

MODEL KS-219

EIGHT-STAGE CASCADE IMPACTOR WITH BACKUP FILTER
FOR THE FRACTIONATED SAMPLING OF SOLID PARTICLES AND AEROSOLS

■■■■ IN - STACK AUTOMATIC VERSION ■■■■



1. Purpose

The **KS-410** type portable, partial gas flow emission type sampling circuit implemented with the **KS-219** type 8 staged cascaded impactor - in automatic operation - is capable of the isokinetic, continuously periodical, total or fractionated sampling of solid particles in flowing air or gas.

The **KS-410** type measuring circuit implemented with the **KS-219** type cascaded impactor, beyond the gravimetric determination of concentration of solid particles and of the fractional composition of the flowing air or gas, is capable of measuring and monitoring the temporal changes of the velocity of the main gas flow or that of the sampled medium.

2. Technical description

The eight stage cascade impactor **KS-219** type device offers completely new solutions. Its evaluation system, too, follows the latest fluid mechanical configurations. For the sake of increasing the impact effect and decreasing dimensions, particles are accelerated in an annular nozzle to the proper impact velocity. The **KS-219** type cascaded impactor consists of a lead-in diffuser, eight impactor stages and a backup filter. To avoid reproduction errors occurring due to the different adhesive capacity of particles, stages have a chamber configuration and are properly separated by scaling.

SPECIAL FEATURES

- Eight impactor stages.
- Rapidly changeable impactor stages suitable for performing sequential, continuously periodical measurements.
- 30% smaller external dimensions, 40% less mass, performing the same flow rate.
- The chambers of the impactor stages can be well separated by scaling.
- Cleaning and the periodic size-control of the annular vent nozzles are extremely simple.
- Dust storage capacity is variable by the changing of the collector plates.

Figure 1. shows the cross-section of the **KS-219** type impactor assembled.

The separation characteristics of the **KS-219** type impactor are represented in Figure 2.

3. Technical data

- Nominal flow rate depending on t_1 5,0-9,0 [m³/h]
- Measuring range 3,0 to 10,0 [m³/h]
- Aerodynamic resistance with clean filter 103 [mbar], $q=7,0$ [m³/h], $\rho = 1,2$ [kg/m³]
- Number of impactor stages 8
- Particle separation values – cut points AR-COM KS-219-v1.0 software
- Max. temp. with Teflon gasket 180 [°C]
- Back-up filter $\varnothing 69$ [mm]

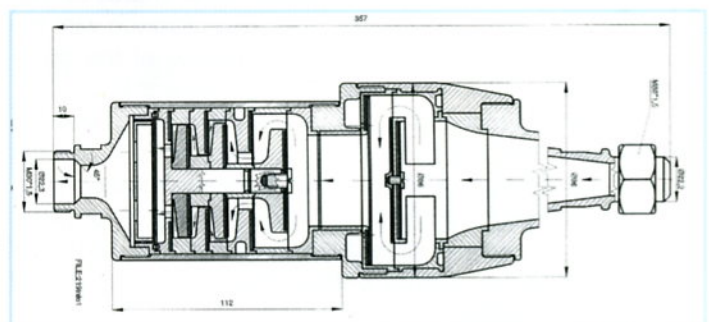


Figure 1.

SERIES KS-219 CASCADE IMPACTOR 50 [%] EFFECTIVE CUT DIAMETER

$R_{op} = 1,0$ [kg/dm ³] $t = 20$ [°C]	Pre-separator A	Pre-separator B	Stage 1.	Stage 2.	Stage 3.	Stage 4.	Stage 5.	Stage 6.
$q = 5,0$ [m ³ /h]	19,8	15,9	13,4	9,7	6,4	3,3	1,3	0,68
$q = 6,0$ [m ³ /h]	18,1	14,5	12,2	8,8	5,8	3,0	1,2	0,61
$q = 7,0$ [m ³ /h]	16,7	13,4	11,3	8,2	5,4	2,8	1,1	0,56
$q = 8,0$ [m ³ /h]	15,6	12,6	10,6	7,6	5,0	2,6	1,0	0,52
$q = 9,0$ [m ³ /h]	14,7	11,8	10,0	7,2	4,7	2,5	0,9	0,49

Figure 2.