

Philips TUV low pressure mercury lamps and drivers

Philips tubular ultraviolet (TUV) purification lamps help protect our world by de-activating bacteria, viruses and other primitive organisms safely and economically. Also effective when organisms have become immune to other purifying methods, Philips TUV lamps are ideal for use across a range of applications with the ability to purify air, water and surfaces.

From hospitals to laboratories. From food processing industries such as dairies, breweries and bakeries to cold storage rooms and air conditioning systems, Philips TUV lamps are the safe solution, making our surroundings cleaner, safer and more hygienic.

The technology behind Philips TUV lamps provides purification without the addition of chemicals. That makes it an ideal solution for residential and industrial water purification. You will also find that our lamps are used to make our swimming pools, ponds and aquariums cleaner.

Please contact us for tailor made solutions. Lamp life in hours and UVC output in Watts were measured with lamps operated under laboratory conditions. For reference purposes only. Actual life and output depends on operating conditions.

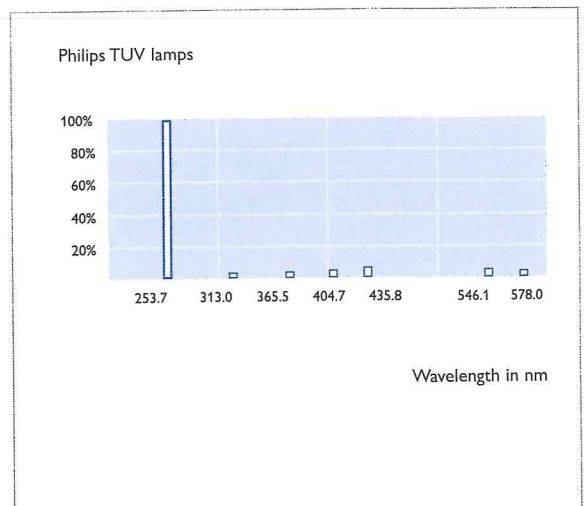
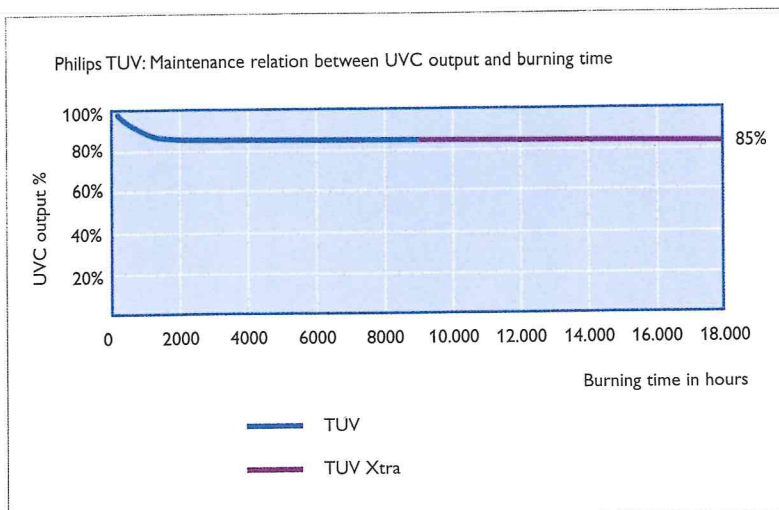
Bf-Bf = Base face - Base face

Bf-Te = Base face - Tube end



Note: Radiation from UVC lamps is harmful to eyes and skin.

Equipment using these lamps must screen completely from direct view.



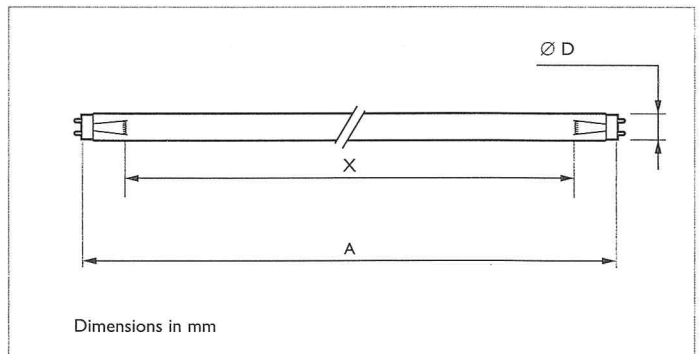
Philips TUV low pressure straight tube lamps

Philips is the largest manufacturer of standard low pressure mercury lamps. These Philips TUV lamps consist of a tubular glass envelope emitting short-wave ultraviolet (UV) radiation with a peak at 254 nm (UVC) for germicidal action. The Philips in-house made glass filters out the 185 nm ozone forming line thus preventing the creation of ozone. High Output (HO) versions are available limiting required space and the footprint of your systems. Low pressure mercury lamps are very efficient, up to 40%. A protective coating on the inside limits the depreciation of the useful UVC output. This allows application manufacturers to design their systems to the highest efficiency. Philips invented and pioneered the use of technology to reduce the mercury level of the lamps. As a result this has been brought down to by far the lowest mercury level in UV lamps in the industry.

Main applications:

- Residential drinking water units
- Stand alone air purifiers
- Wall-mounted air purification units

Features	Benefits
Coating on the inside	The UVC output over lifetime remains constant, allowing optimal design of the water/air treatment unit.
Lowest mercury level	More environmentally friendly



Philips TUV lamps											
Type	Cap/ base	Tube diameter max.	Arc length mm (X)	Bf - Bf mm (A)	Lamp Wattage (W)	Lamp voltage (V)	Lamp current (A)	UVC 100h (W)	$\mu\text{W}/\text{cm}^2$ at 1 meter	Depreciation 9000 h %	Useful lifetime h
Philips TUV 4W	G5	16.0	85	135.9	4	29	0.17	0.9	9	40	6000
Philips TUV 6W	G5	16.0	161	212.1	6	42	0.16	1.5	15	25	9000
Philips TUV 8W	G5	16.0	237	288.3	7	56	0.15	2.1	21	20	9000
Philips TUV 10W	G13	28.0	262	331.5	9	45	0.23	2.2	23	15	9000
Philips TUV 11W	G5	16.0	161	212.1	11	33	0.41	2.6	26	30	9000
Philips TUV 16W	G5	16.0	237	288.3	16	49	0.39	3.9	39	20	9000
Philips TUV F17T8	G13	28.0	526	589.8	17	72	0.27	4.5	45	20	9000
Philips TUV 25W	G5	16.0	466	516.9	28	68	0.49	8.8	88	20	9000
Philips TUV 115W RVHO	G13	40.5	1037	1199.4	115	92	1.50	33.5	610	20*	5000
Philips TUV 115WVHO	G13	40.5	1037	1199.4	115	92	1.50	38.8	360	15*	5000

* at 5000 hours

Philips TUV (Xtra) T8 range

The X-technology is a unique innovation by Philips, the global market leader in lighting. Purification lamps with Philips X-technology (TUV Xtra) have a lifetime that is 2 times longer than that of standard TUV lamps. Philips TUV Xtra lamps are fully retrofit, long-lasting, semi preheat and contribute to a better environment.

The unique X-technology from Philips also guarantees the highest lifetime reliability in the market. It is a case of 'fit and forget': after installation of the lamps, you don't have to worry about them for years to come. These lamps offer the lowest early failure rate in the market, leading to a sharp reduction in maintenance costs (and therefore a substantially lower Total Cost of Ownership) and facilitating the switch from spot to group replacement. Philips UV purification lamps have the lowest mercury content in the market - 2.0 mg in case of TUV and 3.0 mg in case of TUV Xtra lamps. Next to that The unique X-technology from Philips guarantees the highest lifetime reliability in the market (Less waste), this makes them very much environmental friendly.

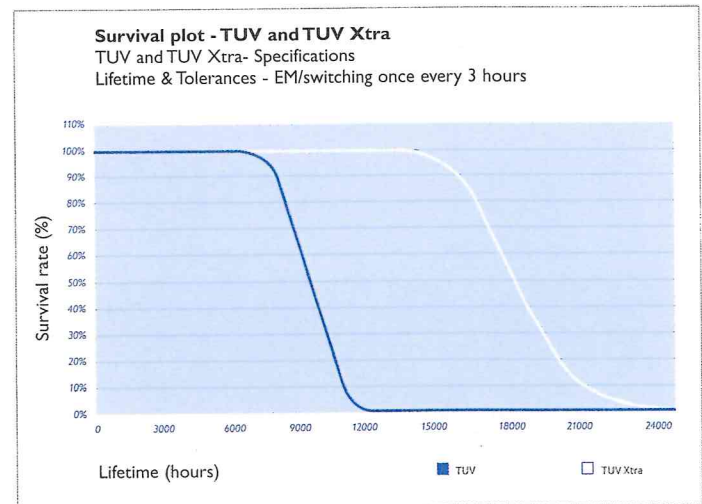
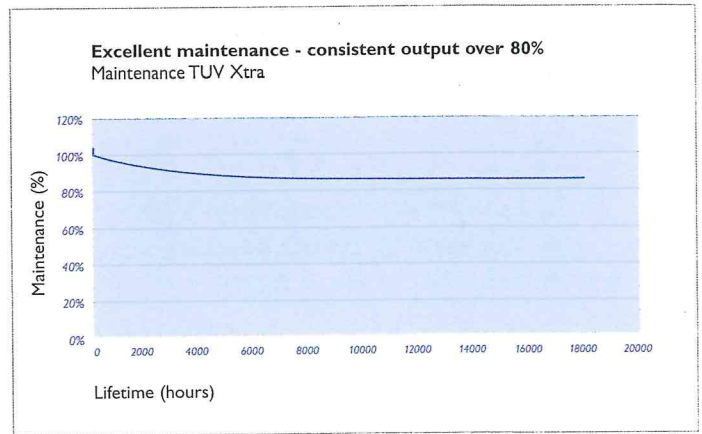
Main applications:

- Residential drinking water units
- Stand alone air purifiers
- Wall-mounted air purification units



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Feature	Benefit
Philips X-technology	highest reliable lifetime in the market



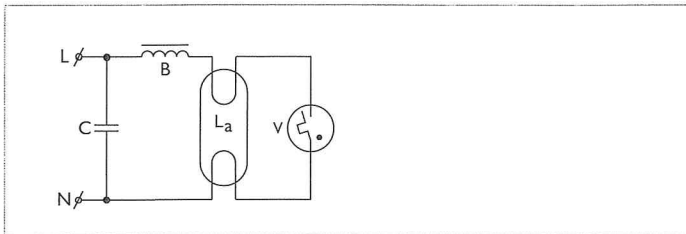
Philips TUV (Xtra) lamps with EM Ballast												
Type	Cap/base	Tube diameter max.	Arc length mm (X)	Bf - Bf mm (A)	Lamp Wattage (W)	Lamp voltage (V)	Lamp current (A)	UVC 100h (W)	µW/cm ² at 1 meter	Depreciation 9000 h %	Useful lifetime h	Useful lifetime TUV Xtra (h)
Philips TUV (Xtra) 15W	G13	28.0	373	437.4	15.9	54	0.34	4.9	47	10	9000	18000
Philips TUV (Xtra) 25W	G13	28.0	373	437.4	25.5	48	0.61	7.0	68	15	9000	18000
Philips TUV (Xtra) 30W	G13	28.0	831	894.6	30.0	100	0.37	11.5	102	10	9000	18000
Philips TUV (Xtra) 36W	G13	28.0	1135	1199.4	36.0	103	0.44	15.0	124	10	9000	18000
Philips TUV (Xtra) 55W HO	G13	28.0	831	894.6	54.0	86	0.77	17.5	156	10	9000	18000
Philips TUV (Xtra) 75W HO	G13	28.0	1135	1199.4	75.0	110	0.84	25.5	211	10	9000	18000

Philips TUV (Xtra) lamps with HF Ballast												
Type	Cap/base	Tube diameter max.	Arc length mm (X)	Bf - Bf mm (A)	Lamp Wattage (W)	Lamp voltage (V)	Lamp current (A)	UVC 100h (W)	µW/cm ² at 1 meter	Depreciation 9000 h %	Useful lifetime h	Useful lifetime TUV Xtra (h)
Philips TUV (Xtra) 15W	G13	28.0	373	437.4	14.9	45	0.33	5.1	48	10	18000	36000
Philips TUV (Xtra) 25W	G13	28.0	373	437.4	25.0	46	0.72	7.5	73	15	18000	36000
Philips TUV (Xtra) 30W	G13	28.0	831	894.6	31.0	100	0.35	13.1	116	10	18000	36000
Philips TUV (Xtra) 36W	G13	28.0	1135	1199.4	32.0	103	0.32	14.7	121	10	18000	36000
Philips TUV (Xtra) 55W HO	G13	28.0	831	894.6	55.0	86	0.84	19.6	174	10	18000	36000
Philips TUV (Xtra) 75W HO	G13	28.0	1135	1199.4	75.0	110	0.84	28.1	232	10	18000	36000

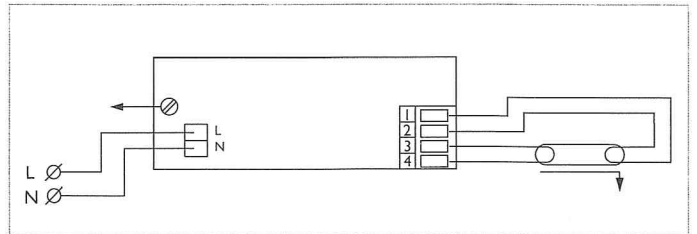
Philips TUV T8 EM and HF electronic drivers

Next to lamps Philips is the only manufacturer that offers a complete inhouse manufactured package of lamp, driver and sleeve what gives us the possibility to optimize the delicate balance and interaction between lamp and driver. With the right driver you can optimize the energy consumption, UV output, and lifetime of the lamp. It is highly recommended to use Philips HF drivers for TUV-Xtra lamps.

Features	Benefits
Optimized for driving Philips TUV lamps	Optimal application performance
Fully automated production	High reliability and long lifetime



EM driver



HF driver

Overview		
Lamp	Ballast	Lifetime (hrs)
TUV	EM	9,000
TUV	HF	18,000
TUV Xtra	EM	18,000
TUV Xtra	HF	36,000

Lifetime expectancy TUV Xtra					
50% survival	HF Preheat	EM	90% survival	HF Preheat	EM
3h cycle IEC	36,000	18,000	3h cycle IEC	30,000	15,500
95% survival	HF Preheat	EM	97% survival	HF Preheat	EM
3h cycle IEC	29,000	15,000	3h cycle IEC	26,500	14,000

Philips TUV (Xtra) lamps EM and HF Drivers		
Type	EM Drivers	HF Drivers
Philips TUV (Xtra) 15W	BTA 15W 230V B2	HF-P 118 TLD EII
Philips TUV (Xtra) 25W	BTA 36W 230V B2	HFP I 60-120 PL-H IUV-2S60-M4LD (120-277V main) - ADVANCE
Philips TUV (Xtra) 30W	BTA 30W 230V B2	HF-P 136 TLD EII
Philips TUV (Xtra) 55W HO	BTA 58W 230V B2	HFP I 60-120 PL-H IUV-2S60-M4LD (120-277V main) - ADVANCE
Philips TUV (Xtra) 75W HO	BTA 36W 230V B2 (2*/I)	HFP I 60-120 PL-H IUV-2S60-M4LD (120-277V main) - ADVANCE

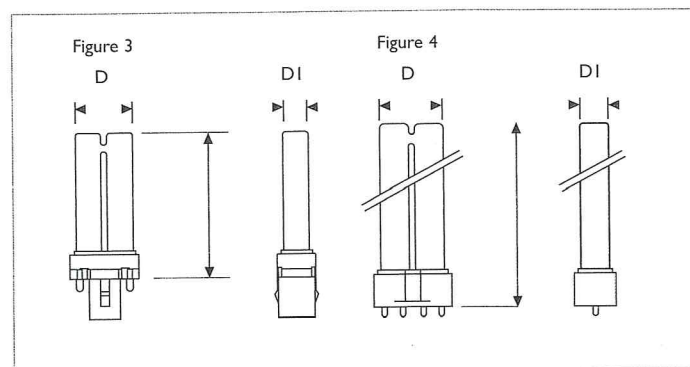
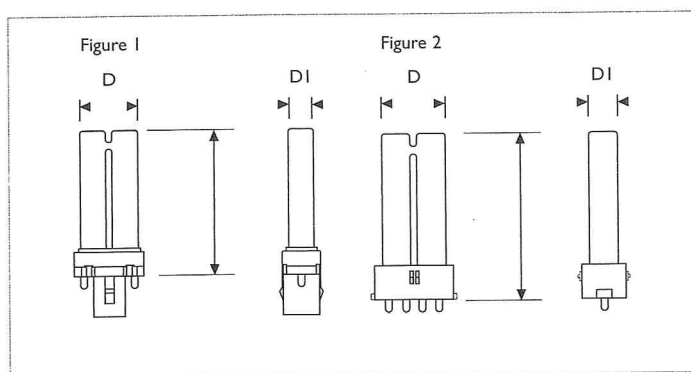
Philips TUV low pressure PL-S and PL-L lamps

These lamps combine all the benefits listed in the previous part and have on top of that, a very compact design. This allows the possibility of a compact unit design. Another advantage is that the lamps are single ended and can be easily replaced. The HO versions are very efficient in air purification applications as they are windchill corrected. This means that in the cooling air flow the lamp will be operating at their optimal temperature range thus giving the highest efficiency. The Philips TUV PL-S lamps have specially adapted starters providing semi preheat starting characteristics already built into the lamp base.

Main applications:

- Residential drinking water
- Pond water
- In-duct air treatment units
- Stand alone air purifiers

Features	Benefits
Compact design	Small footprint for system, design flexibility
Single-ended	Easy lamp replacement
Wind-chill corrected versions	Optimal application performance, better use of lamps, fewer lamps needed



Philips TUV PL-S lamps												
Type	Cap/base	Tube diameter max. mm (D)	Tube diameter I max. mm (DI)	Arc length mm	Bf-Te mm	Lamp Wattage (W)	Lamp voltage (V)	Lamp current (A)	UVC 100h (W)	$\mu\text{W}/\text{cm}^2$ at 1 meter	Depreciation 9000 h %	Useful lifetime h
Philips TUV PL-S 5W 2 pin	G23	28.0	13.0 fig.1	85	82.5	5	35	0.18	1.0	9	20	9000
Philips TUV PL-S 7W 2 pin	G23	28.0	13.0 fig.1	145	112.5	7	46	0.18	1.6	15	20	9000
Philips TUV PL-S 9W 2 pin	G23	28.0	13.0 fig.1	210	144.5	9	60	0.17	2.4	22	20	9000
Philips TUV PL-S 9W 4 pin	2G7	28.0	13.0 fig.2	210	144.5	9	60	0.17	2.4	22	20	9000
Philips TUV PL-S 11W 2 pin	G23	28.0	13.0 fig.1	350	213.3	11	89	0.16	3.6	33	20	9000
Philips TUV PL-S 13W 2 pin	GX23	28.0	13.0 fig.3	230	155.2	13	56	0.29	3.4	31	20	9000
Philips TUV PL-L lamps												
Philips TUV PL-L 18W 4 pin	2G11	39.0	18.0 fig.4	325	220.0	18	58	0.37	5.5	51	15	9000
Philips TUV PL-L 24W 4 pin	2G11	39.0	18.0 fig.4	515	315.0	24	87	0.35	7.0	65	15	9000
Philips TUV PL-L 35W HO 4 pin ⁽¹⁾	2G11	39.0	18.0 fig.4	325	220.0	38	55	0.85	11.0	105	15	9000
Philips TUV PL-L 36W 4 pin ⁽²⁾	2G11	39.0	18.0 fig.4	705	410.0	36	106	0.44	12.0	110	15	9000
Philips TUV PL-L 55W HF 4 pin ⁽¹⁾	2G11	39.0	18.0 fig.4	955	535.0	55	105	0.53	17.0	156	15	9000
Philips TUV PL-L 60W HO 4 pin ^{(1) (2)}	2G11	39.0	18.0 fig.4	705	410.0	65	82	0.80	19.0	235	15	9000
Philips TUV PL-L 95W HO 4 pin ⁽¹⁾	2G11	39.0	18.0 fig.4	955	535.0	90	115	0.80	27.0	250	15	9000

¹⁾ When used with electronic HF driver

²⁾ Lamp is also available with shatterproof SECURA sleeve

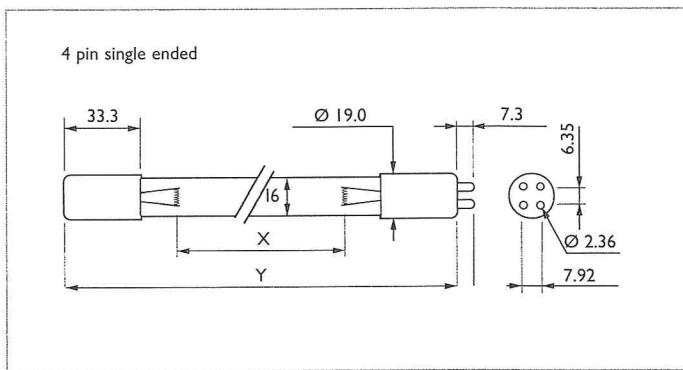
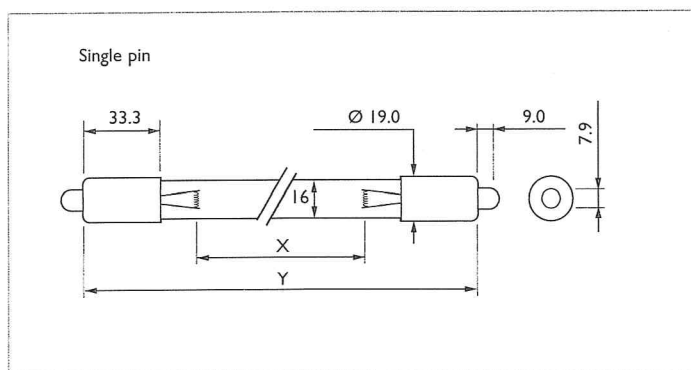
Philips TUV low pressure lamps - T5 range

The Philips TUV T5 range uses a smaller diameter glass tube than the conventional straight tube lamps. They come in a variety of sizes, end caps and output versions. From double capped single pin to single ended and from normal output to HO, guaranteeing that there is a suitable lamp for every application. The extreme low mercury in the lamps has allowed us to bring the first lamps on the market that are compliant to the strict TCLP regulations, and are considered as non hazardous waste.

Main applications:

- Municipal water treatment systems
- Swimming pool applications
- Residential drinking water systems
- Air treatment units

Features	Benefits
Small diameter	Small footprint for system, design flexibility
Some TCLP compliant lamps	Can be disposed as non toxic waste



Philips TUV T5 lamps										
Type	Cap/base	Arc length mm (X)	Bf - Bf mm (Y)	Lamp Wattage (W)	Lamp voltage (V)	Lamp current (A)	UV-C 100h (W)	$\mu\text{W}/\text{cm}^2$ at 1 meter	Depreciation 9000 hr %	Useful lifetime h
Philips TUV 36 T5 SP*	double capped single pin	762	842.4	40	94	0.43	15.0	144	15	9000
Philips TUV 64 T5 SP*	double capped single pin	1473	1553.6	75	176	0.43	31.0	280	15	9000
Philips TUV 64 T5 HO SP*	double capped single pin	1459	1553.6	145	175	0.80	48.0	442	20	9000
Philips TUV 11W 4P-SE**	4 pin single ended	161	241.1	11	33	0.41	2.6	26	30	9000
Philips TUV 16W 4P-SE**	4 pin single ended	237	317.3	16	49	0.39	3.9	39	20	9000
Philips TUV 25W 4P-SE**	4 pin single ended	466	545.9	28	68	0.49	8.8	88	20	9000
Philips TUV 36 T5 4P-SE*	4 pin single ended	762	842.4	40	94	0.43	15.0	144	15	9000
Philips TUV 36 T5 HO 4P-SE*	4 pin single ended	748	842.4	75	97	0.80	25.0	230	20	9000
Philips TUV 64 T5 4P-SE*	4 pin single ended	1473	1553.6	75	176	0.43	31.0	280	15	9000
Philips TUV 64 T5 4P-SE CS*	4 pin single ended	1473	1553.6	75	176	0.43	31.0	280	15	9000
Philips TUV 64 T5 HO 4P-SE*	4 pin single ended	1459	1553.6	145	175	0.80	48.0	442	20	9000

* When used with electronic HF driver

** When used with conventional magnetic ballast 50 Hz