



PHILIPS

Pure protection

Working together to deliver cleaner water,
air and surfaces, today and tomorrow

Use the power of UV-C light for pure protection against viruses and bacteria



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Pure protection

Every day the air we breathe, the surfaces we touch, and the water we use can affect our health and wellbeing. Because bacteria and viruses that are left behind after routine cleaning can spread the risks and dangers of infections and disease. Philips UV-C lamps have the power to inactivate the DNA and RNA of micro-organisms, rendering them harmless.

Partnership

We offer equipment manufacturers and purification companies state-of-the-art UV-C solutions they need to remain competitive. But our expertise goes far beyond innovative products. We also have a proven track record in UV-C technologies and offer solid development support, including microbiological performance testing. A level of service and support that sets industry standards.

We're also naturally inquisitive and work with other companies to refine our ideas. We go out of our way to understand each application, immersing ourselves in the details to make sure that our UV-C solutions do exactly what you expect them to do for your equipment. This has resulted in the development of a complete package of UV-C lamps, drivers and modules in close co-operation with our partners. We're also investigating the introduction of UV-C LED solutions for equipment manufacturers.

Innovation

Innovation is at the heart of everything we do. Our comprehensive portfolio of UV-C lamp and driver systems offers the next generation of innovation that improves lives. To achieve the best performance from disinfection installations, we also optimize the delicate balance between lamp and driver and test them thoroughly to ensure the ultimate in quality, reliability and performance.

Sustainability

The environment matters to us too. We're leading the way in caring for our planet with innovative lamp systems designed to help maximize quality of life and minimize environmental impact:

- A lack of safe water supplies contributes to diseases and deaths in the developing world. Our UV-C lamp systems can help disinfect drinking water in a cost effective way.
- Our UV-C lamps can be used in a large variety of air disinfection systems for consumer and professional use, including in-duct systems, upper air luminaires and free standing luminaires.
- Bacteria and viruses that cause infections can live on plastic and steel surfaces for up to 3 days.* With our UV-C lamps you can disinfect surfaces overnight or when no one is present. Also they can be used in germicidal chambers or cabinets to disinfect objects.
- We contribute to create a better environment by substituting potentially dangerous chemicals in our UV-C solutions.
- Our products also contain industry-leading low amounts of mercury, have a long lifetime to reduce waste and a high efficacy to reduce energy use.

*Van Doremalen N, Bushmaker T, Morris DH et al. Aerosol and Surface Stability of SARS-CoV-2 as Compared with SARS-CoV-1. N Engl J Med. 2020 Mar 17. doi: 10.1056/NEJMc2004973.

Bankia



UV-C defeats micro-organisms*
Proven effective against viruses, bacteria, molds and spores.



UV-C protects against micro-organism growth
Helps keep the surface of water reservoirs clean from biofilm. Helps keep air treatment systems clean.



Reliable disinfection
Disinfection effect is directly related to UV dose (intensity and exposure time of micro-organisms). It's simple to measure effectiveness once system design is validated.



Easy and cost-effective
UV-C installations have low capital and operation costs and are easy to operate and maintain.

*Fluence (UV Dose) Required to Achieve Incremental Log Inactivation of Bacteria, Protozoa, Viruses and Algae Revised, updated and expanded by Adel Haji Malayeri, Madjid Mohseni, Bill Cairns and James R. Bolton. With earlier contributions by Gabriel Chevretil (2006) and Eric Caron (2006) With peer review by Benoit Barbeau, Harold Wright (1999) and Karl G. Linden.

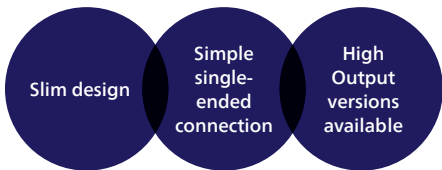
Philips TUV TL Mini



Philips TUV TL Mini lamps are slim double-ended UV-C (germicidal) lamps used in residential water and air disinfection units, as well as for specific surface treatment applications. The small 16 mm diameter of the lamp allows for a small system design and design flexibility. Philips TUV TL Mini lamps offer almost constant UV-C output over their complete lifetime.

Main applications

- Residential drinking water units
- Fish pond water units
- Stand alone air purifiers
- Sanitation cabinets
- Babybottle sterilizers



Features

Short-wave UV-C radiation with a peak at 253.7 nm (UV-C) for disinfection purposes

Protective inside coating ensures almost constant UV-C output over the complete lifetime of the lamp

Special lamp glass filters out the 185 nm ozone-forming radiation

Benefits

Slim system design

Simple single-ended connection

Large range of High Output versions available for optimum UV-C output per lamp length, allowing for reduction of system size

Effective disinfection over the useful lifetime of the lamp

Good environmental choice because of lowest amount of mercury

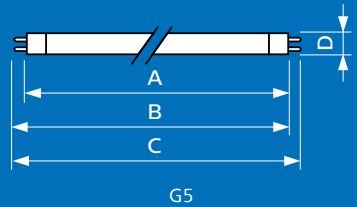
Technical data

Type	Cap-Base	Dim. no	Technical Lamp Wattage (W)	Lamp Voltage (V)	UV-C at 100h (W)	Lamp Current (A)	Useful life (h)	Depreciation at useful lifetime (%)	Irradiance at 1m (μW/cm²)*	Packaging type	Packaging configuration	Ordering number 12 NC
4W	G5	1	4	29	0.9	0.170	6000	25	9.4	1FM	10X25BOX	928000104013
6W	G5	2	6	42	1.8	0.160	9000	20	18	1FM	10X25BOX	928000704013
8W	G5	3	7.1	56	2.5	0.145	9000	15	25	1FM	10X25BOX	928001104013
10W	G5	4	9	48.5	2.8	0.220	9000	15	29	1FM	10X25BOX	927801404001
11W"	G5	2	11.5	34	2.7	0.400	9000	15	27	1FM	10X25BOX	928002204013
16W"	G5	3	15	43	4.4	0.400	9000	15	42	1FM	10X25BOX	928002004013
20W	G5	5	20	45	6.3	0.450	9000	20	62	1FM	10X25BOX	928003404013
25W	G5	6	23	82	8.4	0.350	9000	20	82	1FM	10X25BOX	928002604013
11W 4P SE**	4 Pins Single Ended	7	11.5	34	2.7	0.400	9000	15	27	UNP	32	927971204099
16W 4P SE**	4 Pins Single Ended	8	15	43	4.4	0.400	9000	15	42	UNP	32	927971404099
20W 4P SE	4 Pins Single Ended	9	20	45	6.3	0.450	9000	20	62	UNP	32	927973404099
25W 4P SE	4 Pins Single Ended	10	23	82	8.4	0.350	9000	20	82	UNP	32	927972204099

* Calculated with Keitz formula

** High Output lamps

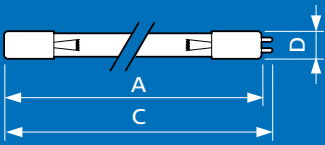
Customized products with bespoke caps, dimensions and power are possible upon request. Please contact us with your requirements.



G5

Dim.*	A	B	B	C	D
no.		min.	max.		
1	135.9	140.6	143	150.1	16
2	212.1	216.8	219.2	226.3	16
3	288.3	293	295.4	302.5	16
4	291.1	295.8	298.2	305.3	16
5	398	402.7	405.1	412.2	16
6	516.9	521.6	524	531.1	16

* Dimensions (mm)



4 Pins Single Ended

Dim.*	A	C	D
no.	max.	max.	max.
7	244.1	251.8	19
8	320.3	328	19
9	430	437.7	19
10	548.9	556.6	19

* Dimensions (mm)

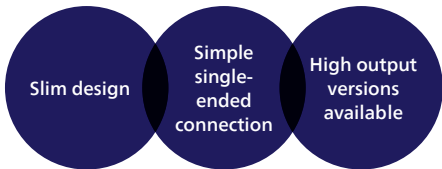
Philips TUV T5



TUV T5 lamps are single- or double-ended UVC (germicidal) lamps used in professional water and air disinfection units. The small 16 mm diameter of the lamp allows for a small system design and design flexibility. TUV T5 lamps offer almost constant UV output over their complete lifetime.

Main applications

- Industrial water disinfection equipment, e.g. for food & beverage industry
- Small municipal water treatment systems
- Swimming pool units
- Air treatment systems (High Output lamp versions)



Features

Short-wave UV-C radiation with a peak at 253.7 nm (UV-C) for disinfection

Small diameter

Protective inside coating ensures almost constant UV-C output over the complete lifetime of the lamp

Special lamp glass filters out the 185 nm ozone-forming radiation

Benefits

Slim system design

Simple single-ended connection

High Output versions for improved performance in moving air and reducing amount of required lamps

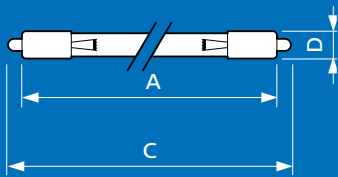
Effective disinfection over the useful lifetime of the lamp

Good environmental choice because of lowest amount of mercury

Technical data

Type	Cap-Base	Dim. no.	Technical Lamp Wattage (W)	Lamp Voltage (V)	UV-C at 100h (W)	Lamp Current (A)	Useful life (h)	Depreciation at useful lifetime (%)	Irradiance at 1m (μW/cm²)*	Packaging type	Packaging configuration	Ordering number 12 NC
36T5 HE SP	Single pin	1	40	97	14.8	0.425	9000	20	138	UNP	32	927970004099
64T5 HE SP	Single pin	2	75	184	32.7	0.425	9000	20	251	UNP	32	927970504099
24T5 HE 4P SE	4 pins single ended	3	33	78	11.9	0.425	9000	20	114	UNP	32	927948204099
24T5 HO 4P SE	4 pins single ended	3	61	77	18.2	0.800	9000	20	175	UNP	32	927948304099
36T5 HE 4P SE	4 Pin Single Ended	4	40	97	14.8	0.425	9000	20	138	UNP	32	927970204099
36T5 HO 4P SE	4 Pin Single Ended	4	75	97	24.4	0.800	9000	20	227	UNP	32	927972104099
48T5 HE 4P SE	4 pins single ended	5	58.4	138	21.9	0.425	9000	20	189	UNP	32	927948604099
48T5 HO 4P SE	4 pins single ended	5	107	135	33.3	0.800	9000	20	289	UNP	32	927948704099
64T5 HE 4P SE	4 Pin Single Ended	6	75	184	32.7	0.425	9000	20	251	UNP	32	927970704099
64T5 HO 4P SE	4 Pin Single Ended	6	145	175	50.6	0.800	9000	20	389	UNP	32	927971104099
22T5 HO G5	G5	7	48	60	15.45	0.800	9000	20	153	UNP	40	928007404099
24T5 HE G5	G5	8	33	78	11.9	0.425	9000	20	114	UNP	40	927928204024
24T5 HO G5	G5	8	61	77	18.2	0.800	9000	20	175	UNP	40	927928304014
36T5 HE G5	G5	9	40	97	14.8	0.425	9000	20	138	UNP	40	928000204024
36T5 HO G5	G5	9	75	97	24.4	0.800	9000	20	227	UNP	40	928002404014
48T5 HE G5	G5	10	58.4	138	21.9	0.425	9000	20	189	UNP	40	927928704024
48T5 HO G5	G5	10	107	135	33.3	0.800	9000	20	289	UNP	40	927928804014
64T5 HE G5	G5	11	75	184	32.7	0.425	9000	20	251	UNP	40	928000404024
64T5 HO G5	G5	11	145	175	50.6	0.800	9000	20	389	UNP	40	928000304014

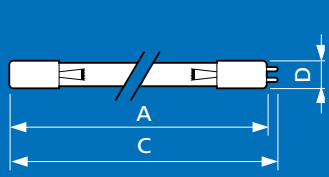
* Calculated with Keitz formula
Customized products with bespoke caps, dimensions and power are possible upon request. Please contact us with your requirements.



Single Pin

Dim.* no.	A max.	C max.	D max.
1	845.4	863.9	19
2	1556.6	1575.1	19

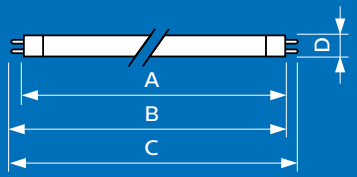
* Dimensions (mm)



4 Pins Single Ended

Dim.* no.	A max.	C max.	D max.
3	693.0	700.7	19.5
4	845.4	853.1	19
5	1149.0	1156.7	19.5
6	1556.6	1564.4	19

* Dimensions (mm)



G5

Dim.* no.	A min.	B min.	B max.	C max.	D max.
7	516.9	521.6	524	531.1	16
8	661.0	665.8	668.2	675.2	16
9	813.4	818.1	820.5	827.6	16
10	1117.0	1121.8	1124.2	1131.2	16
11	1524.6	1529.3	1531.7	1538.8	16

* Dimensions (mm)

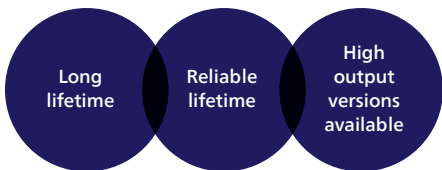
Philips TUV T8



TUV T8 lamps are double-ended UV-C (germicidal) lamps used in professional air disinfection units. TUV T8 lamps offer almost constant UV output over their complete lifetime. Moreover, they have a long and reliable lifetime, which allows maintenance to be planned for in advance.

Main applications

- Air disinfection systems in professional applications such as universities, hospitals, jails and laboratories
- Upper air and whole room disinfection equipment in hospitals
- Areas with low maintenance and/or disruptive costs
- Fish ponds and process water units
- High reliability with the lowest percentage of lamps that fail prematurely in the market



Features

Short-wave UV-C radiation with a peak at 253.7 nm (UV-C) for disinfection purposes

Protective inside coating ensures constant UV-C output over the complete lifetime of the lamp

Long lifetime of 18,000 hours*

90% of all lamps still operate on full output and quality after 15,000 hours*

Special lamp glass filters out the 185 nm ozone-forming radiation

* Based on operation on a Philips electronic driver.

Benefits

Effective disinfection over the useful lifetime of the lamp

Maintenance can be planned in advance, virtually eliminating the need for expensive spot replacement of prematurely failed lamps

High Output versions available for optimum UV-C output per lamp length, allowing for reduction of system size

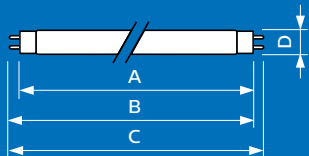
Good environmental choice because of lowest amount of mercury

High reliability with the lowest percentage of lamps that fail prematurely in the market

Technical data

Type	Cap-Base	Dim. no.	Technical Lamp Wattage (W)	Lamp Voltage (V)	UV-C at 100h (W)	Lamp Current (A)	Useful life (h)	Depreciation at useful life (%)	Irradiance at 1m (μW/cm²)*	Packaging type	Packaging configuration	Ordering number 12NC
10W	G13	1	9.9	48	2.7	0.230	9000	15	27	SLV	25	928023904011
15W	G13	2	15.5	55	5.1	0.335	9000	15	51	SLV	25	928039004005
T8 F17	G13	3	16.7	72	6	0.236	9000	15	58	SLV	25	927941904020
25W	G13	2	25	48	7.3	0.600	9000	15	72	SLV	25	928039404005
30W	G13	4	30	102	12.3	0.365	9000	15	112	SLV	25	928039504005
36W	G13	5	36	103	16.4	0.440	9000	15	138	SLV	25	928048604003
55W HO	G13	4	54	86	19.7	0.765	9000	15	180	SLV	25	928049504003
75W HO	G13	5	75	110	27.8	0.835	9000	15	235	SLV	25	928049404003

* Calculated with Keitz formula



G13

Dim.*	A	B	B	C	D
no.	max.	max.	min.	max.	max.
1	331.5	338.6	336.2	345.7	28
2	437.4	444.5	442.1	451.6	28
3	589.8	596.9	594.5	604.0	28
4	894.6	901.7	899.3	908.8	28
5	1199.4	1206.5	1204.1	1213.6	28

* Dimensions (mm)

⚠ Warnings and Instructions for UV lamps, modules and systems

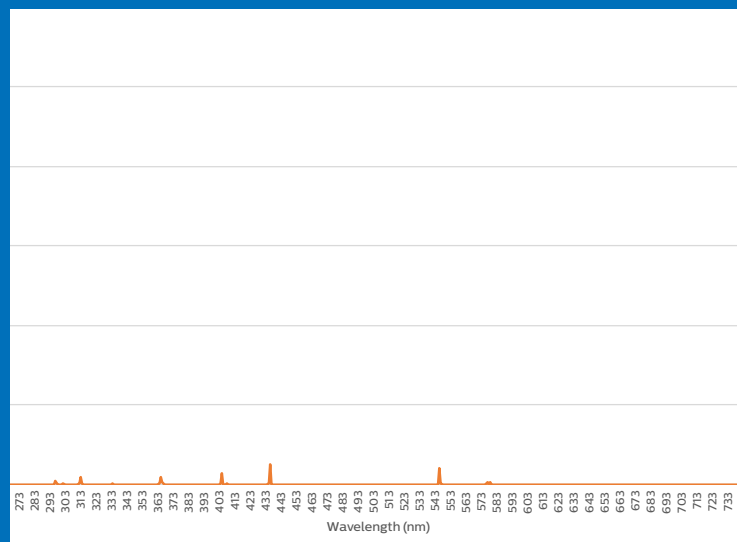
1. UV-C radiation is harmful for eyes and skin, therefore people and animals should always avoid direct exposure to UV-C. When installing the lamps make sure the installation manual of the device is followed and lamps are not switched on during installation. All Philips TUV lamps have warning text and signs on the boxes and individual packaging.
2. WARNING: All plants and/or animals that are exposed to UV-C and/or ozone for a long time may become damaged and/or discolored.



UV-C RISK GROUP 3

WARNING: These lamps are not for general residential or commercial use. Do not purchase this ultraviolet lamp unless it will be installed in a fixture/system specifically designed to accommodate an ultraviolet lamp. If you install these lamps in general purpose lighting fixtures, you may expose yourself and others to dangerous ultraviolet radiation, possibly leading to severe skin and eye damage.

3. Materials that are exposed to UV-C and/or ozone for a long time may become damaged and/or discolored.
4. Our UV-C sources are not intended and shall not be used in applications or activities which may cause death, personal injury and/or damage to the environment.
5. UV-C wavelengths generated by TUV sources:



In addition to the warnings, there shall be instructions for the safe use during assembly, installation, maintenance and disposal in the document.
For Lamps (mercury containing) following should be added in the instructions/user manual.

System Disposal

We recommend that the Philips TUV lamps are disposed of in an appropriate way at the end of their (economic) lifetime. These lamps contain mercury (Hg), necessary for the performance of these lamps. Therefor these lamps should be treated as special waste and be disposed of in accordance with local regulations.

For Signify information on recycling and collection:

<https://www.signify.com/global/sustainability/product-compliance/collection-and-recycling>

Detailed information on waste and recycling that customers

shall adhere to:

Europe (EU):

Directives 2008/98/EC +amd EU/2018/851

Directive 2019/19/EU (WEEE)

USA:

<https://www.epa.gov/mercury/mercury-consumer-products#biz>

Information for Businesses and Industries

Under the Resource Conservation and Recovery Act, some widely generated hazardous wastes, including mercury-containing wastes like mercury-containing bulbs, certain spent batteries, thermostats, barometers, manometer, temperature and pressure gauges, and certain switches, are designated as “universal wastes”. Businesses and industries that qualify as universal waste handlers must follow specific requirements for storing, transporting, and disposing of these wastes. Households are exempt from these regulations.

Note that some states and local jurisdictions have elected to pass regulations that are more stringent than the federal hazardous waste regulations. Several states and municipalities do not recognize the exemption for households; others regulate all fluorescent bulbs as hazardous, regardless of their mercury content. For example, Vermont bans all mercury-containing waste from landfills, including mercury-containing waste generated by households.

Safe Use instructions how to handle a broken bulb:

1. Evacuate people and animals from the room.
2. Ventilate the room for at least 15 minutes prior to starting the clean up.
3. Wear personal protective equipment such as (disposable) gloves and safety glasses.
4. Collect the broken pieces and debris with two pieces of stiff paper or cardboard.
5. Use sticky tape to pick up any remaining fine glass or powder.
6. Clean the area after collecting the debris with a damp cloth or towel to remove any residual particles.
7. Collect all the pieces and debris in a sealable container (glass) and dispose of as special waste.

Detailed information can be found at following sites:

USA: requirements for handling broken mercury products:

<https://www.epa.gov/cfl/cleaning-broken-cfl>

CANADA:

<https://www.canada.ca/en/health-canada/services/health-risks-safety/radiation/everyday-things-emit-radiation/compact-flourescent-lamps.html#a6>