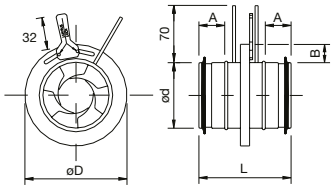
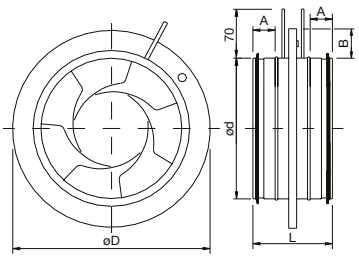
IRIS – control and measuring orifice



size 80–315

size	Ø d	Ø D	L	A	B	weight [kg]
80	79	125	120	35	22	0.5
100	99	165	110	30	32	0.5
125	124	210	110	30	32	0.7
150	149	230	110	30	40	1.3
160	159	230	110	30	35	0.9
200	199	285	110	30	42	1.4
250	249	335	135	40	42	2.1
315	314	410	135	40	47	3.5
400	398	525	150	50	62	6.4
500	498	655	150	50	77	9.6



size 400, 500

Technical parameters

IRIS – control and measuring orifice
s the ideal device for controlling and measuring air flow in circular ducts.
- low noise level
- full opening for duct cleaning
- tight design

Construction
The IRIS orifice plate is made of galvanized steel sheet, supplied with operating mechanism, measuring scale and taps for manometer connection.

Installation
The IRIS orifice plate is attached to the pipe using rivets or self-tapping screws. The connection ports are fitted with a single-edge seal. See next page for more information on recommended safe distances.

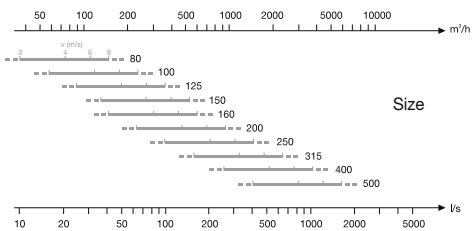
Regulation and measurement
The IRIS orifice plate can easily be used for air flow measurement. The precise control mechanism guarantees defined opening dimensions corresponding to the measuring scale. Each orifice is provided with taps for connecting a pressure differential (pm) gauge, which can be used directly to read the flow rate from the operating characteristics shown on the orifice or on the printed base supplied with the orifice. The diagrams shown here in the catalog are for selecting the appropriate orifice size, not for determining flow rate. Airflow can be easily controlled by using the control handle (for sizes 80–315) or by turning the control nut (for sizes 400, 500).

Example of order execution

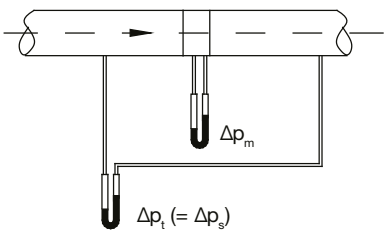
IRIS	200
Product	
Size	

Additional illustration

Scope of use



Air flow q_v



Calibration accuracy at steady state air flow is ± 5%.

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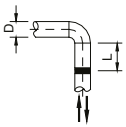
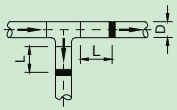
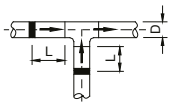
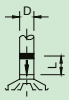
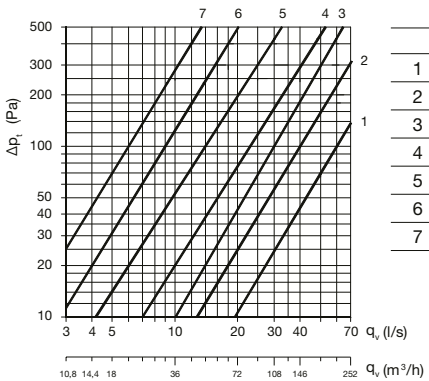
IRIS – control and measuring orifice

Characteristics

Typical example of location	Recommended safe distance L	
	m_2 = ± 7 %	m_2 = ± 10 %
	≥ 1 D	≥ 1 D
	≥ 4 D	≥ 2 D

Typical example of location	Recommended safe distance L	
	m_2 = ± 7 %	m_2 = ± 10 %
	≥ 2 D	≥ 2 D
	≥ 2 D	≥ 2 D

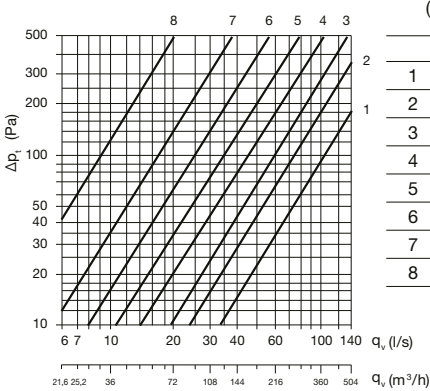
IRIS-80



$q_v = k\sqrt{\Delta p_t}$ (l/s)

	k
1	6.1
2	4.1
3	3.2
4	2.3
5	1.4
6	0.9
7	0.6

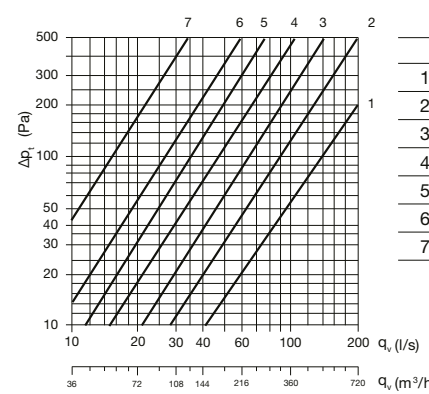
IRIS-100



$q_v = k\sqrt{\Delta p_t}$ (l/s)

	k
1	10.4
2	7.5
3	6.0
4	4.5
5	3.4
6	2.5
7	1.7
8	0.9

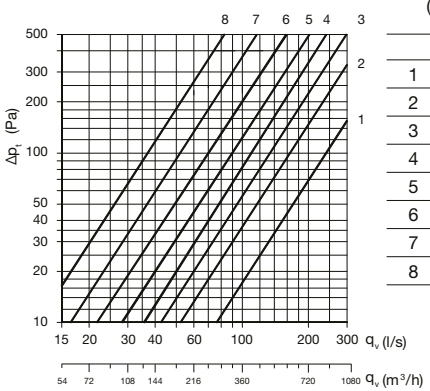
IRIS-125



$q_v = k\sqrt{\Delta p_t}$ (l/s)

	k
1	13.8
2	8.8
3	6.5
4	4.7
5	3.5
6	2.7
7	1.5

IRIS-150



$q_v = k\sqrt{\Delta p_t}$ (l/s)

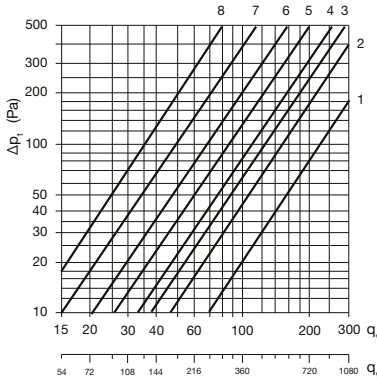
	k
1	24.1
2	16.5
3	13.4
4	11.0
5	8.9
6	6.9
7	5.2
8	3.7

IRIS – control and measuring orifice

Soler&Palau Ventilation Group

Characteristics

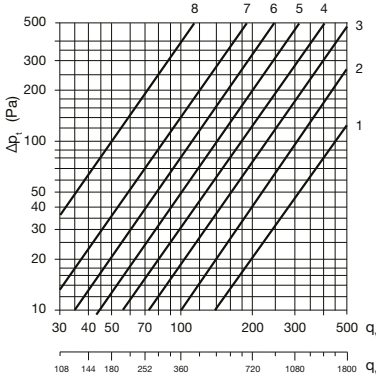
IRIS-160



$q_v = k\sqrt{\Delta p_t}$ (l/s)

	k
1	22.1
2	14.8
3	12.5
4	10.7
5	8.5
6	6.8
7	4.9
8	3.5

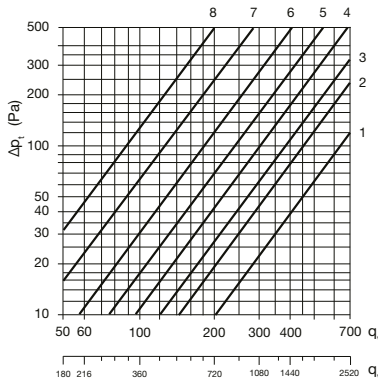
IRIS-200



$q_v = k\sqrt{\Delta p_t}$ (l/s)

	k
1	44.2
2	30.9
3	23.2
4	18.2
5	14.0
6	11.0
7	8.4
8	5.0

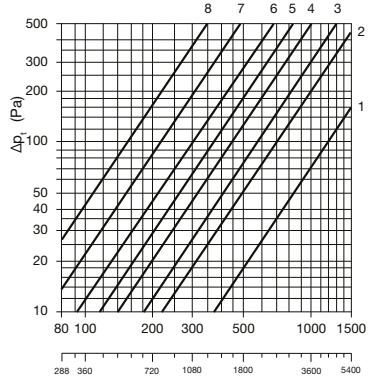
IRIS-250



$q_v = k\sqrt{\Delta p_t}$ (l/s)

	k
1	64.4
2	45.6
3	38.7
4	30.7
5	24.1
6	18.4
7	12.8
8	8.9

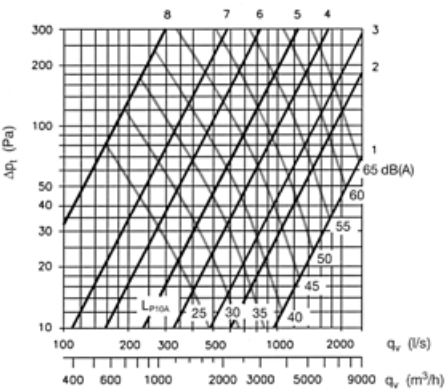
IRIS-315



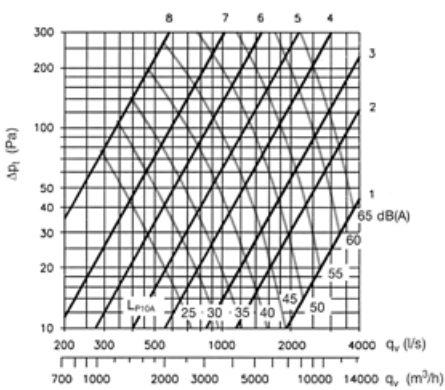
$q_v = k\sqrt{\Delta p_t}$ (l/s)

	k
1	118.0
2	70.0
3	58.7
4	45.1
5	37.0
6	30.0
7	21.8
8	15.8

IRIS-400



IRIS-500



Additional illustration

IRIS	Correction K_{oct} [dB]							
	Medium frequency octave bands [Hz]							
	63	125	250	500	1000	2000	4000	8000
80	10	16	12	9	5	-1	-6	-23
100	9	16	11	7	3	-1	-9	-22
125	12	15	9	7	3	-4	-15	-20
150	14	13	13	5	0	-3	-6	-15
160	12	13	6	4	0	-1	-5	-17
200	12	11	6	2	-1	-1	-6	-18
250	15	12	5	3	1	-3	-12	-17
315	15	10	5	0	-1	-1	-12	-23
400	15	9	6	2	-1	-4	-9	-13
500	14	7	4	1	-1	-4	-8	-11
toler. ±	6	3	2	2	2	2	2	3

The sound power levels in octave bands are obtained by adding the K_{OCT} corrections given in the table to the total sound pressure level L_{p10A}, dB(A) according to the following formula:

$$L_{woct} = L_{p10A} + K_{oct}$$

Correction K_{OCT} is the average value over the frequency range (Hz).

		Explanatory notes
q_v	air flow	[l/s], [m^3/h]
L_{p10A}	sound pressure level at room attenuation 4 dB (10m^2 sabin)	[dB(A)]
L_{Woct}	sound pressure level at room attenuation	[dB]
K_{oct}	correction	[dB]
Δp_t	total pressure drop	[Pa]
Δp_s	static pressure drop	[Pa]
Δp_m	pressure difference	[Pa]
m_2	measurement tolerances	[%]
v	average speed	[m/s]

TDP-D differential pressure transmitter that can be used for air flow measurement