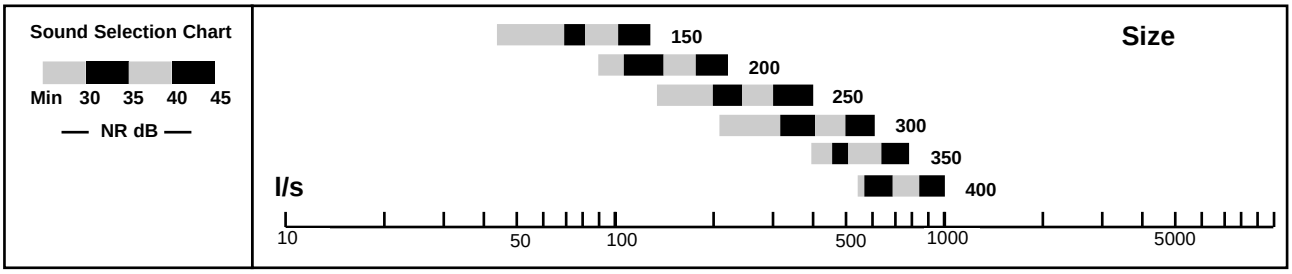
MEASURING UNIT WITH BALANCING DAMPER

4.21
ARU

Selection Guide



Ordering procedure
Using the chart below, select your requirements and substitute the underscored text below **Type..X**

Example: If your requirement is for a 200mm diameter end-line measurer, and you wish to measure through the face of the grille, the ordering code would be: **ARC200** (When ordering it is not necessary to include the periods [..])

Product Size Numbers

"Type"	"X" Size											Colour
ARC	125											
ARE	150											
	200											
	250											
	300											
	350											
	400											
	450											
Special												

4.21
ARU

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Description

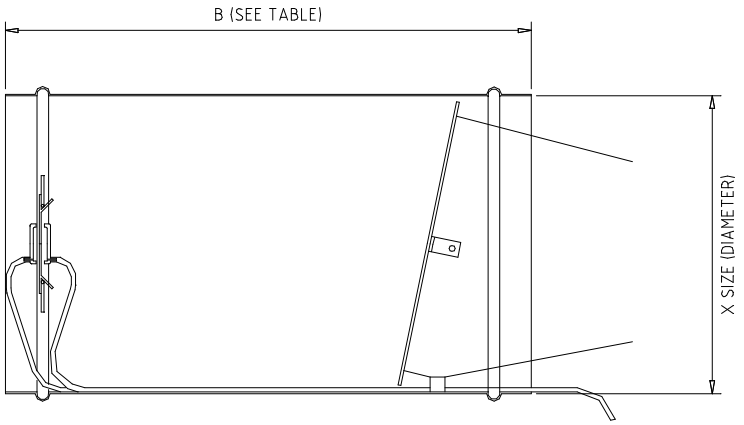
The 4.21 ARU is a fixed air measuring device for mounting in circular ductwork. It provides a very simple and highly accurate method of measuring the air flow.

The air flow rate is determined by measurement of the differential pressure across the mid mounted sensor then cross referenced to the diameter of the measuring unit.

There are two different models for damper adjustment. The ARC model with inside control cords and test tubes which must be accessed through the face of the grille or diffuser and the ARE model which has the damper control and test tubes external to the unit. A control motor may be fitted to the ARE model.

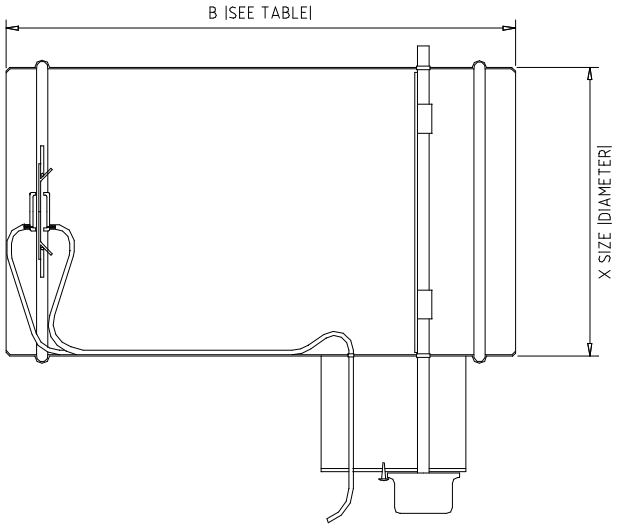
The unit is constructed out of galvanised steel.

Design dimensions ARC model



Design dimensions ARE model

X Size	B
125	340
150	360
200	380
250	425
300	480
350	545
400	560
450	590



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Sound data

NR levels for the diffuser may be determined from the engineering graph.

	Frequency (cycles per second Hz)						
Size	125	250	500	1000	2000	4000	8000
125	+16	+7	-1	-10	+17	-28	-33
150	+16	+8	0	-7	+13	-23	-29
200	+16	+6	-3	-9	-14	-23	-32
250	+16	+8	-2	-5	-10	-19	-27
300	+15	+9	+1	-3	-8	-18	-27
350	+15	+9	+1	-2	-7	-18	-26
400	+15	+8	-2	-1	-7	-18	-24
450	+15	+8	_3	-1	-7	-18	-24
Tol +/-	2	2	2	2	2	2	2

Sound power level L_W

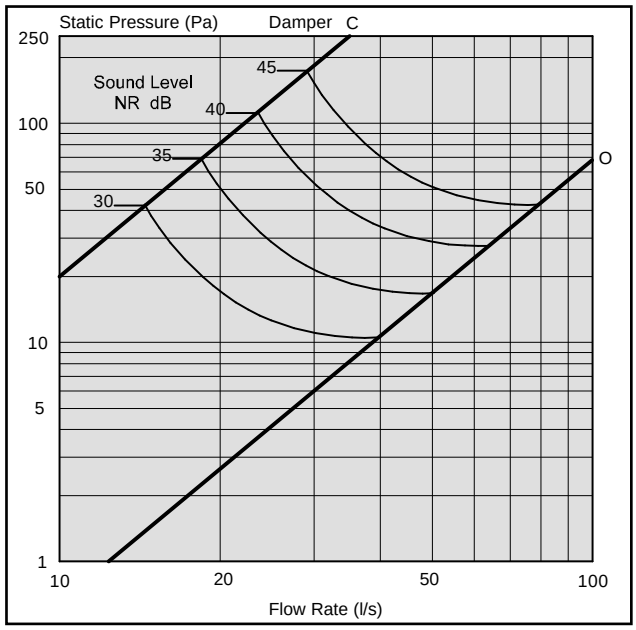
The generated sound power level L_W dB is calculated by adding the correction factor K_{ok} (see table below) to the sound level NR dB according to the formula:

$$L_W = NR + K_{ok}$$

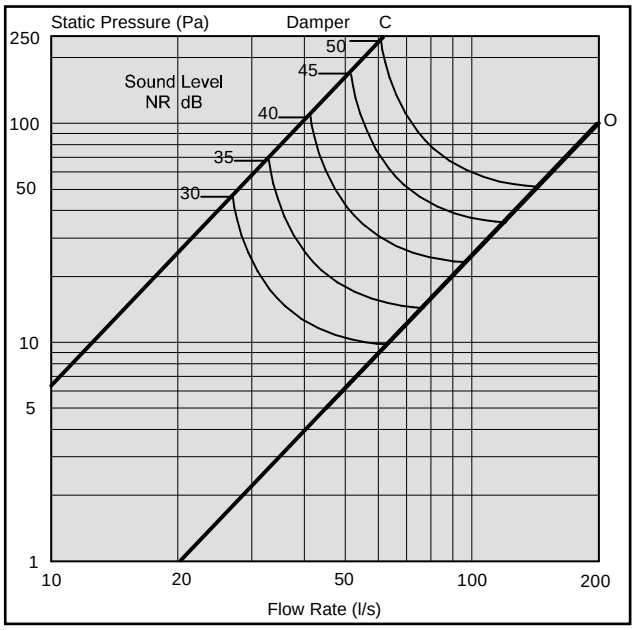
Engineering graphs

To determine the air flow using measured differential pressure, refer to the balancing graph at the end of this section.

ARU Size 125 dia.



ARU Size 150 dia.



These graphs are for selection only and should not be used for commissioning

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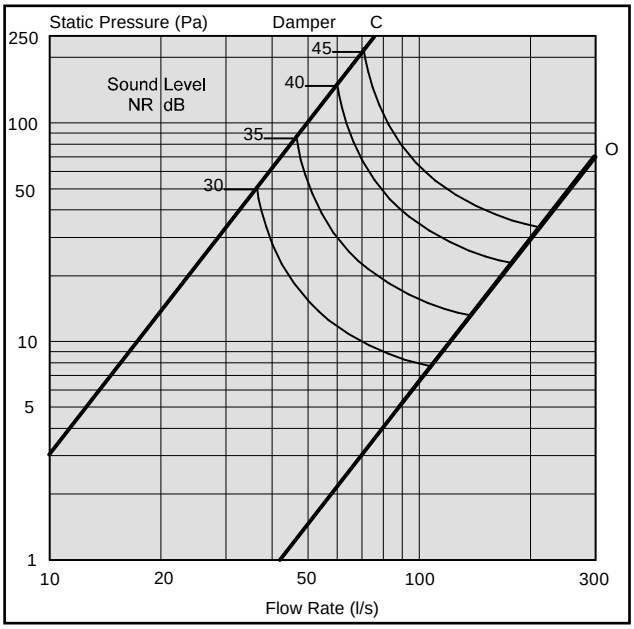
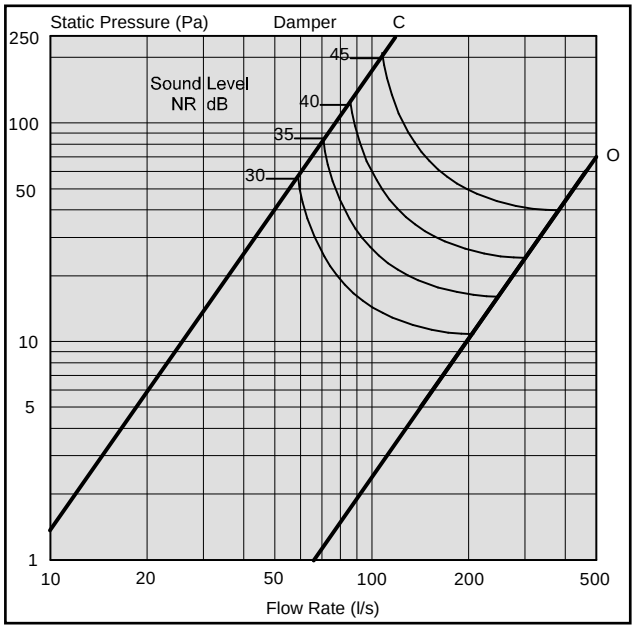
ARU Size 200 dia.



ARU Size 250 dia.



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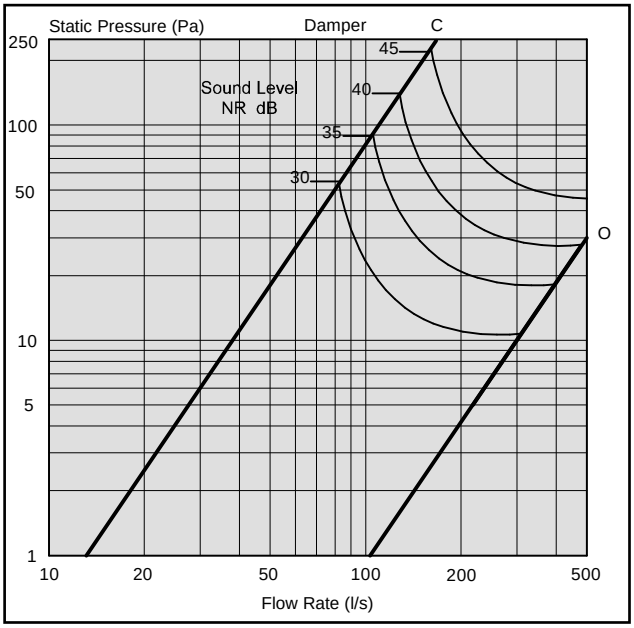
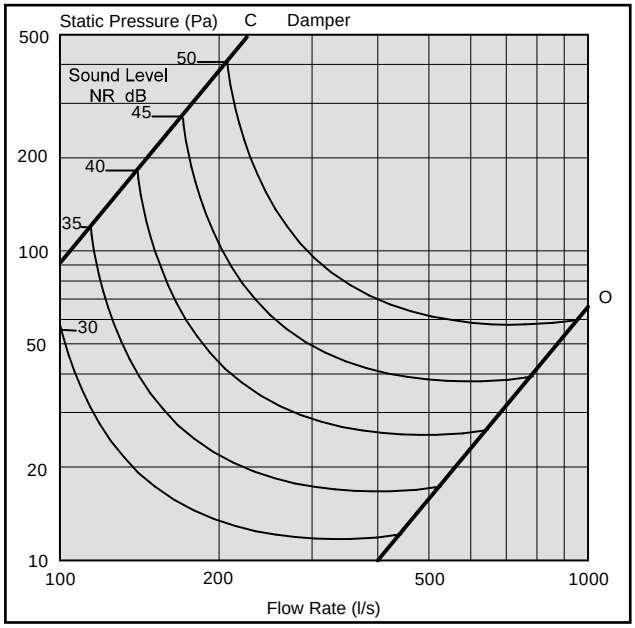
ARU Size 300 dia.



ARU Size 350 dia.



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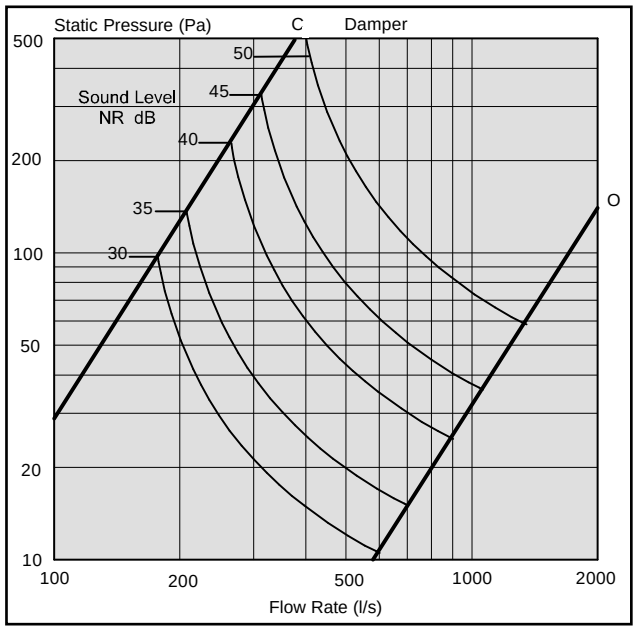
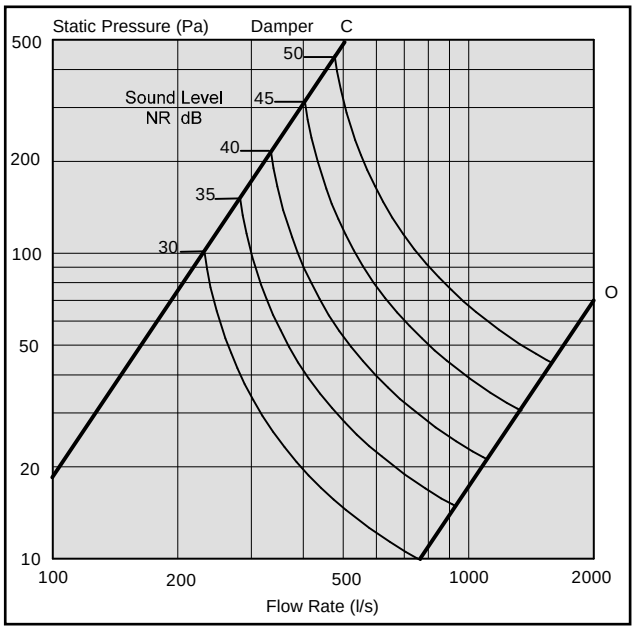
ARU Size 400 dia.



ARU Size 450 dia.



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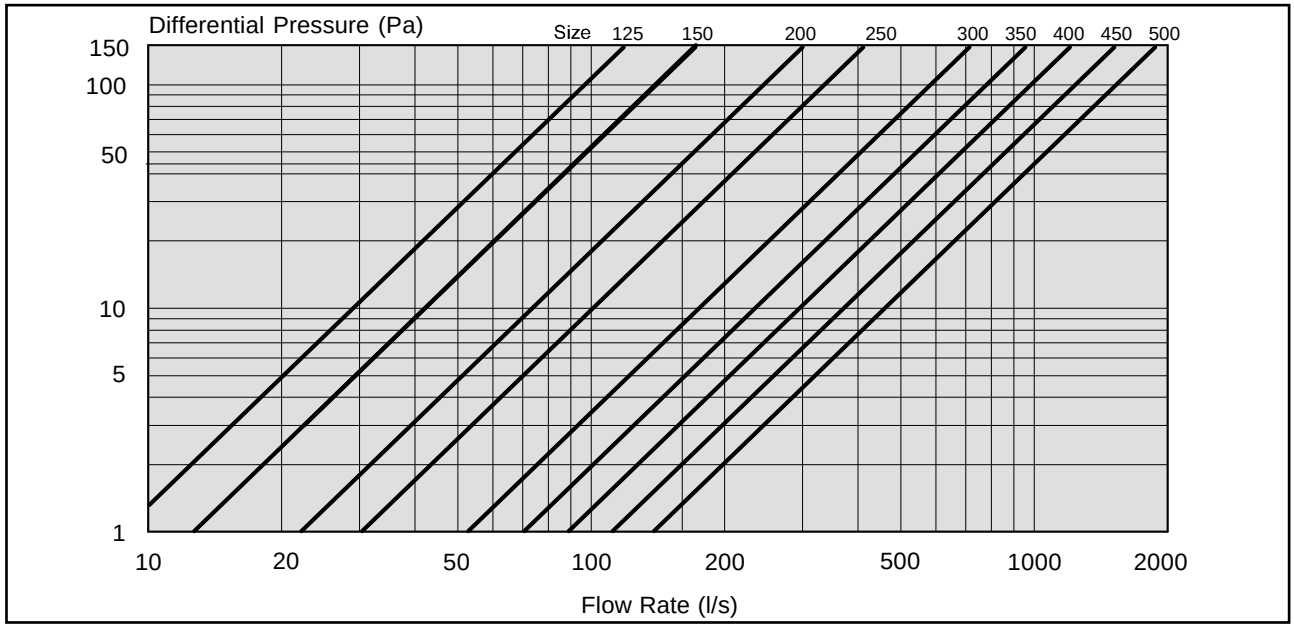
Balancing graph



Example:
If the measured differential pressure was 45 Pa and the size of the measurer 200mm diameter, the flow rate would be approximately 170 l/s