

General Terminology and Project Configuration



Verification Test

- **General Verification Test**

- **What:**
 - Used to verify aerosol reduction rates in occupied spaces
- **Why:**
 - To ensure adequate ventilation, filtration, and dilution in areas where occupants gather or are near each other
- **Where:**
 - Ventilation and filtration performance evaluated in high-density areas
- **Duration: 60 minutes**

- **UL Verification Test**

- **How:**
 - This test consists of **Desktop Review** (Ventilation and filtration performance evaluated based on a building's design, HVAC system specifications and other key building data)
 - **Field Evaluation** (Ventilation and filtration performance evaluated in high-density areas)
 - **Verification Mark** (Building owner and operator is issued a UL Marketing Claim Verification Mark if a building achieves 99% aerosol removal within 1 hr. in all test locations and passes the Desktop Review).
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Flex Test

- **What:**

- Flexible test adaptable to:
 - Recirculation: spray in occupied space and test in AHU return and supply
 - Mini-Survey: Test for isolation
 - ❖ Spray inside the room and sample outside
 - ❖ Spray outside the room in multiple locations and test inside the room

- **Why:**

- Recirculation: To evaluate building level dilution and AHU filtration effects
- Mini-Survey: To test isolation

- **How:**

- Up to 12x OP all the same tag
- Up to 12x SPs all SKC's

- **Where:**

- Occupied space and AHU
- Occupied space - typically enclosed areas but could be used to evaluate the "wind direction" in an open area

- **Duration:** 60 minutes

Survey Test

- **What:**
 - Used to verify aerosol migration patterns within a building or areas within a building
- **Why:**
 - This test can be conducted under varying scenarios as well as gain baseline data about the HVAC condition of the test environment. This test provides useful information about HVAC system balance
- **How:**
 - Aerosols are released and sampled in several defined locations to determine airflows which are displayed on floorplan heatmaps
- **Where:**
 - Typically, the Survey Test is conducted over a large area and may include offices, restrooms, open areas, break rooms, conference rooms, trafficking areas, etc.
- **Duration:** 30 Minutes

Fomite Test

- **What:**
 - Used to verify aerosol settling patterns within a building or areas within a building
 - **Why:**
 - This test can be conducted under varying scenarios as well as gain data about the migration patterns and high-touch points within the test environment.
 - **How:**
 - Aerosols are released and sampled in several defined locations to determine airflows, migration pattern and high-touch points which are displayed on floorplan heatmaps
 - **Where:**
 - Typically, the Survey Test is conducted over a large area and may include offices, restrooms, open areas, break rooms, conference rooms, trafficking areas, etc.
 - Likelihood of Exposure Concerns
 - High Risk of Self-Inoculation
 - These fomites are most likely commonly located in “High Traffic” and “High Density” Areas
 - Sanitation maybe hard to sustain due to the number of fomite surfaces that would need to be cleaned and sanitized
 - Workforce population may include symptomatic and asymptomatic individuals.
 - **Duration:** 30 Minutes
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UV Test

- **What:**
 - Used to verify germicidal efficacy of UV-C Fixtures in air
- **Why:**
 - The test can be used to verify UV-Fixtures disinfection effectiveness under differing UV-C wavelengths as well as possibly scaling to some known pathogens
- **How:**
 - Use UV-Sensitive DNA Tracers which provide highly accurate quantitative measurement and verification of the germicidal efficacy of UV-C Fixtures
- **Where:**
 - Optimize in situ UV-C fixture performance based on room configuration, air distribution, and other local variables
- **Duration:** 65 minutes

Ashrae 241 Test

- **What:**
 - Used for performance testing for the control of infectious Aerosols
- **Why:**
 - To ensure that established minimum requirements for equivalent clean airflow for controlling Infectious Aerosols
- **How:**
 - Use of approved aerosols (DNA Tracers) to assess “Equivalent Clean Airflow (ECAi), which measures how effectively a space’s ventilation and filtration systems remove infectious particles
- **Where:**
 - In new buildings, existing buildings and major renovations are met
- **Duration:** 65 minutes

Controlled Environment Tests

- **Positive Pressure Test**

- Verify aerosol movement between a positively pressurized room and surrounding areas and/or sterile zones within the room
 - **What:**
 - ❖ Used to verify aerosol flow patterns out of and into positive pressure rooms. Additionally, samples can be obtained within Operating Room Aseptic zones or within a Bio Safety Cabinet to verify isolation from the main part of the room
 - **Why:**
 - ❖ This test is typically used to verify the positive pressure HVAC system performs as designed to keep aerosols out of the room
 - **Where:**
 - ❖ Pharmacy Compounding, Healthcare operating or procedure rooms and adjacent areas
 - ❖ Likelihood of Exposure Concerns:
 - ✓ Known airflow patterns that are affected by building design, obstructions or construction
 - ✓ Unknown airflow patterns potentially contaminating unexpected zones or areas
 - ✓ Structural defects, cracks or leaks in HVAC system or defects such as cracks and leaks in windows and doors
 - **Duration:** 60 Minutes
-

Controlled Environment Tests

- **Negative and Neutral Pressure Tests**

- Verify aerosol movement between a negatively pressurized or unpressurized room and surrounding areas and/or sterile zones within the room
 - **What:**
 - ❖ Used to verify aerosol flow patterns out of negative pressure rooms. Additionally, samples can be obtained within OR Aseptic zones or within a Bio Safety Cabinet to verify isolation from the main part of the room
 - **Why:**
 - ❖ This test is typically used to verify the negative pressure HVAC system performs as designed to keep aerosols within the room
 - **Where:**
 - ❖ Pharmacy Compounding, Healthcare Airborne Infectious Isolation or other rooms and adjacent areas
 - ❖ Likelihood of Exposure Concerns:
 - ✓ Known airflow patterns that are affected by building design, obstructions or construction
 - ✓ Unknown airflow patterns potentially contaminating unexpected zones or areas
 - ✓ Structural defects, cracks or leaks in HVAC system or defects such as cracks and leaks in windows and doors
 - **Duration:** 60 minutes
-

DNA Plates and Tags

- **DNA Plate**
 - Contains the unique Tags that are released as aerosols, captured, analyzed and quantified
 - There are three DNA Plate Kinds (A, B and C), each containing eight unique sequence DNA Tags
- **Tag**
 - Unique DNA sequences that are released as aerosols, captured, analyzed and quantified
 - Plate Kind A contains Tags: A1, A2, A3, A4, A5, A6, A7, A8
 - Plate Kind B contains Tags: B1, B2, B3, B4, B5, B6, B7, B8
 - Plate Kind C contains Tags: C1, C2, C3, C4, C5, C6, C7, C8

Tag Lot Numbers and Expiration Date

- **Lot Number Location**

- Package Lot Number
 - Date the syringe was sterilized
 - Advasaf Lot Number: 4202503-01-WO
- Syringe Lot Number
 - Date of the Tag manufacture
 - Example: TAG-C1: Lot Number: 20241202
 - This is the Lot Number to enter in the Client Portal



Sterilized Lot Number



Tag Lot Number

- **Expiration Date**

- The tag solution must be used by this date.
- This information is found on the syringe label
- Example: TAG-C1: Expiration: 12/2/2026
- If the expiration date is extended, there will a label with the updated information on the outside of the syringe packaging

Origin and Sample Points

- **Origin Point (OP)**
 - Typically, noted as OP-0_
 - The location where a Tag will be released
 - Typically, pinpointed on the facility map
- **Sample Point (SP)**
 - Typically, noted as SP-00_
 - The location where the DNA aerosol is captured
 - Typically, pinpointed on the facility map

Origin and Sam Points

- **Origin Point**

- Typically, noted as OP-
- The location where a Tag will be released

- **Sample Point**

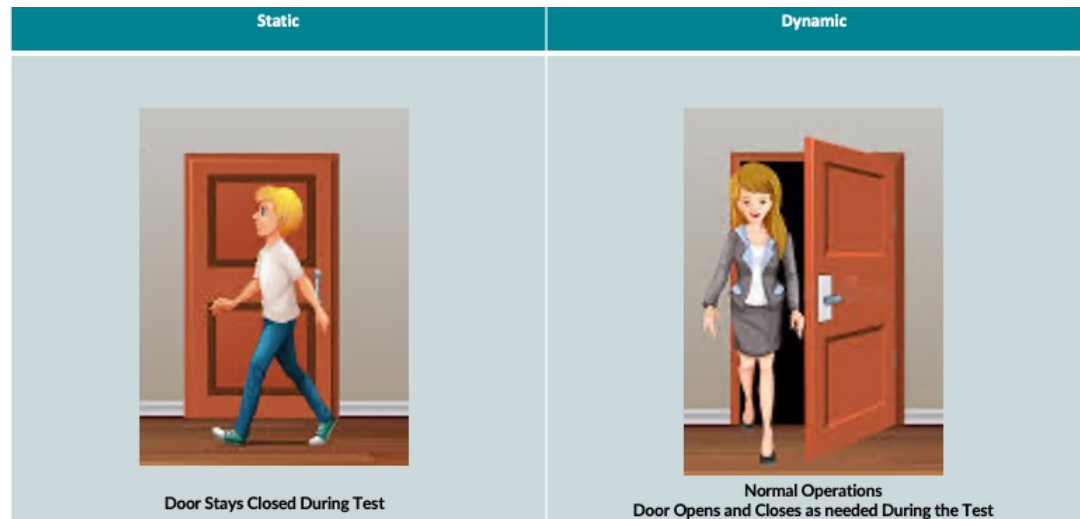
- Typically, noted as SP-
- The location where the DNA aerosol is captured

Origin Point Description	Examples
High Traffic Areas	Hallways, Common Areas, Kitchens, Lunch areas
High Touch Points (Fomites)	Kitchens, Lunch Areas, Labs
High Density Area	Open Office, Cubicles
Team in Close Proximity for Extended Periods of Time	Conference Rooms, Call Center
Contact with the Public	Reception, Shipping and Receiving, Retail Area, Contractor Access Areas
Closed Room Area	Typical Closed Office or Conference Room with Door Closed
Open Room Area	Typical Closed Office or Conference Room with Door Open
Negative Pressure Area	Bathrooms, Areas with Significant Exhaust
Positive Pressure Area	Any Area with Intentional Positive Pressure Relative to Surrounding Areas
Low Airflow Area	Area known to have limited air circulation
Area with Non-Typical Temp/RH settings	Area set either lower or higher temp/RH than usual, Walk in Refrigerator, Food Processing Area
Area with no HVAC Thermostat Control	General understanding of the ambient surrounding
Survey typical area performance	General understanding of the surrounding area
Communication of Zones (HVAC at typical setting)	Selected to identify mixing of air between zones with HVAC operating normally
Communication of Zones (HVAC non-typical setting)	Selected to identify mixing of air between zones with HVAC operating in a non-standard configuration
HVAC Setting Survey	HVAC set to mimic seasonal or other typical operational mode
Test Filter Performance	Typically, near a main air return duct at the air handler

Scenarios

- **Scenario**

- The conditions that you are testing under
 - Baseline (Typical environment conditions)
 - HVAC On/Off
 - HEPA Filter On/Off
 - Doors Open/Close
 - Static vs Dynamic
 - etc.



Numbering and Counts

- **Scenario Number**
 - Unique identifiers that outline the conditions within each test(s)
- **Origin Point Count**
 - The total number of Origin Points in each Test Scenario
- **Sample Point Count**
 - The total number of Sample Points in each Test Scenario
- **Sample Number**
 - The unique number given to each sample. This number is not the same as the Sample Point Number. A Sample Point may have more than one Sample Number
- **Sample Count**
 - The total number of samples taken in each Test Scenario. This number is affected by the number of intervals at each Sample Point

Project Configuration: Title Page



Project Configuration

Prepared on 2026-02-19 10:53:57

Project ID	1403		
Project Name	Zakir	Status	In progress
Address		Customer	Training: Project Company
Description	Office with Garden	Partner	Training: Project Partners

Project Scope

Done	Issues	Test Num	Test Id	Test Date	Test Name	Scenario	Scenario Desc	OP Count	OP Tags	Sample Type	SP Count	Interval Count	Interval Duration	Sample Count	SN Start	SN End
no		1	7145	2026-02-18	Zakir - Small Survey: 1	1	default	8	B1, B2, B3, B4, B5, B6, B7, B8	filter	12	1	30	12	SN-001	SN-012
no		2	7146	2026-02-18	Zakir - Flex: 1	1	Baseline Assessment - Garden	1	C3	filter	4	1	30	4	SN-013	SN-016
no		3	7147	2026-02-18	Zakir - Verification: 1	1	HEPA ON - High Speed	1	C1	filter	1	4	5	4	SN-017	SN-020
no		3	7147	2026-02-18	Zakir - Verification: 1	2	HEPA OFF	1	C2	filter	1	4	5	4	SN-021	SN-024

Project Notes

Project Configuration

PID: 1403 , Zakir

Project Tag Lot Numbers

	Tag A	Tag B	Tag C	Tag B CET	Tag C CET	Tag R	Tag S
1	N/A	20230216_p	20240318-NS	N/A	N/A	N/A	N/A
2	N/A	20230216_p	20240318-NS	N/A	N/A	N/A	N/A
3	N/A	20230216_p	20240318_20240605	N/A	N/A	N/A	N/A
4	N/A	20230216_p	N/A	N/A	N/A	N/A	N/A
5	N/A	20230216_p	N/A	N/A	N/A	N/A	N/A
6	N/A	20230216_p	N/A	N/A	N/A	N/A	N/A
7	N/A	20230216_p	N/A	N/A	N/A	N/A	N/A
8	N/A	20230216_p	N/A	N/A	N/A	N/A	N/A

Project Configuration: Test 1

PID: 1403 , Zakir		Test Number - 1	
Test type: General Survey		Test Name - Zakir - Small Survey: 1	
Completed: No			
No warnings			
Zakir - Small Survey: 1 Notes			
Spray Type:	esprayer65psi	Sample Type:	filter
Sample Flow:	2.5	Interval Duration:	30
Interval Count:	1		
Plate Kind:	B	Sample Numbers:	SN-001 to SN-012

Notes for Test 1:

- Start Time: 12:00; Added 5 minutes to the test time
- SP-011 air sampler stopped during the test
- Change OP-1 Location from Room 2 to Room 3
- Conference Room door was closed

Project Configuration: Test-1 OP/SP Locations

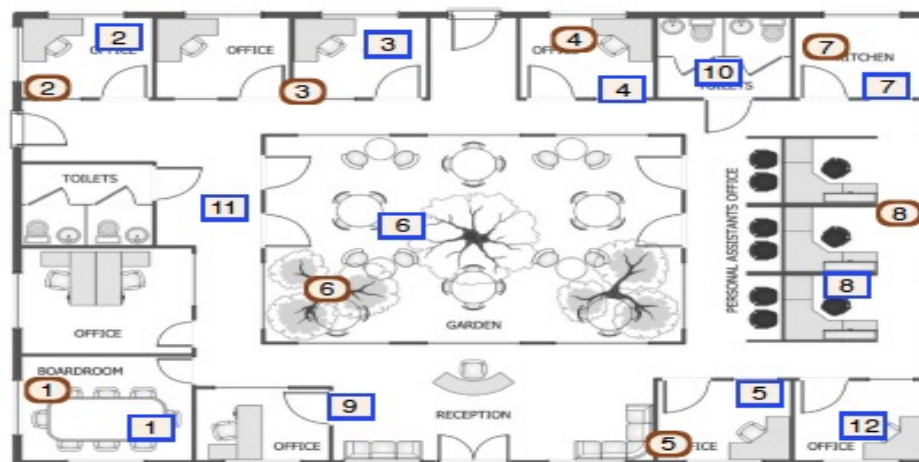
PID: 1403 , Zakir

Test Number - 1
Test Name - Zakir - Small Survey: 1

OP number	OP name
OP-001	OP-001 Boardroom
OP-002	OP-002 Office #1
OP-003	OP-003 Office #2
OP-004	OP-004 Office #3
OP-005	OP-005 Office #4
OP-006	OP-006 Garden
OP-007	OP-007 Kitchen
OP-008	OP-008 Personal Assistants Office

SP number	SP name
SP-001	SP-001 Boardroom
SP-002	SP-002 Office #1
SP-003	SP-003 Office #2
SP-004	SP-004 Office #3
SP-005	SP-005 Office #4
SP-006	SP-006 Garden
SP-007	SP-007 Kitchen
SP-008	SP-008 Pers. Assistants Office
SP-009	SP-009 Reception
SP-010	SP-010 Toilets
SP-011	SP-011 Garden Entrance
SP-012	SP-012 Office #5

File Name: Office with Garden.png



Project Configuration: Test-3

PID: 1403 , Zakir

Test type: Verification

Completed: No

No warnings

Test Number - 3

Test Name - Zakir - Verification: 1

Zakir - Verification: 1 Notes

Spray Type: esprayer65psi Sample Type: filter Sample Flow: 5.5 Interval Duration: 5 Interval Count: 4

SCENARIO1		SCENARIO2
NAME	Scenario1	Scenario2
DESCRIPTION	HEPA ON - High Speed	HEPA OFF
OP COUNT	1	1
OP-001 TAG	Tag-C1	Tag-C2
SP-001 SAMPLES	SN-017 - SN-020	SN-021 - SN-024

Notes for Test 3:

- Start Time: 1445; Ceiling ht: 10 ft; Area: 324 sqft
- Interval #3 cassette came off during the test
- Did not complete Scenario 2 (SN021-024)
- Changed Tag from C1 to C6

Project Configuration: Test-3

PID: 1403 , Zakir

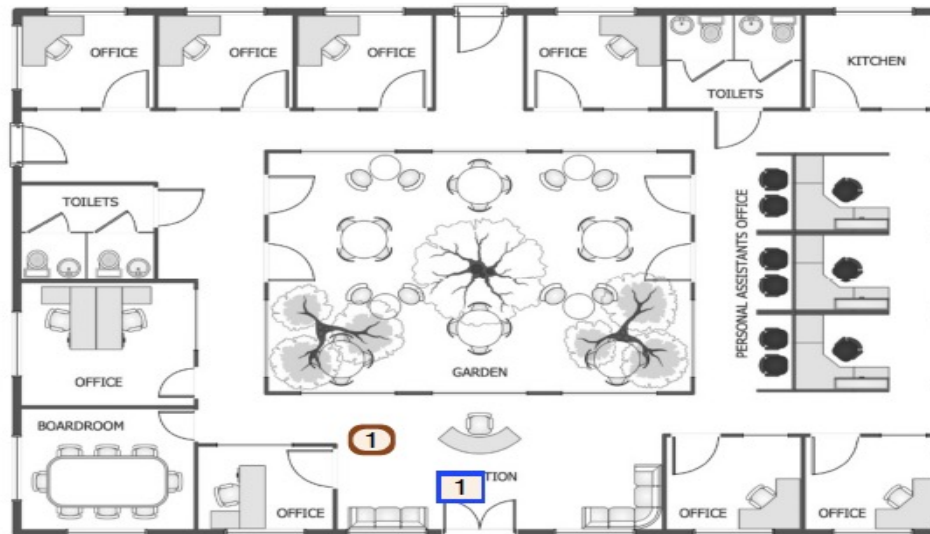
Test Number - 3

Test Name - Zakir - Verification: 1

OP number	OP name
OP-001	OP-001 Reception

SP number	SP name
SP-001	SP-001 Reception

File Name: Office with Garden.png



Project Labels: Origin Points

 OP-001	 OP-001
Test: 1 Scenario: 1:C8	Test: 2 Scenario: 1:C7
DO NOT REMOVE	DO NOT REMOVE
1127: School VVF 2023-07-25	1127: School VVF 2023-07-25
 OP-001	 OP-001
Test: 3 Scenario: 1:C6	Test: 4 Scenario: 1:C5
DO NOT REMOVE	DO NOT REMOVE
1127: School VVF 2023-07-25	1127: School VVF 2023-07-25

Project Labels: Sample Points

 SP-001	 SP-001
Test: 1	Test: 2
Scenario:	Scenario:
1:SN-001,SN-002,SN-003,SN-004	1:SN-005,SN-006,SN-007,SN-008
DO NOT REMOVE	DO NOT REMOVE
1127: School VVF	1127: School VVF
2023-07-25	2023-07-25
 SP-001	 SP-001
Test: 3	Test: 4
Scenario:	Scenario:
1:SN-009,SN-010,SN-011,SN-012	1:SN-013,SN-014,SN-015,SN-016
DO NOT REMOVE	DO NOT REMOVE
1127: School VVF	1127: School VVF
2023-07-25	2023-07-25

Project Labels: Sample Numbers

SN-001 SP-001 filter 1127-School VVF 2023-07-25	SN-002 SP-001 filter 1127-School VVF 2023-07-25	SN-003 SP-001 filter 1127-School VVF 2023-07-25	SN-004 SP-001 filter 1127-School VVF 2023-07-25	SN-005 SP-001 filter 1127-School VVF 2023-07-25	SN-006 SP-001 filter 1127-School VVF 2023-07-25	SN-007 SP-001 filter 1127-School VVF 2023-07-25	SN-008 SP-001 filter 1127-School VVF 2023-07-25	SN-009 SP-001 filter 1127-School VVF 2023-07-25
SN-010 SP-001 filter 1127-School VVF 2023-07-25	SN-011 SP-001 filter 1127-School VVF 2023-07-25	SN-012 SP-001 filter 1127-School VVF 2023-07-25	SN-013 SP-001 filter 1127-School VVF 2023-07-25	SN-014 SP-001 filter 1127-School VVF 2023-07-25	SN-015 SP-001 filter 1127-School VVF 2023-07-25	SN-016 SP-001 filter 1127-School VVF 2023-07-25	SN-017 SP-001 filter 1127-School VVF 2023-07-25	SN-018 SP-001 filter 1127-School VVF 2023-07-25
