

TBP – CEILING VENTILATION DIFFUSERS



Description

- Diffusers are designed for air supply and exhaustion in ventilation and air-conditioning installations. In supply mode – suitable for premises with height up to 3,6 m.

Construction

- Diffusers are made of extruded aluminium profiles with powder coating.
- As a standard RAL 9010 colour is used, upon customer's request painting in all RAL colours is possible.
- Internal section of the decorative part can be easily removed, ensuring this way an approach to the regulation damper and possibility for installation of the damper to the plenum box.

Installation

- Mounted on the air duct system with plenum box and flexible duct. Fixing of the diffuser to the plenum box is arranged with a central bolt (+P) or with four screws on the decorative part.

Accessories

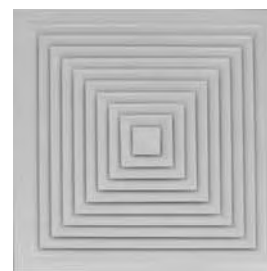
- Multiblade damper (+M).
- Plenum box (+K).
- Regulation damper installed inside (+Di) or outside (+De) the plenum box.
- Internal insulation (+Ii) or external insulation (+Ie) of plenum box.
- Kit for plenum box fixing to Armstrong type ceiling (+MK).

Modifications

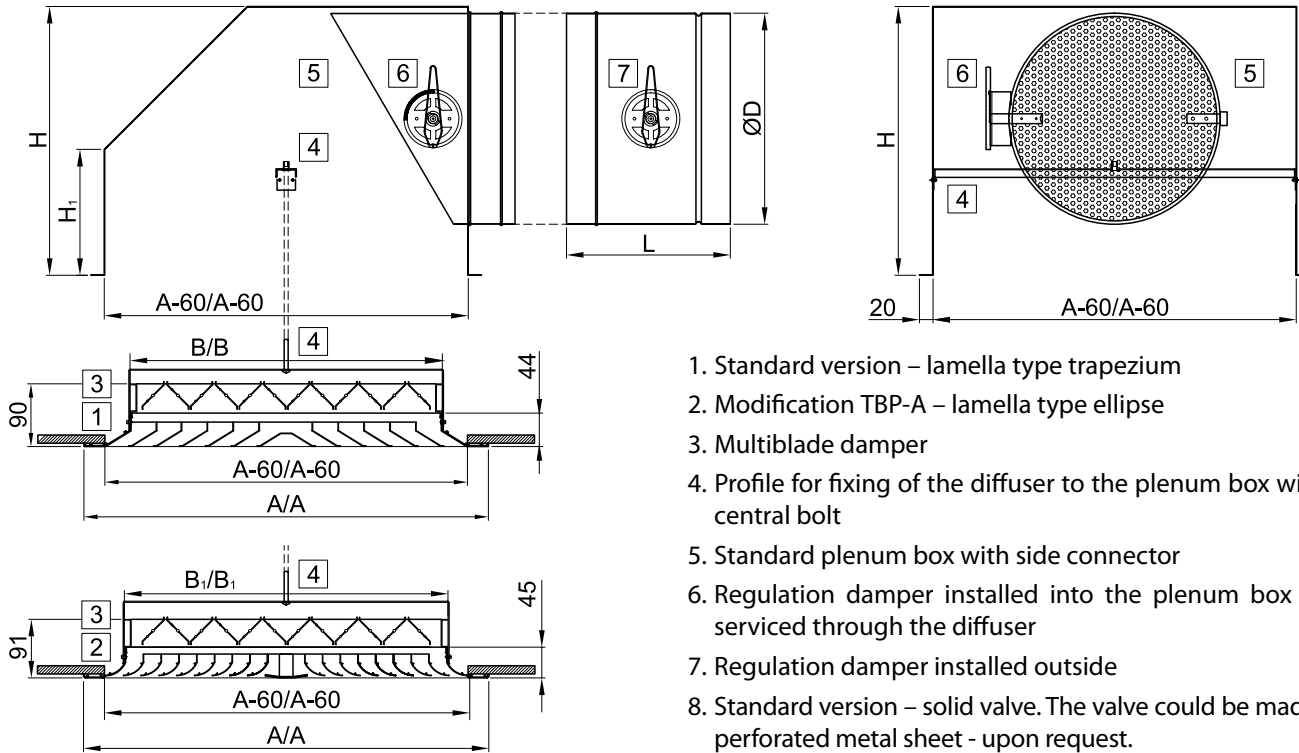
TBP-A – lamella type trapezium



TBP-A – lamella type ellipse



Overall and joined dimensions

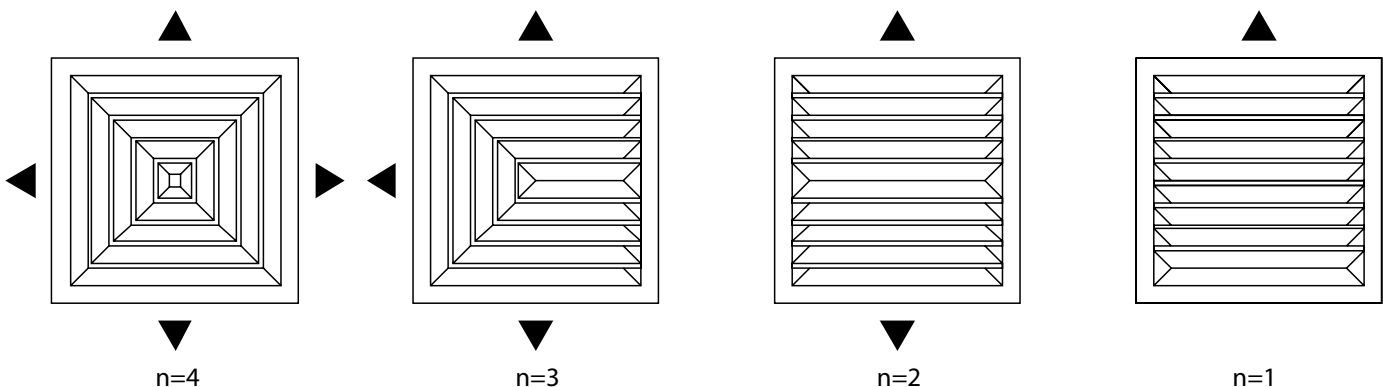


1. Standard version – lamella type trapezium
2. Modification TBP-A – lamella type ellipse
3. Multiblade damper
4. Profile for fixing of the diffuser to the plenum box with a central bolt
5. Standard plenum box with side connector
6. Regulation damper installed into the plenum box and serviced through the diffuser
7. Regulation damper installed outside
8. Standard version – solid valve. The valve could be made of perforated metal sheet - upon request.

Model	ØD [mm]	A [mm]	B [mm]	B ₁ [mm]	H [mm]	H ₁ [mm]	L [mm]
TBP-n/Nº2	120	290	170	165	205	100	120
	145	290	170	165	240	135	140
TBP-n/Nº3	145	366	245	-	240	110	140
	195	366	245	-	280	150	190
TBP-n/Nº4	145	442	320	324	240	110	140
	195	442	320	324	280	150	190
TBP-n/Nº5	195	518	392	-	280	150	190
	245	518	392	-	330	200	240
TBP-n/Nº6	245	594	472	478	330	200	240
	310	594	472	478	395	265	240

- B and B₁ are inner dimensions for plenum box (Armstrong type ceiling).
- B₁ are valid for TBP-A (lamella type ellipse)
- If regulation damper is not necessary, L=70mm

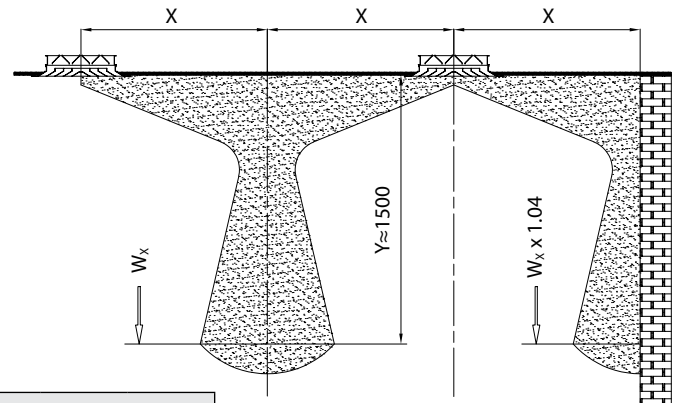
n=1; 2; 3; 4 – number of air supply directions



Note: Modification TBP-A is produced only in sizes Nº2, Nº4 and Nº6

Velocity in the working zone (WX) for quadrilateral diffusers standard version

№2	V [m³/h]						
	100	150	200	250	300	350	
X [m]	1.5	0.18	0.30	0.38	0.46	-	-
	2.0	0.16	0.25	0.31	0.40	0.50	-
	3.0	0.12	0.18	0.24	0.30	0.37	0.44
	4.0	0.10	0.16	0.20	0.25	0.31	0.35
	5.0	-	0.13	0.17	0.21	0.25	0.30
ΔP_1 [Pa]	4	7	12	18	23	30	
ΔP_2 [Pa]	8	16	28	40	55	72	
ΔP_M [Pa]	-	3	6	8	14	20	



№3	V [m³/h]									
	150	200	250	300	350	400	450	500	550	
X [m]	1.5	0.15	0.20	0.25	0.30	0.36	0.41	0.45	0.50	-
	2.0	0.13	0.16	0.20	0.24	0.28	0.32	0.35	0.38	0.43
	3.0	-	0.12	0.15	0.18	0.21	0.24	0.27	0.30	0.34
	4.0	-	0.10	0.13	0.16	0.18	0.20	0.23	0.26	0.29
	5.0	-	-	0.10	0.13	0.16	0.18	0.20	0.22	0.24
ΔP_1 [Pa]	3	6	8	12	15	19	24	31	46	
ΔP_2 [Pa]	7	13	17	25	32	40	50	70	100	
ΔP_M [Pa]	-	-	-	2	4	4	6	8	8	

Legend:

W_x [m/s] – velocity in the working zone

X [m] – horizontal distance between two diffusers or between diffuser and a wall

Y [mm] – vertical distance from diffuser to a point (Y ≈ 1500 mm)

V [m³/h] – air flow rate

ΔP_1 [Pa] – pressure drop in a diffuser without plenum box

ΔP_2 [Pa] – pressure drop in a diffuser with plenum box

ΔP_M [Pa] – pressure drop in case of 50% open multiblade damper

№4	V [m³/h]									
	250	300	350	400	450	500	550	600	700	
X [m]	1.5	0.13	0.17	0.23	0.25	0.35	0.43	0.50	-	-
	2.0	0.10	0.14	0.17	0.24	0.28	0.35	0.40	0.44	0,50
	3.0	-	0.12	0.14	0.18	0.22	0.26	0.30	0.34	0,38
	4.0	-	-	0.12	0.15	0.18	0.22	0.25	0.28	0,31
	5.0	-	-	-	0.13	0.16	0.19	0.21	0.24	0,28
ΔP_1 [Pa]	3	4	6	8	10	13	16	19	25	
ΔP_2 [Pa]	8	12	16	20	25	32	35	48	62	
ΔP_M [Pa]	-	-	-	-	-	-	1	3	5	

№5	V [m³/h]									
	300	400	500	600	700	800	900	1000	1200	
X [m]	1.5	0.12	0.21	0.35	0.50	-	-	-	-	-
	2.0	0.10	0.17	0.30	0.40	0.45	0.50	-	-	-
	3.0	-	0.15	0.23	0.30	0.30	0.36	0.39	0.42	0,50
	4.0	-	0.12	0.18	0.25	0.28	0.31	0.33	0.35	0,41
	5.0	-	-	0.16	0.22	0.24	0.26	0.28	0.30	0,35
ΔP_1 [Pa]	2	4	9	9	12	15	18	21	30	
ΔP_2 [Pa]	4	8	18	18	26	33	40	48	65	
ΔP_M [Pa]	-	-	-	-	-	-	2	4	6	

№6	V [m³/h]									
	400	500	600	700	800	900	1000	1200	1500	
X [m]	1.5	0.20	0.25	0.31	0.38	0.40	0.45	0.55	-	-
	2.0	0.15	0.21	0.25	0.31	0.33	0.38	0.42	0.50	-
	3.0	0.12	0.16	0.20	0.23	0.30	0.33	0.36	0.40	0,46
	4.0	0.12	0.14	0.16	0.18	0.20	0.23	0.26	0.30	0,35
	5.0	-	0.12	0.14	0.16	0.18	0.20	0.23	0.26	0,32
ΔP_1 [Pa]	-	2	3	4	5	7	8	10	15	
ΔP_2 [Pa]	4	7	10	14	18	21	26	30	50	
ΔP_M [Pa]	-	-	-	-	-	-	-	-	4	

Acoustic data, noise level - LNA [dB(A)]

Air flow [m ³ /h] Model	100	200	300	400	500	600	800	1000	1200	1500
Nº2	10	25	38							
Nº3		15	30	40	47					
Nº4			18	27	34	42				
Nº5				15	23	30	41	49		
Nº6						14	25	34	39	48

Coefficient of correction – K [dB]

Frequency [Hz]	125	250	500	1000	2000	4000	8000
Coefficient of correction	0	-3	-6	-9	-10	-18	-20

Order designation

TBP (TBP-A) - 4 / Nº6 +M +O

+O – openings for screws

+M – multiblade damper

Size: 2, 3, 4, 5, 6

Number of the air flow directions: 1, 2, 3, 4

Ceiling ventilation diffuser

Plenum box (TBP-A-4/Nº6) / Ø245 +De +li +MK +P

+P – Profile for diffuser fixing with central bolt to the plenum box

+MK – Kit for plenum box fixing to Armstrong type ceiling

+li – internal plenum box insulation

+le – external plenum box insulation

+Di – regulation damper installed inside plenum box

+De – regulation damper installed outside plenum box

Joining orifice (diameter)

Diffuser type and size

- Main parameters

- Optional parameters