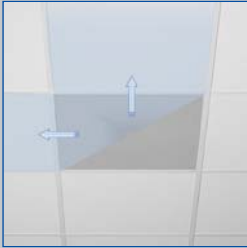
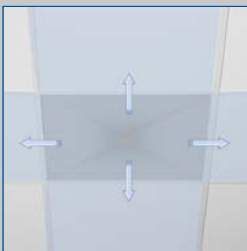




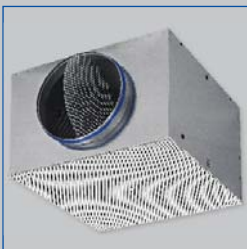
Horizontal
one-way air discharge



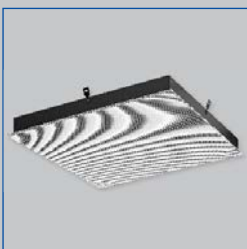
Horizontal
two-way air discharge



Horizontal
four-way air discharge



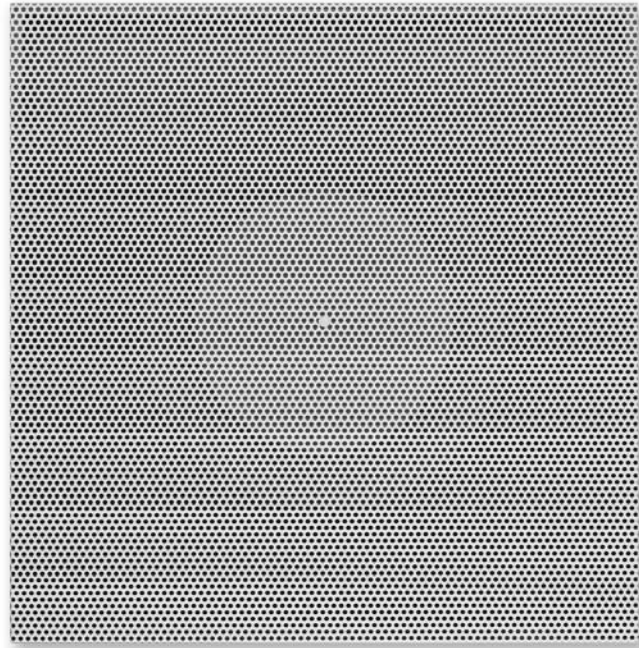
Horizontal
duct connection



Vertical duct connection

Ceiling diffusers

Type DLQL



For horizontal one-way to four-way air discharge, for comfort zones, with fixed baffle element

Square ceiling diffusers

- Nominal sizes 250, 300, 400, 500, 600
- Volume flow rate range 6 – 285 l/s or 22 – 1026 m³/h
- Square diffuser face
- Diffuser face made of galvanised sheet steel, powder-coated
- For supply and extract air
- For variable and constant volume flows
- For all types of ceiling systems
- Perforated diffuser face with special baffle element for horizontal air discharge and high induction levels

Optional equipment and accessories

- Exposed diffuser face available in RAL CLASSIC colours
- Horizontal or vertical duct connection
- Blanking plates for adjusting the discharge direction
- Plenum box with damper blade

1

Type		Page
DLQL	General information	1.4 – 78
	Order code	1.4 – 82
	Quick sizing	1.4 – 84
	Dimensions and weight	1.4 – 87
	Installation details	1.4 – 90
	Specification text	1.4 – 91
	Basic information and nomenclature	1.6 – 1

Variants

Product examples

DLQL-Z-H



DLQL-Z-V

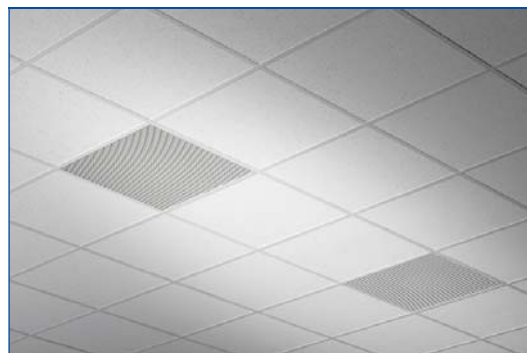


Installation examples

Installation in T-bar ceilings



**Installation in T-bar ceilings,
arrangement in a row**



Description

For detailed information on plenum boxes see Chapter K1 – 1.5.

Application

- Type DLQL ceiling diffusers are used as supply air or extract air diffusers for comfort zones
- Perfect integration with suspended perforated sheet metal ceilings
- Horizontal one-way to four-way supply air discharge for mixed flow ventilation
- High induction results in a rapid reduction of temperature differences and airflow velocities (supply air variant)
- For variable and constant volume flows
- For supply air to room air temperature differences from –10 to +10 K
- For room heights up to 4 m (lower edge of suspended ceiling)
- For all types of ceiling systems

Variants

- DLQL-P: Grid ceilings and continuous plasterboard ceilings
- DLQL-T: T-bar ceilings
- DLQL-*-Z: Supply air
- DLQL-*-A: Extract air

Connection

- H: Horizontal duct connection
- V: Vertical duct connection

Nominal sizes

Ceiling tile

- 248, 298, 398, 498, 598, 623 (intermediate sizes 249 to 622, in increments of 1 mm)

Air terminal device

- 250, 300, 400, 500, 600

Attachments

- M: Damper blade for volume flow rate balancing with horizontal connection

Accessories

- Lip seal

Useful additions

- Blanking plates

Special characteristics

- Horizontal one-way to four-way supply air discharge
- Perforated diffuser face made of galvanised sheet steel
- For all types of ceiling systems
- Horizontal or vertical duct connection

Parts and characteristics

- Perforated square diffuser face with special baffle element
- Simple installation of the diffuser face due to central fixing screw with decorative cap (variant -P)

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

- Perforated diffuser face made of galvanised sheet steel
- Casing, damper blade and plenum box made of galvanised sheet steel
- Baffle element made of acoustic fleece
- Lip seal made of rubber
- Casing powder-coated RAL 9005, jet black
- Diffuser face electrocoated RAL 9010, pure white
- P1: Powder-coated, RAL CLASSIC colour

Installation and commissioning

- Preferably for rooms with a clear height up to 4.0 m
- Installation in plasterboard, grid and T-bar ceilings
- Horizontal or vertical duct connection
- If necessary, carry out volume flow rate balancing with damper blade

Standards and guidelines

- Sound power level of the air-regenerated noise measured according to EN ISO 5135

Maintenance

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

Technical data

Nominal sizes – ceiling tile	248, 298, 398, 498, 593, 598, 618, 623 mm
Nominal sizes – diffuser	250, 300, 400, 500, 600 mm
Minimum volume flow rate	6 – 145 l/s or 22 – 522 m ³ /h
Maximum volume flow rate, with $L_{WA} \cong 50 \text{ dB(A)}$	275 – 285 l/s or 990 – 1026 m ³ /h
Supply air to room air temperature difference	–10 to +10 K

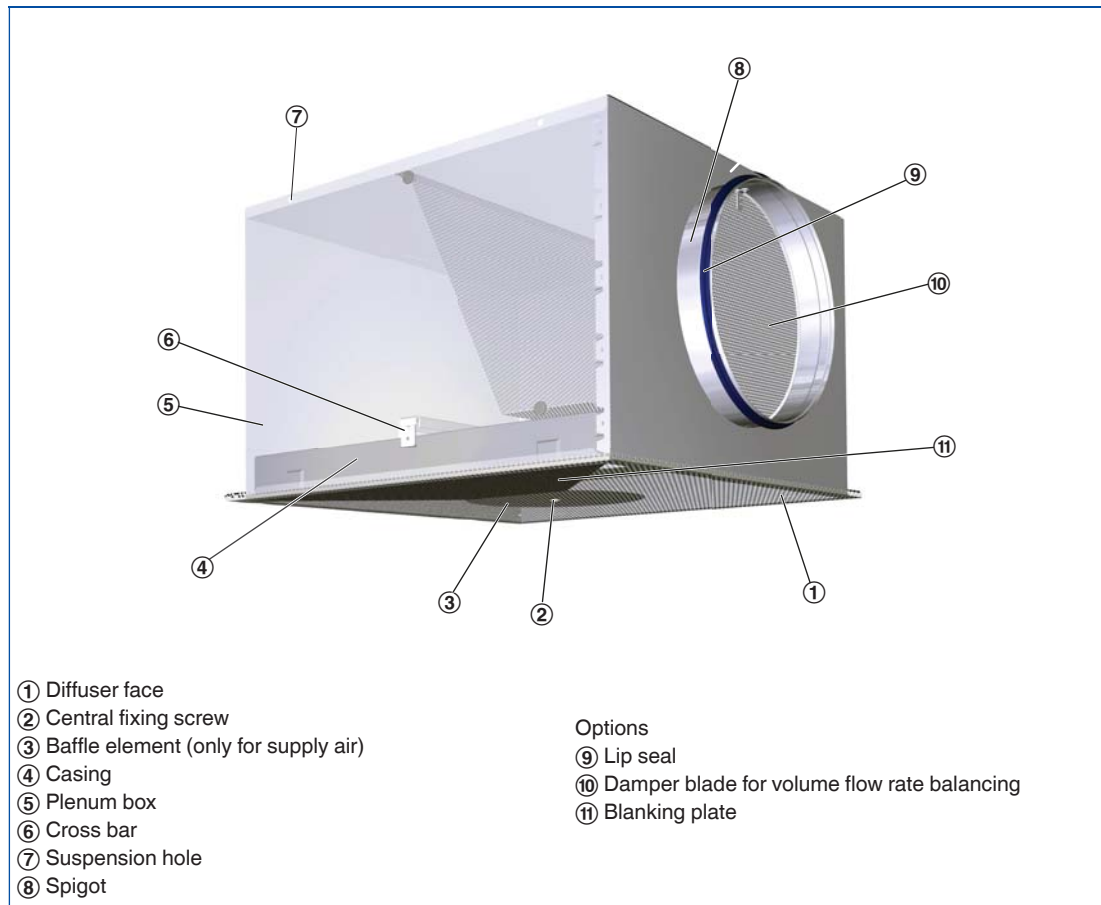
Function

Functional description

Ceiling diffusers direct the air from air conditioning systems into the room. The resulting airflow induces high levels of room air, thereby rapidly reducing the airflow velocity and the temperature difference between supply air and room air. Ceiling diffusers allow for large volume flow rates. The result is a mixed flow ventilation in comfort zones, with good overall room ventilation, creating only very little turbulence in the occupied zone.

Type DLQL ceiling diffusers are fitted with a special baffle element that creates a horizontal air discharge with high induction levels. Horizontal air discharge is one-way to four-way. The supply air to room air temperature difference may range from -10 to $+10$ K. To give rooms an aesthetic, uniform look, Type DLQL diffusers may also be used for extract air.

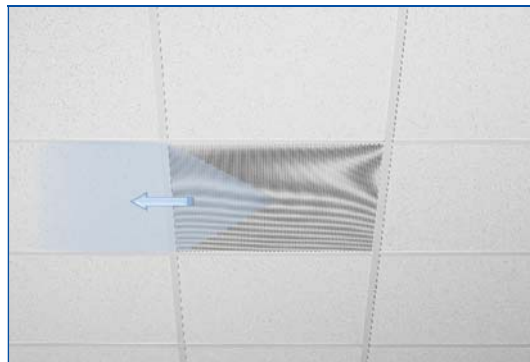
Schematic illustration of the DLQL for supply air with one blanking plate



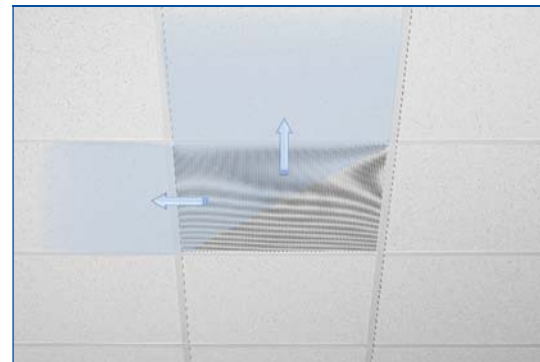
Air patterns

Horizontal air discharge

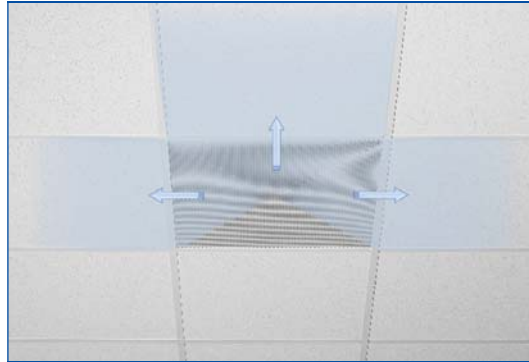
One-way air discharge with three blanking plates



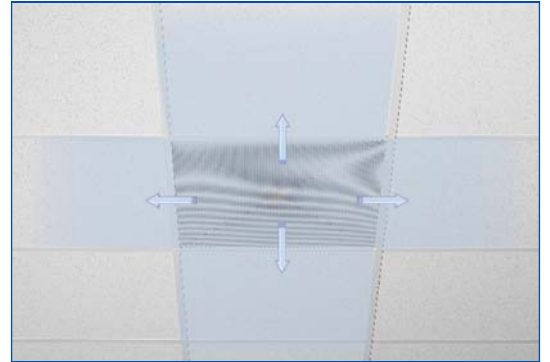
Two-way air discharge with two blanking plates



Three-way air discharge
with one blanking plate



Four-way air discharge
without blanking plate



Order code

DLQL

DLQL - T - Z - H - M - L / 600 x 593 / P1 - RAL ...



1 Type

DLQL Ceiling diffuser

2 Ceiling system

P Grid or plasterboard ceiling
T T-bar ceiling

3 System

Z Supply air
A Extract air

4 Connection

H Horizontal
V Vertical

5 Damper blade for volume flow rate balancing

No entry: none
M With (only for connection type H)

6 Accessories

No entry: none
L With lip seal

7 Nominal size [mm]

250
300
400
500
600

8 Size of diffuser face plate [mm]

DLQL-P
No entry: size of diffuser face plate = nominal size – 2 mm
598 For grid size 600
623 For grid size 625
... Other dimensions, 623 mm max.
DLQL-T
593 For T-bar ceilings, grid size 600
618 For T-bar ceilings, grid size 625

9 Exposed surface

No entry: powder-coated RAL 9010, pure white
P1 Powder-coated, specify RAL CLASSIC colour
Gloss level
RAL 9010 50 %
RAL 9006 30 %
All other RAL colours 70 %

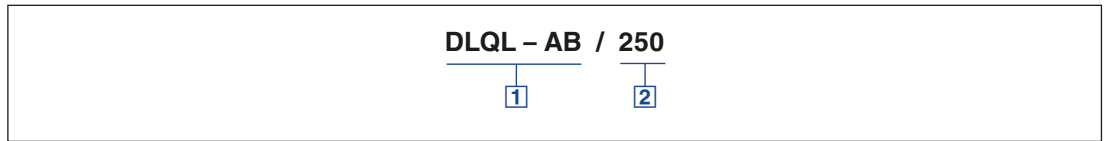
Order example

DLQL-T-Z-H-M-L/600x593

Ceiling system	T-bar ceiling
System	Supply air
Connection	Horizontal
Damper blade for volume flow rate balancing	With
Accessories	With lip seal
Nominal size	600
Size of diffuser face plate	593
Exposed surface	RAL 9010, pure white, gloss level 50 %

Useful additions

DLQL-AB



1 Type

DLQL-AB Blanking plate for ceiling diffuser DLQL

2 Nominal size [mm]

250

300

400

500

600

DLQL^{-*}-Z-H one-way air discharge (supply air)

Quick sizing tables provide a good overview of the volume flow rates and corresponding sound power levels and differential pressures.

The maximum volume flow rates apply to a sound power level of approx. 50 dB (A) with damper blade position 0°.

Exact values for all parameters can be determined with our Easy Product Finder design programme.

Quick sizing – sound power level and total differential pressure

Nominal size	\dot{V}		Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
250	6	22	3	<15	3	<15	6	<15
	15	54	20	22	22	22	40	22
	20	72	35	31	39	31	70	31
	30	108	79	49	87	49	158	49
300	10	36	5	<15	6	<15	11	<15
	20	72	22	30	24	30	43	31
	30	108	49	42	54	42	98	43
	40	144	87	52	95	52	173	53
400	15	54	5	<15	5	<15	9	<15
	30	108	19	28	21	29	38	30
	45	162	43	42	47	43	85	44
	55	198	64	49	70	50	127	51
500	25	90	7	<15	8	<15	14	<15
	40	144	17	28	19	29	35	29
	55	198	33	42	36	43	66	43
	70	252	54	50	59	51	107	51
600	35	126	5	<15	6	<15	11	<15
	60	216	16	28	17	28	32	28
	85	306	32	41	35	41	63	41
	110	396	53	50	58	50	106	50

DLQL^{-*}-Z-H two-way air discharge (supply air)

Quick sizing – sound power level and total differential pressure

Nominal size	\dot{V}		Damper blade position					
			0°		45°		90°	
			Δp_t	L_{WA}	Δp_t	L_{WA}	Δp_t	L_{WA}
	l/s	m ³ /h	Pa	dB(A)	Pa	dB(A)	Pa	dB(A)
250	15	54	8	17	9	17	16	17
	25	90	22	30	24	30	44	30
	35	126	43	39	48	39	87	39
	50	180	89	51	97	51	177	51
300	20	72	9	18	10	18	18	19
	30	108	20	29	22	29	40	30
	40	144	36	38	39	38	72	39
	55	198	68	50	75	50	136	51
400	35	126	10	18	11	19	20	20
	50	180	20	30	23	31	41	32
	70	252	40	42	44	43	80	44
	85	306	59	49	65	50	118	51
500	50	180	10	20	11	21	20	21
	70	252	20	32	22	33	39	33
	95	342	36	43	40	44	72	44
	115	414	53	50	58	51	106	51
600	75	270	9	16	10	16	19	16
	105	378	19	31	20	31	37	31
	140	504	33	42	36	42	66	42
	175	630	52	50	57	50	103	50

DLQL*-Z-H
three-way air discharge
(supply air)

Quick sizing – sound power level and total differential pressure

Nominal size	\dot{V}		Damper blade position					
			0°		45°		90°	
	l/s	m ³ /h	Δp_t Pa	L _{WA} dB(A)	Δp_t Pa	L _{WA} dB(A)	Δp_t Pa	L _{WA} dB(A)
250	20	72	9	20	10	20	18	20
	35	126	27	34	30	34	54	34
	50	180	55	45	61	45	110	45
	60	216	80	52	87	52	159	52
300	30	108	13	23	14	23	26	24
	40	144	23	32	25	32	46	33
	50	180	36	40	40	40	72	41
	65	234	61	49	67	49	122	50
400	50	180	12	21	13	22	24	23
	70	252	23	32	26	33	47	34
	90	324	39	42	43	43	77	44
	110	396	58	50	64	51	115	52
500	75	270	13	22	14	23	26	23
	100	360	23	35	25	36	46	36
	125	450	36	43	39	44	72	44
	150	540	52	50	57	51	103	51
600	110	396	12	19	13	19	23	19
	150	540	22	33	24	33	43	33
	190	684	35	42	38	42	69	42
	235	846	53	50	58	50	106	50

DLQL*-Z-H
four-way air discharge
(supply air)

Quick sizing – sound power level and total differential pressure

Nominal size	\dot{V}		Damper blade position					
			0°		45°		90°	
	l/s	m ³ /h	Δp_t Pa	L _{WA} dB(A)	Δp_t Pa	L _{WA} dB(A)	Δp_t Pa	L _{WA} dB(A)
250	25	90	10	23	11	22	17	22
	35	126	19	30	21	30	34	30
	50	180	39	40	43	41	69	40
	65	234	66	49	72	49	116	49
300	35	126	14	23	16	24	28	25
	45	162	23	31	26	32	46	32
	60	216	41	41	46	41	81	41
	75	270	64	50	72	49	127	49
400	65	234	15	23	19	25	35	26
	75	270	20	28	25	30	47	31
	95	342	32	37	40	38	75	39
	135	486	64	50	80	51	151	51
500	100	360	18	27	20	27	37	28
	130	468	30	38	33	37	62	38
	160	576	46	46	50	45	94	46
	180	648	58	50	63	50	118	50
600	145	522	15	25	17	25	30	25
	185	666	24	34	28	34	49	34
	230	828	38	43	44	43	75	43
	275	990	54	50	63	50	107	49

1

The maximum volume flow rates apply to a sound power level of approx. 50 dB (A).

DLQL-*-Z-V one-way air discharge (supply air)

Quick sizing – sound power level and total differential pressure

Nominal size	\dot{V}		Δp_t Pa	L_{WA} dB(A)
	l/s	m ³ /h		
250	6	22	5	<15
	15	54	34	34
	20	72	60	43
	25	90	94	50
300	10	36	6	15
	20	72	24	33
	30	108	53	46
	35	126	72	51
400	15	54	5	<15
	30	108	20	32
	45	162	45	45
	50	180	56	49
500	25	90	6	19
	40	144	15	30
	55	198	28	40
	75	270	52	51
600	35	126	5	19
	60	216	15	32
	85	306	30	43
	100	360	42	50

DLQL-*-Z-V two-way air discharge (supply air)

Quick sizing – sound power level and total differential pressure

Nominal size	\dot{V}		Δp_t Pa	L_{WA} dB(A)
	l/s	m ³ /h		
250	15	54	10	20
	25	90	29	35
	35	126	56	45
	40	144	73	50
300	20	72	8	16
	30	108	18	31
	40	144	32	41
	50	180	50	49
400	35	126	9	18
	50	180	18	32
	70	252	35	44
	80	288	45	49
500	50	180	8	20
	70	252	15	33
	95	342	28	44
	115	414	41	51
600	75	270	8	20
	105	378	15	33
	130	468	24	41
	165	594	38	50

DLQL-*-Z-V three-way air discharge (supply air)

Quick sizing – sound power level and total differential pressure

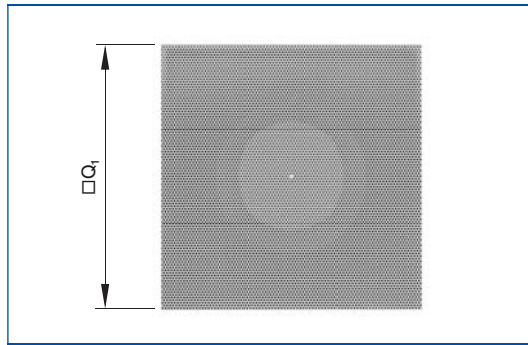
Nominal size	\dot{V}		Δp_t Pa	L_{WA} dB(A)
	l/s	m ³ /h		
250	20	72	9	19
	35	126	27	36
	50	180	55	47
	60	216	80	53
300	30	108	11	20
	40	144	19	31
	50	180	29	40
	65	234	50	49
400	50	180	9	21
	70	252	17	33
	90	324	29	43
	110	396	43	50
500	75	270	9	20
	100	360	16	35
	125	450	25	44
	150	540	36	50
600	110	396	8	21
	150	540	15	33
	190	684	24	42
	230	828	35	51

DLQL-*-Z-V four-way air discharge (supply air)

Quick sizing – sound power level and total differential pressure

Nominal size	\dot{V}		Δp_t Pa	L_{WA} dB(A)
	l/s	m ³ /h		
250	25	90	9	18
	35	126	17	29
	50	180	35	41
	65	234	59	50
300	35	126	9	<15
	50	180	17	30
	65	234	29	41
	85	306	50	51
400	65	234	9	19
	85	306	16	32
	110	396	27	42
	135	486	40	49
500	100	360	11	26
	125	450	17	37
	150	540	25	45
	170	612	32	50
600	145	522	8	20
	190	684	14	33
	235	846	22	42
	285	1026	32	50

Diffuser face DLQL



Dimensions

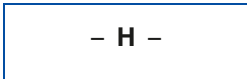
Nominal size	DLQL-P	DLQL-T	A _{eff}
	□Q ₁	□Q ₁	
	mm		m ²
250	248	593	0.0100
300	298	593	0.0145
400	398	593	0.0258
500	498	593	0.0403
600	598	593	0.0580

A_{eff} applies to four-way air discharge

DLQL-...-H



DLQL-Z-H



Order code detail

Variant

- Ceiling diffuser with square diffuser face
- With plenum box for horizontal duct connection

Nominal sizes

- Ceiling tile
- 248, 298, 398, 498, 598, 623
(intermediate sizes 249 to 622,
in increments of 1 mm)

Air terminal device

- 250, 300, 400, 500, 600

Parts and characteristics

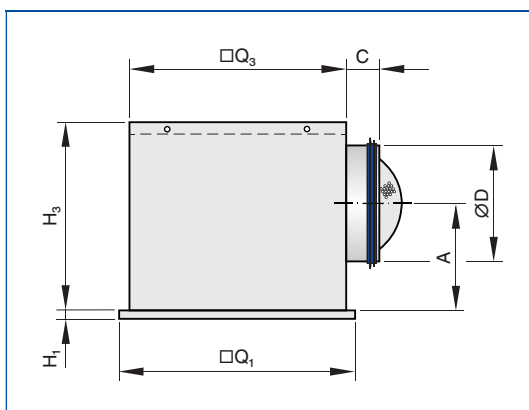
- Perforated square diffuser face with special baffle element
- Simple installation of the diffuser face due to central fixing screw with decorative cap (variant -P)

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)

1

Square diffuser face with plenum box
for horizontal duct connection



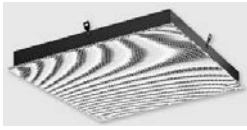
Dimensions [mm] and weight [kg]

Nominal size	DLQL-P	DLQL-T	ØD	H ₁	□Q ₃	H ₃	A	C	Plenum box	m	
	□Q ₁										kg
	mm										
250	248	593	158	8	216	250	139	50	AK-Uni-008	2.8	
300	298	593	158	8	290	250	139	50	AK-Uni-001	4.0	
400	398	593	198	8	372	295	164	50	AK-Uni-002	6.5	
500	498	593	248	8	476	345	189	48	AK-Uni-010	9.6	
600	598	593	313	8	590	410	222	50	AK-Uni-012	13.8	

DLQL-T: □Q₁ = 618 is available for T-bar ceilings with grid size 625

DLQL-P : □Q₁ to 623 mm available

DLQL...-V



DLQL-Z-V

- V -

Order code detail

Variant

- Ceiling diffuser with square diffuser face
- With plenum box for vertical duct connection

Nominal sizes

Ceiling tile

- 248, 298, 398, 498, 598, 623
- (intermediate sizes 249 to 622, in increments of 1 mm)

Air terminal device

- 250, 300, 400, 500, 600

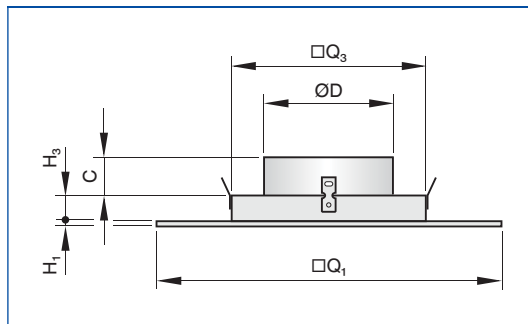
Parts and characteristics

- Square diffuser face
- Plenum box for vertical duct connection

Construction features

- Spigot suitable for circular ducts to EN 1506 or EN 13180

DLQL...-V



Dimensions [mm] and weight [kg]

Nominal size	DLQL-P	DLQL-T	ØD	H ₁	□Q ₃	H ₃	C	m
	□Q ₁							
mm								
kg								
250	248	593	123	8	198	20	50	0.9
300	298	593	158	8	272	26	50	1.2
400	398	593	198	8	354	36	50	2.0
500	498	593	248	8	458	47	50	3.1
600	598	593	313	8	572	56	50	4.4

DLQL-T: □Q₁ = 618 is available for T-bar ceilings with grid size 625

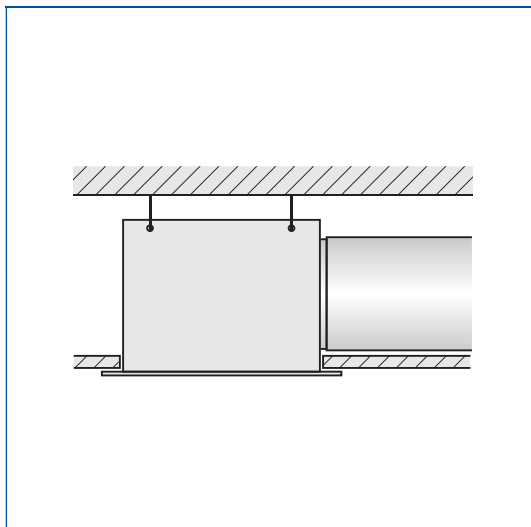
DLQL-P : □Q₁ to 623 mm available

Installation types

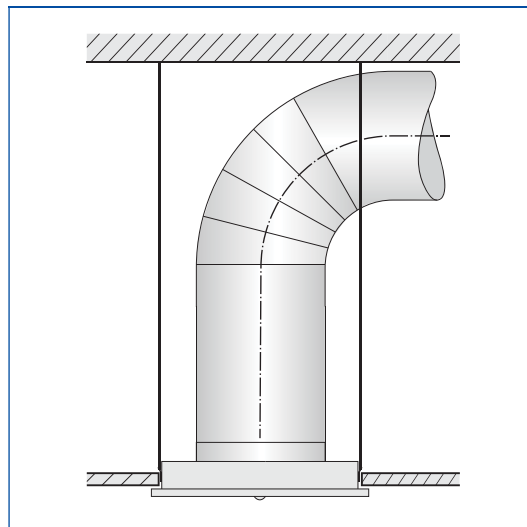
For more installation details see Chapter K1 – 1.6.

These are only schematic diagrams to illustrate installation details.

Flush ceiling installation with square plenum box

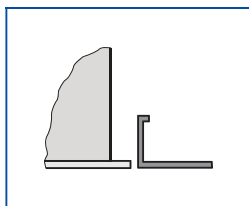


Flush ceiling installation with vertical connection

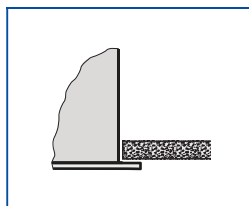


Ceiling systems

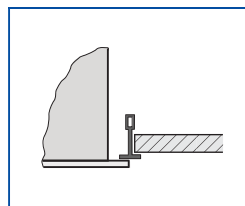
Grid ceiling



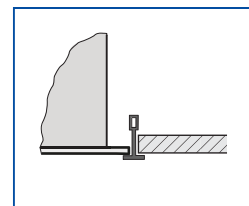
Continuous ceiling



T-bar ceiling



T-bar ceiling (diffuser face rests on T-bars)



Standard text

This specification text describes the general properties of the product. Texts for variants can be generated with our Easy Product Finder design programme.

Ceiling diffusers with perforated square diffuser face. Supply air and extract air variants for comfort zones. Diffuser face with baffle element for horizontal one-way to four-way supply air discharge. For flush installation into all kinds of suspended grid or continuous plasterboard ceilings. Ready-to-install component which consists of the diffuser face with baffle element (only for supply air), and either a casing with top entry spigot or a plenum box with side entry spigot. Perforated diffuser face suitable for central screw fixing (variant -P). Spigot suitable for ducts to EN 1506 or EN 13180. Sound power level of the air-regenerated noise measured according to EN ISO 5135.

Special characteristics

- Horizontal one-way to four-way supply air discharge
- Perforated diffuser face made of galvanised sheet steel
- For all types of ceiling systems
- Horizontal or vertical duct connection

Materials and surfaces

- Perforated diffuser face made of galvanised sheet steel
- Casing, damper blade and plenum box made of galvanised sheet steel
- Baffle element made of acoustic fleece
- Lip seal made of rubber
- Casing powder-coated RAL 9005, jet black
- Diffuser face electrocoated RAL 9010, pure white
- P1: Powder-coated, RAL CLASSIC colour

Technical data

- Nominal sizes – ceiling tile: 248, 298, 398, 498, 593, 598, 618, 623 mm
- Nominal sizes – diffuser: 250, 300, 400, 500, 600 mm
- Minimum volume flow rate: 6 – 145 l/s or 22 – 522 m³/h
- Maximum volume flow rate, with $L_{WA} \cong 50$ dB(A): 275 – 285 l/s or 990 – 1026 m³/h
- Supply air to room air temperature difference: -10 to +10 K

Sizing data

- \dot{V} _____ [m³/h]
- Δp_t _____ [Pa]
- L_{WA} Air-regenerated noise _____ [dB(A)]

Order options

1 Type

DLQL Ceiling diffuser

2 Ceiling system

- P** Grid or plasterboard ceiling
- T** T-bar ceiling

3 System

- Z** Supply air
- A** Extract air

4 Connection

- H** Horizontal
- V** Vertical

5 Damper blade for volume flow rate balancing

- No entry: none
- M** With (only for connection type H)

6 Accessories

- No entry: none
- L** With lip seal

7 Nominal size [mm]

- 250**
- 300**
- 400**
- 500**
- 600**

8 Size of diffuser face plate [mm]

- DLQL-P**
No entry: size of diffuser face plate = nominal size – 2 mm
- 598** For grid size 600
- 623** For grid size 625
- ... Other dimensions, 623 mm max.
DLQL-T
- 593** For T-bar ceilings, grid size 600
- 618** For T-bar ceilings, grid size 625

9 Exposed surface

- No entry: powder-coated RAL 9010, pure white
- P1** Powder-coated, specify RAL CLASSIC colour
Gloss level
RAL 9010 50 %
RAL 9006 30 %
All other RAL colours 70 %

1

Useful additions

Order options

1 Type

DLQL-AB Blanking plate for ceiling diffuser DLQL

2 Nominal size [mm]

- 250
- 300
- 400
- 500
- 600

Ceiling diffusers

Basic information and nomenclature



- Product selection
- Principal dimensions
- Nomenclature
- Sizing and sizing example
- Installation information
- Commissioning

Ceiling diffusers

Basic information and nomenclature

Product selection

	Ceiling swirl diffusers								
	AIRNAMIC	VDW	TDV-SilentAIR	RFD	FD	TDF-SilentAIR	VD	VDL	FDE
Diffuser face style									
Circular	●	●	●	●	●	●		●	
Square	●						●		●
Diffuser face									
Circular	●	●	●	●	●	●		●	
Square	●	●	●	●	●	●	●		●
Galvanised sheet steel		●	●	●	●	●		●	●
Aluminium				●			●		
Plastic	●								
Air control blades									
Fixed	●			●	●	●			●
Adjustable		●	●				●	●	
Plastic, black and white		●	●						
Duct connection									
Horizontal	●	●	●	●	●	●	●	●	●
Vertical		●	●	●	●	●	●	●	
FLEXTRO	●	●	●		●	●			
Attachments									
Damper blade	●	●	●	●	●	●			●
Pressure tap		●	●	●	●	●			●
Actuator							●	●	
Accessories									
Lip seal	●	●	●	●	●	●			●
Protective cage							●	●	
Extended border							●	●	
Nominal sizes									
Circular diffuser face	400, 600	300, 400, 500, 600, 625	300, 400, 500, 600, 625		300, 400, 500, 600, 625	300, 400, 500, 600, 625			
Square diffuser face	300, 600, 625	300, 400, 500, 600, 625, 825					425, 600, 775, 1050		600, 625
Spigot*				125, 160, 200, 250, 315, 400				315, 400, 630, 800	250, 315
Technical data									
Volume flow rate range [l/s]	13 – 385	7 – 470	11 – 315	4 – 330	9 – 235	10 – 295	95 – 1490	65 – 1080	51 – 365
Volume flow rate range [m³/h]	47 – 1386	25 – 1692	40 – 1134	14 – 1188	31 – 846	36 – 1026	342 – 5364	234 – 3888	184 – 1314
Supply air to room air temperature difference	-12 – +10 K						-12 – +15 K		-12 – +10 K
●	Possible								
	Not possible								

*Nominal diameter

Ceiling diffusers

Basic information and nomenclature

Product selection

1

	Design ceiling swirl diffusers		Ceiling swirl diffusers with perforated face plate
	XARTO	ADD	DCS
Diffuser face style			
Circular	●	●	●
Square	●		●
Diffuser face			
Circular	●	●	
Square	●	●	●
Galvanised sheet steel	●	●	●
Aluminium			
Plastic			
Air control blades			
Fixed	●	●	●
Adjustable			
Plastic, black and white			
Duct connection			
Horizontal	●	●	●
Vertical		●	●
FLEXTRO			
Attachments			
Damper blade	●	●	
Pressure tap		●	
Actuator			
Accessories			
Lip seal	●	●	
Protective cage			
Extended border			
Nominal sizes			
Circular diffuser face	600	250, 300, 450, 500, 600	
Square diffuser face	600, 625	250, 300, 450, 500, 600, 625	600, 625
Spigot*		125, 160, 200, 250, 315	125, 160, 200, 250, 315, 400
Technical data			
Volume flow rate range [l/s]	31 – 265	20 – 465	4 – 260
Volume flow rate range [m ³ /h]	110 – 954	72 – 1674	16 – 936
Supply air to room air temperature difference	-12 – +10 K		
●	Possible		
	Not possible		

*Nominal diameter

Ceiling diffusers

Basic information and nomenclature

Product selection

1

	Ceiling diffusers						
	VDR	ADLQ	DLQ	ADLR	DLQL	DLQ-AK	DLK-Fb
Diffuser face style							
Circular	●			●			
Square		●	●		●	●	●
Diffuser face							
Circular	●			●			
Square		●	●	●	●	●	●
Galvanised sheet steel			●		●	●	●
Aluminium	●	●		●			
Plastic							
Air control blades							
Fixed		●	●	●	●	●	●
Adjustable	●						
Plastic, black and white							
Duct connection							
Horizontal	●	●	●	●	●	●	●
Vertical	●			●	●		
FLEXTRO		●					
Attachments							
Damper blade		●	●	●	●		
Pressure tap		●	●	●			
Actuator	●						
Accessories							
Lip seal		●	●	●	●		
Protective cage							
Extended border							
Nominal sizes							
Circular diffuser face	630, 800			244, 300, 356, 412, 468, 542, 598, 654			
Square diffuser face		250, 300, 400, 500, 600, 625	250, 300, 400, 500, 600, 625	600 625	250, 300, 400, 500, 600	300, 400, 500, 600, 625	600, 625
Spigot*	315, 400, 630, 800						
Technical data							
Volume flow rate range [l/s]	175 – 1495	20 – 665	20 – 700	20 – 650	6 – 285	40 – 565	220 – 460
Volume flow rate range [m³/h]	630 – 5382	72 – 2394	72 – 2520	72 – 2340	22 – 1026	144 – 2034	792 – 1656
Supply air to room air temperature difference	-10 to +15 K	-10 to +10 K					
●	Possible						
	Not possible						

*Nominal diameter

Ceiling diffusers

Basic information and nomenclature

Principal dimensions

 $\varnothing D$ [mm]

Outside diameter of the spigot

 $\varnothing D_1$ [mm]

Outer diameter of a circular diffuser face

 $\varnothing D_2$ [mm]

Diameter of a circular diffuser face style

 $\varnothing D_3$ [mm]

Diameter of a circular plenum box

 $\square Q_1$ [mm]

Outer diameter of a square diffuser face

 $\square Q_2$ [mm]

Dimensions of a square diffuser face style

 $\square Q_3$ [mm]

Dimensions of a square plenum box

 H_1 [mm]

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

 H_2 [mm]

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

 H_3 [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

 \dot{V} [m³/h] and [l/s]

Volume flow rate

 Δt_z [K]

Supply air temperature difference

 Δp_t [Pa]

Total differential pressure

 A_{eff} [m²]

Effective air discharge area

All sound power levels are based on 1 pW.

Ceiling diffusers

Basic information and nomenclature

1 Sizing with the help of this catalogue

This catalogue provides convenient quick sizing tables for ceiling diffusers. The tables give supply air volume flow rates for all nominal sizes. The maximum volume flow rates are for an open damper blade. A smaller opening of the damper blade results in higher sound power levels and a higher total differential pressure. The tables show values for damper blade positions 45° and 90°.

Sizing data for other volume flow rates and damper blade positions can be determined quickly and precisely using the Easy Product Finder design programme.

Sizing example

Given data

$\dot{V} = 300 \text{ l/s}$ (1280 m³/h)
 Square ceiling diffuser, steel,
 with fixed air control blades
 Maximum sound power level 40 dB(A)
 with damper blade position 45°
 Four-way air discharge

Quick sizing

Type DLQ
 Nominal sizes: 600, 625
 Selected: DLQ/600

Easy Product Finder



The Easy Product Finder allows you to size products using your project-specific data.

You will find the Easy Product Finder on our website.

The screenshot shows the 'Easy Product Finder' software interface. The main window displays the following information:

- Project Structure:** Projekt 1
- Product Selection:** DLQ AK // 600 // 0 // 0 // 0 // RAL 9010
- Input Parameters:**
 - Volumenstrom [m³/s]: 1.280 (792 - 2795)
 - Zwischenräume/Abstände [m]:
 - a: 6.00 (x2,0)
 - b₁: 1.20 (1,0 - 2,0)
 - x: 3.00 (x1,2)
 - l = b₁ + x = 4,2
 - Temperaturunterschied [K]:
 - ΔT_z: -8,0 (-12,0 - 4,4)
- Technical Results:**
 - v₁₀: 0,15 m/s
 - ΔP₁₀: -1,3 K
 - v₁: 0,32 m/s
 - ΔP₁: -1,3 K
- Acoustic Results (l² = Kompletz geöffnet):**

Zu/R	dB(A)	Pa
dot	34	
LWA	38	
LWNC	32	

Ceiling diffusers

Basic information and nomenclature

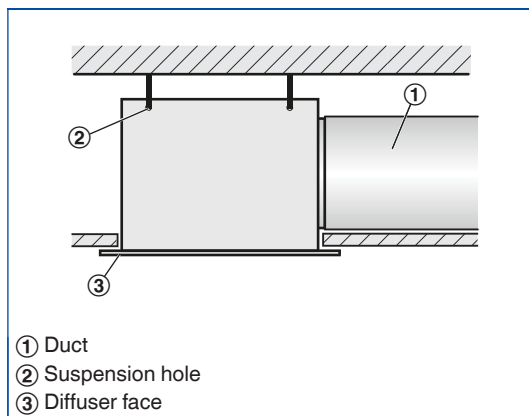
Description

Installation information

- Installation and making connections to be performed by others
- The optimum aerodynamic function is only achieved with flush ceiling installation
- The diffuser face is fixed to the plenum box cross bar using the central fixing screw
- Central fixing screw is concealed by a decorative cap

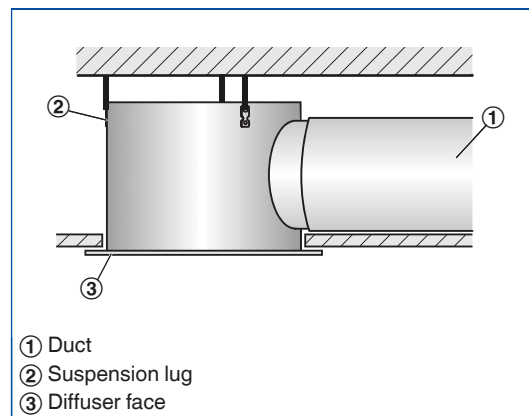
Installation types

Flush ceiling installation with square plenum box



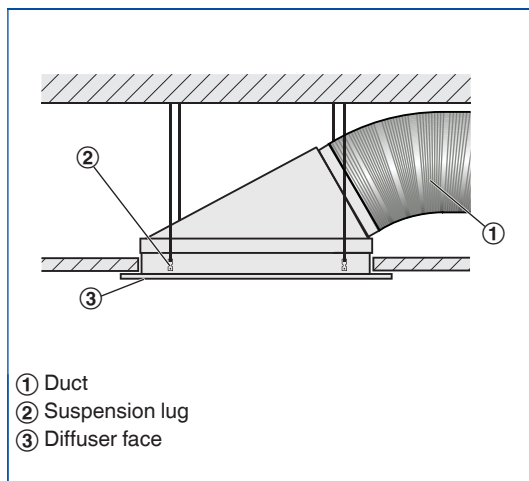
- Horizontal duct connection
- Four suspension holes
- Suspension with cords, wires or hangers, to be provided by others

Flush ceiling installation with circular plenum box



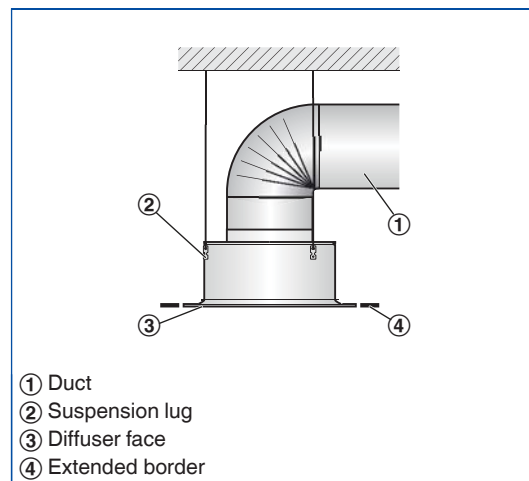
- Horizontal duct connection
- Three suspension lugs
- Suspension with cords, wires or hangers, to be provided by others

Flush ceiling installation with plenum box FLEXTRO



- Spigot at 30° angle
- Four suspension lugs
- Suspension with cords, wires or hangers, to be provided by others

Freely suspended installation



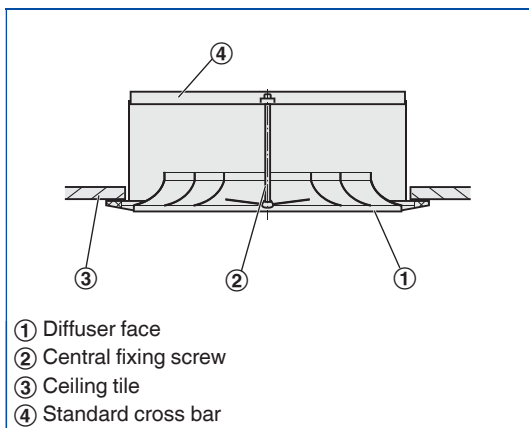
- Vertical duct connection
- Three suspension lugs
- Suspension with cords, wires or hangers, to be provided by others

Ceiling diffusers

Basic information and nomenclature

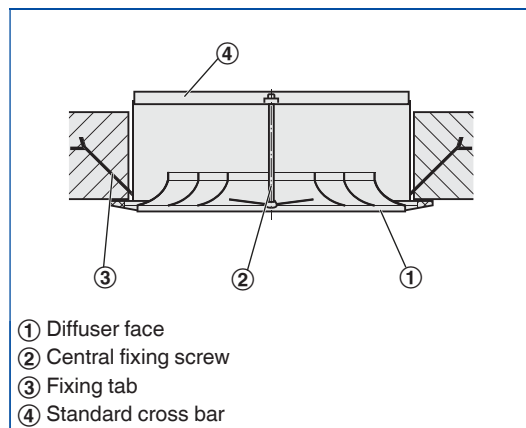
1 Installation without plenum box

Flush ceiling installation with standard cross bar G1, screw-fixed to ceiling



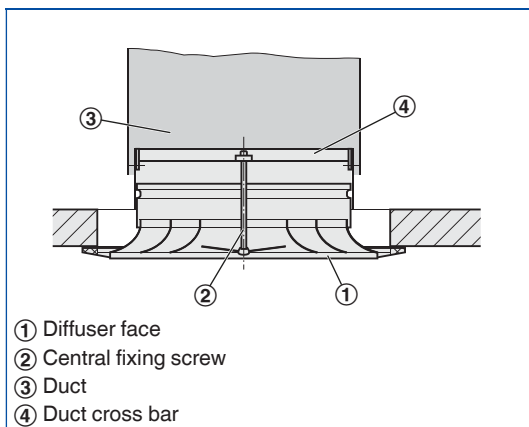
- No spigot
- Fixing of the standard cross bar to the ceiling tile is to be performed by others

Flush ceiling installation with standard cross bar G1, with fixing tabs mortared in



- No spigot
- The standard cross bar has to be mortared into the ceiling by others

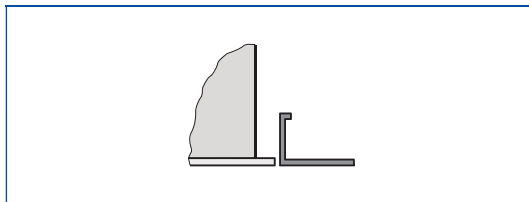
Flush ceiling installation with duct cross bar E1



- Vertical duct connection
- Fixing of the duct cross bar to the duct is to be performed by others

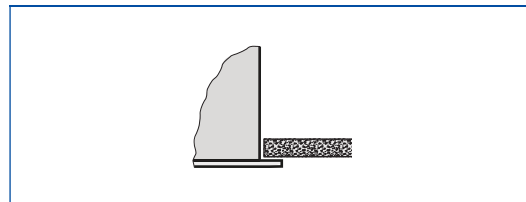
Ceiling systems

Installation into grid ceilings



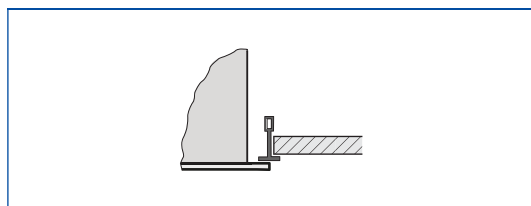
- Fix the plenum box to the ceiling
- The ceiling tile of the grid ceiling is independent of the ceiling diffuser
- Fix the diffuser face after the ceiling has been completed

Installation in continuous ceilings



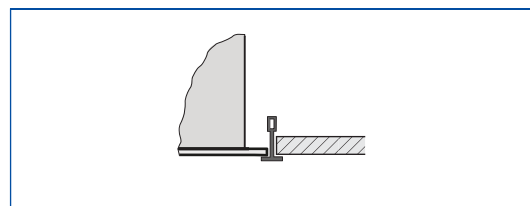
- Fix plenum box (including diffuser face, if necessary) to the ceiling
- Adjust plasterboard ceiling tile as required
- If necessary, fix the diffuser face after the ceiling has been completed

Installation in T-bar ceilings



- Fix the plenum box to the ceiling
- The T-bar ceiling is independent of the ceiling diffuser
- Fix the diffuser face below the T-bars after the ceiling has been completed

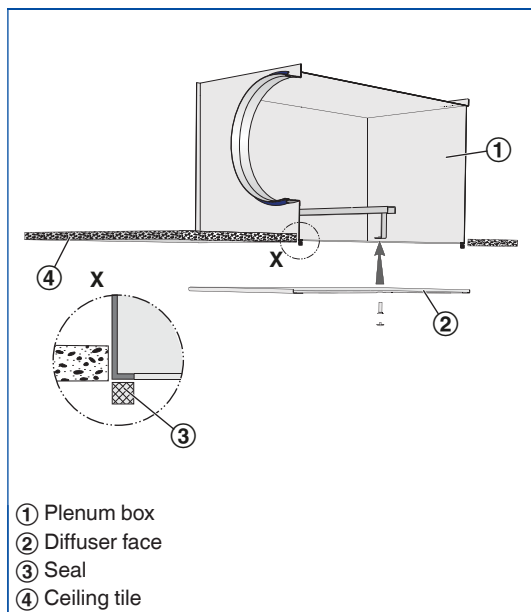
Installation in T-bar ceilings, diffuser face rests on T-bars



- Fix the plenum box to the ceiling, if necessary
- The diffuser rests on the T-bars

Diffuser face sealing and fixing

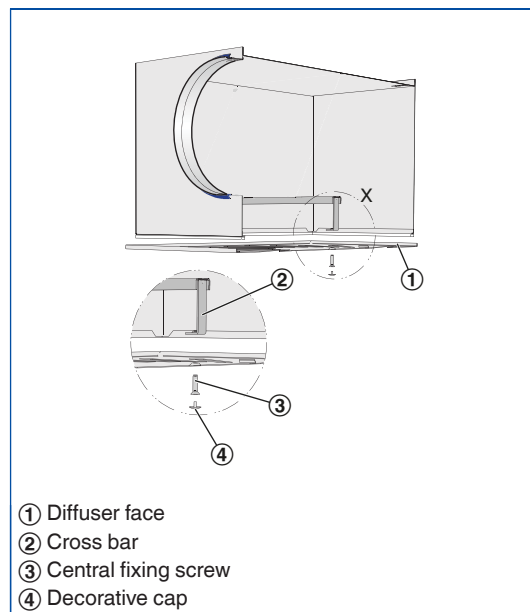
Diffuser face – sealing



- ① Plenum box
- ② Diffuser face
- ③ Seal
- ④ Ceiling tile

- The self-adhesive sealing tape (supplied) has to be applied to the return edges of the plenum box by others

Diffuser face – central screw fixing



- ① Diffuser face
- ② Cross bar
- ③ Central fixing screw
- ④ Decorative cap

- Using the central fixing screw, fix the diffuser face to the cross bar of the plenum box
- Attach the decorative cap

Commissioning

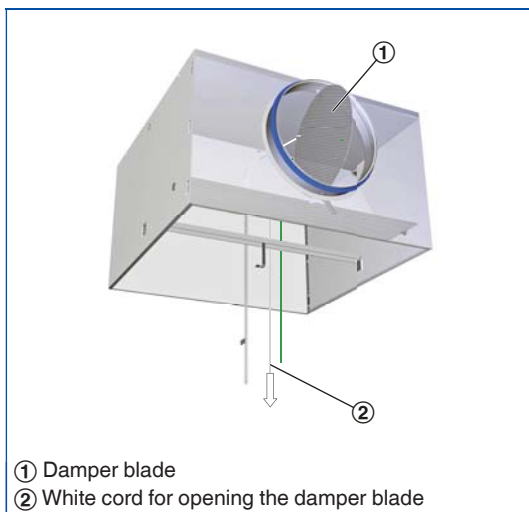
1

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.

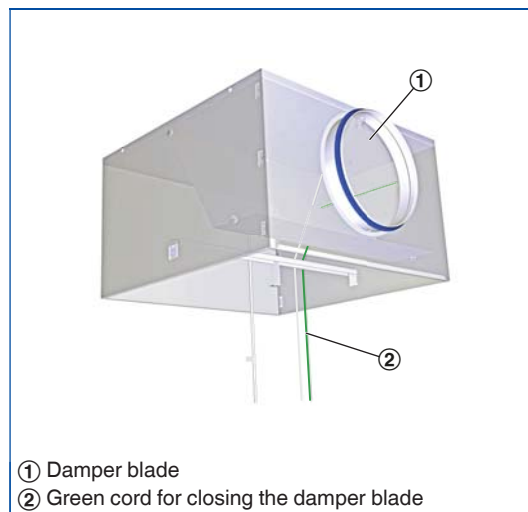
- AIRNAMIC, XARTO, FLEXTRO:
The diffuser face can be removed to access the damper blade; the damper blade can then be set in 15° intervals between 0 and 90°
- Ceiling diffusers with universal plenum box and damper blade (variant -M):
The diffuser face can be removed to access the damper blade; the damper 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).

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



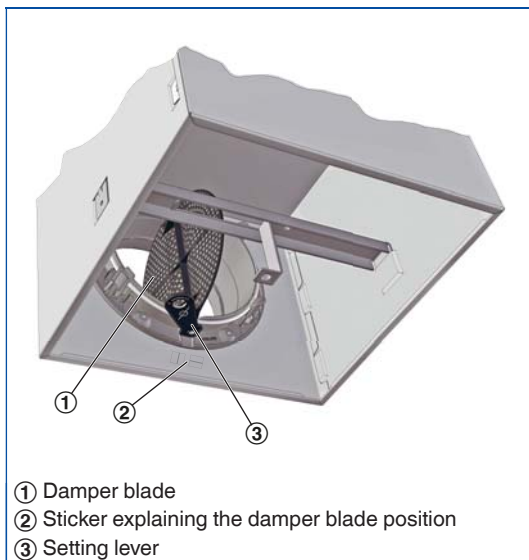
Open, 0°

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



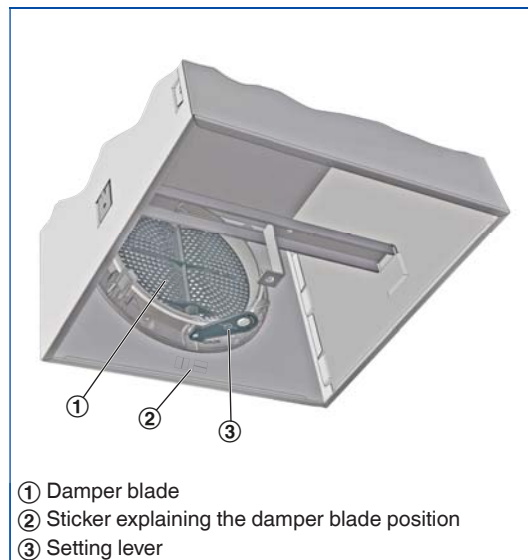
Closed, 90°

AIRNAMIC, XARTO, FLEXTRO Volume flow rate balancing



Open, 0°

AIRNAMIC, XARTO, FLEXTRO Volume flow rate balancing



Closed, 90°

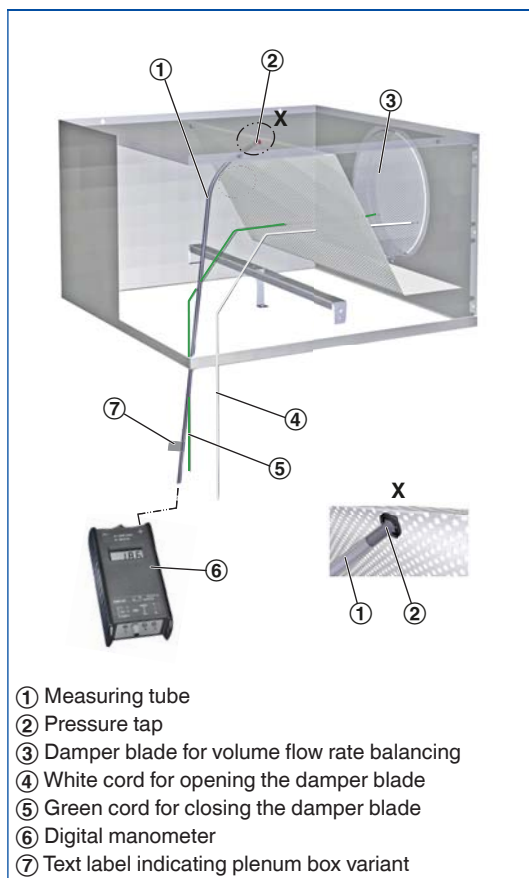
Volume flow rate measurement

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 measurement



For K values for the AK-Uni plenum boxes refer to Chapter K1 – 1.5.

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

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