

## Why „Andromeda Air“?

The fight against the corona virus generated the need for air disinfection. The need to protect ourselves and our families from viruses has forced us to look for different means to do so. And because supply follows demand, the market is suddenly flooded with different appliances from different manufacturers at different prices. But what to choose? How do we filter through the information that floods us to make the most informed choice possible? It is normal not to be narrow specialists in the field of UV-C emitters, electronics and microbiology. Therefore, we from the team of "Industrial Lighting" will try to share our views, experience and information that we have managed to study.

But let's start with how air disinfectants kill bacteria and viruses.

We must first distinguish these devices according to the way they perform disinfection. There are ozonators on the market that produce ozone to disinfect, there are air purifiers from fine dust particles and contaminants, and devices that use UV-C tubes or diodes to disinfect the air. We will focus on the latest type of devices, due to their wide distribution and good knowledge of its device, and way of working

The principle of operation of this type of device is as follows. A fan with a certain flow rate sucks the air from the room and passes it through a UV-C emitter, which destroys the RNA or DNA structure of the viruses passing by it and deprives them of their ability to reproduce. So far, everything is simple and clear, but this is where the specific things that the end user of such products is good to know to make an informed decision when buying.

### *First element - the housing*

The size of the housing is directly dependent on the flow rate of the fan used and the power of the UV-C emitter.

If the housing is too large and the fan is with low power, it will not be able to suck in enough air to be disinfected by the emitter, and if the fan is too powerful and the UV-C emitter has little radiation, just the time the air will pass by it will be too short and he will not be able to disinfect it. Our advice is to check in the technical parameters of the device the flow rate of the fan and the power of the emitter. We have opted for a 36 Watt UV-C emitter to disinfect up to 80 cubic meters. air for an hour.

The second thing you need to check is whether the housing enclosing the UV-C emitter has adequate protection against constant radiation from it. It has been found that with prolonged use of the radiation, various types of unsuitable materials or coatings become dusty and can clog the fan, which will cause it to stop working.

### *Second element - the fan*

As we have already explained, too large fans with high flow will not allow quality disinfection, but also the larger and slower it is, the quieter its operation. On the other hand, since this is the weakest element of the system, it would be good if it was manufactured by a reputable manufacturer to ensure the longest possible life of the device as a whole.

To extend the life of our fans, we have installed additional protection in the form of a filter for dust and fine particles, which must be removed and cleaned every few months, depending on the dustiness of the rooms in which the appliance is used. Unfortunately, this small inconvenience is absolutely necessary in order to prolong his life as much as possible.

### *Third element - UV-C emitter*

This is probably the most important element because it depends on the main function of the device to be purchased. Unfortunately, LED technology is still quite undeveloped and expensive when it comes to UV-C emitters, despite the longer life of the diodes due to their still low performance would increase the price of such an emitter, compared to a similar one with a tube about five times, which it makes it extremely difficult to sell. Therefore, almost all manufacturers have turned to the well-mastered and relatively inexpensive technology using UV-C tubes. In turn, these UV-C tubes are of two main types depending on the glass used for their production.

Chinese and low-cost manufacturers use ordinary quartz glass, but one major drawback is the inability to limit the transmission line to 185 nm. of the mercury discharge that Ozone generates. As a result, in their work, these emitters emit an odor that most people define as quite unpleasant. According to these same manufacturers and traders, Ozone further destroys harmful bacteria and viruses, which is true, but they do not mention that Ozone is harmful to people with respiratory problems and in excess of a certain dose is deadly to humans. In addition, in order to dissipate the accumulated Ozone from the premises after the operation of such an emitter, it is necessary to fully ventilate for at least half an hour, which is quite impractical during the cold winter months.

The problem of ozone emission has been solved by reputable manufacturers with the use of special glass, which does not allow the release of ozone. From the tests we have done, the UV-C emitters of the companies we use also emit a minimum amount of Ozone, but it is several times below the norm, unlike those tested with ordinary quartz glass where the amount of Ozone after one hour of work exceeded 16 times the allowed norms.

### *Fourth element - Certification and test reports.*

In addition to the standard safety certification of the electrical appliances we manufacture, in order to be completely sure of the effectiveness of the disinfectant as such, we must go through a microbiological laboratory to confirm its effectiveness. Yes, this is an expensive and lengthy process, but it is a guarantee for our customers that the device they acquire really does what it was bought for. Unfortunately, such devices sold on a large scale are not accompanied by such documents, which raises serious doubts in us about their real effectiveness.

### *Conclusion*

We believe that the combination of carefully selected quality elements leads to the creation of a precise end product. That is why we have chosen our path of development, associated with uncompromising quality, attention to detail and loyalty to our customers. We hope you found this information helpful.

*Thank you for your time!*