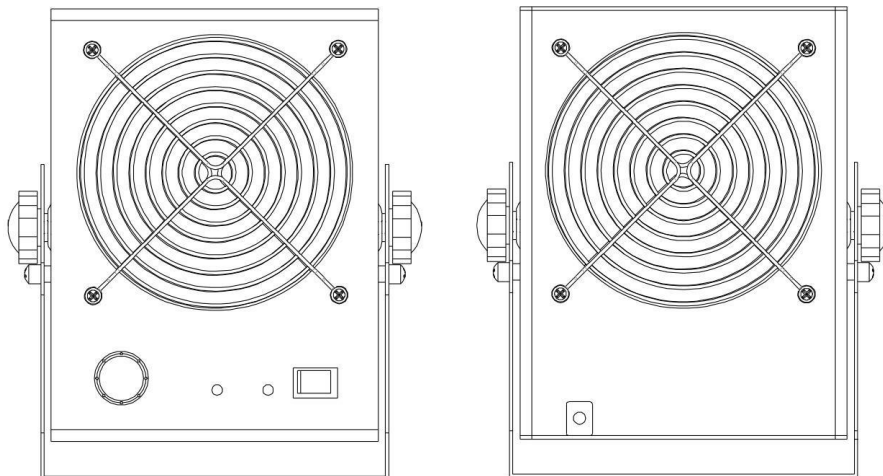





BFN -711

Single-Head Self-Cleaning DC Ion Fan

User Manual



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Company Profile

Shenzhen HORB Technology Corp.Ltd. (Hereinafter Referred To As "HORB") Was Established In 2001 , Headquarter Located In Baoan District Of Shenzhen City, Listed On The National Stock Transfer System(Stock Code: 870762),It Has Been Approved As A National High-Tech Enterprise, A Specialized And Special New Enterprise In Guangdong Province, A "Contract-Abiding And Credit-Worthy" Enterprise In Guangdong Province, The Sixth Innovation Top 100 Enterprise Of Shenzhen City, Post-Doctoral Innovation Practice Base, Shenzhen Vocational And Technical College Practice Base... HORB Is The Vice Director Of Shenzhen Clean Industry System Solution (The Chairman Unit Of The Anti-Static Professional Committee), The Vice President Of Shanghai ESD Association, The Member Of Anti-Static Equipment Of China Electronic Instruments Industry Association, And The Member Of ESD Association Of The United States.

HORB Technology Has Long Been Committed To The Research And Development And Service Of "Controlled Environment Intelligent System Solutions", Based On Clean Control Technology, Electrostatic Protection Technology, Vision And Information Technology. Provide P+1 Smart Clean Space Engineering, P02 Clean Cloud Smart Control Platform, P03 Smart VMI Consumables Integration, +1 Solution Integrating Consulting And Training. Customers Are Mainly Concentrated In High-End Electronics Manufacturing, Biomedicine, Military Industrial Institutes, And Government And Enterprise Units.

We Have Applied For And Approved More Than 30 Invention Patents, More Than 30 Utility Model Patents, 3 PCT International Patent, More Than 10 Software Copyrights, More Than 30 Domestic Trademarks, 4 Madrid Trademarks, About 30 Products CE Certified, National Industrial Production Permit, ISO9001, ISO14001,OHSAS18001, ISO13485 System Certification, LA Certification, Domestic Second-Class Medical Device Certification, Multi-Country Medical Device Product Certification And System Certification. Participation In The Preparation Of 6 National Standards, 1 Industry Standard, 3 Group Standard.

HORB People Do Not Forget The Original Ideals And Aspirations, Always Adhere To Provide Customers With High-Quality Products And Services. Best Resource, Owned By HORB, Is The First Professional Organization In China To Focus On The Research And Promotion Of ESD Protection Technology And Clean Technology, Shenzhen Higher Vocational College's Contracted Industry-University-Research Cooperation Unit, Clean Engineering Professional Teaching Agent, INARTE Authorized China Regional Examination Center Of ESD Engineers Of United States, Senior Consultant Of Multiple Institutions And Enterprises. As Of The End Of 2022, Serving More Than 5,000 Enterprises And Training Professional Talents With More Than 40,000 Person-Times And Efforts To Be Made To Provide The Country With More Professional And Technical Personnel In The Industry.

HORB Is Adhering To The "Being Customer –Focused, Credibility And Openness, Profession And Diligence, Co-Creation And Sharing" Values, To Achieve "To Make Every Enterprise & Family More Safe And Cleaner, To Make Every Customer More Moved, To Make Every Employee More Happier, To Make Every Partner More Satisfied" Corporation Mission, Constantly Improve The Competitiveness Of Enterprises, Has Been Set Up Own Brands: HORB, Clean Cloud, BFN, ECO, KANBO, Yijielianghang, BEST-RESOURCE, Sijiali, Howay,Gradually Formed A Stronger Core Technology And Brand Advantages, Set Up Domestic Offices In Beijing, Yantai, Qingdao, Suzhou, Chongqing, And Chengdu, And Set Up Overseas Subsidiaries In Hong Kong, Thailand, Vietnam, The Philippines, India, And Germany. And With Many Domestic And Foreign Brand Enterprises, Such As: Huawei, OPPO, BOE, Foxconn, Flextronics, Samsung, WD, Seagate, Sony, Military Institutes, Government And Enterprise Units Have Established Long-Term Cooperative Relations.



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1. Product Overview

- ◆ BFN-711 Single-Head Self-Cleaning DC Ion Fan is one of the ion fan series products produced by Horb Technology.
- ◆ The fan adopts positive and negative synchronous emission electrodes, which generate corona discharge through DC high voltage to ionize air molecules and produce a large number of positive and negative air ions. The fan blows the ions to the surface of the object to be electrostatically eliminated for static removal.



2. Industry Applications

- ◆ Widely applicable to electronics, optoelectronics, semiconductors and other industries.

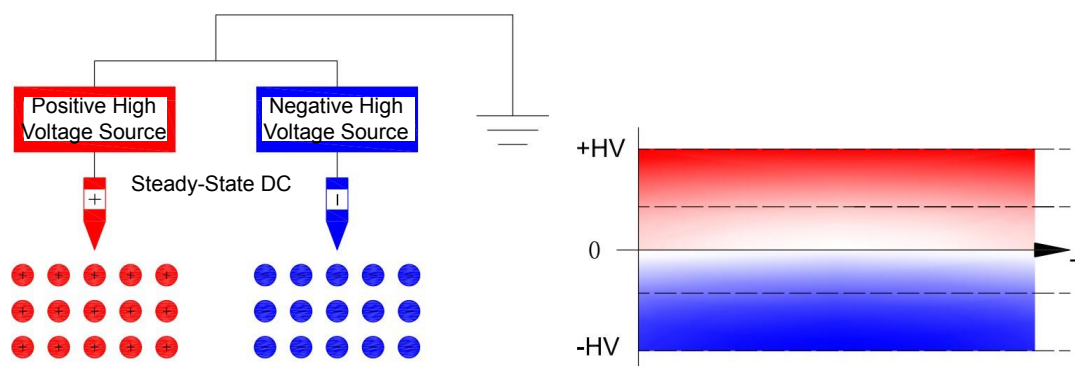
3. Product Features

- ◆ Exquisite body and elegant appearance
- ◆ Large ion output and fast electrostatic elimination speed
- ◆ Equipped with automatic needle brushing function on startup
- ◆ Automatic needle brushing every 24 hours, eliminating manual cleaning and maintenance of needles
- ◆ Stepless speed regulation of the fan with stable performance
- ◆ Removable front and rear mesh covers for easy maintenance

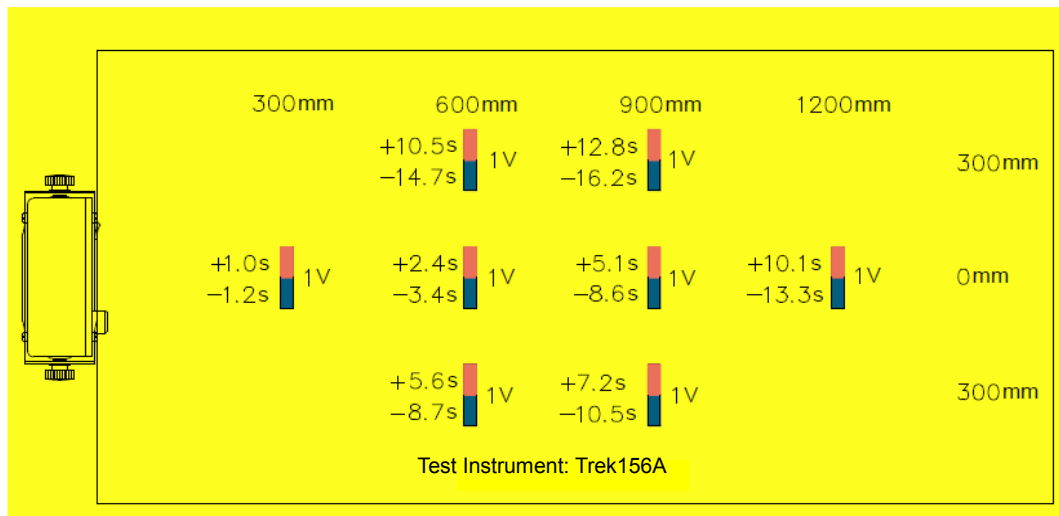
4. Performance Parameters

| | |
|-----------------------|--|
| Input Voltage | 15V |
| Ion Balance | $\leq \pm 10V $ (300mm directly in front of the air outlet) |
| Neutralization Range | 750 × 300mm (L*W) |
| Noise | $\leq 43\text{db}$ (1m from the air outlet) |
| Operating Temperature | 0-50°C |
| Dimensions | 177 * 65.4 * 201.5 mm (LWH) |
| Net Weight | 0.85 kg |
| Warranty | 1 year |
| Power | 9W |
| Discharge Time | $\leq 2\text{s}$ (300mm directly in front of the air outlet) |
| Airflow | ≤ 89.1 CFM |
| Ozone Concentration | ≤ 0.05 ppm (150mm from the air outlet) |
| Operating Humidity | 30-70% RH |
| Power Adapter | INPUT: 100-240V 50/60Hz; OUTPUT: DC15V 2000mA |
| Gross Weight | 1.35 kg (including external power adapter and packaging) |
| Certification | CE |

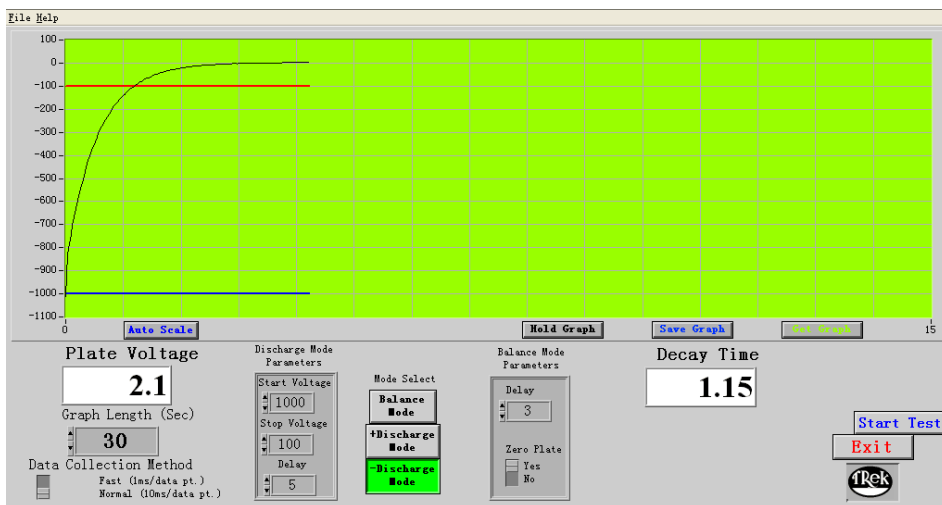
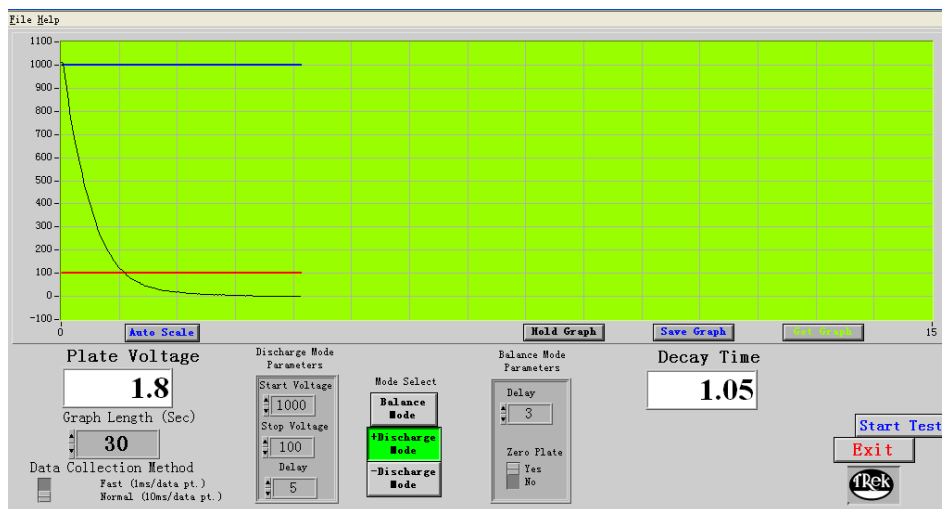
5. Working Principle Diagram

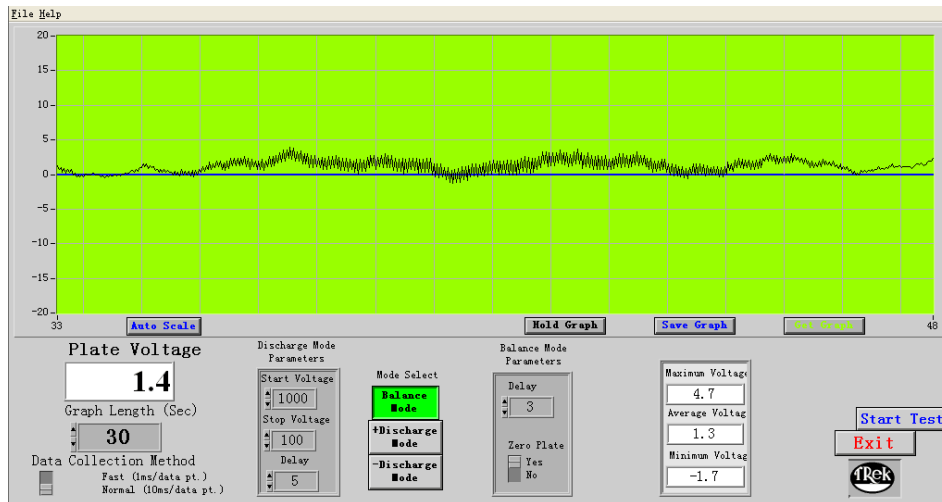


6. Electrostatic Elimination Effect Diagram



Trek157 Test Data Curve Graph (Test distance: 300mm directly in front, maximum wind speed)





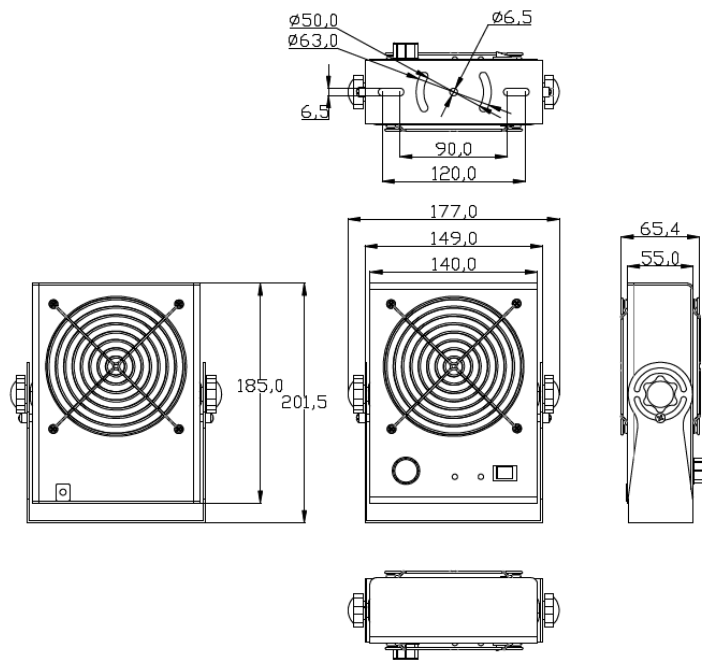
- ◆ Test Standards: ANSI/ESD.STM3.1, SJ/T 11446-2013
- ◆ Test Instrument: Trek Plate Charge Tester
- ◆ Test Voltage: $\pm 1000V$ - $\pm 100V$ attenuation
- ◆ Test Environment: Relative Humidity: $50\pm 5\%$; Temperature: $23\pm 3^{\circ}C$

7. Safety Warnings

- ◆ Please read the operation manual carefully before installing and using the equipment.
- ◆ Do not insert foreign objects into the air inlet or outlet of the fan.
- ◆ Do not use the equipment in an environment with humidity $>70\%$.
- ◆ It is strictly forbidden to use the equipment in flammable and explosive environments.
- ◆ Do not disassemble the product without authorization; internal maintenance and repair must be performed by professional personnel.
- ◆ Do not touch the product with liquid, otherwise abnormalities may occur, leading to electric shock or fire.
- ◆ Turn off the power when inspecting or replacing the product to avoid electric shock or fire.
- ◆ The product is specially designed for electrostatic elimination; it is strictly forbidden to use it for other purposes. Any abnormal use may cause machine failure, electric shock, fire and other hidden dangers.
- ◆ Do not touch the electrode needles when the product is powered on, otherwise it is easy to cause failure and electric shock accidents.
- ◆ The discharge needles are sharp metal parts, please use them with care.
- ◆ Before powering on the product, check the specifications of the matching power supply. Power supply that does not meet the specifications will damage the product or even cause malfunctions.
- ◆ Regularly check the power cord of the product; replace it immediately if it is damaged to avoid electric leakage, abnormal operation and other problems.

8. Installation and Operation

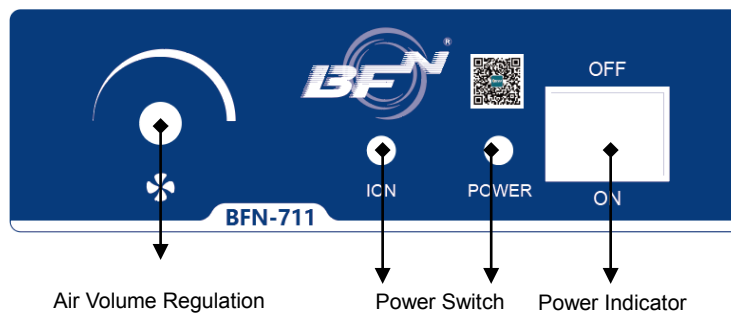
8.1 Overall Dimension Drawing



8.2 Installation Method

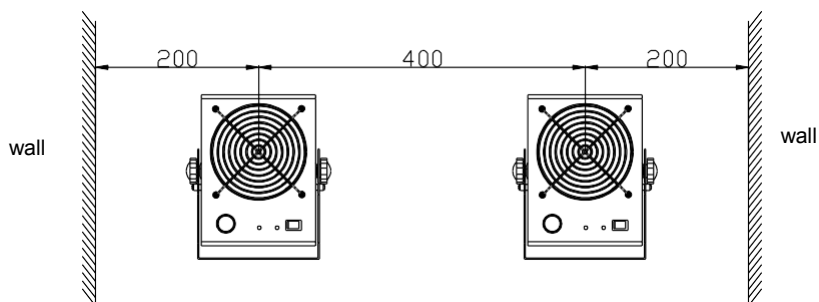
When in use, place the fan close to the working area (about 300~750mm from the object to be electrostatically eliminated), and the air outlet of the ion fan must be vertically aligned with the object. When using the fan bracket, fix it on a firm and flat surface (such as a wall or shelf) with screws or bolts. The angle of the fan can be adjusted by rotating the bracket and/or the knobs on both sides of the bracket to achieve the best electrostatic elimination effect.

8.3 Panel Functions

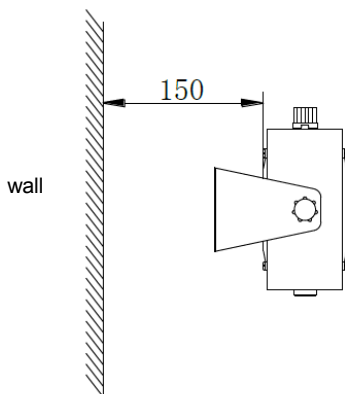


8.4 Technical Tips

- a) When using the ion fan, place it in the working area for electrostatic elimination with the installation angle perpendicular to the surface of the charged object, about 300~750mm from the object to be electrostatically eliminated.
- b) The ion fan should be at least 30cm away from metal conductors and metal grounding bodies.
- c) The ion fan should be at least 20cm away from obstacles such as walls.



- d) The air inlet should be at least 15cm away from the wall.



- e) Troubleshooting Guide :

| No. | Problem | Possible Cause | Solution |
|-----|---|---|---|
| 1 | The indicator light on the fan panel is not on | Poor power cord connection / Mismatched power voltage | Check if the power cord is intact and connected firmly; ensure the input is 220VAC 50Hz |
| 2 | Significant decline in static elimination performance | Contamination or damage of discharge needles / Improper setting position of the ion fan | Clean or replace the discharge needles; confirm the optimal installation position |
| 3 | Reduced static elimination performance | Presence of conductors or other ion fans around the ion fan | Remove (move) the conductors or other ion fans |
| 5 | Failure to eliminate static electricity | Damage to the high-voltage module / Damage to the motherboard chip | Return to the factory for repair |
| 6 | Smoldering or burning of the product | Burning of components on the main control board | Return to the factory for repair |

9. Maintenance

- ◆ To ensure the good performance of the product, clean and maintain the fan in a timely manner according to the use environment and required electrostatic protection requirements: gently remove carbon deposits on the discharge electrodes and metal mesh covers with an electrostatic brush and dust-free cloth dipped in anhydrous ethanol.

Notes:

- a) Operate only 10 minutes after cutting off the power supply.
 - b) Clean the needle tips when dust or white deposits appear during use.
 - c) After cleaning, wait for the ethanol to volatilize completely before powering on; do not use any other organic solvents to clean the fan.
 - d) Alloy electrodes are consumables and not covered by the warranty; the company will charge for replacement during maintenance.
- ◆ Do not press or rotate the control buttons/knobs on the fan panel with excessive force, otherwise permanent damage to the components will be caused.
 - ◆ If the power working indicator light on the front panel of the fan goes out, stop using the fan immediately, and have it inspected and repaired by professional maintenance personnel. It can only be used after the electrical performance indicators are tested to be normal.

10. After-sales Service

- ◆ BFN-711 Single-Head Self-Cleaning DC Ion Fan has undergone rigorous testing, inspection and aging treatment before leaving the factory, and its performance fully meets the relevant indicators marked in the operation manual.
- ◆ Horb Technology makes the following commitments to users: within one year from the date of purchase, the company will repair or replace any defective parts inspected by the company free of charge. However, this commitment does not apply to the following situations: incorrect use and installation of the equipment; damage caused by negligence and accidents during use; self-modification, disassembly or repair by other unauthorized service departments except Horb Technology.
- ◆ Except for the repair or replacement of parts within the scope of this regulation, Horb Technology shall not bear any other obligations and relevant liabilities of product users.

11. Packaging Accessories

- ◆ Warranty Card
- ◆ Operation Manual
- ◆ External Power Adapter

