Let's celebrate

80 million

units sold worldwide*

With heartfelt gratitude, we will continue to provide an environment where everyone can live comfortably

* Total number of products equipped with a Sharp Plasmacluster device and Plasmacluster ion generating devices shipped in Japan and abroad from October 2000 to the end of October 2018.

USED IN A VARIETY OF INDUSTRIES

Consumer			Commercial				Transportation		
Bathroom	Toilet	Ventilation System	Office	Hospital	Hotel	Factory	Car	Bus	Train

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The contents of this booklet As of June 2019.

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Plasmacluster

Inhibits the action of mold and airborne bacteria

Amazing mechanism

Clean and healthy air

Plasmacluster effect

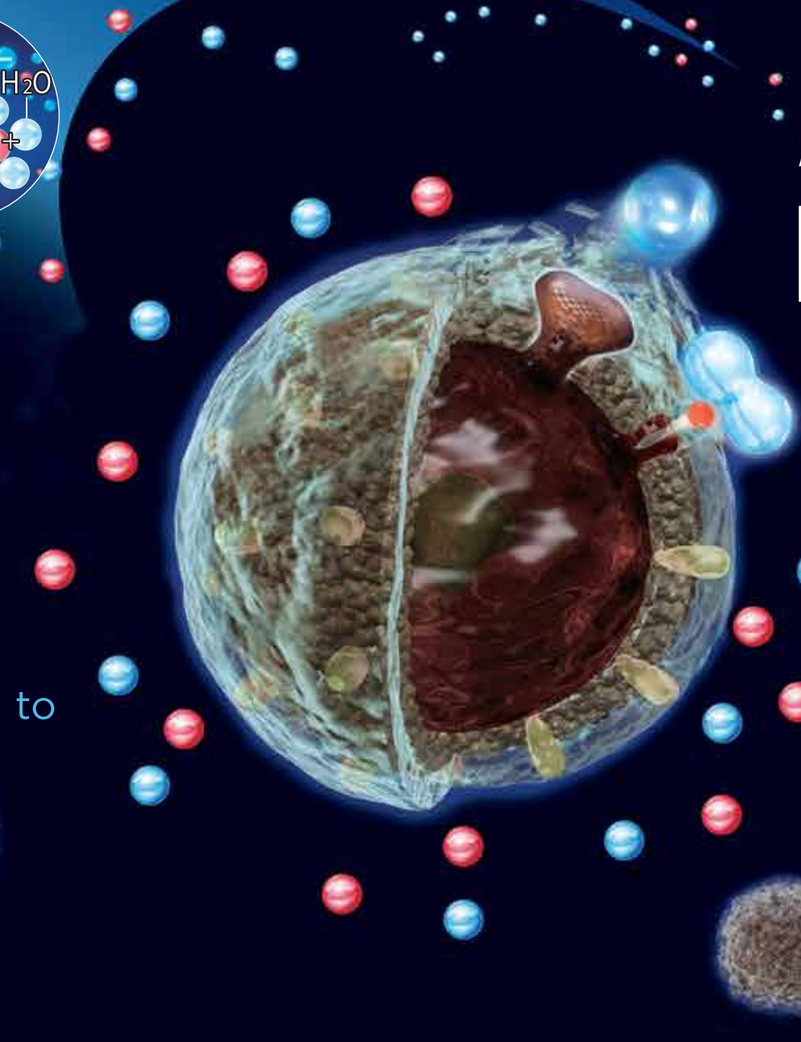
The effect increases as the ion density increases

SHARP

Be Original.

AMAZING MECHANISM

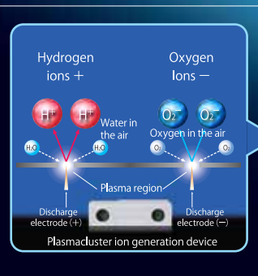
Inhibits act of mold fungus and airborne bacteria



Demonstration by Prof. Artman, Aachen University of Applied Sciences, Germany

1 Ions are released.

Plasmacluster Ions are similar to positive and negative ions found in nature. The ions are surrounded by water molecules and are released into the air.



▲The ions are long-lasting※. ※because they are surrounded by water molecules.

2 The ions act on airborne microbes.

The ions from hydroxide (OH) radicals are highly oxidising when they adhere to the surfaces of airborne microbes, such as suspended allergens, bacteria, mould and viruses. They remove hydrogen from the surface proteins, breaking them down.

3 The broken-down components return to the air as water.

The hydroxide (OH) radicals combine with hydrogen(H) to form water (H_2O) which is returned to the air.

How Plasmacluster ions work?

Unlike common disinfection systems, plasma cluster ions change into substances called "OH radicals" on the surface of molds and viruses. These OH radicals have strong oxidizing power, extract hydrogen from proteins on mold and virus surfaces, and act to degrade proteins. OH radicals combined with hydrogen extracted from proteins return to the air as water.

What is the origin of the Plasmacluster name and logo mark?

Plasma is electrically charged gas. It is produced by an electrical discharge through a gas. Auroras, such as at the North Pole, are representative phenomenon. The Plasmacluster Ion generating device releases hydrogen (+) ions and oxygen (-) ions through plasma discharge, with the generated ions surrounded by water molecules. This for was thus given a name that includes both "plasma" and "cluster" (like a cluster of grapes). A special feature of these Plasmacluster Ions surrounded by water molecules is their long life spans.

What are ions?

"Ions" are those atoms and molecules-which make up physical matter – that possess a positive or negative electrical charge due to the attraction and discharge of electrons. An ion that has lost one or more electrons (and thus has more protons than electrons) is said to have a positive (+) charge and one that has gained electrons (having more electrons than protons) is said to have a negative (-) charge. It is said that, in olden times, a scientist experimenting with electrolysis discovered extremely small matter with an electric charge flying toward an electrode, and called it an "ion", which means "to go" or "that which moves", in ancient Greek.

Feel refreshed with Plasmacluster Ions

1

Suppresses the activity of airborne microbes*1

In dining where everyone eats together, airborne bacteria are a concern. Plasmaclusters degrade proteins on cell membranes on the surface of suspended bacteria and suppress their action.

*1 ● Tested by: Japan Food Research Laboratories ● Test Report: No. 15047086002-0101 / 15061721001-0101 ● Test method: Performance evaluation test base on JEMA standards (HD -131) in a test space of 25m². ● Test object: One kind of suspended bacteria. ■ Test result: 99% reduction in about 14 minutes. KI-EX100 (equivalent performance model to KI-JP100) with high air volume operation. 99% reduction in about 51 minutes. FU-F28 (model with lower performance than FU-J30) with high airflow operation.

2

Acts on both airborne and adhering mold*2

Almost of people has experienced the shock of finding mold growing in food or their favourite shoes, etc. in addition to breaking down and removing airborne mold*2, a Plasmacluster 25,000※a Plasmacluster NEXT※b also suppresses the proliferation of adhering mold*3 and plays an active role in places where mold is a serious concern, for example, kitchen and lavatories, and wet entryways on a rainy day.

*2 ● Tested by: Japan Food Research Laboratories ● Test Report: No. 15047086002-0201 / 15061723001-0101 ● Test method: Performance evaluation test base on JEMA standards (HD -131) in a test space of 25m². ● Test target: One type of mold fungus floating. ■ Test result: 99% reduction in about 14 minutes. KI-EX100 (equivalent model to KI-JP100) with high air volume operation. 99% reduction in about 49 minutes. Implemented with FU-F28 (model with lower performance than FU-J30) "strong airflow" operation.

*3 ● Tested by: Institute of Food and Environmental Health ● Testing method: Refer to JIS Z 2911 and compare the mold growth area with the test piece to which mold fungus adhered. ■ Test result: growth was suppressed after 3 days. KI-DX50 (Model equipped with Plasma Cluster 25000) is operated with "strong airflow".

※a Plasmacluster 25000: Estimated number of ions is a measure of the number of ions per square meter measured at the center of the room (1.2m above the floor) of the floor area to which the Plasmacluster is applied during "medium" operation with the product placed on the wall. . FU-J30 is for "strong" operation. ※b Plasmacluster NEXT: The standard for the number of ions is more than 50,000 per square meter in the center of the room (1.2 m above the floor) of the floor area to which the plasmacluster is applied during "medium" operation, with the product placed on the wall.

3

Decomposes and removes airborne allergens like dust mite faces and dead dust mites*4

It is said that the pollen and house dust that is airborne during the day settles or when we go to bed, get up and accumulates in our bedding. Mites also lurk in our carpets, tatami mats and bedding. Because Plasmacluster removes the allergens of airborne dust mite faeces and dead dust mites, it is a perfect countermeasure to allergens, especially for small children.

*4 ● Tested by: IEA Co., Ltd. ● Testing method: Allergic substances such as mite feces and death are suspended in a test space of about 25cm, and the allelic substances are measured by ELISA. ■ Test result: 99% reduction in about 14 minutes. KI-EX100 (equivalent performance model to KI-JP100) with high air volume operation. 99% reduction in about 51 minutes. FU-F28 (model with lower performance than FU-J30) operated with "strong" air flow.

Descriptions of efficacy indications are based on tests of air purifiers.

4

Suppresses the activity of airborne viruses*5

We naturally worry about the existence of airborne viruses where many people gather , such as living rooms. Plasmacluster ions break down the spike –like projections of protein on the surface of airborne viruses to suppress their activity.

*5 ● Tested by: Pasteur Institute, Ho Chi Minh City, Vietnam ● Testing method: Conducted in a performance evaluation test of the Japan Electrical Manufacturers' Association Standard (JEM1467) in a test space of about 25m2. ● Test target: One kind of suspended virus.
■ Test result: 99% reduction in about 9 minutes. Implemented with KI-AX80 (lower performance model than KI-JP100) airflow "strong airflow" operation. 99% reduction in about 18 minutes. FU-A30 (equivalent to FU-J30) with "strong airflow" operation.

5

Decomposes and removes adhering odors*6

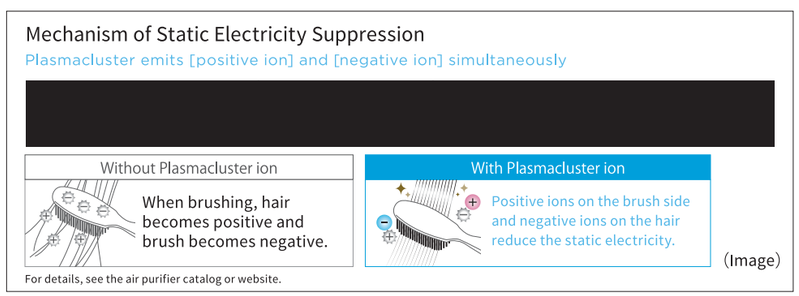
Cigarette and pet odors may not be noticeable to the actual user or pet-owner and their family, but they can be very troublesome to those who are sensitive to those smells. Plasmacluster decomposes and removes cigarette and pet odors that are ingrained in the room, as well as the smell of room-dried laundry.

*6 ● Tested by: by Sharp ● Test method: Evaluate the deodorizing effect of a test piece impregnated with the odor component of tobacco by a 6-step odor intensity display method. ■ Test result: Deodorizes to a level that does not matter in about 30 minutes. Implemented on KI-HP100 (model equipped with Plasmacluster NEXT). Deodorizes to a level that does not matter in about 55 minutes. Implemented on KI-BX50 (model equipped with Plasma Cluster 25000). Deodorizes to a level that does not matter in about 90 minutes. Implemented on FU-B30 (model equipped with Plasmacluster 7000) ※1※2.
※1 The effect of "medium" operation in the KI series and "strong" operation in the KC / FU series. ※2 Deodorant effects vary depending on the type, strength, and material of the object.
For details, see the air purifier catalog or website.

6

Removes static electricity*7

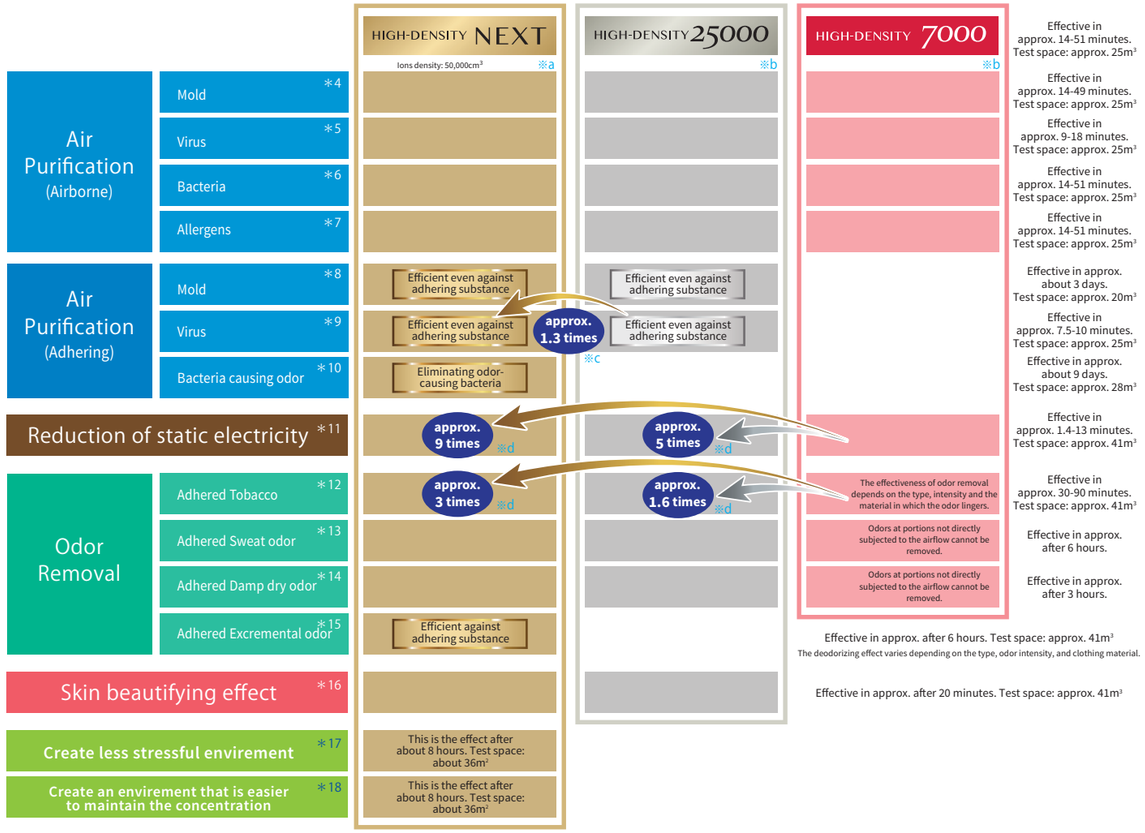
Many of you have had that unpleasant experience of the “crackle” of static electricity the moment we touch a doorknob or put on a sweater. Plasmacluster removes that static electricity, and does so faster through humidification, so that less dust will be attracted to settle on the surfaces.



*7 ● Tested by: by Sharp ● Test method: Measure the time required to remove electricity to 0.5kV with a test plate charged to 5kV. ■ Test result: About 1.4 minutes later. Implemented on KI-HP100 (model equipped with Plasmacluster NEXT). After about 2.7 minutes. Implemented on KI-DX50 (model equipped with Plasma Cluster 25000). About 13 minutes later. Implemented on FU-D30 (model equipped with Plasmacluster 7000).

The effect increases as the ion density increases.

<For air cleaner KI / KC / FU series>



This is a demonstration result in a test space equivalent to about 5 to 20 tatami mats, not in a real use space. The effect differs depending on the location of use, how it is used, and the individual's needs.

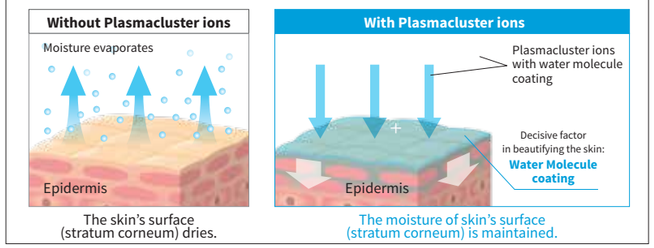
＊4<Mold fungus> ● Request of test: Japan Food Research Laboratories ● Test Report: No. 15047086002-0101 / 15061721001-0101 ● Test method: Approx. Conducted in JEMA standard (HD-131) performance evaluation test. ● Test object: One kind of suspended bacteria. ■ Test result: 99% reduction in about 14 minutes. KI-EX100 (equivalent performance model to KI-LP100) with high air volume operation. 99% reduction in about 51 minutes. Implemented with FU-F28 (lower performance model than FU-L30) airflow "strong" operation.＊5<Airborne virus> ● Testing organization: Pasteur Research Institute, Ho Chi Minh City, Vietnam ● Test method: Conducted in a performance evaluation test of the Japan Electrical Manufacturers' Association Standard (JEM1467) in a test space of about 25m³. ● Test target: One kind of suspended virus. ■ Test result: 99% reduction in about 9 minutes. KI-AX80 (model with lower performance than KI-LP100) operated with "strong" air flow. 99% reduction in about 18 minutes. FU-A30 (equivalent model to FU-L30) with high air volume operation.＊6<Suspended bacteria> ● Request of test: Japan Food Research Laboratories ● Test Report: No. 15047086002-0101 / 15061721001-0101 ● Test method: Approx. Conducted in JEMA standard (HD-131) performance evaluation test. ● Test object: One kind of suspended bacteria. ■ Test result: 99% reduction in about 14 minutes. KI-EX100 (equivalent performance model to KI-LP100) with high air volume operation. 99% reduction in about 51 minutes. Implemented with FU-F28 (lower performance model than FU-L30) airflow "strong" operation.＊7 <Floating allergic substance of mite dung and dead body>● Testing organization: IEA ● Testing method: Allergic substance of mite dung and dead body is suspended in a test space of about 25 mm, and the allelic substance is measured by ELISA. Measurement. ■ Test result: 99% reduction in about 14 minutes. KI-EX100 (equivalent model to KI-JP100) with high air volume operation. 99% reduction in about 51 minutes. FU-F28 (model with lower performance than FU-J30) operated with "strong" air flow. ＊8<Adhered bacterial fungus>● Testing organization: Institute of Food and Environmental Health ● Test method: Refer to JIS Z 2911 and compare the mold growth area with the test piece to which the fungus was attached. ■ Test result: growth was suppressed after 3 days. KI-DX50 (Model equipped with Plasma Cluster 25000) is operated with "strong" air flow.＊9<Adhered virus> ● Testing organization: Institute of Food and Environmental Health ● Testing method: Conducted in a performance evaluation test of the Japan Electrical Manufacturers' Association Standard (JEM1467) in a test space of about 25 mm. ● Test target: One type of attached virus. ■ Test result: 99% reduction in about 7.5 hours. KI-HP100 (Model equipped with Plasmacluster NEXT) is operated with "turbo" air flow. 99% reduction in about 10 hours. KI-BX50 (model equipped with Plasma Cluster 25000) was operated with "strong" air flow. ＊10<Adhered bacterium causing odor> ● Testing organization: Japan Food Research Laboratories ● Test Report: No. 17097215001-0101 ● Test method: One type of odor causing bacteria is attached in a test space of about 28cm2. The bacteria removal rate was calculated using the test specimen. ■ Test result: 99% suppression after 9 days. KI-HP100 (Model equipped with Plasmacluster NEXT) is operated with "medium" air flow. ＊11<Static electricity> ● Testing organization: Investigation by our company ● Test method: Measure the time required to remove electricity to 0.5kV with a test plate charged to 5kV. ■ Test result: About 1.4 minutes later. Implemented on KI-HP100 (model equipped with Plasmacluster NEXT). After about 2.7 minutes. Implemented on KI-DX50 (model equipped with Plasma Cluster 25000). About 13 minutes later. Implemented on FU-D30 (model equipped with Plasmacluster 7000).＊12<Adhered tobacco odor> ● Testing organization: Investigation by our company ● Test method: Evaluate the deodorizing effect of the test piece impregnated with the odor component of tobacco by a 6-step odor intensity display method. ■ Test result: Deodorizes to a level that does not matter in about 30 minutes. Implemented on KI-HP100 (model equipped with Plasmacluster NEXT). Deodorizes to a level that does not matter in about 55 minutes. Implemented on KI-BX50 (model equipped with Plasma Cluster 25000). Deodorizes to a level that does not matter in about 90 minutes. Implemented on FU-B30 (model equipped with Plasmacluster 7000) ※3※4、＊13<Adhesive sweat odor> ● Testing organization: Investigation by our company ● Test method: Evaluate the deodorizing effect of the test piece impregnated with the odor component of sweat using a 6-step odor intensity display method. ■ Test result: Deodorizes to a level that does not matter in about 6 hours. Implemented on FU-B30 (model equipped with Plasmacluster 7000)※4※5、＊14<Adhesive damp dry odor> ● Testing organization: Our investigation ● Test method: Evaluate the deodorizing effect of a test piece with the freshly dried odor component of room-dried clothing by the 6-step odor intensity display method. ■ Test result: Deodorizes to a level that does not matter in about 3 hours. Implemented on FU-B30 (model equipped with Plasmacluster 7000)※4※5、＊15<Adhered excremental odor> ● Testing organization: Investigation by our company ● Test method: Evaluate the deodorizing effect of the test piece to which the odor component of the excreted substance is adhered by a 6-step odor intensity display method. ■ Test result: Deodorizes to a level that does not matter in about 6 hours. Implemented on KI-HP100 (model equipped with Plasmacluster NEXT)※4、＊16<Skin beautyfying> ● Testing organization: Institute of Medical Science, Inc. ● Subjects: 21 (Female, 36-63 years old) ● Temperature: about 25 ° C, Humidity: about 45% ● Test method: Measure the amount of moisture on the skin in a resting state. ■ Test results: The effect of giving the skin a gloss after 20 minutes of operation was confirmed. KI-BX50 (model equipped with Plasma Cluster 25000) is operated during humidified air cleaning "medium" operation.＊17<Stress level after entering the room> ● Testing organization: Dentsu Science Jam ● Number of subjects: 20 adults, 19 children in elementary school fifth and sixth graders ● Test method: Test space of about 20 tatami mats, KI-HP100 (Model equipped with Plasmacluster NEXT) Airflow "Medium" operation Estimated the degree of stress by measuring the brain waves after driving for about 8 hours and entering the room without KI-HP100 Analysis ● Test results: In the room where the KI-HP100 was operated, a significant difference was observed in the degree of stress between 1 minute and 5 minutes※6※7。＊18<Degree of concentration during calculation> ● Testing institution: Dentsu Science Jam ● Number of subjects: 20 adults, 19 children of elementary school fifth and sixth graders ● Testing method: KI- Measure the brain waves when performing a calculation problem (Kraepelin) in the room after operating for about 8 hours with the air flow "medium" operation of HP100 (model equipped with Plasmacluster NEXT) and the room without KI-HP100 installed ● Analysis of concentration ● Test results: In rooms without KI-HP100, significant reduction in concentration was observed after 1 minute and 10 minutes※6。
※3 The effect of the KI series during "medium" operation and the KC / FU series during "strong" operation. ※4 The deodorizing effect differs depending on the type, strength, and material of the object. ※5 The odors and bacteria in the part that is not exposed to the blowing wind cannot be removed.※6 We do not guarantee the effects of preventing or treating mental stress. ※7 There are individual differences in the results of this test. It depends on the environment. [Under the supervision of Prof. Yasue Mangura (Professor, Faculty of Science and Technology, Keio University), who has been working on EEG signal analysis for many years, a sensitivity analyzer (Dentsu Science Jam Inc.) Measurement using joint development)
※a The standard of the number of ions of this technology mark is more than 50,000 per square meter in the center of the room (1.2m above the floor) of the floor area to which the plasma cluster is applied during "middle" operation, with the product placed on the wall.※b The number of this technology mark is a measure of the number of ions per square meter measured at the center (1.2 m above the floor) of the floor area to which the plasma cluster is applied during "middle" operation, with the product placed on the wall. FU-J30 is for "strong" operation. ※c Comparison with Plasmacluster 25000. ※ d Comparison with Plasmacluster 7000.

7

Beautifying Skin with a Lustrous Sheen＊1

The water molecules that surround Plasmacluster ions adhere to the surface of the skin and form a water molecule coating, which maintains the moisture of the skin's surface (stratum corneum)

■The Mechanism of Skin Moisturisation



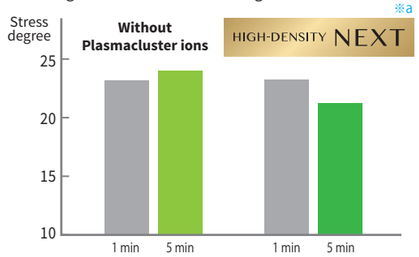
＊1 ● Tested by: Institute of Medical Science, Inc. ● Test target: 21 females, ages 36 – 63 years old. ● Approx. 25C, Humidity: Approx. 45%. ● Testing method: Measure the amount of moisture on the skin in a resting state. ■ Test result: The effect of giving the skin a gloss after 20 minutes of operation was confirmed. KI-BX50 (model equipped with Plasmacluster 25000) is operated during humidified air cleaning medium setting.

New effect by「Plasmacluster NEXT※a」

"Plasmacluster NEXT" has an ion concentration that is about twice (50,000 / m2) or more of the Plasmacluster 25000 ※b -equipped equipment, which not only improves air purification power, but also reduces stress accumulation and increase concentration. Which contribute to family gatherings and children's learning.

Creating an environment where stress is less likely to accumulate

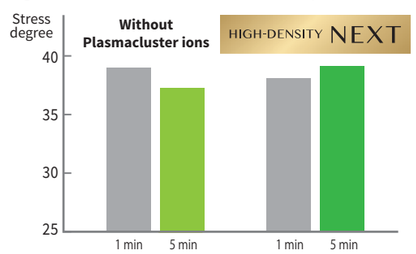
■The degree of stress after entering the room ＊2



＊ The time axis is the average from 0 to 1 minute and the average from 4 to 5 minutes.

Create an environment where concentration is easy to maintain

■Degree of concentration in the calculation problem＊3



＊ The time axis is the average from 0 to 1 minute, the average from 9 to 10 minutes.

＊2 ●Testing institution: Dentsu Science Jam ● Number of subjects: 20 adults, 19 children in grades 5 and 6 ● Test method: KI-HP100 (Model equipped with Plasmacluster NEXT) in a test space of about 20 tatami mats Analyzing the degree of stress by measuring the brain waves after entering the room after driving for about 8 hours with the air flow of "medium" and the room where the KI-HP100 is not installed ● Test result: driving the KI-HP100 In the room, a significant difference was observed between the stress levels after 1 minute and 5 minutes※1※2.＊3 ●Testing institution: Dentsu Science Jam ● Number of subjects: 20 adults, 19 children in grades 5 and 6 ● Test method: KI-HP100 (plasma cluster NEXT equipped model) in a test space of about 20 tatami mats Estimate the degree of concentration by analyzing brain waves when performing a calculation problem (Kraepelin) in a room after about 8 hours of operation with a "medium" air flow and a room without KI-HP100 ●Test results : In rooms without KI-HP100, significant reduction in concentration was observed after 1 minute and 10 minutes※1.
※1 We do not guarantee the effects of preventing or treating mental stress.※2 There are individual differences in the test results. It depends on the environment. [Under the supervision of Prof. Yasue Mangura (Professor, Faculty of Science and Technology, Keio University), who has been working on EEG signal analysis for many years, a sensitivity analyzer (Dentsu Science Jam Inc.) Measurement using joint development)
※a The standard of the number of ions of this technology mark is more than 50,000 per square meter in the center of the room (1.2m above the floor) of the floor area to which the plasma cluster is applied during "middle" operation, with the product placed on the wall.※b The number of this technology mark is a measure of the number of ions per square meter measured at the center (1.2 m above the floor) of the floor area to which the plasma cluster is applied during "middle" operation, with the product placed on the wall. FU-J30 is for "strong" operation.