VWR-N (RAL9005)

- Swirl diffusers
- Square
- Steel
- Black, RAL 9005

Square swirl diffusers with fixed blades type VWR-N (RAL9005)

Square swirl ceiling diffusers with fixed blades

Brand
- Cairox

Application
- For air supply and exhaust in ventilation and air conditioning systems

Material
- Steel

Colour
- Colour black, RAL 9005
- Other colours available upon request

Composition
- Fixed blades

Mounting
- Fixing with central screw into the crossbar of the plenum box

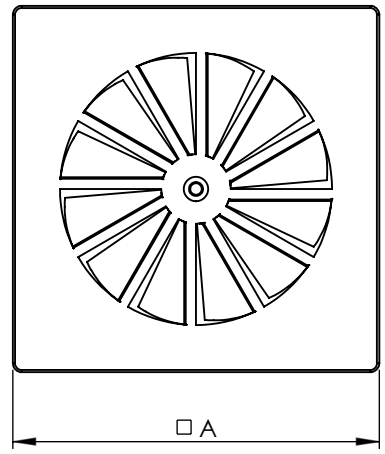
Accessories
- Plenum box, type **RER-LB**
- Insulated plenum box, type **RER-LB ISO**
- Regulating valve for plenum box, type **CRC**
- Mounting crossbar for direct duct mounting, type **FGN**
- Mounting crossbar for direct ceiling mounting, type **FHN**

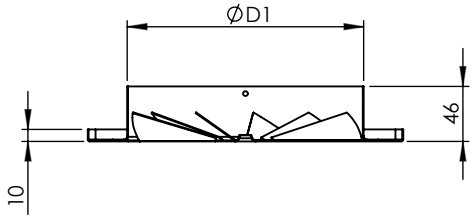
Text for tender
- The square air supply diffusers are of the swirl type with fixed blades. They are made of steel with black powder coating RAL 9005 and supplied with a volume control damper in the plenum box.
- **Cairox** type **VWR-N (RAL9005)** +**RER-L**

Order example
- **VWR-N (RAL9005), 315 + RER-LB 315 + CRC 250**

Explanation
VWR-N (RAL9005) = Diffuser type
315 = Diffuser size (Ø diffuser neck connection)
Accessories

RER-LB = Plenum box
CRC = Regulating valve for plenum box
250 = Plenum box connection diameter





Dimensions			
VWR-N	A [mm]	ØD1 [mm]	#Blades
125	171	123	8
160	213	158	10
200	264	198	12
250	326	248	14
315	404	313	16
355	448	353	17
400	500	398	18
500	596	498	20

Quick selection

Q			VWR-N 125			160			200			250			315			355			400			500		
		Ak	0.0099			0.0123			0.0176			0.0226			0.033			0.0359			0.05			0.0618		
		B	1.2	2.4	3.6	1.2	2.4	3.6	1.2	2.4	3.6	1.2	2.4	3.6	1.2	2.4	3.6	1.2	2.4	3.6	1.2	2.4	3.6	1.2	2.4	3.6
50	Vz	H= 2.7	0.08	0.05	0.04																					
		H= 3.2	0.06	0.04	0.04																					
		H= 3.8	0.04	0.04	0.03																					
	Vk			1.4																						
	X0.25			0.5																						
	Ps			11																						
	Lw(A)			<20																						
100	Vz	H= 2.7	0.15	0.11	0.08	0.14	0.1	0.08	0.11	0.08	0.06															
		H= 3.2	0.11	0.09	0.07	0.1	0.08	0.06	0.09	0.07	0.05															
		H= 3.8	0.09	0.07	0.06	0.08	0.06	0.05	0.07	0.05	0.05															
	Vk			2.8			2.3			1.6																	
	X0.25			0.9			0.8			0.7																	
	Ps			45			19			6																	
	Lw(A)			35			26			<20																	
150	Vz	H= 2.7	0.23	0.16	0.13	0.21	0.15	0.11	0.17	0.12	0.1	0.15	0.11	0.08												
		H= 3.2	0.17	0.13	0.11	0.15	0.12	0.1	0.13	0.1	0.08	0.11	0.09	0.07												
		H= 3.8	0.13	0.11	0.09	0.12	0.1	0.08	0.1	0.08	0.07	0.09	0.07	0.06												
	Vk			4.2			3.4			2.4			1.8													
	X0.25			1.4			1.2			1			0.9													
	Ps			100			41			14			5													
	Lw(A)			46			38			24			<20													
200	Vz	H= 2.7	0.31	0.22	0.17	0.27	0.2	0.15	0.23	0.16	0.13	0.2	0.14	0.11	0.17	0.12	0.09	0.18	0.13	0.1						
		H= 3.2	0.23	0.18	0.14	0.21	0.16	0.13	0.17	0.13	0.11	0.15	0.12	0.09	0.13	0.1	0.08	0.13	0.1	0.08						
		H= 3.8	0.18	0.14	0.12	0.16	0.13	0.11	0.13	0.11	0.09	0.12	0.09	0.08	0.1	0.08	0.07	0.1	0.08	0.07						
	Vk			5.6			4.5			3.2			2.5			1.7			1.5							
	X0.25			1.8			1.6			1.4			1.2			1			1.1							
	Ps			178			72			25			9			3			2							
	Lw(A)			54			46			32			22			<20			<20							
300	Vz	H= 2.7							0.34	0.25	0.19	0.3	0.22	0.17	0.25	0.18	0.14	0.27	0.19	0.15	0.23	0.16	0.13			
		H= 3.2							0.26	0.2	0.16	0.23	0.17	0.14	0.19	0.14	0.12	0.2	0.16	0.13	0.17	0.13	0.11			
		H= 3.8							0.2	0.16	0.14	0.17	0.14	0.12	0.14	0.12	0.1	0.16	0.13	0.11	0.13	0.11	0.09			
	Vk									4.7			3.7			2.5			2.3			1.7					
	X0.25									2.1			1.8			1.5			1.6			1.4					
	Ps									54			20			6			4			2					
	Lw(A)									43			33			<20			<20			<20					
400	Vz	H= 2.7										0.4	0.29	0.22	0.33	0.24	0.19	0.36	0.26	0.2	0.3	0.22	0.17	0.24	0.17	0.13
		H= 3.2										0.3	0.23	0.19	0.25	0.19	0.16	0.27	0.21	0.17	0.23	0.18	0.14	0.18	0.14	0.11
		H= 3.8										0.23	0.19	0.16	0.19	0.16	0.13	0.21	0.17	0.14	0.18	0.14	0.12	0.14	0.11	0.09
	Vk												4.9			3.4			3.1			2.2			1.8		
	X0.25												2.4			2			2.2			1.8			1.4		
	Ps												35			12			8			4			3		
	Lw(A)												41			27			23			<20			<20		
500	Vz	H= 2.7													0.42	0.3	0.23	0.45	0.32	0.25	0.38	0.27	0.21	0.29	0.21	0.16
		H= 3.2													0.31	0.24	0.2	0.34	0.26	0.21	0.29	0.22	0.18	0.22	0.17	0.14
		H= 3.8													0.24	0.2	0.16	0.26	0.21	0.18	0.22	0.18	0.15	0.17	0.14	0.12
	Vk															4.2			3.9			2.8			2.2		
	X0.25															2.5			2.7			2.3			1.8		
	Ps															18			13			7			4		
	Lw(A)															33			30			<20			<20		
600	Vz	H= 2.7													0.5	0.36	0.28	0.54	0.39	0.3	0.46	0.33	0.25	0.35	0.25	0.2
		H= 3.2													0.38	0.29	0.24	0.4	0.31	0.25	0.34	0.26	0.21	0.27	0.2	0.17
		H= 3.8													0.29	0.24	0.2	0.31	0.25	0.21	0.26	0.21	0.18	0.2	0.17	0.14
	Vk															5.1			4.6			3.3			2.7		
	X0.25															3			3.2			2.7			2.1		
	Ps															26			18			9			6		
	Lw(A)															38			35			22			<20		
800	Vz	H= 2.7																			0.61	0.44	0.34	0.47	0.34	0.26
		H= 3.2																			0.46	0.35	0.29	0.35	0.27	0.22
		H= 3.8																			0.35	0.29	0.24	0.27	0.22	0.19
	Vk																					4.4			3.6	
	X0.25																					3.7			2.8	
	Ps																					16			11	
	Lw(A)																					30			22	
1000	Vz	H= 2.7																			0.76	0.54	0.42	0.59	0.42	0.33
		H= 3.2																			0.57	0.44	0.36	0.44	0.34	0.28
		H= 3.8																			0.44	0.36	0.3	0.34	0.28	0.23
	Vk																					5.6			4.5	
	X0.25																					4.6			3.5	
	Ps																					26			17	
	Lw(A)																					36			28	
1200	Vz	H= 2.7																						0.71	0.51	0.39
		H= 3.2																						0.53	0.41	0.33
		H= 3.8																						0.41	0.33	0.28
	Vk																								5.4	
	X0.25																								4.2	
	Ps																								24	
	Lw(A)																								33	

Symbols and specifications

- Q = Air volume in m³/h
- Ak = Effective surface (free area) in m²
- B = Distance between the diffusers in m
- H = Installation height of the diffusers in m
- Vz = Maximum velocity at the occupied zone according to distance between the diffusers and installation height in m/s
- Vk = Average effective velocity through the diffuser in m/s
- X0.25 = Throw length in m at an end velocity Vt of 0,25m/s
- Ps = Static pressure loss given in Pa
- Lw(A) = Acoustic power in dB(A)

- The throw X0.25 is given at an end velocity of 0.25m/s for a smooth ceiling without any obstacles.
- The values are given for isothermal supply air. Throw distances for cooling conditions at -11K can be calculated by dividing the X0.25 values with factor 1.1. For heating purposes at Dt of +11K a multiplier of 1.1 should be applied to the

given X0.25 value.
- In order to achieve a high comfort level, selections can be made according to the maximal velocity at the occupied zone Vz. These values are given at distances between diffusers B and installation heights H. Velocities Vz lower than, or equal to 0,25m/s at the occupied zone are advised.
- The pressure losses Ps are given for diffusers without damper of with fully opened damper.
- The acoustic power values Lw(A) are given for diffusers without damper of with fully opened damper without room attenuation. Acoustic powers below 20dB(A) are mentioned as "<20" in the tables.
- For all special requirements, please contact our engineering office.

Placement instruction