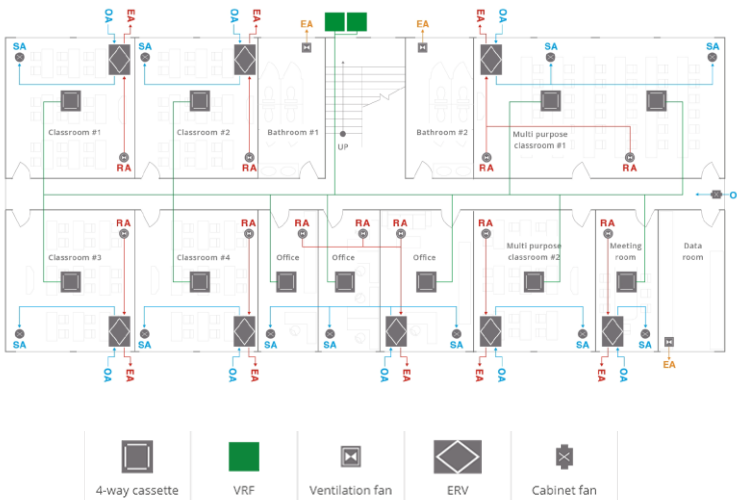


Concentration Simulation Result



Facility type :	School
Target area :	253.6m ²
Space height :	2.7m
Type of indoor unit and nanoe™ generator :	4-way Cassette (Mark 2)
Type of outdoor unit :	VRF
Ventilation unit :	ERV Cabinet Fan Ventilation Fan
Average nanoe™ concentration level (120 minutes later) :	Level 1

nanoe™ distribution and concentration level over time

There are 7 key benefits provided by nanoe™ which commence when concentration reaches Level 1. The concentration level affects the speed at which the benefits occur. Concentration level 2 is 10 times the concentration of level 1, and concentration level 3 is 20 times the concentration of level 1.

*The results shown are for simulation purpose only and concentration may vary due to actual room conditions.



Room Conditions

Classroom #1: 28.64m³
 Classroom #2: 26.82m³
 Classroom #3: 28.61m³
 Classroom #4: 26.82m³
 Office(1), Office(2): 13.18m³
 Office(3): 20.65m³
 Multipurpose classroom #1: 55.14m³
 Multipurpose classroom #2: 26.76m³
 Meeting room: 13.83m³

- Type of indoor unit : 4-way Cassette
- Position of indoor unit or air outlet : As indicated in the image
- Ventilation

Position of air inlet/outlet : As indicated in the image

Amount of ventilation : Adequate ventilation level with reference to ASHRAE standards and guidelines

Other Conditions

Amount of generated nanoe: 9.6 trillion / second (Mark2)
 Half-life of hydroxyl radical: Approximately 10 minutes
 Simulation method: Fluid/concentration diffusional analysis by finite volume method

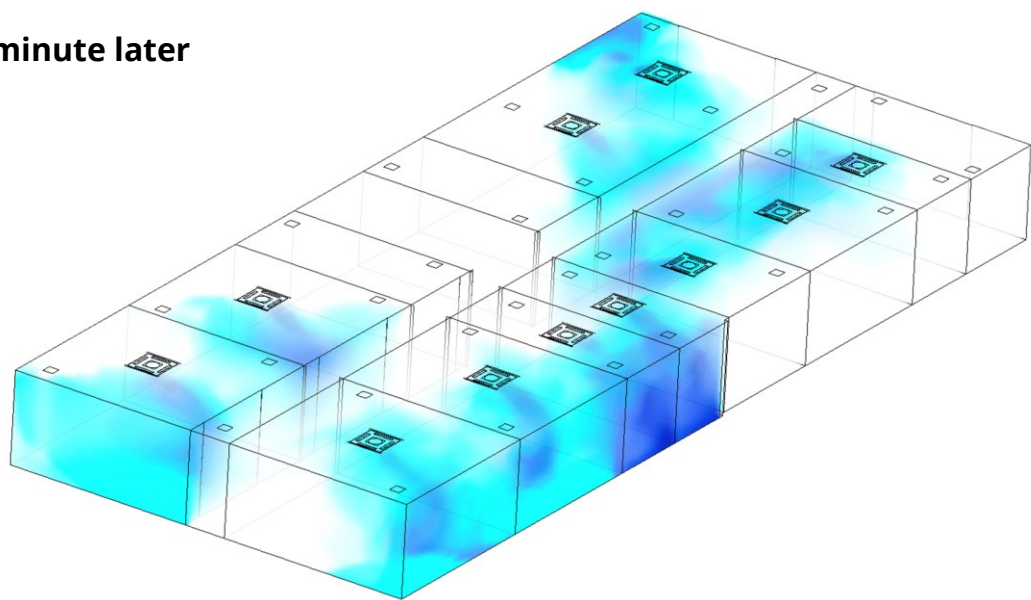
Remarks

The concentration level of nanoe™ is stabilized after a certain period of time. This result shows the variability of nanoe™ diffusion at the 3 time points until when nanoe™ concentration is stabilized.

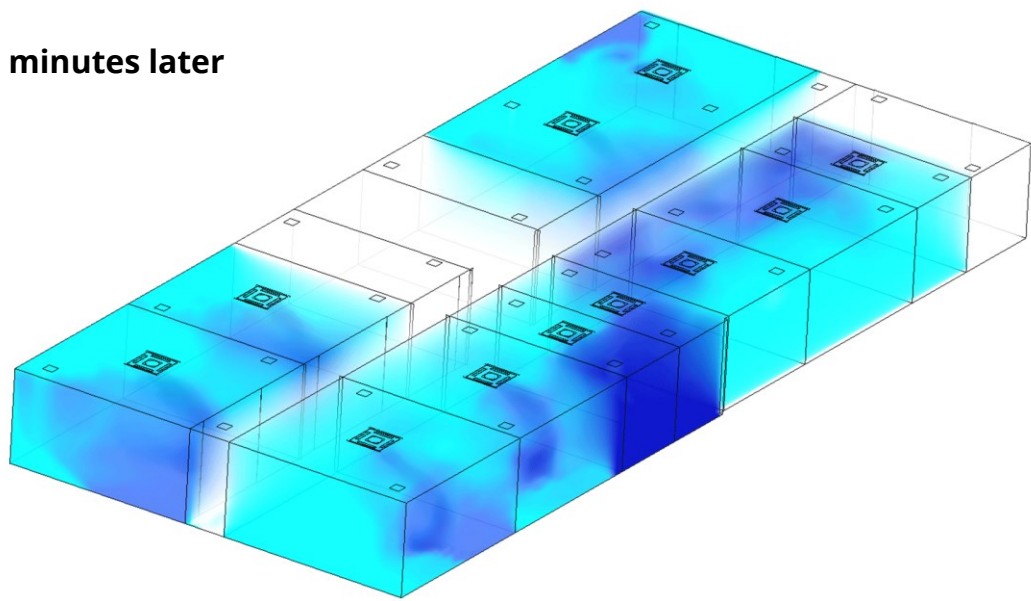
The diffusion of nanoe™ is not effected by the operation mode (heating, cooling, nanoe™, etc.) of the air conditioner. Simulation was conducted as an independent space by dividing one home into individual room.

nanoe™ particles are extremely tiny in nano-meter size. They cannot be seen so the concentration image is solely for illustrative purposes.

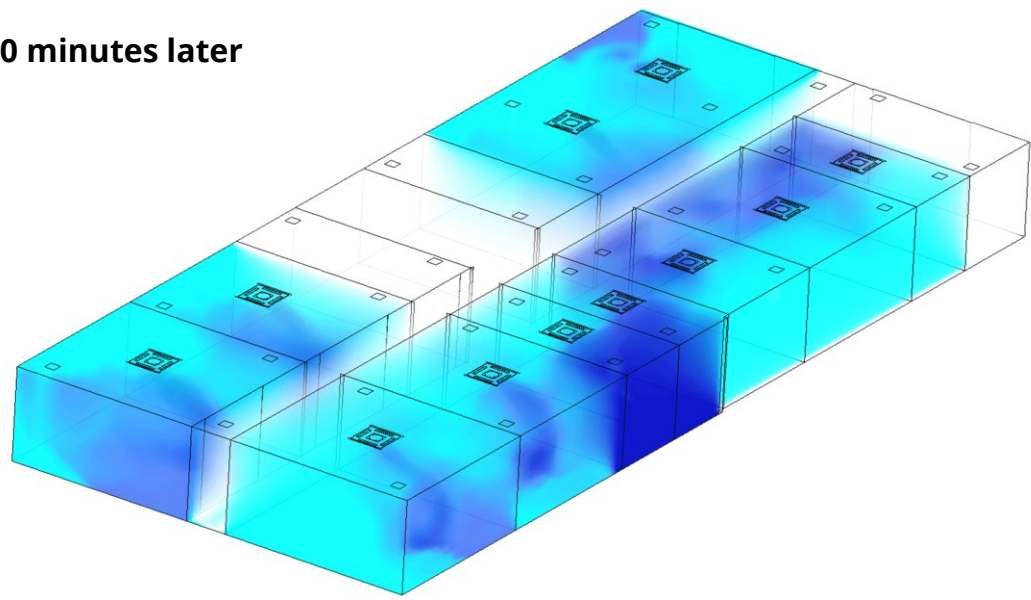
1 minute later



10 minutes later



120 minutes later





Concentration level of nanoe™ X is the key for effectiveness

7 Effects nanoe™ X

Deodorises



Odours



Bacteria
& viruses



Mould



Allergens



Pollen



Hazardous
substances



Skin and hair

Known as nature's detergent, hydroxyl radicals (also known as OH radicals) are natural reactive molecules looking to react with other elements such as hydrogen. This reaction enables hydroxyl radicals to inhibit the growth of pollutants. Panasonic's nanoe™ X technology brings these effects to purify surfaces and indoor environments.

The concentration level of nanoe™ X is the key to effectiveness. The higher the concentration, the more hydroxyl radicals are in the space, and the quicker the effect can be realised.

This will enable you to enjoy a pleasant and comfortable living space.

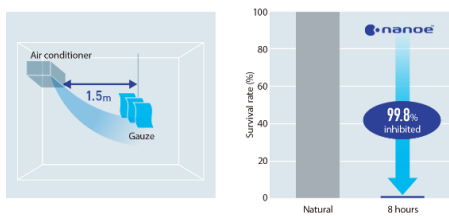
• Test results conducted under controlled laboratory conditions. Performance of nanoe™ X might differ in real life environment.

• The nanoe™ X performance varies depending on the room size, environment and usage and it may take several hours to reach the full effect.

• nanoe™ X is not medical device, local regulations on building design and sanitary recommendations must be followed.

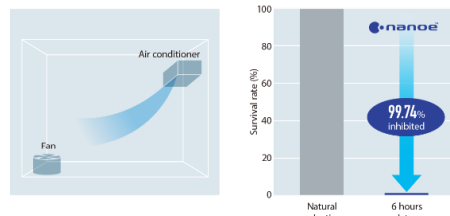
LEVEL 1 Effects expected at concentration Level 1

Adhered virus



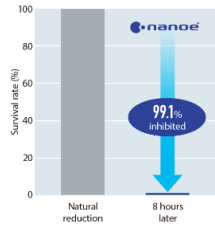
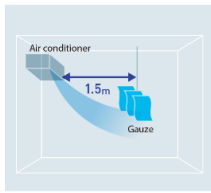
- (1) Testing organisation: Japan Food Research Laboratories
- (2) Test subject: Adhered bacteriophage Φ x 174
- (3) Test volume: Approx. 25 m³ laboratory (3.3 x 3.5 x 2.2m)
- (4) Test result: Inhibited 99.8% in 8 hours
- (5) Report No.: 13001265005-01

Airborne virus



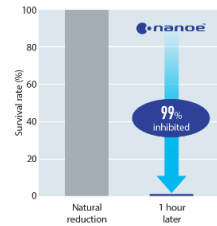
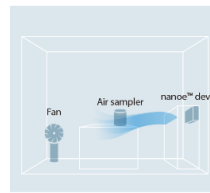
- (1) Testing organisation: Kitasato Research Center for Environmental Science
- (2) Test subject: Airborne bacteriophage 174
- (3) Test volume: Approx. 25 m³ laboratory (3.5 x 3.3 x 2.2m)
- (4) Test result: Inhibited 99.74% in 6 hours
- (5) Report No.: 24_0300_1

Bacteria



- (1) Testing organisation: Japan Food Research Laboratories
- (2) Test subject: Adhered staphylococcus aureus
- (3) Test volume: Approx. 23 m³ laboratory (3.6 x 2.7 x 2.4m)
- (4) Test result: Inhibited 99.1% in 8 hours
- (5) Report No.: 13044083003-01

Mould

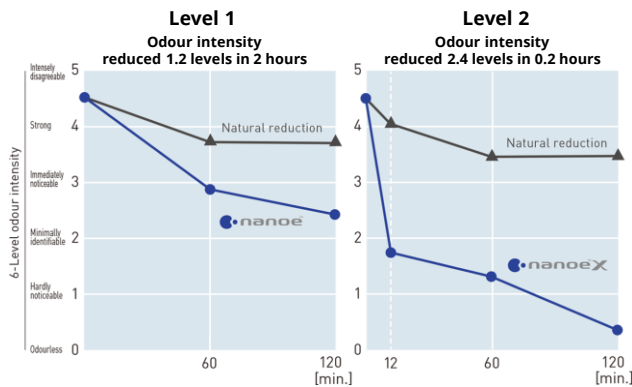


- (1) Testing organisation: Japan Food Research Laboratories
- (2) Test subject: Airborne cladosporium
- (3) Test volume: Approx. 23 m³ laboratory (3.6 x 2.7 x 2.4m)
- (4) Test result: Inhibited 99% in 1 hour
- (5) Report No.: 205061541-001

LEVEL 2 Effects expected at concentration Level 2

Level 2 is 10 times more concentrated than Level 1, and compared to Level 1 takes less time to realise the effects.

Cigarette Smoke Odour



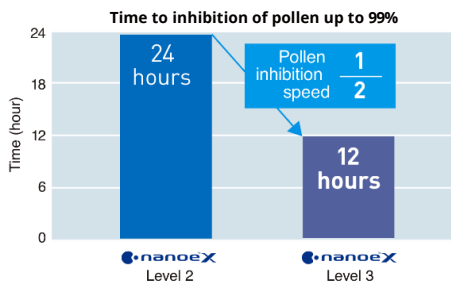
- Level 1
- (1) Testing organisation: Panasonic Product Analysis Center
 - (2) Test subject: Adhered cigarette smoke odour
 - (3) Test volume: Approx. 23m³ laboratory (3.64 x 2.73 x 2.4m)
 - (4) Test result: Odour intensity reduced 1.2 levels in 2 hours
 - (5) Report No.: BAA33-130125-D01

- Level 2
- (1) Testing organisation: Panasonic Product Analysis Center
 - (2) Test subject: Adhered cigarette smoke odour
 - (3) Test volume: Approx. 24m³ laboratory (3.64 x 2.73 x 2.4m)
 - (4) Test result: Odour intensity reduced 2.4 levels in 0.2 hours
 - (5) Report No.: 4AA33-160615-N04

LEVEL 3 Effects expected at concentration Level 3

Level 3 is 20 times more concentrated than Level 1, and compared to Level 2 takes less time to realise the effects.

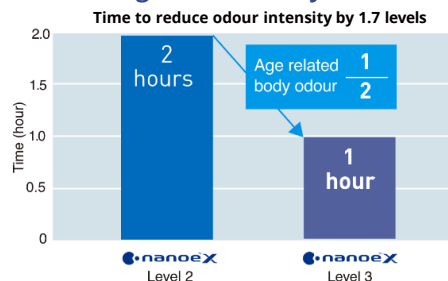
Pollen



- Level 2:
- (1) Testing organisation: Panasonic Product Analysis Center
 - (2) Test subject: Adhered cedar pollen allergens
 - (3) Test volume: Approx. 24 m³ laboratory (3.64 x 2.73 x 2.4m)
 - (4) Test Result: Inhibition of 99% or more in 24 hours
 - (5) Report No.: 4AA33-151001-F01

- Level 3:
- (1) Testing organisation: Panasonic Product Analysis Center
 - (2) Test subject: Adhered cedar pollen allergens
 - (3) Test volume: Approx. 24 m³ laboratory (3.64 x 2.73 x 2.4m)
 - (4) Test Result: Inhibition of 99% or more in 12 hours confirmed
 - (5) Report No.: L19YA009

Age-related body odour



- Level 2:
- (1) Testing organisation: Panasonic Product Analysis Center
 - (2) Target odour: Surface-adhered age-related body odour
 - (3) Test volume: approximately 23 m³-sized test chamber
 - (4) Test result: Odour intensity reduced by 1.3 levels in 2 hours
 - (5) Report No.: Y18HM047-1

- Level 3:
- (1) Testing organisation: Panasonic Product Analysis Center
 - (2) Target odour: Surface-adhered age-related body odour
 - (3) Test volume: approximately 23 m³-sized test chamber
 - (4) Test result: Odour intensity reduced by 1.7 levels in one hour
 - (5) Report No.: Y18HM059