Real pros have the perfect LED tube for every job.

Discover our wide portfolio of efficient LED tubes for every application area, demand and budget.

philips.com/ledtube
Simplicity and ultra-efficiency make Philips LED tubes the quickest and easiest way to upgrade to LED for immediate energy savings over a long and reliable lifetime.

We have an LED tube for every application: bright easy-to-fit tubes that last and last. All our LED tubes have the industry’s lowest failure rates for ultra reliable operation and lifetime.

Choose CorePro LEDtubes for everyday replacement of fluorescent tubes in general applications. The MASTER Value range offers strong performance in more demanding applications with intense usage, while the MASTER range is the right choice for every project that calls for best in class performance. MasterConnect LEDtubes are Interact Ready and can be integrated into smart lighting systems for personal and automated light control.

Fast installation, long reliable life phosphorus LED tubes offer 100% safe and hassle free installation with a simple tube-for-tube replacement. Our EM/Mains, InstantFit HF and universal tubes fit straight into existing luminaires.

Our range has the widest ballast compatibility in the market, including the great majority of 600, 1200 and 1500mm versions.

LED tubes have more than double the life of fluorescents to halve the cost of maintenance. Even with installation and maintenance costs, our tubes pay for themselves within a few months for permanently lit sockets.

High quality professional tubes Our LED tubes won’t flicker or cause glare. They switch on instantly with excellent and uniform color consistency. Defined tube/ballast combinations can be dimmed. And rotating end caps can direct the light where needed.

Switch to LED now
LED tubes are the future. They have no start-up delay, have a long lifetime of up to 100,000 hours compared to fluorescent tubes which have a life of 5,000 - 20,000 hours. Though LED tubes seem more expensive in the start, they end up paying for themselves in the first year due to their lower energy consumption. Make the switch to LED tubes now at https://www.lighting.philips.com/main/products/led-conversion

Fluorescent lights are soon going to be a thing of the past. The Reduction of Hazardous Substances (RoHS) directive of the European Union restricts the use of certain hazardous substances in electrical and electronic equipment, such as the use of mercury in lighting products. In addition, due to the Single Lighting Regulation (SLR), products that fail to meet efficiency requirements are being phased out August 2023.

Discover our attractive energy-saving alternatives to fluorescent tubes now and get all the info you need on: philips.com/LEDtubes
LEDtube wins in every way

Light quality

LEDtube
- Very high light quality
- Instant 100% brightness without start-up delay or flickering
- Optically efficient – emits light only towards usage direction

Fluorescent
- Optically inefficient – light needs to be reflected and redirected
- Flicker upon power-up

Efficiency and robustness

LEDtube
- Highest efficacy up to 210lm/W
- Up to 75% less energy compared to fluorescent
- Low failure rate
- Up to 10 years warranty
- Long lifetime of up to 100,000 hours

Fluorescent
- Lower system efficiency due to losses associated with omnidirectional light output
- Broken tubes release a small amount of toxic mercury as a gas
- Lifetime between 5,000 to 20,000 hours

Cost of ownership

LEDtube
- Relatively high initial costs – but low lifetime costs
- Less maintenance needed – low frequency to change a tube after installation
- Payback time typically within a year with great reduction of energy consumption

Fluorescent
- Cheap to purchase, but much shorter service life
- Will require several replacements plus monitoring and replacing aging or expired components within the lifetime of a single LED alternative

Real pros choose Philips LED tubes for:

- Fast and easy installation: Philips LED tubes are true retrofit, making it the fastest-to-install solution.
- Hassle-free compatibility: No wires to replace or drivers to change
- InstantFit solutions work with HF electronic ballasts
- Universal LED tubes available - compatible with all ballast types
- Philips LEDtube T5: has industry leading ballast compatibility performance that supports:
  - fixed output ballast
  - intelligent/multi-watt ballast
  - dimming ballast (DALI, 1-10V)
- Philips LEDtube T8: Breakthrough design with >10 IPs that give best-in-class compatibility with High-Frequency ballast
  - >45 compatible ballasts per product
- Pin safety: Safe to touch the end cap when installing
- Integrated driver isolated from touchable parts
- Meets UL and IEC pin safety requirements
- Trusted performance: Low early failures
- Warranty up to 10 years
- High resistance to switching cycles

Finding the right LED tubes for different plans, needs and budgets is easy with the extensive Philips portfolio. It ensures that you always have a quality solution at the price you want.
CorePro LEDtube EM/Mains T8

- Best value for money solution to upgrade to LED
- Truly retrofit, safe and hassle-free installations
- Up to 110lm/W efficacy
- Glass platform that optimizes the usage of luminaire optics

Click here to see all products

MASTER Value LEDtube EM/Mains T8

- High efficiency of up to 160lm/W
- Glass platform with a wider beam angle for better lighting uniformity
- Reduced maintenance cycle thanks to the longer lifetime

Click here to see all products

MASTER LEDtube EM/Mains T8

- Best-in-class energy saving with up to 210lm/W
- Truly shatterproof thanks to plastic design according to IEC 61549
- Rotatable end-caps for maximized installation flexibility
- Higher flux through smaller beam angle

Click here to see all products

MASTER LEDtube InstantFit HF T8

- Industry-leading HF ballast compatibility
- Up to 155lm/W energy efficiency
- Shatterproof solution thanks to plastic design according to IEC 61549
- Rotatable end-cap for various applications
- Higher flux through smaller beam angle

Click here to see all products

CorePro LEDtube Universal T8

- Best value for money solution to upgrade to LED
- Universal compatibility: one fits for all
- Up to 110lm/W efficacy
- Glass platform that optimizes the usage of luminaire optics

Click here to see all products

MASTER Value LEDtube Universal T8

- Unbeatable universal compatibility with HF, EM ballasts and direct mains
- High efficiency of up to 160lm/W
- Glass platform with a wider beam angle for better lighting uniformity
- Reduced maintenance cycle thanks to the longer lifetime

Click here to see all products

MASTER LEDtube Mains T5

- Optimized glass design to reduce glare
- Up to 155lm/W energy efficiency
- Operates on direct mains

Click here to see all products

MASTER LEDtube InstantFit HF T5

- Optimized glass design to reduce glare
- Up to 155lm/W energy efficiency
- Unbeatable HF ballast compatibility, with support of dimming ballast

Click here to see all products

MasterConnect LEDTube EM/Mains T8

- Smart retrofit LED solution that brings wireless connectivity to existing luminaires
- Up to 90% of energy savings than fluorescent lamps via advanced lighting controls
- Works seamlessly with Interact Pro system
- Scalable and upgradable from stand-alone to cloud-based solutions

Click here to see all products
Always compliant,
always up-to-date

New regulations for more sustainability

As of September 2021, the EU is implementing two updated regulations, both with the goal of further expanding the lighting industry’s lead in sustainability by delivering significant energy savings for lighting products and systems.

- **The Ecodesign Regulation (SLR):** Aims to improve product performance and sustainability.
- **Products that fail to meet requirements will be phased out.**
- **The Energy Labelling Regulation:** Introduces a new consumer-friendly energy label to empower end users to choose energy efficient products.
- **The new scale reflects how efficient a product is – the definition of A to G is changed based on the new efficacy requirements.**

The RoHS1 ban

- The RoHS1 directive of the European Union restricts the use of certain hazardous substances in electrical and electronic equipment, such as the use of mercury in lighting products. The directive included exemptions for a series of products that have now been revised by the European Commission – with great impact on fluorescent lighting products.
- The EU is convinced of the many benefits of switching to more environmentally friendly, energy efficient LED lighting: With the implementation of EU Ecodesign (SLR) Regulation on September 1st, 2021 and with the amended RoHS (Reduction of Hazardous Substances) directive at the start of 2022, EU countries will phase out numerous light sources, for example CFL-ni, linear fluorescent lamps (T5/T8) may no longer be placed on the market in the European Union from February 24, 2023 and August 24, 2023 respectively.

New regulation for optimized light quality

The Single Lighting Regulation (SLR) also aims to optimize the functional requirements for light quality – above all the stroboscopic effect and flicker of mains voltage light sources. Starting from September 1, 2021 the low-flicker qualities and stroboscopic effect will be governed and further regulated until 2024. With Philips LED tubes you are well prepared for the upcoming regulations: all our MASTER LEDtubes meet the 2024 requirements already!

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.
- **Unified Glare Rating (UGR):** The amount of glare, annoyance or reflection created by high or non-uniform brightness must be kept to a minimum.

**Sufficient light**

- Key parameter for minimum required light is indicated in EN12464-1 lux (lumens per square meter).
- EN12464-1 prescribes minimum lux values, uniformity of Illumination, and color rendering index, depending on the task.
- **UGR:** The amount of glare is indicated in EN12464-1 standard by (Unified Glare Rating: UGR).

**Discomfort glare**

- Definition of annoyance or reflection caused by high or non-uniform brightness (e.g. on computer screens).
- Amount of glare is indicated in EN 12464-1 standard by (Unified Glare Rating: UGR).
- **3700 lm**
- **700 lux**
- **UGR < 20**

Real pros choose light that looks good on camera

Introducing the new camera friendly feature for MASTER LEDtube EM/Mains T8³ and InstantFit HF T8². This innovative product design ensures no visible flicker on camera, giving you assurance of a dependable light source when working with cameras³.

New camera friendly feature in detail

You may have experienced this occasionally -- the light looks perfect to your eyes but flickers on the screen when filming a video. In high power factor LED product, the ripple current through LEDs brings fast change in light, which will not be detected by human eyes. However in case the light and camera shutter are out of sync, it might be captured on the screen.

The use of cameras (phone/digital camera/webcam/security camera etc.) has become part of our daily lives and now more than ever, means that we need light that also looks good on camera. Perfect for use in office, retail, industry or education. The Philips MASTER range brings light quality to a next level. With this update you can still rely on the top performance features for this range.

Key Benefits:
- Up to 3700lm ultra light output with best-in-class energy efficiency
- Truly shutterproof according to IEC 61549 thanks to plastic design
- Rotatable end-caps for maximized installation flexibility
- Higher flux through smaller beam angle
- Up to 75,000 hrs lifetime which greatly reduce replacement cycles

![Product highlight](image)

[1] Including MASTER LEDtube EM/Mains T8 High-Output, Ultra-Output.
[2] Performance is ballast dependent. More details can be found in published ballast compatibility list.
[3] Tested in Signify lab with most commonly used consumer phone, PC and CCTV cameras with frequency <=2kHz*.

For warranty conditions, visit www.lighting.philips.com/main/support/support/warranty
Real pros help their customers realize ultra energy savings

Introducing the Philips MASTER LEDtube Ultra Efficient T8: our most energy efficient LED tube yet.

Are your customers worried about their energy costs?

With energy cost going through the roof, many companies are more aware of their energy consumption than ever. Lighting on average represents up to 35% of electricity consumption in buildings2, so there is much to gain. Did you know there is great potential to save energy, even if you already have LED lights?

With the new Philips Ultra Efficient LEDtube you have the perfect retrofit lamp to help your customers save energy and money with high-quality, long-lasting and ultra energy-efficient LED.

Unbeatable arguments for your customers

- Saves up to 44% in energy costs compared to standard LED tubes3
- Ultra long lifetime of 100,000 hours – more than 3x longer than standard LED tubes
- Less than 5 months payback time compared with fluorescent tubes
- 10 years warranty

The Philips MASTER LEDtube Ultra Efficient is also available with a class B energy rating1. To learn more visit: www.philips.com/ledtube

1 According to the updated European Energy Labelling Regulation (09/2021)
2 According to Signify modeling and market intelligence data
3 Standard LED tube refers to Philips CorePro LEDtube EM/mains Ultra Output operating on direct mains

Cost and CO2 savings right from the start

When updating from fluorescent tubes, your customers can expect a full return on investment in only 5 months. A typical small warehouse will save 13,661 Euro by replacing 100 x 58W fluorescent tubes with 17.6W Ultra Efficient A-class LED tubes.3

Compared to a standard LED tube, a new Philips MASTER LEDtube UE can reduce CO2 emissions by up to 2,285 kg over its lifetime4 – equivalent to the emissions absorbed by more than 103 trees.

Compared to a fluorescent tube, a new Philips MASTER LEDtube UE can reduce CO2 emissions by up to 584 kg over its lifetime4 – equivalent to the emissions absorbed by more than 26 trees.

1 Calculation for a typical warehouse based on 100 x 58W fluorescent lamps with a lifetime of 20,000 hours vs 100 x 17.6W Ultra Efficient A-class LED tubes with a lifetime of 100,000 hours; 0.29 Euro energy cost/hour; 5 euro replacement cost per lamp; 8,760 burning hours per year
2 Standard LED tube refers to Philips CorePro LEDtube EM/mains Ultra Output operating on direct mains
3 Calculation based on CO2 gas emissions of 0.42 kg/kWh.
4 Based on multiple scientific literature, an average fully grown tree can absorb 22 kg CO2 per year.

Designed for you and the planet

With Philips MASTER LEDtube Ultra Efficient, you can offer your customers an innovative and value-adding product to minimize their energy consumption. And although ultra efficient LED tubes require less maintenance and replacement, the higher investment of your customer will give you a higher profit per light point!
With the new Philips CorePro LEDtube Ultra Output T8, making the switch from fluorescent to energy- and cost-saving LED is fast, easy, and hassle-free. Plus there are plenty of additional good reasons to switch:

1. Fluorescent tubes to be banned soon
   - Fluorescent T8 tubes will be phased out from August 24, 2023 due to EU regulations
   - Be best prepared for the switch to LED with Philips LED tubes!

2. Save money straight away
   - Saves up to 56% energy compared to a conventional fluorescent equivalence
   - Philips LEDtubes pay for themselves within a few months
   - Twice the lifetime of fluorescent means less maintenance – and with that an even better overall TCO

3. Hassle-free 1-to-1 replacement
   - True retrofit, making it the fastest-to-install solution saving you time and money
   - Designed for EM ballast operation, and if needed on direct mains
   - Fits straight into existing luminaires

Switching to LED tubes always pays off
Philips LED tubes provide you with unbeatable quality, easy-to-install solutions for every application. It was never easier to switch to LED.

- Available in many sizes
- Substantial energy savings
- Long lifetime and low maintenance
- Ultra bright, flicker-free output
- Various color temperatures available
- No toxic materials, e.g. mercury

**Typical use cases**

<table>
<thead>
<tr>
<th>Office Space</th>
<th>Industry</th>
<th>Classroom</th>
<th>Retail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office space with dimming capability for comfortable light at any moment.</td>
<td>Increase your energy saving without any hassle.</td>
<td>Optimize comfort by adjusting the light level for every task.</td>
<td>Optimize shelf lighting hassle free with LED lighting.</td>
</tr>
</tbody>
</table>

*According to the RoHS (Reduction of Hazardous Substances) directive and European Single Lighting Regulation. Products already placed on the market may still be sold after these dates, but they may not be placed on the market.
Choose the right LED tube for every application

<table>
<thead>
<tr>
<th>Application areas</th>
<th>Value and features:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Industry</td>
</tr>
<tr>
<td></td>
<td>Burning hours: varies, max. 24/7</td>
</tr>
<tr>
<td></td>
<td>Light requirement: 200–500+ lux</td>
</tr>
<tr>
<td></td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td></td>
<td>Warehouses/factories</td>
</tr>
<tr>
<td></td>
<td>Burning hours: 12 hrs/day to 24/7</td>
</tr>
<tr>
<td></td>
<td>Light requirement: 200–300 lux</td>
</tr>
<tr>
<td></td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td></td>
<td>Car park</td>
</tr>
<tr>
<td></td>
<td>Burning hours: 24/7</td>
</tr>
<tr>
<td></td>
<td>Light requirement: 200+ lux</td>
</tr>
<tr>
<td></td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td></td>
<td>Supermarket/retail</td>
</tr>
<tr>
<td></td>
<td>Burning hours: 12 hrs/day to 24/7</td>
</tr>
<tr>
<td></td>
<td>Light requirement: 500+ lux</td>
</tr>
<tr>
<td></td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td></td>
<td>Office/school/healthcare</td>
</tr>
<tr>
<td></td>
<td>Burning hours: usually 12 hrs/day</td>
</tr>
<tr>
<td></td>
<td>Light requirement: 500+ lux</td>
</tr>
<tr>
<td></td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td></td>
<td>Public buildings</td>
</tr>
<tr>
<td></td>
<td>Burning hours: 12 hrs/day to 24/7</td>
</tr>
<tr>
<td></td>
<td>Light requirement: 100–500+ lux</td>
</tr>
<tr>
<td></td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
</tr>
</tbody>
</table>

Find the right Philips LED tube for every application and demand using our handy product finder: philips.com/productfinder
What type of LEDtube do I need?

Does your luminaire have a starter?

Yes  No

1. Turn off power supply
2. Remove lamp
3. Remove starter
4. Install LED starter
5. Install LED tube (T8; EM/Mains or UN) with light opening facing downwards
6. Turn on power supply

1. Turn off power supply
2. Remove lamp
3. Remove cover to expose ballast
4. Cut wires and remove ballast
5. Applicable for T8 EM/Mains, T8 UN and T5 Mains
6. LED tube (T8 or T5; EM/Mains, Mains or UN)
7. Turn on power supply

Pro tip for choosing a Philips LED tube: Watch out for the rings!

T8 T5
One ring: EM/Mains (Electro-magnetic ballast or direct mains)
Two rings: HF (High-frequency Electronic ballast)
Three rings: UN (Universal)
No ring/one ring: Mains (Electro-magnetic ballast or direct mains)
Two rings: HF (High-frequency Electronic ballast)
Get ready to save energy and costs

### Parking
Car parks and transportation networks need to feel bright and welcoming 24 hours a day. White LED light has a higher perceived brightness and superior color rendering, so people feel safer. 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.

<table>
<thead>
<tr>
<th>Lamp wattage</th>
<th>Total costs/year/lamp*</th>
<th>Number of lamps</th>
<th>Burning hours/year</th>
<th>Total savings/year</th>
<th>Payback period</th>
</tr>
</thead>
<tbody>
<tr>
<td>58W</td>
<td>31.5W</td>
<td>100</td>
<td>8,760 hrs</td>
<td>13,128 €</td>
<td>0.9 months</td>
</tr>
<tr>
<td></td>
<td>23W</td>
<td></td>
<td></td>
<td>10,117 €</td>
<td>1.5 months</td>
</tr>
<tr>
<td></td>
<td>21.7W</td>
<td></td>
<td></td>
<td>13,107 €</td>
<td>1.6 months</td>
</tr>
<tr>
<td></td>
<td>17.6W</td>
<td></td>
<td></td>
<td>13,631 €</td>
<td>2.5 months</td>
</tr>
</tbody>
</table>

Equivalent to emissions absorbed by 2320 trees 22 kg CO₂ per year.

### 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.

<table>
<thead>
<tr>
<th>Lamp wattage</th>
<th>Total costs/year/lamp*</th>
<th>Number of lamps</th>
<th>Burning hours/year</th>
<th>Total savings/year</th>
<th>Payback period</th>
</tr>
</thead>
<tbody>
<tr>
<td>58W</td>
<td>31.5W</td>
<td>100</td>
<td>4,380 hrs</td>
<td>5,124 €</td>
<td>3.1 months</td>
</tr>
<tr>
<td></td>
<td>25.27 €</td>
<td></td>
<td></td>
<td>6,221 €</td>
<td>3.7 months</td>
</tr>
<tr>
<td></td>
<td>22.88 €</td>
<td></td>
<td></td>
<td>6,353 €</td>
<td>5.9 months</td>
</tr>
<tr>
<td></td>
<td>28.30 €</td>
<td></td>
<td></td>
<td>13,661 €</td>
<td>4.7 months</td>
</tr>
</tbody>
</table>

Equivalent to emissions absorbed by 2320 trees 22 kg CO₂ per year.

### Industry
In ultra-demanding applications, 24/7 operations can run up expensive energy bills. With a super bright light output of up to 3700 lumen our Ultra Output and Ultra Efficiency LED tubes combine both the best light output for maximum visibility AND the highest lumen per watt efficiency.

<table>
<thead>
<tr>
<th>Lamp wattage</th>
<th>Total costs/year/lamp*</th>
<th>Number of lamps</th>
<th>Burning hours/year</th>
<th>Total savings/year</th>
<th>Payback period</th>
</tr>
</thead>
<tbody>
<tr>
<td>58W</td>
<td>31.5W</td>
<td>100</td>
<td>6,480 hrs</td>
<td>5,035 €</td>
<td>4.5 months</td>
</tr>
<tr>
<td></td>
<td>23W</td>
<td></td>
<td></td>
<td>6,221 €</td>
<td>4.6 months</td>
</tr>
<tr>
<td></td>
<td>21.7W</td>
<td></td>
<td></td>
<td>6,353 €</td>
<td>7.2 months</td>
</tr>
<tr>
<td></td>
<td>17.6W</td>
<td></td>
<td></td>
<td>13,661 €</td>
<td>5.5 months</td>
</tr>
</tbody>
</table>

Equivalent to emissions absorbed by 2320 trees 22 kg CO₂ per year.

### Office
With a light output of up to 3100 lumen, our High Output LED tubes provide brilliant light quality with the best lumen per watt. Ultra Output LED tubes shine with impressive, high quality light to create the most comfortable ambience that complies with all office norms and still saves on energy.

<table>
<thead>
<tr>
<th>Lamp wattage</th>
<th>Total costs/year/lamp*</th>
<th>Number of lamps</th>
<th>Burning hours/year</th>
<th>Total savings/year</th>
<th>Payback period</th>
</tr>
</thead>
<tbody>
<tr>
<td>58W</td>
<td>31.5W</td>
<td>100</td>
<td>3,000 hrs</td>
<td>3,465 €</td>
<td>4.5 months</td>
</tr>
<tr>
<td></td>
<td>25.27 €</td>
<td></td>
<td></td>
<td>4,489 €</td>
<td>4.6 months</td>
</tr>
<tr>
<td></td>
<td>22.88 €</td>
<td></td>
<td></td>
<td>4,668 €</td>
<td>7.2 months</td>
</tr>
<tr>
<td></td>
<td>28.30 €</td>
<td></td>
<td></td>
<td>4,261 €</td>
<td>5.5 months</td>
</tr>
</tbody>
</table>

Equivalent to emissions absorbed by 2320 trees 22 kg CO₂ per year.
Signify, previously known as Philips Lighting, is the world leader in connected LED lighting systems, software and services. We proudly market the best lighting brands in the world, including Philips and Interact.

**PHILIPS**

The Philips brand stands for quality and energy-efficiency in light. For over 125 years, Philips products have been at the forefront of innovation. Today Philips is recognized as the leading brand in lighting.

**interact**

The Philips brand stands for quality and energy-efficiency in light. For over 125 years, Philips products have been at the forefront of innovation. Today Philips is recognized as the leading brand in lighting.

---

**You and Signify – a reliable partnership**

Close cooperation before, during and after projects is important to us. Our local service teams make sure you always get the competent support and information you need.

We are closely working with local wholesalers to offer you flexible and on-time delivery – and product availability you can rely on.

To help you stay on top of your game the Signify Lighting Academy offers a comprehensive range of educational resources for you to grow your expertise and get certified.

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**Brighter lives, better world**

Signify is 100% carbon neutral since September 2020.

We recycle up to 90% of our manufacturing waste.

We use 100% renewable electricity.

Our paper packaging for LED lamps and luminaires is saving over 500,000 kilos of plastic waste per year.

Thank you for choosing Philips products offered by Signify and joining us on our mission!