

Precautions for installation, construction, operation, and safety

- The permissible limit value (TLV) of 222 nm ultraviolet rays that a person may be exposed to in a day is 22 mJ/ Cm² or less (in 8 hours) per day according to ACGIH (American Conference of Governmental Industrial Health) and JIS Z 8812 (measurement method of harmful ultraviolet radiation). When using OGY-UV222, install and operate so that it is exposure within this allowable value.
- Always install the unit to be at least 1 meter away from people
- The temperature of this product rises while the lamp is on or immediately after it is turned off. Never touch the lamp or lamp housing. (It may cause burns, etc.)
- Do not use or store flammable gas or flammable substances near the product. Also, do not cover it with flammable materials such as paper or cloth, or place it near such items. (It may cause a fire)
- Do not use in humid environment such as near a humidifier, or in a dusty place. Also, do not allow the power plug or outlet to get wet, and do not insert or remove the power plug with wet hands. (It may cause electric shock, fire, or malfunction.)
- Do not use in an environment with a lot of oily gas (exhaust gas, steam, etc.).
- Do not hit or drop the product. Also, do not push or pull during installation. It may cause an accident or an unexpected accident. Also, do not push or pull the product when it is mounted on a wall (facing sideways or downwards).
- Do not use the product outdoors. Also, do not install it indoors where it will be exposed to liquids such as water.
- This product emits UV light. Please note that UV light may cause fading or deterioration depending on the material of the object exposed. Ogaya is not responsible for any fading or deterioration due to UV light exposure.
- Specifications and design of this product are subject to change without notice for improvement. The lamp is a glass product. Return the old lamp to your dealer or Ogaya, or dispose of it according to the method specified by your local government.
- It is generally said that pregnant people tend to have sensitive skin to UV rays. If you are concerned about UV rays or have photosensitivity, use long sleeves, a hat, sunscreen cream, etc. and take the same measures as your daily sun UV protection. If you lack experience or knowledge, please do not use the product without proper guidance. Please be careful not to let children play with the product.
- Ozone odor may be generated during UV light emission. Due to the small amount this is not harmful to the human body. If you feel uncomfortable or feel unwell, stop using OGY-UV222 immediately and consult a doctor.

OGY-UV222

Advanced UV Light For Humanity

OGAYA

Your Air Quality, Our Responsibility
OGAYA FILTER CO., LTD



OGY-UV222 is a completely new type of ultraviolet light that can be used in occupied environments, which has not been possible with conventional ultraviolet wavelengths. OGY-UV222 uses advanced technology to suppress the effects of ultraviolet rays on the bodies of humans and animals, while maintaining the virus suppression and sterilization capabilities inherent in ultraviolet rays.

What OGY-UV222 can do

It can sanitize space and object surfaces with ultraviolet light even in an occupied environment..

Space sterilization

OGY-UV222 is highly effective for space sterilization. In particular, when operated in a manned environment, OGY-UV222 can sterilize an entire space without affecting the human body by emitting ultraviolet rays that have been stripped of their harmful wavelengths, thereby maintaining a safe and clean environment.

Surface sterilization

OGY-UV222 is also effective in sterilizing object surfaces. Continuous irradiation is possible, especially in an unattended environment, which maximizes the sterilization effect.



Medical environment

elevator

meeting room

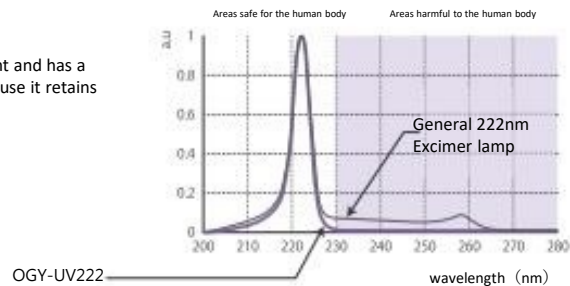
OGY-UV222 safety

It has been confirmed that it is safe to use in a manned environment.

(Please use the product in compliance with the usage instructions in the instruction manual.)

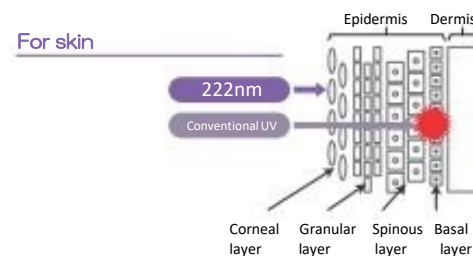
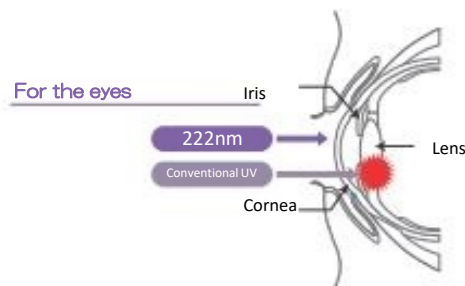
222nm UV

Ultraviolet light has a wavelength of 10-400 nm and is shorter than visible light and has a strong bactericidal effect. The wavelength of 222 nm is extremely useful because it retains the bactericidal effect without affecting the human body.



Low impact on the human body

The absorption coefficient of proteins and keratin differs between the 222 nm UV and the conventional UV wavelength. Since 222nm ultraviolet light does not penetrate into the skin and eyes, it has been found to have lower impact on the human body.



OGY-UV222 Advanced Technology

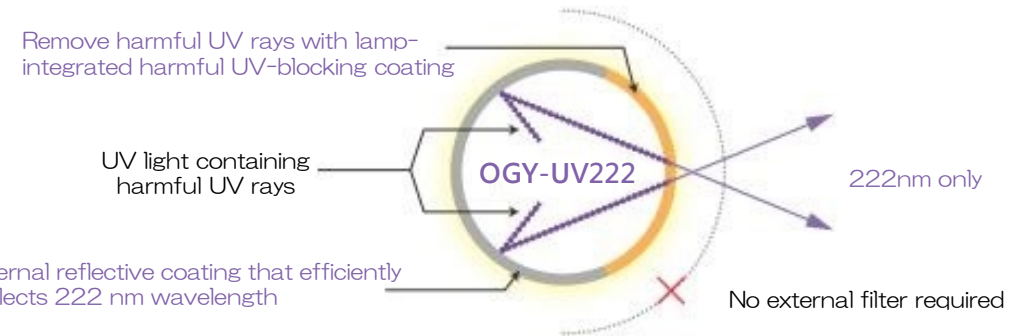
Removing harmful wavelengths from UV light requires superior coating technology. OGY-UV222 does not use external filters, which are common in conventional products.

Integrated harmful UV light-blocking coating

OGY-UV222 has a harmful ultraviolet blocking coat inside the lamp, and emits exclusively the wavelength of 222 nm with the harmful ultraviolet rays removed by the UV lamp. The lamp-integrated coat dramatically improves durability and maintainability compared to conventional products.

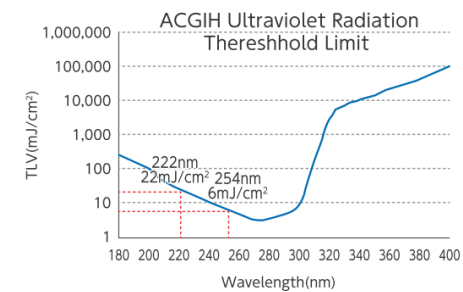
High efficiency internal reflective coating

OGY-UV222 has a special reflective coating on the inside of the lamp that allows light rays to be reflected inside the light and efficiently extract the 222 nm wavelength.



Sensor technology

Although the safety of 222nm UV light is scientifically supported, the United States ACGIH (American Conference of Governmental Industrial Hygienists) has established a Threshold Limit Value (TLV). Therefore, the OGY-UV222 uses motion sensors to control the operation so that the this limit is not exceeded in a manned environment.



wavelength	TLV	Relative wavelength dependent Adverse effects
222nm	22mJ/cm²	27%
254nm	6mJ/cm²	100%

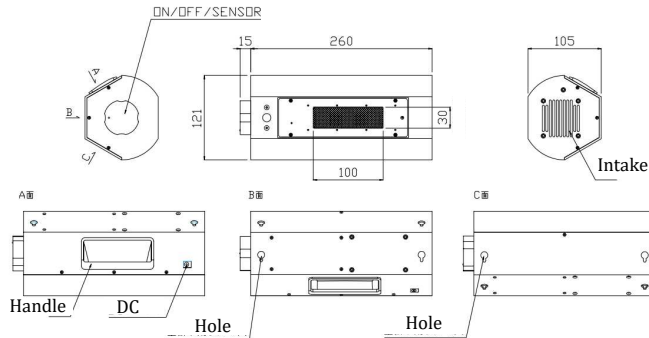
OGY-UV222

Specification

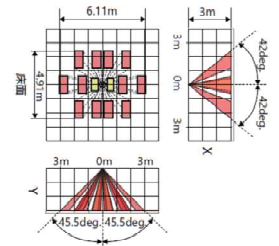
● External view



● Dimensions



● Motion sensor detection range

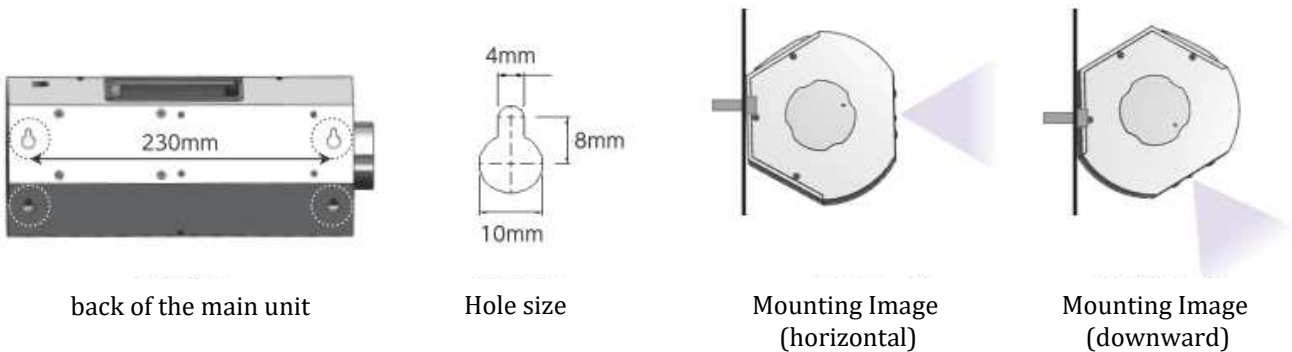


● Specifications

Device Type	OGY-UV222	Main color	white
Light source (type)	Excimer lamp	Voltage	DC12V
Wavelength	222nm	Weight	~1.2kg
Mercury	None	Function	Includes motion sensor
Dimensions	250 × 120 × 100mm	Cooling (fan)	Forced air cooling (~0.56m ³ /min)
Light emitting area	100 × 30mm	Noise	27.5dB
Intensity	4.5mW/cm ² ±20%	Option	AC adapter
Power consumption	< 25W		

Mounting method

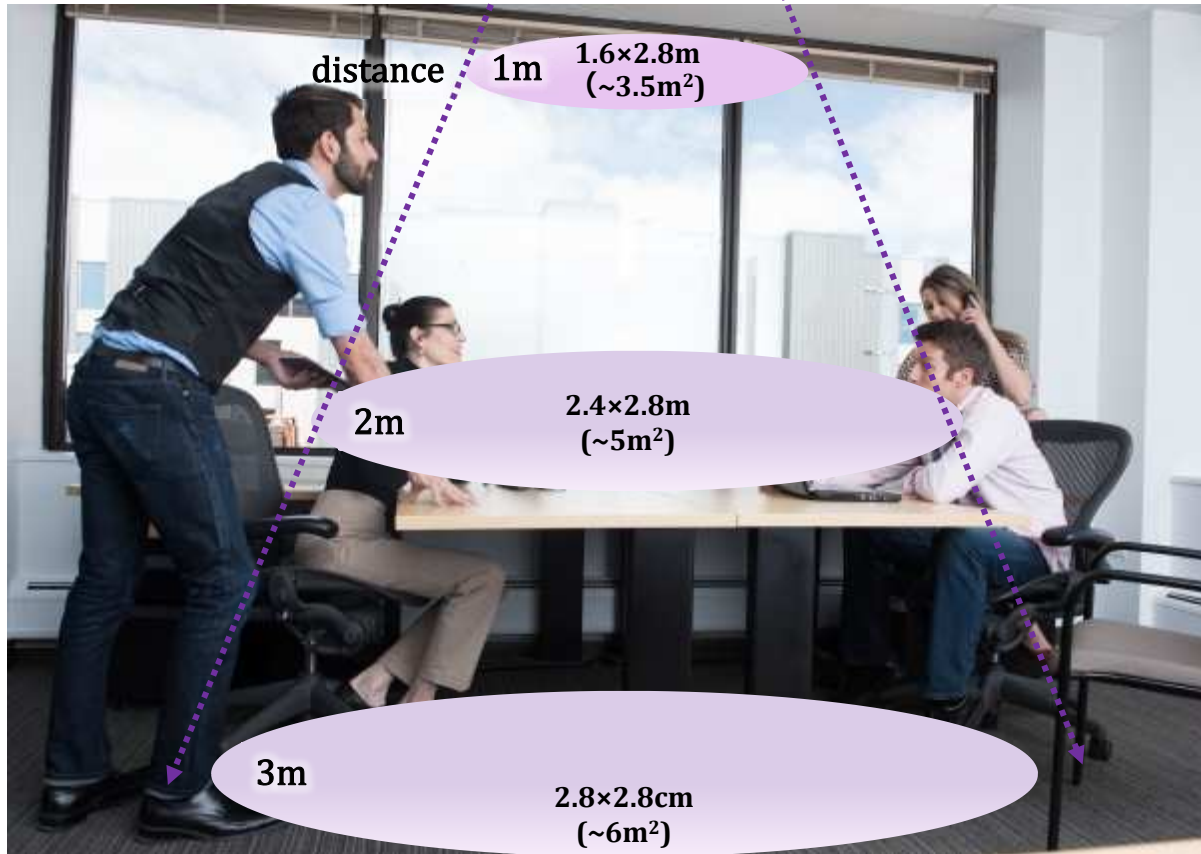
Four holes are provided on the back of the main unit for wall mounting.



Precautions for installation, operation, and safety

- According to ACGIH (American Conference of Governmental Industrial Hygienists) and JIS Z 8812 (Methods of Measuring Hazardous Ultraviolet Radiation), the tolerable limit of daily exposure (TLV) for 222nm ultraviolet radiation is 8 hours or less per day (22mJ/cm² or less).
When using the product, install and use it so that it is within these allowable values.
- Always install the unit to be at least 1 meter away from people.
- The OGY-UV222 is for indoor use only. Do not use outdoors.
- Do not use flammable gas or water near the product even indoors, and do not install the product in a humid place or a place where it will be exposed to liquid.
- The specifications and design of this product are subject to change without notice.

OGY-UV222



Time required to suppress 90% of viruses when continuously lit
(one virus per type)

distance	Surface sterilization	Air sterilization
1m	~4 min	~2 min
2m	~17 min	~9 min
3m	~42 min	~24 min

1) This is not the result of actual use in space. Effectiveness may vary depending on the usage environment.

2) Do not use at distances of less than 1 meter.

3) The time required for virus suppression is calculated based on the maximum illumination within the range of the light.

reference : Kitagawa, et al.(2020) DOI: <https://doi.org/10.1016/j.ajic.2020.08.022>

reference : Buonanno, et al., Sci. Rep. 10, 10285 (2020).

OGY-UV222 Illuminance data

Distance 1m

Central Intensity
5 μ W/cm²

units: μ W/cm²

180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
160	0	0	0	0	0	0.01	0.04	0.06	0.08	0.09	0.08	0.06	0.04	0.01	0	0	0	0	0
140	0	0	0.02	0.05	0.10	0.14	0.20	0.23	0.26	0.26	0.23	0.21	0.17	0.12	0.09	0.05	0.01	0	0
120	0	0	0.07	0.15	0.22	0.28	0.34	0.40	0.42	0.44	0.43	0.36	0.31	0.26	0.20	0.13	0.07	0.01	0
100	0	0.02	0.07	0.16	0.28	0.39	0.48	0.55	0.60	0.55	0.57	0.51	0.43	0.35	0.25	0.15	0.07	0.02	0
80	0	0.02	0.06	0.16	0.32	0.44	0.54	0.67	0.75	0.71	0.73	0.61	0.51	0.38	0.25	0.14	0.07	0.02	0
60	0	0.04	0.10	0.15	0.25	0.39	0.64	0.90	1.27	1.24	1.16	0.83	0.54	0.36	0.22	0.14	0.06	0	0
40	0	0	0.05	0.12	0.19	0.30	0.59	1.57	2.88	2.93	2.49	1.25	0.52	0.29	0.16	0.07	0.02	0	0
20	0	0	0	0.03	0.09	0.24	0.91	2.46	3.94	4.13	3.74	2.43	0.80	0.20	0.06	0	0	0	0
0	0	0	0	0.08	0.37	1.34	3.36	4.65	5.00	4.38	2.74	1.18	0.32	0.06	0	0	0	0	0
-20	0	0	0	0.03	0.09	0.24	0.91	2.46	3.94	4.13	3.74	2.43	0.80	0.20	0.06	0	0	0	0
-40	0	0	0.05	0.12	0.19	0.30	0.59	1.57	2.88	2.93	2.49	1.25	0.52	0.29	0.16	0.07	0.02	0	0
-60	0	0.04	0.10	0.15	0.25	0.39	0.64	0.90	1.27	1.24	1.16	0.83	0.54	0.36	0.22	0.14	0.06	0	0
-80	0	0.02	0.06	0.16	0.32	0.44	0.54	0.67	0.75	0.71	0.73	0.61	0.51	0.38	0.25	0.14	0.07	0.02	0
-100	0	0.02	0.07	0.16	0.28	0.39	0.48	0.55	0.60	0.55	0.57	0.51	0.43	0.35	0.25	0.15	0.07	0.02	0
-120	0	0	0.07	0.15	0.22	0.28	0.34	0.40	0.42	0.44	0.43	0.36	0.31	0.26	0.20	0.13	0.07	0.01	0
-140	0	0	0.02	0.05	0.10	0.14	0.20	0.23	0.26	0.26	0.23	0.21	0.17	0.12	0.09	0.05	0.01	0	0
-160	0	0	0	0	0.01	0.04	0.06	0.08	0.09	0.08	0.06	0.04	0.01	0	0	0	0	0	0
-180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
cm	-180	-160	-140	-120	-100	-80	-60	-40	-20	0	20	40	60	80	100	120	140	160	180

Distance 2m

Central Intensity
1 μ W/cm²

units: μ W/cm²

260	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
240	0	0	0	0	0	0	0	0.01	0.01	0.02	0.02	0.01	0	0	0	0	0	0	0	
220	0	0	0	0	0.01	0.02	0.03	0.03	0.04	0.04	0.04	0.03	0.03	0.03	0.02	0.01	0	0	0	
200	0	0	0	0.00	0.02	0.02	0.04	0.06	0.07	0.08	0.08	0.08	0.04	0.03	0.03	0.02	0.01	0	0	
180	0	0	0.01	0.03	0.04	0.06	0.07	0.08	0.09	0.10	0.08	0.06	0.06	0.06	0.05	0.04	0.02	0.01	0.05	
160	0	0	0.01	0.03	0.04	0.04	0.07	0.08	0.10	0.11	0.09	0.11	0.10	0.08	0.06	0.05	0.04	0.04	0.02	
140	0	0.01	0.02	0.04	0.06	0.06	0.10	0.11	0.11	0.13	0.13	0.12	0.10	0.10	0.08	0.06	0.04	0.02	0	
120	0	0.02	0.03	0.07	0.07	0.10	0.13	0.17	0.20	0.22	0.21	0.22	0.18	0.12	0.08	0.06	0.02	0.00	0	
100	0	0	0.00	0.02	0.05	0.10	0.16	0.21	0.22	0.25	0.26	0.22	0.23	0.17	0.11	0.06	0.01	0.00	0	
80	0	0	0	0.03	0.07	0.14	0.22	0.30	0.35	0.41	0.41	0.37	0.30	0.27	0.22	0.11	0.04	0.00	0	
60	0	0	0	0	0.04	0.12	0.23	0.41	0.73	0.88	0.81	0.79	0.71	0.55	0.36	0.17	0.04	0.00	0	
40	0	0	0	0.01	0.11	0.30	0.54	0.73	0.86	0.97	0.93	0.87	0.81	0.68	0.51	0.27	0.10	0.01	0	
20	0	0	0	0.03	0.16	0.38	0.65	0.82	0.94	1.04	1.06	0.99	0.93	0.79	0.63	0.36	0.16	0.04	0	
0	0	0	0	0.06	0.19	0.45	0.70	0.89	1.00	1.10	1.15	1.11	1.02	0.87	0.72	0.48	0.25	0.10	0	
-20	0	0	0	0.03	0.16	0.38	0.65	0.82	0.94	1.04	1.06	0.99	0.93	0.79	0.63	0.36	0.16	0.04	0	
-40	0	0	0	0.01	0.11	0.30	0.54	0.73	0.86	0.97	0.93	0.87	0.81	0.68	0.51	0.27	0.10	0.01	0	
-60	0	0	0	0	0.04	0.12	0.23	0.41	0.73	0.88	0.81	0.79	0.71	0.55	0.36	0.17	0.04	0	0	
-80	0	0	0	0.03	0.07	0.14	0.22	0.30	0.35	0.41	0.41	0.37	0.30	0.27	0.22	0.11	0.04	0	0	
-100	0	0	0.00	0.02	0.05	0.10	0.16	0.21	0.22	0.25	0.26	0.22	0.23	0.17	0.11	0.06	0.01	0	0	
-120	0	0.02	0.03	0.07	0.07	0.10	0.13	0.17	0.20	0.22	0.21	0.22	0.18	0.12	0.08	0.06	0.02	0	0	
-140	0	0.01	0.02	0.04	0.06	0.06	0.10	0.11	0.11	0.13	0.13	0.12	0.10	0.10	0.08	0.06	0.04	0.02	0	
-160	0	0	0.01	0.03	0.04	0.04	0.07	0.08	0.10	0.11	0.09	0.11	0.10	0.08	0.06	0.05	0.04	0.04	0.02	
-180	0	0	0.01	0.03	0.04	0.06	0.07	0.08	0.09	0.10	0.08	0.06	0.06	0.06	0.05	0.04	0.02	0.01	0.05	
-200	0	0	0	0.00	0.02	0.02	0.04	0.06	0.07	0.08	0.08	0.08	0.04	0.03	0.03	0.02	0.01	0.00	0	
-220	0	0	0	0.00	0.01	0.02	0.03	0.03	0.04	0.04	0.04	0.03	0.03	0.03	0.02	0.01	0.00	0.00	0	
-240	0	0	0	0	0	0	0	0.01	0.01	0.02	0.02	0.01	0	0	0	0	0	0	0	
-260	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
cm	-180	-160	-140	-120	-100	-80	-60	-40	-20	0	20	40	60	80	100	120	140	160	180	200

Exposure results for bacteria and viruses

LRV results for various bacteria(distance 60mm)

Bacteria	Exposure time		
	5sec	10 sec	20 sec
<i>Escherichia coli (E.coli)</i>	>0.9	>1.8	>3.3
<i>Staphylococcus aureus</i>	>1.3	>2.5	>4.3
<i>Bacillus subtilis (spore)</i>	>1.5	>2.8	>4.0
<i>Salmonella</i>	>1.2	>2.0	>3.2
<i>Pseudomonas aeruginosa</i>	>3.4	>4.3	>5.4

Reference: When a decrease of 3 log (LRV>3) or more is read, the product is judged to be effective against the target microorganism.

Saishunkan Reassurance and Safety Laboratory Co., Ltd.

※Japanese Pharmacopoeia, revision No. 17,

"Reference Information: Disinfection & Decontamination Methods

*LRV (Logarithmic Reduction Value) = $\frac{\text{No. of bacteria with no exposure (control)}}{\text{No. of bacteria after exposure}}$

Salmonella



Photo 1: Exposure time 0 sec



Photo 2: Exposure time 2 sec



Photo 3: Exposure time 10 sec



Photo 4: Exposure time 20 sec

Staphylococcus aureus



Photo 1: Exposure time 0 sec



Photo 2: Exposure time 2 sec



Photo 3: Exposure time 10 sec



Photo 4: Exposure time 20 sec

Bacillus subtilis (spore)



Photo 1: Exposure time 0 sec



Photo 2: Exposure time 2 sec



Photo 3: Exposure time 10 sec

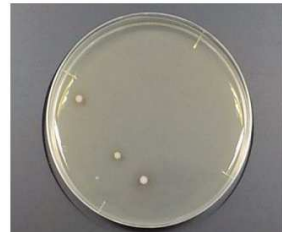


Photo 4: Exposure time 20 sec