



## Mercury Policy Project

### Environmental NGOs Feedback on draft Delegated Directive for RoHS Exemption Category 1g

16 July 2021

The European Environmental Bureau, the Mercury Policy Project, and the Responsible Purchasing Network<sup>1</sup> welcome the draft proposals from the European Commission to finally revise the annex of the RoHS directive concerning lighting, despite coming with a [5-year delay](#).

As per our letters sent in December 2019 and January 2020<sup>2</sup>, February 2020<sup>3</sup> and February 2021,<sup>4</sup> we strongly urge the European Commission and DG Environment to review and remove exemptions for virtually all fluorescent and most high-intensity discharge (HID) lamps under the Restriction of Hazardous Substances for Electric and Electronic Products (RoHS) Directive, which based on the evidence, we conclude are no longer needed or justified. Phase-outs should take place at the earliest possible date, mainly for the larger categories including compact fluorescent lamps (CFLs), linear fluorescent lamps (LFLs), and low-wattage HID lamps used for general lighting applications.

Although the validity of the existing exemptions expired in July 2016, the delay in an actual decision by the Commission has led to these lamps still being allowed on the EU market, contributing to mercury pollution as well as much more expensive lighting, while more energy efficient mercury-free alternatives are available.

Mercury and its compounds are highly toxic to the developing nervous system as well as harmful to ecosystems and wildlife. Methylmercury, its most toxic form, has the capacity to bioaccumulate and bioconcentrate, especially in the aquatic food chain.

The EU via its 2005 mercury strategy, accompanied measures and as Party to the Minamata Convention on Mercury has as its objective to protect human health and the environment from anthropogenic emissions and releases of mercury and mercury compounds.

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<sup>1</sup> NGOs include the **European Environmental Bureau, (EEB)**, [www.eeb.org](http://www.eeb.org), is a federation of more than 170 environmental citizens' organisations based in over 35 countries in Europe. These organisations range from local and national, to European and international. The aim of the EEB is to protect and improve the environment of Europe and to enable the citizens of Europe to play their part in achieving that goal.

The **Mercury Policy Project (MPP)**, a project of the Tides Center, [www.mercurypolicy.org](http://www.mercurypolicy.org), works to promote policies to eliminate mercury uses, reduce the export and trafficking of mercury, and significantly reduce mercury exposures at the local, national, and international levels. We strive to work harmoniously with other groups and individuals who have similar goals and interests.

The **Responsible Purchasing Network**, [www.responsiblepurchasing.org](http://www.responsiblepurchasing.org), is a non-profit organization based in the United States that helps government agencies, institutions and businesses to specify, evaluate and purchase environmentally preferable goods and services.

<sup>2</sup> <https://eeb.org/library/making-the-case-for-a-ban-on-mercury-lamps/>

<sup>3</sup> <https://eeb.org/library/mercury-containing-lamp-exemptions-to-rohs-directive/>

<sup>4</sup> <https://eeb.org/library/why-hasnt-the-european-commission-banned-wasteful-lamps/>

Furthermore, most recently, under the European Green Deal, the EC has pledged 'to ensure a toxic-free environment', to 'help to protect citizens and the environment better against hazardous chemicals and encourage innovation for the development of safe and sustainable alternatives'.

Given the global implications of the RoHS directive, making definitive decisions without further delay to end the exemptions for compact and linear fluorescent lamps, will confirm and demonstrate the EU's commitment to the health and environmental objectives described above.

## 1. Introduction

As explained in our comments below, equivalent products with no mercury are widely available in the European marketplace and around the globe as lamp makers often advertise. They are listed in the online catalogues of multiple large and small lighting manufacturers such as Osram, Tungsram and Philips. Most importantly, drop-in replacement light-emitting diode (LED) *mercury-free* lamps, retrofit kits and fixtures are not only widely available but are also more energy-efficient and have a longer rated life than most types of fluorescent and HID lamps used for general lighting applications. In addition, LEDs are now cost competitive, giving consumers the opportunity to save money when cut energy, replacement, and waste disposal costs are considered.

It is clear that the lighting sector is a fast improving one in term of availability, performance and price of LED lamps; therefore, policy decisions can and should go beyond of the current market as relevant.

Moreover, LEDs are more acceptable to consumers than CFLs and other types of mercury-added lamps because they are more easily dimmable and give off a higher quality of light. They also last longer, which benefits consumers' pocketbooks because LEDs don't have to be replaced as often. In addition, they don't break as easily. According to *Business Matters Magazine*<sup>5</sup>, there are many benefits to using LEDs, including:

1. LED lights last far longer than incandescent or halogen bulbs.
2. They are highly energy-efficient, converting most of their energy into light, rather than heat.
3. They are ecologically sound because they are mercury-free and have a long life, reducing the user's carbon footprint.
4. LEDs are very tough and durable, making them able to "stand up to harsh weather, vibrations, shocks, and abrasions."
5. LEDs are a safe light source, that can offer excellent colour rendering and great quality light; they have almost no UV emissions, making them good options for museums and food pantries,
6. LEDs offer great design flexibility: "LED light arrays can be placed and combined in an infinite number of ways to produce efficient – but also controllable – illumination. The colour, shade, brightness and distribution of light can be controlled to perfection, which makes for not only technically-useful lighting, but also soothing, uplifting or energising mood lighting."
7. They work well in extreme temperatures, including freezers, unlike most fluorescent lamps.
8. They work instantly with no warm-up time and can be turned on an off many times without reducing their performance.

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<sup>5</sup> "The Top Nine Benefits of Using LED Bulbs," *Business Matters Magazine*, 10 November 2016, <https://www.bmmagazine.co.uk/in-business/top-nine-benefits-using-led-bulbs/>

9. They work on low-voltage power, so they can be used outside.

Our comments below refer to draft delegated acts concerning the following lamp category:

**1g - Single-capped fluorescent lamps for general lighting purposes <30W with a lifetime equal or above 20.000 h: 3,5 mg**

COM proposals for Exemption as per Directive 2011/65		COM proposals	EEB/ RPN/MPP Recommendation
<b>1. Mercury in single capped fluorescent lamps not exceeding (per burner):</b>			
<b>1(g)</b>	<i>For general lighting purposes &lt; 30 W with a lifetime equal or above 20 000 h: 3,5 mg</i>	<i>Expires on [PO: 18 months after the adoption of the Delegated Directive]</i>	<b>We propose that this exemption be revoked with a 12-month transition period, which is the same as for other compact fluorescent lamps.</b>

**Summary - 4000 character text**

Our comments below refer to draft delegated acts concerning the following lamp category:

1g - Single-capped fluorescent lamps for general lighting purposes <30W with a lifetime equal or above 20.000 h: 3,5 mg

**European Environmental Bureau, Mercury Policy Project, and Responsible Purchasing Network Recommendation: We propose that this exemption be revoked with a 12-month transition period, which is the same as for other compact fluorescent lamps.**

Single-capped fluorescent lamps for general lighting purposes <30 watts with a lifetime equal or above 20.000 hours typically are compact fluorescent lamps (CFLs) with a non-integrated ballast that use mercury amalgam as the mercury dosing method. These fluorescent lamps often have a 4-pin base, run on electronic ballasts, and are labeled long-life models. Many of the manufacturers that make them also offer LED lamps that can replace them (as well as other manufacturer's equivalent lamps. Despite having a relatively long-life for a CFL, LED lamps that can replace them almost always have a longer rated life (as well as lower a lower wattage).

Below are several examples of major European lamp manufacturers that offer LED lamps that are drop-in replacements for long-life pin-based CFLs:

- Tungsram's 8W and 10W LED Plug-in 4-Pin Gen 2 Lamps can directly replace its 18W and 26W Biax T/E LongLast 4-pin CFLs because they have the same base and a lamp that is similar in size and shape. Its LED retrofit lamps have a longer rated life (50.000 hours versus 20.000 hours), a higher energy efficiency rating (A+ compared to A) and no mercury. According to Tungsram, its LED plug-in lamps are compatible with most 4-pin CFL ballasts.

- Similarly, Philips' 18W and 26W single-capped fluorescent lamps, which have a rated life of 33.000 hours ([Master PL-C Xtra 4P fluorescent lamps](#)) can be directly replaced by its 6.5W and 9W [CorePro LED](#)

[PL-C 4-pin lamps](#), respectively. The LED replacement lamps, which have the same 4-pin configuration, have a higher energy-efficiency rating and a comparable rated life.

According to Philips, its CorePro 4-pin LED PLC lamps can be used in hospitality, retail, office, industrial and home applications and are easy to install. They have a “conventional form factor to fit into existing luminaires” and are the “fastest and easiest way to upgrade existing luminaires to LED technology.”

-Another major European lighting manufacturer that offers LED replacement lamps for long-life CFLs is LEDVANCE (Osram Sylvania). Like the other two manufacturers listed above, LEDVANCE offers single-capped fluorescent lamps with a lifetime of 20.000 hours or more as well as LED replacements for them, which have a longer rated life (30.000 hours) and a higher energy-efficiency rating (A+ compared to A for the CFLs).

The Design Lights Consortium (DLC), which is a collaboration of utilities and lighting manufacturers based in the United States, currently lists 769 models of 4-pin plug-in LED lamps that work with external drivers on its Qualified Products List, some of which are replacements for long-life single-capped fluorescent lamps.

We call on the Commission to shorten the phase-out period for category 1(g) long-life CFLs from 18 months to 12 months since there are already direct, drop-in LED retrofit lamps widely available from major European lighting manufacturers. These products are not only mercury-free, they are much more energy efficient and last longer than these long-life CFLs. Shortening the phase-out period from 18 months to 12 months would bring this category into alignment with the other CFL categories 1(a)-1(e) and with the long-life double-capped category 2(a)(5), all of which have a proposed 12-month phase-out period.

No more delays should occur in the decision-making process; otherwise mercury will keep being added to the environment, additional CO<sub>2</sub> will be emitted into the atmosphere, and millions of Euros will be lost each day as [recent studies show](#).

Single-capped fluorescent lamps for general lighting purposes <30 watts with a lifetime equal or above 20.000 hours typically are compact fluorescent lamps (CFLs) with a non-integrated ballast that use mercury amalgam as the mercury dosing method. These fluorescent lamps often have a 4-pin base, run on electronic ballasts, and are labeled long-life models. Below are examples of these products along with the same manufacturer's LED replacement for them.

[Tungsum's family of 18W Biax T/E LongLast 4-pin CFLs with Amalgam](#) are single-capped compact fluorescent lamps that have a GX24q-2 4-pin base and an external driver. These long-life CFLs have an energy-efficiency rating of A and a rated life of 20.000 hours. See screenshot below, left. This 18W CFL, which contains 1,3 mg of mercury, can be replaced by Tungsum's 8-watt [LED Plug-in 4-pin Gen 2 Lamp](#), which has the same base and a similar lamp size and shape. The LED lamp has a higher energy-efficiency rating (A+) and a significantly longer rated life (50.000 hours) than the CFL it is designed to replace. See screenshot below, right.

**Product data**

Product Code	93105907
Bulb Shape	Hex plug-in
Bulb maximum overall diameter [mm]	49.3
Maximum Overall Length [mm]	120.7
Net weight per piece [g]	85
Gross weight per piece [g]	125
Operating position	U - Universal
Mercury Content [mg]	1.3
UV radiance	exempt
Brand	Tungsum
Cap/Base	GX24q-2

**Performance data**

Colour Code	827
Rated Lumens [lm]	1200
Weighted energy consumption [kWh/1000h]	18.15
Energy efficiency class (EEC)	A
Rated Life [h]	20000



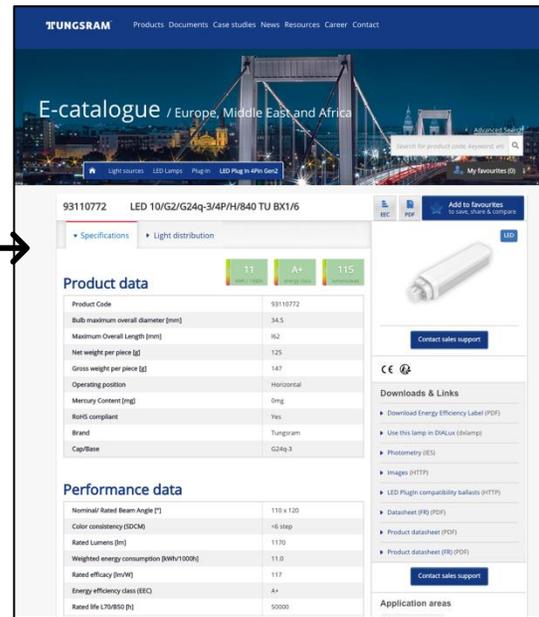
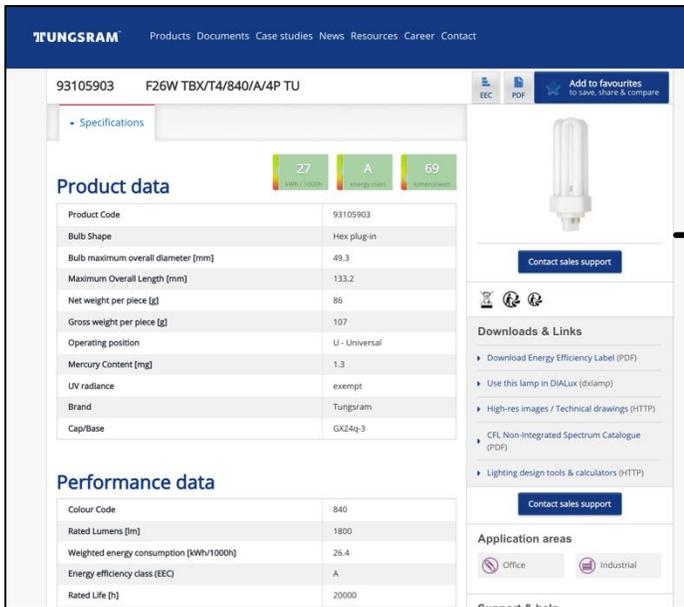
**Product data**

Product Code	93110775
Bulb maximum overall diameter [mm]	34.5
Maximum Overall Length [mm]	162
Net weight per piece [g]	125
Gross weight per piece [g]	147
Operating position	Horizontal
Mercury Content [mg]	0mg
RoHS compliant	Yes
Brand	Tungsum
Cap/Base	G24q-2

**Performance data**

Nominal/ Rated Beam Angle [°]	110 x 120
Color consistency (SDCM)	<6 step
Rated Lumens [lm]	880
Weighted energy consumption [kWh/1000h]	8.25
Rated efficacy [lm/W]	117.33
Energy efficiency class (EEC)	A+
Rated life L70/B50 [h]	50000

[Tungsum's family of 26W Biax T/E LongLast 4-pin CFLs with Amalgam](#) are also single-capped fluorescent lamps; they have a GX24q-3 plug-in base and an external driver, an energy-efficiency rating of A, and a rated life of 20.000 hours. See screenshot below, left. These plug-in CFLs, which contain 1,3 mg of mercury, can be replaced by Tungsum's 10-watt LED [LED Plug-in 4-pin Gen 2 Lamps](#), which have the same base and a similar lamp size and shape. The LED replacement lamp has a higher energy efficiency rating (A+) and a significantly longer rated life (50.000 hours). See screenshot below, right.



According to Tungram, its LED plug-in lamps are compatible with most 4-pin CFL ballasts; see [compatibility table](#), right.

Like Tungram, Philips manufactures 18W and 26W single-capped fluorescent lamps with a rated life of at least 20.000 hours that would fall under this Exemption. For example, Philips' 26W single-capped CFLs ([Master PL-C Xtra 4P fluorescent lamps](#)), which have a GX24q-3 4-pin base and an external driver, have an energy-efficiency rating of A and a rated life of 33.000 hours. See screenshot below, left. These CFLs, which contain 1,6 mg of mercury, can be directly replaced by Philips' 9W [CorePro LED PL-C 4-pin lamps](#), which have the same base and a lamp that is similar in size and shape to the CFL. But the LED retrofit lamp has a higher energy-efficiency rating of A+. See screenshot below, right. Similarly, Philips' 18W Master PL-C Xtra 4-pin CFLs can be easily replaced by its 6.5W 4-pin LED PLC lamps.

**TUNGSRAM**  
Innovation is our heritage  
EST. 1896

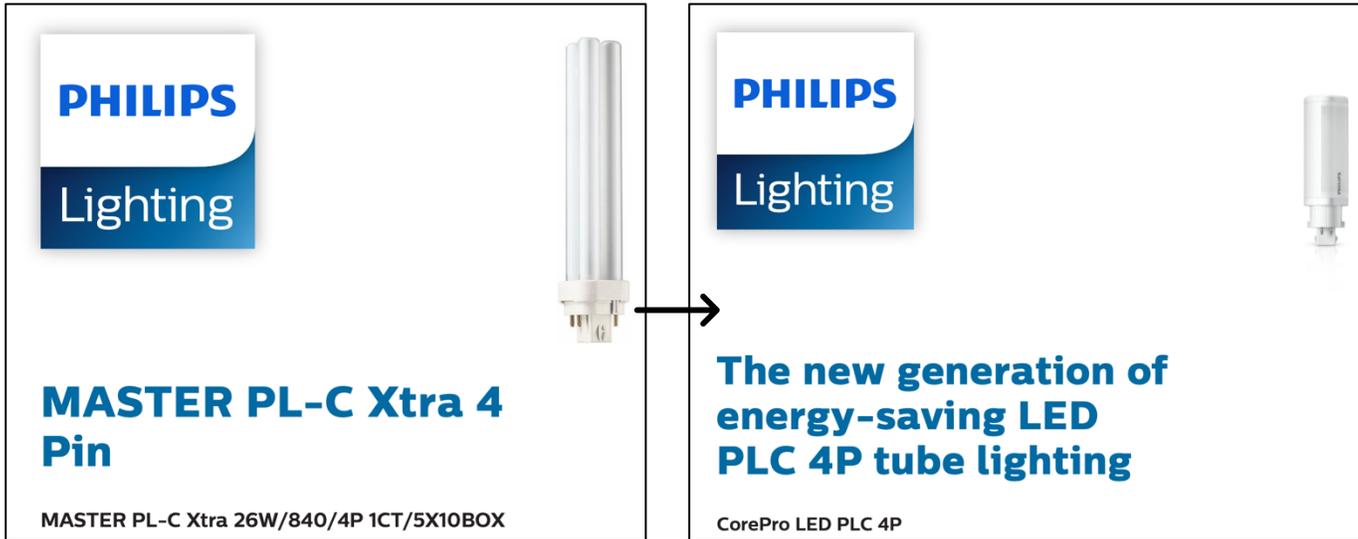
## LED Plug-in 4pin Ballast Compatibility

7.5W and 10W - GEN2

	Ballast Brand	Ballast List		Compatible
		Single	Dual	
7.5W (18Weq)	TRIDONIC	PC PRO 18 FSQ b101	PC 2X18 TCO PRO	
	TRIDONIC	PC 1X18 TCD PRO	PC 1/2X18 TC PRO	
	TRIDONIC	PC 1/2X18 TC PRO	PCA 2X18/24 TCI_EXC_EL one4all c	
	TRIDONIC	PCA 1/18 TCD ECO		
	TRIDONIC	FCA 1/18 TC ECO		
	Philips		HF-P 218 PL-T/C 220-240 9137 001 553	
	Philips		HF-P 218 PL-T/C 220-240 99137 001 203	
	OSRAM	QT-M 1X26-42/230-240 S	QTP-T/E 1X18, 2X18 T/E-D/E	
	OSRAM	QT-T/E 1*18/230-240	INTELLIGENT QTI-T/E 2X18-42 DIM	
	OSRAM	QTP-T/E 1X18, 2X18 T/E-D/E		
	OSRAM	QT-D/E 1*18/230-240		
	OSRAM	QTI-T/E 1/18-57 DIM		
	HUGO	06 6975 18W TC-DEL/TEL	18W 220-240V 097554	
	HUGO	EL 1/2X18DIM-C	09 6955 2X18 T-DEL/TEL	
HELVAR	ELT	EL 1/2X18DIM-C		
		BE218-TC-5		
10W (26Weq)	VOSSLÖH		TYPE ELXC 218.832	
	VOSSLÖH	Type ELXC 142.835	Type ELXC 242.837 2x26-42W	
	VOSSLÖH	Type ELX 142.872	Type ELXe 142.872	
	TRIDONIC	PC 1/26/32/42 TCT PRO	PC 2/26/32 TCT PRO	
	TRIDONIC	PC 1/2X26-42 TC PRO	PC 1/2X26-42 TC PRO	
	TRIDONIC	PC 1/2X26-42 TC PRO sr	PC 1/2X26-42 TC PRO sr	
	TRIDONIC	PC 1X26W	PC 2X26-42 TC PRO	
	Philips	HF-R 1 26-42 PL-T/C EII		
	Philips	HF-R 126 PL-T/C 220-240		
	OSRAM	QT-M 1X26-42/230-240 S	INTELLIGENT QTI-T/E 2X18-42 DIM*	
	OSRAM	QTI-T/E 1X18-57 OIM	QTI-T/E 2X18-42 DIM	
	OSRAM	QTP-T/E 1X26-4 2,2X26	PROFESSIONAL QTP-T/E 1 x26-42,2x26	
	OSRAM	PROFESSIONAL QTP-M 1X26-42*	QT-D/E 2X26/230-240	
	HUGO	26W TC-DEL/TEL 096976		
HUGO	18-42W 220-240V 097535			
HELVAR	EL 1/2X18-42 TCs	EL 1/2X18-42 TCs		

■ Compatible    ■ Not compatible

NOTE: Further ballast compatibility tests can be completed with other brands and models in case physical samples provided!



The benefits of the CorePro 4-pin LED PLC lamps, which are drop-in replacement for long-life CFLs , include significant energy savings, lower maintenance costs thanks to their 2-3 times longer lifetime than conventional lamps, fast and easy installation, and no mercury. According to Philips, these LED lamps, which can be used in hospitality, retail, office, industrial and home applications (and more), have a “conventional form factor to fit into existing luminaires” and are the “fastest and easiest way to upgrade existing luminaires to LED

technology.” For more information on [CorePro LED PL-C 4-pin lamps](https://www.lighting.philips.com/api/assets/v1/file/PhilipsLighting/content/comf7904619-pss-global/LP_CF_7904619_EU.en_AA.PROF.CF.pdf), see [https://www.lighting.philips.com/api/assets/v1/file/PhilipsLighting/content/comf7904619-pss-global/LP\\_CF\\_7904619\\_EU.en\\_AA.PROF.CF.pdf](https://www.lighting.philips.com/api/assets/v1/file/PhilipsLighting/content/comf7904619-pss-global/LP_CF_7904619_EU.en_AA.PROF.CF.pdf).

### CorePro LED PLC 4P

The CorePro LED PLC 4P integrates a LED light source into a traditional fluorescent form factor. This product is the ideal solution for uplampping in general lighting applications: it meets basic lighting requirements, offers significant energy savings, and is environmentally friendly.

#### Benefits

- Reduced operational cost thanks to lower energy consumption
- Lower maintenance cost thanks to 2-3 times longer lifetime than conventional lamps
- Fastest and easiest way to upgrade existing luminaires to LED technology
- Completely safe product and installation process

#### Features

- Highly energy-efficient
- Easy installation
- Conventional form factor to fit into existing luminaires
- No mercury

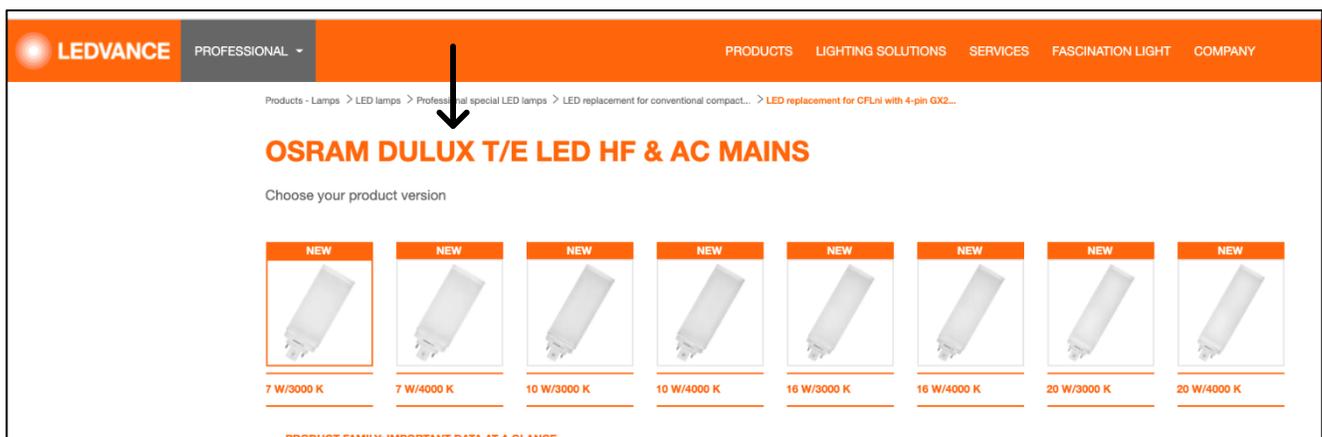
#### Application

- Hospitality, retail, office, industrial and home applications

Another example of a major European lighting manufacturer that offers LED replacements for long-life CFLs is LEDVANCE (Osram Sylvania). Like the other two manufacturers listed above, LEDVANCE offers single-capped fluorescent lamps with a lifetime of 20.000 hours or more as well as LED replacements for them. Its family of long-life CFLs ([DULUX D/E](#)) include 10W, 13W, 18W and 26W models.



LEDVANCE's 18W single-capped plug-in CFLs have an energy-efficiency rating of A and a rated life of 20.000 hours. See screenshot below, left. These CFLs, which contain 1,3 mg of mercury, can be directly replaced by LEDVANCE's 7W [DULUX T/E HE LED lamps](#), which have the same base and a lamp that is similar in size and shape. The LED replacement lamps has a higher energy-efficiency rating of A+ and a longer life (30.000 hours). See screenshot below, right. Similarly, LEDVANCE's 26W DULUX D/E 4-pin CFLs can be replaced with its 10W DULUX T/E HE LED lamps.



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