



Blade profiling advantageous to air flow pattern Minimal installation heights due to special plenum boxes



Description, summary of types

LFQ air diffuser for supply air and exhaust air. Slot type, fixed air deflection blades with an engaged profile in a progressive gradient towards the centre without disturbances of air jet by bended edges. This results in high volume flow rates at low sound power levels and an application for room cooling with a temperature difference of up to -12 K between room air and supply air is possible. Made of galvanised sheet steel, powder coating in colour RAL 9010 (white) smooth gloss with a gloss level of 80 to 90% or in another RAL colour or with galvanised surface.

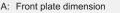
The **plenum boxes**, made of galvanised sheet steel, are optimized for these air diffusers and for low installation heights, also available with powder coating. One or two lateral connecting pieces or one for connection from above as standard. In addition, with dampers and special air deflector plates for optimum air distribution with low flow noises, particularly for supply air. Setting volume flow rate is possible without dismounting of the air diffuser. With suspension holes and concealed central fastening.



For closed ceiling systems, grid ceilings and for freely suspended.

Air diffuser	LFQ	with central fastening	9	LFQW		
and plenum box with	lateral	two lateral	top	with countersunk		
		connecting piece(s)		hole fastening		
• without damper, without air deflector plate	K1	K2	K3	Les Collection d'action automation		
with damper	K1-D	K2-D	K3-D	Installation in walls of ventilation ducts - without plenum box -		
 with air deflector plate 	K1-L	K2-L	K3-L			
 with damper, with air deflector plate 	K1-DL	K2-DL	K3-DL			





F: Clear ceiling cut-out dimension

Nominal sizes

Nominal	Hole pattern		F [mm]	A [m²]	Application			
size	Plenum box size			free [111]	\Rightarrow see page 12			
325	325	323	260	0.0207	from 45 [m ³ /h]			
400	400	398	337	0.0382	from 60 [m ³ /h]			
500	500	498	437	0.0661	from 150 [m ³ /h]			
600	600	595	537	0.1063	from 265 [m³/h]			
625	600	623	537	0.1063	from 265 [m ³ /h]			

• Nominal sizes correspond to the front plates.

- Hole patterns correspond to the plenum box sizes. They define the free cross-sections ${\rm A}_{\rm free}$ of the air diffusers.
- Front plates for supply air and exhaust air are identical.

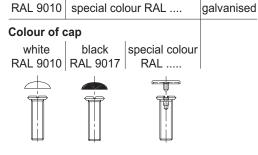
Piece list

- 1 Plenum box
- 2 Connecting piece
- 3 Damper (optional)
- 4 Air deflector plate (optional)
- 5 Air diffuser
- 6 Central fastening
- 7 Adjustment device for damper
- 8 Lip seal (optional)
- 9 Seal

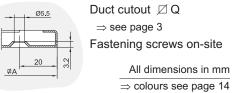
Central fastening for LFQ

with concealed screws M8x25

Colour of air diffuser



Countersunk hole fastening for LFQW



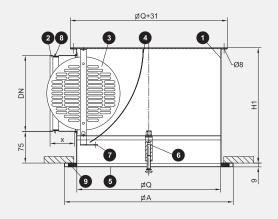
2.1 ENG (2007-09) 2



Plenum boxes for closed ceiling systems, grid ceilings and for freely suspended

K1 - with lateral connecting piece





K2 - with two lateral connecting pieces for high volume flow rates at lowest possible box height H1



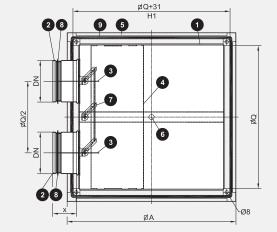


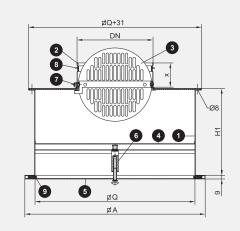


Plenum box heights H1 [mm]

Standard connecting pieces and heights of the plenum boxes K1 are in bold type

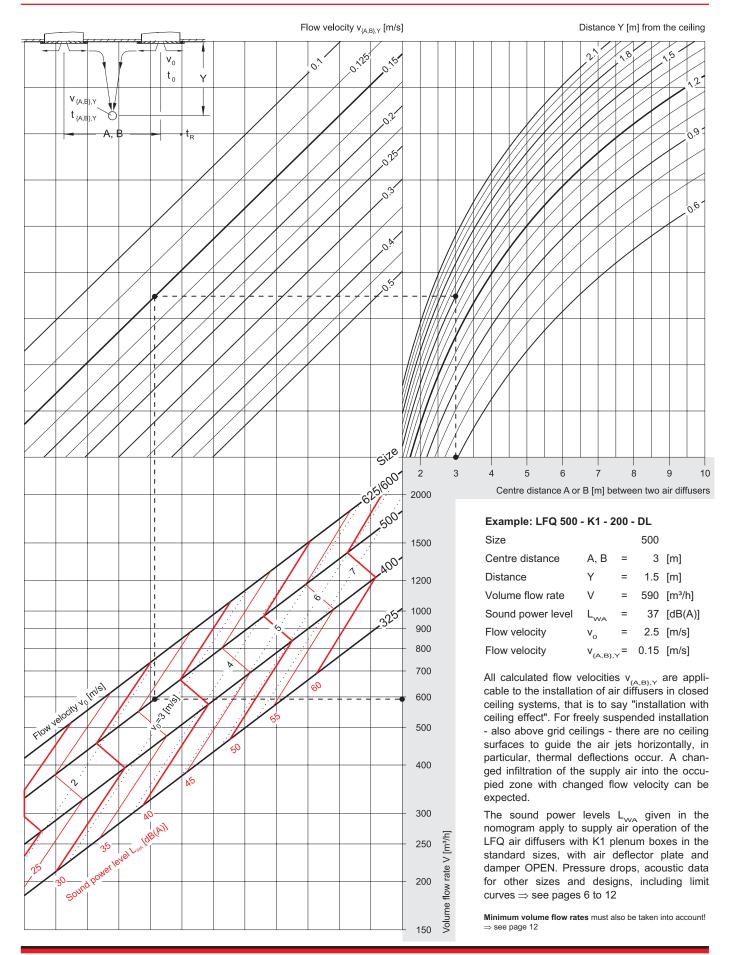
	• •		-		•																	
Plenum box			Ple	num	box ł	<1 wi	th co	nnec	ting p	iece	DN				K2	with	DN			K3	with	DN
SIZE Hole pattern	ØQ	100	125	150	160	180	200	224	250	280	300	315	100	125	150	160	180	200	224	160	200	250
325	260	190	215	240	250	270	290	-	-	-	-	-	190	-	-	-	-	-	-	190	-	-
400	337	-	215	240	250	270	290	314	-	-	-	-	190	215	-	-	-	-	-	-	190	-
500	437	-	-	240	250	270	290	314	340	370	-	-	-	215	240	250	270	-	-	-	190	-
6001)	537	-	-	240	250	270	290	314	340	370	390	405	-	215	240	250	270	290	314	-	-	200
connecting piece	length x	40	40	40	40	40	40	60	60	60	60	60	40	40	40	40	40	40	60	40	40	60
¹⁾ Plenum box size 600 is for air diffusers with nominal sizes 600 and 625 (hole pattern 600).																						





Front plate dimension $\square A$ and piece list \Rightarrow see page 2

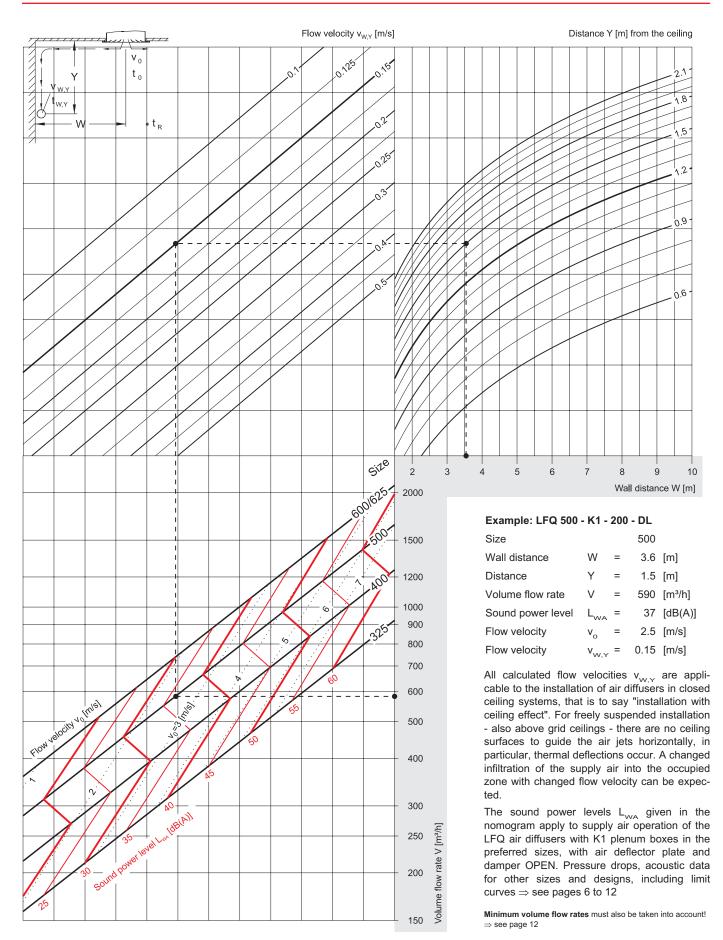
Room flow at installation in closed ceiling systems (air jets directed on each other)



WILDEBOER®



Room flow at installation in closed ceiling systems (air jets directed to the wall)

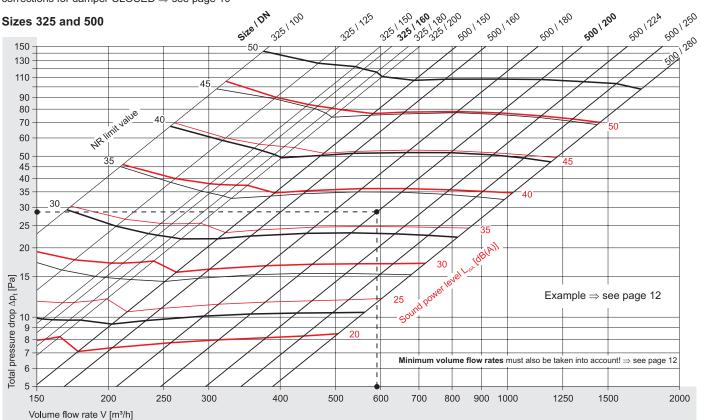




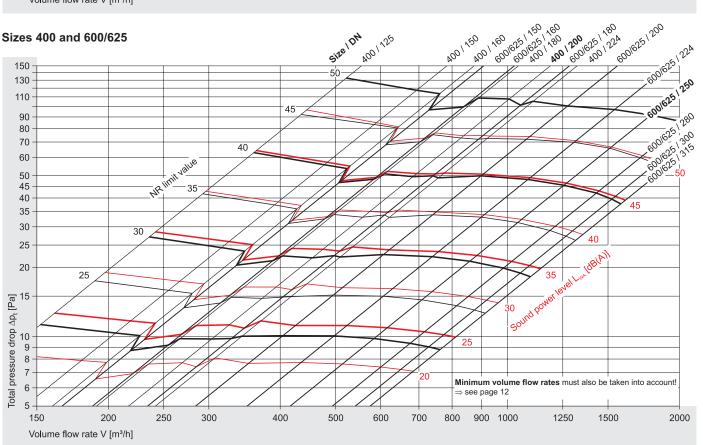
Pressure drop, sound power level, NR rating

Supply air: LFQ with plenum box K1-DL

with air deflector plate and damper OPEN corrections for damper CLOSED \Rightarrow see page 10



Sizes 400 and 600/625



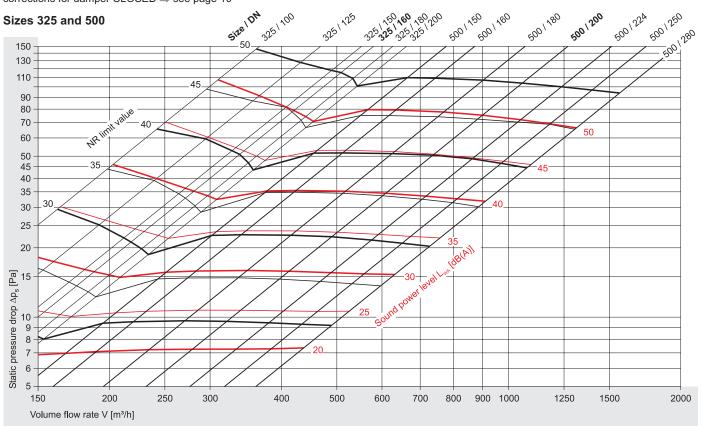


Pressure drop, sound power level, NR rating

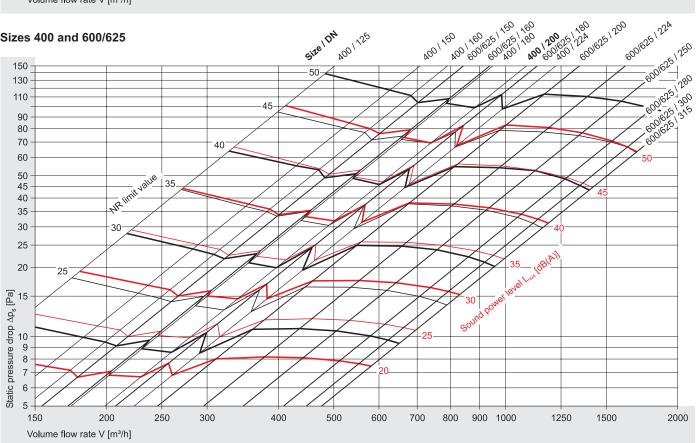
Exhaust air: LFQ with plenum box K1-D

without air deflector plate and damper OPEN

corrections for damper CLOSED \Rightarrow see page 10



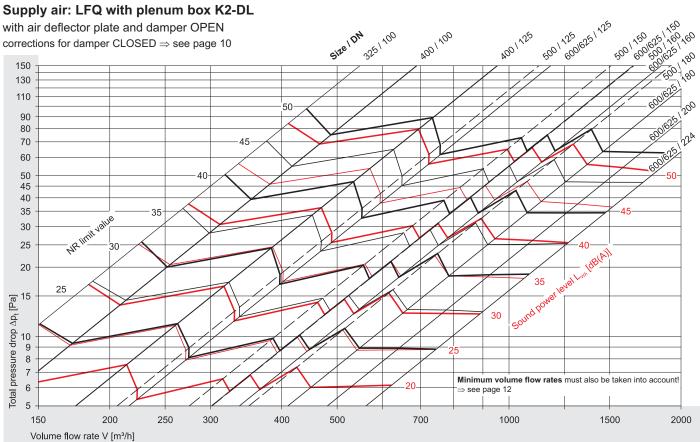
Sizes 400 and 600/625



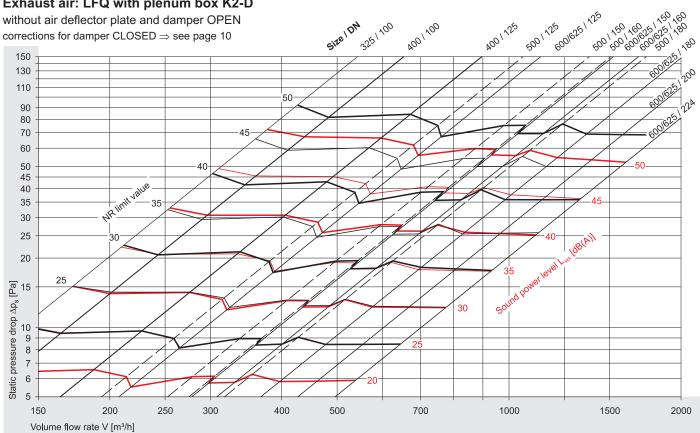


Pressure drop, sound power level, NR rating

Supply air: LFQ with plenum box K2-DL



Exhaust air: LFQ with plenum box K2-D

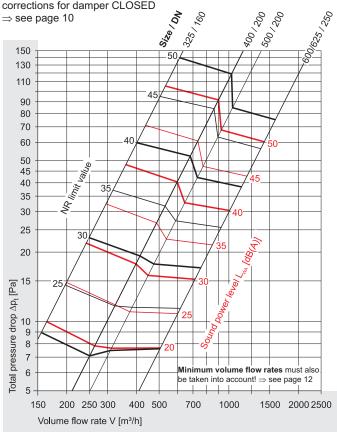




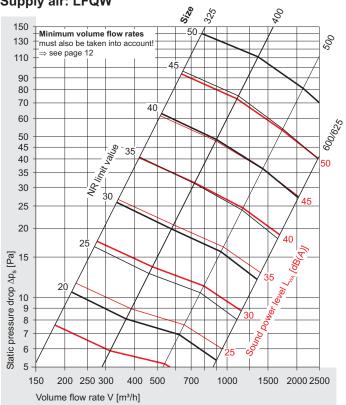
Pressure drop, sound power level, NR rating

Supply air: LFQ with plenum box K3-DL

with air deflector plate and damper OPEN corrections for damper CLOSED

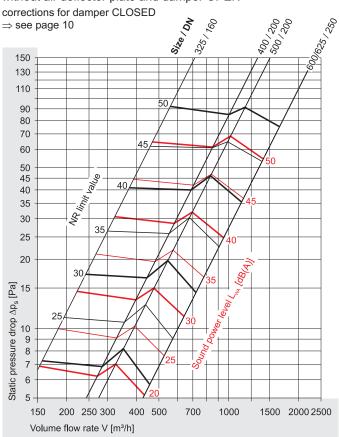


Supply air: LFQW

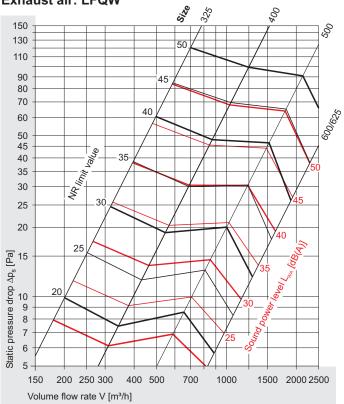


Exhaust air: LFQ with plenum box K3-D

without air deflector plate and damper OPEN corrections for damper CLOSED



Exhaust air: LFQW





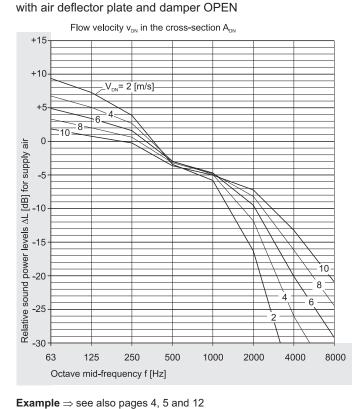
Correction values for damper CLOSED

Supply air Plenum box K1-DL with air deflector plate Exhaust air Plenum box K1-D without air deflector plate	400 500 600/625 Size 325 600/625 Size 325	Δp L _{WA} Δp L _{WA} Δp L _{WA} Δp L _{WA} Δp L _{WA} Δp L _{WA} Δp L _{WA}	x + x + x + x + x + x + x + x + x + x +	4.5 16.5 - - - - - - - - - - - - - - - - - - -	3.6 12.0 4.0 14.3 - - - 2.7 9.4 2.8 12.6 - - - - -	2.8 8.5 4.0 15.1 4.1 13.1 4.5 15.5 2.0 5.8 3.1 13.5 3.3 13.5 3.7 14.5	2.5 7.3 3.9 15.0 3.9 13.7 4.6 16.4 1.8 4.9 3.1 13.4 3.2 13.9 3.6	2.0 5.5 3.7 14.0 3.7 14.6 4.6 17.6 1.6 3.8 3.0 12.5 3.1 14.4 3.4	1.6 4.3 3.3 12.0 3.4 15.0 4.5 18.2 1.5 3.9 2.7 10.7 3.0 14.5 3.3	2.6 8.3 3.1 14.7 4.4 18.2 - - 2.1 7.2 2.9 14.1 3.1	- - 2.9 13.6 4.1 17.2 - - - - - - 2.6 12.9 2.9	- - 2.6 11.3 3.6 14.8 - - - 2.3 10.7 2.6	- - - - - - - - - - - - - - - - - - -	- - - 2.8 10.2 - - - - - - - - - - 2.4
Plenum box K1-DL with air deflector plate Exhaust air Plenum box K1-D without air deflector plate Supply air Plenum box K2-DL	400 500 600/625 Size 325 400 600/625 Size 325	Δp L _{WA} Δp L _{WA} Δp L _{WA} Δp L _{WA} Δp L _{WA} Δp L _{WA} Δp	x + x + x + x + x + x + x + x + x + x +	- - - - - - - - - - - - - - - - - - -	4.0 14.3 - - - 2.7 9.4 2.8 12.6 - - -	4.0 15.1 4.1 13.1 4.5 15.5 2.0 5.8 3.1 13.5 3.3 13.5 3.7	3.9 15.0 3.9 13.7 4.6 16.4 1.8 4.9 3.1 13.4 3.2 13.9 3.6	3.7 14.0 3.7 14.6 4.6 17.6 1.6 3.8 3.0 12.5 3.1 14.4	3.3 12.0 3.4 15.0 4.5 18.2 1.5 3.9 2.7 10.7 3.0 14.5	2.6 8.3 3.1 14.7 4.4 18.2 2.1 7.2 2.9 14.1	13.6 4.1 17.2 - - - 2.6 12.9	11.3 3.6 14.8 - - - 2.3 10.7	3.2 12.4 - - - - -	10.2 - - - - - -
Plenum box K1-DL with air deflector plate Exhaust air Plenum box K1-D without air deflector plate Supply air Plenum box K2-DL	500 600/625 Size 325 400 500 600/625 Size 325 400	Δp	+ x + x + x + x + x + x + x + x + x + x	- - - 3.7 14.8 - - - - - - - - - - - - - - - - - - -	14.3 - - 2.7 9.4 2.8 12.6 - - -	15.1 4.1 13.1 4.5 15.5 2.0 5.8 3.1 13.5 3.3 13.5 3.7	15.0 3.9 13.7 4.6 16.4 1.8 4.9 3.1 13.4 3.2 13.9 3.6	14.0 3.7 14.6 4.6 17.6 1.6 3.8 3.0 12.5 3.1 14.4	12.0 3.4 15.0 4.5 18.2 1.5 3.9 2.7 10.7 3.0 14.5	8.3 3.1 14.7 4.4 18.2 2.1 7.2 2.9 14.1	13.6 4.1 17.2 - - - 2.6 12.9	11.3 3.6 14.8 - - - 2.3 10.7	3.2 12.4 - - - - -	10.2 - - - - - -
with air deflector plate Exhaust air Plenum box K1-D without air deflector plate Supply air Plenum box K2-DL	500 600/625 Size 325 400 500 600/625 Size 325 400	Δp L _{WA} Δp L _{WA} Δp L _{WA} Δp L _{WA} Δp L _{WA} Δp	x + x + x + x + x + x + x +	- - - 3.7 14.8 - - - - - - - - - - - - - - - - - - -	- - - - - - - - - - - - - -	4.1 13.1 4.5 15.5 2.0 5.8 3.1 13.5 3.3 13.5 3.7	3.9 13.7 4.6 16.4 1.8 4.9 3.1 13.4 3.2 13.9 3.6	3.7 14.6 4.6 17.6 1.6 3.8 3.0 12.5 3.1 14.4	3.4 15.0 4.5 18.2 1.5 3.9 2.7 10.7 3.0 14.5	3.1 14.7 4.4 18.2 2.1 7.2 2.9 14.1	13.6 4.1 17.2 - - - 2.6 12.9	11.3 3.6 14.8 - - - 2.3 10.7	3.2 12.4 - - - - -	10.2 - - - - - -
Exhaust air Plenum box K1-D without air deflector plate Supply air Plenum box K2-DL	600/625 Size 325 400 500 600/625 Size 325 400	L _{WA} Δp L _{WA}	+ x + x + x + x + x + x + x + x + x + x	- - - 14.8 - - - - - - - - - - - - - - - - - - -	2.7 9.4 12.6 -	13.1 4.5 15.5 2.0 5.8 3.1 13.5 3.3 13.5 3.7	13.7 4.6 16.4 1.8 4.9 3.1 13.4 3.2 13.9 3.6	14.6 4.6 17.6 1.6 3.8 3.0 12.5 3.1 14.4	15.0 4.5 18.2 1.5 3.9 2.7 10.7 3.0 14.5	14.7 4.4 18.2 2.1 7.2 2.9 14.1	13.6 4.1 17.2 - - - 2.6 12.9	11.3 3.6 14.8 - - - 2.3 10.7	3.2 12.4 - - - - -	10.2 - - - - -
Exhaust air Plenum box K1-D without air deflector plate Supply air Plenum box K2-DL	600/625 Size 325 400 500 600/625 Size 325 400	Δp L _{WA} Δp L _{WA} Δp L _{WA} Δp L _{WA} Δp L _{WA}	x + x + x + x + x + x + x +	- 3.7 14.8 - - - - - - - - - - - - - - - - - - -	2.7 9.4 12.6 -	4.5 15.5 2.0 5.8 3.1 13.5 3.3 13.5 3.7	4.6 16.4 1.8 4.9 3.1 13.4 3.2 13.9 3.6	4.6 17.6 3.8 3.0 12.5 3.1 14.4	4.5 18.2 1.5 3.9 2.7 10.7 3.0 14.5	4.4 18.2 - 2.1 7.2 2.9 14.1	4.1 17.2 - - - 2.6 12.9	3.6 14.8 - - - 2.3 10.7	12.4 - - - - - -	10.2 - - - - - -
Exhaust air Plenum box K1-D without air deflector plate Supply air Plenum box K2-DL	Size 325 400 500 600/625 Size 325 400	Δp Δp Δwa Δp Lwa	+ x + x + x + x + x + x + x +	- 3.7 14.8 - - - - - - - - - - - - - - - - - - -	2.7 9.4 2.8 12.6 - -	15.5 2.0 5.8 3.1 13.5 3.3 13.5 3.7	16.4 1.8 4.9 3.1 13.4 3.2 13.9 3.6	17.6 1.6 3.8 3.0 12.5 3.1 14.4	18.2 1.5 3.9 2.7 10.7 3.0 14.5	18.2 - 2.1 7.2 2.9 14.1	17.2 - - 2.6 12.9	14.8 - - 2.3 10.7	12.4 - - - - - -	10.2 - - - - - -
Exhaust air Plenum box K1-D without air deflector plate Supply air Plenum box K2-DL	Size 325 400 500 600/625 Size 325 400	Δp L _{WA} Δp L _{WA} Δp L _{WA} Δp L _{WA} Δp	x + + x + + x + + x + + x +	14.8 - - - - - 3.3	2.7 9.4 2.8 12.6 - -	2.0 5.8 3.1 13.5 3.3 13.5 3.7	1.8 4.9 3.1 13.4 3.2 13.9 3.6	1.6 3.8 3.0 12.5 3.1 14.4	1.5 3.9 2.7 10.7 3.0 14.5	- 2.1 7.2 2.9 14.1	- - - 2.6 12.9	- - - 2.3 10.7		
Exhaust air Plenum box K1-D without air deflector plate Supply air Plenum box K2-DL	400 500 600/625 Size 325 400	L _{WA} Δp L _{WA} Δp L _{WA} Δp L _{WA} Δp	+ x + x + x + x + x +	14.8 - - - - - 3.3	9.4 2.8 12.6 - -	5.8 3.1 13.5 3.3 13.5 3.7	4.9 3.1 13.4 3.2 13.9 3.6	3.8 3.0 12.5 3.1 14.4	3.9 2.7 10.7 3.0 14.5	- 2.1 7.2 2.9 14.1	12.9	10.7	-	-
Plenum box K1-D without air deflector plate Supply air Plenum box K2-DL	400 500 600/625 Size 325 400	Δp L _{WA} Δp L _{WA} Δp L _{WA} Δp L _{WA}	x + x + x + x + x +	- - - - 3.3	2.8 12.6 - -	3.1 13.5 3.3 13.5 3.7	3.1 13.4 3.2 13.9 3.6	3.0 12.5 3.1 14.4	2.7 10.7 3.0 14.5	2.1 7.2 2.9 14.1	12.9	10.7	- - - 25	-
Plenum box K1-D without air deflector plate Supply air Plenum box K2-DL	500 600/625 Size 325 400	L _{WA} Δp L _{WA} Δp L _{WA} Δp L _{WA}	+ x + x + x +	- - - 3.3	12.6 - - -	13.5 3.3 13.5 3.7	13.4 3.2 13.9 3.6	12.5 3.1 14.4	10.7 3.0 14.5	7.2 2.9 14.1	12.9	10.7	- - - 2 5	- - - 24
without air deflector plate Supply air Plenum box K2-DL	600/625 Size 325 400	Δp L _{WA} Δp L _{WA} Δp L _{WA} Δp	x + + + + +	- - - 3.3	- -	3.3 13.5 3.7	3.2 13.9 3.6	3.1 14.4	3.0 14.5	2.9 14.1	12.9	10.7	- - 2.5	- - - 2 4
Supply air Plenum box K2-DL	600/625 Size 325 400	L _{WA} Δp L _{WA} Δp L _{WA} Δp	+ x + x +	-	-	13.5 3.7	13.9 3.6	14.4	14.5	14.1	12.9	10.7	- - 25	- - 2 A
Supply air Plenum box K2-DL	600/625 Size 325 400	Δp L _{WA} Δp L _{WA} Δp	x + x +	-	-	3.7	3.6						- 2.5	- 2 /
Supply air Plenum box K2-DL	Size 325 400	Δp Δp Δp Δp	+ X +	-				3.4	33	3.1	2.9	26	2.5	2 /
Supply air Plenum box K2-DL	Size 325 400	Δp L _{wa} Δp	x +	3.3	-	14.5								
Supply air Plenum box K2-DL	400	L _{wA} Δp	+		-		15.0	15.7	16.1	16.0	15.4	13.8	12.3	10.9
Plenum box K2-DL	400	Δр		13.0		-	-	-	-	-	-	-	-	-
Plenum box K2-DL		•	х		-	-	-	-	-	-	-	-	-	-
		L_{WA}	-	4.7	4.9	-	-	-	-	-	-	-	-	-
with air deflector plate	500		+	15.8	16.9	-	-	-	-	-	-	-	-	-
	000	∆р	х	-	5.3	4.3	4.0	3.2	-	-	-	-	-	-
		L_{WA}	+	-	17.3	15.3	14.5	12.9	-	-	-	-	-	-
	600/625	∆р	х	-	5.3	5.0	4.8	4.4	3.8	2.9	-	-	-	-
		L_{wa}	+	-	15.8	20.4	21.1	20.6	17.7	10.8	-	-	-	-
	Size 325	Δр	х	3.0	-	-	-	-	-	-	-	-	-	-
		L_{WA}	+	13.1	-	-	-	-	-	-	-	-	-	-
Exhaust air	400	Δр	х	3.8	3.6	-	-	-	-	-	-	-	-	-
Plenum box K2-D		L_{WA}	+	14.7	14.2	-	-	-	-	-	-	-	-	-
without air deflector plate	500	Δр	х	-	3.9	3.3	3.1	2.6	-	-	-	-	-	-
		$L_{_{\rm WA}}$	+	-	14.3	13.0	12.4	11.3	-	-	-	-	-	-
	600/625	Δр	х	-	4.6	3.8	3.5	3.0	2.6	2.3	-	-	-	-
		L_{WA}	+	-	15.2	14.7	14.3	13.2	11.7	9.4	-	-	-	-
;	Size 325	Δр	х	-	-	-	2.9	-	-	-	-	-	-	-
		L_{WA}	+	-	-	-	12.8	-	-	-	-	-	-	-
Supply air	400	Δр	х	-	-	-	-	-	3.2	-	-	-	-	-
Plenum box K3-DL		L_{WA}	+	-	-	-	-	-	13.4	-	-	-	-	-
with air deflector plate	500	∆р	х	-	-	-	-	-	4.7	-	-	-	-	-
		L_{WA}	+	-	-	-	-	-	19.4	-	-	-	-	-
	600/625	∆р	х	-	-	-	-	-	-	-	4.3	-	-	-
		L _{WA}	+	-	-	-	-	-	-	-	18.5	-	-	-
	Size 325	Δр	х	-	-	-	3.1	-	-	-	-	-	-	-
		L _{WA}	+	-	-	-	11.1	-	-	-	-	-	-	-
Full such als	400	Δр	х	-	-	-	-	-	3.4	-	-	-	-	-
Exhaust air Plenum box K3-D		L _{WA}	+	-	-	-	-	-	11.7	-	-	-	-	-
without air deflector plate	500	Δр	х	-	-	-	-	-	4.4	-	-	-	-	-
- F		L _{WA}	+	-	-	-	-	-	15.1	-	-	-	-	-
	600/625	Δp	x	_	-	-	-	-	-	-	4.1	-	-	-
	000,020	L _{wa}	+	-	-	-	-	-	-	-	12.9	-	-	-



Relative sound power levels, nomenclature

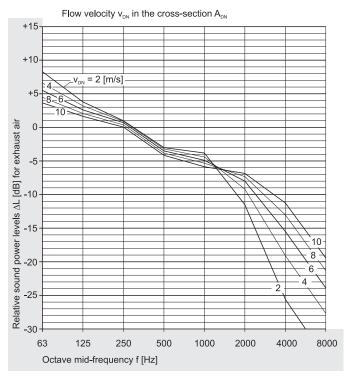
Supply air: LFQ with plenum box K1-DL



590 [m³/h] / (3600 · 0.0314 [m²]) = 5.2 [m/s]

Exhaust air: LFQ with plenum box K1-D

without air deflector plate and damper OPEN



Octave sound power level L_{w-oct} , damper OPEN

f	[Hz]								
L _{WA}	[dB(A)]	37	37	37	37	37	37	37	37
$\Delta L_{v_{DN} = 5.2 \text{ [m/s]}}$	_{₅]} [dB]	6	4	2	-3	-5	-10	-22	-32
L _{w-Oct}	[dB]	43	41	39	34	32	27	<20	<20

Relative sound power levels ΔL for plenum boxes K2, K3 and for installation in ducts \Rightarrow see WILDEBOER - selection software

[m²]

= 0.0314

Nomenclature

LFQ 500 - K1 - 200 - DL $= 590 [m^{3}/h]$

37 [dB(A)]

= $(0.2 [m])^2 \cdot \pi / 4$

V

 L_{wa} =

 $A_{_{DN}}$ =

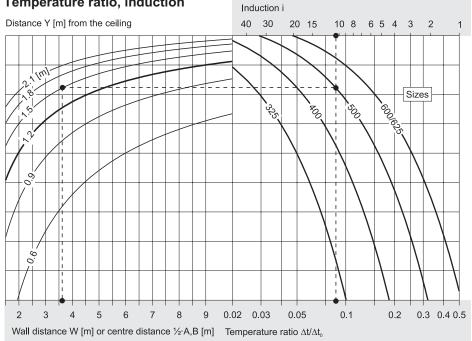
V_{DN}

DN	[mm]	= Connecting piece size	Δt_o	[K]	= Temperature difference; $\Delta t_o = t_o - t_R$
$A_{_{free}}$	[m²]	= Free cross-section of the air diffuser	to	[°C]	= Supply air temperature
$A_{_{DN}}$	[m²]	= Cross-section $A_{DN} = (DN [m])^2 \cdot \pi / 4$	t _R	[°C]	= Room temperature
V	[m³/h]	= Volume flow rate	$\Delta t / \Delta t_o$		= Temperature ratio
v	[m/s]	= Flow velocity in A _{free}	i		= Induction
		$v_o = V / (3600 \cdot A_{free})$	Vs	[m³/h]	= Secondary volume flow rate; $V_s = i \cdot V$
V _{DN}	[m/s]	= Flow velocity in A _{DN}	Δp_t	[Pa]	= Total pressure drop
		$v_{_{DN}} = V / (3600 \cdot A_{_{DN}})$	Δp_s	[Pa]	= Static pressure drop
V {А,В},Ү	[m/s]	= Flow velocity after the flow path	Lp	[dB]	= Sound pressure level
		({A/2, B/2} + Y)	L _{pA}	[dB(A)]	= A-weighted sound pressure level
V _{W,Y}	[m/s]	= Flow velocity after the flow path	L	[dB]	= Sound power level
		(W + Y)	Lwa	[dB(A)]	= A-weighted sound power level
Α, Β	[m]	= Distance between two air diffusers	L_{W-Oct}	[dB]	= Octave sound power level
W	[m]	= Distance from air diffuser to wall			$L_{W-Oct} = L_{WA} + \Delta L$
Υ	[m]	= Distance from the ceiling	NR		= Sound power related NR limit value
t _{{А,В},Ү}	[°C]	= Temperature after the flow path ({A/2, B/2} + Y)	NC		= Sound power related NC limit value
		$t_{{}_{\{A,B\},Y}} = (\Delta t / \Delta t_o) \cdot (t_o - t_R) + t_R$	ΔL	[dB]	= Relative sound power level to L_{WA}
t _{w,Y}	[°C]	= Temperature after the flow path (W + Y)	ΔL_{R}	[dB]	= Acoustic room attenuation
		$t_{w,y} = (\Delta t / \Delta t_o) \cdot (t_o - t_R) + t_R$	f	[Hz]	= Octave mid-frequency



Temperature ratio, induction, limit curves, room acoustics, range of application

Temperature ratio, induction



Example \Rightarrow see also pages 4 to 6							
LFQ 500 - K1 - 200 -	DL						
Size		500					
Volume flow rate	V =	590	[m³/h]				
Sound power level	L _{vva} =	37	[dB(A)]				
Total pressure drop	$\Delta p_t =$	29	[Pa]				
Wall distance	W =	3.6	[m]				
Distance from the cei	ling Y =	1.5	[m]				
Temperature ratio	$\Delta t / \Delta t_o =$	0.09					
Induction	i =	10.5					
Secondary volume							
flow rate	V _s =	i · V					
	=	6195	[m³/h]				

Acoustic limit values NR, NC

The NR limit values in accordance with ISO 1996 given in the nomograms are calculated from octave sound power levels and are therefore not related to sound pressure levels. The room attenuation ΔL_{R} is not considered; this depends on the room acoustics in each individual case. NC limit values, like NR limit values, are to be referenced to sound pressure level. NC = NR - 4 may be used as an approximation in air conditioning and ventilation applications.

Room attenuation ΔL_{R}

Individual sound power levels are given in the nomograms. The sum of all sound pressure levels should be used for an acoustic assessment. This differs from the sum of the

individual sound power levels by the room attenuation:

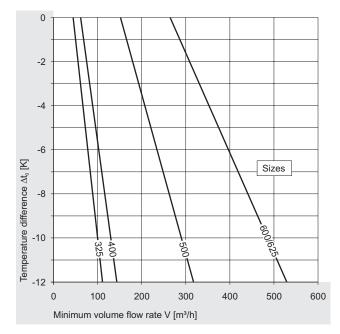
$$\mathsf{L}_{\mathsf{p}}, \, \mathsf{L}_{\mathsf{pA}} = \mathsf{L}_{\mathsf{W}}, \, \mathsf{L}_{\mathsf{WA}} + \Delta \mathsf{L}_{\mathsf{R}}.$$

 $\Delta L_{_{B}}$ = -8 [dB] can be used for estimating in air conditioning and ventilation systems.

Range of application

Plenum boxes, installed flush in ceilings, are required for optimum air supply distribution in rooms with a height of approx. 2.5 to 4 m. The square LFQ air diffusers distribute the supply air underneath the ceiling on four sides. In the case of cooling, the required minimum volume flow rates must be maintained at a given temperature difference Δt_{o} between supply air and room air; air distribution in the room takes place through adjoining walls and the effects of counterflow. The minimum volume flow rates should also be maintained in heating operation and in isothermal cases with ${\rm \Delta t}_{\rm o}$ = 0 [K], in order to achieve minimum room purging.

In the case of freely suspended installation, thermal deflections occur. Therefore a changed infiltration of the supply air into the occupied zone with changed flow velocities are to be expected. For this reason, comfort criteria can be met only very restricted at this type of installation.



NOTE

The specified, temperature-dependent minimum volume flow rates must also be taken into consideration when selecting using the nomogram or tables. These can be taken into account automatically with the WILDEBOER - selection software!



Quick selection

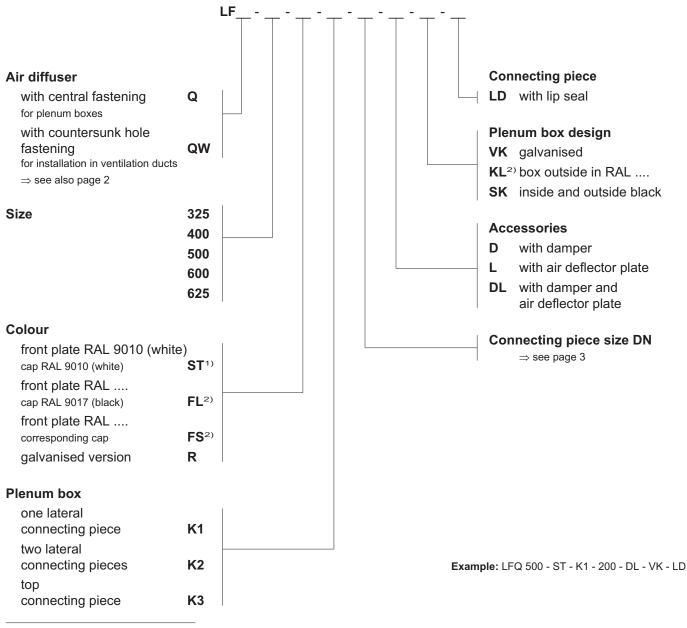
Volume flow rate [m³/h] / Pressure drop [Pa]

Connecting piece - DN					Sound	l power level	[dB(A)]		
Air diffuser - Size ——	¥		20	25	30	35	40	45	50
	325	100	90 / 8	110 / 12	140 / 20	170 / 30	210 / 45	260 / 69	320 / 105
O		160	140 / 7	170 / 11	210 / 17	260 / 26	310 / 37	380 / 55	470 / 84
Supply air		200	160 / 8	200 / 12	240 / 18	290 / 26	350 / 37	420 / 54	510 / 79
LFQ	400	125	130 / 8	160 / 12	200 / 19	240 / 28	300 / 44	360 / 63	440 / 94
with	400	200	270/8	330 / 12	390 / 16	480 / 24	570 / 34	690 / 51	840 / 75
plenum box		225	310/8	370 / 12	450 / 17	400 / 24 540 / 25	640 / 35	770 / 51	930 / 74
K1-DL									
with air deflector plate	500	150	180 / 7	220 / 11	260 / 15	320 / 23	390 / 34	480 / 52	580 / 76
damper OPEN		200	310 / 8	380 / 12	460 / 17	550 / 25	660 / 36	800 / 52	970 / 77
		280	500 / 8	600 / 12	720 / 17	860 / 25	1020 / 35	1220 / 50	1450 / 70
	600/625	150	190 / 7	230 / 10	280 / 14	340 / 21	420 / 32	510 / 47	620 / 70
Minimum volume flow rates		250	510 / 8	620 / 11	740 / 16	880 / 22	1060 / 32	1270 / 47	1520 / 67
must also be taken into account! \Rightarrow see page 12		315	680 / 7	810 / 10	960 / 14	1140 / 20	1360 / 28	1610 / 39	1910 / 55
	325	100	90 / 9	110 / 14	130 / 19	160 / 29	200 / 45	250 / 70	310 / 108
		160	130 / 8	150 / 10	190 / 16	230 / 24	280 / 35	340 / 52	420 / 79
Exhaust air		200	140 / 7	170 / 10	210 / 15	250 / 21	310 / 33	370 / 47	460 / 72
LFQ	400	125	120 / 9	150 / 13	180 / 19	220 / 29	270 / 43	330 / 65	410 / 100
with		200	230 / 7	280 / 10	340 / 15	410/21	500 / 32	610 / 47	740 / 69
plenum box		225	260 / 7	320 / 10	380 / 14	460 / 21	560 / 31	680 / 46	820 / 67
K1-D	500	150	170 / 7	210 / 11	250 / 15	310 / 24	380 / 36	460 / 52	570 / 81
without air deflector pl		200	280 / 7	340 / 11	410 / 16	500 / 23	610 / 35	740 / 51	900 / 75
damper OPEN		280	440 / 7	530 / 11	630 / 15	760 / 22	910 / 32	1090 / 46	1310 / 66
	000/005								
	600/625	150	180 / 7	220 / 10	270 / 15	330 / 23	400 / 34	490 / 51	600 / 76
		250 315	440/8	530 / 12 690 / 11	640 / 17 820 / 15	780 / 25 990 / 22	940 / 37 1190 / 31	1130 / 53 1420 / 45	1360 / 77
		515	580 / 7		830 / 15				1700 / 64
Supply air	325		180/8	220 / 11	280 / 18	340 / 27	420 / 41	520 / 36	40 / 95
	400		310/6	390 / 9	480 / 14	590 / 21	730/32	890 / 47	1100 / 73
LFQW	500		540 / 5	650 / 8	790 / 11	960 / 16	1170 / 24	1420 / 36	1730 / 54
	600/625		790 / 4	950 / 6	1150 / 9	1390 / 13	1690 / 19	2040 / 27	2470 / 40
Eulerict eli-	325		180 / 8	220 / 12	270 / 18	320 / 25	390 / 37	480 / 57	580 / 83
Exhaust air	400		310 / 6	380 / 9	460 / 13	570 / 21	690 / 30	840 / 45	1030 / 68
LFQW	500		590 / 7	710 / 10	850 / 14	1030 / 21	1240 / 31	1490 / 44	1790 / 64
	600/625		820 / 5	980 / 7	1160 / 10	1370 / 14	1630 / 19	1930 / 27	2290 / 38

Standard connecting pieces of the plenum boxes are in bold type



Order information



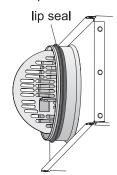
¹⁾ Standard colour

²⁾ Please also indicate the RAL colour required

NOTE regarding colours

- RAL colours available as standard are basically in accordance with the RAL CLASSIC colour collection.
- For technical reasons, deviations in colour can never completely be avoided. This relates to colour tones in particular RAL 9006 (white aluminium) and RAL 9007 (grey aluminium). In special cases it is therefore always advisable to carry out specific colour matching and to include the surrounding colour tones, for example suspended ceilings!

Connecting piece with lip seal





Specification text

LFQ air diffuser for supply air and exhaust air. For constant and variable volume flow rates. Fixed, slot type air deflection blades for horizontal air distribution. With engaged, arched profiles in a progressive gradient towards the centre without disturbances of air jet by bended edges, such that a maximum air flow with low sound noises is achieved. With high induction for the reduction of flow velocities and temperature differences in heating applications and room cooling by up to -12 K. Square front plate made of galvanised sheet steel with concealed central fastening or with countersunk holes for installation in ventilation ducts. With robust, colour-resistant, antistatic polyester coating, smooth gloss in colour RAL 9010 (white) or in RAL special colour. Corresponding cap or RAL 9017 (black)

Plenum box with central fastening, made of galvanised sheet steel with suspension holes with

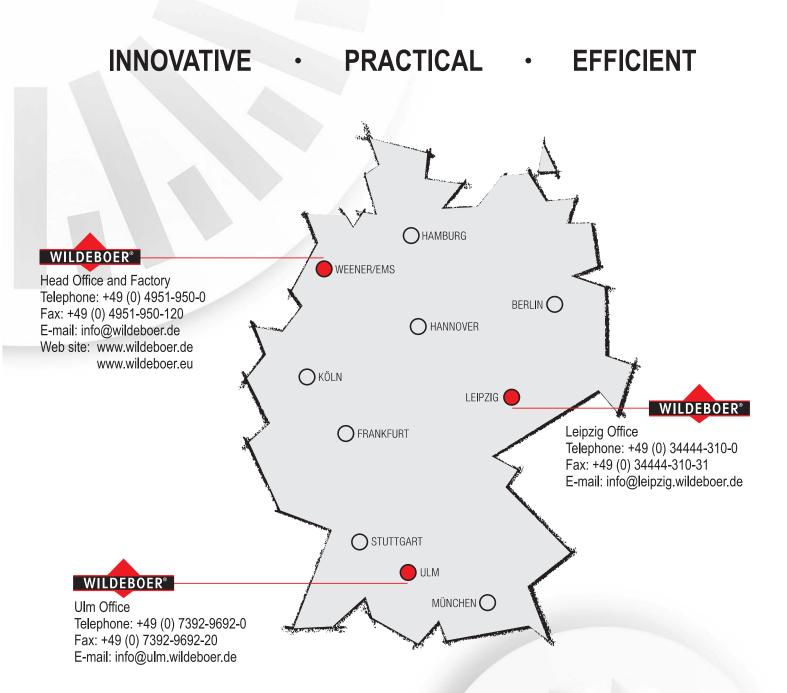
- special air deflector plates, particularly for supply air, for optimum air distribution with low flow noises
- inside and outside with black powder coating
- outside in RAL special colour
- one lateral connecting piece
- two lateral connecting pieces
- top connecting piece
- lip seal(s)
- damper for setting volume flow rate without dismounting of air diffuser

Installation in closed ceiling systems, grid ceilings and freely suspended.

..... pieces

Volume flow rate:	m ³ /h
Pressure drop:	Pa
Sound power level:	dB (A)
Manufacturer:	WILDEBOER®
Туре:	LFQ
Size:	
Connecting piece size DN:	mm
Colour air diffuser:	RAL
Colour plenum box:	RAL
Complete with fasteners	supply:
	install:

Delete text in non-bold type as required!



TAKE ADVANTAGE OF OUR STRENGTHS!



QUALITY PRODUCTS

Air Distribution Fire Protection Noise Protection

© 1995...2007 WILDEBOER BAUTEILE GMBH D26826 WEENER