

DBQ Four-way square diffusers

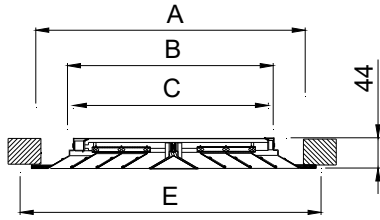
MADEL[®]

The four-way square diffusers meet the functional and architectural requirements of modern updated locations. Its geometrical shape, fits perfectly in the style of the surroundings.

The **DBQ** diffuser offers great flexibility of use, as it can provide a diffusion of air suitable to the type of premises. A feature of this type of diffusers is that support large airflows.

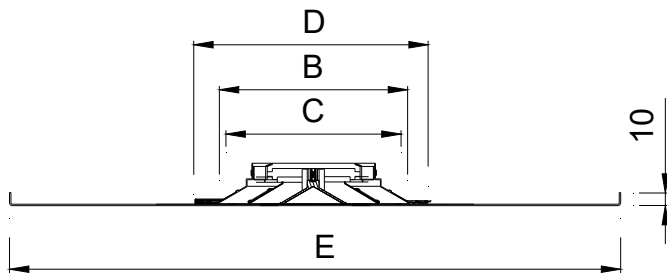
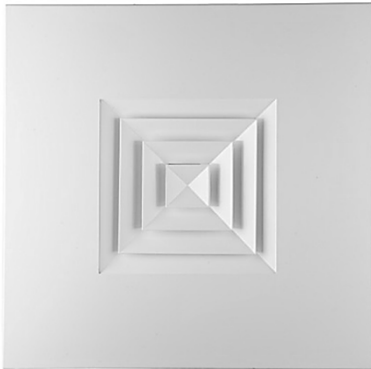
They can be used in premises up to 4 meters high and with a temperature differential up to 12°C, obtaining good results, not only in air speed but also in sound pressure level in the comfort zone.

DBQ



	E	A	C	B
150 x 150	259	219	134	148
225 x 225	334	294	209	223
300 x 300	409	369	284	298
375 x 375	484	444	359	373
450 x 450	559	519	434	448
525 x 525	634	594	509	523
600 x 600	709	669	584	598

DBQ-MOD



				600	625	675
	C	B	D	E	E	E
150 x 150	137	148	259	595	620	670
225 x 225	212	223	332	595	620	670
300 x 300	287	298	407	595	620	670
375 x 375	362	373	482	595	620	670
450 x 450	437	448	557	595	620	670

CLASSIFICATION

DBQ Four-Way square diffuser with removable core.

DBQ-MOD Four-Way square diffuser with removable core, specially designed to replace a false ceiling tile.

.../T15/ False ceiling panel 15 mm profile with angled borders.

.../T24/ False ceiling panel 24 mm profile with angled borders.

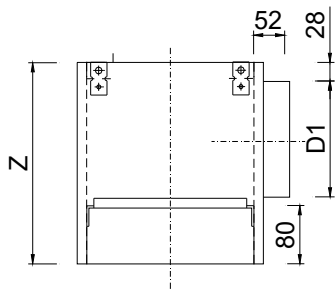
MATERIAL

Diffusers made with extruded aluminium.

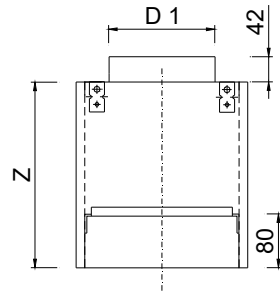
All diffusers with fixing system (P) or (O) are provided with a seal on the back of the frame in order that the perimeter in contact with the ceiling is airtight.



PLDQ/L/

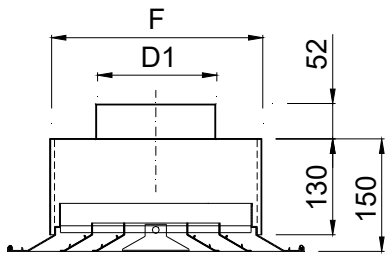


PLDQ/S/



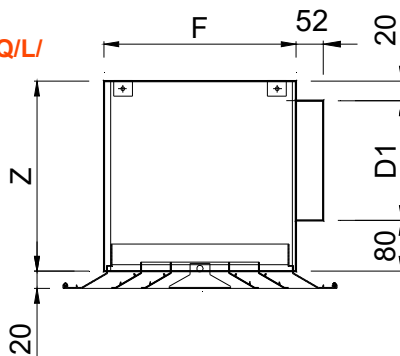
	F	Z	D1
150 x 150	256	275	125
225 x 225	332	300	158
300 x 300	406	375	198
375 x 375	480	375	248
450 x 450	555	450	313
525 x 525	630	490	313
600 x 600	705	490	313

DBQ+ADPQ/S/



	F	D1
150 x 150	177	125
225 x 225	252	198
300 x 300	327	248
375 x 375	402	313
450 x 450	477	353
525 x 525	552	398
600 x 600	632	398

DBQ+ADPQ/L/



	F	Z	D1
150 x 150	177	225	125
225 x 225	252	260	158
300 x 300	327	300	198
375 x 375	402	350	248
450 x 450	477	415	315
525 x 525	552	455	355
600 x 600	632	455	355

ACCESSORIES

R3Q Flap damper assembled in the diffuser neck. Manually operated. Made from galvanized steel. Compatible with fixing systems (D) and (P).

SPQ Opposed blades damper to regulate the air flow. The damper is operated by an easily accessible key inside the grille. Made from electro-zinc steel, painted in black colour. Compatible with fixing system (D).

PMQ Crossbar suitable for mounting in a false ceiling with rectangular duct. Made from galvanized steel.

CQ Mounting frame from galvanized steel. Compatible with fixing system (O).

ACCESSORIES – PLENUM BOXES

PLDQ Plenum box with circular connection. It includes supports to hang from the ceiling. Made from galvanized steel. Compatible with fixing system (P).

.../L/ Lateral circular neck connector.

.../S/ Upper circular neck connector.

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

.../AIS/ Thermal insulation inside 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.

ADPQ Adapter to circular connection. Riveted to the diffuser. Compatible with fixing system (D).

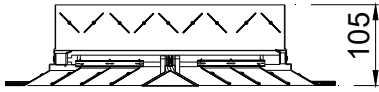
.../S/ Upper circular neck connector.

.../L/ Lateral circular neck connector.

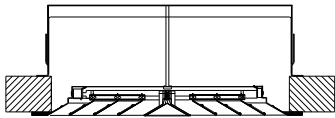
...-R Plenum box with a flow damper in the spigot.

.../AIS/ Thermal insulation inside 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.

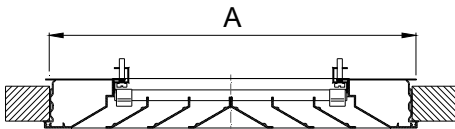
DBQ+SPQ



DBQ (P)+PMQ



DBQ+CQ (O)



L ó H	A
150	233
225	308
300	383
375	458
450	533
525	608
600	683

	R3Q	SPQ	PLDQ	ADPQ
DBQ (D)	ok	ok	x	ok
DBQ (P)	ok	x	ok	x
DBQ (O)	x	x	x	x

FIXING SYSTEMS

(D) Connection into a metallic duct by rivets.

1) DBQ-MOD: Suspended at the false ceiling replacing a ceiling tile.

(P) Connection into the PMQ crossbar or PLDQ plenum box by means of central screw. Made from galvanized steel. To regulate the flow in plenum box mounting, we suggest ...-R versions that incorporates a damper in the plenum.

(O) Hidden screws. It requires mounting frame CQ.

FINISHES

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

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

R9016B Painted white RAL 9016 (85-95% gloss)

R9006M Painted aluminium colour RAL 9006 matt (20-30% gloss)

RAL... Painted in other RAL colours.

SPECIFICATION TEXT

Supply and mounting of four-way square diffuser with removable core series **DBQ+PLDQ-R R9016S** 150x150, constructed from aluminium paint in white RAL 9016 (60-70% gloss) with lateral circular connection plenum box and air flow damper in the spigot. **Manufacturer MADEL.**

RECOMMENDED VELOCITY.

DBQ	Vmin m/s	Vmax m/s
150x150	2.5	4.5
225x225	2.5	4.5
300x300	2.5	4.5
375x375	2.5	4.5
450x450	2.5	4.5
525x525	2.5	4.5
600x600	2.5	4.5

NECK AREA m².

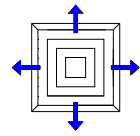
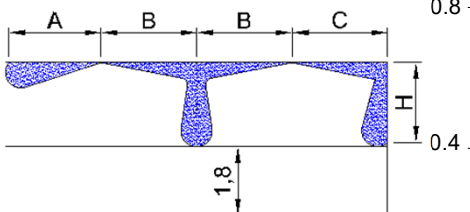
DBQ	Afree m ²	Qmin. m ³ /h	Qmax. m ³ /h
150x150	.0138	124	223.5
225x225	.0277	249	449
300x300	.0486	437	787
375x375	.0694	624	1124
450x450	.0972	875	1575
525x525	.1296	1166	2100
600x600	.1666	1499	2699

CORRECTION FACTOR FOR Dpt AND Lwa1.

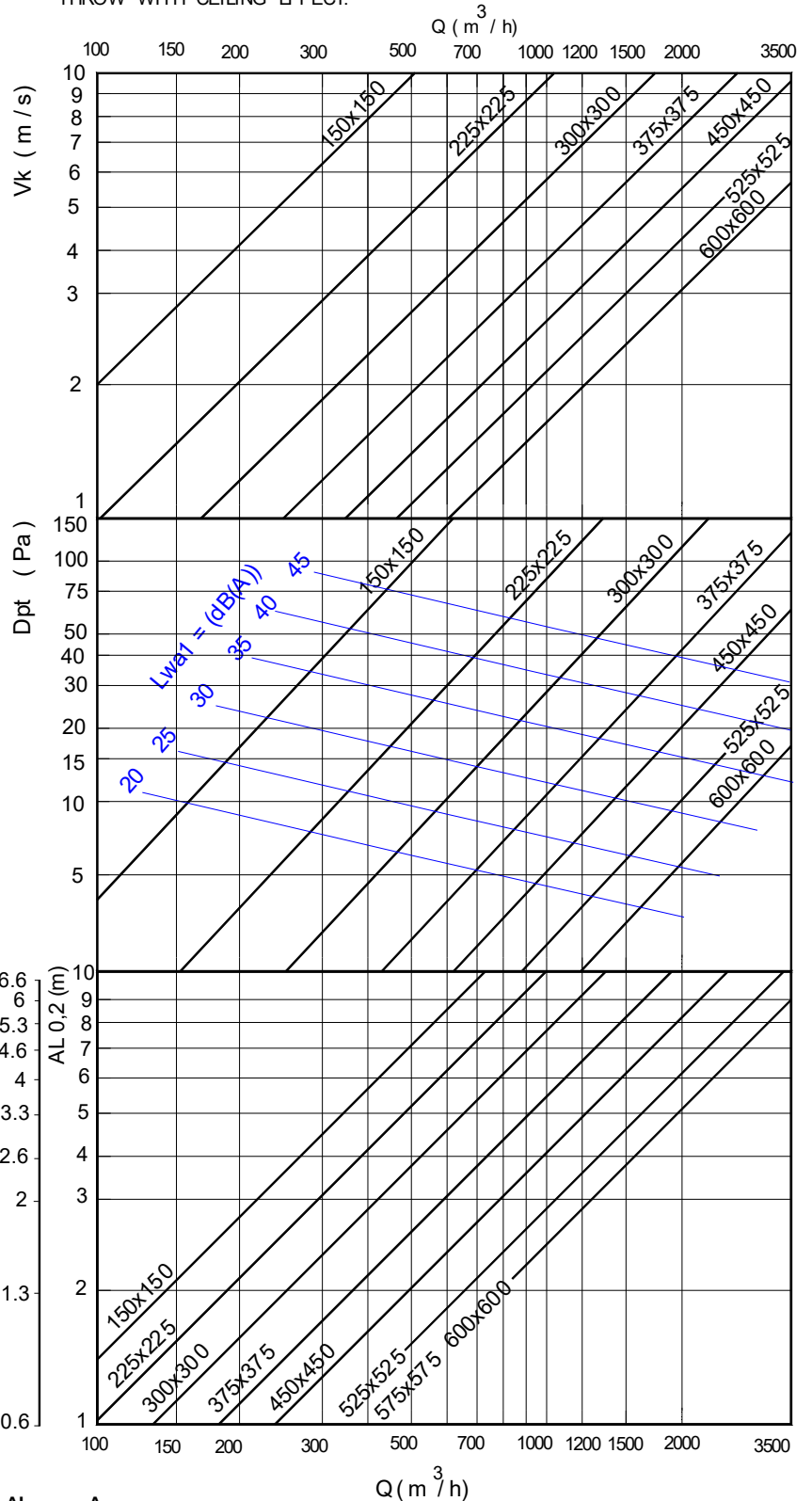
DBQ		100% Open	50% Open	10% Open
		150x150	Dpt (Kp) 1	1,82
	Lwa1 (Kf) +0	+6	+15	
225x225	Dpt (Kp) 1	4,38	7,5	
	Lwa1 (Kf) +0	+6	+15	
300x300	Dpt (Kp) 1	4,17	8,33	
	Lwa1 (Kf) +0	+6	+16	
375x375	Dpt (Kp) 1	3	18	
	Lwa1 (Kf) +0	+7	+16	
450x450	Dpt (Kp) 1	2,5	5	
	Lwa1 (Kf) +0	+7	+17	
525x525	Dpt (Kp) 1	4,1	6	
	Lwa1 (Kf) +0	+6	+17	
600x600	Dpt (Kp) 1	3,3	5	
	Lwa1 (Kf) +0	+7	+17	

$$Dpt_1 = K_p \times Dpt$$

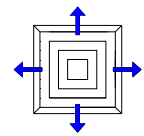
$$Lwa = Lwa_1 + K_f$$



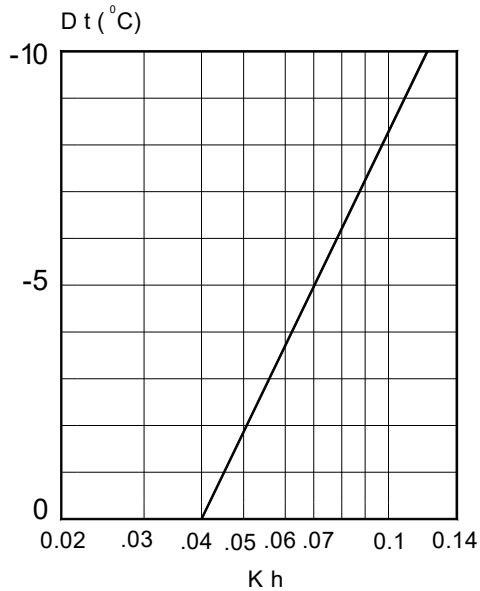
NECK VELOCITY, PRESSURE LOSS AND SOUND POWER LEVEL, THROW WITH CEILING EFFECT.



- AL_{0,5} A
- AL_{0,5} B+H
- AL_{0,5} C+H

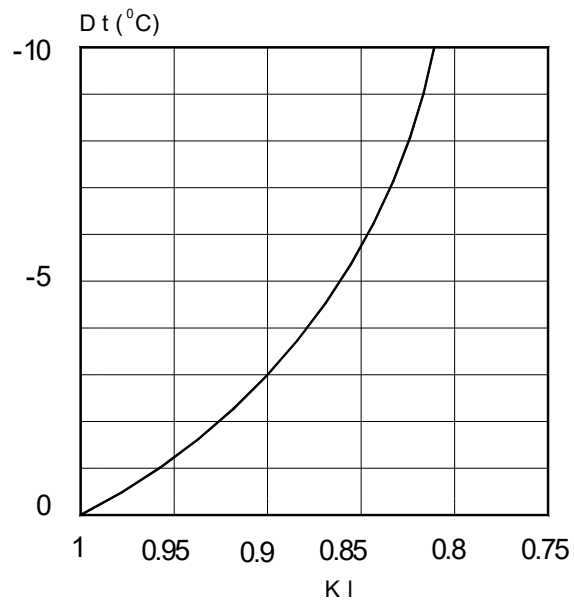


CORRECTION FACTOR FOR VERTICAL DIFFUSION (bv) FOR DT (-).

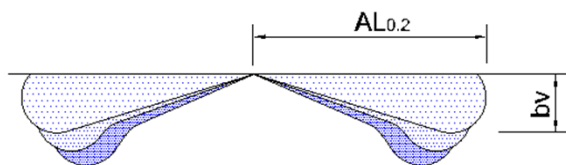


Kh = Correction factor for the vertical diffusion.

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



Kl = Correction factor for the throw.

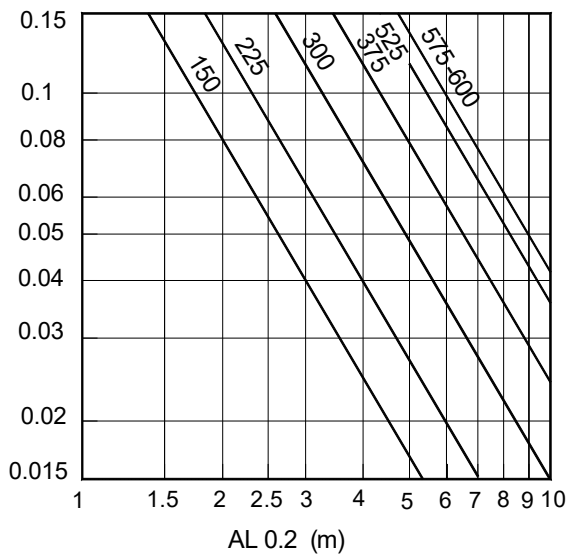


$$bv = Kh \times AL_{0.2}$$

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

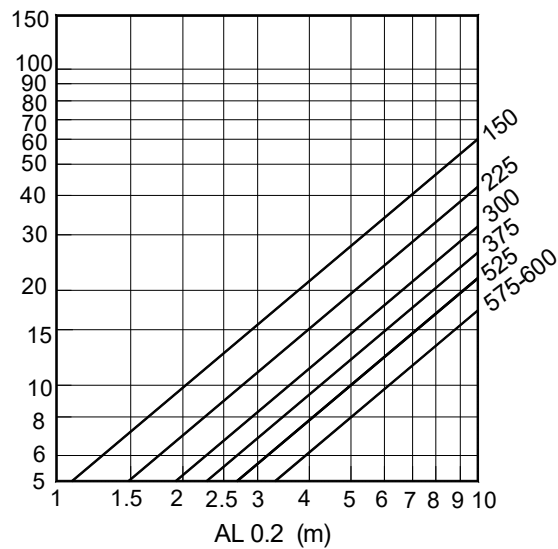
TEMPERATURE RATIO.

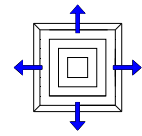
$$\frac{Dtl}{Dtz} = \frac{t_{room} - t_x}{t_{room} - t_{supply}}$$



INDUCTION RATIO

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





RECOMMENDED VELOCITY.

DBQ	Vmin m/s	Vmax m/s
150x150	2	3.5
225x225	2	3.5
300x300	2	3.5
375x375	2	3.5
450x450	2	3.5
525x525	2	3.5
600x600	2	3.5

FREE VELOCITY, PRESSURE LOSS AND SOUND POWER LEVEL,
FOR EXTRACT.

NECK AREA m².

DBQ	Afree m ²	Qmin. m ³ /h	Qmax. m ³ /h
150x150	.0138	100	174
225x225	.0277	200	349
300x300	.0486	350	612
375x375	.0694	500	874
450x450	.0972	700	1224
525x525	.1296	933	1633
600x600	.1666	1200	2099

CORRECTION FACTOR FOR Dpt AND Lwa1.

DBQ		100% Open	50% Open	10% Open
150x150	Dpt (Kp)	1	1,82	4,55
	Lwa1 (Kf)	+0	+6	+15
225x225	Dpt (Kp)	1	4,38	7,5
	Lwa1 (Kf)	+0	+6	+15
300x300	Dpt (Kp)	1	4,17	8,33
	Lwa1 (Kf)	+0	+6	+16
375x375	Dpt (Kp)	1	3	18
	Lwa1 (Kf)	+0	+7	+16
450x450	Dpt (Kp)	1	2,5	5
	Lwa1 (Kf)	+0	+7	+17
525x525	Dpt (Kp)	1	4,1	6
	Lwa1 (Kf)	+0	+6	+17
600x600	Dpt (Kp)	1	3,3	5
	Lwa1 (Kf)	+0	+7	+17

