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# HUMIDIFICATION:

ESD PREVENTION IN THE ELECTRONICS INDUSTRY

# ENERGY-SAVING HUMIDIFICATION SYSTEM FOR SURFACE MOUNTING CUT MOUNTING DEFECTS TO NEAR ZERO

## PROBLEMS IN SURFACE MOUNTING / PCB ASSEMBLY PROCESS



EFFECTS OF AN UN-CONTROLLED HUMIDITY LEVEL  
ESD ACCOUNT FOR AROUND 1/10 OF DAMAGES

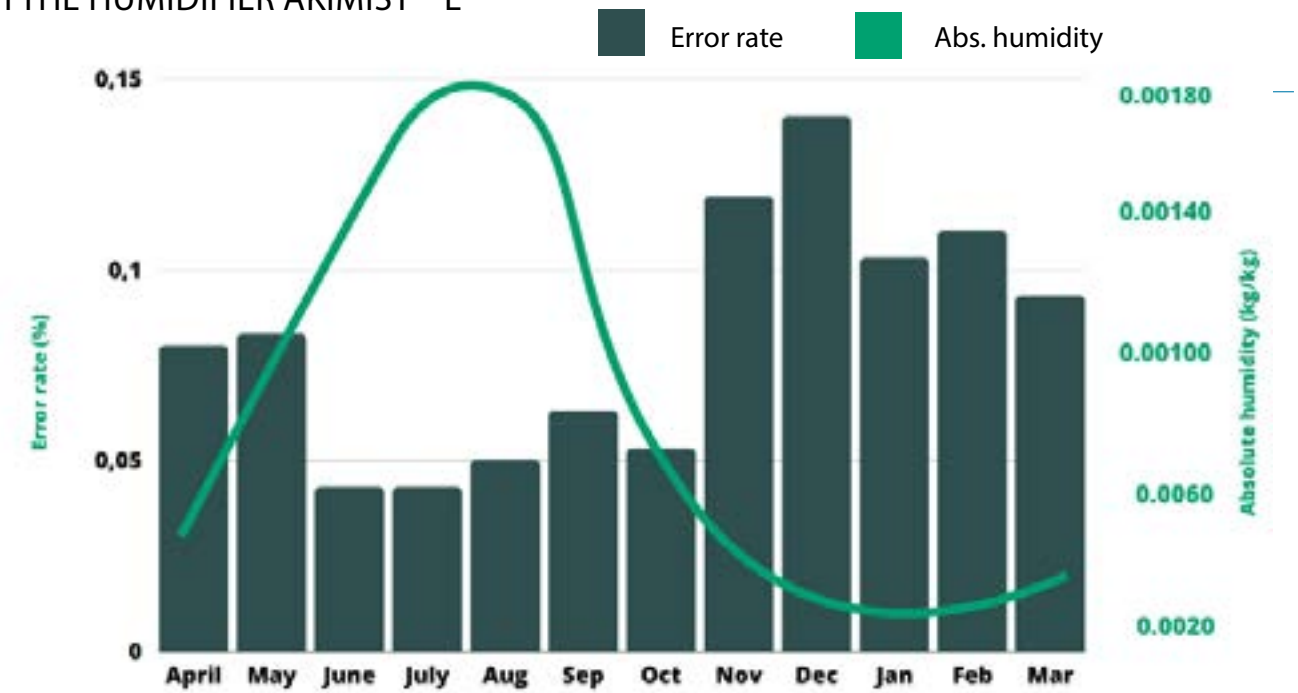
- ESD
- DUST ADHESION
- ERROR RATE
- CIRCUIT DAMAGE
- SOLDERING DEFECTS
- BAD MOUNTS

## FACTORS

- 1 Humidity level influenced by outside air conditions
- 2 Temperature controlled by HVAC system
- 3 Error rate increases when humidity level is low, especially during winter season

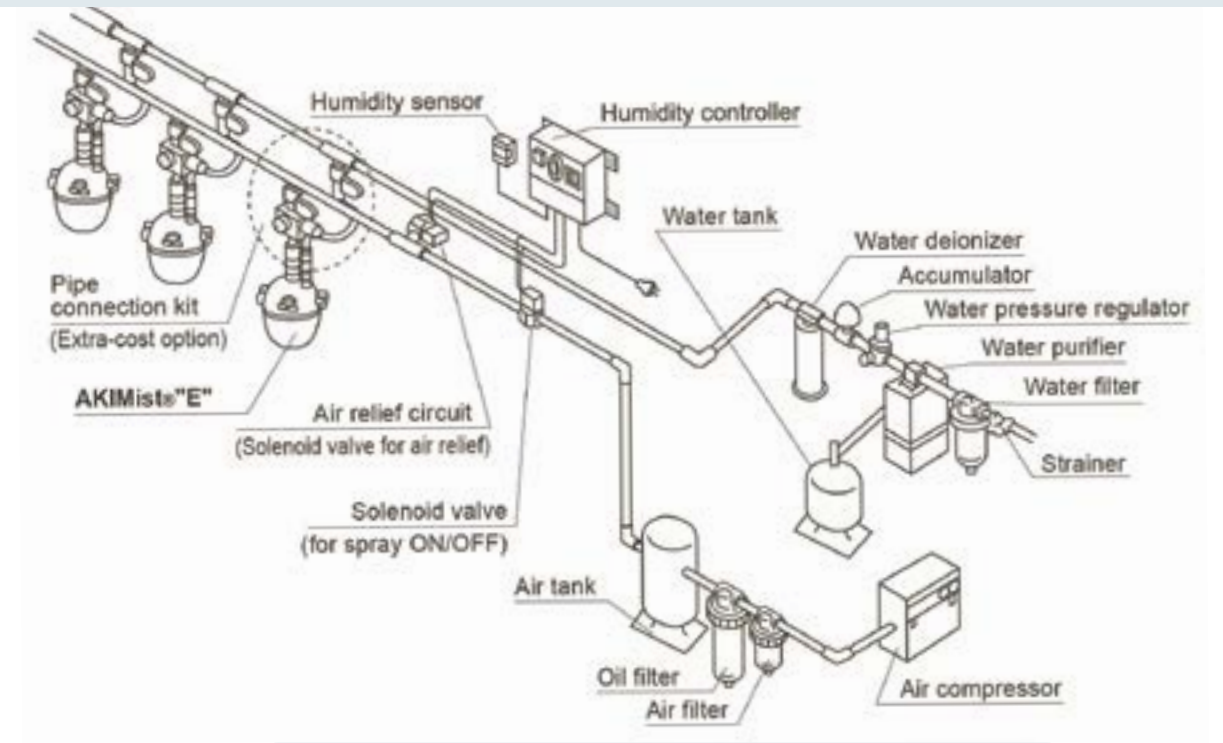


## IKEUCHI'S SOLUTION: DRY FOG HUMIDIFICATION SYSTEM AIRAKI® WITH THE HUMIDIFIER AKIMIST® "E"



AirAKI® is a humidification system consisting of the Dry Fog humidifier AKIMist® "E", control equipment, and reverse osmosis equipment.

Non-wetting Dry Fog sprayed from AKIMist® "E" produces and maintains a humidity-controlled environment which generates less static charge and thus, will drastically reduce issues such as circuit damage and dust adhesion.



Flexible installation

Thanks to the small size of the Dry Fog humidifier AKIMist® "E" (~25 cm height), it is easy to install regardless of the existing air conditioning system. It is suitable for any type of configuration, even rooms with limited space, as it humidifies without wetting surfaces.

## DRY FOG HUMIDIFICATION SYSTEM AIRAKI® WITH THE HUMIDIFIER AKIMIST® "E" ITS APPLICATIONS

### AKIMIST®

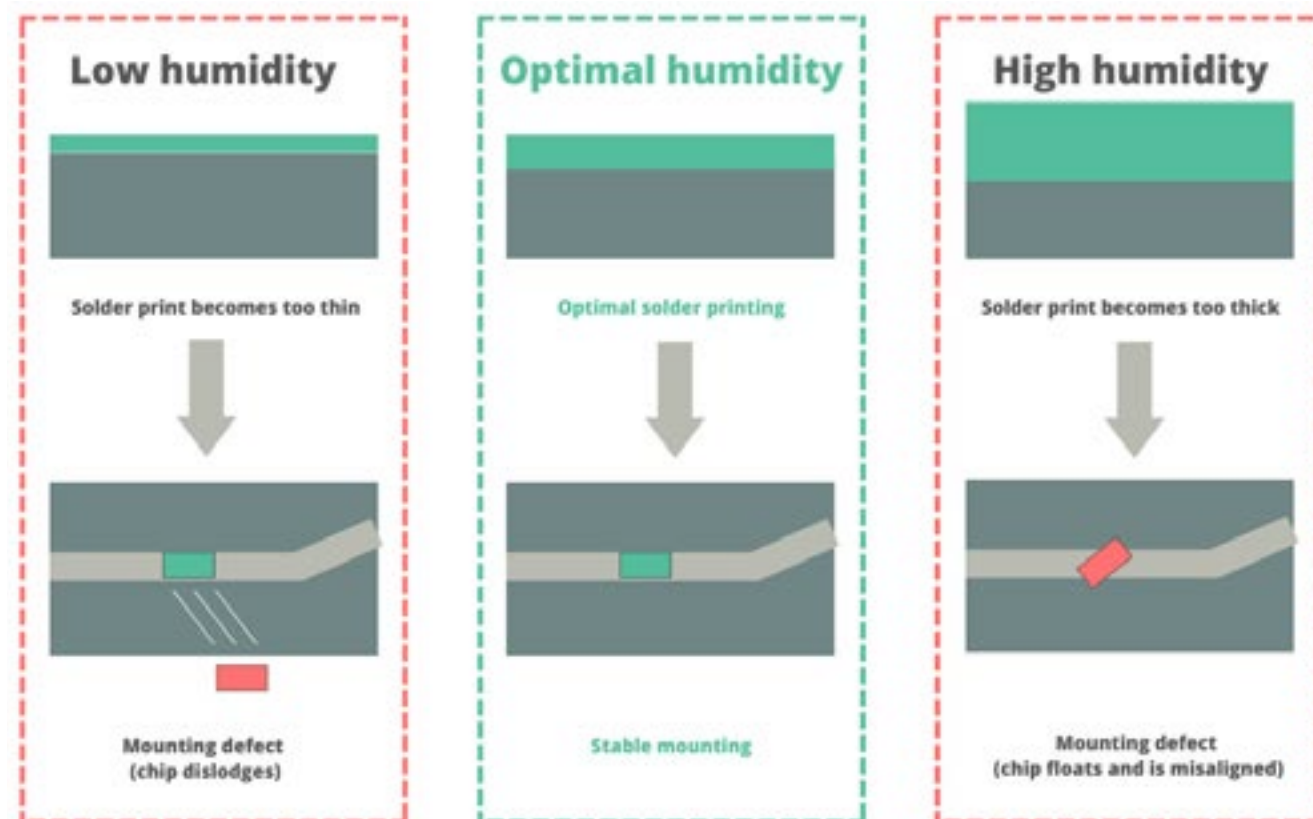
AKIMist will keep an even humidity level year-round, improving the mounting and assembly processes, and thus, the product quality. The mounting quality is influenced by the solder printing aspect which is affected by humidity.

### SOLDER PRINTING

An environment with a too low humidity level will lead to a thin solder printing and the chip will dislodge. On the contrary, a too high humidity level will lead to a thick solder print which will cause the chip to float and misalign.

### MACHINE ERRORS

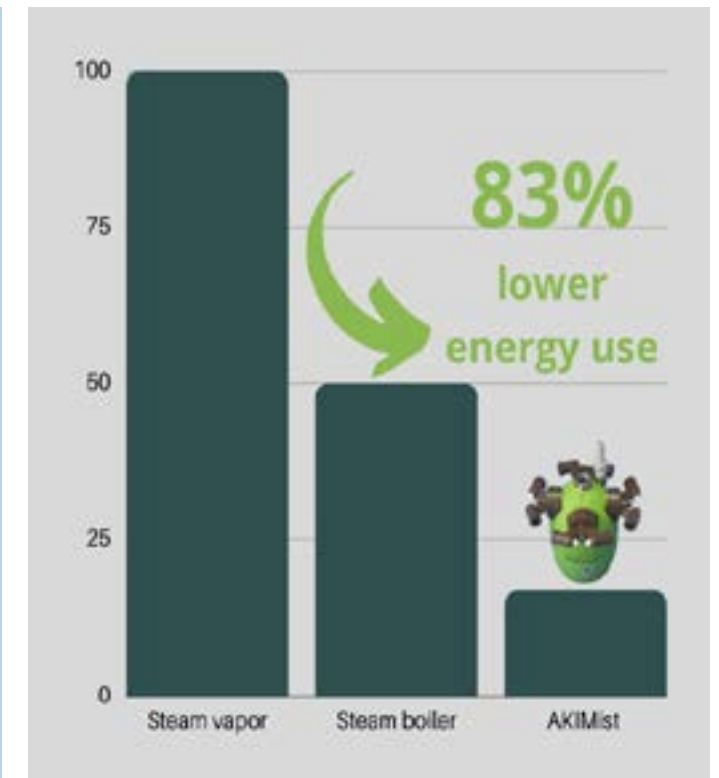
Humidifying the working area also prevents machine mounting errors due to static charge and solder thinning/drying. By reducing the risk of ESD, you also eliminate the risk of explosion or fire, which could cause a serious health risk to the staff and damage to the equipment. In general, humidification control ensures a longer life-span for the machines and equipment.



## THE ENERGY EFFICIENT HUMIDIFIER

### Energy efficient humidifier

- AKIMist® "E" uses 83% less energy than a conventional humidifier (1/5th)
- CO<sub>2</sub> emission is 80% lower than conventional humidifiers (like steam)
- AKIMist® "E" has the double advantage of humidification while lowering the temperature (cooling) through atomization. This saves energy and cost on air conditioning



## THE NON-WETTING HUMIDIFIER



### Non-wetting humidifier

- The Dry Fog humidifier AKIMist® "E" is recommended for precision part production where water droplets would be a problem.
- The droplets are so small (on average 7µm) that they will bounce back from the surface they touch without bursting.
- No leaking = stops spraying as soon as the compressed air is turned off

CUSTOMERS WHO SUCCESSFULLY IMPLEMENTED AKIMIST® TO PREVENT ESD

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“A car audio manufacturer eliminated ESD at their production site by installing 46 units of AKIMist® on their SMT and inspection lines



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“A PCB manufacturer increased the quality of their products significantly by decreasing the mounting defects and enhancing the PCB solder printer quality.”



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“A Printing company which makes transfer film for printing on mobile phones and computers, eliminated the risk of fire ignition due to ESD by installing AKIMist®”



DRY FOG HUMIDIFICATION SYSTEM AIRAKI® WITH THE HUMIDIFIER AKIMIST® “E” ITS ADVANTAGES

- ✓ Double advantageous: Humidification and lowering the temperature (cooling) through atomization
- ✓ High efficiency
- ✓ ESD prevention and dust suppression by maintaining even humidity level all year round
- ✓ Low maintenance
- ✓ Easily adaptable to changes in floor layout

DRY FOG HUMIDIFICATION SYSTEM AIRAKI® WITH THE HUMIDIFIER AKIMIST® “E” ITS BENEFITS

**Reducing product losses**

- Defect rate reduced due to reduction of ESD
- Increase in lifespan of machinery
- Reduced risk of fire ignition

**Energy savings**

- Reduction in air conditioning costs as the temperature is cooled down
- Less energy consumption
- Less environmental impact

**Productivity increased**

- Machine failure rate decreased
- Better and safer working environment for employees
- Reduction in employee sick days

**Product quality increased**

- PCB solder printing and mounting quality increased
- Product quality increased due to dust suppression





Ikeuchi is a Japanese company with branches all over the world. It was founded in 1954 in Osaka and has since then expanded across Asia, North America and Europe. The European headquarter was established in 2008 and is located near Amsterdam in the Netherlands.

For inquiries / information requests / quotations related this product, please contact us



**Ikeuchi Europe**

The fog engineers

“Taking the path less traveled”

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