


## Concentration Simulation Results

### Simulation Conditions

<b>Type of indoor unit</b>  <b>Wall-mounted</b>	<b>Room shape</b> <b>Room size</b> <b>Short side length</b> <b>Room height</b> <b>Position of indoor unit</b> <b>Type of nanoe™ Generator</b>	<b>Rectangle</b> <b>20 m<sup>2</sup></b> <b>3 m</b> <b>2.4 m</b> <b>Center of the long side</b> <b>Mark 1</b>
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### nanoe™ X concentration simulated image and concentration value by points

This result shows the variability of nanoe™ diffusion at the time points where nanoe™ concentration is stabilized.

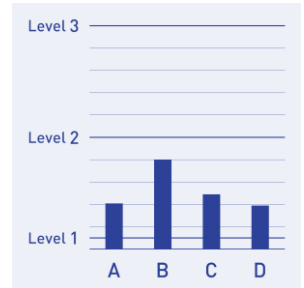
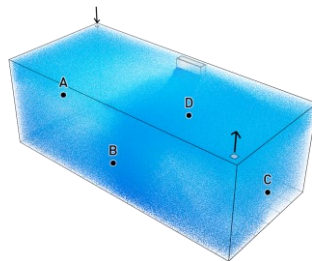
Available benefits of nanoe™ at each level are detailed below the simulation results.

The higher the concentration level rises, it is expected that the nanoe™ effect is enhanced.  
 \*The result is based on the conditions for the simulation and it may differ from the concentration measured in an actual room.

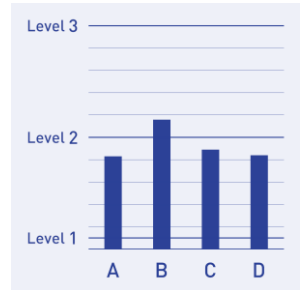
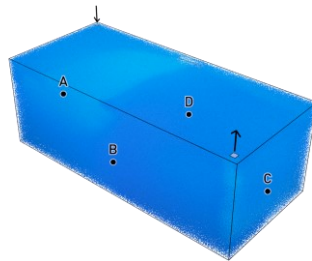


#### 2 minutes later

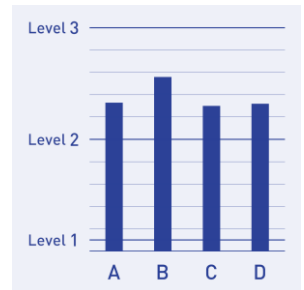
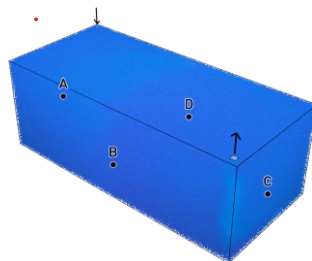
↑ Exhaust Air (EA) ↓ Supply Air (SA)



#### 5 minutes later



#### 14 minutes later



#### Room Conditions

- Room size : 3m x 6.67m x 2.4m (20m<sup>2</sup>)
- Type of indoor unit : Wall-mounted air conditioner
- 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 : 0.5 times / hour (amount of ventilation means number of times when air volume equivalent to the cubic capacity of the room is ventilated per hour)

#### Other conditions

- Air volume : 4.5m<sup>3</sup>/min (270m<sup>3</sup>/hour) by 12,000BTU/h 3.5kW
- Air flow direction : To 45 degrees down with the horizontal axis
- Amount of generated nanoe™ : 4.8 trillion / second
- Half-life of hydroxyl radical : Approximately 10 minutes
- Simulation method : Fluid/concentration diffusional analysis by finite volume method

#### Remarks

- The diffusion of nanoe™ is not affected 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.



## Technology with the benefits of hydroxyl radicals

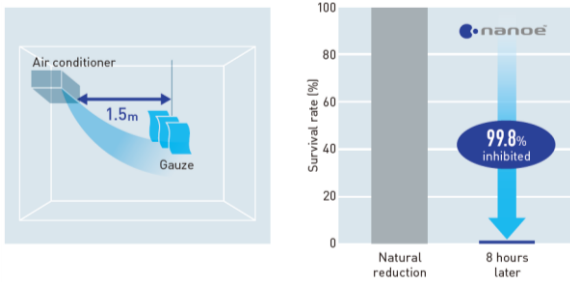
In addition to odour suppression, several types of pollutants can be inhibited such as certain types of bacteria, viruses, mould, allergens, pollen and certain hazardous substances.



### The standard concentration of Level 1

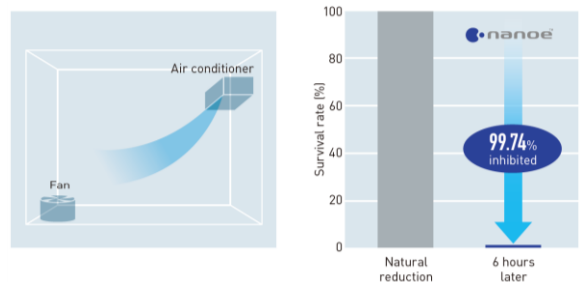
= the concentration at which the results of airborne and adhered certain virus/bacteria and mould inhibition in actual space are obtained

#### Adhered virus



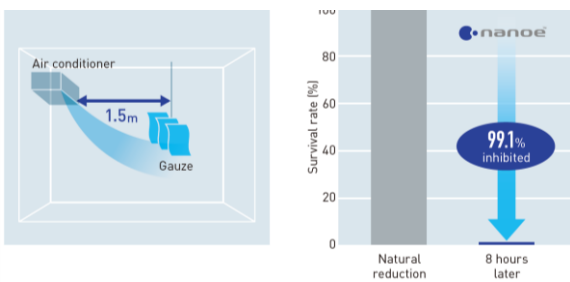
- (1) Testing organisation: Japan Food Research Laboratories
- (2) Test subject: Adhered bacteriophage  $\Phi$  x 174
- (3) Test volume: Approx. 25 m<sup>3</sup> laboratory (3.3 x 3.5 x 2.2m)
- (4) Test result: Inhibited 99.8% in 8 hours
- (5) Report No.: 13001265005-01

#### Airborne virus



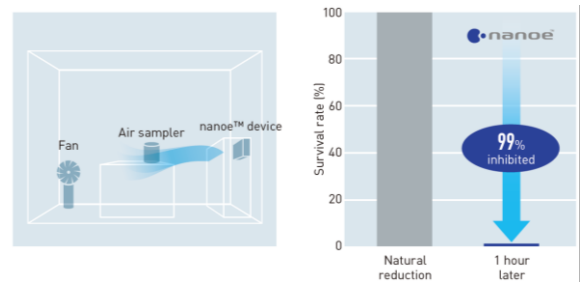
- (1) Testing organisation: Kitasato Research Center for Environmental Science
- (2) Test subject: Airborne bacteriophage 174
- (3) Test volume: Approx. 25 m<sup>3</sup> laboratory (3.5 x 3.3 x 2.2m)
- (4) Test result: Inhibited 99.74% in 6 hours
- (5) Report No.: 24\_0300\_1

#### Adhered bacteria



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

#### Airborne mould



- (1) Testing organisation: Japan Food Research Laboratories
- (2) Test subject: Airborne cladsporium
- (3) Test volume: Approx. 23 m<sup>3</sup> laboratory (3.6x2.7x2.4m)
- (4) Test result: Inhibited 99% in 1 hour
- (5) Report No.: 205061541-001



## Technology with the benefits of hydroxyl radicals

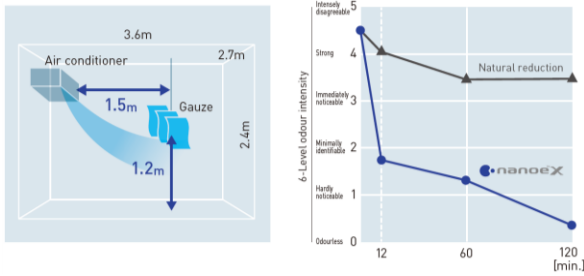
In addition to odour suppression, several types of pollutants can be inhibited such as certain types of bacteria, viruses, mould, allergens, pollen and certain hazardous substances.



### The standard concentration of Level 2

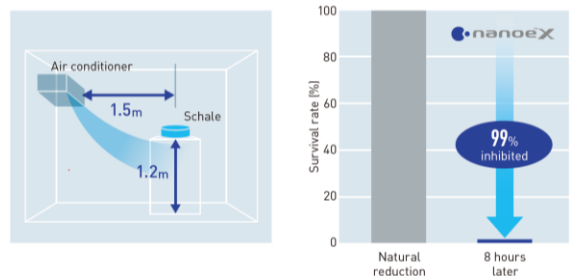
= the concentration at which the results of deodourisation, and hazardous substances inhibition in actual space are obtained

#### Adhered cigarette smoke odour



- (1)Testing organisation: Panasonic Product Analysis Center
- (2)Test subject: Adhered cigarette smoke odour
- (3)Test volume: Approx. 24 m<sup>3</sup> 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

#### Adhered hazardous substances

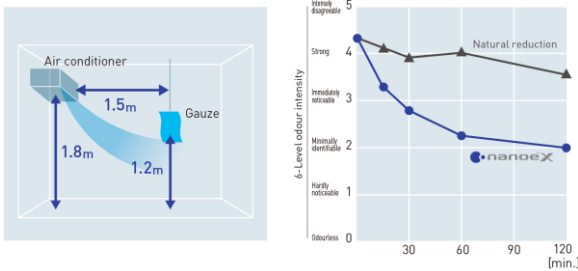


- (1)Testing organisation: Panasonic Product Analysis Center
- (2)Test subject: Adhered aromatic carboxylic acid (benzoic acid)
- (3)Test volume: Approx. 23 m<sup>3</sup> laboratory (3.64 x 2.73 x 2.4m)
- (4)Test result: Inhibited 99% in 8 hours
- (5)Report No.: Y17NF096

### The standard concentration of Level 3

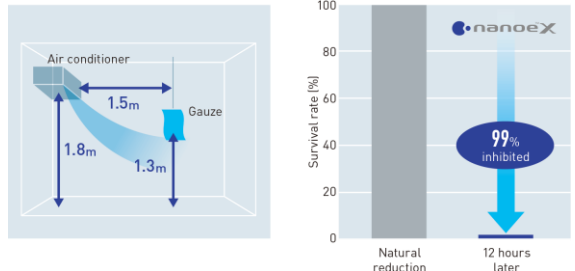
= the concentration at which the results of deodourisation and pollen inhibition in actual space are obtained

#### Adhered nonenal (body odour of an aging person)



- (1)Testing organisation: Panasonic Product Analysis Center
- (2)Test subject: Adhered nonenal (Body odour of an aging person)
- (3)Test volume: Approx. 23 m<sup>3</sup> laboratory
- (4)Test result: Odour intensity reduced by 1.7 levels in 1 hour
- (5)Report No.: Y18HM059

#### Adhered cedar pollen allergens



- (1)Testing organisation: Panasonic Product Analysis Center
- (2)Test subject: Adhered cedar pollen allergens
- (3)Test volume: Approx. 23 m<sup>3</sup> laboratory
- (4)Test result: Inhibited over 99% in 12 hours
- (5)Report No.: L19YA009