

OMRON

Model ZJ-FA20□ Ionizer

INSTRUCTION SHEET

Thank you for selecting OMRON product. This sheet primarily describes precautions required in installing and operating the product.

Before operating the product, read the sheet thoroughly to acquire sufficient knowledge of the product. For your convenience, keep the sheet at your disposal.

TRACEABILITY INFORMATION:

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Pudong New Area, Shanghai, 201206 CHINA

NOTICE:

This product meets CISPR11 class A. The intended use of this product is in an industrial environment only.



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Precautions on Safety

● Meanings of Signal Words



WARNING

Indicates a potentially hazardous situation which, if not avoided, will result in minor or moderate injury, or may result in serious injury or death. Additionally, there may be significant property damage.



CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or in property damage.

● Alert Statement in this Sheet

WARNING

If you open the front cover and put your hand inside the product before the fan has stopped rotating, you may get injured. Before cleaning or replacing the discharge needles, be sure to turn the product off, make sure that the fan has stopped rotating, and then open the front cover.



Water droplets entering the body and coming into contact with the electrical circuit may cause the circuit to ignite. Do not use the product in locations subjected to condensation or in highly humid atmospheres.



CAUTION

If you use an ionizer at hermetically closed space, ozone should stay at the space and human should be damaged. Be sure to ventilate constantly.



When screw-fastening the body for use, vibration or the body's own weight may cause it to fall, and cause an injury if the screws are not sufficiently tightened. When screw-fastening the body for use, mount the body using M5 screws and tighten them to a tightening torque of 2.3 to 2.8 N·m.



● Warning labels

According to need, replace two kinds of warning labels on the body with the attached labels.

Precautions for Safe Use

Please observe the following precautions for safe use of the product:

1. Installation environment
 - Do not use the product in environments where it can be exposed to inflammable/explosive gas.
 - Do not install the product close to high-voltage devices and power devices in order to secure the safety of operation and maintenance.
2. Power Supply and Wiring
 - Be sure to use the supplied AC adapter.
 - The supply voltage must be within the rated range.
 - Do not reverse-connect the power supply.
 - High-voltage lines and power lines must be wired separately from this product. Wiring them together or placing them in the same duct may cause induction, resulting in malfunction or damage.
 - Avoid connecting or disconnecting connectors while the product is powered on. Doing so might damage the product.
3. Other
 - Do not disassemble, repair or modify this product.
 - Dispose of this product as industrial waste.
 - Before cleaning or removing/installing discharge needles, be sure to wait more than one minute after turning the power off.
 - Do not touch the discharge needles directly with your hands.

Precautions for Correct Use

Please observe the following precautions to prevent failure to operate, malfunctions, or undesirable effects on product performance.

1. Installation site
 - Do not install the product in locations subjected to the following conditions:
 - Ambient temperature outside the rating
 - Ambient humidity outside the rating
 - Presence of corrosive or flammable gases
 - Presence of dust, salt, or iron particles
 - Direct vibration or shock
 - Direct sunlight
 - Water, oil, or chemical fumes or spray
 - Strong magnetic or electric field
 - Hermetically closed space
2. Power Supply and Wiring
 - If surge currents are present in the power lines, connect surge absorbers that suit the operating environment.
 - Be sure to connect FG terminal to ground by the cable. If not, the ion balance would deviate.
3. Maintenance and Inspection
 - Periodically clean the discharge needles as dirt on these needles causes the amount of generated ions to fall or the ion balance to deviate.
 - Use ethanol or IPA to clean discharge needles. Do not use paint thinner, benzene, acetone, or kerosene.

● Outline and Features

This product neutralizes static electricity on electric-charged objects with ionized air by DC high-voltage corona discharge, which is blown on the charged object by the embedded fan in the product.

■ Installation

- The ring-shaped metal inside the product is the ion balance sensor. Do not bring charged objects near to the product. If there is a charged object within roughly 150 mm of the product, the ion balance might not be able to be controlled.
- Allow at least 60mm of space behind the air inlet to ensure good intake of air.

■ How to use

1. First, make sure that the product has been properly connected and installed.
2. Set the power switch to ON.
3. If necessary, adjust the ion balance adjustment control and fan adjustment control. Measuring equipment such as charge plate monitor is needed for adjusting the ion balance.
4. Set the power switch to OFF to stop.

■ Specifications

● Main unit

Item \ Model	ZJ-FA20□
Power supply voltage	DC24V*1
Current consumption	900mA Max.(provided from AC adapter)
Output voltage	±7kV
Ion generation system	Variable DC system
Fan speed(m ³ /min.)	1.4 to 2.3 m ³ /min.
Discharging time*2	1.2 seconds(0.8 seconds : without air filter)
Ion balance*2	±10V or less
Amount of generated ozone	0.01ppm or less (measured at 50mm from the product, with maximum fan speed)
Indicators	High-voltage output operation indicator:ION(Yellow) Power supply indicator:POWER(Green) Cleaning indicator:CLEANING(Orange)
Main functions	Ion balance automatic adjustment function, Fan speed adjustment function, Ion balance manual adjustment function
Ambient temperature	Operating:Storage:0 to +50°C (with no icing or condensation)
Ambient humidity	Operating:35 to 65%RH Storage:35 to 85%RH (with no condensation)
Weight(packaging)	Approx.2.0kg
Material	Case:ABS, Discharge needle:Tungsten, Stand:SPCC
Accessories	Instruction sheet (this sheet), AC adapter, Frame ground cable (2m), Warning label (2 kinds)

*1 Please ensure using the special AC adapter which pertains to the product.

*2 Typical value
Measurement condition:distance 300mm, center of the product, maximum fan speed.

Discharging time:±1000V at charge plate monitor is discharged to ±100V.

Measurement time of ion balance:10seconds.

Charge plate monitor:150mm sq., 20pF.

■ Checking and Cleaning

Periodically clean the product.

Be sure to wait more than one minute after turning the power off, before starting cleaning.

1. Cleaning the discharge needles and inside the product
 - Make sure that the fan has stopped rotating, and then open the front cover.
 - Wipe off any dirt on the tips of the discharge needles with a cotton wool bud moistened with ethanol or IPA.
 - We recommend removing the discharge needles and cleaning them in an ultrasonic bath once every three to six months.
 - Also clean parts that form the air tract (e.g. air intake port, fan and front cover).
2. Removing/installing discharge needles
 - To remove a discharge needle, grip the needle to be replaced with a needle-nose plier or a similar tool and pull it out.
 - When installing discharge needles, also use a needle-nose or a similar tool to insert them.
 - * Do not touch the tip of discharge needles. Damaging or bending the tips of discharge needles will impair their performance.
 - * To maintain performance, use only discharge needles specified by OMRON.
 - * The product needs to be power ON for 12 hours before using the product after replacing needles.
3. Cleaning the air filter
 - Remove the air filter frame and use a vacuum cleaner to remove dust from the filter inside.
 - * If cleaning does not restore performance, replace the discharge needles and the air filter. (Be sure to use the following parts specified by OMRON.)

Discharge needle	ZJ9-NDT06FN1 (pack of 6 for ZJ-FA20.)
Air filter	ZJ9-FL120N1 (pack of 10 for ZJ-FA20.)
 - * Even in clean rooms with few particles, corona discharge that occurs on the tips of the discharge needles causes gas in the air to turn into particles that stick to the discharge needles. These particles fly off the discharge needles when a fixed amount has accumulated. In processes where these particles will damage a product, be sure to periodically clean the discharge needles and air filter.

* The Silicon element that is used as the sealant on partitions and a filter might turn into particles by corona discharge and sticks to the discharge needles.

In this case, the discharge needles must be cleaned.

* The cleaning cycle differs according to the degree of dirt accumulation in specific operating environments and must be determined by the user.

■ Parts Names and Functions

Refer to the attached sheet about the number.

- (1)Front cover
Front cover is removable.
- (2)Power switch
This is the switch that turns on the ionizer.
- (3)Power indicator (POWER)
When the power is on, this indicator LED lights. When the power is off, it is out.
- (4)High-voltage output operation indicator (ION)
The LED lights when high voltage is being output.
- (5)Cleaning indicator (CLEANING)
When the discharge needles needs to be cleaned, this indicator LED lights.
- (6)Fan speed adjustment control (FAN SPEED ADJ)
The fan speed (air volume) can be set to suit the operating conditions.
(Note:Performance depends on fan speed.Performance with higher fan speed is better.)
- (7)Body fixing screw and angle adjustment washer
The body can be fixed at an angle freely.
- (8)Ion balance adjust control (BALANCE ADJ)
This is for adjusting ion balance.
*The ion balance has been adjusted before this product is shipped from the factory.
If the ion balance deviates, turn this to adjust the balance by using a Phillips head screwdriver. Measuring equipment such as charge plate monitor is needed for adjusting the ion balance.
- (9)FG terminal
This terminal is to connect to a frame ground cable.
*Be sure to connect FG terminal to ground by a cable.
- (10)Power in connector (DC-in)
This connector is for connecting the AC adapter.
*Be sure to use the AC adapter specified by OMRON.
- (11)Air filter
This filter prevents dirt from entering the unit.

Outline dimensions and parts names refer to other sheet.

Suitability for Use

THE PRODUCTS CONTAINED IN THIS SHEET ARE NOT SAFETY RATED. THEY ARE NOT DESIGNED OR RATED FOR ENSURING SAFETY OF PERSONS, AND SHOULD NOT BE RELIED UPON AS A SAFETY COMPONENT OR PROTECTIVE DEVICE FOR SUCH PURPOSES. Please refer to separate catalogs for OMRON's safety rated products.

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of the products in the customer's application or use of the product.

Take all necessary steps to determine the suitability of the product for the systems, machines, and equipment with which it will be used. Know and observe all prohibitions of use applicable to this product.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

See also Product catalog for Warranty and Limitation of Liability.

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OMRON Corporation

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OMRON

ZJ-FA20□

静电消除器

使用说明书

非常感谢您使用本产品，使用时请务必遵守以下内容。
•请让具备电气知识的专业人员实施操作。
•请在阅读并理解本说明书的基础上正确使用。
•请妥善保管本说明书以备随时查询。



欧姆龙株式会社

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安全上的注意点

●警告标志的意思



警告

如果不正确使用本产品，有可能会引起轻度、中度人体伤害，严重时还可能会导致重伤或死亡，也可能产生重大的物质性损害。



注意

如果不正确使用本产品，有可能会引起轻度、中度人体伤害或者重大的物质性损害。

●警告标志



警告

在主体内部风扇停止旋转前打开面板、并将手伸入内部会割伤人手。因此在对放电针进行清洁或更换时请务必关闭电源、并确认风扇停止转动后再打开面板。



主体内电路部分有水滴进入时可能会引起线路短路并造成燃烧。因此请不要在易结露等高湿度环境中使用。



注意

如果使用于密闭空间的话，会由于产生的臭氧无法排散出去而对人体有害。
请在可换气环境中使用本产品。



将主体用螺钉固定使用时，因螺钉松动及振动或者主体自身重量而有可能导致主体掉落，请采用M5螺钉紧固本产品。



●关于警告标签

请用户根据实际需要，将贴于主体上的警告标签换成附属的相应语种标签。

安全方面的要点

以下项目在确保安全方面非常重要，请务必遵守：

①关于使用环境

- 请不要在易燃、易爆环境中使用。
- 为确保操作、保养的安全性，请在使用时远离高压或动力机器。

②关于电源、配线

- 关于AC适配器
请务必使用附属AC适配器。
- 请不要使用超出额定范围的电压。
- 请将高压线与电源线分开配线。使用同一配线或者使用同一配线槽时，会由于感应电流引起误动作或者产品损坏。
- 请在关闭产品电源再拔掉电源连接器，否则可能造成产品损坏。

③其他

- 请不要擅自拆卸、修理以及改造本产品。
- 请不要用手直接接触放电针。
- 请在废弃时以工业废弃物进行处理。
- 对放电针进行清洁或更换时，请务必在关闭电源1分钟以上后再实施操作。

使用方面的注意点

为防止本产品不动作、误动作以及避免对产品性能、功能产生不良影响，请遵守以下要求：

①关于使用场所

请不要将产品使用于以下场所中：

- 周边温度超出额定范围的场所
- 周边湿度超出额定范围的场所
- 有腐蚀性、可燃性气体的场所
- 存在有灰尘、盐分、铁屑的场所
- 会直接受到振动或冲击的场所
- 阳光直射的场所
- 有水、油、化学药品碎末飞溅的场所
- 有强电磁、强电场干扰的场所
- 密闭环境

②关于电源及配线

- 电源有浪涌时，根据环境需要请连接浪涌吸收器后再使用。
- FG端子请务必接地。若在不接地情况下使用时可能会导致离子平衡失调。

③关于保养检查

- 放电针积尘后会导致离子量降低或者是离子平衡失调，故需要对放电针进行定期清洁。
- 请使用乙醇或异丙醇对放电针进行清洁，不要使用稀释剂、汽油、丙酮、灯油类液体。

■额定值/性能

●主体

项目	型号	ZJ-FA20□
电源电压		DC24V※1
消费电流		900mA Max.(从附属AC适配器输入)
放电电压		±7 kV
放电方式		可变DC
风量(m³/min.)		1.4~2.3m³/min.
除静电时间※2		1.2秒(0.8秒：无过滤片时)
离子平衡※2		±10 V以下
臭氧浓度		0.01ppm以下 (在开放空间、距离出风口50mm处测定，风量最大时)
指示灯		高压输出指示灯：ION(黄色) 电源指示灯：POWER(绿色) 清洁指示灯：CLEANING(橙色)
主要功能		自动离子平衡调整功能， 风量调整功能，手动离子平衡调整功能
周围温度		动作时、保存时：0~+50℃ (无结露、结冰)
周围湿度		动作时：35~65%RH 保存时：35~85%RH (无结露)
重量(包装状态)		约 2.0kg
材质		主体：ABS 放电针：钨丝 支架：SPCC
附属品		使用说明书(本纸)、AC适配器、FG连接用导线(2m) 警告标签(2种)

※1请务必使用本产品附属的AC适配器。

※2出厂时的代表值

测定条件：距离300mm、出风口中央、风量最大

除静电时间：从±1000V到±100V的时间

离子平衡测定时间：10Sec

充电板监视器：150 x 150mm、20pF

■检查及清洁

请定期进行清洁。

请务必在关闭电源1分钟以上后再进行清洁操作。

①放电针以及内部的清洁

- 确认风扇停止后，请打开面板。
- 请在棉棒等上面浸上酒精后擦拭放电针头部积污染物的地方。
- 每3~6个月拆除一次放电针，并建议使用超声波清洗。
- 请对空气入口、风扇以及面板等空气流通部位也进行清洁。

②放电针的拆除/安装

- 拆除放电针时要用扁嘴钳夹住需要更换的放电针，然后将其拔出。
- 安装放电针时也同样需要用扁嘴钳等将放电针插入。
- *请不要触碰放电针头部。划伤或歪曲放电针的话会导致产品性能下降。
- *请使用本公司指定放电针以维持除静电效果。
- *更换放电针后，请通电12小时后再使用本产品。

③空气滤清器的清洁

- 将空气滤清器外框拆除后，用吸尘器除去内部滤清器上的灰埃。
- *如果在清洁后产品的性能并没有恢复时请更换放电针以及空气过滤片。
(请务必使用本公司指定的以下型号产品)

选购件(另售)

放电针

ZJ9-NDT06FN1(ZJ-FA20用、6根装)

空气过滤片

ZJ9-FL120N1(ZJ-FA20用、10张装)

- *即使是在颗粒很少的净化室中，混杂在空气中的瓦斯会通过放电针头部发生的电晕放电而粒子化，然后附着在放电针的头部，一旦达到一定的量就会飞散开来。而因飞散的颗粒对产品有损害时就必须进行清洁。
- *隔板或滤清器滤纸材料中含有硅胶密封胶，长期使用后，因电晕放电而粒子化后也有可能附着在放电针上，此时也需要对放电针进行清洁。
- *清洁周期因用户使用环境的不同，放电针被污染的程度会有不同，请用户自己判定。

■各部位的名称・功能

①面板

保养时可进行拆除。

②电源开关

产品启用或关闭。

③电源指示灯(POWER)

电源接通时，LED点亮。

④高压输出指示灯(ION)

高压输出时，LED点亮。

⑤清洁指示灯(CLEANING)

放电针被污染并需要更换时此灯点亮。

⑥风量调整旋钮(FAN SPEED ADJ)

根据风扇风量的使用情况可自由的进行控制。
(但是，风扇风量减弱时，除静电性能也会有所下降)

⑦主体固定螺钉以及角度调节垫圈

可自由调节角度后进行固定。

⑧离子平衡调整旋钮(BALANCE ADJ)

用于离子平衡性调整用的旋钮。

*本产品出厂时均为离子平衡性调整完毕状态。当离子平衡性有偏差时请通过此旋钮进行调整(请用十字螺丝刀旋转旋钮)。为了进行离子平衡调整，需要使用充电板监视器等测定器。

⑨FG端子

用于产品接地的端子。

*请务必接地使用。

⑩电源输入连接器(DC-in)

用于连接AC适配器。

*请务必使用本公司指定的AC适配器。

⑪空气滤清器

防止外部灰尘等进入的过滤装置。

各部位名称图以及外形尺寸图请参看背面。

使用时的承诺事项

- ①为了确保安全，请勿将本产品直接或间接用于人体检测。
- ②使用于下列用途时，请与本公司营业担当商谈、并根据规格书等确认后，采用相对于额定值・性能留有一定余裕度的使用方法或者采取即使出现故障也能使危险度降低到最小的安全电路的对策。
 - a)屋外使用、用于有潜在的化学污染或者有电气妨害时或者是产品手册、使用说明书等没有记载的条件或环境中使用时
 - b)用于原子能控制设备、焚烧设备、铁路・航空・车辆设备、医疗设备、娱乐器械、安全装置以及按照行政机关或个别业界规定制造的设备时
 - c)用于可能危及生命、财产的系统・机械・装置
 - d)用于煤气、水道、电力供给系统或者24小时连续运转系统的高可靠性设备时
 - e)用于其他，以上述a)-d)为基准，需要高度安全性的用途时*上述内容是适用条件的一部分。请参阅本公司综合产品手册・数据等最新版商品目录、手册中记载的保证・免责事项内容后再使用。

■制造商

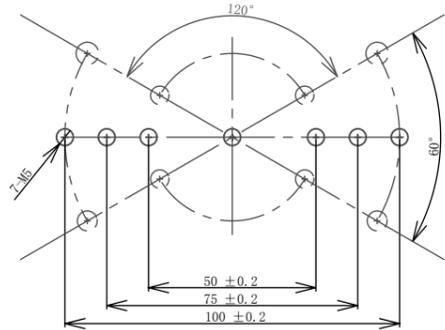
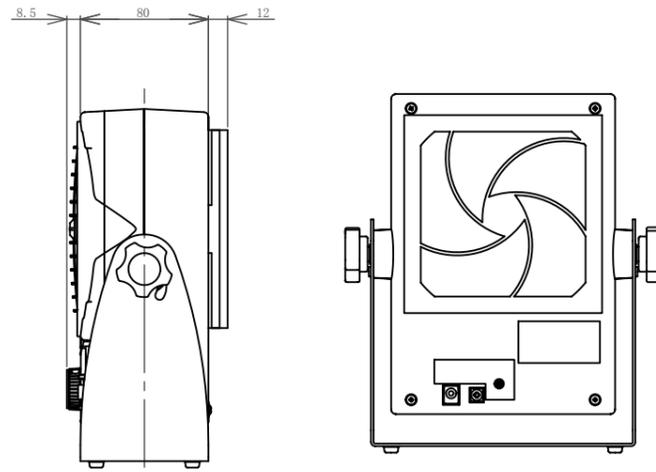
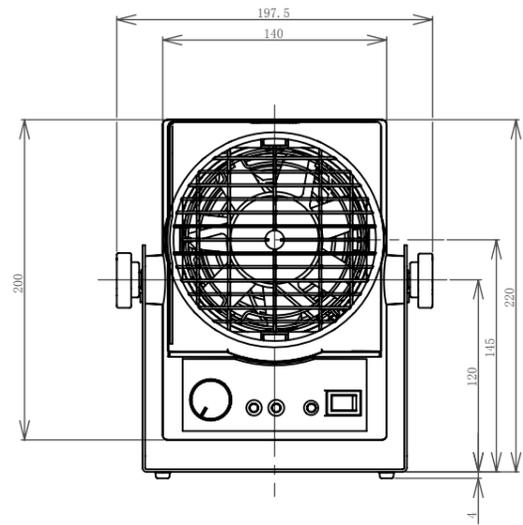
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■技术咨询

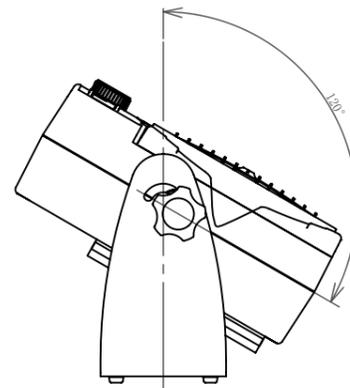
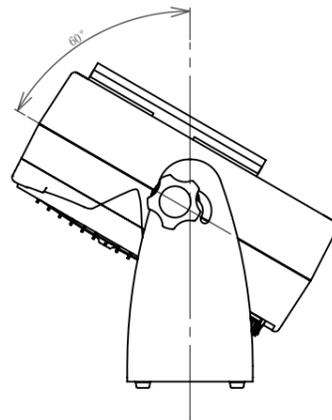
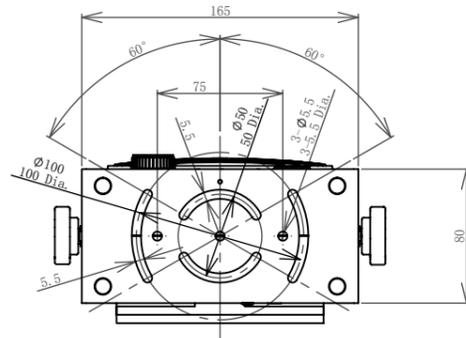
欧姆龙（中国）有限公司
地址：中国上海市浦东新区银城中路200号中银大厦2211室
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OMRON Corporation

■ Outline dimensions/外形寸法図/外形尺寸图
ZJ-FA20



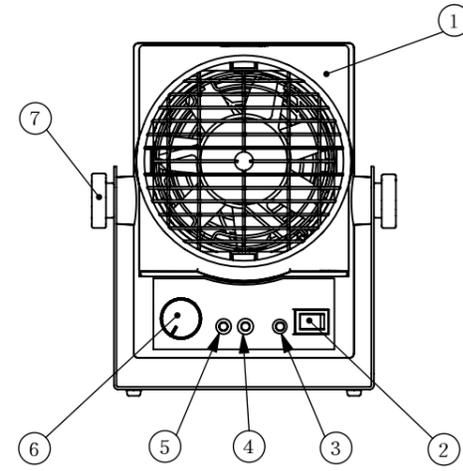
MOUNTING HOLE SIZE
取り付け穴寸法
安装孔尺寸



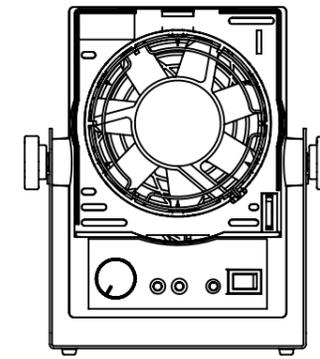
RANGE OF MOVABLE ROTATION
可動回転範囲
可动旋转范围

[単位:mm]
[UNIT:mm]

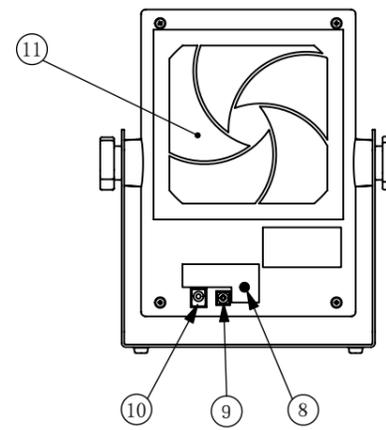
■ Parts names /各部の名称/各部位名称



FRONT
正面



FRONT(WITHOUT FRONT COVER)
正面(无面板状态)



BACK
背面

●Parts names

①	Front cover
②	Power switch
③	Power indicator(POWER)
④	High-voltage output operation indicator(ION)
⑤	Cleaning indicator(CLEANING)
⑥	Fan speed adjustment control(FAN SPEED ADJ)
⑦	Body fixing screw and angle adjustment washer
⑧	Ion balance adjust control(BLANCE ADJ)
⑨	FG terminal
⑩	Power in connector(DC-in)
⑪	Air filter

●各部の名称

①	フロントカバー
②	電源スイッチ
③	電源表示灯(POWER)
④	高電圧出力表示灯(ION)
⑤	クリーニング表示灯(CLEANING)
⑥	风量調整ボリューム(FAN SPEED ADJ)
⑦	本体固定ネジ及び角度調節ワッシャー
⑧	イオンバランス調整ボリューム(BLANCE ADJ)
⑨	FG端子
⑩	電源入力コネクタ(DC-in)
⑪	エアフィルター

●各部位名称

①	面板
②	电源开关
③	电源指示灯(POWER)
④	高压输出指示灯(ION)
⑤	清洁指示灯(CLEANING)
⑥	风量调整旋钮(FAN SPEED ADJ)
⑦	主体固定螺钉以及角度调节垫圈
⑧	离子平衡调整旋钮(BLANCE ADJ)
⑨	FG端子
⑩	电源输入连接器(DC-in)
⑪	空气滤清器