

# SHARP

## 規格 Specifications

型號 Model	IG-CL15A	
適用面積*1 (平方米 / 平方呎) Applicable Floor Area*1 (m <sup>2</sup> /sq feet)	15 / 161	
操作模式 Operating Mode	低風速 Low	高風速 High
PCI 濃度*2 (顆 / 立方厘米) PCI Density*2 (ions/cm <sup>3</sup> )	7,000	25,000
空氣流量 (立方米 / 小時) Airflow Volume (m <sup>3</sup> /hour)	50	78
耗電量 (瓦) Power Consumption (W)	15	24
操作音量 (分貝) Noise Level (dBA)	32	42
外形尺寸 (闊 x 高 x 深) (毫米) Dimensions (W x H x D) (mm)	265 x 330 x 155	
重量 (公斤) Weight (kg)	3.1	
電源線 (米) Power Cord (m)	2.0	
顏色 Color	白色 White	
HD離子產生器 (壽命) Plasmacluster Ion Generating Unit (Life time)	IZ-CCL15E (17,500 小時 hours)	

\*1 假設放置主機於靠近牆壁位置，以高風速操作時，於靠近房間中央位置（離地約1.2米高的水平）可量度得到懸浮PCI濃度達每立方厘米25,000粒離子的最大適用面積。PCI數量會因室內狀況及主機之操作模式而異。

\*2 當主機靠近牆壁放置時，在每個風速設定下，房間中央位置附近（離地約1.2米高的水平）每立方厘米空氣中的PCI數量。

注意：IG-CL15A可以抑制空氣中的病毒及其他污染物，但不能做出一個完全無菌的環境。SHARP並不保證其可預防細菌感染。

\*1 The applicable floor area for which an emitted airborne ion density of about 25,000 ions/cm<sup>3</sup> can be measured at a point near the center of the room (at a height of about 1.2m from the floor), during operating at high fan mode when the main unit is placed near a wall. Number of ions will vary according to the room conditions and operation modes.

\*2 Ion count per cm<sup>3</sup> blown into air at around the center of the room (at a height of about 1.2m from the floor) during operation at each airstream setting when the main unit is placed near a wall.

Notice: While IG-CL15A can inactivate suspended virus and other contaminants, it cannot create a completely sterilized environment. SHARP does not guarantee its ability to prevent microbial infection.



High-Density 25000

## HD PCI 抗菌機

利用高濃度PCI技術 有效淨化空氣

Ion Generator with High Air Purifying Ability by  
High-Density Plasmacluster Technology



IG-CL15A

# SHARP

**DCH EA**  
DCH ELECTRICAL APPLIANCES DIVISION  
代理：大昌貿易行有限公司

## PCI空氣淨化技術 Plasmacluster (PCI) Technology



High-Density 25000

離子產生器會產生及釋放與自然環境相同的正、負離子。SHARP首創的PCI空氣淨化技術，能有效抑制空氣中的霉菌及病毒。

Plasmacluster Ion Generating Unit generates and emits the same positive and negative ions that occur in nature. Plasmacluster (PCI) technology is SHARP's original air purifying technology that inactivates suspended airborne mold and virus.



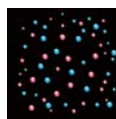
榮獲由日本社團法人發明協會 (JII)主辦的2008年全國發明大獎賽「發明賞」專利權由SHARP擁有 (專利編號：3680121)

Winner of the Invention Prize at the 2008 National Invention Awards Ceremony held by the Japan Institute of Invention and Innovation (JII) Patented by SHARP (Patent No. 3680121)

SHARP的「PCI」是唯一採用正、負離子淨化空氣的技術。

SHARP's Plasmacluster (PCI) is the only technology using positive and negative ions to purify air.

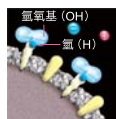
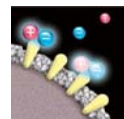
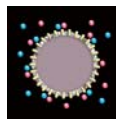
### 1. 釋放PCI正、負離子 Release Plasmacluster Ions (PCI)



PCI與自然環境的正、負離子相同。這些離子被水分子包圍，再釋放到空氣中。

Plasmacluster ions (PCI) are the same positive and negative ions found in nature. The ions are surrounded by water molecules, and are released into the air.

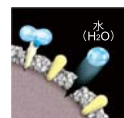
### 2. 破壞空氣中的微生物細胞 Attack Suspended Airborne Microbes



正、負離子接觸到霉菌及病毒時，便會形成有高度氧化能力的氫氧基(OH)，然後從病毒細胞上的蛋白質提取氫原子(H)，以抑制其活動能力。

The ions form hydroxide(OH) radicals that are highly oxidizing only when they adhere to the surfaces of mold and virus. They instantly remove the hydrogen(H) from the surface proteins, breaking them down.

### 3. 轉化為水分回歸空氣 Return to the Air as Water



氫氧基(OH)與氫原子(H)結合，轉化為水分(H<sub>2</sub>O)重回空氣中。

The hydroxide(OH) radicals combine with hydrogen(H) to form water(H<sub>2</sub>O) which returns to the air.

## 利用高濃度PCI技術 有效淨化空氣 Ion Generator with High Air Purifying Ability by High-Density Plasmacluster (HD PCI) Technology

### 高濃度PCI技術揭秘 The Secret of High Ion Density

#### 效能持久 Long-lasting

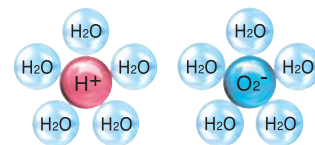
##### 離子被水分子包圍 壽命更長久

離子產生器使用高壓電，以大量電流產生較高濃度的正、負離子。由於所產生的正、負離子被水分子包圍，因此可存活更長時間。

##### Water Molecules Surround Ions Ensuring Long Ion Life

Plasmacluster Ion Generating Unit uses high voltage and a larger number of electrical discharges to generate higher density of positive and negative ions. Since the positive and negative ions generated are surrounded by water molecules, they can survive for extended periods.

離子被水分子包圍，因而可存活更長時間  
Ions are surrounded by water molecules, enabling long life



HD 離子產生器  
High-density Plasmacluster Ion Generating Unit



#### 對人體無害 People-friendly

SHARP PCI空氣淨化技術經由符合優良實驗室規範 (GLP)\* 的測試設施收集安全數據，高度可靠。

- 刺激 / 侵害皮膚試驗
- 刺激 / 侵害眼睛試驗
- 吸入毒性測試 (肺組織基因影響評估)

測試機構：三菱化學安全科學研究所 (株)

GLP\* compliant test facilities have gathered highly reliable safety data on SHARP's Plasmacluster (PCI) technology.

- Skin irritation / corrosion test
- Eye irritation / corrosion test
- Inhalation toxicity test (lung tissue genetic impact assessment)

Tested by: Mitsubishi Chemical Safety Institute

\* GLP (Good Laboratory Practice) 為管理及監控測試設施及程序的系統，以確保化學安全評估測試的可靠性。

\* GLP (Good Laboratory Practice) is a system of management controls for test facilities and test procedures designed to ensure the reliability of chemical safety assessment tests.

# 高濃度PCI 更優質的空氣淨化科技

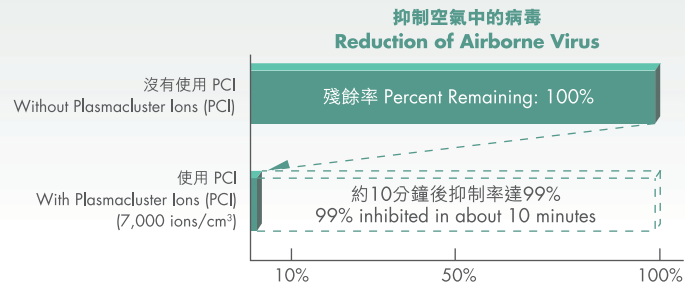
## High-Density Plasmacluster Ion (HD PCI)

### Refined Air Purifying Technology

#### 抑制空氣中的病毒 Inactivation of Virus

PCI 分解及去除空氣中病毒的尖狀突出蛋白質，並減低病毒的威脅。

Plasmacluster ions (PCI) break down and remove projecting spike-shaped proteins of suspended virus, and reduce its effects.



測試機構：英國 Retroscreen Virology Ltd.

測試方法：將浮游病毒注入1立方米箱子內，再量度受抑制病毒的百分率 (PCI 濃度：每立方厘米7,000粒)

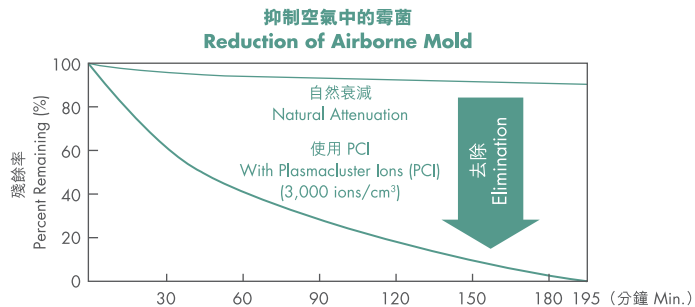
Tested by: Retroscreen Virology Ltd. UK

Test method: Virus was suspended in the air in a 1m³ box, and the percentage of airborne virus inactivated was measured. (PCI density: 7,000 ions/cm³)

#### 抑制空氣中的霉菌 Inactivation of Mold

PCI 分解及去除空氣中霉菌細胞膜上的蛋白質，減低霉菌所造成的影響。

Plasmacluster ions (PCI) cut through and remove proteins on the cell membrane of suspended mold surfaces, inhibiting their effects.



測試機構：日本石川縣預防醫學協會

測試方法：在面積約13平方米的房間內釋放PCI，抽取空氣樣本來量度空氣中霉菌數量。SHARP根據概約數據，以圖表顯示測試結果。(PCI濃度：每立方厘米3,000粒)

Tested by: Ishikawa Health Service Association

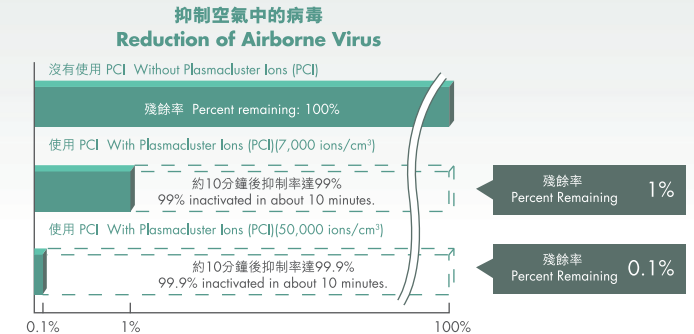
Test method: Plasmacluster ions (PCI) were emitted into an experimental chamber with a floor area of about 13m², and the suspended mold was measured with an air sampler. SHARP has graphed the results using approximate figures. (PCI density: 3,000 ions/cm³)

#### 增加離子濃度，提升抑制病毒效能

#### Increasing Virus Inactivation Performance by Increasing Ion Density

高濃度的PCI，能更有效抑制空氣中的病毒高達99.9%。

High-density Plasmacluster ions (HD PCI) are highly effective in inactivating suspended virus up to 99.9%.



測試機構：英國 Retroscreen Virology Ltd.

測試方法：將浮游病毒注入1立方米箱子內，再量度受抑制病毒的百分率

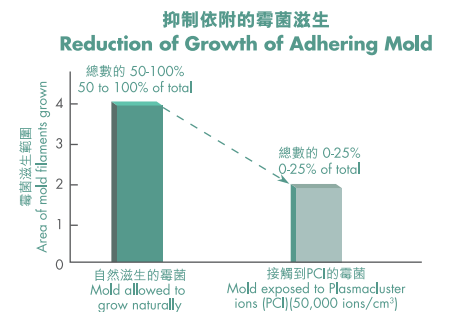
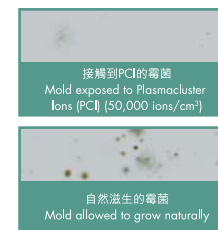
Tested by: Retroscreen Virology Ltd. UK

Test method: Virus was suspended in the air in a 1m³ box, and the percentage of airborne virus inactivated was measured.

#### 抑制依附的霉菌滋生 Reducing Growth of Adhering Mold

高濃度的PCI不但能抑制空氣中的霉菌，並有效減低依附的霉菌滋生。

High-density Plasmacluster ions (HD PCI) inactivate suspended mold and reduce the growth of adhered mold.



測試機構：日本食品分析中心。測試結果編號：2008年7月23日，編號為208070713-001

測試方法：以PVC塑膠碟滋生霉菌達5天，在2.6立方米的空間內釋出離子，再委託實驗室進行測試。霉菌滋生範圍按JIS Z2911指示進行比較，由SHARP計算測試結果。(PCI濃度：每立方厘米50,000粒)

Tested by: Japan Food Research Laboratories. Test results: No.208070713-001 of July 23, 2008

Test method: SHARP generated ions in a space of 2.6m³, grew mold on PVC plates for 5 days, and entrusted them to test institution. Mold growth areas were compared as directed by JIS Z2911. SHARP plotted the results. (PCI density: 50,000 ions/cm³)

IG-CL15A以高風速操作時產生的離子濃度，是在該型號水平距離1米、離地面1.5米高，向著釋放PCI的方向量度。

The ion density generated when IG-CL15A was operated at the HIGH airstream setting, measured at a horizontal distance of 1 meter from IG-CL15A (in the direction of ion emission), at a height of 1.5 meters from the floor.



# 高濃度PCI 更優質的空氣淨化科技

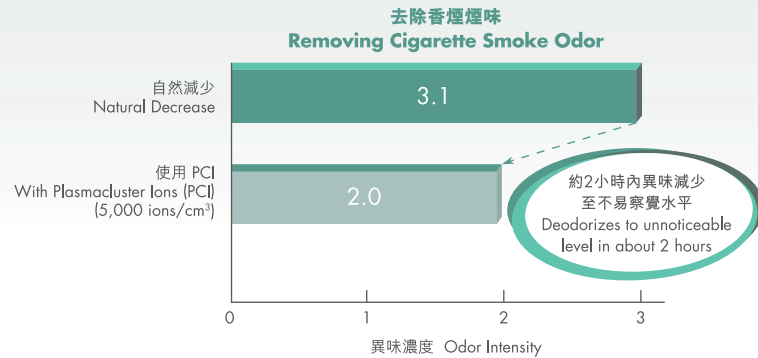
## High-Density Plasmacluster Ion (HD PCI)

### Refined Air Purifying Technology

#### 去除依附的難聞異味 Inactivation of Adhering Odor

PCI 去除異味分子的氫原子，有效分解及去除依附的難聞異味。

Plasmacluster ions (PCI) remove hydrogen from adhering odor molecules, breaking down and removing odor components.



測試機構：日本紡織檢查協會

測試方法：用一塊含有香煙煙味分子的布樣本，以六級異味濃度的測試方法來評估除臭效能。SHARP 轉化及計算測試結果。(PCI濃度：每立方厘米5,000粒)

Tested by: Japan Spinners Inspecting Foundation

Test method: The deodorizing effectiveness on a cloth swatch impregnated with cigarette smoke odor components was evaluated by the six-level odor intensity indication method. SHARP has converted and calculated the results. (PCI density: 5,000 ions/cm³)

#### 抑制空氣中的過敏原 (來自塵蟎屍體及糞便) Inactivation of Allergen (from dead dust mites and dust mite feces)

PCI 分解及去除空氣中蟎類過敏原細胞上的蛋白質，減低其造成的影響。

Plasmacluster ions (PCI) cut through and remove proteins in suspended allergen generated by dust mite feces and dead mites, reducing their effects.



#### 除臭速度加快約兩倍\*

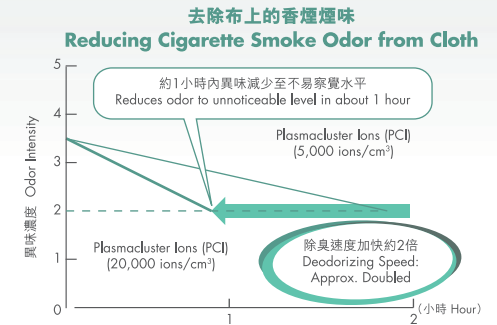
#### Increase in Adhering Odor Removal Speed: Approximately Doubled\*

高濃度的PCI 加快除臭速度，可在約1小時內減少香煙煙味至不易察覺水平。

High-density Plasmacluster ions (HD PCI) increase deodorizing speed. They reduced cigarette smoke odor in a room to an unnoticeable level in about 1 hour.

\* 以PCI濃度每立方厘米5,000粒與每立方厘米20,000粒作比較

\* Comparison of PCI density between 5,000 ions/cm³ and 20,000 ions/cm³



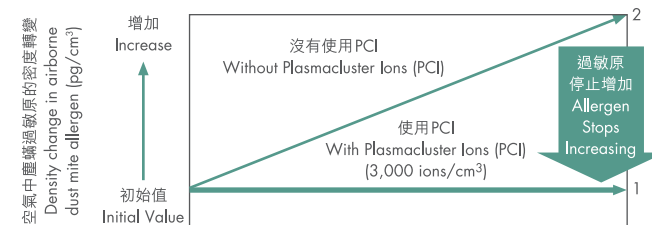
測試機構：日本紡織檢查協會

測試方法：用一塊含有香煙煙味分子的布樣本，以六級異味濃度的測試方法來評估除臭效能。SHARP 轉化及計算測試結果。

Tested by: Japan Spinners Inspecting Foundation

Test method: The deodorizing effectiveness on a cloth swatch impregnated with cigarette smoke odor components was evaluated by the six-level odor intensity indication method. SHARP has converted and calculated the results.

#### 抑制家居塵埃中塵蟎過敏原的效能 Inactivation Effectiveness for Dust Mite Allergen in Suspended House Dust



測試機構：日本廣島大學學院先端物質科學研究所

測試方法：在真實家居一間面積約13平方米的未潔淨房間，以酵素免疫分析法 (ELISA) 計量PCI對塵蟎過敏原的效能表現。SHARP 轉化測試結果及計算平均值。(PCI濃度：每立方厘米3,000粒)

Tested by: Hiroshima University Graduate School of Advanced Sciences of Matter

Test method: The effect of dust mite allergen in an uncleaned room (with a floor area of about 13m²) was measured in an actual home by the ELISA (Enzyme-Linked ImmunoSorbant Assay) method. SHARP converted the results and calculated the average value. (PCI density: 3,000 ions/cm³)

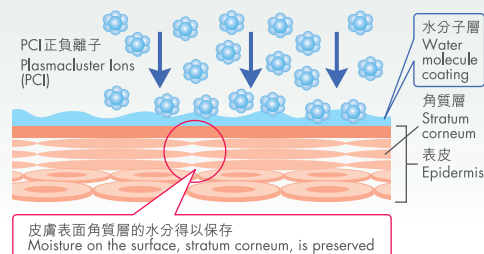
# 三重美肌功效

## Three Skin Beautifying Effects

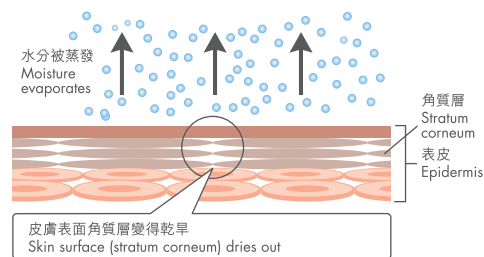
當被水分子包圍的PCI接觸到皮膚時，會形成「水分子層」，保持皮膚表面角質層濕潤。

The water molecules that surround Plasmacluster Ions (PCI) adhere to skin, forming a “water molecule coating”. This keeps the stratum corneum moist.

### 使用PCI With Plasmacluster Ions (PCI)



### 沒有使用PCI Without Plasmacluster Ions (PCI)



測試機構：日本東北大學電氣通信研究所  
PCI濃度：每立方厘米25,000粒  
測試方法：將PCI離子產生器放置在光譜儀器內，分析內裏的水分子。分別在釋放PCI及沒有釋放PCI的情況下，運用紅外線吸收光譜法配合多角度內反射幾何學，來確定水分子層有沒有出現在模擬人類皮膚的碟片表面。  
測試結果：證實PCI能在皮膚表面形成水分子層。

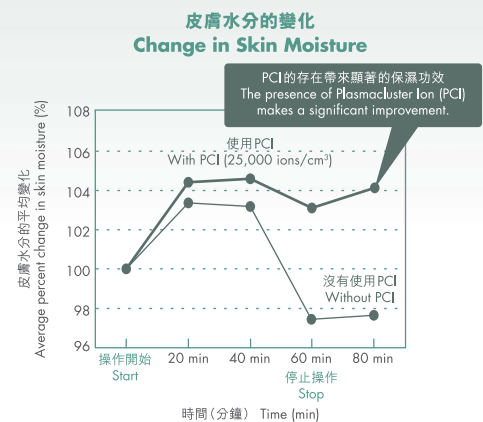
Tested by: The Research Institute of Electrical Communication at Tohoku University, Japan

PCI density: 25,000 ions/cm<sup>3</sup>

Test method: Plasmacluster ion generator was placed in a spectroscopic instrument to analyze the molecules of water. Infrared absorption spectroscopy (IRAS) with multiple internal reflection (MIR) geometry was used to confirm the presence of a water molecular layer (water molecule coating) on the surface of a plate designed to simulate human skin when Plasmacluster ions (PCI) were being generated and when they were not being generated.

Test results: Confirmed Plasmacluster ions (PCI) allowed the formation of a water molecule coating on the skin surface.

### (1) 保存皮膚水分 Preserves Skin Moisture



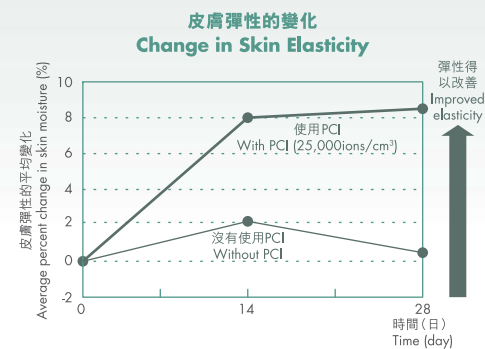
測試機構：日本Soiken總合醫學研究所(株)  
測試對象：13位年齡介乎20至60歲的健康女性  
PCI濃度：每立方厘米25,000粒  
測試環境：在約9.8平方米的測試房間，把室溫調節在約28°C，相對濕度約40%。  
測試方法：安排測試對象分別睡在兩間房間內，一間開啓著PCI，另一間則沒有使用PCI，然後測試研究對象的皮膚水分的變化。  
測試結果：經過約60分鐘之後，在有使用PCI的房間內的測試對象的皮膚水分明顯比在沒有使用PCI的房間內的測試對象為高，由此證實PCI可有效保濕。  
註：測試房間內並沒有進行加濕。

Tested by: Soiken Inc., Japan  
Test target: 13 healthy female ranging from 20 to 60 years old  
PCI density: 25,000 ions/cm<sup>3</sup>  
Test condition: Testing room having a floor area of approximately 9.8m<sup>2</sup> with the temperature adjusted to 28°C and humidity around 40% relative humidity (RH).

Test method: Targets slept in one of two rooms: one where Plasmacluster ions (PCI) were generated and another where they were not. The change in the moisture condition of the skin at the temple was examined.  
Test result: After more than 60 minutes in the room with Plasmacluster ions (PCI), the subjects' skin moisture content was significantly higher than that of the subjects in the room with no Plasmacluster ions (PCI), thus confirming the moisturizing effect.

Note: The room was not humidified.

### (2) 改善皮膚彈性 Improves Skin Elasticity



測試機構：日本Soiken總合醫學研究所(株)  
測試對象：24位年齡介乎30至65歲的健康女性  
PCI濃度：每立方厘米25,000粒  
測試方法：在一個面積約9.8至13.2平方米的真實家居環境內，於每晚睡眠時段開啟PCI離子產生器，為期28天。  
測試結果：28天後，測試結果顯示在有開啟PCI的房間內，測試對象的皮膚彈性明顯比在沒有開啟PCI的房間內的測試對象為高，由此證實PCI能有效改善皮膚彈性。

Tested by: Soiken Inc., Japan  
Test target: 24 healthy female ranging from 30 to 65 years old  
PCI density: 25,000 ions/cm<sup>3</sup>  
Test method: A Plasmacluster ion generator was set up in actual living spaces having floor area of about 9.8m<sup>2</sup> to 13.2m<sup>2</sup>. The Plasmacluster ion generator was used at bedtime every day for a period of 28 days.

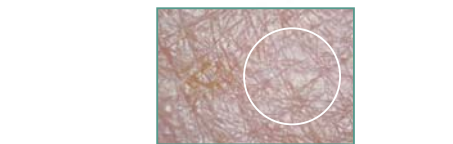
Test result: After 28 days, measurements showed that the elasticity of the skin of the targets in the Plasmacluster Ion (PCI) room was significantly higher than that of the targets in the room with no Plasmacluster Ions (PCI). This confirmed Plasmacluster Ions (PCI) effect in improving elasticity of skin.

### (3) 改善皮膚結構 Improves Skin Texture

#### 皮膚狀況改變的例子 Change in Skin Condition (example)



#### 使用28天後 After 28 days



皮膚組織更深层，並有清晰明顯的網狀結構  
Skin texture is deeper with a clearly visible lacy, net-like structure

測試機構：日本Soiken總合醫學研究所(株)  
測試對象：24位年齡介乎30至65歲的健康女性  
PCI濃度：每立方厘米25,000粒  
測試方法：在一個面積約9.8至13.2平方米的真實家居環境內，於每晚睡眠時段開啟PCI離子產生器，為期28天。  
測試結果：在使用PCI的環境下，28天後，皮膚結構得到明顯改善。  
註：此測試使用了PCI離子產生裝置，以用作實驗用途。使用市面上銷售的HD PCI抗菌機預料應該有相似效果。

Tested by: Soiken Inc., Japan  
Test target: 24 healthy female ranging from 30 to 65 years old  
PCI density: 25,000 ions/cm<sup>3</sup>  
Test method: A Plasmacluster ion generator was set up in actual living spaces having floor area of about 9.8m<sup>2</sup> to 13.2m<sup>2</sup>. The Plasmacluster ion generator was used at bedtime every day for a period of 28 days. The skin underneath the outer corner of the eyes was examined with a 30X photomicrograph.

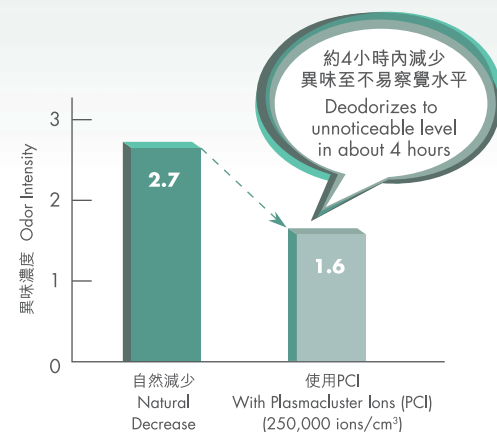
Test result: Skin texture improved after 28 days of exposure to Plasmacluster ions (PCI).

Note: This test used an ion generating device for test purposes. Similar results can be expected using a commercially available Sharp Plasmacluster Ion Generator.

## 定點除臭功能 Spot Deodorizing Function

定點除臭功能可消除西裝或外套上的難聞氣味。只要向衣物集中噴射高濃度PCI，一晚時間便可去除衣物上的臭味。

The Spot Deodorizing function gently deodorizes suits or coats impregnated with unpleasant odor overnight by emitting a focused stream of high-density Plasmacluster ion (PCI) air onto them.



測試機構：SHARP  
測試方法：用一塊含有汗味分子的布樣本，以六級異味濃度的測試方法來評估除臭效能。  
(PCI濃度：每立方厘米250,000粒)

Tested by: SHARP  
Test method: The deodorizing effectiveness on a cloth swatch impregnated with sweat odor components was evaluated by the six-level odor intensity indication method.  
(PCI density: 250,000 ions/cm³)



- 家居工作室  
HD PCI抗菌機抑制空氣中的霉菌、病毒及過敏原，營造清新寫意的工作或休閒空間。
- In Home Offices  
HD PCI Ion Generator creates a clean environment by inactivating suspended airborne mold, virus and allergen. It creates a comfortable space for work or leisure.



## HD PCI 抗菌機 HD PCI Ion Generator

### IG-CL15A



- 適用面積：15平方米 / 161平方尺
- 高濃度PCI，抑制99.9%空氣中的病菌
- 有效抑制塵蟎等過敏原
- 可調校導風板，送風角度輕易調配
- 耗電量特低，慳電環保
- 機身設計時尚小巧
- 顏色：白色
- 尺寸：265(闊) x 330(高) x 155(深) 毫米

- Applicable floor area: 15 sq. meter / 161 sq. feet
- HD PCI inactivates 99.9% airborne virus and bacteria
- Effective in suppressing allergens, e.g. dead mite
- Adjustable louver
- Low power consumption
- Compact design
- Color: white
- Dimensions: 265(W) x 330(H) x 155(D)mm



- 小孩睡房  
HD PCI抗菌機能有效淨化空氣中的過敏原及病毒等有害物質，有助孩子健康成長。
- In Children's Room  
HD PCI Ion Generator's highly effective purification of harmful airborne substances such as suspended allergen and virus helps children's health and growth.