

FRESH-AIRE



# Sanitizing UV Light for Ice Machines

## TECHNICAL BULLETIN



ICE MACHINE A



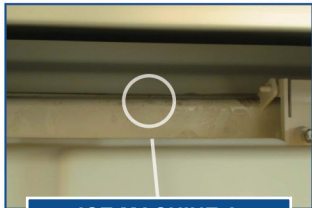
ICE MACHINE B

### Field Study Confirms **Fresh-Aire ICE UV™** Reduces Biological Contamination In Ice Machines

Research shows that ice machines are an ideal breeding ground for mold, slime and other biological contaminants. In the past, frequent labor intensive cleanings with harsh chemicals were required to keep the inside of these machines sanitary. With the **FRESH-AIRE ICE UV™** germicidal ultraviolet light system, ice machine maintenance has become easier, safer, and cost-effective. Ultraviolet light kills mold and bacteria before they become established reducing, maintenance intervals and potential liability.

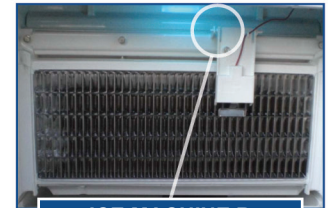
To confirm the effectiveness of the **ICE UV**, we took two identical field installations and compared the data from before and after the application of UV light. The test was conducted by Mr. Scott Cluxton CIEC, a certified indoor environmental and mold specialist. Scott was hired to conduct the sampling and monitor the field test and validate the data.

The test sites we chose were two local tennis clubs that have two outdoor located Manitowoc half-dice ice cube machines. We chose these locations because they are located 1/4 mile from each other and they both experience the same type of atmosphere and usage conditions. These machines have been in use for some time and had not been cleaned at the start of the test, so pre-existing field related conditions existed. Continued on back...



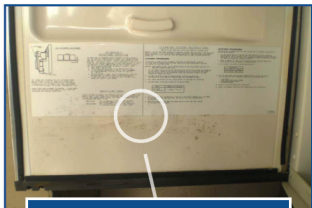
ICE MACHINE A  
Sample JORTC-1S

BEFORE		AFTER	
Fungi	Bacteria	Fungi	Bacteria
82,000	2,300,000	10	1,400



ICE MACHINE B  
Sample JBT-3S

BEFORE		AFTER	
Fungi	Bacteria	Fungi	Bacteria
80	130	10	10



ICE MACHINE A  
Sample JORTC 2S

BEFORE		AFTER	
Fungi	Bacteria	Fungi	Bacteria
1,140,000	3,000,000	2,130	1,400



ICE MACHINE B  
Sample JBT-4 S

BEFORE		AFTER	
Fungi	Bacteria	Fu gi	Bacteria
10,700	730,000	360	910

# FRESH-AIRE ICE UV™

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First, we took swab samples from the spray bar assembly and inside the access panel doors of the two machines and sent the samples to a certified lab for analysis. This is reported as the "Before" data in the table. Then, on the same day and without cleaning the machines, we installed the **FRESH-AIRE ICE UV™** devices in the machines. The **ICE UV** was installed exactly as displayed in the ice machine rendering on the first page.

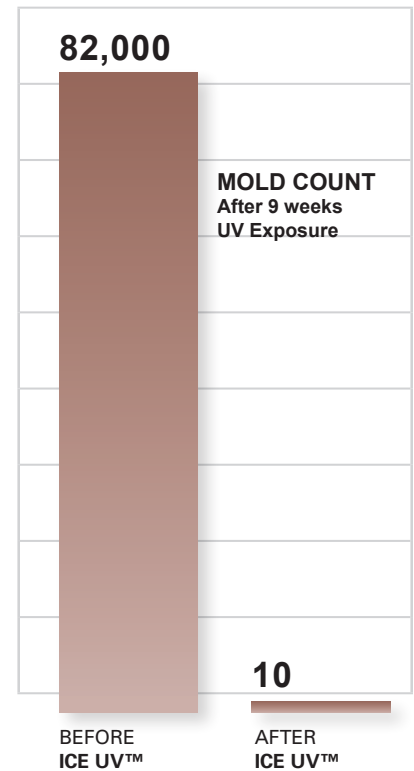
We then returned nine weeks later and collected the "After" samples from the same locations in the two machines and sent them to the same lab for analysis. As anticipated, the after data was dramatically different. We were able to achieve greater than 99% reduction in both fungi and bacteria at the first tennis club and better than 92% reduction of fungi and 96% reduction of bacteria at the second tennis club.

This data clearly confirms that the use of the **FRESH-AIRE ICE UV™** can greatly reduce the growth of biological contaminants from within ice machines.

### BACTERIA



### MOLD



Sample	Location	Before		After		Difference / % Reduction	
		Fungi	Bacteria	Fungi	Bacteria	Fungi	Bacteria
JORTC-1S	Spray Bar Assembly	82,000	2,300,000	10	1,400	-81,990 -99.98%	-2,298,600 -99.94%
JORTC-2S	Inside Access Panel	1,140,000	3,000,000	2,130	1,400	-1,137,870 -99.81%	-2,998,600 -99.953%
JBT-3S	Spray Bar Assembly	80	130	10	10	-70 -87.5%	-120 -92.31%
JBT-4S	Inside Access Panel	10,700	730,000	360	910	-10,340 -96.64%	-729,090 -99.88%



Manufactured by Triatomic Environmental, Inc.

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