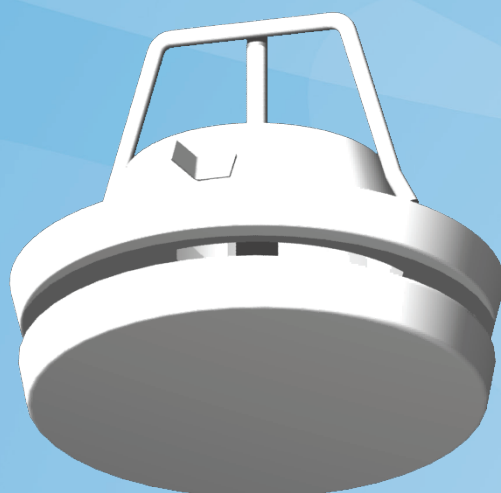


# Halton ULA

Valve



Halton reserves the right to alter products without notice

- Supply/exhaust valve for ceiling and wall installation with adjustable pressure loss
- Installation without an installation frame directly into ductwork or a hollow-core slab
- Flow pattern can be directed
- Attenuates duct noise
- Airflow rate measurement and adjustment facility

## Product model options and Accessories

- Model with installation frame
- Protection ring for protecting the surfaces from smudging
- Extension part for detaching the valve from surfaces

## MATERIAL AND FINISHING

PART	MATERIAL	NOTE
Collar	Steel	
Front panel	Steel	
Attenuation panel	Polyethylene	
Sector plate	Polyethylene	
Gasket	Polyurethane	
Finishing	Painted White RAL 9010	Special colour available

**QUICK SELECTION, EXHAUST**

qv	l/s m <sup>3</sup> /h	15	20	25	30	40	50	60	70	80	90	100
		54	72	90	108	144	180	216	252	288	324	360
ULA/N-100(E)	LpA	19	24	29	34	43						
	ΔP <sub>tot</sub>	7	13	20	29	52						
	ΔP <sub>t</sub>	90	63	50	40	-						
ULA/N-125(E)	LpA			20	24	32	38					
	ΔP <sub>tot</sub>			12	17	30	47					
	ΔP <sub>t</sub>			100	93	43	-					
ULA/N-160(E)	LpA					22	29	35	40			
	ΔP <sub>tot</sub>					20	31	45	61			
	ΔP <sub>t</sub>					110	52	-	-			
ULA/N-200(E)	LpA					23	26	28	31	33	36	
	ΔP <sub>tot</sub>					16	23	31	41	52	65	
	ΔP <sub>t</sub>					70	57	57	56	58	-	

**QUICK SELECTION, SUPPLY, RADIAL JET**

qv	Pa	180	240	300	360	480	600	720	840	960	1200	1440	1680
	l/s	15	20	25	30	40	50	60	70	80	100	120	140
	m <sup>3</sup> /h	54	72	90	108	144	180	216	252	288	360	432	504
ULA/N-100(R)	LpA	<20	20	27	33	43							
	ΔP <sub>tot</sub>	11	20	31	45	80							
	dP <sub>t</sub>	76	82	63	-	-							
	Ld	-	-	-	-	-							
	L0.2	0,8	1,0	1,4	1,6	2,0							
ULA/N-125(R)	LpA				20	28	35	41	46				
	ΔP <sub>tot</sub>				18	32	50	72	98				
	dP <sub>t</sub>				90	57	-	-	-				
	Ld				-	-	-	-	-				
	L0.2				1,8	2,4	3,0	3,6	4,0				
ULA/N-160(R)	LpA					<20	24	30	34	38	45		
	ΔP <sub>tot</sub>					12	19	28	38	50	78		
	dP <sub>t</sub>					72	65	46	-	-	-		
	Ld					-	-	-	-	-	-		
	L0.2					1,4	1,8	2,0	2,4	2,6	3,2		
ULA/N-200(R)	LpA							21	25	30	37	43	49
	ΔP <sub>tot</sub>							14	19	25	39	56	76
	dP <sub>t</sub>							45	41	34	-	-	-
	Ld							-	-	-	-	-	-
	L0.2							2,4	2,8	3,2	3,8	4,4	5,0

LpA values presented with room attenuation 4 dB (red 10m<sup>2</sup> - sab). When using room attenuation 8 dB (red 25m<sup>2</sup> - sab):  
LpA - 4dB.

LpA A-weighted sound pressure level, reduced by total equivalent absorption surface of 10m<sup>2</sup>, dB(A) red 10m<sup>2</sup> - sab

ΔP<sub>tot</sub> Total pressure drop, Pa

dP<sub>t</sub> Maximum ΔP<sub>tot</sub> (Pa), when a-weighted sound pressure level (Lp) is 35 dB(A)

Ld Distance from the supply unit, at which air jet detaches from ceiling, m

L0.2 Isothermal throw length, m when residual velocity of supply air jet 0,2 m/s

Room temperature (Tr) = 24 °C

Supply air temperature (Ta) = 14 °C

## QUICK SELECTION, SUPPLY, RADIAL JET 1 DIRECTION

qv	Pa	96	120	180	240	300	360	480	600	720	840	960
	l/s	8	10	15	20	25	30	40	50	60	70	80
	m <sup>3</sup> /h	28,8	36	54	72	90	108	144	180	216	252	288
ULA/N-100(R1)	LpA	<20	<20	26	34	41						
	ΔPtot	8	12	27	48	75						
	dP_t	-	89	66	64	86						
	Ld	-	-	-	-	-						
	L0.2	0,5	0,5	0,8	1,0	1,2						
ULA/N-125(R1)	LpA			<20	23	29	34	43				
	ΔPtot			12	22	34	49	88				
	dP_t			127	84	59	49	-				
	Ld			-	-	-	-	-				
	L0.2			0,8	1,0	1,2	1,4	1,8				
ULA/N-160(R1)	LpA					<20	24	44	39	45		
	ΔPtot					17	25	32	69	99		
	dP_t					111	65	49	-	-		
	Ld					-	-	-	-	-		
	L0.2					1,2	1,4	1,8	2,2	2,6		
ULA/N-200(R1)	LpA						<20	24	30	36	40	44
	ΔPtot						12	22	34	49	67	87
	dP_t						68	54	48	49	-	-
	Ld						-	-	-	-	-	-
	L0.2						1,0	1,2	1,6	1,8	2,0	2,2

## QUICK SELECTION, SUPPLY, WALL INSTALLATION

qv	Pa	96	120	180	240	300	360	480	600	720	840	960
	l/s	8	10	15	20	25	30	40	50	60	70	80
	m <sup>3</sup> /h	28,8	36	54	72	90	108	144	180	216	252	288
ULA/N-100(RW)	LpA	<20	<20	26	34	41						
	ΔPtot	8	12	27	48	75						
	dP_t	-	89	66	64	86						
	Ld	-	-	-	-	-						
	L0.2	0,5	0,5	0,8	1,0	1,2						
ULA/N-125(RW)	LpA			<20	23	29	34	43				
	ΔPtot			12	22	34	49	88				
	dP_t			127	84	59	49	-				
	Ld			-	-	-	-	-				
	L0.2			0,8	1,0	1,2	1,4	1,8				
ULA/N-160(RW)	LpA					<20	24	44	39	45		
	ΔPtot					17	25	32	69	99		
	dP_t					111	65	49	-	-		
	Ld					-	-	-	-	-		
	L0.2					1,2	1,4	1,8	2,2	2,6		
ULA/N-200(RW)	LpA						<20	24	30	36	40	44
	ΔPtot						12	22	34	49	67	87
	dP_t						68	54	48	49	-	-
	Ld						-	-	-	-	-	-
	L0.2						1,0	1,2	1,6	1,8	2,0	2,2

LpA values presented with room attenuation 4 dB (red 10m<sup>2</sup> - sab). When using room attenuation 8 dB (red 25m<sup>2</sup> - sab):  
LpA - 4dB.

LpA A-weighted sound pressure level, reduced by total equivalent absorption surface of 10m<sup>2</sup>, dB(A) red 10m<sup>2</sup> - sab

ΔPtot Total pressure drop, Pa

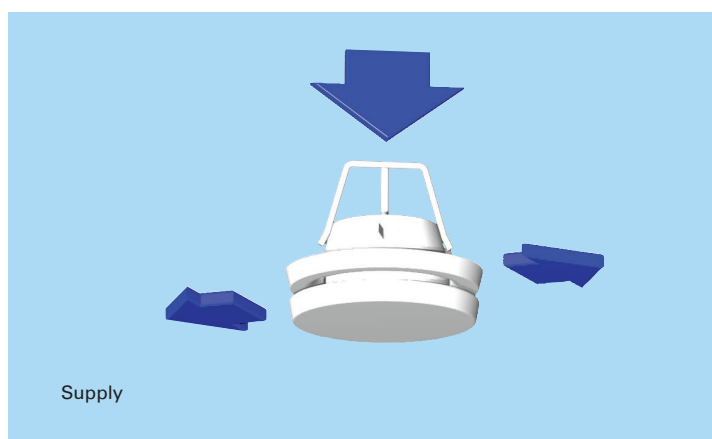
dP\_t Maximum ΔPtot (Pa), when a-weighted sound pressure level (Lp) is 35 dB(A)

Ld Distance from the supply unit, at which air jet detaches from ceiling, m

L0.2 Isothermal throw length, m when residual velocity of supply air jet 0,2 m/s

Room temperature (Tr) = 24 °C

Supply air temperature (Ta) = 14 °C



Supply

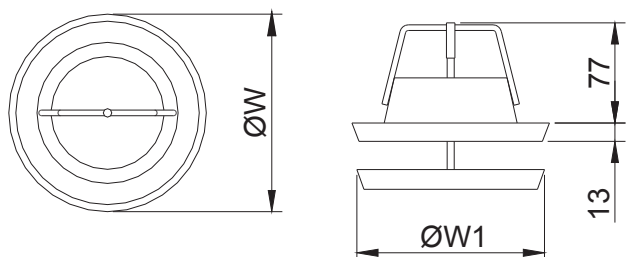


Exhaust

## Function

- In supply air application the desired flow pattern is directed using an internal sector plate.
- Pressure loss and airflow rate are dependent on both the flow pattern adjustment and position of the front panel.
- The valve attenuates duct noise.
- The desired pressure loss and airflow rate can be adjusted in an exhaust air application, by removing the sector plate and adjusting the front panel position.

## DIMENSIONS



NS	ØW	ØW1
100	140	133
125	165	146
160	200	188
200	251	240

## ACCESSORIES

ACCESSORY	CODE	DESCRIPTION
Protection ring	CS	For protection of the surfaces from smudging and for directing the air jet in a grid-structured ceiling
Extension part	EP	Extension part for detaching the valve from the surface/ standard height 50 mm
Installation frame	LF	Installation frame without gasket/height 50 mm
Installation frame	GF	Installation frame with gasket/height 50 mm
Installation frame	DF	Installation frame with duct dimensions can be installed directly to duct parts such as bending or T-branch etc

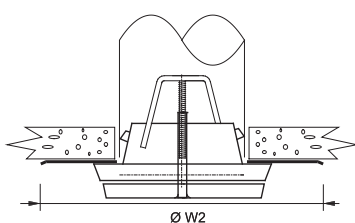
## Installation

The collar is installed either directly into the end of a duct or into a hollow-core slab with fixing springs. Alternatively, the model can be installed with the aid of a separate installation frame (LF, GF or DF).

The supply air valve can be installed in contact with the ceiling or wall surface, with or without a protection ring (CS), or suspended from the ceiling or wall with an extension part (EP).

### Protection ring CS

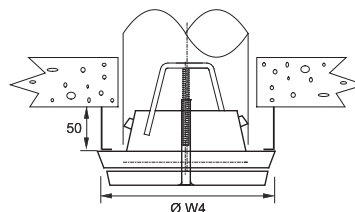
The CS protection ring protects the ceiling or wall from smudging and can also be used for directing the air jet in an open grid-structured ceiling installation.



ULA	Ø K
100	290
125	315
160	350
200	400

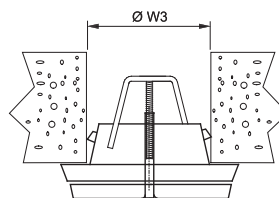
### Extension part EP

The EP extension part allows the valve to be suspended from the ceiling surface, allowing the supply air jet to be directed clear of a nearby obstacle.



ULA	Ø K
100	150
125	175
160	210
200	260

### Installation hole in hollow core slabs



ULA	Ø K
100	96-101
125	121-126
160	155-161
200	195-201

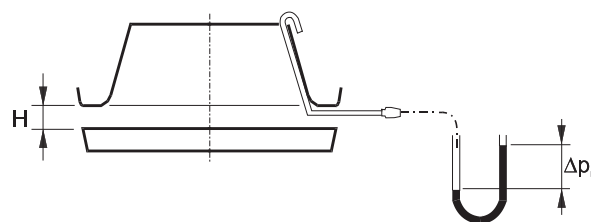
## Adjustment

In the supply application the sector plate is positioned prior to airflow direction. In an exhaust application the sector plate is not used, yet the spring shall be conserved.







The valve is adjusted by rotating the front panel. Measure the opening (A) position (in mm) of the front panel. Set a probe inside the valve and measure the differential pressure with a manometer. The airflow rate is calculated using the formula below.







$$q_v = k * \sqrt{\Delta p_m}$$







After adjustment, lock the front panel with the locking nut.









**SUPPLY**




ULA 100		360*			180°		
							
A	k	k	k	k	k	k	
3	1,40	1,41	1,41	0,82	0,90	0,90	
6	3,09	3,06	3,05	1,65	1,63	1,64	
9	4,52	4,40	4,38	2,33	2,31	2,31	
12	5,61	5,36	5,31	3,00	2,95	2,90	




ULA 125		360*			180°		
							
A	k	k	k	k	k	k	
3	1,61	1,60	1,60	1,04	1,03	1,03	
6	3,52	3,51	3,51	1,98	1,95	1,95	
9	5,39	5,33	5,33	2,82	2,84	2,84	
12	8,25	8,07	8,07	4,45	4,46	4,46	




ULA 160		360*			180°		
							
A	k	k	k	k	k	k	
3	2,00	2,01	2,01	1,18	1,23	1,23	
6	4,11	4,13	4,13	2,41	2,42	2,42	
9	6,61	6,78	6,78	3,47	3,41	3,41	
12	8,78	8,86	8,86	4,55	4,39	4,39	
18	12,92	12,85	12,85	6,65	6,68	6,68	




ULA 200		360*			180°		
							
A	k	k	k	k	k	k	
3	2,46	2,44	2,44	1,39	1,44	1,44	
6	5,11	5,16	5,16	2,96	3,06	3,06	
9	8,01	8,00	8,00	4,37	4,36	4,36	
12	10,96	10,69	10,69	5,78	5,79	5,79	
20	17,90	17,65	17,65	9,30	9,26	9,26	

**EXHAUST**

ULA 100				
				
A	k	k	k	
3	1,43	1,44	1,45	
6	2,63	2,64	2,63	
9	3,52	3,52	3,53	
12	4,16	4,14	4,17	

ULA 125				
				
A	k	k	k	
3	1,65	1,65	1,65	
6	2,99	2,99	2,99	
9	3,96	3,97	3,97	
15	5,85	5,85	5,85	

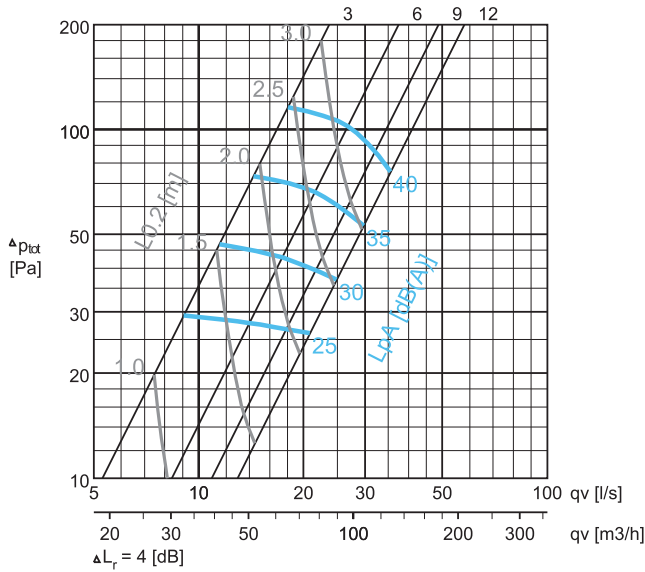
ULA 160				
				
A	k	k	k	
3	1,58	1,54	1,54	
6	3,61	3,60	3,60	
9	5,19	5,19	5,19	
15	7,56	7,58	7,58	

ULA 200				
				
A	k	k	k	
3	2,53	2,28	2,40	
6	4,72	4,80	4,75	
9	6,48	6,55	6,60	
15	10,11	10,13	10,13	

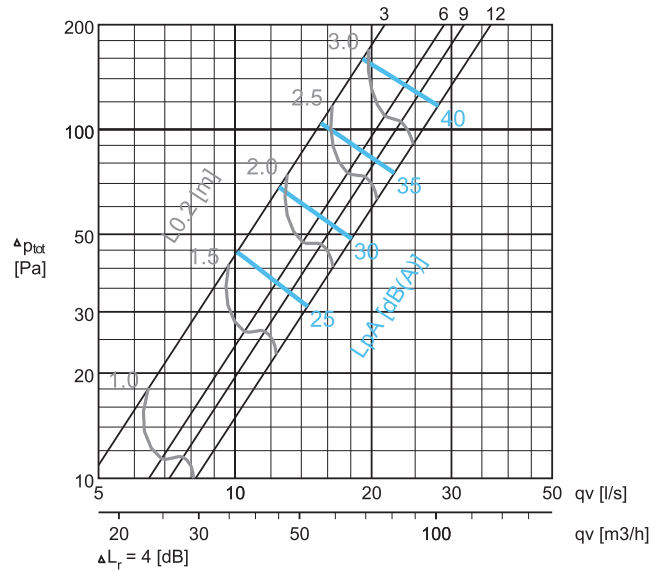
Pressure drop, throw pattern and sound data, supply

ULA-(R) = supply at 360°, ULA-(R1/RW) = supply at 180°

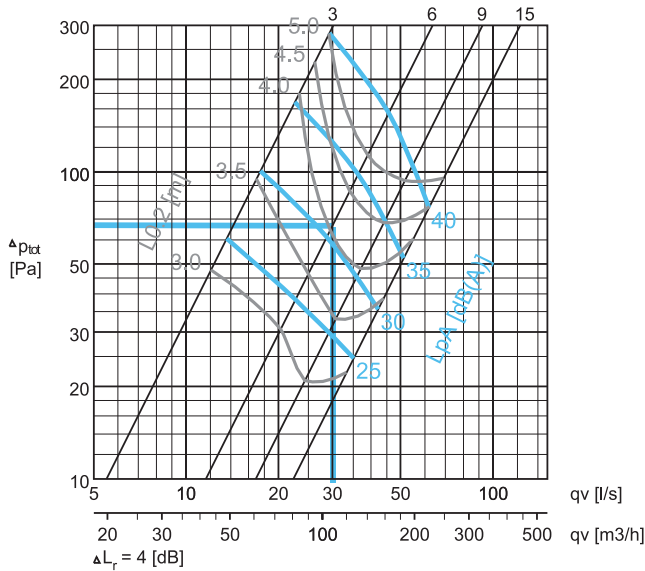
ULA-100(R)



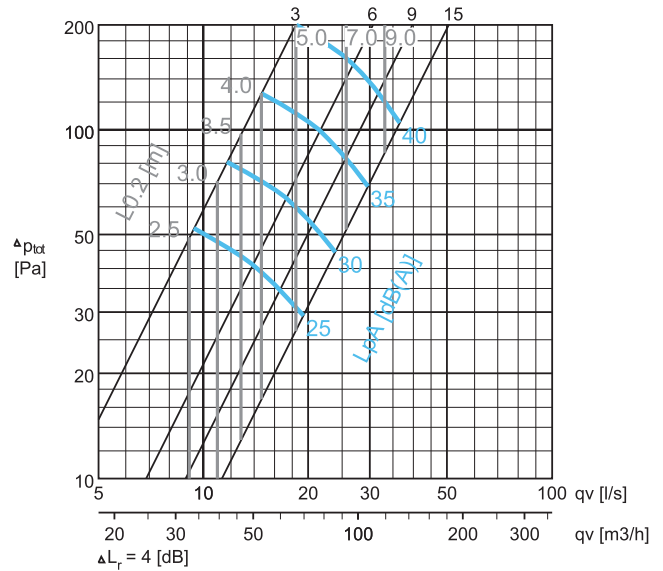
ULA-100(R1/RW)



ULA-125(R)



ULA-125(R1/RW)



Selection example :

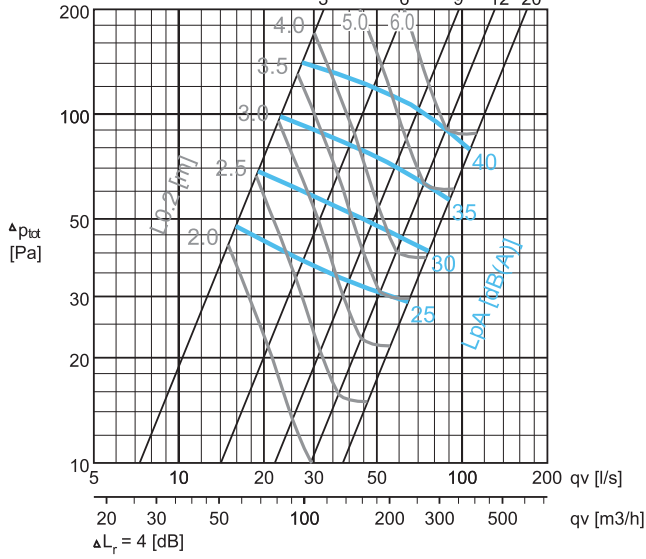
Requirements :	$qv = 30$ l/s	Selection : ULA-125
	$L_{pA} \leq 35$ dB(A)	$L_{pA} = 31$ dB(A)
	$L_{0,2} \leq 4$ m	$L_{0,2} = 4$ m
	360° throw pattern	$\Delta p_{tot} = 67$ Pa
	Opening A = 6 mm	

ULA-(R) Radial jet  
 ULA-(R1) Radial jet, 1 direction  
 ULA-(RW) Wall type

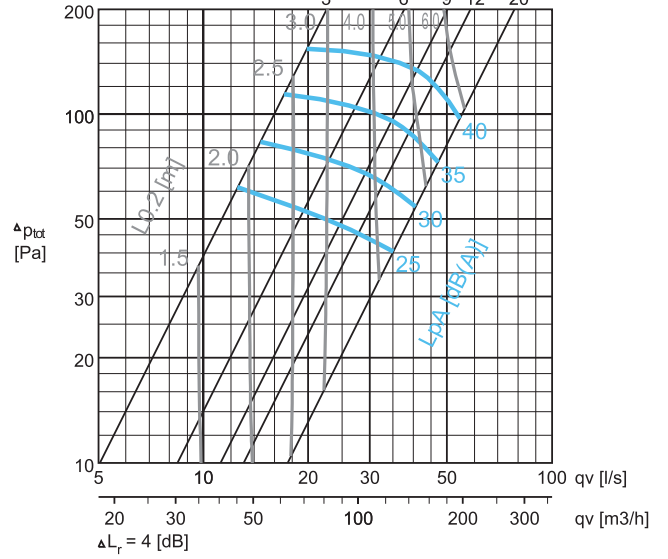
Pressure drop, throw pattern and sound data, supply

ULA-(R) = supply at 360°, ULA-(R1/RW) = supply at 180°

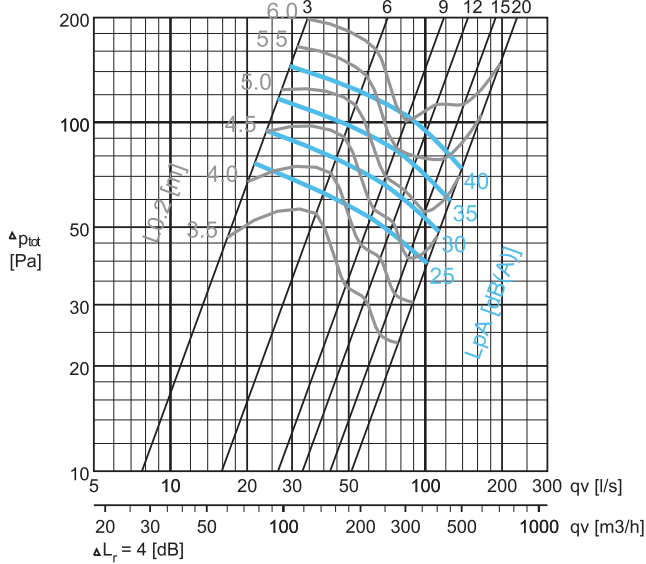
ULA-160(R)



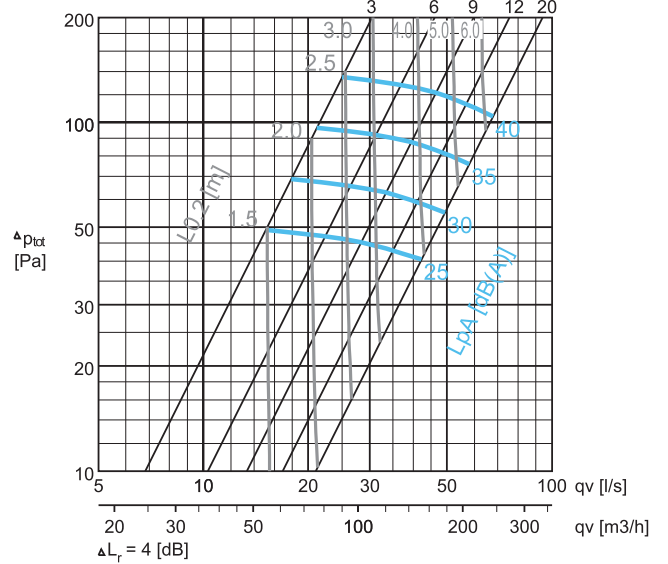
ULA-160(R1/RW)



ULA-200(R)



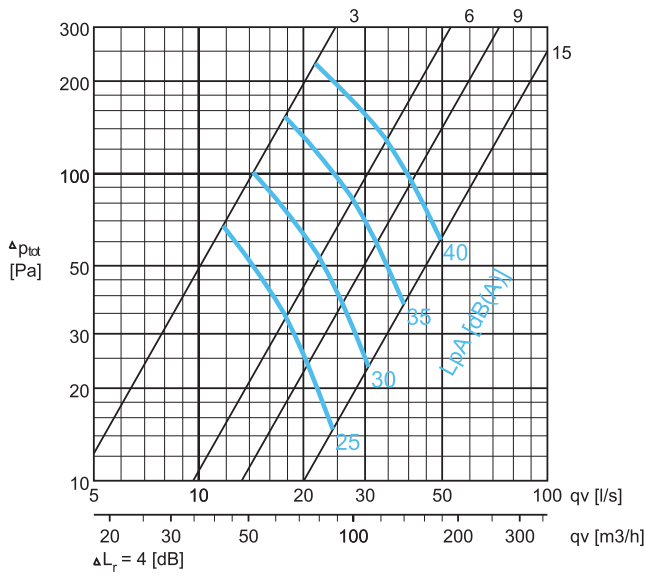
ULA-200(R1/RW)



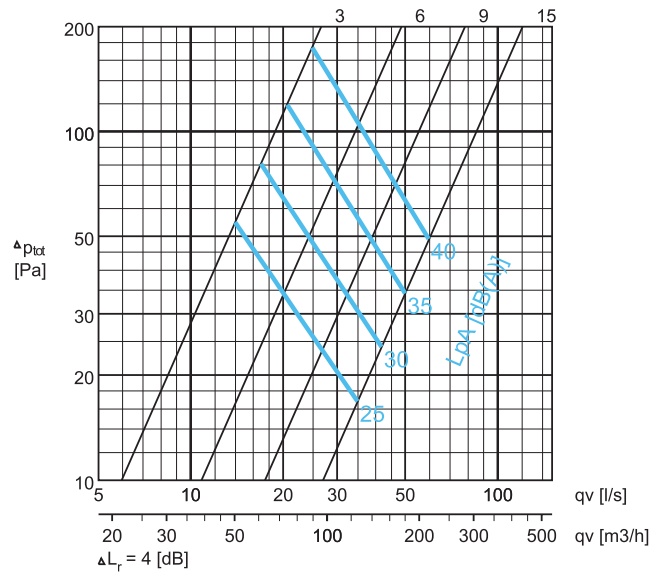


Pressure drop and sound data, exhaust

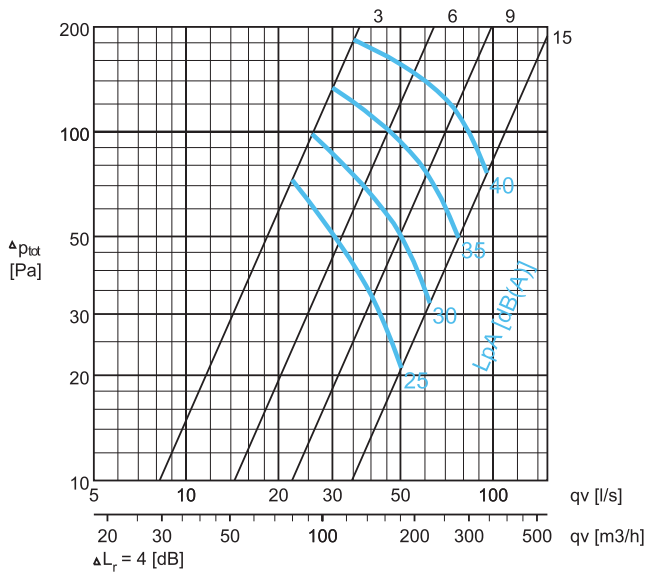
ULA-100



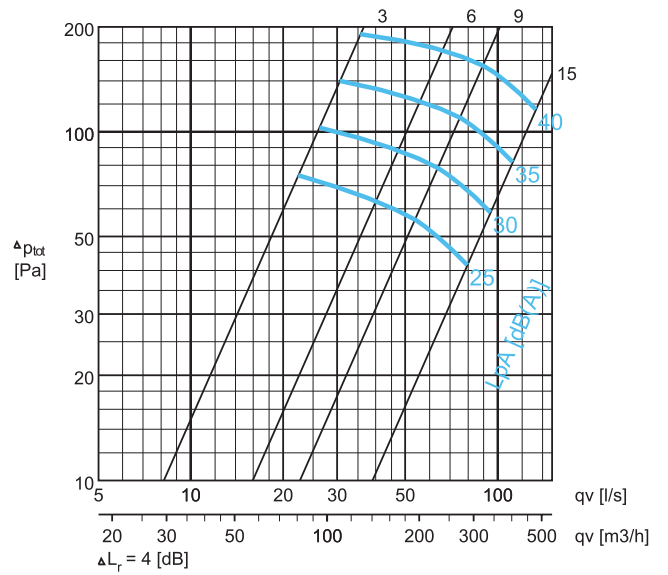
ULA-125



ULA-160



ULA-200



SOUND LEVEL DATA, SUPPLY

		qv	$\Delta P_{st}$	$\Delta P_{tot}$	F (Hz)						LpA	NR	NC	
		(l/s)	(Pa)	(Pa)	125	250	500	1000	2000	4000	[dB(A)]			
ULA-100(R)	max	9	32	28	29	33	35	27	19	13	3	25	20	17
		11	40	46	47	38	40	32	24	18	8	30	26	23
		14	50	71	73	43	45	37	29	23	13	35	31	29
		18	65	112	116	48	50	42	34	28	18	40	36	35
	min	21	76	22	26	33	35	27	19	13	3	25	20	17
		25	90	31	37	38	40	32	24	18	8	30	26	23
		30	108	44	53	43	45	37	29	23	13	35	31	29
		36	130	63	76	48	50	42	34	28	18	40	36	35
ULA-100(R1/RW)	max	10	36	44	45	30	31	27	22	21	18	25	20	17
		13	47	67	68	35	36	32	27	26	23	30	25	22
		15	54	102	104	40	41	37	32	31	28	35	30	27
		19	68	156	160	45	46	42	37	36	33	40	35	33
	min	14	50	29	31	30	31	27	22	21	18	25	20	17
		18	65	45	49	35	36	32	27	26	23	30	25	22
		22	79	70	75	40	41	37	32	31	28	35	30	27
		28	101	109	117	45	46	42	37	36	33	40	35	33
ULA-125(R)	max	14	50	60	61	34	33	27	21	17	12	25	19	17
		17	61	99	100	39	38	32	26	22	17	30	24	22
		23	83	167	169	44	43	37	31	27	22	35	29	28
		29	104	279	282	49	48	42	36	32	27	40	35	33
	min	35	126	20	25	34	33	27	21	17	12	25	19	17
		42	151	29	36	39	38	32	26	22	17	30	24	22
		51	184	42	52	44	43	37	31	27	22	35	29	28
		62	223	61	76	49	48	42	36	32	27	40	35	33
ULA-125(R1/RW)	max	9	32	52	52	27	26	25	22	22	20	25	22	20
		12	43	80	81	32	31	30	27	27	25	30	27	24
		15	54	126	127	37	36	35	32	32	30	35	32	29
		18	65	199	200	43	42	41	38	38	36	40	37	34
	min	19	68	28	29	27	26	25	22	22	20	25	22	20
		24	86	42	45	32	31	30	27	27	25	30	27	24
		30	108	65	69	38	37	36	33	33	31	35	32	29
		37	133	99	105	43	42	41	38	38	36	40	37	34
ULA-160(R)	max	16	58	47	48	33	35	27	19	13	3	25	20	17
		19	68	68	69	38	40	32	24	18	8	30	26	23
		23	83	98	98	43	45	37	29	23	13	35	31	29
		27	97	140	141	48	50	42	34	28	18	40	36	34
	min	65	234	23	29	33	35	27	19	13	3	25	20	17
		76	274	32	40	38	40	32	24	18	8	30	26	23
		90	324	45	57	43	45	37	29	23	13	35	31	29
		107	385	62	79	48	50	42	34	28	18	40	36	34
ULA-160(R1/RW)	max	13	47	61	62	34	32	27	22	18	13	25	19	17
		15	54	83	83	39	37	32	27	23	18	30	24	22
		17	61	114	114	44	42	37	32	28	23	35	29	28
		20	72	153	154	49	47	42	37	33	28	40	34	33
	min	35	126	39	40	34	32	27	22	18	13	25	19	17
		41	148	52	54	39	37	32	27	23	18	30	24	22
		47	169	70	73	44	42	37	32	28	23	35	29	28
		54	194	93	97	49	47	42	37	33	28	40	34	33
ULA-200(R)	max	21	76	76	76	34	33	27	20	19	16	25	18	17
		24	86	94	95	39	38	32	25	24	21	30	24	22
		26	94	116	117	44	43	37	30	29	26	35	29	27
		29	104	144	145	49	48	42	35	34	31	40	34	33
	min	102	367	33	39	34	33	27	20	19	16	25	18	17
		113	407	41	49	39	38	32	25	24	21	30	24	22
		125	450	50	60	44	43	37	30	29	26	35	29	27
		139	500	62	74	49	48	42	35	34	31	40	34	33
ULA-200(R1/RW)	max	15	54	49	49	29	29	27	22	21	17	25	20	18
		18	65	69	69	34	34	32	27	26	22	30	25	23
		21	76	96	96	39	39	37	32	31	27	35	30	28
		25	90	135	135	44	44	42	37	36	32	40	35	33
	min	42	151	39	40	29	29	27	22	21	17	25	20	18
		49	176	54	55	34	34	32	27	26	22	30	25	23
		58	209	74	76	39	39	37	32	31	27	35	30	28
		68	245	101	104	44	44	42	37	36	32	40	35	33

LpA values presented with room attenuation 4 dB (red 10m<sup>2</sup> - sab). When using room attenuation 8 dB (red 25m<sup>2</sup> - sab): LpA - 4dB. NR/NC noise criteria

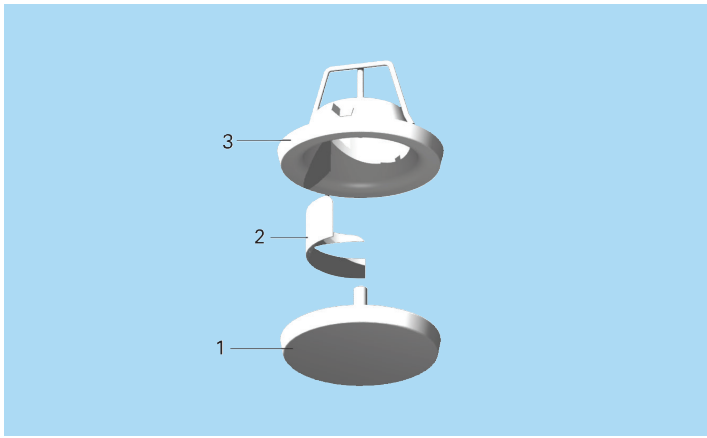
## SOUND LEVEL DATA, EXHAUST

		qv	$\Delta P_{st}$	$\Delta P_{tot}$	F (Hz)						LpA	NR	NC	
		(l/s)			(m <sup>3</sup> /h)	(Pa)	(Pa)	125	250	500				1000
ULA-100	max	12	43	69	68	32	29	26	22	21	16	25	21	18
		14	50	103	101	37	34	31	27	26	21	30	26	23
		18	65	156	153	43	40	37	33	32	27	35	31	28
		22	79	233	228	47	44	41	37	36	31	40	36	33
	min	24	86	20	15	32	29	26	22	21	16	25	21	18
		31	112	33	23	37	34	31	27	26	21	30	26	23
		39	140	52	37	42	39	36	32	31	26	35	31	28
		49	176	85	61	48	45	42	38	37	32	40	36	33
ULA-125	max	14	50	56	55	37	32	25	21	21	12	25	20	17
		17	61	82	81	42	37	30	26	26	17	30	25	22
		21	76	121	119	47	42	35	31	31	22	35	30	28
		25	90	177	174	52	47	40	36	36	27	40	35	33
	min	35	126	22	17	37	32	25	21	21	12	25	20	17
		42	151	31	24	42	37	30	26	26	17	30	25	22
		50	180	44	34	47	42	35	31	31	22	35	30	27
		60	216	63	49	52	47	40	36	36	27	40	35	33
ULA-160	max	22	79	73	73	31	29	26	24	21	13	25	20	18
		26	94	100	99	36	34	31	29	26	18	30	25	23
		30	108	135	134	41	39	36	34	31	23	35	30	29
		35	126	185	183	46	44	41	39	36	28	40	35	34
	min	50	180	25	21	31	29	26	24	21	13	25	20	18
		62	223	38	32	36	34	31	29	26	18	30	25	23
		77	277	58	50	41	39	36	34	31	23	35	30	29
		96	346	90	76	46	44	41	39	36	28	40	35	34
ULA-200	max	22	79	75	75	31	26	26	25	22	17	25	21	19
		26	94	103	103	36	31	31	30	27	22	30	26	24
		31	112	140	140	41	36	36	35	32	27	35	31	29
		36	130	191	190	46	41	41	40	37	32	40	36	34
	min	80	288	45	41	31	26	26	25	22	17	25	21	19
		95	342	64	59	36	31	31	30	27	22	30	26	24
		112	403	89	82	41	36	36	35	32	27	35	31	29
		133	479	126	116	46	41	41	40	37	32	40	36	34

LpA values presented with room attenuation 4 dB (red 10m<sup>2</sup> - sab). When using room attenuation 8 dB (red 25m<sup>2</sup> - sab): LpA - 4dB.  
NR/NC noise criteria

## SOUND ATTENUATION

	$\Delta L$ [(dB)]					
	f [Hz]					
	125	250	500	1000	2000	4000
ULA-100	22	18	15	10	13	15
ULA-125	20	16	14	11	14	15
ULA-160	17	14	13	12	14	12
ULA-200	18	15	14	13	14	14



#### CODE DESCRIPTION

1	Front panel
2	Sector plate
3	Collar

#### Servicing

Unscrew the front panel (1) from the collar (3) for cleaning. Remove the sector plate (2) by pulling gently to detach the spring. Clean the components with a damp cloth, instead of immersing in water. Reassemble in reverse order after cleaning.

#### Suggested specifications

The Halton ULA supply and exhaust valve shall have a detachable front panel and collar made of painted steel, with a white (RAL 9010) standard colour. The collar shall have fixing springs and comprise a sealing gasket to be fixed directly to the duct. The front panel shall have a sound attenuation panel to reduce duct noise.

When used for supply, the desired flow pattern shall be adjusted by rotating the front panel and using the internal sector plate (180° or 360°).

#### Product code

ULA/S-D(J)

S = Model

N Standard

A Installation hole in hollow core slabs

D = Diameter of duct connection

100, 125, 160, 200

#### Specifics and accessories

CO = Colour

W White

X Special colour

#### Code example

ULA/N-100(R), CO=W

#### Sub products

CS Cover plate (ULA)

EP Extension part

LF Installation frame

GF Installation frame

DF Installation frame for duct parts