Displacement Flow Diffusers

Type QLV

for low turbulence air supply

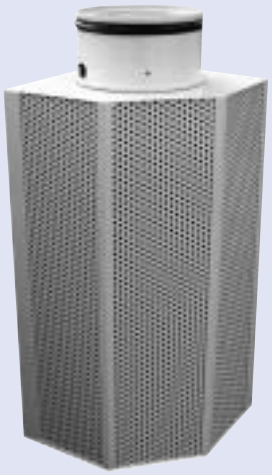
TROX® TECHNIK

TROX GmbH

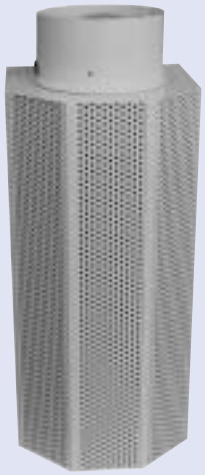
Heinrich-Trox-Platz
D-47504 Neukirchen-Vluyn

Telephone +49/28 45/2 02-0
Telefax +49/28 45/2 02-2 65
e-mail trox@trox.de
www.troxtechnik.com

Contents · Description



QLV-90-O-M-L



QLV-180-O-M

QLV-360-O-M

Description

TROX displacement flow diffusers type QLV with their visually appealing polygon shape are suitable for use in both industrial and comfort areas.
In contrast to the well-known principle of mixed air flow using ceiling diffusers or wall grilles, displacement flow diffusers ensure that the air supply is introduced with low levels of turbulence and very low discharge velocities.
While the aim with mixed flow is to achieve the highest possible induction (i.e. maximum mixing between supply and room air) the principle of displacement flow ventilation involves achieving a flow with the lowest possible induction.
Depending on the level of activity of individuals in the area in use the supply air can have a temperature differential between -1K and -6K with respect to the room. In this case, the supply air spreads out over the floor and is conveyed upwards by the convection currents from heat sources (machines, electrical equipment, people etc.). The supply air is therefore forced to find its way to the heat source from which the thermal load is to be removed. When it is a human heat source the process provides a local fresh air source.

With the principle of displacement flow ventilation it involves extract air being taken out at high level. By regularly distributing displacement flow diffusers even large halls can have economic air conditioning without draughts. Most air pollutants resulting from production processes are conveyed upward and dissipated with the extract air.

Construction

Displacement flow diffusers type QLV are available in three models:
Type QLV- 90 – 90° construction for corner installation
Type QLV-180 – 180° construction for wall installation
Type QLV-360 – 360° construction for free-standing installation

The equipment casing consists of the top cover, the base and the corner and edge strips with the siding inserts. The discharge faces consist of perforated plates, behind which are air straighteners. The air entry spigot can be positioned at either the top or the bottom. Units featuring top spigots are only fitted with lip seals on request. Units featuring bottom spigots always come equipped with lip seal.

A conical air control element is also built into the diffusers. The diffusers are only fitted with volume control dampers on request. The QLV-90 and QLV-180 models feature brackets for wall installation. The wall mounting kit is also available on request. The QLV-360 can, on request, be fitted with a floor mounting plate.

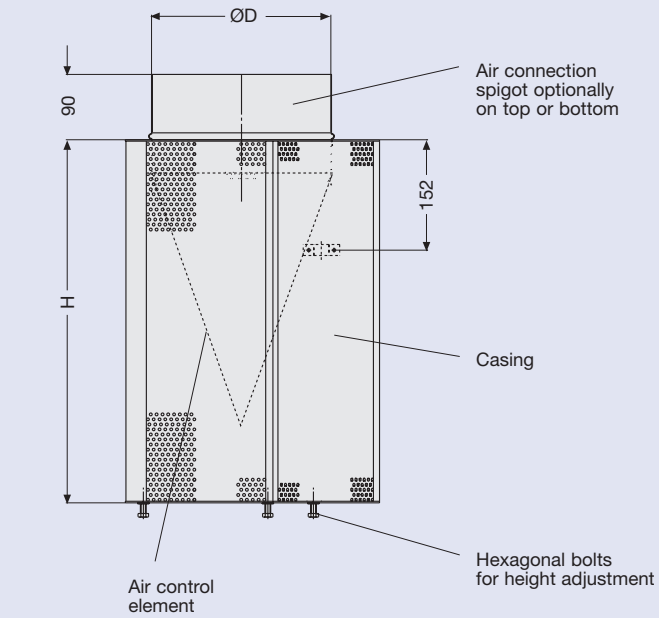
Available Sizes

H	NW						
in mm	160	200	250	315	400	500	630
500	●	●	●				
600	●	●	●	●			
800	●	●	●	●	●		
1000	●	●	●	●	●	●	
1250				●	●	●	●
1500					●	●	●
1750							●

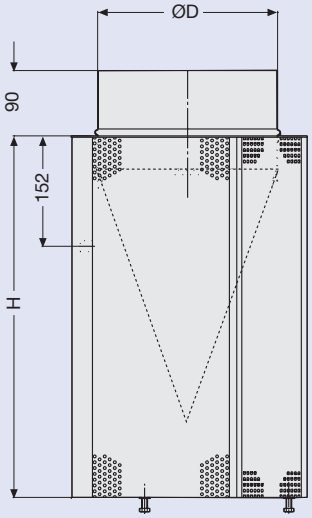
Dimensions in mm

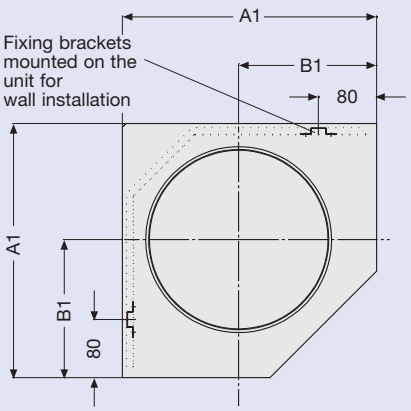
	NW						
	160	200	250	315	400	500	630
ØD	158	198	248	313	398	498	628
A1	250	295	350	420	510	615	750
A2	235	275	325	390	475	575	705
A3	240	280	330	395	480	580	710
B1	135	160	190	227	275	330	400
B2	120	140	165	197	240	290	355

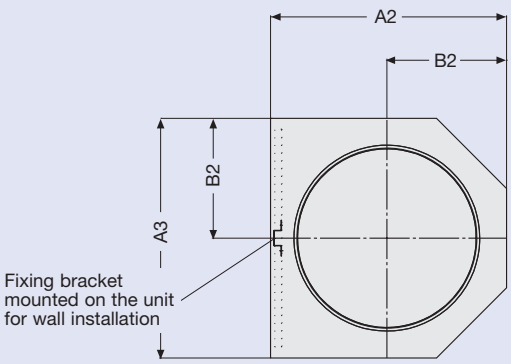
Type QLV-90



Type QLV-180







Materials

Cover, base, spigots and side plates are made of galvanised sheet steel, corner and edge strips are made of aluminium extrusions.

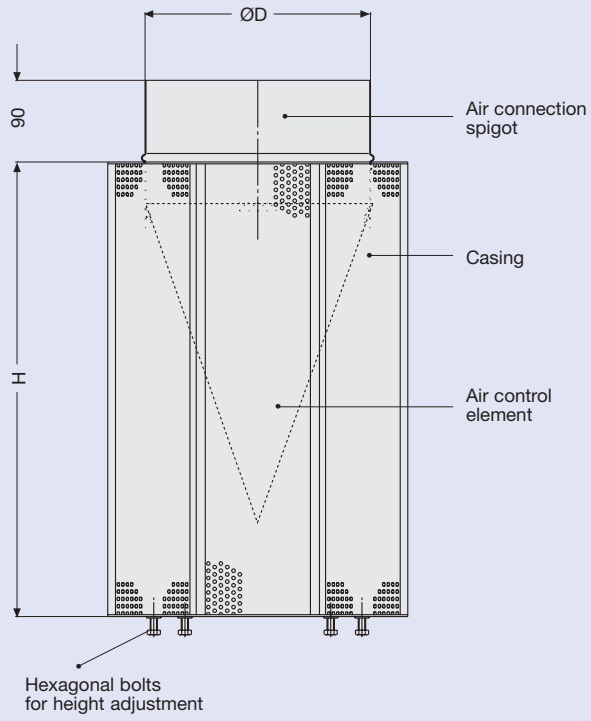
The surface is pre-treated and powder-coated white RAL 9010, gloss level 50 %, on request powder-coated to RAL 9006, gloss level 30 %, other RAL colours, gloss level 70 %.

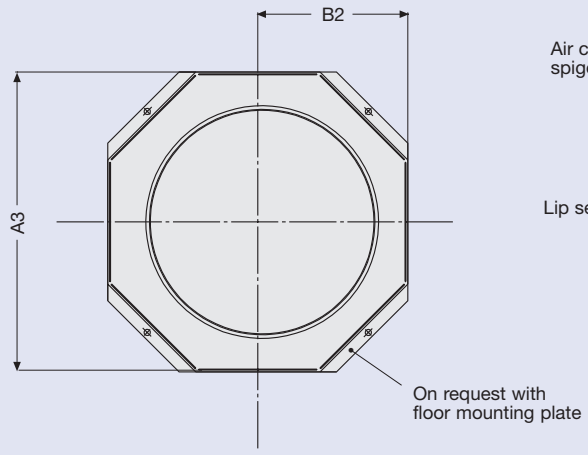
The air straightener is made of plastic, the air control element is made of synthetic fiber and the lip seal of rubber.

The side plates are of galvanised steel construction if powder coat finish is not specified; top cover, base, corner and edge strips are made of aluminium.

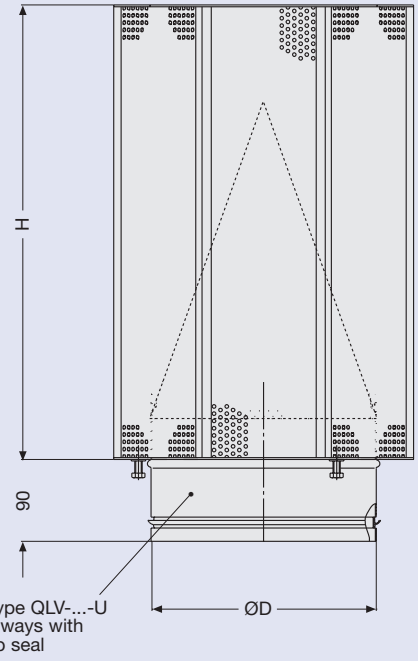
Dimensions in mm							
	NW						
	160	200	250	315	400	500	630
ØD	158	198	248	313	398	498	628
A3	240	280	330	395	480	580	710
B2	120	140	165	197	240	290	355

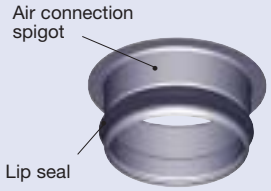
Type QLV-360-O



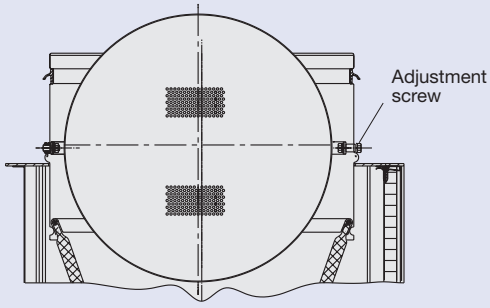


Type QLV-...-U-L





Detail
Flow volume control
(on request)



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Assembly

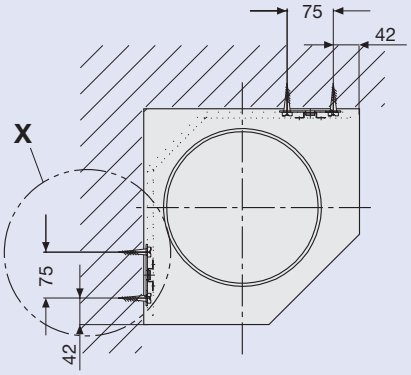
Type QLV-90 · Type QLV-180

The QLV-90 and QLV-180 displacement flow diffusers are designed for wall mounting. For this reason, the QLV-90 is equipped with two brackets and the QLV-180 with one bracket. Wall mounting kits are available on request. These consist of bracket(s) fitted to the diffuser and tongue plate(s) which are fitted on the wall.

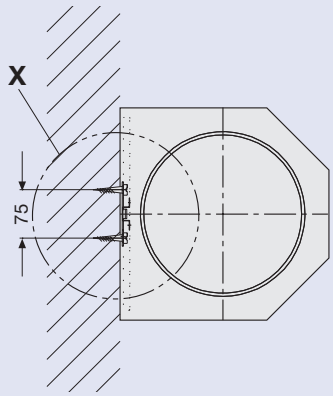
Type QLV-360

The QLV-360 displacement flow diffusers can be supplied on request with a floor mounting plate. (Note: This can only be factory fitted, retro fit is not possible.) The customer can attach the diffuser to the floor by bolting it down at the four holes drilled into the mounting plate for this purpose.

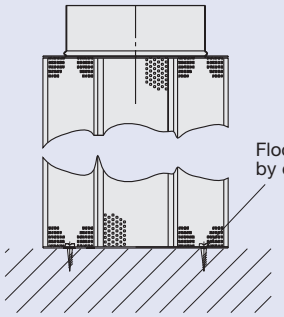
Wall installation Type QLV-90

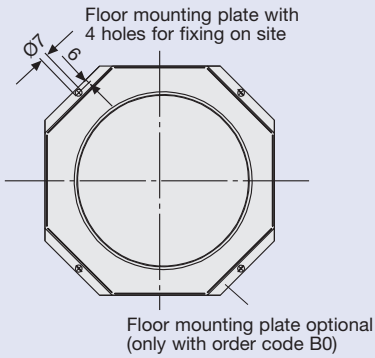


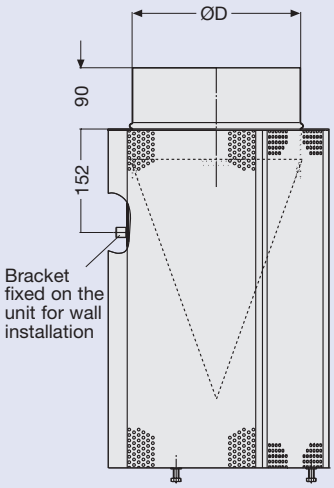
Wall installation Type QLV-180



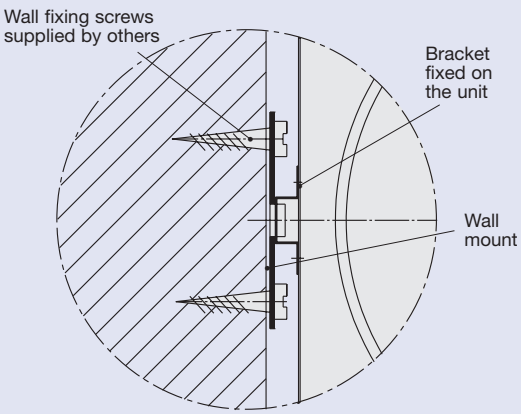
Floor installation Type QLV-360



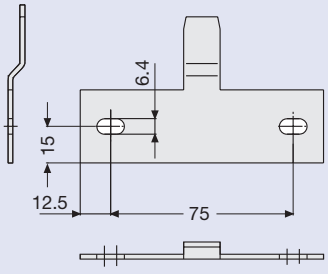




Detail X



Wall tongue plate for QLV-90 · QLV-180
(on request)



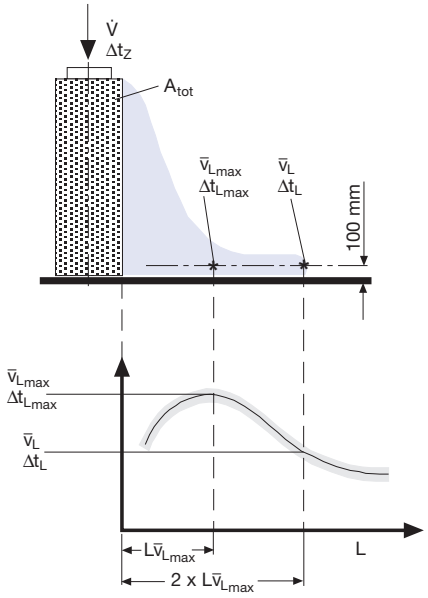
Nomenclature · Technical Data – QLV-90

$\bar{v}_{tot}$ = 0.1 m/s

Nomenclature

$\dot{V}$	in m³/h or l/s:	Volume flow rate per diffuser
L	in m:	Distance from diffuser
Δt_Z	in K:	Temperature difference between supply and room air
A_{tot}	in m²:	Total outlet area
$\bar{v}_{tot}$	in m/s:	Discharge velocity related to A_{tot}
$L\bar{v}_{Lmax}$	in m:	Distance at which the max. time average air velocity $\bar{v}_{Lmax}$ occurs
$\bar{v}_{Lmax}$	in m/s:	Max. time average air velocity, measured 100 mm above the floor
Δt_{Lmax}	in K:	Max. temperature difference, measured 100 mm above the floor at distance $L\bar{v}_{Lmax}$
$\bar{v}_L$	in m/s:	Max. time average air velocity at double distance 2 x $L\bar{v}_{Lmax}$ from diffuser
Δt_L	in K:	Temperature difference at double distance 2 x $L\bar{v}_{Lmax}$ from diffuser
Δp_t	in Pa:	Total pressure drop
L_{WA}	in dB(A):	A-weighted sound power level

Correction factors for construction with flow-volume control		
from table	Damper setting	
	45°	closed
Δp_t	x 1.9	x 3.4
L_{WA}	+ 8	+ 17



Type QLV-90, for corner installation $\bar{v}_{tot}$ = 0.1 m/s

							Δt_Z = -2 K						Δt_Z = -6 K					
NW	H	A_{tot}	V̇		Δp_t	L_{WA}	$L\bar{v}_{Lmax}$	$\bar{v}_{Lmax}$	Δt_{Lmax}	$2xL\bar{v}_{Lmax}$	$\bar{v}_L$	Δt_L	$L\bar{v}_{Lmax}$	$\bar{v}_{Lmax}$	Δt_{Lmax}	$2xL\bar{v}_{Lmax}$	$\bar{v}_L$	Δt_L
(mm)	(mm)	m²	in m³/h	in l/s	Pa	dB(A)	in m	in m/s	in K	in m	(m/s)	(K)	in m	in m/s	in K	in m	(m/s)	in K
160	500	0.17	62	17	2	<15	0.5	0.12	-1.4	1.0	0.07	-1.2	0.4	0.22	-4.8	0.7	0.14	-4.0
	600	0.21	74	21	2	<15	0.6	0.13	-1.4	1.2	0.08	-1.2	0.4	0.24	-4.9	0.8	0.15	-4.0
	800	0.28	99	28	4	<15	0.7	0.15	-1.5	1.4	0.09	-1.2	0.5	0.29	-5.0	1.0	0.18	-4.2
	1000	0.34	124	34	5	<15	0.8	0.17	-1.5	1.6	0.11	-1.3	0.6	0.32	-5.1	1.2	0.20	-4.3
200	500	0.21	75	21	1	<15	0.5	0.12	-1.4	1.0	0.07	-1.2	0.4	0.22	-4.8	0.8	0.14	-4.0
	600	0.25	91	25	1	<15	0.6	0.13	-1.4	1.2	0.08	-1.2	0.4	0.24	-4.9	0.8	0.15	-4.0
	800	0.34	121	34	2	<15	0.7	0.15	-1.5	1.4	0.09	-1.2	0.5	0.29	-5.0	1.0	0.18	-4.2
	1000	0.42	151	42	3	<15	0.8	0.17	-1.5	1.6	0.11	-1.3	0.6	0.32	-5.1	1.2	0.20	-4.3
250	500	0.26	92	26	1	<15	0.5	0.12	-1.4	1.0	0.07	-1.2	0.4	0.22	-4.8	0.8	0.14	-4.0
	600	0.31	111	31	1	<15	0.6	0.13	-1.4	1.2	0.08	-1.2	0.4	0.24	-4.9	0.8	0.15	-4.0
	800	0.41	148	41	1	<15	0.7	0.15	-1.5	1.4	0.09	-1.2	0.5	0.29	-5.0	1.0	0.18	-4.2
	1000	0.52	186	52	2	<15	0.8	0.17	-1.5	1.6	0.11	-1.3	0.6	0.32	-5.1	1.2	0.20	-4.3
315	600	0.38	138	38	1	<15	0.6	0.13	-1.4	1.2	0.08	-1.2	0.4	0.24	-4.9	0.8	0.15	-4.0
	800	0.51	184	51	1	<15	0.7	0.15	-1.5	1.4	0.09	-1.2	0.5	0.29	-5.0	1.0	0.18	-4.2
	1000	0.64	230	64	1	<15	0.8	0.17	-1.5	1.7	0.11	-1.3	0.6	0.32	-5.1	1.2	0.20	-4.3
	1250	0.80	288	80	2	<15	1.0	0.20	-1.6	2.0	0.12	-1.3	0.6	0.37	-5.2	1.2	0.23	-4.4
400	800	0.64	230	64	1	<15	0.7	0.15	-1.5	1.4	0.09	-1.2	0.5	0.29	-5.0	1.0	0.18	-4.2
	1000	0.80	287	80	1	<15	0.8	0.17	-1.5	1.6	0.11	-1.3	0.6	0.32	-5.1	1.2	0.20	-4.3
	1250	1.00	359	100	1	<15	1.0	0.20	-1.6	2.0	0.12	-1.3	0.6	0.37	-5.2	1.2	0.23	-4.4
	1500	1.20	432	120	2	<15	1.1	0.22	-1.6	2.2	0.14	-1.3	0.7	0.41	-5.3	1.4	0.25	-4.4
500	1000	0.98	354	98	1	<15	0.8	0.17	-1.5	1.6	0.11	-1.3	0.6	0.32	-5.1	1.2	0.20	-4.3
	1250	1.23	443	123	1	<15	1.0	0.20	-1.6	2.0	0.12	-1.3	0.6	0.37	-5.2	1.2	0.23	-4.4
	1500	1.48	532	148	1	<15	1.1	0.22	-1.6	2.2	0.14	-1.3	0.7	0.41	-5.3	1.4	0.25	-4.4
630	1250	1.53	551	153	1	<15	1.0	0.20	-1.6	2.0	0.12	-1.3	0.6	0.37	-5.2	1.2	0.23	-4.4
	1500	1.84	662	184	1	<15	1.1	0.22	-1.6	2.2	0.14	-1.3	0.7	0.41	-5.3	1.4	0.25	-4.4
	1750	2.15	773	215	1	<15	1.2	0.24	-1.6	2.4	0.15	-1.3	0.8	0.44	-5.4	1.6	0.28	-4.5

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Example

3 module wide office with a modular width = 1.5 m,
room depth = 6 m and room height = 2.7 m
(floor area = 27 m², room volume approx. 73 m³)
Cooling load = 70 W/m², of that 30 W/m² is dealt with by other means, leaving 40 W/m² (= 1080 W) for the ventilation. The supply air should be introduced to the room with a temperature difference of Δt_Z = -4K so that a difference of about -6 K between supply and extract air can be assumed. An air volume flow of 540 m³/h is thus required for load removal.
Two QLV-90 models should be installed in the corners (270 m³/h per diffuser).
QLV-90 / 250 x 500 with $\bar{v}_{totmax}$ = 0.3 m/s selected (see below).
For balancing, the diffuser should be equipped with a volume control damper. This selection assumes a damper setting of 45°.

L_{WA} (table) < 15 dB(A)
Damper setting correction value = +8
L_{WA} < 23 dB(A)
Δp_t (table) = 7 Pa
Damper setting correction value = 1.9
Δp_t = 13 Pa

At a supply air temperature difference Δt_Z = -4 K, linear interpolation of the aerodynamic values between -2 K and -6 K is required.

$L\bar{v}_{Lmax}$	= 1 m	2 x $L\bar{v}_{Lmax}$	= 2 m
$\bar{v}_{Lmax}$	= 0.15 m/s	$\bar{v}_L$	= 0.09 m/s
Δt_{Lmax}	= -2.5 K	Δt_L	= -2 K

Correction factors for construction with flow-volume control		
from table	Damper setting	
	45°	closed
Δp_t	x 1.9	x 3.4
L_{WA}	+ 8	+ 17

Type QLV-90, for corner installation $\bar{v}_{tot}$ = 0.3 m/s

							Δt_Z = -2 K						Δt_Z = -6 K					
NW (mm)	H (mm)	A_{tot} m²	$\dot{V}$ in m³/h	$\dot{V}$ in l/s	Δp_t Pa	L_{WA} dB(A)	$L\bar{v}_{Lmax}$ in m	$\bar{v}_{Lmax}$ in m/s	Δt_{Lmax} in K	$2xL\bar{v}_{Lmax}$ in m	$\bar{v}_L$ (m/s)	Δt_L (K)	$L\bar{v}_{Lmax}$ in m	$\bar{v}_{Lmax}$ in m/s	Δt_{Lmax} in K	$2xL\bar{v}_{Lmax}$ in m	$\bar{v}_L$ (m/s)	Δt_L in K
160	500	0.17	185	51	16	<15	1.2	0.10	-1.1	2.4	0.06	-0.9	0.8	0.19	-3.8	1.6	0.12	-3.2
	600	0.21	223	62	20	19	1.3	0.11	-1.2	2.6	0.07	-1.0	0.9	0.21	-3.9	1.8	0.13	-3.2
	800	0.28	298	83	32	26	1.6	0.13	-1.2	3.2	0.08	-1.0	1.1	0.25	-4.0	2.2	0.15	-3.3
	1000	0.34	373	104	46	32	1.9	0.15	-1.2	3.8	0.09	-1.0	1.3	0.28	-4.1	2.5	0.17	-3.4
200	500	0.21	226	63	10	<15	1.2	0.10	-1.1	2.4	0.06	-0.9	0.8	0.19	-3.8	1.6	0.12	-3.2
	600	0.25	272	76	13	<15	1.3	0.11	-1.2	2.6	0.07	-1.0	0.9	0.21	-3.9	1.8	0.13	-3.2
	800	0.34	363	101	20	21	1.6	0.13	-1.2	3.2	0.08	-1.0	1.1	0.25	-4.0	2.2	0.15	-3.3
	1000	0.42	454	126	29	27	1.9	0.15	-1.2	3.8	0.09	-1.0	1.3	0.28	-4.1	2.5	0.17	-3.4
250	**500**	**0.26**	**277**	**77**	**7**	**<15**	**1.2**	**0.10**	**-1.1**	**2.4**	**0.06**	**-0.9**	**0.8**	**0.19**	**-3.8**	**1.6**	**0.12**	**-3.2**
	600	0.31	333	93	9	<15	1.3	0.11	-1.2	2.6	0.07	-1.0	0.9	0.21	-3.9	1.8	0.13	-3.2
	800	0.41	445	124	13	16	1.6	0.13	-1.2	3.2	0.08	-1.0	1.1	0.25	-4.0	2.2	0.15	-3.3
	1000	0.52	557	155	18	21	1.9	0.15	-1.2	3.8	0.09	-1.0	1.3	0.28	-4.1	2.5	0.17	-3.4
315	600	0.38	413	115	6	<15	1.3	0.11	-1.2	2.6	0.07	-1.0	0.9	0.21	-3.9	1.8	0.13	-3.2
	800	0.51	551	153	9	<15	1.6	0.13	-1.2	3.2	0.08	-1.0	1.1	0.25	-4.0	2.2	0.15	-3.3
	1000	0.64	690	192	12	16	1.9	0.15	-1.2	3.8	0.09	-1.0	1.3	0.28	-4.1	2.5	0.17	-3.4
	1250	0.80	863	240	16	22	2.1	0.17	-1.2	4.2	0.10	-1.0	1.4	0.32	-4.2	2.9	0.20	-3.5
400	800	0.64	689	191	6	<15	1.6	0.13	-1.2	3.2	0.08	-1.0	1.1	0.25	-4.0	2.2	0.15	-3.3
	1000	0.80	862	239	8	<15	1.9	0.15	-1.2	3.8	0.09	-1.0	1.3	0.28	-4.1	2.5	0.17	-3.4
	1250	1.00	1078	299	10	16	2.1	0.17	-1.2	4.2	0.10	-1.0	1.4	0.32	-4.2	2.9	0.20	-3.5
	1500	1.20	1295	360	14	21	2.4	0.19	-1.3	4.8	0.12	-1.1	1.6	0.35	-4.3	3.2	0.22	-3.5
500	1000	0.98	1062	295	5	<15	1.9	0.15	-1.2	3.8	0.09	-1.0	1.3	0.28	-4.1	2.5	0.17	-3.4
	1250	1.23	1328	369	7	<15	2.1	0.17	-1.2	4.2	0.10	-1.0	1.4	0.32	-4.2	2.9	0.20	-3.5
	1500	1.48	1595	443	9	15	2.4	0.19	-1.3	4.8	0.12	-1.0	1.6	0.35	-4.3	3.2	0.22	-3.5
630	1250	1.53	1654	459	5	<15	2.1	0.17	-1.2	4.2	0.10	-1.0	1.4	0.32	-4.2	2.9	0.20	-3.5
	1500	1.84	1986	552	6	<15	2.4	0.19	-1.3	4.8	0.12	-1.1	1.6	0.35	-4.3	3.2	0.22	-3.5
	1750	2.15	2318	644	7	<15	2.7	0.21	-1.3	5.4	0.13	-1.1	1.8	0.38	-4.3	3.6	0.24	-3.6

Technical Data – QLV-180

$\bar{v}_{tot}$ = 0.1 m/s

Correction factors for construction with flow-volume control		
from table	Damper setting	
	45°	closed
Δp_t	x 1.9	x 3.4
L_{WA}	+ 8	+ 17

Type QLV-180, for wall installation $\bar{v}_{tot}$ = 0.1 m/s

							Δt_Z = -2 K						Δt_Z = -6 K					
NW	H	A_{tot}	$\dot{V}$		Δp_t	L_{WA}	$L\bar{v}_{L_{max}}$	$\bar{v}_{L_{max}}$	$\Delta t_{L_{max}}$	$2xL\bar{v}_{L_{max}}$	$\bar{v}_L$	Δt_L	$L\bar{v}_{L_{max}}$	$\bar{v}_{L_{max}}$	$\Delta t_{L_{max}}$	$2xL\bar{v}_{L_{max}}$	$\bar{v}_L$	Δt_L
(mm)	(mm)	m²	in m³/h	in l/s	Pa	dB(A)	in m	in m/s	in K	in m	(m/s)	(K)	in m	in m/s	in K	in m	(m/s)	in K
160	500	0.25	88	24	3	<15	0.5	0.12	-1.4	1.0	0.07	-1.2	0.4	0.22	-4.8	0.8	0.14	-4.0
	600	0.29	106	29	4	<15	0.6	0.13	-1.4	1.2	0.08	-1.2	0.4	0.24	-4.9	0.8	0.15	-4.0
	800	0.39	142	39	7	<15	0.7	0.15	-1.5	1.4	0.09	-1.2	0.5	0.29	-5.0	1.0	0.18	-4.2
	1000	0.49	177	49	10	<15	0.8	0.17	-1.5	1.6	0.11	-1.3	0.6	0.32	-5.1	1.2	0.20	-4.3
200	500	0.30	107	30	2	<15	0.5	0.12	-1.4	1.0	0.07	-1.2	0.4	0.22	-4.8	0.8	0.14	-4.0
	600	0.36	129	36	3	<15	0.6	0.13	-1.4	1.2	0.08	-1.2	0.4	0.24	-4.9	0.8	0.15	-4.0
	800	0.48	172	48	4	<15	0.7	0.15	-1.5	1.4	0.09	-1.2	0.5	0.29	-5.0	1.0	0.18	-4.2
	1000	0.60	216	60	6	<15	0.8	0.17	-1.5	1.6	0.11	-1.3	0.6	0.32	-5.1	1.2	0.20	-4.3
250	**500**	**0.36**	**130**	**36**	**1**	**<15**	**0.5**	**0.12**	**-1.4**	**1.0**	**0.07**	**-1.2**	**0.4**	**0.22**	**-4.8**	**0.8**	**0.14**	**-4.0**
	600	0.44	157	44	2	<15	0.6	0.13	-1.4	1.2	0.08	-1.2	0.4	0.24	-4.9	0.8	0.15	-4.0
	800	0.58	209	58	3	<15	0.7	0.15	-1.5	1.4	0.09	-1.2	0.5	0.29	-5.0	1.0	0.18	-4.2
	1000	0.73	262	73	4	<15	0.8	0.17	-1.5	1.6	0.11	-1.3	0.6	0.32	-5.1	1.2	0.20	-4.3
315	600	0.54	194	54	1	<15	0.6	0.13	-1.4	1.2	0.08	-1.2	0.4	0.24	-4.9	0.8	0.15	-4.0
	800	0.72	259	72	2	<15	0.7	0.15	-1.5	1.4	0.09	-1.2	0.5	0.29	-5.0	1.0	0.18	-4.2
	1000	0.90	325	90	2	<15	0.8	0.17	-1.5	1.6	0.11	-1.3	0.6	0.32	-5.1	1.2	0.20	-4.3
	1250	1.13	406	113	3	<15	1.0	0.20	-1.6	2.0	0.12	-1.3	0.6	0.37	-5.2	1.2	0.23	-4.4
400	800	0.90	324	90	1	<15	0.7	0.15	-1.5	1.4	0.09	-1.2	0.5	0.29	-5.0	1.0	0.18	-4.2
	1000	1.13	406	113	2	<15	0.8	0.17	-1.5	1.6	0.11	-1.3	0.6	0.32	-5.1	1.2	0.20	-4.3
	1250	1.41	508	141	2	<15	1.0	0.20	-1.6	2.0	0.12	-1.3	0.6	0.37	-5.2	1.2	0.23	-4.4
	1500	1.69	609	169	3	<15	1.1	0.22	-1.6	2.2	0.14	-1.3	0.7	0.41	-5.3	1.4	0.25	-4.4
500	1000	1.39	501	139	1	<15	0.8	0.17	-1.5	1.6	0.11	-1.3	0.6	0.32	-5.1	1.2	0.20	-4.3
	1250	1.74	627	174	1	<15	1.0	0.20	-1.6	2.0	0.12	-1.3	0.6	0.37	-5.2	1.2	0.23	-4.4
	1500	2.09	752	209	2	<15	1.1	0.22	-1.6	2.2	0.14	-1.3	0.7	0.41	-5.3	1.4	0.25	-4.4
630	1250	2.17	782	217	1	<15	1.0	0.20	-1.6	2.0	0.12	-1.3	0.6	0.37	-5.2	1.2	0.23	-4.4
	1500	2.61	939	261	1	<15	1.1	0.22	-1.6	2.2	0.14	-1.3	0.7	0.41	-5.3	1.4	0.25	-4.4
	1750	3.04	1096	304	2	<15	1.2	0.24	-1.6	2.4	0.15	-1.3	0.8	0.44	-5.4	1.6	0.28	-4.5

Cooke Industries - Phone: +64-9-579 2185 Fax: +64-9-579 2181 Email: sales@cookeindustries.co.nz Web: www.cookeindustries.co.nz

Correction factors for construction with flow-volume control		
from table	Damper setting	
	45°	closed
Δp_t	x 1.9	x 3.4
L_{WA}	+ 8	+ 17

Type QLV-180, for wall installation $\bar{v}_{tot}$ = 0.3 m/s

							Δt_Z = -2 K						Δt_Z = -6 K					
NW (mm)	H (mm)	A_{tot} m²	$\dot{V}$ in m³/h	$\dot{V}$ in l/s	Δp_t Pa	L_{WA} dB(A)	$L\bar{v}_{L_{max}}$ in m	$\bar{v}_{L_{max}}$ in m/s	$\Delta t_{L_{max}}$ in K	$2xL\bar{v}_{L_{max}}$ in m	$\bar{v}_L$ (m/s)	Δt_L (K)	$L\bar{v}_{L_{max}}$ in m	$\bar{v}_{L_{max}}$ in m/s	$\Delta t_{L_{max}}$ in K	$2xL\bar{v}_{L_{max}}$ in m	$\bar{v}_L$ (m/s)	Δt_L in K
160	500	0.25	265	74	30	24	1.2	0.10	-1.1	2.4	0.06	-0.9	0.8	0.19	-3.8	1.6	0.12	-3.2
	600	0.29	318	88	39	29	1.3	0.11	-1.2	2.6	0.07	-1.0	0.9	0.21	-3.9	1.8	0.13	-3.2
	800	0.39	425	118	62	37	1.6	0.13	-1.2	3.2	0.08	-1.0	1.1	0.25	-4.0	2.2	0.15	-3.3
	1000	0.49	532	148	89	42	1.9	0.15	-1.2	3.8	0.09	-1.0	1.3	0.28	-4.1	2.5	0.17	-3.4
200	500	0.30	322	89	19	19	1.2	0.10	-1.1	2.4	0.06	-0.9	0.8	0.19	-3.8	1.6	0.12	-3.2
	600	0.36	387	108	25	23	1.3	0.11	-1.2	2.6	0.07	-1.0	0.9	0.21	-3.9	1.8	0.13	-3.2
	800	0.48	517	144	39	31	1.6	0.13	-1.2	3.2	0.08	-1.0	1.1	0.25	-4.0	2.2	0.15	-3.3
	1000	0.60	647	180	55	37	1.9	0.15	-1.2	3.8	0.09	-1.0	1.3	0.28	-4.1	2.5	0.17	-3.4
250	500	0.36	391	109	12	<15	1.2	0.10	-1.1	2.4	0.06	-0.9	0.8	0.19	-3.8	1.6	0.12	-3.2
	600	0.44	470	131	16	18	1.3	0.11	-1.2	2.6	0.07	-1.0	0.9	0.21	-3.9	1.8	0.13	-3.2
	800	0.58	628	174	25	25	1.6	0.13	-1.2	3.2	0.08	-1.0	1.1	0.25	-4.0	2.2	0.15	-3.3
	1000	0.73	786	218	35	31	1.9	0.15	-1.2	3.8	0.09	-1.0	1.3	0.28	-4.1	2.5	0.17	-3.4
315	600	0.54	583	162	10	<15	1.3	0.11	-1.2	2.6	0.07	-1.0	0.9	0.21	-3.9	1.8	0.13	-3.2
	800	0.72	778	216	16	20	1.6	0.13	-1.2	3.2	0.08	-1.0	1.1	0.25	-4.0	2.2	0.15	-3.3
	1000	0.90	974	271	22	26	1.9	0.15	-1.2	3.8	0.09	-1.0	1.3	0.28	-4.1	2.5	0.17	-3.4
	1250	1.13	1219	339	31	31	2.1	0.17	-1.2	4.2	0.10	-1.0	1.4	0.32	-4.2	2.9	0.20	-3.5
400	800	0.90	973	270	10	<15	1.6	0.13	-1.2	3.2	0.08	-1.0	1.1	0.25	-4.0	2.2	0.15	-3.3
	1000	1.13	1217	338	14	20	1.9	0.15	-1.2	3.8	0.09	-1.0	1.3	0.28	-4.1	2.5	0.17	-3.4
	1250	1.41	1523	423	20	26	2.1	0.17	-1.2	4.2	0.10	-1.0	1.4	0.32	-4.2	2.9	0.20	-3.5
	1500	1.69	1828	508	26	31	2.4	0.19	-1.3	4.8	0.12	-1.1	1.6	0.35	-4.3	3.2	0.22	-3.5
500	1000	1.39	1503	418	9	15	1.9	0.15	-1.2	3.8	0.09	-1.0	1.3	0.28	-4.1	2.5	0.17	-3.4
	1250	1.74	1880	522	13	21	2.1	0.17	-1.2	4.2	0.10	-1.0	1.4	0.32	-4.2	2.9	0.20	-3.5
	1500	2.09	2257	627	17	25	2.4	0.19	-1.3	4.8	0.12	-1.1	1.6	0.35	-4.3	3.2	0.22	-3.5
630	1250	2.17	2345	651	9	15	2.1	0.17	-1.2	4.2	0.10	-1.0	1.4	0.32	-4.2	2.9	0.20	-3.5
	1500	2.61	2816	782	11	20	2.4	0.19	-1.3	4.8	0.12	-1.1	1.6	0.35	-4.3	3.2	0.22	-3.5
	1750	3.04	3287	913	14	24	2.7	0.21	-1.3	5.4	0.13	-1.1	1.8	0.38	-4.3	3.6	0.24	-3.6

Technical Data – QLV-360

$\bar{v}_{tot}$ = 0.1 m/s

Correction factors for construction with flow-volume control		
from table	Damper setting	
	45°	closed
Δp_t	x 1.9	x 3.4
L_{WA}	+ 8	+ 17

Type QLV-360, for free standing installation $\bar{v}_{tot}$ = 0.1 m/s

							Δt_Z = -2 K						Δt_Z = -6 K					
NW	H	A_{tot}	$\dot{V}$		Δp_t	L_{WA}	$L\bar{v}_{L_{max}}$	$\bar{v}_{L_{max}}$	$\Delta t_{L_{max}}$	$2xL\bar{v}_{L_{max}}$	$\bar{v}_L$	Δt_L	$L\bar{v}_{L_{max}}$	$\bar{v}_{L_{max}}$	$\Delta t_{L_{max}}$	$2xL\bar{v}_{L_{max}}$	$\bar{v}_L$	Δt_L
(mm)	(mm)	m²	in m³/h	in l/s	Pa	dB(A)	in m	in m/s	in K	in m	(m/s)	(K)	in m	in m/s	in K	in m	(m/s)	in K
160	500	0.32	115	32	5	<15	0.5	0.12	-1.4	1.0	0.07	-1.2	0.4	0.22	-4.8	0.8	0.14	-4.0
	600	0.38	138	38	7	<15	0.6	0.13	-1.4	1.2	0.08	-1.2	0.4	0.24	-4.9	0.8	0.15	-4.0
	800	0.51	184	51	11	<15	0.7	0.15	-1.5	1.4	0.09	-1.2	0.5	0.29	-5.0	1.0	0.18	-4.2
	1000	0.64	231	64	16	<15	0.8	0.17	-1.5	1.6	0.11	-1.3	0.6	0.32	-5.1	1.2	0.20	-4.3
200	500	0.39	139	39	3	<15	0.5	0.12	-1.4	1.0	0.07	-1.2	0.4	0.22	-4.8	0.8	0.14	-4.0
	600	0.46	167	46	4	<15	0.6	0.13	-1.4	1.2	0.08	-1.2	0.4	0.24	-4.9	0.8	0.15	-4.0
	800	0.62	223	62	7	<15	0.7	0.15	-1.5	1.4	0.09	-1.2	0.5	0.29	-5.0	1.0	0.18	-4.2
	1000	0.78	280	78	10	<15	0.8	0.17	-1.5	1.6	0.11	-1.3	0.6	0.32	-5.1	1.2	0.20	-4.3
250	500	0.47	168	47	2	<15	0.5	0.12	-1.4	1.0	0.07	-1.2	0.4	0.22	-4.8	0.8	0.14	-4.0
	600	0.56	202	56	3	<15	0.6	0.13	-1.4	1.2	0.08	-1.2	0.4	0.24	-4.9	0.8	0.15	-4.0
	800	0.75	269	75	4	<15	0.7	0.15	-1.5	1.4	0.09	-1.2	0.5	0.29	-5.0	1.0	0.18	-4.2
	1000	0.94	337	94	6	<15	0.8	0.17	-1.5	1.6	0.11	-1.3	0.6	0.32	-5.1	1.2	0.20	-4.3
315	600	0.69	249	69	2	<15	0.6	0.13	-1.4	1.2	0.08	-1.2	0.4	0.24	-4.9	0.8	0.15	-4.0
	800	0.92	332	92	3	<15	0.7	0.15	-1.5	1.4	0.09	-1.2	0.5	0.29	-5.0	1.0	0.18	-4.2
	1000	1.15	416	116	4	<15	0.8	0.17	-1.5	1.6	0.11	-1.3	0.6	0.32	-5.1	1.2	0.20	-4.3
	1250	1.44	520	144	5	<15	1.0	0.20	-1.6	2.0	0.12	-1.3	0.6	0.37	-5.2	1.2	0.23	-4.4
400	800	1.15	412	114	2	<15	0.7	0.15	-1.5	1.4	0.09	-1.2	0.5	0.29	-5.0	1.0	0.18	-4.2
	1000	1.43	516	143	2	<15	0.8	0.17	-1.5	1.6	0.11	-1.3	0.6	0.32	-5.1	1.2	0.20	-4.3
	1250	1.79	646	179	3	<15	1.0	0.20	-1.6	2.0	0.12	-1.3	0.6	0.37	-5.2	1.2	0.23	-4.4
	1500	2.15	775	215	4	<15	1.1	0.22	-1.6	2.2	0.14	-1.3	0.7	0.41	-5.3	1.4	0.25	-4.4
500	1000	1.76	635	176	2	<15	0.8	0.17	-1.5	1.6	0.11	-1.3	0.6	0.32	-5.1	1.2	0.20	-4.3
	1250	2.21	795	221	2	<15	1.0	0.20	-1.6	2.0	0.12	-1.3	0.6	0.37	-5.2	1.2	0.23	-4.4
	1500	2.65	954	265	3	<15	1.1	0.22	-1.6	2.2	0.14	-1.3	0.7	0.41	-5.3	1.4	0.25	-4.4
630	1250	2.75	988	274	1	<15	1.0	0.20	-1.6	2.0	0.12	-1.3	0.6	0.37	-5.2	1.2	0.23	-4.4
	1500	3.30	1187	330	2	<15	1.1	0.22	-1.6	2.2	0.14	-1.3	0.7	0.41	-5.3	1.4	0.25	-4.4
	1750	3.85	1385	385	2	<15	1.2	0.24	-1.6	2.4	0.15	-1.3	0.8	0.44	-5.4	1.6	0.28	-4.5

Correction factors for construction with flow-volume control		
from table	Damper setting	
	45°	closed
Δp_t	x 1.9	x 3.4
L_{WA}	+ 8	+ 17

Type QLV-360, for free standing installation $\bar{v}_{tot}$ = 0.3 m/s

							Δt_Z = -2 K						Δt_Z = -6 K					
NW (mm)	H (mm)	A_{tot} m²	$\dot{V}$ in m³/h	$\dot{V}$ in l/s	Δp_t Pa	L_{WA} dB(A)	$L\bar{v}_{L_{max}}$ in m	$\bar{v}_{L_{max}}$ in m/s	$\Delta t_{L_{max}}$ in K	$2xL\bar{v}_{L_{max}}$ in m	$\bar{v}_L$ (m/s)	Δt_L (K)	$L\bar{v}_{L_{max}}$ in m	$\bar{v}_{L_{max}}$ in m/s	$\Delta t_{L_{max}}$ in K	$2xL\bar{v}_{L_{max}}$ in m	$\bar{v}_L$ (m/s)	Δt_L in K
160	500	0.32	345	96	49	32	1.2	0.10	-1.1	2.4	0.06	-0.9	0.8	0.19	-3.8	1.6	0.12	-3.2
	600	0.38	414	115	64	37	1.3	0.11	-1.2	2.6	0.07	-1.0	0.9	0.21	-3.9	1.8	0.13	-3.2
	800	0.51	553	154	103	44	1.6	0.13	-1.2	3.2	0.08	-1.0	1.1	0.25	-4.0	2.2	0.15	-3.3
	1000	0.64	692	192	148	50	1.9	0.15	-1.2	3.8	0.09	-1.0	1.3	0.28	-4.1	2.6	0.17	-3.4
200	500	0.39	417	116	31	26	1.2	0.10	-1.1	2.4	0.06	-0.9	0.8	0.19	-3.8	1.6	0.12	-3.2
	600	0.46	502	139	40	31	1.3	0.11	-1.2	2.6	0.07	-1.0	0.9	0.21	-3.9	1.8	0.13	-3.2
	800	0.62	670	186	64	38	1.6	0.13	-1.2	3.2	0.08	-1.0	1.1	0.25	-4.0	2.2	0.15	-3.3
	1000	0.78	839	233	90	44	1.9	0.15	-1.2	3.8	0.09	-1.0	1.3	0.28	-4.1	2.6	0.17	-3.4
250	500	0.47	503	140	20	20	1.2	0.10	-1.1	2.4	0.06	-0.9	0.8	0.19	-3.8	1.6	0.12	-3.2
	600	0.56	605	168	25	25	1.3	0.11	-1.2	2.6	0.07	-1.0	0.9	0.21	-3.9	1.8	0.13	-3.2
	800	0.75	808	224	40	32	1.6	0.13	-1.2	3.2	0.08	-1.0	1.1	0.25	-4.0	2.2	0.15	-3.3
	1000	0.94	1011	281	55	38	1.9	0.15	-1.2	3.8	0.09	-1.0	1.3	0.28	-4.1	2.6	0.17	-3.4
315	600	0.69	746	207	16	19	1.3	0.11	-1.2	2.6	0.07	-1.0	0.9	0.21	-3.9	1.8	0.13	-3.2
	800	0.92	997	277	25	27	1.6	0.13	-1.2	3.2	0.08	-1.0	1.1	0.25	-4.0	2.2	0.15	-3.3
	1000	1.15	1247	346	35	33	1.9	0.15	-1.2	3.8	0.09	-1.0	1.3	0.28	-4.1	2.6	0.17	-3.4
	1250	1.44	1560	433	49	38	2.1	0.17	-1.2	4.2	0.10	-1.0	1.4	0.32	-4.2	2.8	0.20	-3.5
400	800	1.15	1237	344	16	21	1.6	0.13	-1.2	3.2	0.08	-1.0	1.1	0.25	-4.0	2.2	0.15	-3.3
	1000	1.43	1548	430	22	27	1.9	0.15	-1.2	3.8	0.09	-1.0	1.3	0.28	-4.1	2.6	0.17	-3.4
	1250	1.79	1937	538	30	33	2.1	0.17	-1.2	4.2	0.10	-1.0	1.4	0.32	-4.2	2.8	0.20	-3.5
	1500	2.15	2326	646	40	37	2.4	0.19	-1.3	4.8	0.12	-1.1	1.6	0.35	-4.3	3.2	0.22	-3.5
500	1000	1.76	1905	529	14	21	1.9	0.15	-1.2	3.8	0.09	-1.0	1.3	0.28	-4.1	2.6	0.17	-3.4
	1250	2.21	2384	662	20	27	2.1	0.17	-1.2	4.2	0.10	-1.0	1.4	0.32	-4.2	2.8	0.20	-3.5
	1500	2.65	2862	795	26	32	2.4	0.19	-1.3	4.8	0.12	-1.1	1.6	0.35	-4.3	3.2	0.22	-3.5
630	1250	2.75	2965	824	13	22	2.1	0.17	-1.2	4.2	0.10	-1.0	1.4	0.32	-4.2	2.8	0.20	-3.5
	1500	3.30	3560	989	17	27	2.4	0.19	-1.3	4.8	0.12	-1.1	1.6	0.35	-4.3	3.2	0.22	-3.5
	1750	3.85	4155	1154	21	31	2.7	0.21	-1.3	5.4	0.13	-1.1	1.8	0.38	-4.3	3.6	0.24	-3.5

Order Details

Specification text

Type QLV displacement flow diffusers are polygonal architectural design elements available in a 90° construction for corner installation, a 180° construction for wall installation or a 360° construction for free-standing installation. They provide low-turbulence air supply with very low jet velocities.

Displacement flow diffusers consist of a casing with a spigot on the top or bottom. The top spigot configuration can, on request, be supplied with a lip seal, while the bottom spigot model configuration includes a lip seal. A spigot mounted volume control damper is available on request.
The discharge faces are of perforated sheets concealing an air straightener and an interior air control element.

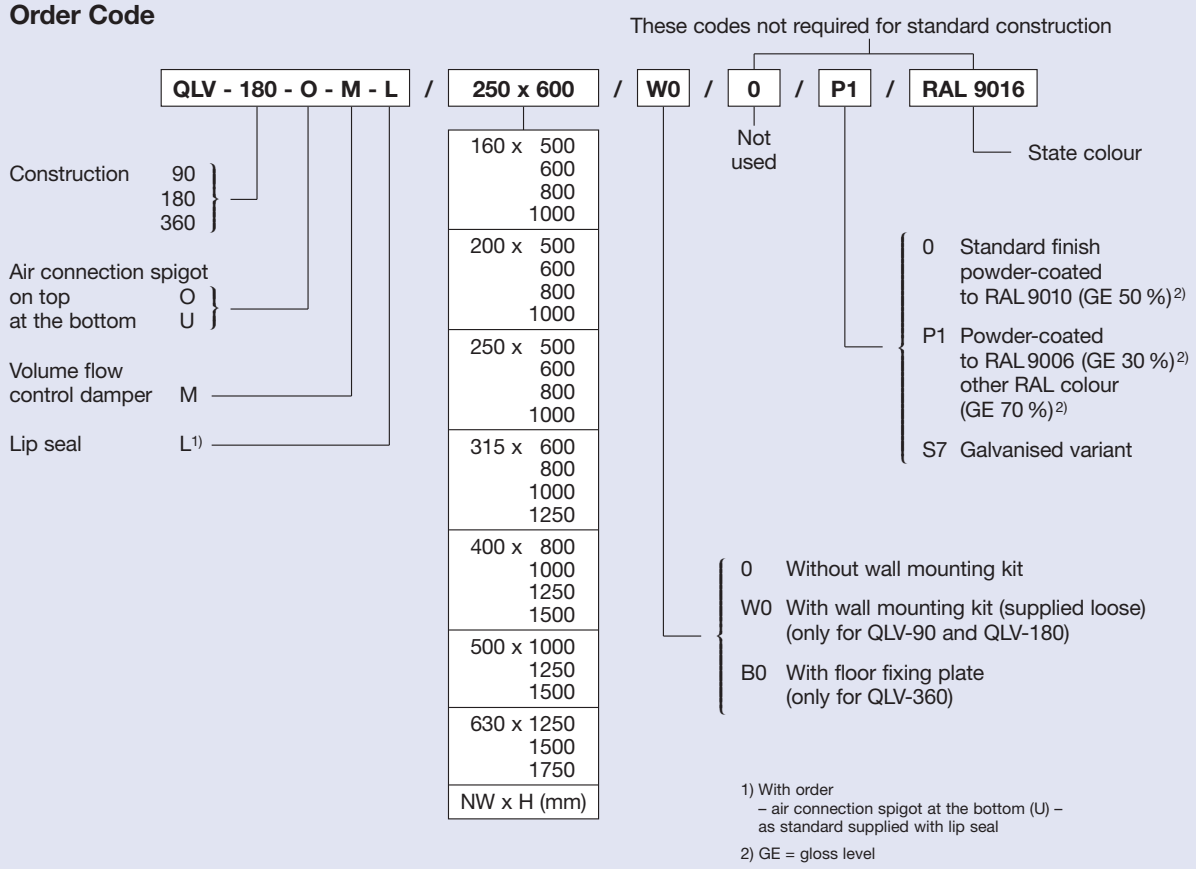
Materials
Top cover, base, spigots and side plates are made of galvanised sheet steel, corner and edge strips are made of aluminium extrusions.

The surface is pre-treated and powder-coated white RAL 9010, gloss level 50 %, on request powder-coated to RAL 9006, gloss level 30 %, other RAL colours, gloss level 70 %.

The air straightener is made of plastic, the air control element is made of synthetic fiber and the lip seal of rubber.

The side plates are of galvanised steel construction if powder coat finish is not specified; top cover, base, corner and edge strips are made of aluminium.

Order Code



1) With order
– air connection spigot at the bottom (U) –
as standard supplied with lip seal

2) GE = gloss level

Order example

Make: TROX
Type: QLV - 180 - O - M - L / 250 x 600 / W0 / P1 / RAL 9016