ceiling tile profile 15 mm.

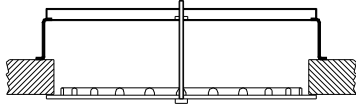
**.../T24/** Panel with angled borders to replace an angled ceiling tile profile 24 mm.

Material

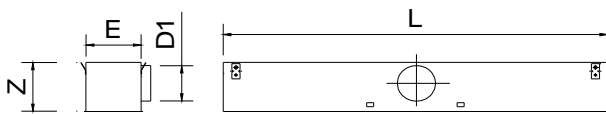
Diffusers are constructed from galvanised steel and nylon bearings.

All diffusers are provided with a seal on the back of the frame in order to ensure airtight contact of the perimeter, with the plenum box or ceiling.

**PMXO**

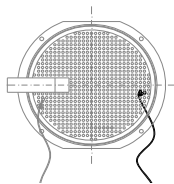


**PLXOR**



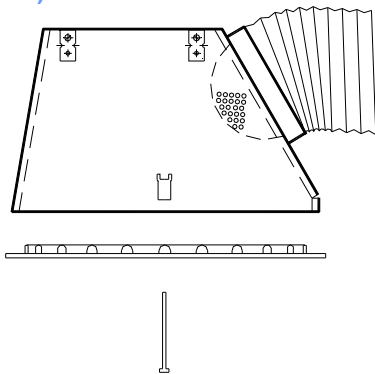
	L (mm)	Z	E	D1
1000 300	990	324	270	248
1000 310	990	324	285	248
1200 300	1190	324	270	248
1250 310	1240	324	285	248

**COR**



Blanca abrir      Negra cerrar  
 White open      Black close

1)



**Accessories**

**PMXO** Crossbar suitable for mounting in false ceiling with rectangular duct.

**PLXOR** Plenum box with a lateral circular connection. Made in galvanised steel.

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

**.../S/** Plenum box with an upper connection.

**.../AIS/** Thermally insulated plenum box with foam.

Density 30 kg / m<sup>3</sup> ISO 845.

Thermal conductivity 20° C 0,040 W / m°K ISO 3386/1.

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

**COR** Set of 2 cords to regulate the plenum damper type-R from the face of the diffuser.

**Fixing systems**

- 1) Connection into the crossbar or to the plenum box by means of central screw.

**Finishes**

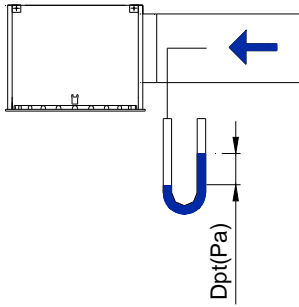
**M9016** Painted in white similar to RAL 9016.

**R9010** Painted in white RAL 9010.

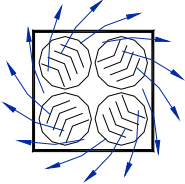
**RAL...** Painted in other RAL colours.

**Specification text**

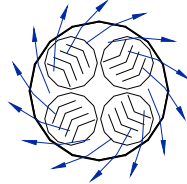
Supply and mounting of rectangular multi-directional diffuser by adjustable sectors able to act like a 1 or 2-way series **PLAY-R+PLXOR M9016 dim. 1000x300** constructed from galvanised steel paint in white **M9016**. With lateral circular connection plenum box **PLXOR**. Manufacturer **MADEL**.



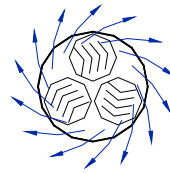
PLAY-S 600  
PLAY-S 625



PLAY-C 825

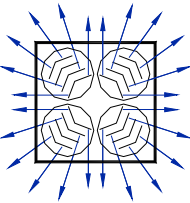


PLAY-C 625

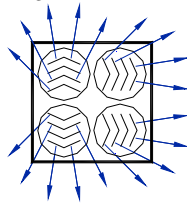


PLAY-S 600  
PLAY-S 625

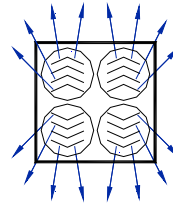
4-w



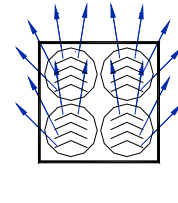
3-w



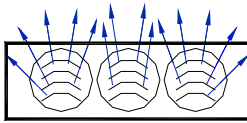
2-w



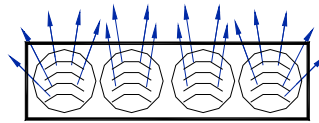
1-w



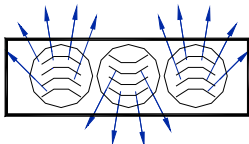
PLAY-R 1000 300  
PLAY-R 1000 310  
1-w



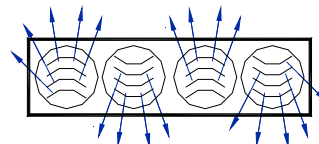
PLAY-R 1200 300  
PLAY-R 1250 310  
1-w



2-w

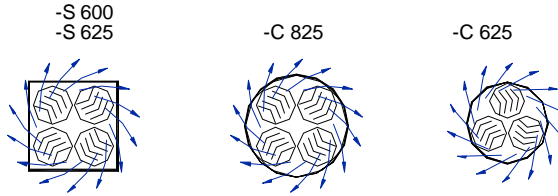


2-w



**PLAY-S** (same technical data for 600, 610, 625 or 675)

**PLAY-C**



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

RECOMMENDED VELOCITY.

PLAY	Vmin m/s	Vmax m/s
-S 600	2,5	4,7
-S 625	2,5	4,7
-C 625	2,5	4,9
-C 825	2,5	4,7

FREE FACE AREA (m2).

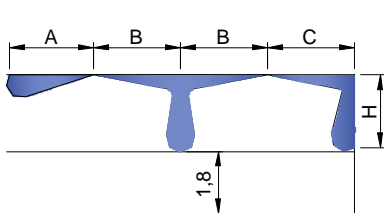
PLAY	Afree m2	Qmin. m3/h	Qmax. m3/h
-S 600	0,04	360	680
-S 625	0,04	360	680
-C 625	0,03	270	530
-C 825	0,04	360	680

CORRECTION FACTOR FOR Dpt AND Lwa1.

...-S+BOXSTAR-R ...-C+PLXOC-R		100% Open	50% Open	10% Open
-S 600	Dpt (Kp)	1	1,5	2,3
	Lwa1 (Kf)	+0,8	+1,2	+1,5
-S 625	Dpt (Kp)	1	1,5	2,3
	Lwa1 (Kf)	+0,9	+1,2	+1,5
-C 625	Dpt (Kp)	1	1	1,4
	Lwa1 (Kf)	+0,8	+0,7	+1,2
-C 800	Dpt (Kp)	1	1,5	2,3
	Lwa1 (Kf)	+0,9	+1	+0,8

$$Dpt1 = Kp \times Dpt$$

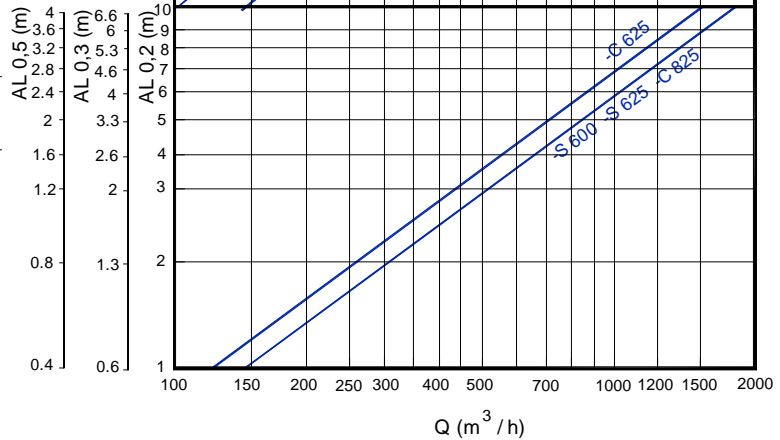
$$Lwa = Lwa1 + Kf$$



$$AL_{0,2} = A$$

$$AL_{0,2} = B+H$$

$$AL_{0,2} = C+H$$

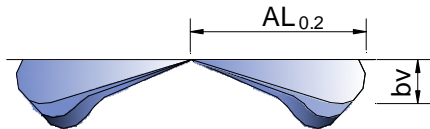
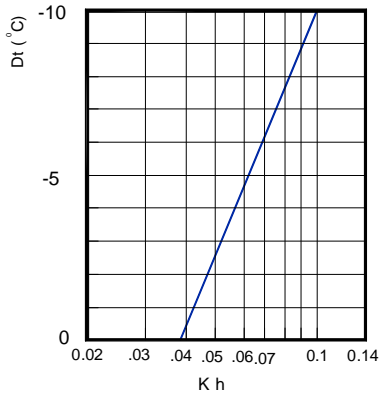


Note: In MadelMedia Octava band centre frequency in Hz.

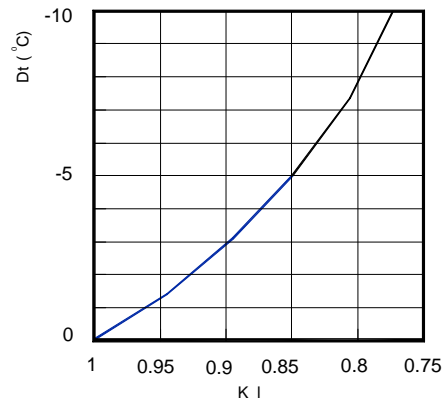
**PLAY-S** (same technical data for 600, 610, 625 or 675)

**PLAY-C**

CORRECTION FACTOR FOR VERTICAL DIFFUSION (bv) FOR DT (-).  
Kh = Correction factor for vertical diffusion.



CORRECTION FACTOR FOR THROW (L 0.2) DT (-).  
KI = Correction factor for throw.

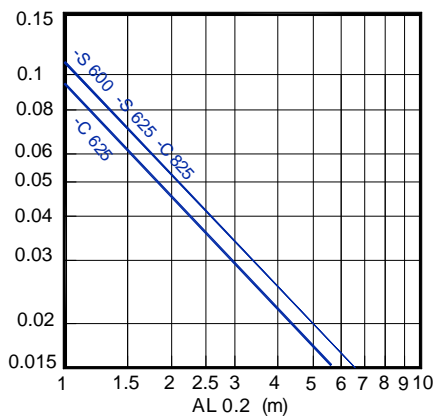


$$bv = Kh \times AL_{0.2}$$

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

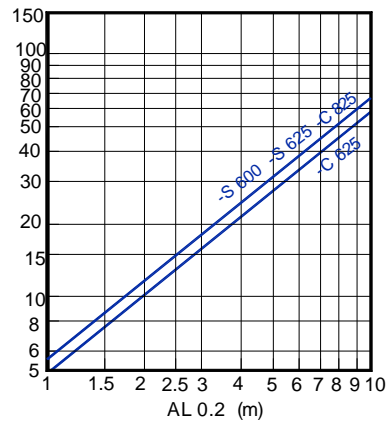
TEMPERATURE RATIO.

$$\frac{Dtl}{Dtz} = \frac{t_{room} - t_x}{t_{room} - t_{supply}}$$



INDUCTION RATIO.

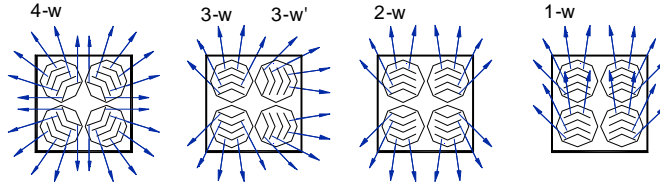
$$i = \frac{Q_r}{Q_0} = \frac{Q_{total\ at\ x}}{Q\ of\ supply.}$$



**PLAY-S** (same technical data for 600, 610, 625 or 675)

**PLAY-KLIN** (same technical data for 600, 610, 625 or 675)

-S 600  
-S 625



RECOMMENDED VELOCITY.

PLAY	Vmin m/s	Vmax m/s
-S 600 -S 625	2,5	3,5

FREE FACE AREA (m2).

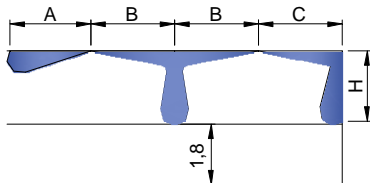
PLAY	Afree m2	Qmin. m3/h	Qmax. m3/h
-S 600 -S 625	0,04	360	504

CORRECTION FACTOR FOR DPt AND Lwa1.

PLK/L-R BOXSTAR-R		100% Open	50% Open	10% Open
		-S 600	Dpt (Kp)	1
-S 625	Lwa1 (Kf)	+0,8	+1,7	+1,7

$$DPt1 = Kp \times DPt$$

$$Lwa = Lwa1 + Kf$$



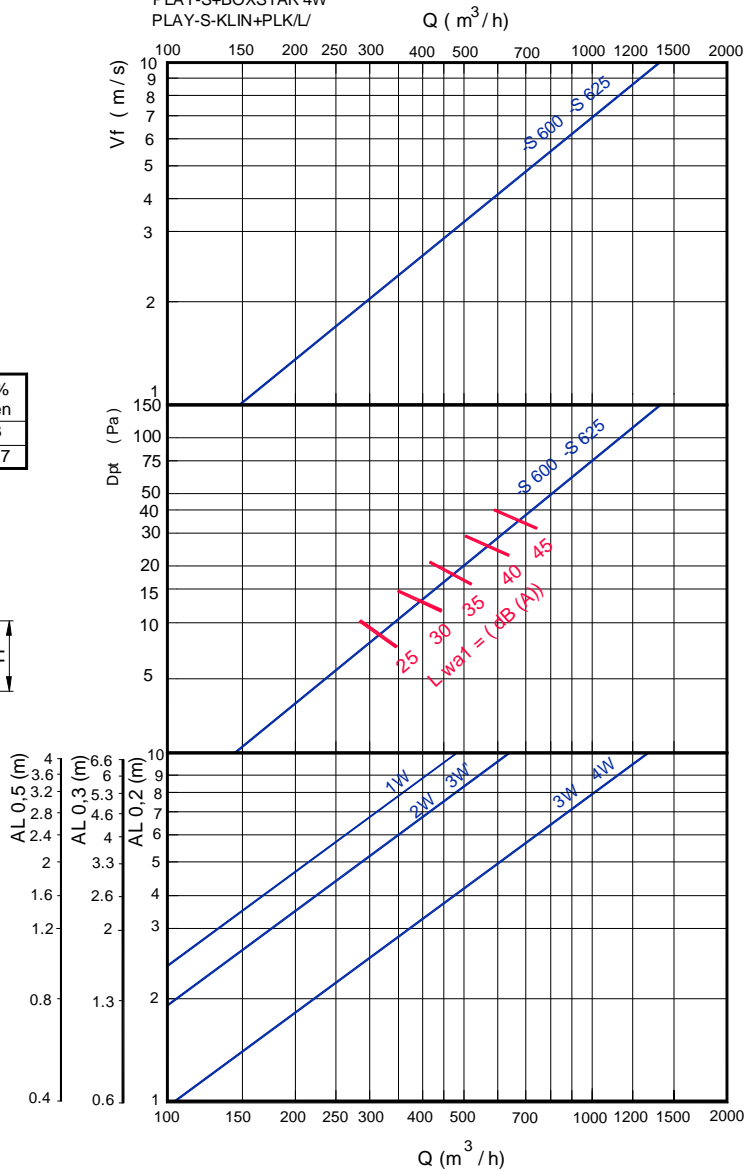
$$AL_{0,5} = A$$

$$AL_{0,2} = B+H$$

$$AL_{0,2} = C+H$$

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

PLAY-S+BOXSTAR 4W  
PLAY-S-KLIN+PLK/L/

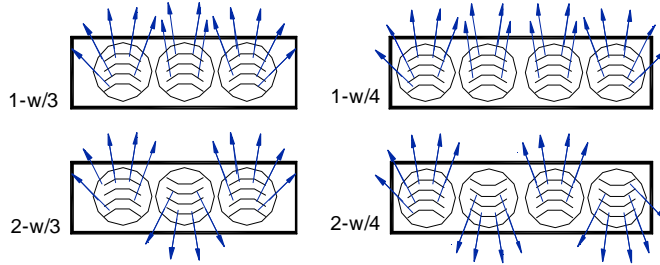


Note: In MadelMedia Octava band centre frequency in Hz.



PLAY-R 1000x300  
PLAY-R 1000x310

PLAY-R 1200x300  
PLAY-R 1200x310



RECOMMENDED VELOCITY.

PLAY	Vmin m/s	Vmax m/s
-R 1000x300	2,5	3,5
-R 1000x310	2,5	3,5
-R 1200x300	2,5	3,5
-R 1200x310	2,5	3,5

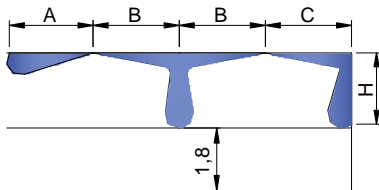
FREE FACE AREA (m2).

PLAY	Afree m2	Qmin. m3/h	Qmax. m3/h
-R 1000x300	0,03	270	378
-R 1000x310	0,03	270	378
-R 1200x300	0,04	360	504
-R 1200x310	0,04	360	504

CORRECTION FACTOR FOR DPt AND Lwa1.

PLXOR-R		100% Open	50% Open	10% Open
		-R 1000x300	Dpt (Kp)	1
-R 1000x310	Lwa1 (Kf)	+0,7	+1,7	+2,5
-R 1200x300	Dpt (Kp)	1	1,5	2,3
-R 1200x310	Lwa1 (Kf)	+0,7	+1,7	+2,4

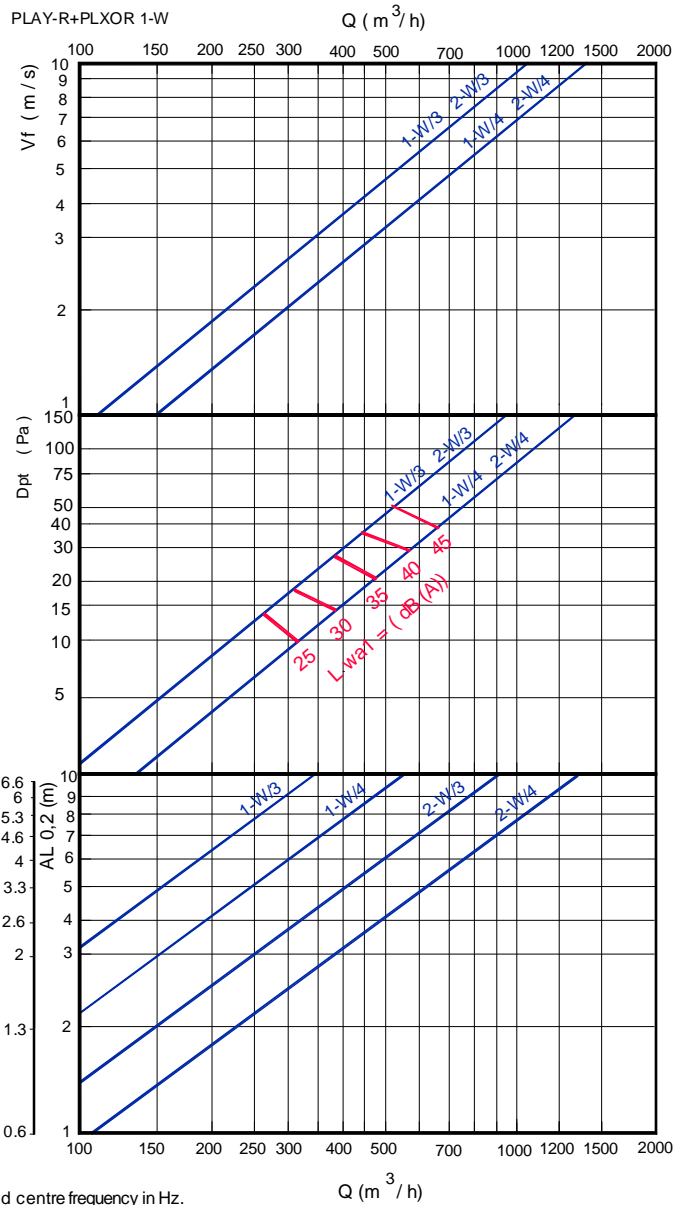
$Dp_{t1} = K_p \times Dp_t$   
 $L_{wa} = L_{wa1} + K_f$



$AL_{0,2} = A$   
 $AL_{0,2} = B+H$   
 $AL_{0,2} = C+H$

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

PLAY-R+PLXOR 1-W



Note: In MadelMedia Octava band centre frequency in Hz.