

# Covid - 19 !

Heat Over 80 °C(176°F) to Kill or Deactivate Most Viruses

According to the several tests inside the company, in general, up to 10cm away from the steam gun of Optima steamer, the temperature of the steam is over 176°F (80°C).

Also, Optima Steamer is well famous for its high continuous pressure and its high dry steam injection rate. The power of steam is determined by two factors, its volume and pressure. The steam injected from its steam gun is speedier with a higher pressure and contains a higher temperature through its larger volume than any other steam cleaners. This means that an operator of Optima Steamer can clean any inner space like car interior to kill viruses much faster and much more effectively.

Sincerely Yours,

**Homoong Yoo**

CEO & President



As the Coronavirus 2019 has spread more to all around the world, SJE, maker of Optima Steamer, has got more inquiries about the relation between steam (and heat) and the virus. company insists that the steam of Optima Steamer is a very useful tool against the virus. The reason is as follows.

1. Like disinfectants and fixatives, heat is an effective way to kill viruses, according to a document from WHO. (See the webpage of [https://www.who.int/csr/sars/survival\\_2003\\_05\\_04/en/](https://www.who.int/csr/sars/survival_2003_05_04/en/)) Also, another research indicates that a temperature of 160°F (71°C) or greater is recommended to kill most viruses. (See <https://www.insider.com/what-temperature-kills-germs>)



2. Vapor heat (heating with air humidified by injection of steam) as well as dry heat is one of well-recognized methods for viral inactivation and removal, according to another paper from WHO. (**World Health Organization, WHO Technical Report, Series No. 924, 2004**)

3. As seen at the below chart, the temperature of steam with a standard gun and a standard hose is 135.4°C (275.7°F) at the start of an open nozzle, 85.3°C(185.54°F) at 5cm from the start, 73.3°C(°F) at 10cm from the start (Based on our test report.) So, within 10cm, Optima Steamer is considered a very useful for a virus. Moreover, when an operator uses Optima Steamer with a power gun and a power hose, even at 15cm away from a steam gun, the temperature of steam is above 160°F (71°C), that is, 77.8°C.



So, against Coronaviruses, a set of one power gun and one power hose is more useful. According to the test, at 18cm, the temperature is still 71.6°C (160.9°F).

Model	Optima XD / DMF				
Distance from the steam gun	At the muzzle of a gun	5cm	10cm	15cm	20cm
<b>Temperature (°C)</b> In case of using a standard hose of 10m + a standard gun of Ø3.5mm.	135.4	85.3	73.3	64.2	57.8
<b>Temperature (°C)</b> In case of using a power hose of 10m + a power gun of Ø5.5mm	137.1	123	90	77.8	65.4



4. Optima Steamer is well known to produce the most powerful and effective steam. As seen in the below chart, Optima Steamer produces much more powerful steam than other steam cleaners.

	A brand	OPTIMA XD / DMF	
Continuous Pressure	4 ~ 4.5 bar	7.0 ~ 8.5 bar	
Dry Steam Injection Rate	280cc/min	340cc/min	860cc/min (power hose + power gun)

The more pressure the steam from a steam cleaner has, the higher temperature it contains. In the case of Optima Steamer, the temperature of steam from the boiler is 178°C but its temperature at the muzzle of a steam gun drops down to 135.4°C through the 10m standard steam hose. So, **in the case of the steam of lower pressure than that of Optima Steamer, there should be a much more drop of temperature through a 10m steam hose or at any distance from the steam gun.**



Also, the powerful steam of Optima Steamer makes an operator finish the cleaning of an area with effectiveness much faster. The power of steam is determined by two factors, its volume and pressure. Because the steam injected from its steam gun is speedier with a higher pressure and contains a higher temperature through its larger volume, its operator can clean any inner space like car interior to kill viruses or bacteria much faster and more effectively. **This means that Optima Steamer helps an operator clean to prevent or kill much more viruses and bacteria with a shorter period of time.**

5. Now, as much more people has entered our homepage [www.sjecorp.com](http://www.sjecorp.com), my company has got much more interest in Optima Steamer. Also, some distributors around the world are trying to do online marketing jobs. One has interviewed with a media to explain how useful Optima steamer is against Corona viruses. (<https://www.thisdaylive.com/index.php/2020/03/19/killing-bacteria-viruses-through-dry-vapor-steam/>) Another has provided it to a police station in China to kill coronaviruses inside police cars.

Best Regards,

Paul K. Kim  
Director of Overseas Sales  
SJE Corporation



**OPTIMA  
STEAMER**

**TURBO STEAM NOZZLE**

## Steam Temperature Test Report

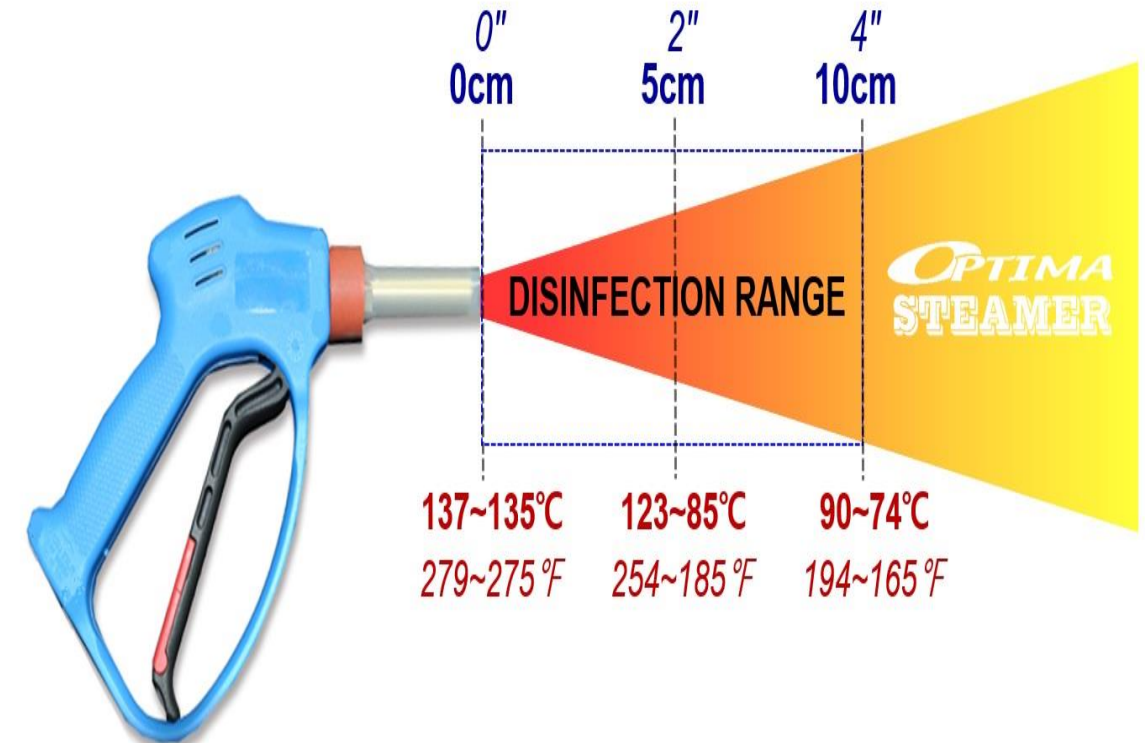
2020.03.24

Distance		Temperature	
mm	inch	°C	°F
0	0.00	93.1	199.6
10	0.39	82.0	179.6
20	0.79	75.1	167.2
30	1.18	73.8	164.8
40	1.57	73.7	164.7
50	1.97	70.5	158.9
60	2.36	69.0	156.2
70	2.76	66.4	151.5
80	3.15	65.2	149.4
90	3.54	64.9	148.8
100	3.94	62.1	143.8
110	4.33	61.7	143.1
120	4.72	58.2	136.8
130	5.12	57.6	135.7
140	5.51	55.3	131.5
150	5.91	54.8	130.6
160	6.30	54.3	129.7
200	7.87	51.0	123.8

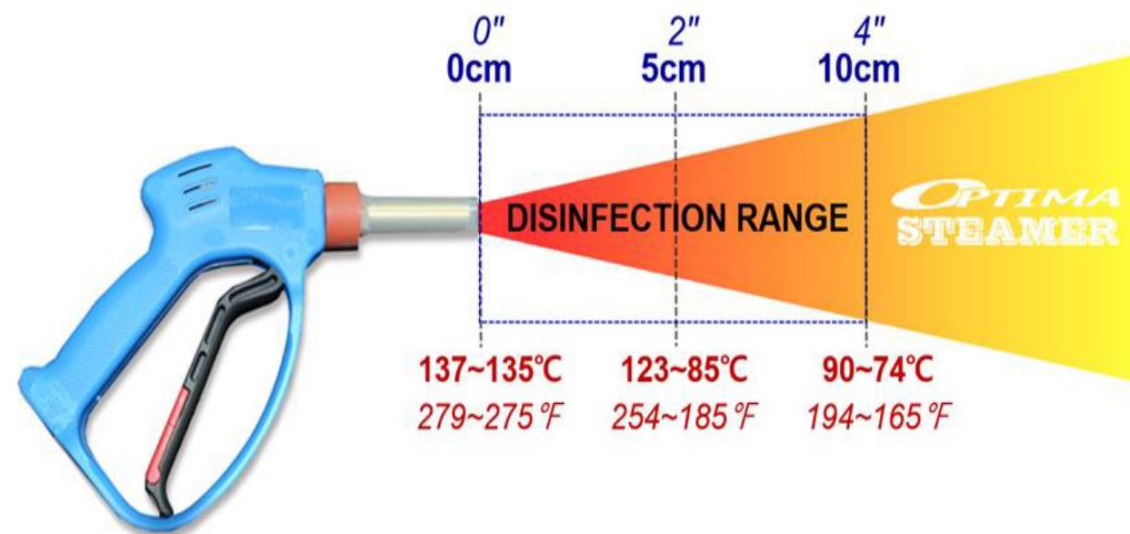
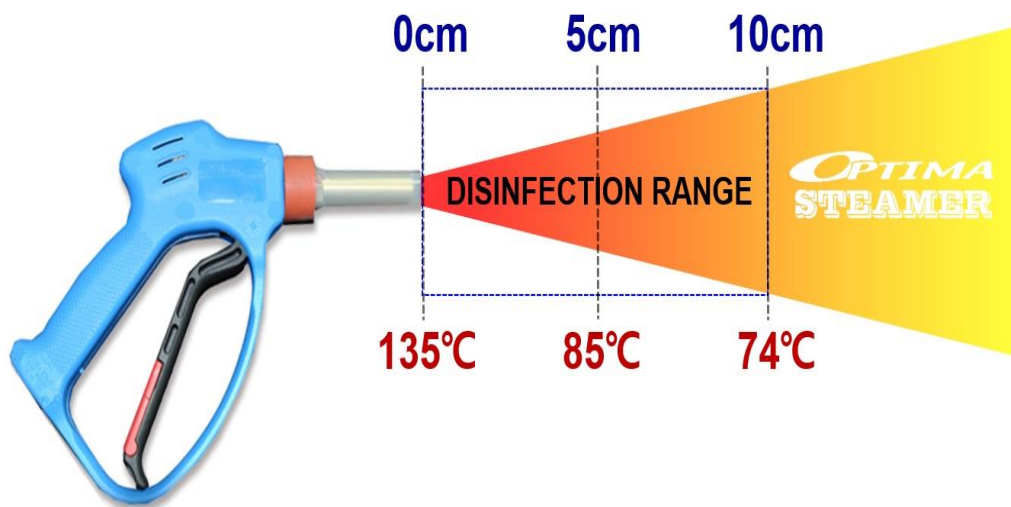
Continuous Steam Pressure : 7~8.5 Bar

Test Lab Temperature : 13 °C (55°F)

## Steam Temperature by Sprayed Distance



## Steam Temperature by Sprayed Distance



Continuous Steam Pressure : 7~8.5 Bar

Test Lab Temperature : 18°C (64°F)



Given the current state of fear, confusion and exploitation, any other claims are premature. Treating this outbreak lightly or without proven information can put your or others' lives at risk.

In the case of responding to COVID-19, we want all our customers to be safe. If there is confirmed exposure to contamination, immediately contact your local authorities and follow their guidance.

The CDC recommends using PPE (personal protection equipment) including goggles, a respirator-type mask, gloves and clothing protection. Any type of cleaning or spraying can disturb the virus contagens causing them to be airborne. Clothing and porous materials should be treated as hazardous and laundry machines equipped with steam features should be used.

<https://www.cdc.gov/coronavirus/2019-ncov/community/organizations/cleaning-disinfection.html>

<https://www.steamerics.com/>

<https://youtu.be/7q-q5jF547s>



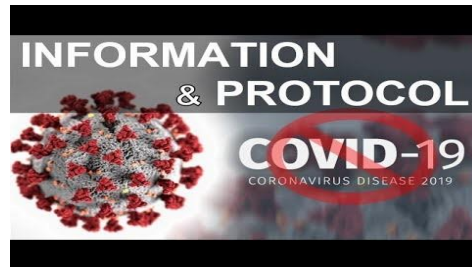
The only data we as a society should be relying on right now is scientifically validated data coming from the officials and specialists leading us through this situation.

While we have supporting data that shows steam's effectiveness at removing virus contaminants and the CDC, WHO and other scientific bodies have data published related to evidence of moisture at temps above 80°C deactivating other coronaviruses, there is no specific validation done with the Optima Steamer and the virus that causes COVID-19 (SARS-CoV-2).

With that said, we believe the Optima Steamer is potentially a perfect tool for combatting the outbreak when used in conjunction with proper containment and disinfection.

Currently, the CDC recommends cleaning and disinfecting, pointing to a list of EPA-registered products approved for responding to COVID-19 infections, found here: <https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>





Please Double Click and Watch this videos to understand more about how Optima Steamer can be a Important tool to fight against Coronavirus Pandemic.

## Let's Shake Hands for Better and Healthy Future



Contact No -9755594157,8889531822

Head Office – Raipur (C.G.)

Branch Office – Navi Mumbai (M.H.)



**MUMBAI BRANCH:**  
1402, wing A3 Hyde Park, Plot no. 8.9.10  
Sector 35G Kharghar, 410210, Navi Mumbai