



AK-UNI-004-ZL-M-L



FOR CIRCULAR DIFFUSER
FACES



PLENUM BOX WITH
DAMPER BLADE
(OPTIONAL)

TYPE AK-UNI

UNIVERSAL PLENUM BOX, AVAILABLE IN MANY VARIANTS

Plenum boxes for supply air and extract air

- For circular and square diffuser faces
- Plenum box made of galvanised sheet steel
- For supply and extract air
- For all types of ceiling systems
- Horizontal duct connection
- Equalising element that ensures a uniform airflow through the diffuser face (supply air variant)
- For comfort zones and industrial zones

Optional equipment and accessories

- Damper blade for volume flow rate balancing
- Pressure tap and cord-operated damper blade for volume flow rate balancing
- Lip seal

Application

Application

- Type AK-Uni plenum boxes for the connection of circular and square diffuser faces to circular ducts, suitable for supply air or extract air applications in comfort and industrial zones
- For diffuser faces of Types VDW, TDV, RFD, FD, TDF, ADD, ADLQ, DLQ, ADLR, and DLQL, with central screw fixing
- For variable and constant volume flows
- For all types of ceiling systems

Special characteristics

- Plenum box made of galvanised sheet steel
- For all types of ceiling systems
- For circular and square diffuser faces
- Horizontal duct connection
- For comfort zones and industrial zones

Description

Variants

- AK-Uni-...-ZL: Supply air
- AK-Uni-...-AL: Extract air

Parts and characteristics

- Casing with spigot and cross bar for fixing the diffuser face
- Equalising element that ensures a uniform airflow through the diffuser face (supply air variant)
- Simple installation of the diffuser face due to central fixing screw with decorative cap

Attachments

- M: Damper blade for volume flow rate balancing
- MN: Pressure tap and cord-operated damper blade for volume flow rate balancing with the diffuser face in place

Accessories

- Lip seal

Construction features

- Spigot suitable for circular ducts to EN 1506 or EN 13180
- Spigot with groove for lip seal (if accessory lip seal has been ordered)

Materials and surfaces

- Casing, cross bar and spigot made of galvanised sheet steel
- Equalising element made of galvanised, perforated sheet steel
- Lip seal made of rubber

Maintenance

- Maintenance-free as construction and materials are not subject to wear
- Inspection and cleaning to VDI 6022

TECHNICAL INFORMATION

Function, Technical data – supply air, Technical data – extract air, Specification text, Order code



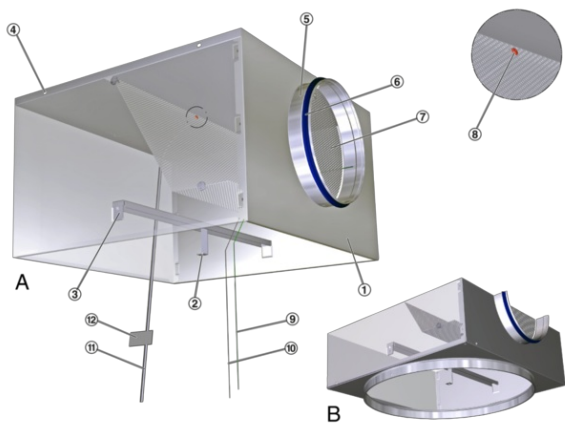
Functional description

Plenum boxes are used to connect ceiling diffusers to circular ducts and to fix the diffuser face.

Type AK-Uni plenum boxes are fitted with an equalising element that ensures that the air is evenly distributed to the room.

A damper blade (optional) simplifies volume flow rate balancing for commissioning. Pressure tap and cord-operated damper blade (optional) allow for volume flow rate balancing with the diffuser face in place.

Schematic illustration



A Plenum box for square diffuser faces

B Plenum box for circular diffuser faces

- ① Plenum box
- ② Central fixing screw
- ③ Cross bar
- ④ Suspension hole
- ⑤ Spigot

Optional

- ⑥ Lip seal
- ⑦ Damper blade for volume flow rate balancing
- ⑧ Pressure tap
- ⑨ Green cord for closing the damper blade
- ⑩ White cord for opening the damper blade
- ⑪ Measuring tube
- ⑫ Text label indicating plenum box variant

Plenum boxes for square diffuser faces

Plenum boxes for circular diffuser faces

Plenum boxes for Type RFD diffuser faces

Legende verwendeter Abkürzungen

ØD [mm]	Außendurchmesser des Anschlussstutzens
Q_s [mm]	Abmessungen eines quadratischen Anschlusskastens
H_s [mm]	Höhe eines Deckenluftdurchlasses mit Anschlusskasten von der Unterkante der abgehängten Decke bis zur Oberkante des Anschlusskastens oder des Anschlussstutzens
A [mm]	Lage des Anschlussstutzens, definiert durch den Abstand der Mittellinie zur Unterkante der abgehängten Decke
C [mm]	Länge des Anschlussstutzens
m [kg]	Gewicht (Masse)

Standard combinations

Variant	Diffuser face Variant											
	VDW-Q			TDV-SA-Q			FD-Q			TDF-SA-Q		
Variant	Nominal size		K value		Nominal size		K value		Nominal size		K value	
	mm	l/s	m³/h	mm	l/s	m³/h	mm	l/s	m³/h	mm	l/s	m³/h
AK-Uni-001	300 × 8	10.3	36.9	300	13.2	47.7	300	10.1	36.5	300	13.2	47.7
AK-Uni-002	400 × 16	19.6	70.7	400	22.8	82.1	400	19.6	70.7	400	22.8	82.1
AK-Uni-003	500 × 24	24.2	87.1	500	27.9	100.5	500	25.8	92.7	500	27.9	100.5
AK-Uni-004	600 × 24 625 × 24	34.9	125.8	600 625	40.4	145.5	600 625		125.8	600 625	40.4	145.5
AK-Uni-005	600 × 48	43.0	154.8									
AK-Uni-006	625 × 54	44.2	158.9									
AK-Uni-007	825 × 72	72.8	262.2									

Standard combinations

Variant	Diffuser face Variant									
	ADD-Q			ADLQ DLQ			ADLR-Q			
Variant	Nominal size		K value		Nominal size		K value		Nominal size	
	mm	l/s	m³/h	mm	l/s	m³/h	mm	l/s	m³/h	
AK-Uni-002				400	30.1	108.2				
AK-Uni-008				250	10.1	36.2				
AK-Uni-009				300	14.8	53.4				
AK-Uni-010				500	48.3	173.7				
AK-Uni-011				600 625	72.2	260.0				
AK-Uni-019	250	7.6	27.4				1	8.3	29.8	
AK-Uni-020	300	14.5	52.2				2	14.8	53.3	
AK-Uni-021	400	22.2	79.9				3	24.0	86.2	
AK-Uni-022	450	35.7	128.7				4	35.7	128.7	
AK-Uni-023	500	39.8	143.4				5	41.8	150.6	
AK-Uni-024							6	57.4	206.8	
AK-Uni-025	600 625	68.2	245.7				7	64.4	231.9	
AK-Uni-026							8	70.7	254.7	

Alternative combinations

Variant	Diffuser face Variant										
	VDW-Q			FD-Q			ADLQ DLQ				
Variant	Nominal size		K value		Nominal size		K value		Nominal size		
	mm	l/s	m³/h	mm	l/s	m³/h	mm	l/s	m³/h		
AK-Uni-004							600< 625<	50.7	182.4		
AK-Uni-005	600 × 24	625 × 24	34.9	125.8	600	625	34.9	125.8	600< 625<	50.7 182.4	
AK-Uni-006	625 × 24		34.9	125.8	625		34.9	125.8	625<	50.7 182.4	
AK-Uni-010	500 × 24>		28.9	104.1	500>		28.7	103.5			
AK-Uni-011	600 × 24>	625 × 24>	39.4	141.9	600>	625>	39.4	141.9			
AK-Uni-012	600 × 24>	625 × 24>	39.4	141.9	600<	625<	39.4	141.9	600	625	72.2 260.0
	600 × 48>		50.5	182.0							
AK-Uni-027	625 × 24>		39.4	141.9	625>		39.4	141.9	625	72.2 260.0	
	625 × 54>		53.2	191.4							

< Smaller connection diameter

> Larger connection diameter

Standard combinations

Variant	Diffuser face Variant															
	VDW-R			TDV-SA-R			FD-R			TDF-SA-R						
Variant	Nominal size		K value		Nominal size		K value		Nominal size		K value					
	mm	l/s	m³/h	mm	l/s	m³/h	mm	l/s	m³/h	mm	l/s	m³/h				
AK-Uni-013	300 × 8	9.4	33.8	300	13.2	47.7	300	10.2	36.5	300	13.2	47.7				
AK-Uni-014	400 × 16	19.6	70.7	400	22.8	82.1	400	19.6	70.7	400	22.8	82.1				
AK-Uni-015	500 × 24	23.1	83.0	500	27.9	100.5	500	26.2	94.4	500	27.9	100.5				
AK-Uni-016	600 × 24	625 × 24	34.5	124.3	600	625	40.4	145.5	600	625	34.5	124.3	600	625	40.4	145.5
AK-Uni-017	600 × 48	44.0	158.3													

Standard combinations

Variant	Diffuser face Variant					
	ADD-R			ADLR		
Variant	Nominal size		K value	Nominal size		K value
	mm	l/s	m³/h	mm	l/s	m³/h
AK-Uni-019	250	7.6	27.4	1	8.3	29.8
AK-Uni-020	300	14.5	52.2	2	14.8	53.3
AK-Uni-021	400	22.2	79.9	3	24.0	86.2
AK-Uni-022	450	35.7	128.7	4	35.7	128.7
AK-Uni-023	500	39.8	143.4	5	41.8	150.6
AK-Uni-024				6	57.4	206.8
AK-Uni-025	600	68.2	245.7	7	64.4	231.9
AK-Uni-026				8	70.7	254.7

Alternative combinations

Variant	Diffuser face Variant									
	VDW-R			FD-R			ADLR			
Variant	Nominal size		K value		Nominal size		K value		Nominal size	K value
	mm	l/s	m³/h	mm	l/s	m³/h	mm	l/s	m³/h	
AK-Uni-013									2	14.8 53.3
AK-Uni-014									4>	31.3 112.6
AK-Uni-016									7<	51.1 184.1
AK-Uni-017	600 × 24	625 × 24	34.5	124.3	600	625	34.5	124.3	7	51.1 184.1
AK-Uni-018	625 × 24		34.0	122.5	625		34.0	122.5	8<	51.1 183.9
AK-Uni-022	400 × 16>		17.6	67.1	400>		18.6	67.1		
AK-Uni-024	500 × 24>		28.1	101.3	500>		31.1	111.8		
AK-Uni-025	600 × 24>	625 × 24>	36.5	131.4	600>	625>	36.5	131.4		
	600 × 48>		51.7	186.0						
AK-Uni-026	625 × 24>		36.1	129.9	625>		36.1	129.9		

< Smaller connection diameter

> Larger connection diameter

Standard combinations

Variant	Nominal size	RFD without discharge nozzle		RFD with discharge nozzle	
		K value			
Variant	mm	l/s	m³/h	l/s	m³/h
AK-Uni-028	125	3.5	12.4	4.7	17.9
AK-Uni-029	160	5.2	18.7	7.3	26.3
AK-Uni-030	200	7.1	25.5	12.2	43.9
AK-Uni-031	250	12.9	46.4	19.0	68.4
AK-Uni-032	315	22.8	82.0	28.6	103.0
AK-Uni-033	400	34.5	124.3	37.3	134.4

Plenum boxes for square diffuser faces

Plenum boxes for circular diffuser faces

Standard combinations

Variant	Diffuser face Variant											
	VDW-Q			TDV-SA-Q			FD-Q			TDF-SA-Q		
	Nominal size	K value		Nominal size	K value		Nominal size	K value		Nominal size	K value	
Variant	mm	l/s	m³/h	mm	l/s	m³/h	mm	l/s	m³/h	mm	l/s	m³/h
AK-Uni-001	300 × 8	8.9	32.1	300	16.4	59.0	300	11.6	41.7	300	16.4	59.0
	300 × 8/0	15.6	56.0	300/0	27.3	98.2						
AK-Uni-002	400 × 16	17.6	63.5	400	28.9	104.2	400	23.8	85.5	400	28.9	104.2
	400 × 16/0	34.4	123.9	400/0	43.1	155.2						
AK-Uni-003	500 × 24	25.7	92.6	500	38.5	138.7	500	38.3	137.9	500	38.5	138.7
	500 × 24/0	52.7	189.7	500/0	65.9	237.1						
AK-Uni-004	600 × 24 625 × 24	41.8	150.6	600 625	52.3	188.2	600 625	55.7	200.5	600 625	52.3	188.2
	600 × 24/0 625 × 24/0	63.9	230.1	600/0 625/0	94.0	338.3						
AK-Uni-005	600 × 48	54.7	197.0									
	600 × 48/0	87.8	316.1									
AK-Uni-006	625 × 54	59.6	214.7									
	625 × 54/0	96.3	346.1									
AK-Uni-007	825 × 72	96.7	348.7									
	825 × 72/0	173.3	623.9									

... /0: Diffuser face without air control blades

Standard combinations

Variant	Diffuser face Variant								
	ADD-Q			ADLQ DLQ			ADLR-Q		
	Nominal size	K value		Nominal size	K value		Nominal size	K value	
mm	l/s	m³/h	mm	l/s	m³/h	mm	l/s	m³/h	
AK-Uni-002				400	36.3	130.8			
AK-Uni-008				250	9.8	35.3			
AK-Uni-009				300	18.6	66.9			
AK-Uni-010				500	68.7	247.2			
AK-Uni-011				600 625	114.6	412.6			
AK-Uni-019	250	8.7	31.4				1	7.7	27.8
AK-Uni-020	300	20.6	74.0				2	14.8	53.2
AK-Uni-021	400	26.9	97.0				3	20.7	74.4
AK-Uni-022	450	39.3	141.5				4	30.1	108.2
AK-Uni-023	500	54.1	194.9				5	45.1	162.4
AK-Uni-024							6	56.4	203.0
AK-Uni-025	600 625	71.1	256.0				7	72.8	262.1
AK-Uni-026							8	97.5	351.1

Alternative combinations

Variant	Diffuser face Variant									
	VDW-Q			FD-Q			ADLQ DLQ			
Variant	Nominal size		K value		Nominal size		K value		Nominal size	
	mm	l/s	m³/h	mm	l/s	m³/h	mm	l/s	m³/h	
AK-Uni-004									600< 625<	139.1 500.6
AK-Uni-005	600 × 24 625 × 24	42.1	151.6	600 625	44.1	158.8	600< 625<	111.2	400.3	
	600 × 24/0 625 × 24/0	65.6	236.0							
AK-Uni-006	625 × 24	40.3	145.2	625	50.6	182.1	625<	137.9	496.4	
	625 × 24/0	66.8	240.5							
AK-Uni-010	500 × 24>	27.4	98.8	500>	39.8	143.3				
	500 × 24/0>	49.4	177.8							
AK-Uni-011	600 × 24> 625 × 24>	45.1	162.3	600> 625>	60.3	217.1				
	600 × 24/0> 625 × 24/0>	69.1	248.7							
AK-Uni-012	600 × 24> 625 × 24>	42.8	154.1	600< 625<	60.0	216.1	600 625	114.3	411.6	
	600 × 24/0> 625 × 24/0>	70.6	254.3							
AK-Uni-012	600 × 48>	58.4	210.2							
	600 × 48/0>	94.0	338.4							
AK-Uni-027	625 × 24>	40.4	154.4	625>	58.8	211.8	625	118.9	428.0	
	625 × 24/0>	69.4	250.0							
AK-Uni-027	625 × 54>	64.0	230.3							
	625 × 54/0>	104.7	377.0							

... /0: Diffuser face without air control blades

< Smaller connection diameter

> Larger connection diameter

Standard combinations

Variant	Diffuser face Variant												
	VDW-R			TDV-SA-R			FD-R			TDF-SA-R			
Variant	Nominal size		K value		Nominal size		K value		Nominal size		K value		
	mm		l/s	m³/h	mm		l/s	m³/h	mm		l/s	m³/h	
AK-Uni-013	300 × 8		9.3	33.6	300	16.4	59.0	300	13.0	46.7	300	16.4	59.0
	300 × 8/0		16.2	58.1	300/0	26.7	96.7						
AK-Uni-014	400 × 16		17.9	64.3	400	28.9	104.2	400	25.2	90.6	400	28.9	104.2
	400 × 16/0		35.4	127.4	400/0	44.8	161.1						
AK-Uni-015	500 × 24		25.3	90.9	500	38.5	138.7	500	38.4	138.1	500	38.5	138.7
	500 × 24/0		50.9	183.2	500/0	66.8	240.6						
AK-Uni-016	600 × 24 625 × 24		42.2	151.9	600 625	52.3	188.2	600 625	57.7	207.7	600 625	52.3	188.2
	600 × 24/0 625 × 24/0		65.3	235.1	600/0 625/0	95.1	342.5						
AK-Uni-017	600 × 48		58.1	209.1									
	600 × 48/0		88.0	316.9									

... /0: Diffuser face without air control blades

Standard combinations

Variant	Diffuser face Variant							
	ADD-R			ADLR				
Variant	Nominal size		K value		Nominal size		K value	
	mm		l/s	m³/h	mm		l/s	m³/h
AK-Uni-019	250		8.7	31.4	1		7.7	27.8
AK-Uni-020	300		20.6	74.0	2		14.8	53.2
AK-Uni-021	400		26.9	97.0	3		20.7	74.4
AK-Uni-022	450		39.3	141.5	4		30.1	108.2
AK-Uni-023	500		54.1	194.9	5		45.1	162.4
AK-Uni-024					6		56.4	203.0
AK-Uni-025	600		71.1	256.0	7		72.8	262.1
AK-Uni-026					8		97.5	351.1

Alternative combinations

Variant	Diffuser face Variant								
	VDW-R			FD-R			ADLR		
Variant	Nominal size	K value		Nominal size	K value		Nominal size	K value	
	mm	l/s	m³/h	mm	l/s	m³/h	mm	l/s	m³/h
AK-Uni-013							2	14.5	52.1
AK-Uni-014							4>	30.5	109.9
AK-Uni-016							7<	76.7	276.2
AK-Uni-017	600 × 24 625 × 24	40.3	145.0	600 625	58.1	209.0	7	71.0	255.7
	600 × 24/0 625 × 24/0	67.3	242.1						
AK-Uni-018	625 × 24			625	50.6	182.1	8<	101.1	364.0
	625 × 24/0								
AK-Uni-022	400 × 16>	18.0	64.9	400>	25.0	90.0			
	400 × 16/0>	31.5	113.3						
AK-Uni-024	500 × 24>	28.6	103.0	500>	40.2	144.6			
	500 × 24/0>	45.0	161.9						
AK-Uni-025	600 × 24> 625 × 24>	37.7	158.2	600> 625>	59.3	213.6			
	600 × 24/0> 625 × 24/0>	70.5	253.9						
AK-Uni-025	600 × 48>	59.0	212.3						
	600 × 48/0>	96.5	347.4						
AK-Uni-026	625 × 24>			625>	61.0	219.4			
	625 × 24/0>								

... /0: Diffuser face without air control blades

< Smaller connection diameter

> Larger connection diameter

Universal plenum boxes for the connection of circular and square diffuser faces to circular ducts, suitable for supply air or extract air applications. For installation into all types of suspended ceilings.

Ready-to-install component which consists of the plenum box, equalising element (only supply air variants), side entry spigot, cross bar, and suspension holes.

The diffuser face is fixed to the cross bar with a central screw, concealed by a decorative cap.

Spigot suitable for ducts to EN 1506 or EN 13180.

Special characteristics

- Plenum box made of galvanised sheet steel
- For all types of ceiling systems
- For circular and square diffuser faces
- Horizontal duct connection
- For comfort zones and industrial zones

Materials and surfaces

- Casing, cross bar and spigot made of galvanised sheet steel
- Equalising element made of galvanised, perforated sheet steel
- Lip seal made of rubber

Order example: **AK-Uni-003-AL-MN-L**

Variant	003
System	Extract air
Damper blade for volume flow rate balancing	Volume flow rate adjustment with cords and pressure tap
Accessories	With lip seal

AK – Uni – 002 – ZL – M – L



1 Type

AK-Uni Plenum box

3 System

ZL Supply air
AL Extract air

2 Variant

001 to 033

4 Damper blade for volume flow rate balancing

No entry: none
M With
MN With cords and pressure tap

5 Accessories

No entry: none
L With lip seal



Plenum boxes for square diffuser faces

Plenum boxes for circular diffuser faces

Plenum boxes for Type RFD diffuser faces

Standardverwendungen für quadratische Frontdurchlässe

Produktvariante	ØD	Frontdurchlass Variante							
		VDW-Q	TDV-SA-Q	FD-Q	TDF-SA-Q	ADD-Q	ADLQ DLQ	ADLR-Q	DLQL
AK-Uni-001	158	300 × 8	300	300	300				300
AK-Uni-002	198	400 × 16	400	400	400		400		400
AK-Uni-003	198	500 × 24	500	500	500				
AK-Uni-004	248	600 × 24 625 × 24	600 625	600 625	600 625				
AK-Uni-005	248	600 × 48							
AK-Uni-006	248	625 × 54							
AK-Uni-007	313	825 × 72							
AK-Uni-008	158						250		250
AK-Uni-009	158						300		
AK-Uni-010	248						500		500
AK-Uni-011	313						600 625		
AK-Uni-012	313								600
AK-Uni-019	123					250		1	
AK-Uni-020	158					300		2	
AK-Uni-021	198					400		3	
AK-Uni-022	248					450		4	
AK-Uni-023	248					500		5	
AK-Uni-024	313							6	
AK-Uni-025	313					600 625		7	
AK-Uni-026	313							8	

Alternative Verwendungen für quadratische Frontdurchlässe

Produktvariante	ØD	Frontdurchlass Variante		
		VDW-Q	FD-Q	ADLQ DLQ
AK-Uni-004	248			600<, 625<
AK-Uni-005	248	600 × 24 625 × 24	600 625	600< 625<
AK-Uni-006	248	625 × 24	625	625<
AK-Uni-010	248	500 × 24>	500>	
AK-Uni-011	313	600 × 24> 625 × 24>	600> 625>	
AK-Uni-012	313	600 × 24> 625 × 24>	600< 625<	600 625
	313	600 × 48>		
AK-Uni-027	313	625 × 24>	625>	625
	313	625 × 54>		

< Kleinerer Anschlussdurchmesser

> Größerer Anschlussdurchmesser

Standardverwendungen für runde Frontdurchlässe

Produktvariante	ØD	Frontdurchlass Variante					
		VDW-R	TDV-SA-R	FD-R	TDF-SA-R	ADD-R	ADLR
AK-Uni-013	158	300 × 8	300	300	300		
AK-Uni-014	198	400 × 16	400	400	400		
AK-Uni-015	198	500 × 24	500	500	500		
AK-Uni-016	248	600 × 24 625 × 24	600 625	600 625	600 625		
AK-Uni-017	248	600 × 48					
AK-Uni-019	123					250	1
AK-Uni-020	158					300	2
AK-Uni-021	198					400	3
AK-Uni-022	248					450	4
AK-Uni-023	248					500	5
AK-Uni-024	313						6
AK-Uni-025	313					600	7
AK-Uni-026	313						8

Alternative Verwendungen für runde Frontdurchlässe

Produktvariante	ØD	Frontdurchlass Variante		
		VDW-R	FD-R	ADLR
AK-Uni-013	158			2
AK-Uni-014	198			4>
AK-Uni-016	248			7<
AK-Uni-017	248	600 x 24 625 x 24	600 625	7
AK-Uni-018	248	625 x 24	625	8<
AK-Uni-022	248	400 x 16>	400>	
AK-Uni-024	313	500 x 24>	500>	
AK-Uni-025	313	600 x 24> 625 x 24>	600> 625>	
	313	600 x 48>		
AK-Uni-026	313	625 x 24>	625>	

< Kleinerer Anschlussdurchmesser

> Größerer Anschlussdurchmesser

Standardverwendungen für Frontdurchlass RFD

Produktvariante	ØD	Frontdurchlass Serie
		RFD
AK-Uni-028	98	125
AK-Uni-029	123	160
AK-Uni-030	158	200
AK-Uni-031	198	250
AK-Uni-032	248	315
AK-Uni-033	313	400

AK-Uni-004-ZL-M-L



AK-Uni-016



Produktvariante	ØD mm	□Q ₃ mm	H ₃ mm	A mm	C mm	m kg
AK-Uni-001	158	290	250	139	50	3.0
AK-Uni-002	198	372	295	164	50	4.5
AK-Uni-003	198	476	295	164	50	6.0
AK-Uni-004	248	567	345	199	48	8.2
AK-Uni-005	248	590	345	189	48	8.6
AK-Uni-006	248	615	345	189	48	9.0
AK-Uni-007	313	806	410	222	50	16.0
AK-Uni-008	158	216	250	139	50	2.2
AK-Uni-009	158	266	250	139	50	2.7
AK-Uni-010	248	476	345	189	48	6.6
AK-Uni-011	313	567	410	222	50	9.2
AK-Uni-012	313	590	410	222	50	9.6
AK-Uni-027	313	615	410	222	50	10.2

Weights apply to the supply air variant

R

Produktvariante	□Q ₃ mm	H ₃ mm	ØD ₄ mm	H ₄ mm	ØD mm	A mm	C mm	m kg
AK-Uni-013	290	285	278	250	158	174	50	3.4
AK-Uni-014	372	330	362	295	198	199	50	5.1
AK-Uni-015	476	330	460	295	198	199	50	6.9
AK-Uni-016	567	380	557	345	248	234	48	9.3
AK-Uni-017	590	380	578	345	248	224	48	9.7
AK-Uni-018	615	380	590	345	248	224	48	10.3
AK-Uni-019	266	255	202	220	123	161	48	2.9
AK-Uni-020	290	285	258	250	158	174	50	3.5
AK-Uni-021	372	330	314	295	198	199	50	5.2
AK-Uni-022	476	380	362	345	248	224	48	7.8
AK-Uni-023	476	380	426	345	248	224	48	7.6
AK-Uni-024	567	445	482	410	313	257	50	10.5
AK-Uni-025	590	445	578	410	313	257	50	10.8
AK-Uni-026	615	445	590	410	313	257	50	11.4

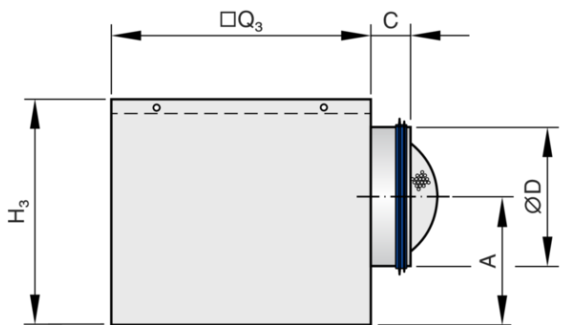
Weights apply to the supply air variant

RFD

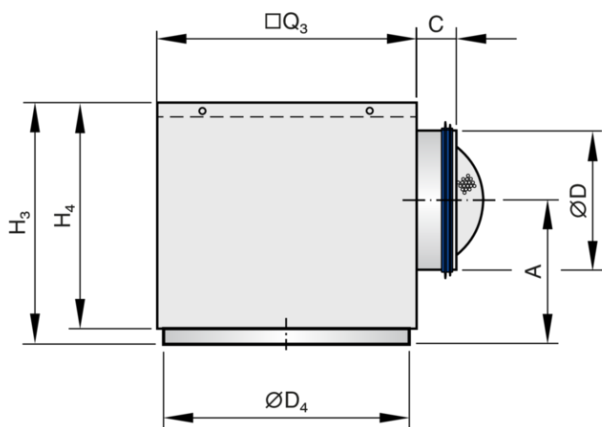
Produktvariante	□Q ₃ mm	H ₃ mm	ØD ₄ mm	H ₄ mm	ØD mm	A mm	C mm	m kg
AK-Uni-028	216	255	125	195	98	170	50	2.5
AK-Uni-029	266	280	160	220	123	182	48	3.0
AK-Uni-030	290	310	200	250	158	194	50	3.5
AK-Uni-031	476	355	250	295	198	219	50	7.5
AK-Uni-032	567	395	315	345	248	244	48	10.0
AK-Uni-033	615	470	400	410	313	277	50	12.0

Weights apply to the supply air variant

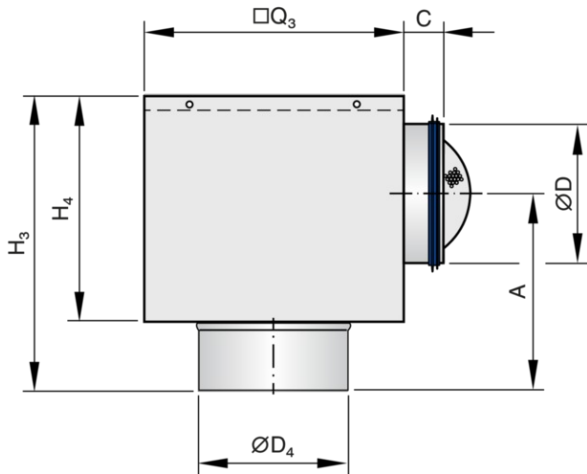
Universal plenum box AK-Uni for square diffuser faces



Universal plenum box AK-Uni for circular and square diffuser faces with circular face style



Universal plenum box AK-Uni for RFD



Installation details, Commissioning, Basic information and nomenclature



Installation and commissioning

- Note the installation details for ceiling diffusers
- Horizontal duct connection
- If necessary, carry out volume flow rate balancing with the damper blade

Volume flow rate balancing

When several diffusers are connected to just one volume flow controller, it may be necessary to balance the volume flow rates.

- Ceiling diffusers with universal plenum box and damper blade (variant -M): The diffuser face can be removed to access the damper blade; the damper blade can then be set to any position between 0 and 90°
- Ceiling diffusers with universal plenum box, damper blade and pressure tap (variant -MN): The diffuser face need not be removed since the damper blade can be set with two cords (white and green).

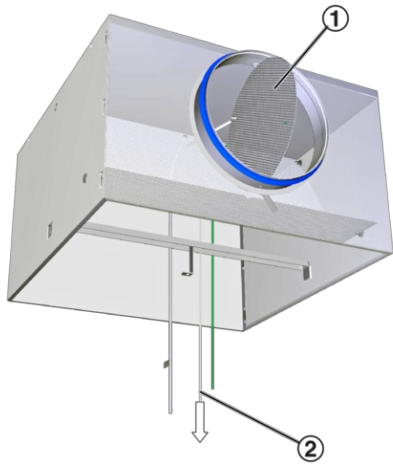
Volume flow rate measurement

Ceiling diffusers with universal plenum box, damper blade and pressure tap (variant -MN) allow for volume flow rate balancing even with the diffuser face in place.

- Connect the measuring tube to the digital manometer
- Read the effective pressure
- Read the volume flow rate off the characteristic or calculate it
- If necessary, adjust the damper blade position with the cords

A characteristic is included with each AK-Uni plenum box.

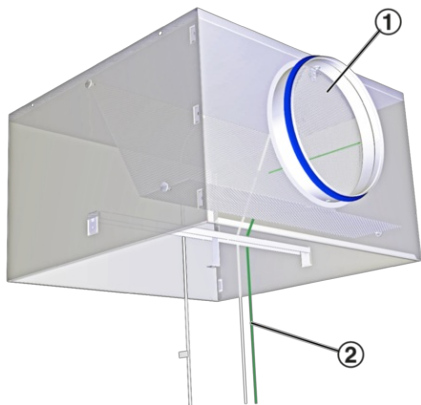
AK-Uni-...-MN Volume flow rate balancing



- ① Damper blade
- ② White cord for opening the damper blade

Open, 0°

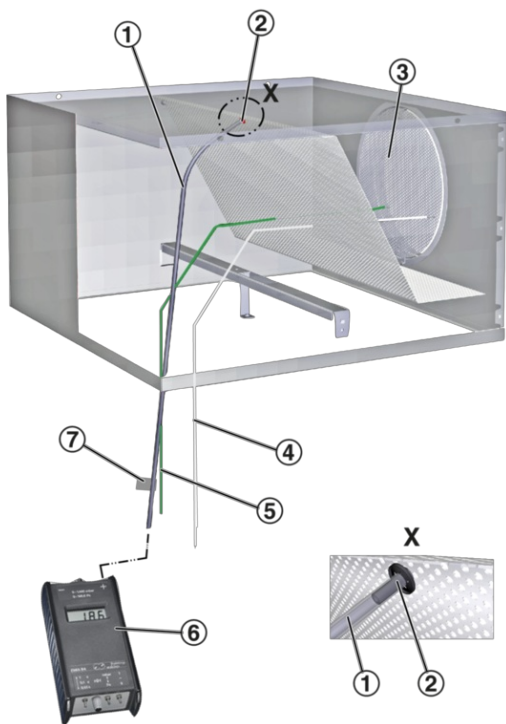
AK-Uni-...-MN Volume flow rate balancing



- ① Damper blade
- ② Green cord for closing the damper blade

Closed, 90°

AK-Uni-...-MN volume flow rate measurement



- ① Measuring tube
- ② Pressure tap
- ③ Damper blade for volume flow rate balancing
- ④ White cord for opening the damper blade
- ⑤ Green cord for closing the damper blade
- ⑥ Digital manometer
- ⑦ Text label indicating plenum box variant

Volume flow rate calculation for air density 1.2 kg/m³

$$\dot{V} = C \times \sqrt{\Delta p_w}$$

Volume flow rate calculation for other air densities

$$\dot{V} = C \times \sqrt{\Delta p_w} \times \sqrt{\frac{1.2}{\rho}}$$

Principal dimensions

ØD [mm]

Outer diameter of the spigot

ØD₁ [mm]

Outer diameter of a circular diffuser face

ØD₂ [mm]

Diameter of a circular diffuser face style

ØD₃ [mm]

Diameter of a circular plenum box

□Q₁ [mm]

Outer diameter of a square diffuser face

□Q₂ [mm]

Dimensions of a square diffuser face style

□Q₃ [mm]

Dimensions of a square plenum box

H₁ [mm]

Distance (height) from the lower edge of the suspended ceiling to the lower edge of the diffuser face

H₂ [mm]

Height of a ceiling diffuser, from the lower edge of the suspended ceiling to the upper edge of the spigot

H₃ [mm]

Height of a ceiling diffuser with plenum box, from the lower edge of the suspended ceiling to the upper edge of the plenum box or of the spigot

A [mm]

Position of the spigot, defined by the distance of the spigot centre line to the lower edge of the suspended ceiling

C [mm]

Length of the spigot

m [kg]

Weight

Nomenclature

L_{WA} [dB(A)]

A-weighted sound power level of air-regenerated noise

V [m³/h] and [l/s]

Volume flow rate

Δt_z [K]

Supply air to room air temperature difference, i.e. supply air temperature minus room temperature

Δp_t [Pa]

Total differential pressure

A_{eff} [m²]

Effective air discharge area

All sound power levels are based on 1 pW.

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