UC/4F129/3 - UC/4F129V/3

Standard Product Reference Sheet UV-CCL Compact WH Ass'y TYPE

Features

UV Cold Cathode lamp for disinfection water, air and surface.

Size, Wavelength	Lamp diameter φ4.0mm Lamp width 10mm Lamp length 44mm, 84mm, 129mm 3 types Wavelength 254nm 1 types
Product features	・Long life Life time of L:44mm is 30,000Hrs., L:84mm and 129mm are 50,000Hrs. ・Compact ・Vibration-proof ・Power saving ・Never unlighted even the lamp turns ON/OFF repeatedly

Recommended Applications

Deodorizer, Air purifier, Air conditioner, Vacuum cleaner, Humidifier, Water purifier etc.

*UV-CCLs are mercury-contained products. According to rules of municipalities, segregate and discharge them individually at homes, and companies should follow laws and regulations.
According to the conventions of Mercury, please see the Japan Lighting Manufactures Association's HP.
http://jlma.or.jp/kankyo/suigin/

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Outline Dimensions

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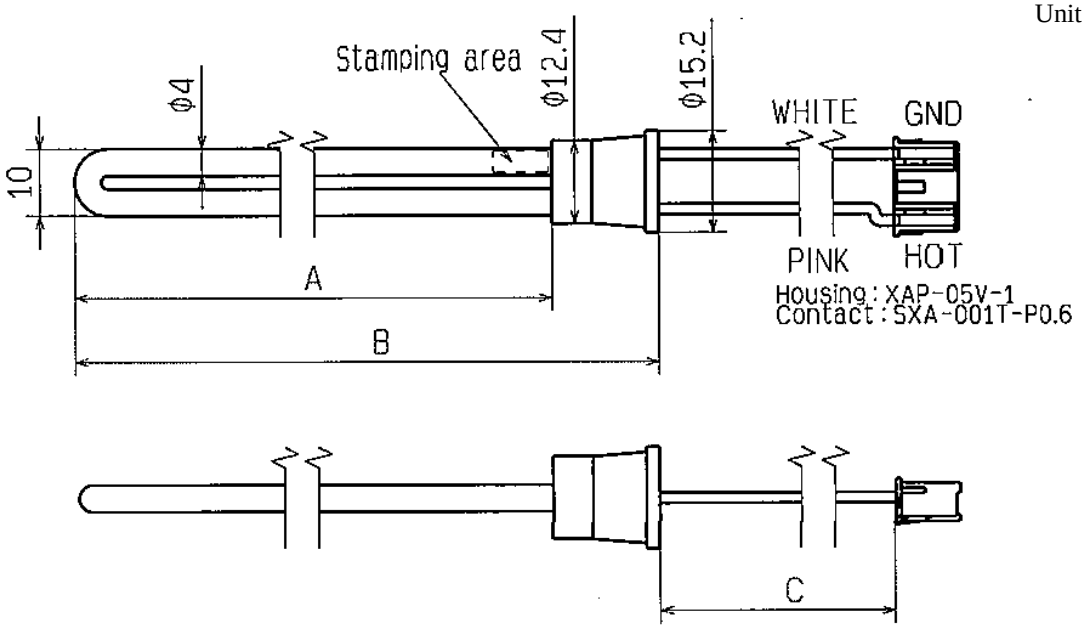
Unit : mm



Part Name

Part Name	Dimension: A (mm)	Dimension: B (mm)	Dimension: C (mm)	Peak Wavelength (nm)	Lamp Length (mm)
UC/4F44V/3	28	44	100	254	70
UC/4F84V/3	68	84		254	150
UC/4F129V/3	113	129		254	240

【General Characteristics／Germicidal Lamp】

Part Name	UC/4F44V/3	UC/4F84V/3	UC/4F129V/3	Unit	Note
Lamp length	70mm	150mm	240mm		
Starting Voltage	550MAX	600MAX	860MAX	(V RMS)	Ambient temperature25℃, Note1
	800MAX	900MAX	1300MAX		Ambient temperature0℃, Note1
Recommended applied voltage	1000MIN	1200MIN	1500MIN	(V RMS)	For discharge in dark space, Note2
Discharge in dark space	1MAX	1MAX	1MAX	(s)	Note3
Lamp current	10±0.05	15±0.05	15±0.05	(mA RMS)	
Lamp voltage	Initial 140±35 End of life 240MAX	Initial 205±25 End of life 320MAX	Initial 320±50 End of life 440MAX	(V RMS)	
Lamp power consumption	Initial 1.4	Initial 3.1	Initial 4.7	(W)	Commutation value
UV irradiance	2.0±0.5	6.5±0.8	11.1±1.5	($\mu W/cm^2$)	Measurement distance shall be 1.0m , Note4
UV radiant Flux	0.2	0.6	1.1	(W)	Calculation from JIS C7605
Time to stabilize UV irradiance	60MAX	60MAX	60MAX	(s)	Note5

＊It is likely to change without a previous notice. Please acknowledge it beforehand.

Note 1: Peak voltage on both ends of lamp when lamp is completely turned on by sliding-up voltage method.
Note 2: Required voltage that apply to the both edges of UV-lamp, for turning this lamp on correctly in a darkness area where this specifications stated.
Note 3: Turn lamp on at rating current for 60sec., store lamp for 24hrs in a completely dark space at room temperature, and turn lamp on within 1sec with 0.1lx.(Supply voltage: demand applied voltage)
Note 4: The measurement part is made respect not stamped.
Note 5: Time which reaches 90% of UV irradiance in saturation
(at 25℃・As a state of the single lamp item)

【About "starting voltage" and "recommended applied voltage"】

[Starting voltage]
Needed input voltage to the both edge of the lamp to turn it on under the ambient illuminance is less than 0.1(lx).

[Recommended applied voltage]
In a case of the ambient illuminance would be under 0.1(lx), we recommend to input higher voltage than the starting voltage.
When the ambient illuminance is under 0.1(lx), there is a possibility to late the lighting start time. Inputting higher voltage, has an effect to improve its lighting start time, so this specification stated it as a recommended value.

【Absolute Maximum Ratings】

Items		Standards			
		MIN	TYP	MAX	Note
Operation Temperature	(℃)	0	-	60	—
Operation Humidity	(%Rh)	5	-	95	—
Storage Temperature	(℃)	-30	-	85	—
Storage Humidity	(%Rh)	5	-	95	—
Operation Lamp Current	(mA)	2	10	11	70mm
		2	15	16	150mm,240mm
Operation Frequency	(kHz)	30	55	100	—

【 Lifetime 】

1. Germicidal lamp

	Lamp Length	Rated Current	Life	Ambient Temperature
Room temperature continuous lighting	70mm	10mA	30,000h(MIN)	25±5℃
	150mm,240mm	15mA	50,000h(MIN)	
Low temperature continuous lighting	70mm	10mA	1,800h(MIN)	0±2℃
	150mm,240mm	15mA	3,000h(MIN)	

【 Definition of Life 】

UV irradiance reaches 50% of the initial irradiance. (254nm)

Reliability Testing Results　　UV-CCL Compact WH Ass'y TYPE

No.	Items	Test Conditions	Standards
1	Life Operation test	25±5℃ Rated Current Germicidal lamp 70mm : 30,000hrs. Germicidal lamp 150mm, 240mm : 50,000hrs.	B
2	On-Off Operation test	25±5℃ ON/1min OFF/1min (the off time is conclude) Rated Current Germicidal lamp 70mm : 30,000hrs. Germicidal lamp 150mm, 240mm : 50,000hrs.	B
3	Low temperature Operation test	0±2℃ Rated Current Germicidal lamp 70mm : 1,800hrs. Germicidal lamp 150mm, 240mm : 3,000hrs.	B
4	High temp., High humidity Operation test	60±2℃ 90±5%Rh Rated Current Germicidal lamp 70mm : 1,800hrs. Germicidal lamp 150mm, 240mm : 3,000hrs.	B
5	Temperature cycle Operation test Heat shock test	-30℃ ⇔ 85℃ 200 cycles (0.5h) (0.5h)	A
6	Vibration test	Amplitude (x,y,z) 1.5mm, Test time 2hrs, Frequency sweep condition : 10～55～10Hz/1minitue	A
7	Impact test	1470m/s^2, 0.8ms 5 times	A
8	Lead wire Tension test	Loading : 29.4N (Longer direction) 10s 10 times	A
9	Lead wire Bending test	Loading: 2.45N, 90 degree bend ⇒ reset: 1 time, reversed 90 degree bend ⇒ reset: 1 time = Total 2 times.	A
10	Hermetic test	Soak lamp in warm water (90 ～ 100℃) for 3 min ⇒ in cold water (5℃) for 3 min. 3 cycles	A
11	Lighting in dark space test	Turn lamp on at rating: 15mArms for 1min ⇒ Store it for 24hrs. ⇒ Turn lamp on within 1sec with 0.1lx. lamp voltage of test is demand applied voltage.	C
12	Harness Tension test	Weight: 14.7N (tube axis direction) 10s 4.9N (vertical direction) 10s	A
13	Harness Bending test	Weight: 4.9N Bend a lead wire at 90° and put it back to original position. This is one cycle. The same is done to an opposite direction. Repeat the cycle twice.	A

【Basis of judgment】

After reliability test, lamp shall be kept for 24hours under environmental conditions of room temperature and humidity and then shall satisfy standards as follows.

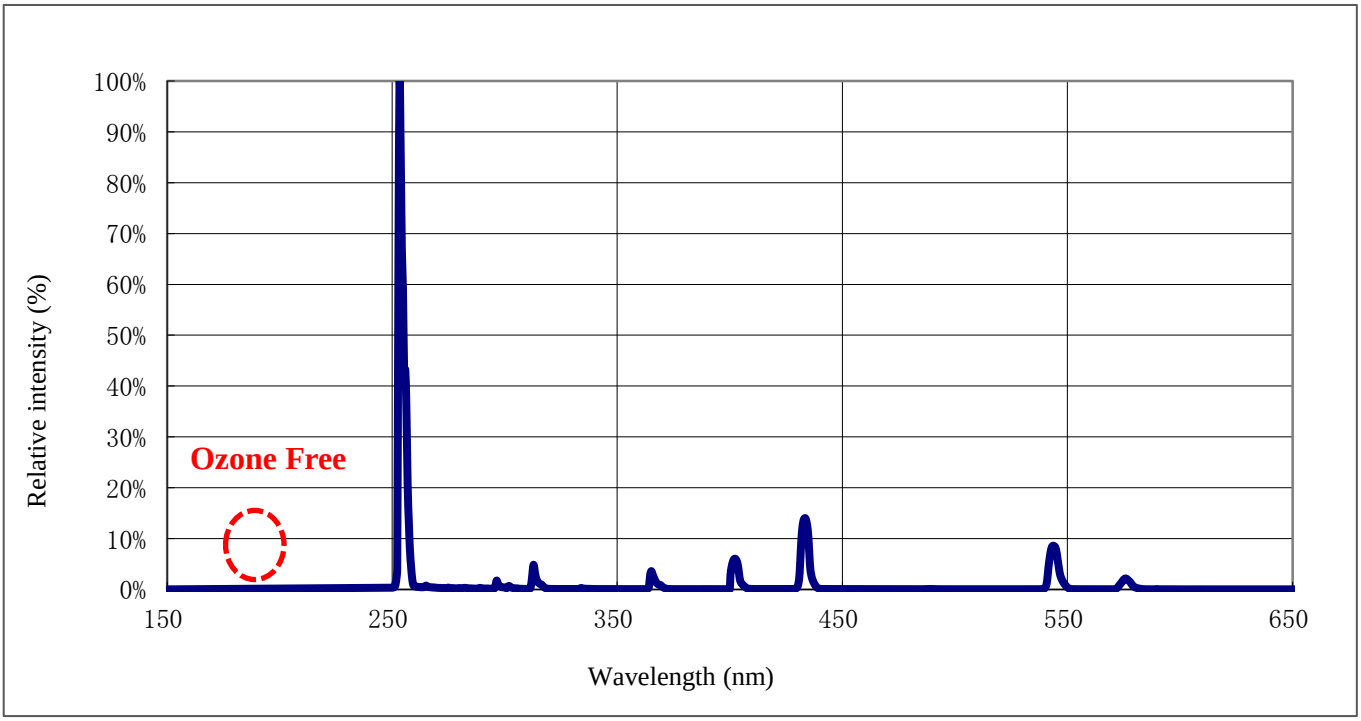
A. Lamp shall satisfy rating specification.
B. Lamp shall satisfy definition of life.
C. Lamp shall be turned on within 1sec.

About Storage

1. Recommended storage conditions
   - Temperature is 0～40℃
   - Humidity is under 80%Rh
   - Storage term is within 6 months.

2. In a case of the storage term (6 months) exceeded
   - There are possibilities that the lighting start time delays or unlighted, if the UV-CCL were stored in a dark space for long time. It's possible to use the lamp again if it's turned on for one minute under the rating conditions, in a daylight area.

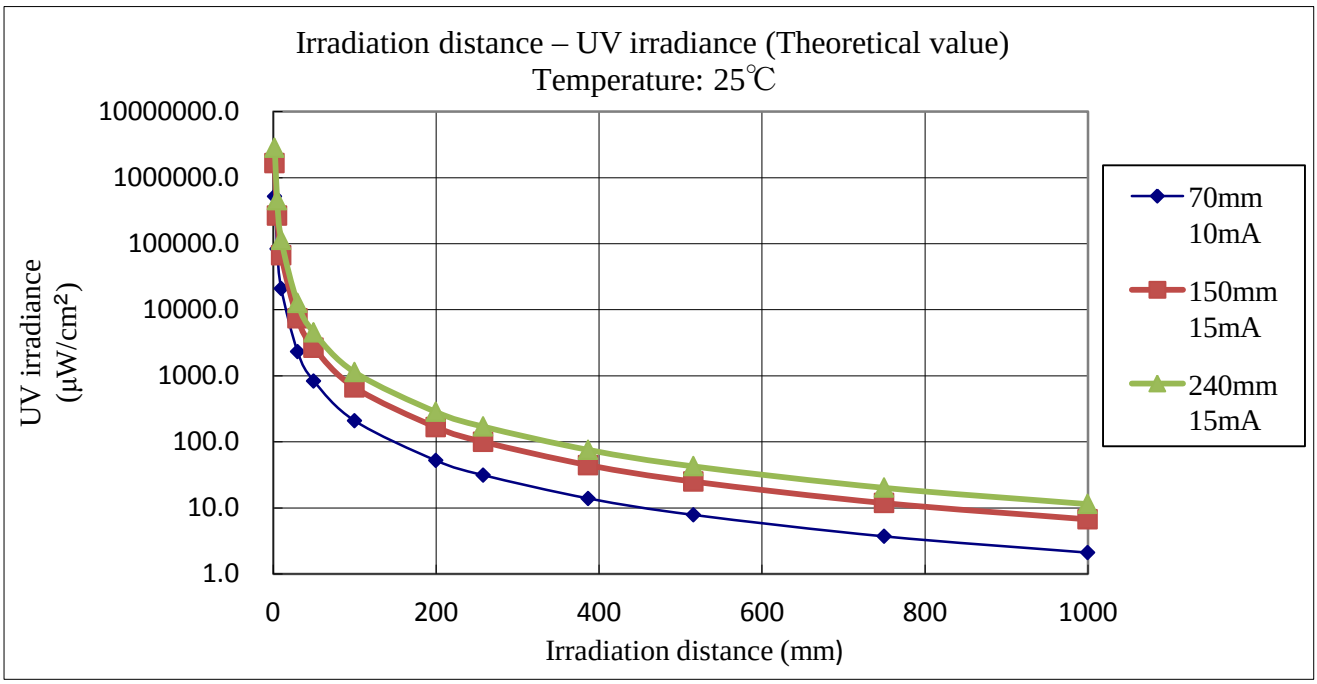
【 Germicidal Lamp spectrum (254nm) 】



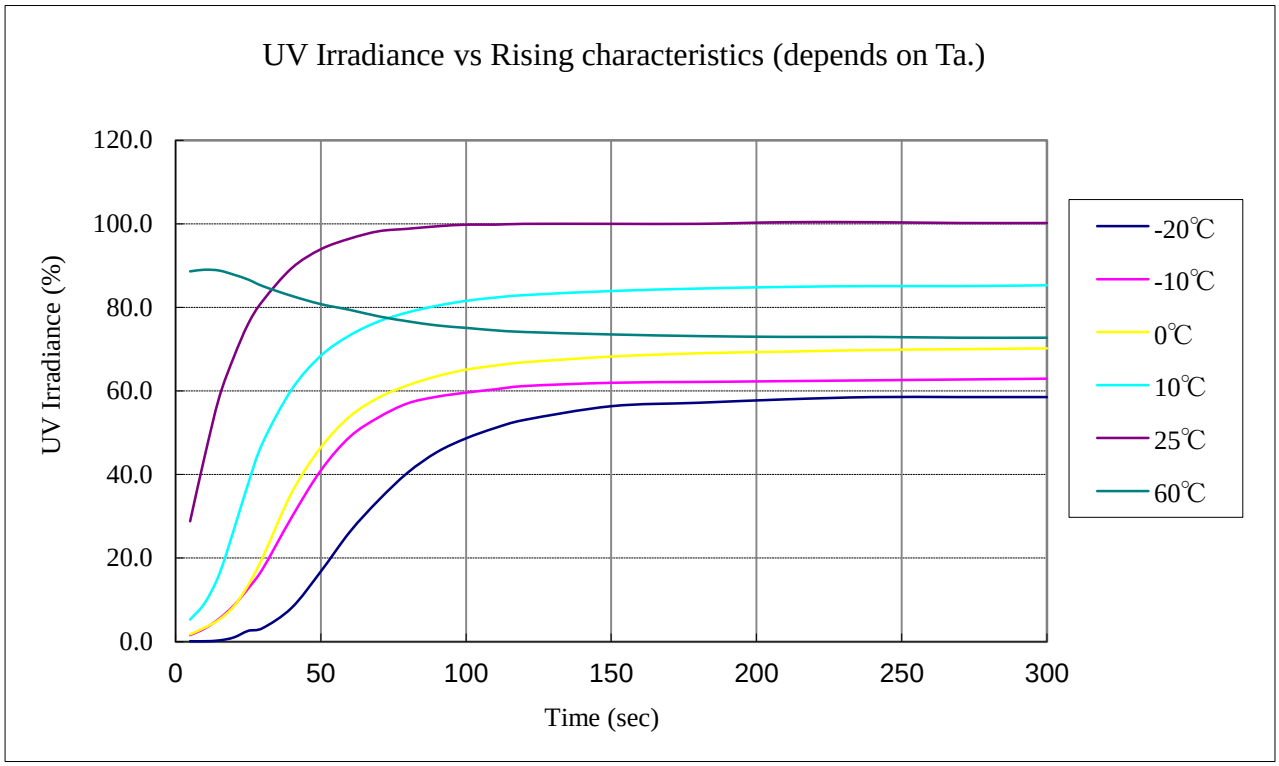
The irradiance of UV is in inverse proportion to the second power of the distance.
(point source of light)

UV irradiance (μW/cm²) = UV irradiance (μW/cm²) / Distance (R2/R1)²

*R1: Distance between UV lamp and object.
R2: Standard distance



◇It's easy to install the lamp close to the target area because of its small size, and possible to get high disinfection power.



◇UV irradiance would be changed depends on the ambient temperature.

1. This product needs invertor (lighting circuit) for turn it on.
   The invertor is high voltage. Please do not touch the lamp and invertor under the switch is on.
   It would be cause of electrification.

2. Regarding to the invertor, please ask our sales.

3. While the UV-CCL is lit, do not look at the UV light(Germicidal Lamp:254nm)
   with your naked eyes. Also, please do not see the reflected light.
   It would be causes of eyes pain and dystonia.

4. Please do not irradiate UV rays to your skin directly or indirectly.
   It would be causes of skin anger and tanning.

5. Please do not dip this product in water. The water penetrate electric wirings and it would be causes of short and electrification.

6. When the connection of the wire harness and the inverter is defective, it causes smoking and the ignition.
   Please affirm made of engagement to the end.

7. Please do not hold wire harness part when you carry it.
   It would be causes for a breaking and unlighted, in a case of the wire harness are pulled more than necessary or pressed to bend them. Please hold rubber socket area when you carry it.

8. The rubber sockets will move during transport.
   So, the dimension that related to the rubber sockets, is noted in brackets.

Correspondence to RoHS,
Minamata Convention on Mercury UV-CCL Compact WH Ass'y TYPE

1. This product is in compliance with RoHS.

2. This product is exempt from the Minamata Convention on Mercury.
   It has been possible to manufacture and sell the lamp after 2020.
   According to rules of municipalities, segregate and discharge them individually at homes, and companies should follow laws and regulations.

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