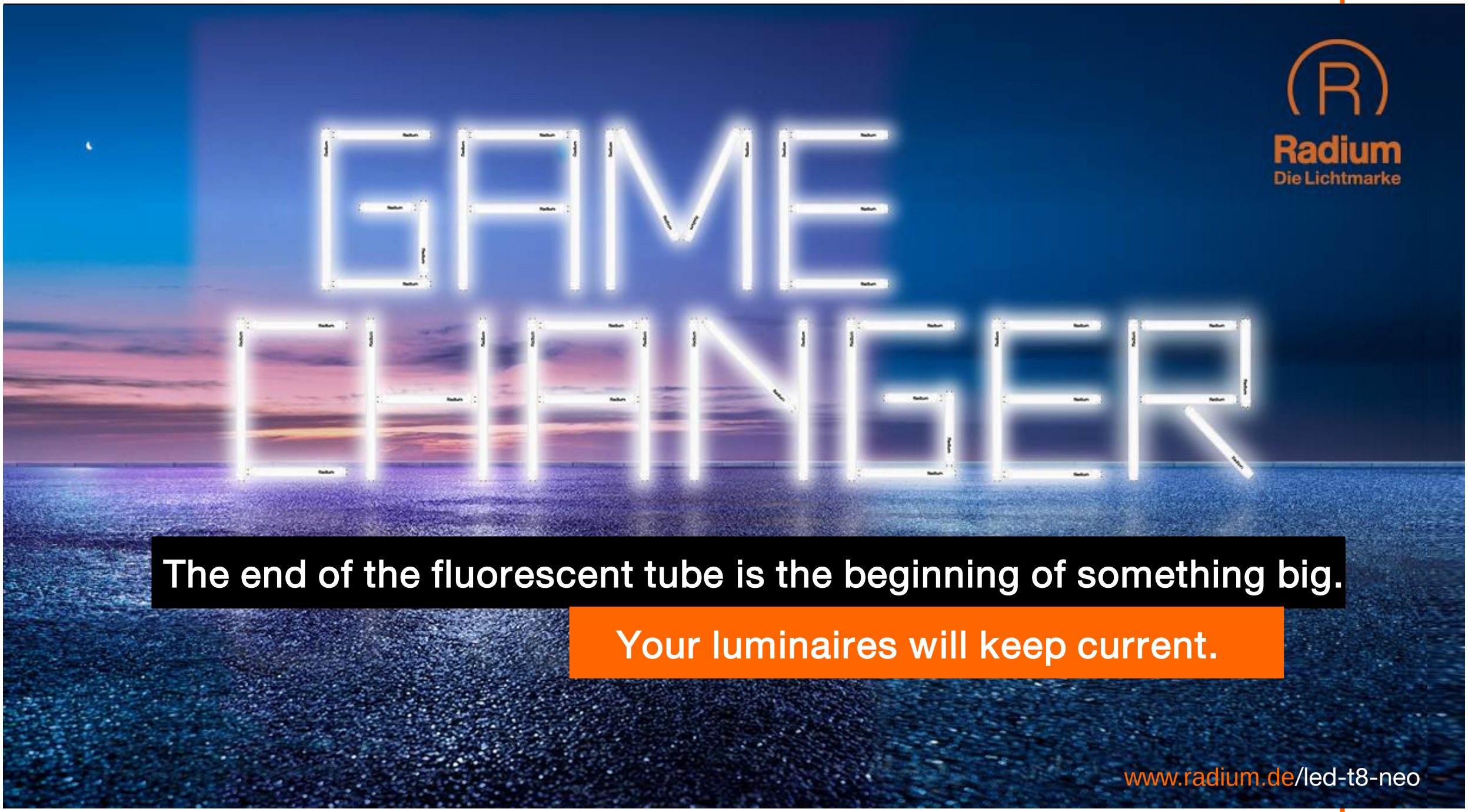
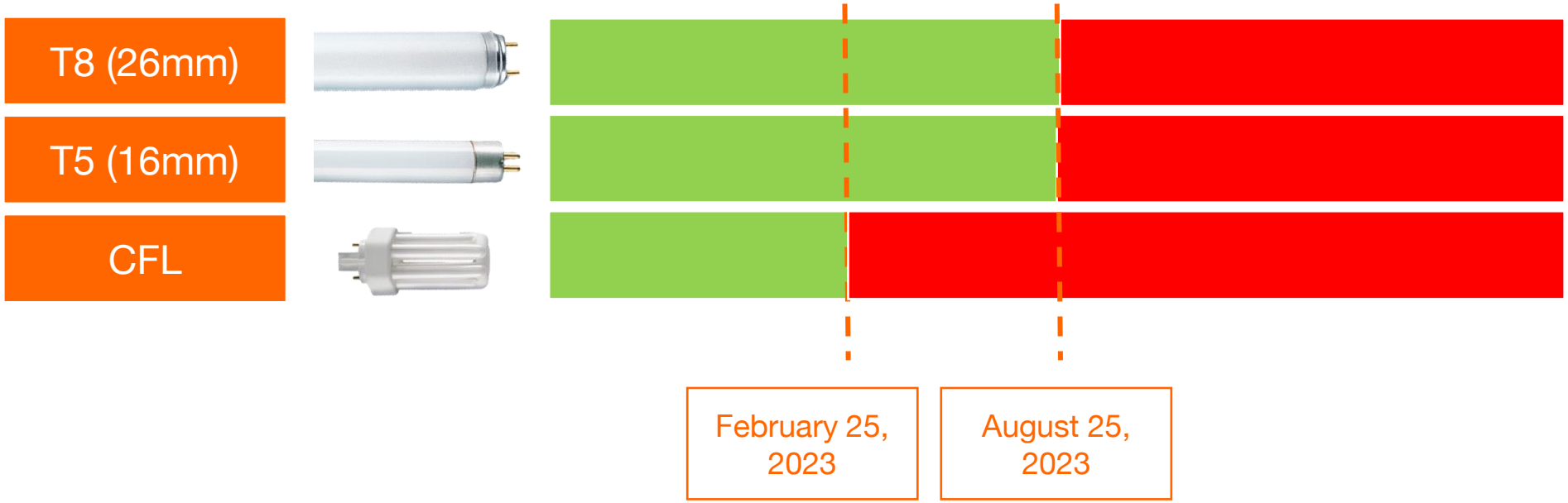

GAME
CHANGER
Radium
Die Lichtmarke
The end of the fluorescent tube is the beginning of something big.
Your luminaires will keep current.
www.radium.de/led-t8-neo

How much longer will fluorescent lamps be available?

Ban of almost all LPD-Lamps!

The EU Commission has passed drafts of the RoHS, in which LPD lamps for general lighting are affected earlier by limiting the amount of mercury in the lamps.



Don't wait until it's too late.

What are the options for action?

	Pro	Cons
1. Stock up with LPD Lamps	– less expenses	– no energy savings
2. T8 & T5 Retrofit	– energy saving	– no features, less light
3. New luminaires	– energy saving, many features	– Most expensive
4. Radium T8 & T5 NEO	– Energy saving, more light, less expenses	

LED Neo.

That's how it works!

Unique product concept: robust, external Radium driver instead of integrated mini-driver.

Radium LED Neo

+ Very high efficiency up to 180 lm/W
+ High luminous flux up to 5,180 lm
+ Flicker-free lighting

Radium LED Driver

+ One Radium LED Neo driver DALI can control up to 4 Radium LED Neo.
+ External driver creates space for high quality technical components which are not usable in mini driver format.
+ High reliability
+ No compatibility check

Radium LED T8 Neo.

Brings light into the future.

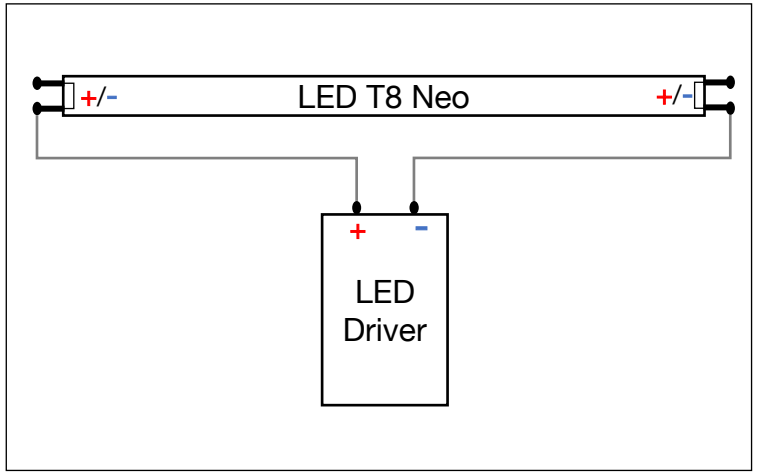
- ✓ TÜV certified
- ✓ 5 years guarantee
- ✓ Extremely long service life: up to 70,000h L80B10
- ✓ Increase in efficiency: up to 180 lm/W
- ✓ Super bright: up to 5,180 lm per lamp
- ✓ future-proof by DALI control
- ✓ flicker-free
- ✓ dimmable
- ✓ suitable for Emergency power
- ✓ Low-priced

LED T8 Neo.

The portfolio.

Features

- **Dimmable** via DALI or Push&DIM*
- Very efficient with up to **180 lm/W**
- Super bright: very **high luminous flux**
- **Luminous flux** can be **adjusted flexibly**
- Flicker-free light
- With splinter protection and TÜV certification
- Easy to wire up
- Polarity neutral



	LED T8 Neo 18	LED T8 Neo 36	LED T8 Neo 58
Power (min./rated /max.)	3.8 / 6.9 / 11 W	9,8 / 13.9 / 20.2 W	20 / 24.3 / 30.8 W
Luminous flux (min./rated /max.)**	716 / 1215 / 1875 lm	1772 / 2460 / 3418 lm	3550 / 4200 / 5180 lm
Efficiency (min./rated /max.)**	186 / 176 / 170 lm/W	181 / 177 / 169 lm/W	178 / 173 / 168 lm/W
Operating current (min./rated /max.)	200 / 350 / 550 mA	500 / 700 / 1000 mA	1000 / 1200 / .500 mA1
Voltage	18.5 – 20.5 V	19 – 21 V	19.5 – 21.5 V
R_a	>80	>80	>80
Lifetime L80B10	70.000 h	70.000 h	70.000 h
Guarantee	5 Years	5 Years	5 Years
Material	Glass	Glass	Glass
Splinter protection	Yes	Yes	Yes
Diameter*Length	28*600 mm	28*1.200 mm	28*1.500 mm
Color temperature	4000K, 6500K	4000K, 6500K	4000K, 6500K

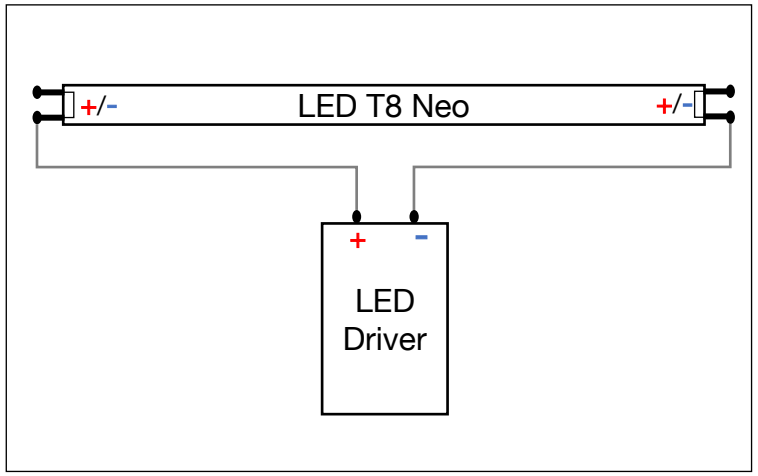
* With Radium DALI drivers **at 4000K

LED T8 Neo.

Radium driver ON/OFF.

Features

- High efficiency: 87-90%
- Protection class I
- **Flicker-free**
- High lifetime of **70.000 h**
- **SELV**
- Suitable for DC operation (200 - 280 V) for use in **emergency power systems**
- Strong price-performance ratio
- **ENEC** certified



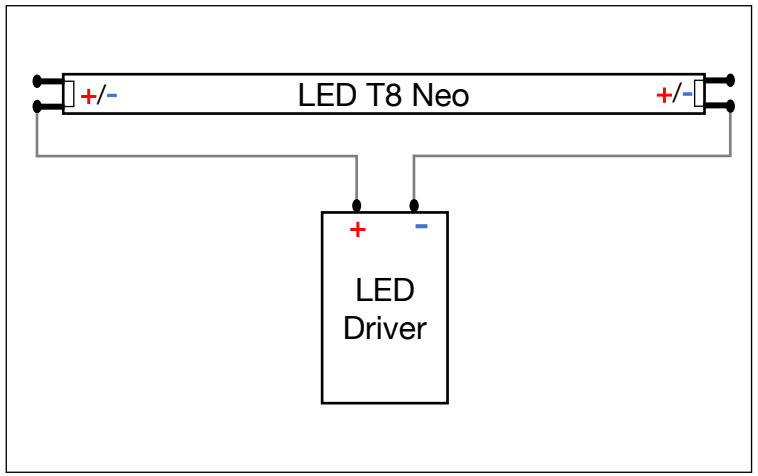
	DRIVER 15W/350mA	DRIVER 30W/700mA	DRIVER 50W/1200
Max. Power (W)	14.7	29.4	50.4
Compatible Neo tubes	2 x 600	2 x 1200	2 x 1500
Efficiency (%)	≥87	≥87	≥90
Output current (mA)	350	700	1200
Output voltage (V DC)	33 – 42	33 – 42	33 – 42
Mains voltage (V AC)	220 - 240	220 - 240	220 - 240
Lifetime (h)	70,000	70,000	70,000
Guarantee	5 Years	5 Years	5 Years
Material	Metal	Metal	Metal
Ambient temperature (°C)	-30°C…+50°C	-30°C…+50°C	-30°C…+50°C
Dimensions (mm)	156*30*20	195*30*20	245*30*21
Dimming interface	-	-	-

LED T8 Neo.

Radium DALI Driver.

Features

- **Dimmable** via DALI or Push&DIM
- Adjustable output current via dip switch
- High efficiency: 84-89%
- Protection class I
- **Flicker-free**
- Very long lifetime of up to **70.000 h**
- **SELV**
- **ENEC certified**



	DRIVER DALI 15	DRIVER DALI 30	DRIVER DALI 60
Max. Power (W)	14,7	31,5	63,0
Compatible Neo tubes	1 x 600 / 2 x 600	1 x 1.200 / 2 x 1.200	1 x 1.500 / 2 x 1.500
Efficiency (%)	≥84	≥87	≥89
Output current (mA)	200 – 350	550 – 750	1.100 – 1.500
Output voltage (V DC)	16 – 42	18 – 44	19 – 44
Mains voltage (V AC)	220 - 240	220 - 240	220 - 240
Lifetime (h)	70.000	70.000	70.000
Guarantee	5 Years	5 Years	5 Years
Material	Metal	Metal	Metal
Ambient temperature (°C)	-30°C…+50°C	-30°C…+50°C	-30°C…+50°C
Dimensions (mm)	195*30*21	245*30*21	285*30*21
Dimming interface	DALI 2, Push&DIM	DALI 2, Push&DIM	DALI 2, Push&DIM

LED T8 Neo.

Adjustable luminous flux LED T8 Neo 58.

Adjust the luminous flux by setting the DC driver:

- Luminous flux of each LED T8 Neo Tube can be adjusted on the DALI driver by the customer via dip switches.
- ON/OFF drivers are supplied with 1,200mA as standard, but can be set to other currents on a project-by-project basis during installation.
- Various luminous fluxes from **3875 lm to 5180 lm*** can be retrieved with Radium LED T8 Neo 58 840.

Current	1	2	3	4
1100mA	ON	-	-	-
1150mA	-	ON	ON	ON
1200mA	-	ON	ON	-
1250mA	-	ON	-	ON
1300mA	-	ON	-	-
1350mA	-	-	ON	ON
1400mA	-	-	ON	-
1450mA	-	-	-	ON
1500mA	-	-	-	-

Adjustable currents via dip switches on the DALI driver

High Output

High Efficiency

Current	Power	Efficiency	Luminous flux
1.500 mA	30.8 W	168 lm/W	5180 lm
1.450 mA	29.7 W	169 lm/W	5017 lm
1.400 mA	28.6 W	170 lm/W	4853 lm
1.350 mA	27.5 W	170 lm/W	4690 lm
1.300 mA	26.5 W	171 lm/W	4527 lm
1.250 mA	25.4 W	172 lm/W	4363 lm
1.200 mA	24.3 W	173 lm/W	4200 lm
1.150 mA	23.2 W	174 lm/W	4038 lm
1.100 mA	22.1 W	175 lm/W	3875 lm

* At 1,500 mA operating current

Safe and certified!

ENEC, TÜV, CE.

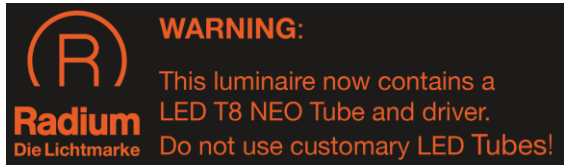
- TÜV Süd certified
- ENEC
- Safety extra-low voltage (SELV) ensures high operational safety
- Suitable for installation in emergency power systems
- DC capable driver → Radium LED T8 Neo continues to emit the same brightness even if the power supply is switched to DC in the event of a fault

SELV

The responsible master electrician certifies the standard-compliant operation of the fitted luminaire.
We support the electrician with documents and checklists to determine conformity

System reliability after modernization is significantly higher than before!

Additional sticker for marking the luminaire is included in the package.



Radium LED T5 Neo.

Brings light into the future.

- ✓ Increase in efficiency: up to 192 lm/W
- ✓ Super bright: up to 6,200 lm per lamp
- ✓ Extremely long service life: up to 90,000h L70B10
- ✓ 5 years guarantee
- ✓ future-proof by DALI control
- ✓ flicker-free
- ✓ dimmable
- ✓ suitable for Emergency power
- ✓ Low-priced
- ✓ TÜV certified

LED T5 Neo.

That's how it works!

Unique product concept: robust, external Radium driver instead of integrated mini-driver.

Radium LED T5 Neo

+ Very high efficiency up to 192 lm/W
+ High luminous flux up to 6,200 lm
+ Flicker-free lighting

+

Radium LED Driver

+ One Radium LED Neo driver DALI can control up to 4 Radium LED T5 Neo.
+ External driver creates space for high quality technical components which are not usable in mini driver format.
+ High reliability
+ No compatibility check

LED T5 Neo.

Technical Information 549mm.

– 5 – YEARS GUARANTEE

Features

- LED tube as a replacement for 14W or 24W T5 fluorescent lamps
- Same design, same material and same brightness for the perfect LED replacement
- Adjustable operating current via DipSwitch on separate LED driver
- Highest reliability and lifetime
  - 60,000h L80B10
  - 90,000h L70B10
- Super efficient with more than 50% energy savings

14/24W Replacement			3000K		4000K		6500K	
mA	V	W	lm/W	lm	lm/W	lm	lm/W	lm
350	28.5	10.0	162	1,620	180	1,800	180	1,800
300	28.5	8.6	163	1,400	180	1,550	180	1,550
250	28.5	7.1	166	1,180	183	1,300	183	1,300
200	28.5	5.7	168	960	186	1,060	186	1,060

LED T5 Neo.

Technical Information 849mm*.

– 5 – YEARS GUARANTEE

Features

- LED tube as a replacement for 21W or 39W T5 fluorescent lamps
- Same design, same material and same brightness for the perfect LED replacement
- Adjustable operating current via DipSwitch on separate LED driver
- Highest reliability and lifetime
  - 60,000h L80B10
  - 90,000h L70B10
- Super efficient with more than 50% energy savings

21/39W* Replacement			3000K		4000K		6500K	
mA	V	W	lm/W	lm	lm/W	lm	lm/W	lm
350	51.1	17.9	159	2,840	176	3,150	176	3,150
300	50.9	15.3	161	2,460	178	2,730	178	2,730
250	50.7	12.7	163	2,070	181	2,300	181	2,300
200	50.5	10.1	165	1,670	183	1,850	183	1,850

* LED T5 NEO 21/39 **only available on request**!

LED T5 Neo.

Technical Information 1149mm.

– 5 – YEARS GUARANTEE

Features

- LED tube as a replacement for 28W or 54W T5 fluorescent lamps
- Same design, same material and same brightness for the perfect LED replacement
- Adjustable operating current via DipSwitch on separate LED driver
- Highest reliability and lifetime
  - 60,000h L80B10
  - 90.000h L70B10
- Super efficient with more than 50% energy savings

28/54W Replacement			3000K		4000K		6500K	
mA	V	W	lm/W	lm	lm/W	lm	lm/W	lm
350	70.0	24.5	163	4,000	180	4,400	180	4,400
300	69.7	20.9	165	3,440	182	3,800	182	3,800
250	69.3	17.3	168	2,900	185	3,200	185	3,200
200	69.0	13.8	170	2,350	188	2,600	188	2,600

LED T5 Neo.

Technical Information 1449mm.

– 5 – YEARS GUARANTEE

Features

- LED tube as a replacement for 35W or 49W T5 fluorescent lamps
- Same design, same material and same brightness for the perfect LED replacement
- Adjustable operating current via DipSwitch on separate LED driver
- Highest reliability and lifetime
  - 60,000h L80B10
  - 90.000h L70B10
- Super efficient with more than 50% energy savings

35/49W Replacement			3000K		4000K		6500K	
mA	V	W	lm/W	lm	lm/W	lm	lm/W	lm
350	66.9	23.4	165	3,870	184	4,300	184	4,300
300	66.6	20.0	167	3,340	185	3,700	185	3,700
250	66.3	16.6	169	2,800	188	3,110	188	3,110
200	66.0	13.2	172	2,270	191	2,520	191	2,520

LED T5 Neo.

Technical Information 1449mm.

– 5 – YEARS GUARANTEE

Features

- LED tube as a replacement for 49W or 80W T5 fluorescent lamps
- Same design, same material and same brightness for the perfect LED replacement
- Adjustable operating current via DipSwitch on separate LED driver
- Highest reliability and lifetime
  - 60,000h L80B10
  - 90.000h L70B10
- Super efficient with more than 50% energy savings

49/80W Replacement			3000K		4000K		6500K	
mA	V	W	lm/W	lm	lm/W	lm	lm/W	lm
350	96.9	33.9	165	5,600	183	6,200	183	6,200
300	96.6	29.0	167	4,830	185	5,360	185	5,360
250	96.3	24.1	169	4,080	188	4,520	188	4,520
200	96.0	19.2	173	3,320	192	3,680	192	3,680

LED T5 Neo.

Radium Driver ON/OFF.

Features

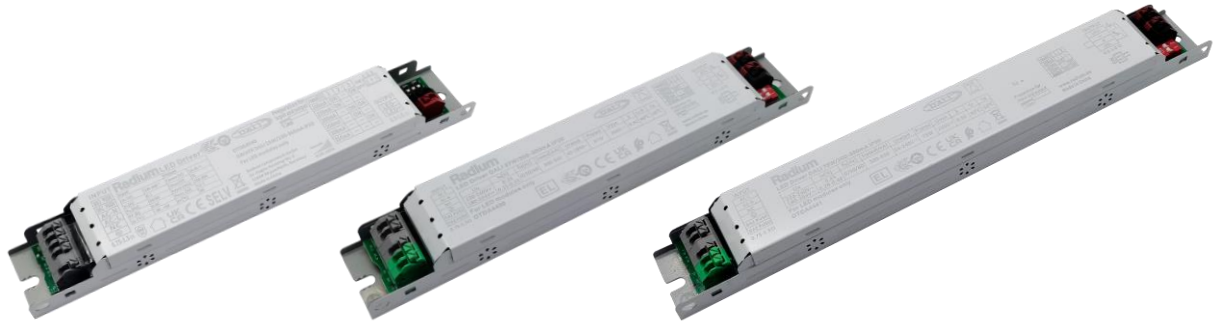
- High efficiency 93%
- Adjustable output current via dip switch
- Protection class I
- **Flickerfree**
- Very long lifetime of up to **70,000 h**
- **Emergency power capable (EL)**
- Strong price-performance ratio
- **ENEC** zertifiziert

	DRIVER 20/200-350	DRIVER 40/200-350	DRIVER 60/200-350	DRIVER 80/200-350
Max. Power (W)	20	40	60	80
Efficiency (%)	≥85	≥90	≥91	≥93
Output current (mA)	200, 250, 300, 350	200, 250, 300, 350	200, 250, 300, 350	200, 250, 300, 350
Output voltage (V DC)	25 – 57	58 – 114	115 – 172	170 – 230
Mains voltage (V AC)	220 - 240	220 - 240	220 - 240	220 - 240
Lifetime (h)	70,000	70,000	70,000	70,000
Guarantee	5 years	5 years	5 years	5 years
Material	Metal	Metal	Metal	Metal
Ambient temperature (°C)	-30°C…+50°C	-30°C…+50°C	-30°C…+50°C	-30°C…+50°C
Dimensions (mm)	156x30x21	156x30x21	195x30x21	245x30x21
Emergency power	CE, ENEC, EL	CE, ENEC, EL	CE, ENEC, EL	CE, ENEC, EL

LED T5 Neo.
Radium DALI Driver.

Features

- **Dimmable** via DALI or Push&DIM
- Adjustable output current via dip switch
- High efficiency: 90-92%
- Protection class I
- **Flicker-free**
- Very long lifetime of up to **100,000 h**
- **Emergency power capable (EL)**
- **ENEC certified**

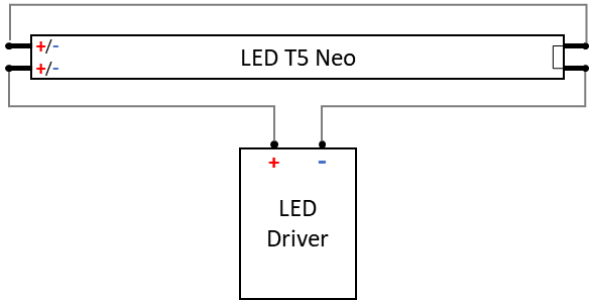


	DRIVER DALI 15/200-350	DRIVER DALI 37/200-350	DRIVER DALI 75/200-350
Max. Power (W)	14,7	37	75
Efficiency (%)	≥84	≥90	≥92
Output current (mA)	100, 150, …., 350	200, 250, 300, 350	200, 250, 300, 350
Output voltage (V DC)	16 – 42	46 – 185	54 – 240
Mains voltage (V AC)	220 - 240	220 - 240	220 - 240
Lifetime (h)	100,000	100,000	100,000
Guarantee	5 years	5 years	5 years
Material	Metal	Metal	Metal
Ambient temperature (°C)	-30°C…+50°C	-30°C…+50°C	-30°C…+50°C
Dimensions (mm)	195x30x21	195x30x21	245x30x21
Dimming interface	DALI 2.0, Push&DIM	DALI 2.0, Push&DIM	DALI 2, Push&DIM
Emergency power	CE, ENEC, DALI 2.0	CE, ENEC, DALI 2.0, EL	CE, ENEC, DALI 2.0, EL

LED T5 Neo.

Adjustability.

- All drivers (DALI and ON/OFF) can be set to 350, 300, 250 & 200mA
- The current setting allows one T5 Neo to replace two fluorescent lamp wattages (e.g. 35 & 49W)
- This reduces the number of types and the storage complexity (15 instead of 24)
- The customer can choose the preferred power and brightness during installation



1 to 4 LED T5 Neo can be operated on one LED driver

LED T5 NEO 35/49	W	lm	lm/W	Note
350mA	23.4	4,300	184	~ 1:1 Replacement of the **49W** fluorescent lamp
300mA	20.0	3,700	185	~ Same illuminance as **49W** fluorescent lamp
250mA	16.6	3,110	188	~ 1:1 Replacement of the **35W** fluorescent lamp
200mA	13.2	2,520	191	~ Same illuminance as **35W** fluorescent lamp

LED Neo.

Convincing even in comparison with retrofits and luminaires.

			
Efficiency lm/w	170	190	180
Max. lumen output	4300	6200	-
Lifetime	60.000	90.000	70.000
Dimmable	No	Yes	Yes
Compatibility	to be checked	given	given
Quality/Reliability	medium	high	high
Suitable for DC-Power	No	Yes	Yes
Cost	$	$$	$$$$
Expense	🔧	🔧🔧	🔧🔧🔧
Suitable for smart building	No	Yes	Yes
Shatter protection	No	Yes(T8)	Yes

LED Neo.

Comparison with LED luminaires.

Advantages LED luminaire

- Possibly better beam control
- Consists entirely of new and "unused" components
- Possibly more modern design

Advantages LED Neo

- Much more sustainable due to keeping the old luminaires/ fixtures/holders and due to the choice of materials
- Significantly cheaper in purchasing
- No commitment to one luminaire manufacturer
- Less effort (driver replacement vs. uninstalling luminaires and installing completely new luminaire system)
- Easier and cheaper replacement of components

Comparable

- Efficiency
- Illuminance
- Product life

VS.

Low effort.
Great effect.

- Quick and easy conversion: install new driver, screw in LED T8 Neo - done!
- **Big advantage:** free choice of light source thanks to T8 standard in the long term
  → Luminaire and light source are not inseparable, so in case of defect, complete replacement with assembly effort and electrical scrap is **not** necessary

Sustainability by design: 1,150 tons less waste per 1,000 points of light.

a) Continue to use the luminaire and make it technically future-proof instead of disposing of it. This saves approx. 2,000 kg of waste per 1000 light points!

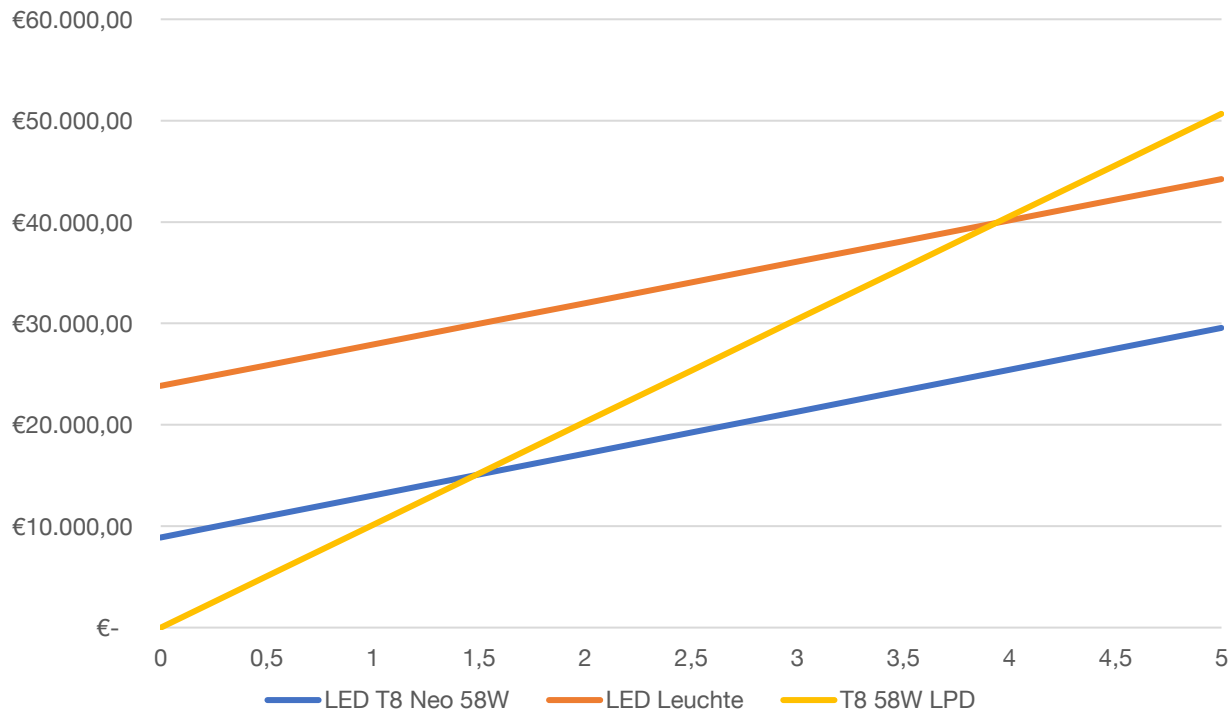
b) Even after the end of service life, the amount of waste is low. Compared to replacing a luminaire insert, they save again about 700 kg of waste for 1,000 light points.

Low investment.
Fast amortization.

- Invest little - save a lot: All luminaires in good conditions can be used
- Over 60% lower investment costs compared to a LED continuous row system
- Fluorescent lamp replacement pays for itself after just 1.5 Years

	LED T8 Neo	T8 58W
Number of luminaires (pcs.)	100	100
Number of lamps per luminaire (pcs.)	2	2
Electricity price (€/kWh)	0,265	0,265
Power consumption (kW)	5,2	13,0
Operatingtime per year	3000h	3000h
ElectricityCosts	4,134 €	13,335 €

	LED T8 Neo	LED Luminaire
Number of luminaires (pcs.)	100	100
Number of lamps per luminaire (pcs.)	2	1
Changeover time per luminaire (min.)	12	20
Personnel costs/hour	70,00 €	70,00 €
Investment per luminaire DALI (RRP)	75 €	215 €
Total investment costs	8,900 €	23,833 €



Radium
Die Lichtmarke

Jan. 2024

Radium LED Neo – Ideal for Everyday Use

What about emergency lighting?

www.radium.de

Emergency Lighting

Overview

Central-Batterie-Systems

Single-Battery-Systems

Emergency Lighting

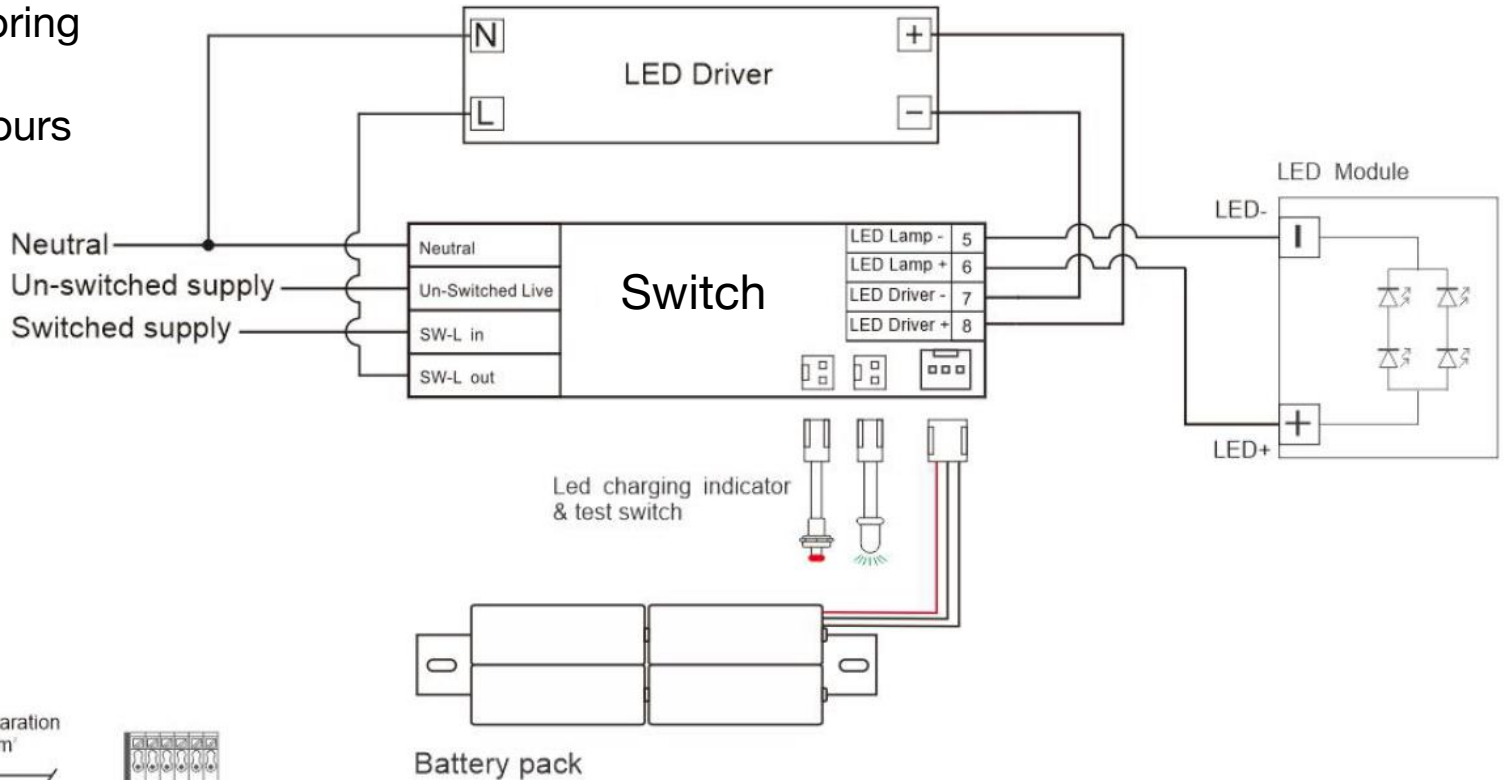
Central-Batterie-System

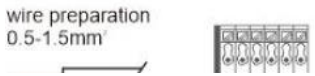
Function:
If there is a mains fail, the mains voltage is switched from AC to battery powerd DC voltage.
Devices connected to this emergency power supply are then supplied with DC.

Emergency Lighting

Single-Battery-System

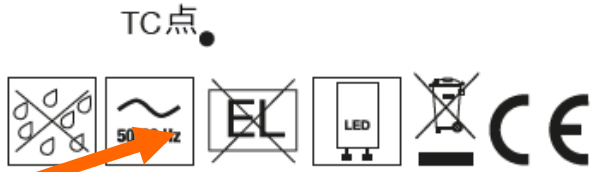
Function:
In the event of a mains failure, the power supply of the connected lightsource is switched to an individual battery system.
The system has its own testing and monitoring systems.
Usual emergency power running time: 3 hours





Emergency Lighting

Conformity



Radium
Lampenwerk GmbH
Dr.-Eugen-Kersting-Straße 6
51688 Wipperfürth, Germany

Radium

LED Essence
Tube T8 EM

RL-T8 18 830/G13 EM
6.6 W · 3000 K · 720 lm
220-240 V · 50/60 Hz
Ta: -20°C … +45°C

EU Declaration of Conformity **Radium**

Document number: 2022/04

List of harmonised standards:

EN 61347-1:2015	Lamp controlgear - Part 1: General and safety requirements
EN 61347-2-13:2014	Lamp controlgear - Part 2-13: Particular requirements for d.c. or a.c. supplied electronic controlgear for LED modules
EN 62493:2010	Assessment of lighting equipment related to human exposure to electromagnetic fields
EN IEC 55015:2019/A11:2020	Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment
EN 61547:2009	Equipment for general lighting purposes - EMC immunity requirements
EN 61000-3-2:2014	Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)
EN 61000-3-3:2013	Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current <= 16 A per phase and not subject to conditional connection

List of additional standards, the product is compliant to:

EN 61347-2-13:2014/A1:2017	Lamp controlgear - Part 2-13: Particular requirements for d.c. or a.c. supplied electronic controlgear for LED modules
EN 62493:2015	Assessment of lighting equipment related to human exposure to electromagnetic fields

List of designations:

Article No.	Type	EAN
OTDA4030	DRIVER DALI 15W/100-350mA IP20	4003556010826
OTDA4031	DRIVER DALI 30W/550-750mA IP20	4003556010833
OTDA4032	DRIVER DALI 60W/1100-1500mA IP20	4003556010840

Conformity of converted Luminaires

Excerpt from Blue Guide 2022 “Covered products”

A product to which significant modifications or revisions have been made to alter the original power, use or type may be considered a new product. The person making the changes then becomes the manufacturer with the corresponding obligations. This means that if no significant changes are made, it is not a new product and the person making the change does not become the manufacturer.

1. Power
Conversion solutions usually result in reduced energy consumption, which means less heat is generated in the luminaire, which also reduces risk. If the electrical power is increased, a case-by-case assessment is necessary.
2. Usage:
The use of the lamp must not be changed. For example, interior lights, office lights or street lights must continue to be used as such after the conversion. The risk resulting from use remains unchanged in this case.
3. Type:
The design of the luminaire must not be changed, e.g. stationary luminaires with protection class IP 20 must continue to have the same properties. The risk resulting from the design remains unchanged in this case.

Product Liability

Conformity of converted Luminaires

To be safe:

Every conversion should fulfill the following requirements:

Manufacturer of the conversion solution:
a) Determine CE conformity of the conversion solution
b) Carrying out a risk assessment for types of luminaires

Installer (converter):
a) Suitability test of the existing luminaire: technical / lighting technology
b) Carrying out a risk assessment (except for retrofits)

Radium
Die Lichtmarke

Do you need support for large projects? Just get in touch with us. We are happy to help!

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Thanks.

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