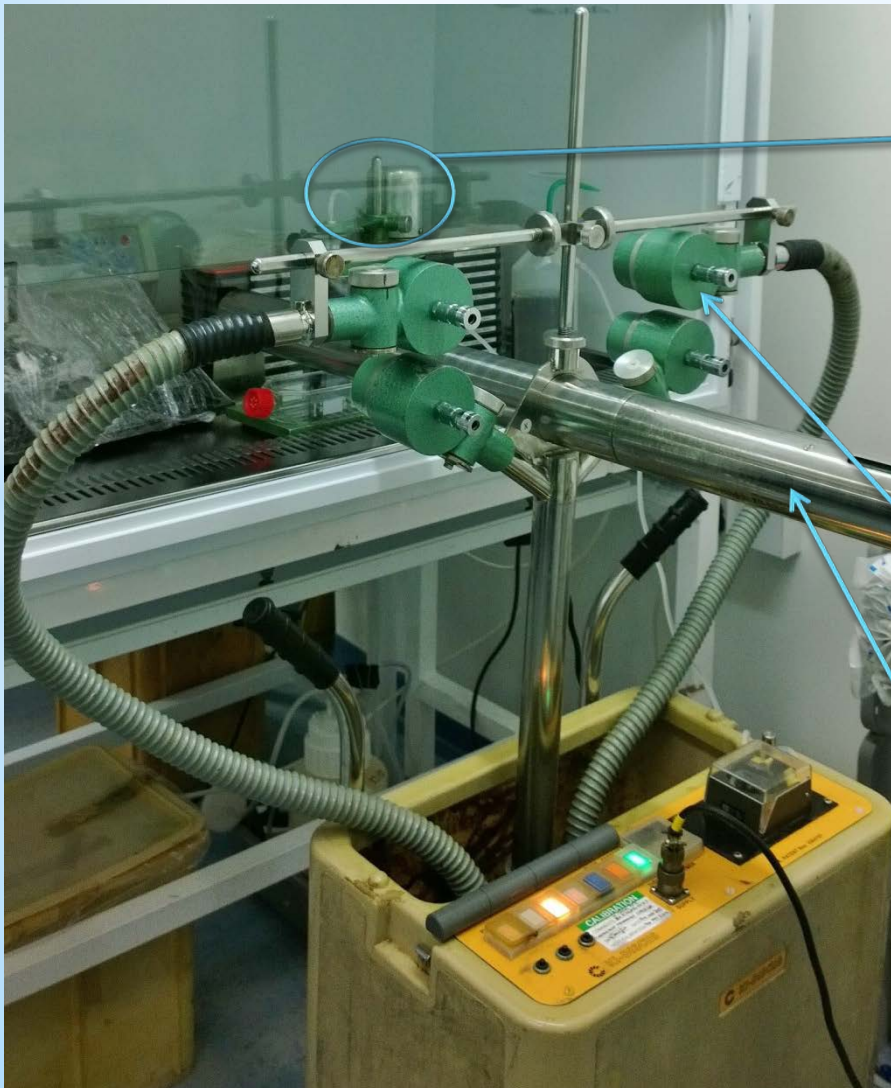


KI-DISCUS Containment Test

The KI (potassium iodide) discus test is defined in the European Standard for microbiological safety cabinets, EN12469:2000, as a test method for validating the operator protection capabilities of Class I and Class II open-fronted microbiological safety cabinets.



KI-DISCUS Containment Test



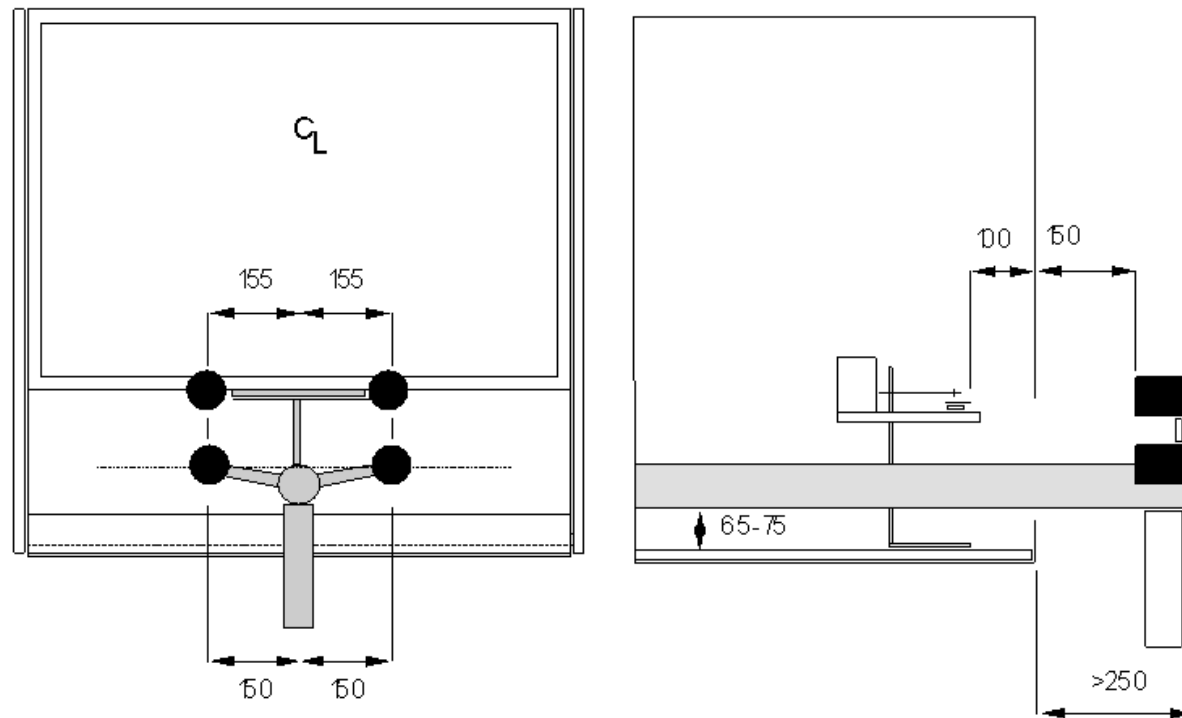
spinning disc aerosol generator

air sampler

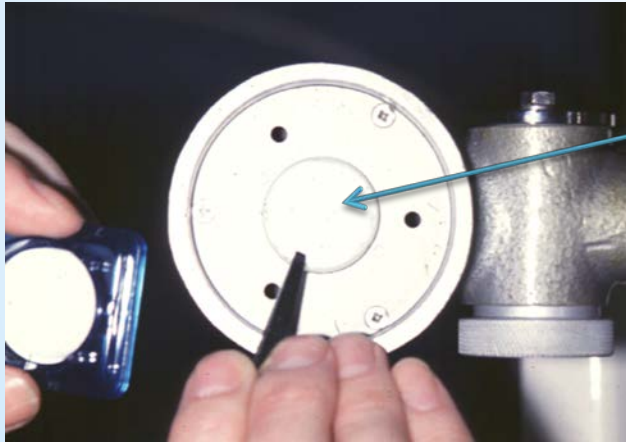
artificial arm

KI-DISCUS Containment Test

KI-Discus arrangement - Class II cabinet



KI-DISCUS Containment Test



3 micron, 25mm, CN filter
in each air sampler

20 ml of potassium iodide solution is dispensed via peristaltic pump onto the spinning disc aerosol generator over the course of a 9 minute run while air is drawn through the 4 samplers/filters at a rate of 100 litres/minute. One KI test consists of 5 separate runs. New filters are used for each run.

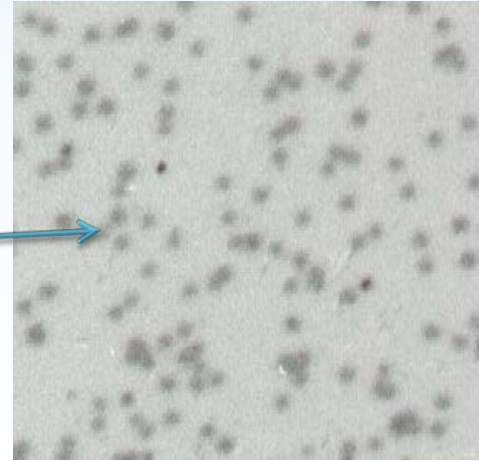
KI-DISCUS Containment Test



Palladium chloride

Filters are removed from the air samplers after each run and placed in palladium chloride solution. Any droplets of KI trapped by the filters appear as grey/brown dots after approximately 10 seconds. Filters are then rinsed in water and air dried.

KI-DISCUS Containment Test



A magnifier is used to identify and count the number of grey/brown dots on each filter.

The standard dictates that all 20 filters (4 filters x 5 runs) must each have fewer than 62 dots for the cabinet to pass the test.

KI-DISCUS Containment Test

Why 62 dots?

According to the standard, a microbiological safety cabinet must provide an operator protection factor (O_{pf}) of not less than 100000.

$$O_{pf} = (N \times V) / (10^4 \times n)$$

N: number of particles liberated = $3.1 \times 10^7 \times M$

M: volume of KI dispensed = 20 ml

V: sampling flow rate = 100 dm³/min

n: the number of brown dots captured

$$\text{Therefore } O_{pf} = 6200000 / n$$

$$\text{When } n = 62, O_{pf} = 100000$$

KI-DISCUS Containment Test

LABCAIRE For Tomorrow's Environment
PuriCore Pure Science. Pure Life.

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DATE: 11/09/2015
 TIME: 10:00 AM
 TEST NO: 1015/001
 TESTER: J. G. G. G.

CABINET FUNCTIONS

APPROX. BROWNIAN PARTICLES	YES	NO	YES	NO
DIFFUSION	YES	NO	YES	NO
DIFFUSION TEST SUCCESSFUL	YES	NO	YES	NO
DIFFUSION TEST RESULTS	YES	NO	YES	NO
DIFFUSION TEST RESULTS	YES	NO	YES	NO

EXHAUST FILTERS

EXHAUST FILTER FITTED	YES	NO
EXHAUST FILTER SERVICE	YES	NO

TEST RESULTS

Filter	0.3µm	0.5µm	1.0µm	5.0µm
1	13/NA	11/NA	6/NA	5/NA
2	4/NA	3/NA	3/NA	5/NA
3	2/NA	1/NA	1/NA	14/NA
4	5/NA	3/NA	1/NA	7/NA
5	5/NA	2/NA	2/NA	5/NA

TEST CONDITION
 KI PASS VALUE > 1×10^5 4.43 x 10⁵

P/C ISO 1,2,3,4,5,6,7,8,9- EUGMP A,B,C,D,

COMMENTS ACTION TAKEN ON FAULTS FOUND

TEST ENGINEER: J. G. G. G.
 TEST ENCLAVE SIGN: J. G. G. G.
 CABINET SIGN: J. G. G. G.

TEST RESULTS

TEST EQUIPMENT	TEST NO.
TEST EQUIPMENT	TEST NO.
TEST EQUIPMENT	TEST NO.
TEST EQUIPMENT	TEST NO.
TEST EQUIPMENT	TEST NO.

QC13-14 Rev D
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TEST RESULTS

	X	X1	Y	Y1
	0.3µm	0.5µm	1.0µm	5.0µm
1	13/NA	11/NA	6/NA	5/NA
2	4/NA	3/NA	3/NA	5/NA
3	2/NA	1/NA	1/NA	14/NA
4	5/NA	3/NA	1/NA	7/NA
5	5/NA	2/NA	2/NA	5/NA

KI PASS VALUE > 1×10^5 4.43 x 10⁵

P/C ISO 1,2,3,4,5,6,7,8,9- EUGMP A,B,C,D,

TESTS FOUND | **PARTS USED** | **PART NO**