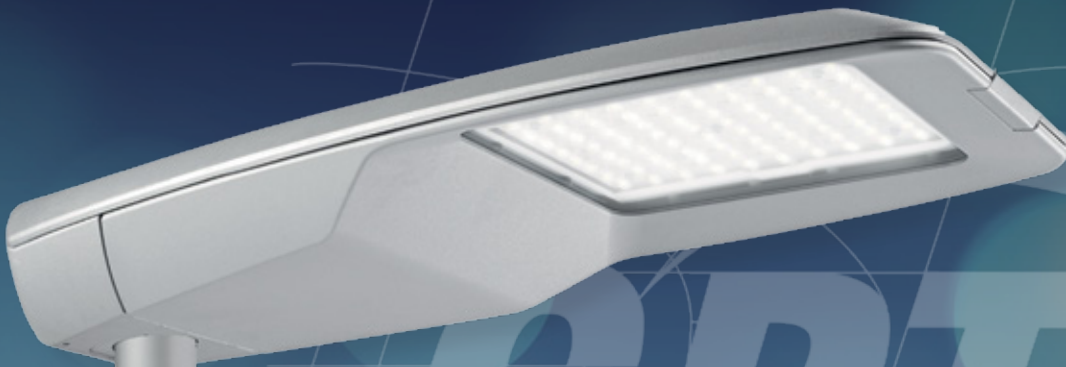


# The best surge protection solution

Outdoor LED lighting



[www.cirprotec.com/led](http://www.cirprotec.com/led)

**CPT** cirprotec



# 1,500,000,000

lightning strikes worldwide every year

# 31%

of electrical damage is caused directly or indirectly by the effects of lightning

# 2 kV

maximum peak voltage withstood by the majority of LED devices. Because of their high atmospheric exposure, LED lights are extremely prone to receive voltage surges exceeding 2 kV with a 1.2/50  $\mu$ s wavefront

## Why protect

LED technology embraces the concept of efficiency, combining considerable energy saving and much greater life expectancy than traditional lighting sources. This technology, however, has a number of drawbacks:

- Its implementation requires a **major investment**, which in the case of destruction of the equipment would have to be repeated.

- **Extreme sensitivity to overvoltages**, whether caused by lightning or by switching on the grid. The very nature of public lighting installations, with its long cable runs, increased their exposure to overvoltage effects induced by lightning.

For these reasons, **the use of protective systems against surges is a very profitable investment, both in terms of the lifetime of the luminaire and in savings in replacement costs and maintenance.**

Cirprotec offers a wide range of solutions for all types of outdoor lighting equipment and installations.

# >500,000

installed base of insufficiently protected outdoor LED luminaires in the EU

# OEM Solutions (manufacturer)

Extend the life of your LED luminaires and avoid potential claims and damage to your image



**Surge protection adds value to the manufacturer of LED lighting**, providing an extra guarantee to the end user in terms of **reliability and durability**.

**Cirprotec**, a company specialising in surge protection, provides the manufacturer with a complete solution in this field: a wide range of surge protector devices, technical advice, built-to-order products, testing of luminaires, etc.



CODE	PART NUMBER	LUMINAIRE CLASS	TYPE	Un	Uoc (max peak)	END OF LIFE
77705662	NSS-10/230-C1-P	Class I	T 2+3	230 V	10 kV	Visual LED+ disconnection
77705762	NSS-10/230-C2-P	Class II	T 2+3	230 V	10 kV	Visual LED+ disconnection
77705862	NSS-10/230-C12-P	Class I+II 	T 2+3	230 V	10 kV	Visual LED+ disconnection

**miniature**

**<50%**  
size similar SPDs

## Compact and easy to install in any luminaire

CPT has designed a compact solution which fits any luminaire. Surge protection for LED luminaires IS VERY SIMPLE TO INSTALL. Cables, terminals, etc. ... can be tailored for each manufacturer.

## Solutions for all types of electrical grids

The range of surge protectors for LED luminaires **is suitable for all network configurations and all voltages (including IT systems)**. CPT has **solutions for class I and class II luminaires**.

**Surge certified luminary**

## Your luminaire, surge resistant, tested and certified

At Cirprotec we guarantee both the protection of the LED luminaire and the correct design of the luminaire and surge protection combination. For manufacturers working on large scale projects, **CPT provides tests and certifies the luminaires in terms of resistance to surges** in accordance with the standards, through an **ENAC accredited laboratory**.



**The major manufacturers of outdoor LED luminaires are now protected by Cirprotec**

# Retrofit solutions

Upgrading the protection of the installed base of luminaires

for the maintainer and the municipality

## Why is protection needed?

Recent studies suggest that over **80% of existing public lighting panels include no surge protection**. For the remaining 20%, **the protection in the panel is insufficient** to effectively protect the luminaire assembly connected to the panel, because **surges can also be induced along the long cable runs**.

**The optimal and most effective system of protection is the staggered or cascade type.** First, an **initial protection stage should be installed in the lighting panel** (with the installation of a sturdy protector with a high discharge capacity of 40 kA, and protection against power frequency overvoltages POP a.k.a TOV temporary overvoltages) and a **second stage as close as possible to the luminaire** (fine protection to complement the first stage).

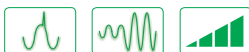
Upgrading the installed base of LED luminaires with surge protection is a very profitable investment, both in terms of **reduced maintenance costs**, and of the **protection of expensive investments**.

Cirprotec offers a wide range of solutions for efficient protection of outdoor LED lighting installations.

- Good protection
- reduces maintenance cost
  - ensures continuity of service
  - extends the life of the lights
  - ensures ROI on LED technology



## Lighting panel



CODE	PART NUMBER	Nu. PROT. POLES	SPD PROTECTION			POP PROTECTION (TOV)*
			I <sub>max</sub>	TYPE	U <sub>n</sub>	U <sub>a</sub>
77706417	V-CHECK 4RC	3P+N	40 kA	T 2	230/400 V	> 275V

\* POP power frequency overvoltages = TOV temporary overvoltages



Currently over 80% of lighting panels are inadequately protected.

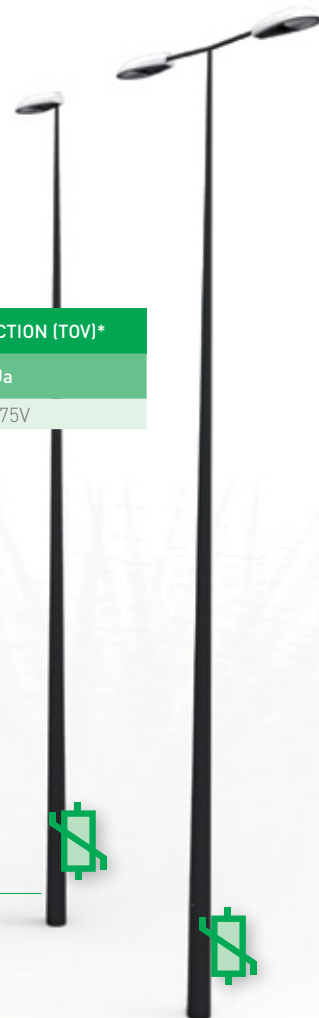
## Luminaire



CODE	PART NUMBER	I <sub>max</sub>	TYPE	U <sub>n</sub>	U <sub>oc</sub> (max peak)
77704115	CSF21-230	20 kA	T 2+3	230 V	10kV



It is estimated that there is an installed base of over 500,000 insufficiently protected outdoor LED lights in Europe.



# The best protection for LED lighting by the surge protection specialist



Compact Type 2+3 surge protection  
NS range  
inside the luminaire



Type 2+3 surge protection for inspection covers and fuse boxes  
CSF21-230  
inside the pole



Type 2 surge protection and temporary overvoltage protection (POP).  
V-CHECK 4RC  
inside the panel



# 20

YEARS PROTECTING

[cirprotec.com](http://cirprotec.com)

Specialists in comprehensive lightning and surge protection. Specific solutions for all types of application.  
For more information contact our technical sales department on [www.cirprotec.com/products](http://www.cirprotec.com/products).



Transient surge  
Protection  
(Electrical supply)



POP Power frequency  
overvoltage  
protection  
(Electrical supply)



Surge protection  
for telecom  
and signalling  
networks



External lightning  
protection  
systems



Monitoring  
of grounding  
systems



Insulation  
monitoring



Beacon  
systems

**CPT** cirprotec

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