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Abstract of Test

RAYCOP has requested Japan Food Research Laboratory to conduct a test on its RS2 Purifier to demonstrate the effectiveness of the device on various forms of bacteria, including Escherichia Coli (commonly referred to as E-Coli) as well as Staphylococcus aureus. These are some of the most commonly found bacteria in households, and is typically brought back home from public places including schools, gyms, public transportation, etc. This test also attempted to demonstrate the effectiveness of RayClean technology compared to using a device with standard vacuum feature. The results showed that a standard vacuum fails to remove any form of bacteria, where as a Raycop RS2 device with RayClean technology can eliminate 99.9% of bacteria after a few seconds of exposure to the fabric test surface.

Table 1-1 Viable cell count of the sample (Vacuum Only)

Test strain	Category	Exposure time	Viable cell count (/sample)
<i>Escherichia coli</i>	Before exposure	-	1.0×10^5
	After exposure to the test object *	Approximately 2 seconds	1.8×10^5
		Approximately 5 seconds	1.7×10^5
		Approximately 10 seconds	1.5×10^5
<i>Staphylococcus aureus</i>	Before exposure	-	5.1×10^5
	After exposure to the test object *	Approximately 2 seconds	5.7×10^5
		Approximately 5 seconds	4.4×10^5
		Approximately 10 seconds	5.0×10^5

Sample: Bed pad was covered with high-pressure steam sterilized sheets (121°C, 15 minutes). Then, 80 μL (10 μL × 8 drops) of the test bacterial suspension was dropped on the sheets where appointed by the requestor.

Operative requirement: Futon mattress mode (suction only)

* The suction tip of the test object was placed right above the bacterial suspension sample application area.

Table 1-2 Viable cell count of the sample (Vacuum with UV Light)

Test strain	Category	Exposure time	Viable cell count (/sample)
<i>Escherichia coli</i>	Before exposure	-	2.7×10^5
	After exposure to the test object *	2 laps	20
		5 laps	<10
<i>Staphylococcus aureus</i>	Before exposure	-	4.9×10^5
	After exposure to the test object *	2 laps	30
		5 laps	20

Sample: Bed pad was covered by high-pressure steam sterilized sheets (121°C, 15 minutes). Then, 80 μL (10 μL × 8 drops) of the test bacterial suspension was dropped on the sheets where appointed by the requestor.

Operative requirement: Heavy mode (suction + UV lamp)

* Test object was placed above the sample, and moved in the speed as appointed by the requestor (approximately 8 cm/sec).



Photo 1 *Escherichia coli*

Before exposure: Futon mattress mode (suction only)
(washing fluid 1 mL)



Photo 2 *Escherichia coli*

After exposure to the test object: Futon mattress mode (suction only) approximately 2 seconds
(washing fluid 1 mL)



Photo 3 *Escherichia coli*

After exposure to the test object: Futon mattress mode (suction only) approximately 5 seconds
(washing fluid 1 mL)



Photo 4 *Escherichia coli*

After exposure to the test object: Futon mattress mode (suction only) approximately 10 seconds
(washing fluid 1 mL)

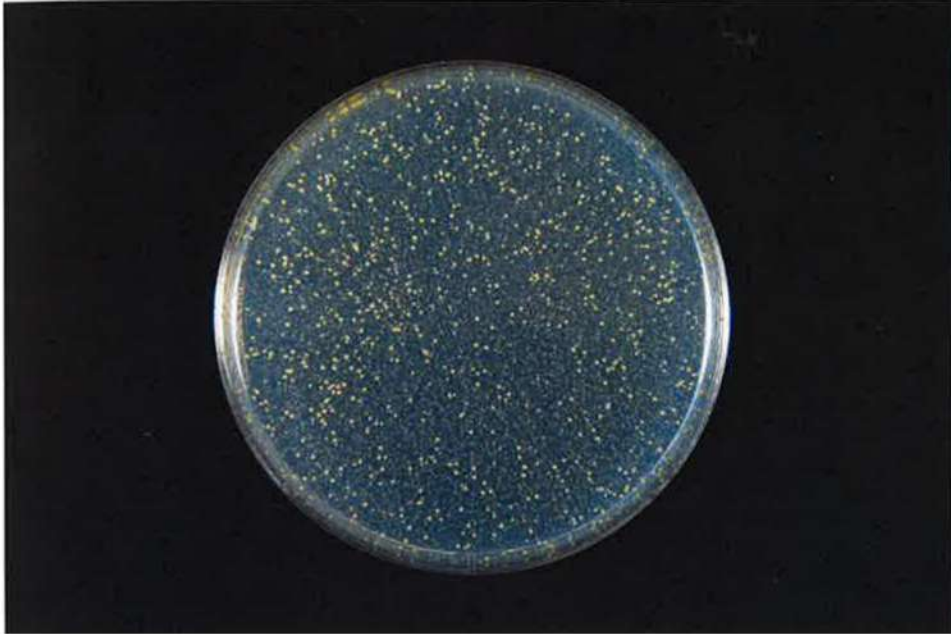


Photo 5 *Staphylococcus aureus*

Before exposure: Futon mattress mode (suction only)
(washing fluid 1 mL)



Photo 6 *Staphylococcus aureus*

After exposure to the test object: Futon mattress mode (suction only) approximately 2 seconds
(washing fluid 1 mL)

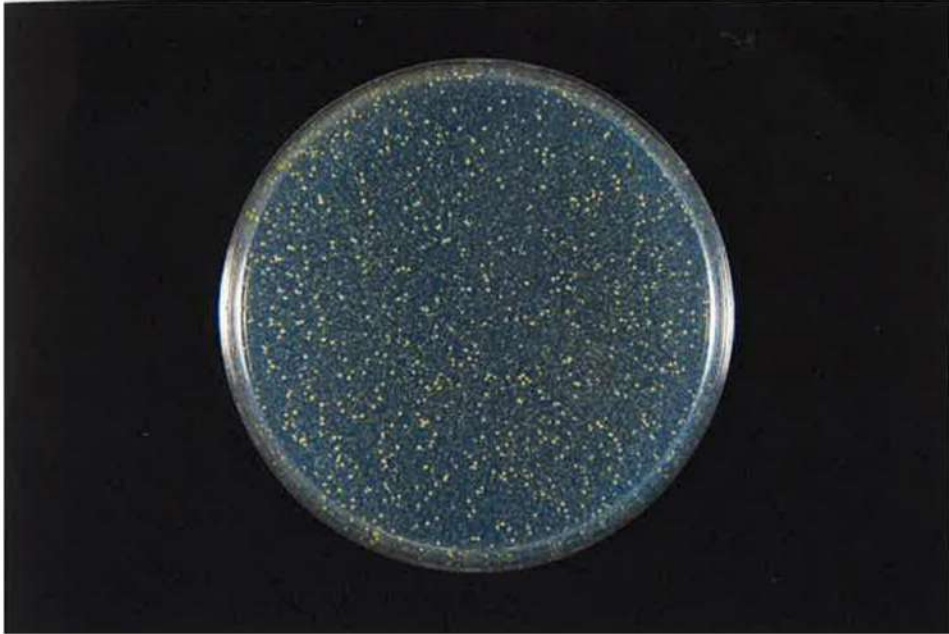


Photo 7 *Staphylococcus aureus*

After exposure to the test object: Futon mattress mode (suction only) approximately 5 seconds
(washing fluid 1 mL)



Photo 8 *Staphylococcus aureus*

After exposure to the test object: Futon mattress mode (suction only) approximately 10 seconds
(washing fluid 1 mL)



Photo 9 *Escherichia coli*

Before exposure: Futon mattress mode (suction + UV lamp)
(washing fluid 1 mL)



Photo 10 *Escherichia coli*

After exposure to the test object: Futon mattress mode (suction + UV lamp) 2 laps
(washing fluid 1 mL)

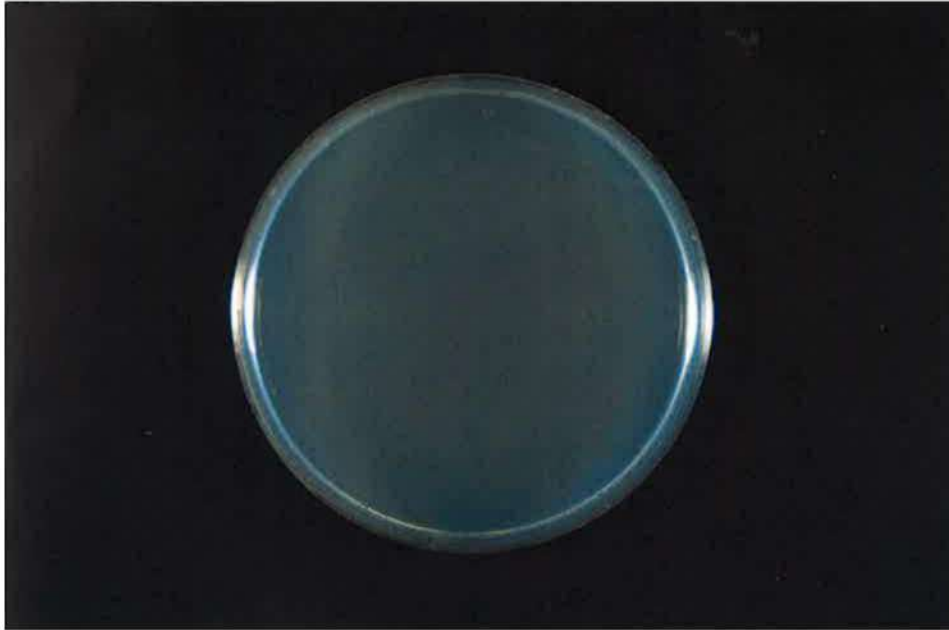


Photo 11 *Escherichia coli*

After exposure to the test object: Futon mattress mode (suction + UV lamp) 5 laps
(washing fluid 1 mL)



Photo 12 *Staphylococcus aureus*

Before exposure: Futon mattress mode (suction + UV lamp)
(washing fluid 1 mL)



Photo 13 *Staphylococcus aureus*

After exposure to the test object: Futon mattress mode (suction + UV lamp) 2 laps
(washing fluid 1 mL)



Photo 14 *Staphylococcus aureus*

After exposure to the test object: Futon mattress mode (suction + UV lamp) 5 laps
(washing fluid 1 mL)