



PHILIPS

MASTER LEDtube



The right LED tube every time

**Industry leading LED range of T5 and T8
tube replacements**

Easy installation and long tube lifetimes cut LED
repayment times. Philips MASTER LEDtubes are
the easiest and fastest way to upgrade existing
T5 and T8 fluorescent tubes.

**T5 LED
tubes
available
NOW**



Bright easy-to-fit LED tubes **that last and last**

With LEDs taking around half the energy of fluorescent tubes, the energy savings from retrofitting can pay for the tubes themselves within just a few months. From 24/7 usage downwards, it's the installation costs and tube lifetimes that overwhelmingly set actual repayment times.

Besides a complete range of T8 LED tubes covering a large variety of applications, we now have tubes with light outputs up to 3900 lm. The range includes the first truly hassle-free LED 1:1 replacement for 1500mm T5 fluorescent tubes – another in Philips' long history of ground-breaking lighting innovations.

**T5 LED
tubes**
available
NOW





Fast installation and reliably long life

Philips MASTER LEDtubes have 100% safe, hassle-free installation with a simple lamp-for-lamp replacement. Our EM/mains and InstantFit HF tubes fit straight into existing luminaires. Our InstantFit range works with 2x more existing ballasts (600, 1200 and 1500mm InstantFit version lists are regularly updated.

Please refer to the site www.philips.com/ledtube for the latest information about ballast compatibility.

The 50,000 hour guaranteed lifetime outshines fluorescents up to 35000 hours to halve maintenance costs. Including the price of tube, installation and maintenance they pay for themselves within 9 months for permanently lit sockets to 2.4 years for 10 hours/day.

Uniform light distribution with exceptional efficiency

Philips unique design creates a perfectly uniform light, and there are different light outputs to fit most applications. The High Output (HO) range offers high light levels for retail and industry. The Ultra-efficient Ultra Output (UO) has best in class efficiency (up to 156 Lumen/W) and the exceptional light quality and output needed for offices and healthcare. There are warm white (3000K), cool white (4000K) and cool daylight (6500K) versions.

We have the widest range on the market, with standard 1200mm and 1500mm tubes along with special 600, 900 and 1800m versions. Each replaces a different fluorescent type, ensuring a light for every application including covered car parks, offices, schools, industry, healthcare, warehouses, cold rooms and corridors. And they work from -20 to +45°C to suit extreme environments thanks to the unique product design and excellent construction quality.

In order to justify high quality of our professional LED lamps, we've extended our warranty to up to 5 years.

Our LED tubes won't flicker or cause glare. They switch on instantly with excellent color consistency and uniform visual appearance. All T8 MASTER LEDtubes have rotating end-caps to easily direct the light where it is needed.

All in all, an attractive energy saving and mercury-free alternative to fluorescent tubes.

Dimming functionality

Building on the latest InstantFit technology innovation Philips Master LEDtubes can now offer dimming functionality for defined tube/ballast combination.

Please refer to the site www.philips.com/ledtube for the latest update on MASTER LED tube InstantFit range/dimming ballast compatibility.



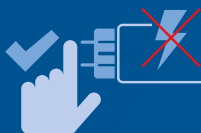
The installer's choice

If you're an installer there are even more reasons for you to choose Philips MASTER LEDtubes. As you'd expect from the world's leading name in lighting, our quality and attention to detail mean that we can also make your life safer and easier.



HF compatibility

No wires to replace, no hassle changing drivers; our InstantFit solution works with High Frequency electronic ballasts, making it easy and safe for all installation methods. All you have to do is slot the tube into your existing fitting.



Pin safety

With Philips products you can safely touch the other end-cap when installing the tube. The integrated driver is also safely isolated from touchable parts. Philips LED tubes adhere to all UL and IEC pin safety requirements.



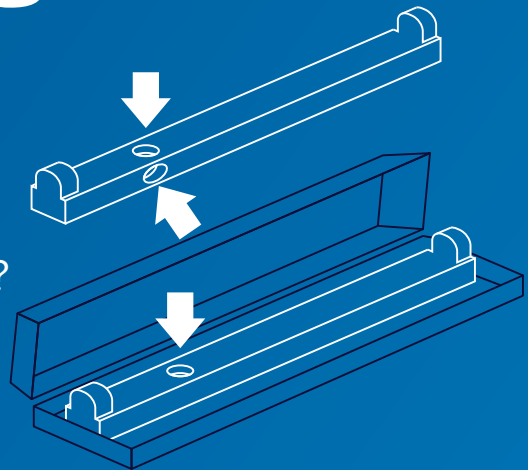
Rotating end-caps

In many applications the pin fitting needs to be rotated. This can be a problem as LED tubes only provide directional light. Our T8 MASTER LEDtubes have rotating end-caps to allow you to rotate the tube by up to 90 degrees. So you can always direct the light to best effect.

Finding the right fit for T8 tubes

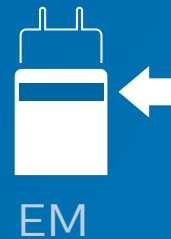
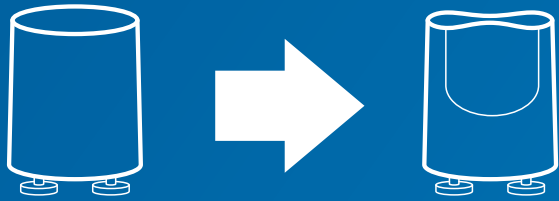
1 Does your luminaire have a starter?

This illustration shows its typical location in an open or closed luminaire with 1200 and 1500 mm tubes.



2 Yes.

The luminaire works with ElectroMagnetic ballasts. Simply replace the old starter with the new (EM) LED starter included in the packaging. Choose the LED tube with one ring on the cap.



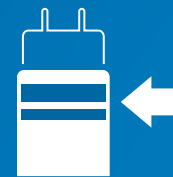
EM

No.

The luminaire works on High Frequency (HF) electronic ballasts. Choose MASTER LEDtube InstantFit with the end-cap with two rings. No need to change drivers or rewire. It's a plug and play solution that works straight out of the box.

Quick and easy installation.

Check the ballast compatibility list on www.philips.com/ledtube

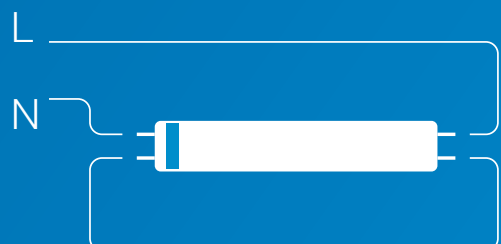


HF

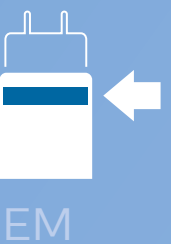
3 No.

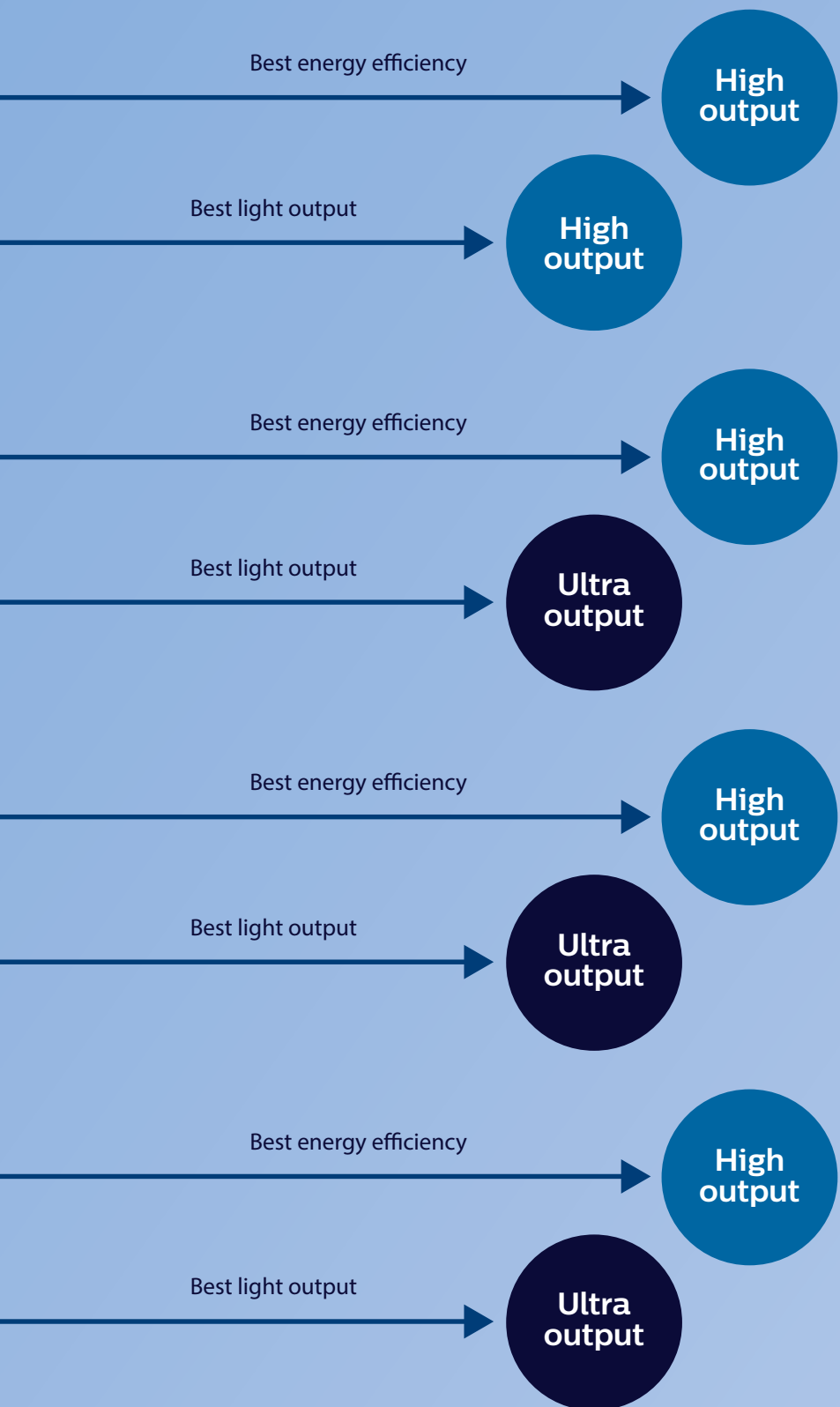
Your luminaire works on High Frequency (HF) electronic ballasts but you can't use MASTER LEDtube InstantFit or your ballast is not compatible.

Cut wires, remove ballast and connect direct to mains. Use the MASTER LEDtube EM with one ring on the cap.



Finding the right T8 tube





High output
2100 – 3100 lumen

- 600 mm
- 600 mm InstantFit
- 1200 mm
- 1200 mm InstantFit
- 1500 mm
- 1500 mm InstantFit

Ultra output
2500 – 3700 lumen

- 1200 mm
- 1200 mm InstantFit
- 1500 mm
- 1500 mm InstantFit

Use the **right** selector tool 

www.philips.com/ledtube


Selector tool is currently only available for T8 LED tube.

Finding the right output

For ultra-output applications, our solutions meet lighting industry standards (EN12464-1) by providing high light levels without causing discomfort or glare*.

Lux

Working, typing reading and data processing require sufficient light with a minimum lux level

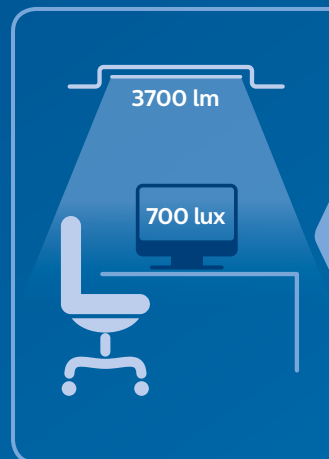


Sufficient light

- › Key parameter for minimum required light is indicated in EN12464-1 in lux (lumens per square meter).
- › EN12464-1 prescribes minimum lux values, uniformity of illumination, and color rendering index, depending on the task.

Unified Glare Rating (UGR)

The amount of glare, annoyance or reflection created by high or non-uniform brightness must be kept to a minimum



Discomfort glare

- › Sensation of annoyance or reflection caused by high or non-uniform brightness (eg. on computer screen).
- › Amount of glare is indicated in EN 12464-1 standard by Unified Glare Rating (UGR).

Lighting requirements

EN12464-1 prescribes minimum lux values, uniformity of illumination and color rendering index, depending on the task



Supermarkets / Retail

- › For Supermarket and Retail applications 500 lux counts as minimum value.
- › UGR standard for Supermarket applications is also set at max 19 UGR.



Industrial

- › For Industry applications, there are many sub segments, each having their own specific standards. In the storage industry segment 300 lux counts as minimum value.
- › UGR standard for Industry applications is set at max 25 UGR.



Office / School / Healthcare

- › For Office applications 500 lux counts as minimum value for writing, typing, reading, data processing, conference and meeting rooms.
- › UGR standard for Office applications is set at max 19 UGR.
- › For most Healthcare applications 200 lux counts as minimum value.
- › UGR standard for applications is set at max 22 UGR.

* Final light quality, besides the LED tube, also depends on application circumstances like e.g. type of luminaire used and amount of daylight.



Finding the **right solution** for your application



High output for higher standards in car parks

High Output LED tubes raise the standards in car parks even higher. With a light output of up to 3100 lumen they provide maximum visibility and safety – particularly important in car parks that operate right around the clock.

	Fluorescent TL-D 1500 mm	MASTER LEDtube HO 1500 mm
High Output 2100 – 3100 lumen Lux	588 lx	660 lx
Longer lifetime	15,000 Hrs	50,000 Hrs
64% Energy savings	72W	20W
Average buying price installer ex VAT	2 €	27 €
Total costs / year	40 €	26 €

Based on the European average of 12 cent/kWh hour (including maintenance and lamp replacement cost)

4,517
€

Savings / year

6.1
months

Payback period

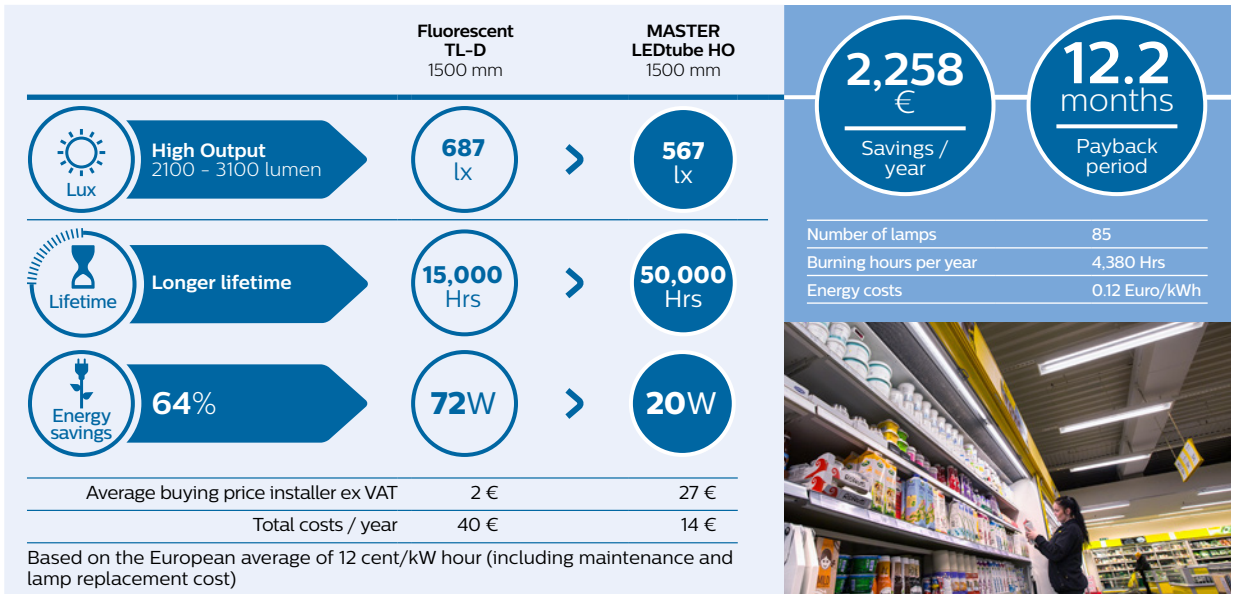
Number of lamps	85
Burning hours per year	8,760 Hrs
Energy costs	0.12 Euro/kWh

› Choose High Output LED tubes for **high light output** with the **best lm/w**



High output on the high street

Retail stores and hospitality venues know light has the power to attract. It creates irresistible displays, brings brands to life and encourages customers to spend longer in store. With our LED tubes you can light up sales at the same time as reducing energy and maintenance costs.

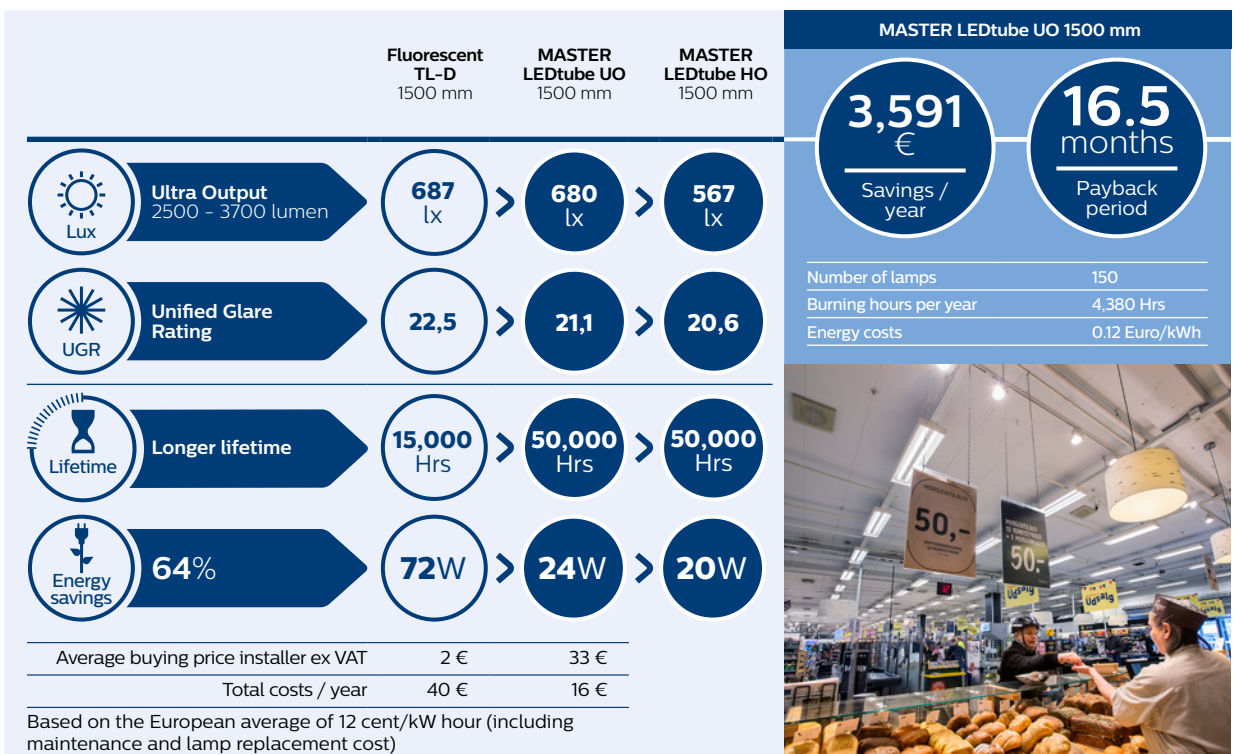


› Choose High Output LED tubes for **high light output** with the **best lm/w**



Ultra output for ultra efficient supermarkets and retail

Beautiful lighting brings out the best in the products on display and enhances the shopping experience for customers. But with lamps burning for up to 18 hours a day, food retailers want solutions that will reduce energy and maintenance costs – and show their green credentials in the best light.

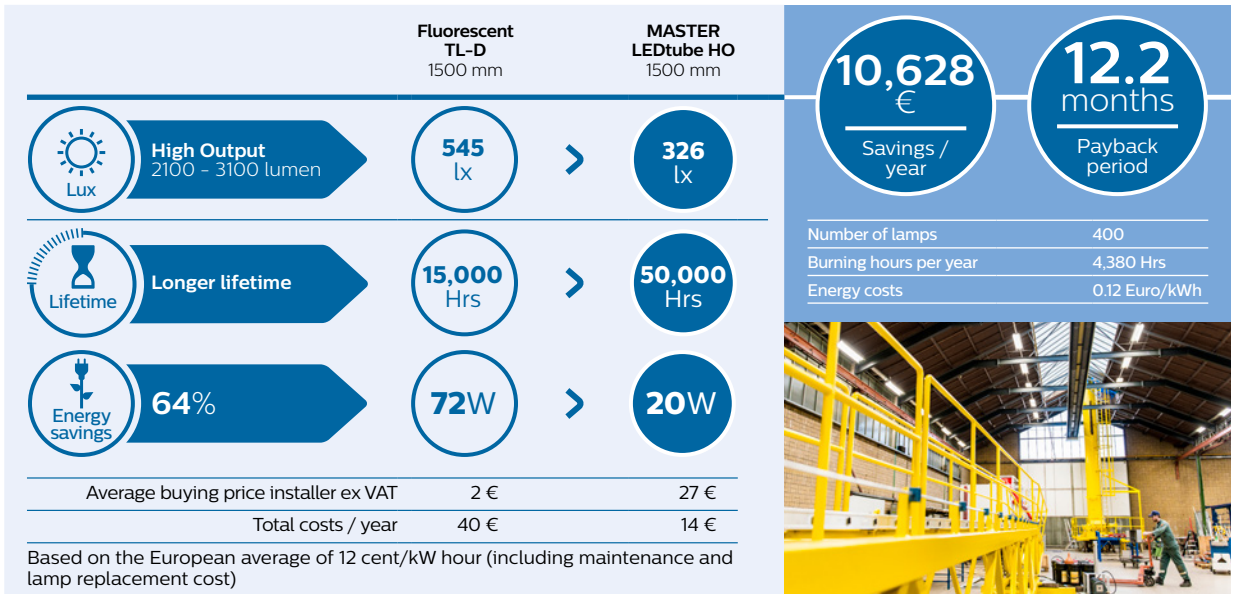


› Choose Ultra Output LED tubes for **ultra efficiency** in the most demanding supermarket and retail applications



High output for highly-efficient industry

Industry demands high visibility, efficiency and safety. But 24/7 operations can run up expensive energy bills. Our solutions save energy and maintain their energy efficiency, even in extremely cold conditions. So they reduce maintenance costs and avoid expensive production down time.

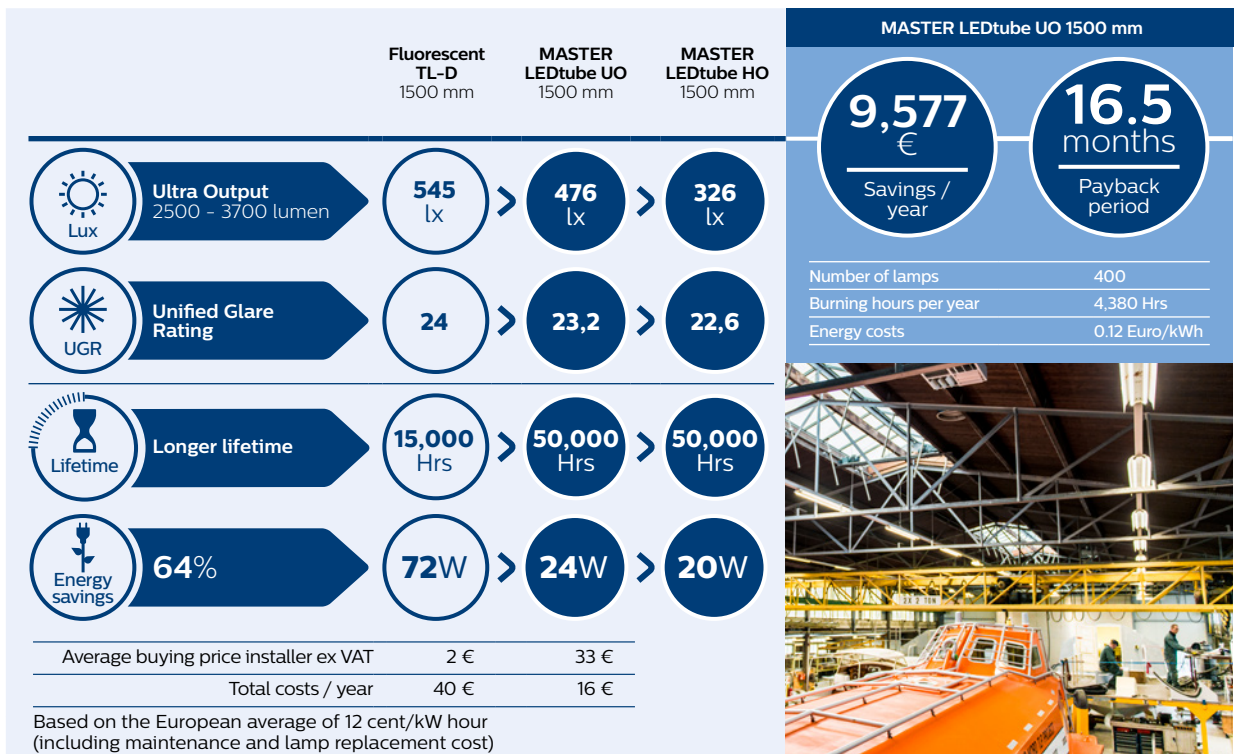


› Choose High Output LED tubes for **high light output** with the **best lm/w**



Ultra output for ultra-efficient industry

In ultra-demanding applications, our Ultra Output LED tubes take safety and performance to the next level. With a super bright light output of up to 3700 lumen they offer the best light output for maximum visibility and minimal maintenance.

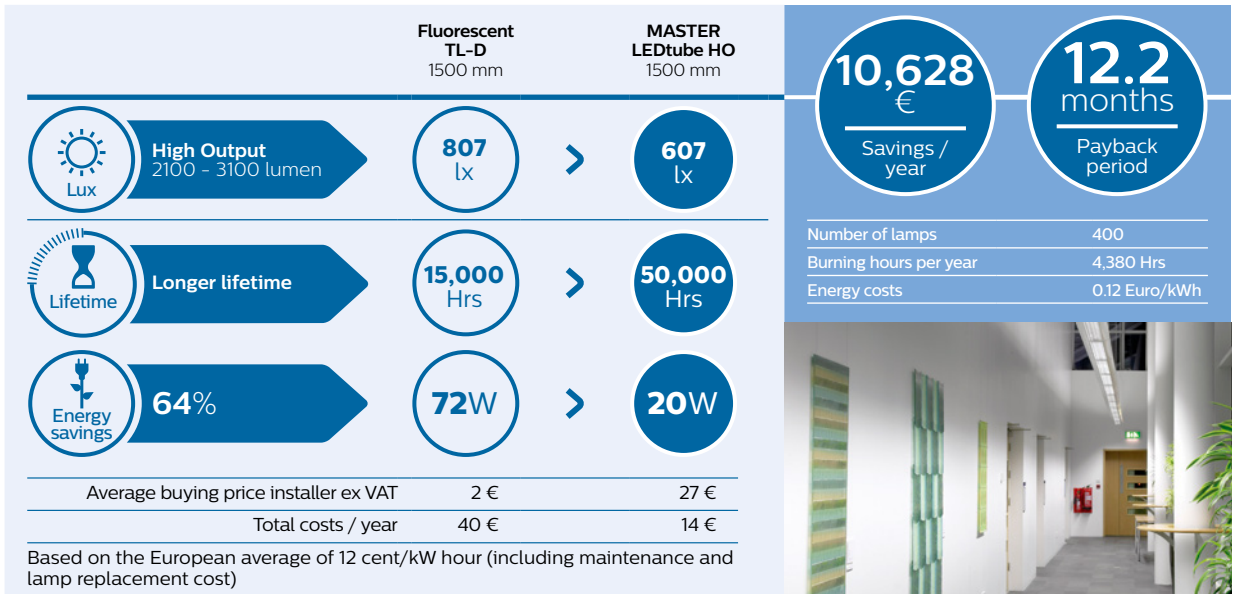


› Choose Ultra Output LED tubes for the **best light output** in the most demanding industry applications



High output for highly efficient offices

With a light output of up to 3100 lumen, our High Output LED tubes provide brilliant light quality with the best lumen per watt. A simple switch for offices and healthcare settings that saves on energy but feels bright and welcoming.

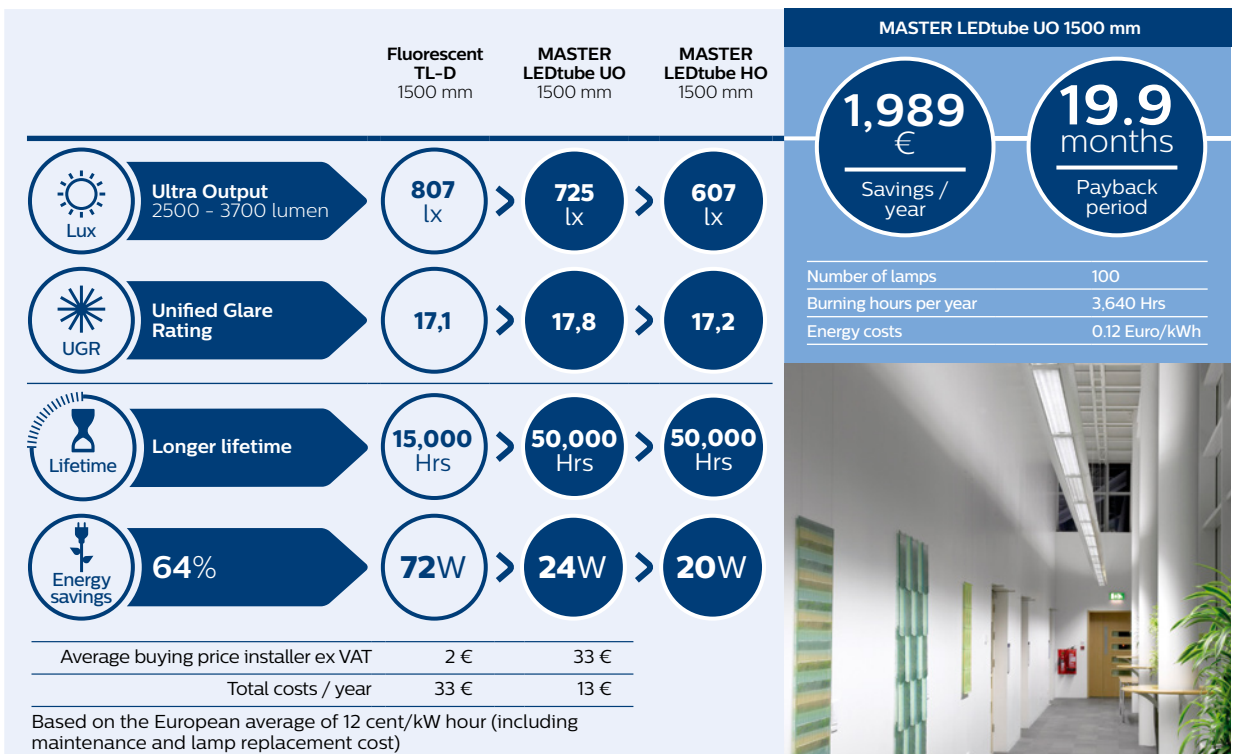


› Choose High Output LED tubes for **high light output** with the **best lm/w**



Ultra output for ultra-efficient offices

Office and school lighting can influence energy levels, performance and wellbeing. Our solutions shine with impressive, high quality light to create the most comfortable ambience that complies with all office norms and still saves on energy. So business is always a pleasure.



› Choose Ultra Output LED tubes for the **best light output** in the most demanding office and healthcare applications

Calculate your own **savings** on

www.philips.com/ledtube

Currently only available for T8 LED tube



Case study



60% energy savings for shipbuilding company

Time to replace the existing fluorescent lighting made it the perfect moment to change to energy-efficient and maintenance-free LEDs for Verhoef Access Technology (Aalsmeerderbrug, North Holland). Facility Manager Dick Verhoef turned to Technische Unie (Haarlem), who, after comparing the various suppliers, chose Philips' MASTER LEDtubes.

Verhoef installed around 2,100 LEDtubes in its factory halls. Despite the tubes' bright output, they consume only 31 W (1,700 units) and 20 W (400 units). Removing the capacitors from the existing fittings brought extra energy savings, giving an ROI of just 18 months.

Uniform warm light, no glare ...

Verhoef is a worldwide manufacturer of lifeboats and access installations on gangways for boats. Every product leaving the factory has to meet the highest international quality and safety standards. The slanted walls of ships must be sanded during production, and workers have to work at heights.

Lighting therefore needs to be of the highest quality, and must not hinder the work in any way. It did even better than that, as Dick Verhoef remarked: "the uniform warm light provided a pleasant work environment."

... and no need to replace for 17 years

Rather than replacing fluorescents every four years, Verhoef won't have to replace the LEDs for 17 years. With the factory spaces being 8 meters high that means nobody will have to climb scaffolding for the next 17 years. By then, the LEDtubes will have paid for themselves nearly 12 times over from energy savings alone – even ignoring maintenance and other savings.

Lower heat emissions from the LED tubes eliminate the need for extra cooling and ventilation, especially in the summer – bringing even more cost savings.



“

The customer used to have to replace tubes every four years, but this will no longer be necessary for the next seventeen years. This creates pure profit, especially considering that the factory spaces are 8 metres high – **it saves a lot of time and effort for the staff.**”

Ron Julio, Customer Relations Manager
Technische Unie, Haarlem

Technical specifications



What's new T5

- High Lm/W performance 150 Lm/W
- Small form factor
- High compatibility Level HF ballast

MASTER LEDtube T5



HF

InstantFit



3000 / 4000 / 6500



G5



NON-ROTATABLE (ROT)



NON-DIMMABLE



50,000 H



BEAM ANGLE
160°

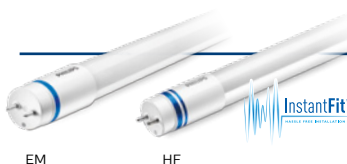


17
1447 1462
DIMENSIONS



Product type	LED	Rotatable end cap	Lumen output	Operation	Beam angle	CRI	Color temperature	EOC 1 pcs (C)*	Energylabel
MASTER LEDtube (HF)	W		lm		°		K	8718696	
1500mm HO 26W 830 T5 Instant Fit	26	No	3700	HF	160	83	3000	68552500	A+
1500mm HO 26W 840 T5 Instant Fit	26	No	3900	HF	160	83	4000	68554900	A++
1500mm HO 26W 865 T5 Instant Fit	26	No	3900	HF	160	83	6500	68556300	A++

MASTER LEDtube T8 High Output



EM

HF

InstantFit



3000 / 4000 / 6500



G13



ROTATABLE (ROT)



DIMMABLE*



NON-DIMMABLE



50,000 H



BEAM ANGLE
160°



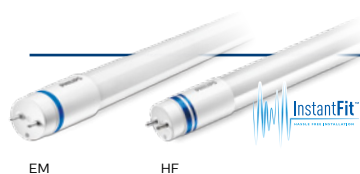
27.3
1198 1498
DIMENSIONS



Product type	LED	Rotatable end cap	Lumen output	Operation	Beam angle	CRI	Color temperature	EOC 1 pcs (C)*	Energylabel
MASTER LEDtube (EM)	W		lm		°		K	8718696	
600mm HO 8W 830 T8	8	Yes	1000	EM & Mains	160	83	3000	69747400	A++
600mm HO 8W 840 T8	8	Yes	1050	EM & Mains	160	83	4000	69749800	A++
600mm HO 8W 865 T8	8	Yes	1050	EM & Mains	160	83	6500	69751100	A++
900mm HO 12W 840 T8	12	Yes	1575	EM & Mains	160	83	4000	68708600	A++
900mm HO 12W 865 T8	12	Yes	1575	EM & Mains	160	83	6500	68710900	A++
1200mm HO 14W 830 T8	14	Yes	2000	EM & Mains	160	83	3000	68718500	A++
1200mm HO 14W 840 T8	14	Yes	2100	EM & Mains	160	83	4000	68720800	A++
1200mm HO 14W 865 T8	14	Yes	2100	EM & Mains	160	83	6500	68722200	A++
1500mm HO 20W 830 T8	20	Yes	2900	EM & Mains	160	83	3000	68712300	A++
1500mm HO 20W 840 T8	20	Yes	3100	EM & Mains	160	83	4000	68714700	A++
1500mm HO 20W 865 T8	20	Yes	3100	EM & Mains	160	83	6500	68716100	A++
MASTER LEDtube (HF)	W		lm		°		K	8718696	
600mm 10.5W 830 T8 InstantFit	10.5	Yes	1000	HF	160	83	3000	5965900	A+
600mm 10.5W 840 T8 InstantFit	10.5	Yes	1050	HF	160	83	4000	5967300	A++
600mm 10.5W 865 T8 InstantFit	10.5	Yes	1050	HF	160	83	6500	5969700	A++
1200mm HO 14W 830 T8 InstantFit	14	Yes	2000	HF	160	83	3000	68752900	A+
1200mm HO 14W 840 T8 InstantFit	14	Yes	2100	HF	160	83	4000	68748200	A++
1200mm HO 14W 865 T8 InstantFit	14	Yes	2100	HF	160	83	6500	68750500	A++
1500mm HO 20W 830 T8 InstantFit	20	Yes	2900	HF	160	83	3000	68758100	A+
1500mm HO 20W 840 T8 InstantFit	20	Yes	3100	HF	160	83	4000	68754300	A++
1500mm HO 20W 865 T8 InstantFit	20	Yes	3100	HF	160	83	6500	68756700	A++



MASTER LEDtube T8 Ultra Output



Product type	LED	Rotatable end cap	Lumen output	Operation	Beam angle	CRI	Color temperature	EOC 1 pcs (C)*	Energylabel
EM MASTER LEDtube (EM)	W		lm		°		K	8718696	
1200mm UO 16W 830 T8	16	Yes	2300	EM & Mains	160	83	3000	68736900	A++
1200mm UO 16W 840 T8	16	Yes	2500	EM & Mains	160	83	4000	68738300	A++
1200mm UO 16W 865 T8	16	Yes	2500	EM & Mains	160	83	6500	68740600	A++
1500mm UO 24W 830 T8	24	Yes	3500	EM & Mains	160	83	3000	68742000	A++
1500mm UO 24W 840 T8	24	Yes	3700	EM & Mains	160	83	4000	68744400	A++
1500mm UO 24W 865 T8	24	Yes	3700	EM & Mains	160	83	6500	68746800	A++
HF MASTER LEDtube (HF)	W		lm		°		K	8718696	
1200mm UO 16W 830 T8 InstantFit	16	Yes	2300	HF	160	83	3000	68800700	A++
1200mm UO 16W 840 T8 InstantFit	16	Yes	2500	HF	160	83	4000	68796300	A++
1200mm UO 16W 865 T8 InstantFit	16	Yes	2500	HF	160	83	6500	68798700	A++
1500mm UO 24W 830 T8 InstantFit	24	Yes	3500	HF	160	83	3000	68806900	A++
1500mm UO 24W 840 T8 InstantFit	24	Yes	3700	HF	160	83	4000	68802100	A++
1500mm UO 24W 865 T8 InstantFit	24	Yes	3700	HF	160	83	6500	68804500	A++

MASTER LEDtube T8



Product type	LED	Rotatable end cap	Lumen output	Operation	Beam angle	CRI	Color temperature	EOC 1 pcs (C)*	Energylabel
EM MASTER LEDtube (EM)	W		lm		°		K	8718696	
1800mm 25W 840 T8	25	Yes	3700	EM & Mains	160	85	4000	48037300	A+



DIMENSIONS

Product type	EOC 10 pcs (I)
Accessory	8718291
Starter EMP	72928000



Please refer to the site www.philips.com/ledtube for the latest information about ballast compatibility.

* Dimming a LED tube: please refer to the site www.philips.com/ledtube for the latest update on our InstantFit LED tube/dimming ballast compatibility information.

