

# NERI

ARCHILEDE S





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**Functional lighting doesn't necessarily have to disappear or blend with the lack of identity of the surroundings. We actually believe that is the exact opposite, that's why we designed a fixture with personality. LED lighting award winning luminaire Archilede S is the solution for cities to become more sustainable without losing their identity, because well-lit cities are livable and lovable cities, a testament to how lighting truly contributes to a city's identity.**



## ARCHILEDE S

Scale 1:20  
Dimensions in mm/in

Street lamps are often the forgotten fixtures of the urban landscape. Crucial to night time navigation, the feeling of safety, and many others; the objects are seemingly only noticed when not properly functioning. As lighting technologies quickly progress in every context from domestic table lamps to innovative automotive headlights – it's only natural that the roadside beacons follow suit.

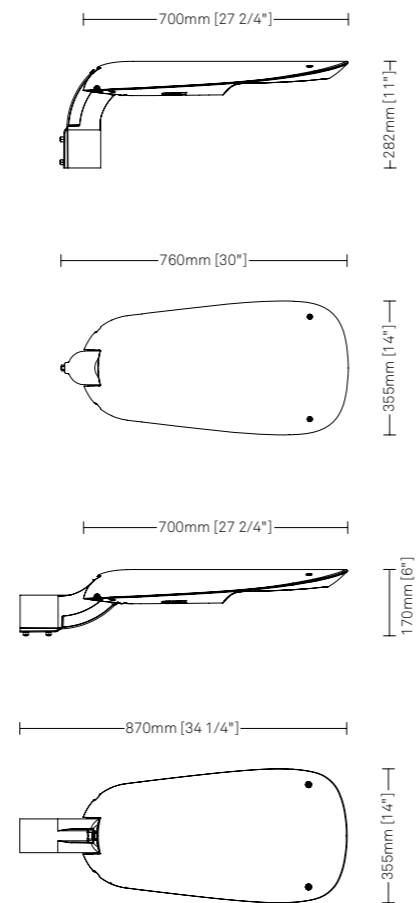
Archilede S is the result of Neri's design led approach applied to functional lighting, because there is no reason why a lamp post shouldn't be beautiful and help us to love our cities even more.

### Materials

Made of cast aluminium, IP66 protection rating, the screen is made of extra-clear transparent flat glass, 4mm thick, IK09 mechanical resistance.

### Finishes

Powder coated colour RAL 9007.





## Performance

- Electrical insulation: class II (class I on demand)
- Enclosure protection: IP66, IK09
- LED optics: multilayer lenses
- CCT: 3,000K-4,000K
- High efficiency: up to 130lm/W
- Reflector for flow recovery and reduced glare
- Surge protection: up to 10kV/10kV
- Estimated life: 100,000h, L85B50

## APPLICATIONS

### Roads and highways

High efficiency and reduced glare are guaranteed for different road optics.

### Parking lots

Light and safety optimisation: large areas covered in a functional and efficient way.

### Roundabouts

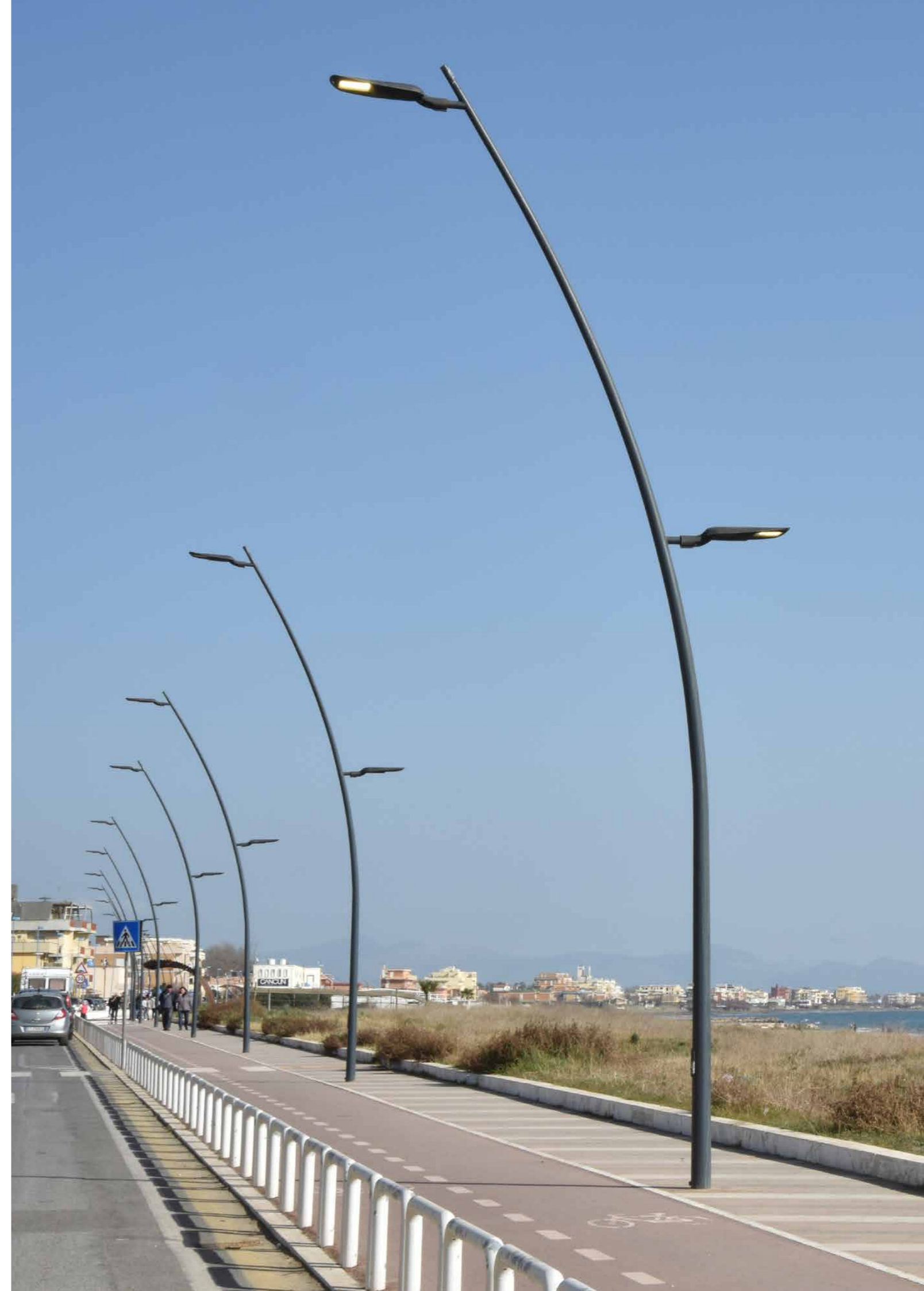
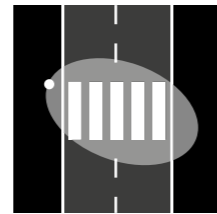
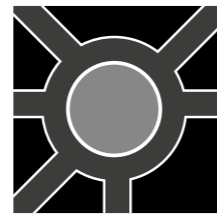
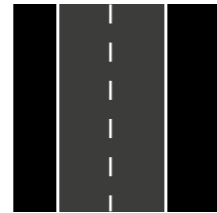
The asymmetric road optic distributes light on the circulation ring without glaring.

### Pedestrian and cycling paths

Light is concentrated on the path, so that disturbances and visual pollution of green areas are prevented. Effective illumination is guaranteed in harmony with the surroundings.

### Pedestrian crossings

Light illuminates the vertical plane of the path increasing visibility for pedestrians.





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**We have to make the most of technology to achieve a more sustainable lifestyle, not just from an economic point of view but also in terms of the psychological aspect of safety and social relationships. It's not simply and only about lighting, because even lamp posts contribute in some way to increasing the quality of life. Makio Hasuike**

## MULTILAYER TECHNOLOGY

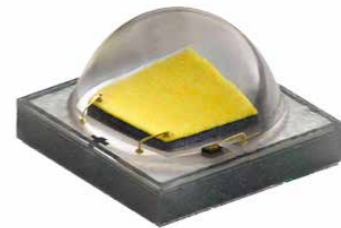
Reduced glare thanks to the wide emission surface. Latest generation LED, Cree XP-G2 and Cree XP-L, and PMMA multilayer lenses provide high and constant performance over time, even in case of failure of a single source.

The optical system is composed of overlapping PMMA lenses with high performance and constant light transmission.

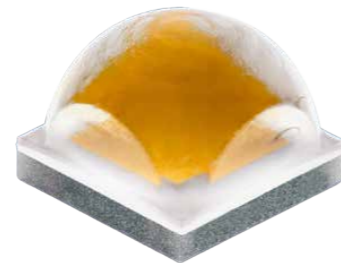
Archilede S is equipped with highly efficient latest generation of LED Cree XP-G2 and Cree XP-L positioned on a ceramic base to provide high thermal conductivity and electrical insulation for a longer service life.

The wide emission surface and the perimeter reflector increase the emission efficiency maintaining reduced glare values.

Customised distributions of light can be obtained thanks to the flexibility in composing the lenses.



LED Cree XP-G2



LED Cree XP-L



**PERFORMANCE:  
ENERGY SAVING**

Proper management of electronic luminous flux means benefits in terms of energy saving and life cycle of the product.

Thanks to electronic ballasts equipped with intelligent systems, the lighting management guarantees high energy savings. The driver chosen for Archilede S can be equipped with the features below:

**NCL (Neri Constant Lumen)**

**Keeping flows consistent**

The driver allows the initial flow to be kept consistent throughout the product life cycle by calibrating the current supply of the LEDs and ensuring the same luminous flux over time.

**NVL (Neri Variable Lighting)**

**Stand-alone setting**

The driver is equipped with a stand-alone control that automatically adjusts the light flow to one or more levels during the operational period, which is automatically set according to the seasons.

**DALI, 1-10V**

**Remote lighting management system**

With the two-way digital DALI protocol lighting levels can be adjusted, consumption and system diagnostics monitored. By the analog signal 1-10V, the illumination levels regulation is enabled. Inside the products on the cabling board, space has been made to accommodate an electronic unit for remote management functionalities.

**AmpDim**

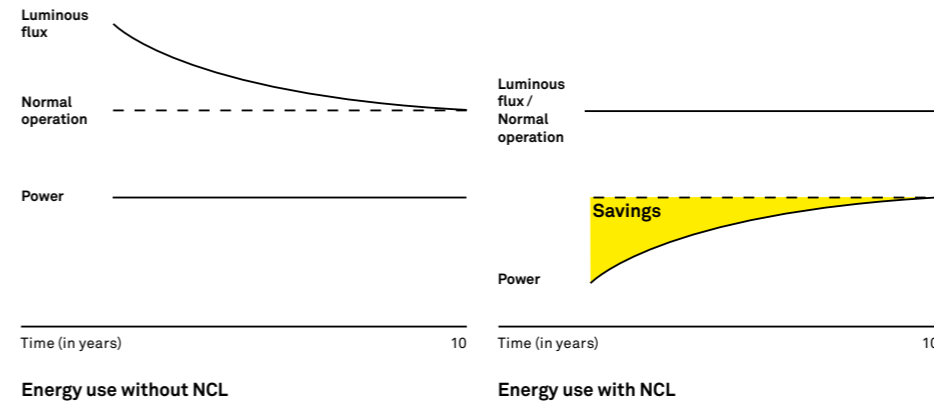
**Flux regulator**

Product dimming in electrical systems already furnished with flux regulator, where the feed voltage is linearly modulated. The percentages of flux reduction are specified in relation to the existing logic.



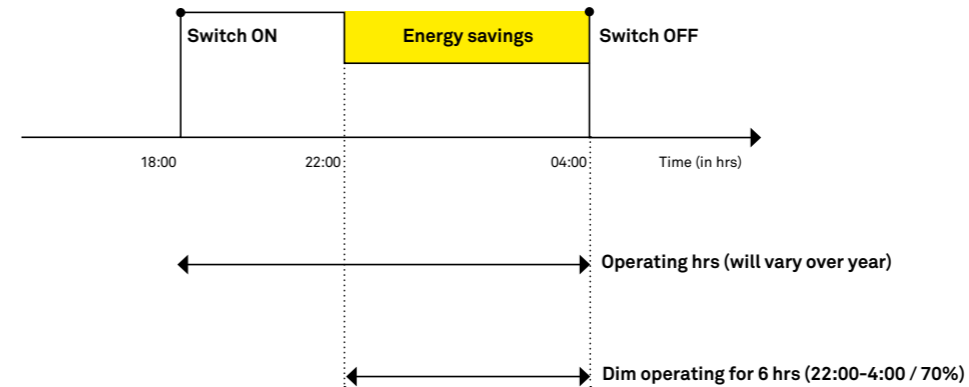
Philips Xitanium Constant Current

**NCL – KEEPING FLOWS CONSISTENT**



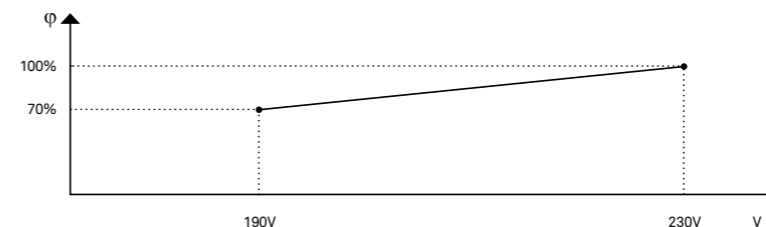
The light output of the system is kept consistent throughout the life of the product by acting on the current supplied and compensating for the decay of the source.

**NVL – STAND-ALONE SETTING**



Dimming preset cycle: from switching on to 22:00, 100% of the luminous flow is guaranteed; from 22:00 until shut-down the guaranteed flux is 70%.

**AMPDIM – FLUX REGULATOR**



Example of AmpDim setting: with a feed voltage of 230V, the product is at 100% of its flux; the flux regulator reduces the feed voltage to 190V, thus reaching 70% of its flux.





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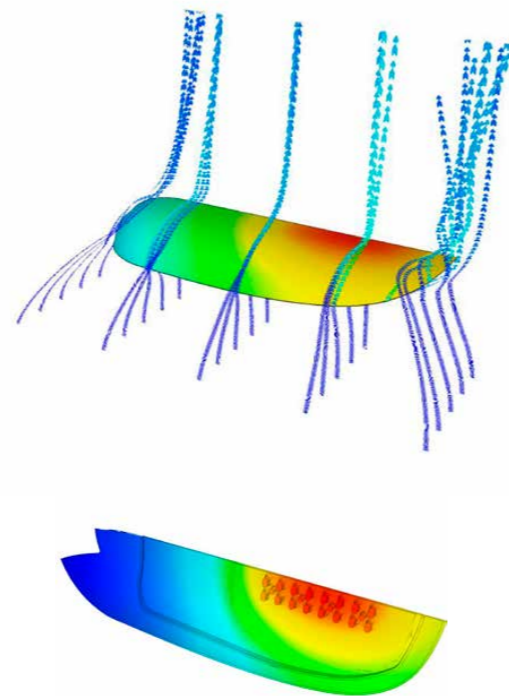
**Thermal management is critical to the proper functioning and long life of LED sources. Archilede S is equipped with a heat dissipation system capable of keeping the junction temperature low, thus extending the life of the light source.**

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## PERFORMANCE: HEAT DISSIPATION

Heat dissipation, a determining factor for the efficiency of the system, is integrated perfectly in the product design. The physical contact between the light source and the aluminium cover, through channels dedicated to the individual LED lights, guarantees that the transmitted heat is correctly directed.

Due to this dissipation of heat, the system is able to keep the LED junction temperature below the limits that guarantee the expected useful life. The luminaire can be used at temperatures up to 50°C.



Thermal scanning at  
an ambient temperature  
of 25°C.



## MAINTENANCE

### Luminaire opening



Archilede S was developed to provide the simplest possible installation and maintenance. Replacement of the parts can take place quickly in just a few steps.

Two-screw opening.

Accidental anti-closure mechanism.

### Removing control gear



Quick release automatic disconnect plug, on axis with the power supply cable intake.



LED module power supply disconnection.



Disconnect the equipotential cable.



Removal of control gear.



## TECHNICAL FEATURES

### Fixing

- Suitable for post top or side mounting from  $\varnothing$  48mm to  $\varnothing$  60mm (with adapter ring) and to  $\varnothing$  76mm (without adapter ring)
- Bracket with a tilting system (5° step)

### Materials

- Die-cast aluminium
- Extra-clear transparent flat glass
- Fixing elements in stainless steel
- Internal reflector in PC

### Finishes

- Powder coating RAL 9007

### Main components

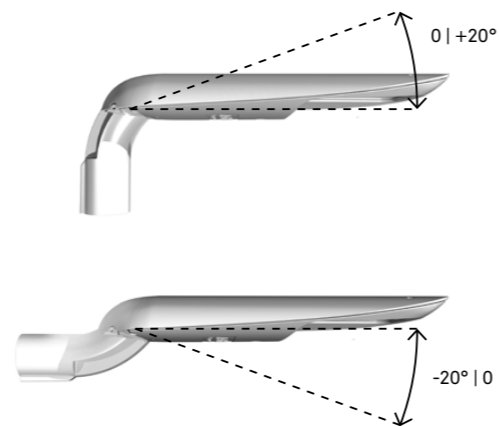
- Opening aluminium cover to access wiring and optical compartment for heat dissipation
- Lower frame in aluminium, for fastening the coupling to the pole and for wiring and screen support
- Silicone gasket between frame and cover
- Screen is flat glass with impact resistance IK09
- Plastic reflector to recover flux and reduce glare
- 2x2 refractive modular lenses in PMMA
- Osmotic valve to balance internal/external pressure
- Control gear with appropriate space for auxiliary for remote control devices (Smart City Ready) and additional surge protection devices

### Electrical auxiliaries

- Programmable electronic power supply with auto diagnostic function
- Automatic disconnecter when opening
- Terminals wires max. section of 2.5mm<sup>2</sup>
- PG16 cable gland
- Additional inputs for data cable (Plus version) with cable gland PG16
- Surge protection for differential/common mode up to 10kV/10kV

### Power supply

- Estimated life (EN 62722-2-1, LM85 data): 100,000h L85B50 (Tq= 25°C)



Bracket with a tilting system from 0° to +20° and from -20° to 0° (5° step).



# TECHNICAL FEATURES: LED MODULE

## MAIN TECHNICAL DATA

CE IP66

### SUPPLY VOLTAGE

220V-240V, 50/60Hz frequency

### SURGE PROTECTION

6kV L-N / 10kV L/N-frame

### POWER SUPPLY

Programmable electronic

### POWER FACTOR CORRECTION

PFC > cos φ 0.9

### ELECTRICAL INSULATION

Class II (class I on demand)

### ENCLOSURE PROTECTION

Water and dust IP66

Mechanical impacts IK09

### PLANNING INFORMATION

For information related to the combinations between flux size options, power and colour temperature see the website.

Neri SpA reserves the right to modify its products and documentation without obligation to give prior warning.

## Performance

### SCREEN SHAPE

EXTRA-CLEAR TRANSPARENT FLAT GLASS – Full Cutoff

### OPTIC SYSTEM

TYPE II – ASYMMETRIC ROAD OR CYCLE PATH (NLG 20)

TYPE III – ASYMMETRIC ROAD (NLG 21)

TYPE III – ASYMM. ROAD WITH SIDEWALK AND CYCLE PATH (NLG 22)

TYPE IV – STRONG ASYMMETRIC (NLG 17)

TYPE V – ROTOSYMMETRICAL (NLG 18)

PEDESTRIAN CROSSINGS (NLG 23)

### COLOUR TEMPERATURE

3,000K

4,000K

### FLUX SIZES OPTIONS

3,000K	3,500lm	31W	111lm/W
3,000K	4,500lm	38W	118lm/W
3,000K	6,000lm	53W	114lm/W
3,000K	7,500lm	69W	108lm/W
3,000K	9,000lm	86W	105lm/W
3,000K	10,500lm	98W	107lm/W
3,000K	12,000lm	119W	101lm/W
4,000K	3,500lm	27W	130lm/W
4,000K	4,500lm	35W	129lm/W
4,000K	6,000lm	48W	124lm/W
4,000K	7,500lm	61W	124lm/W
4,000K	9,000lm	77W	117lm/W
4,000K	10,500lm	91W	115lm/W
4,000K	12,000lm	97W	123lm/W
4,000K	13,500lm	113W	119lm/W

### DRIVER FUNCTIONS

1 - 10V + NCL

AmpDim

AmpDim + NCL

DALI

DALI + NCL

NVL

NVL+NCL

### ELECTRICAL DEVICES

AUTOMATIC DISCONNECTOR

## Planning

### TYPE II – ASYMMETRIC ROAD OR CYCLE PATH (NLG 20)

CLASS	H 5m, W 3m		H 9m, W 8m		H 9,5m, W 8m	
	Spacing	Flux	Spacing	Flux	Spacing	Flux
S1	27m	3,500lm	-	-	-	-
ME1	-	-	-	-	27m	13,500lm
ME2	-	-	-	-	35m	13,500lm
ME3b	-	-	36m	9,000lm	-	-
ME4b	-	-	41m	9,000lm	-	-

### TYPE III – ASYMMETRIC ROAD (NLG 21)

CLASS	H 7m, W 8m		H 8m, W 8m	
	Spacing	Flux	Spacing	Flux
ME1	-	-	28m	13,500lm
ME2	26m	9,000lm	-	-
ME3	31m	9,000lm	-	-
CE2 (U <sub>0</sub> ≥ 0.4)	-	-	29m	9,000lm

### TYPE III – ASYMM. ROAD WITH SIDEWALK (a) AND CYCLE PATH (b) (NLG 22)

CLASS	H 7m, W 7m		W 2m		H 8m, W 7m		W 2m	
	Spacing	Flux	(a)	(b)	Spacing	Flux	(a)	(b)
CE1 (30 lux)	21m	9,000lm	S1	S2	23m	9,000lm	S2	S4
CE2 (20lux)	27m	9,000lm	S2	S2	24m	7,500lm	S2	S4
ME3b	26m	7,500lm	S2	S3	22m	7,500lm	S2	S4

### TYPE IV – STRONG ASYMMETRIC (NLG 17)

CLASS	H 7m, A 39x21m		H 7m, A 44x25m		H 7m, A 39x34m	
	Spacing	Flux	Spacing	Flux	Spacing	Flux
S1	-	-	-	-	34m	13,500lm
S2	21m*	9,000lm	-	-	-	-
S4	-	-	25m*	6,000lm	-	-

\* on both sides

### TYPE V – ROTOSYMMETRICAL (NLG 18)

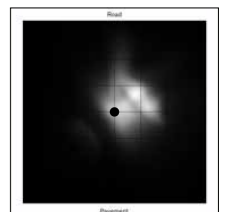
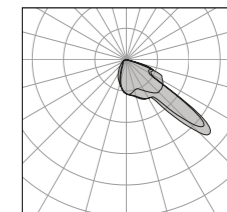
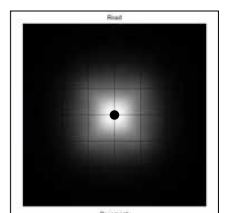
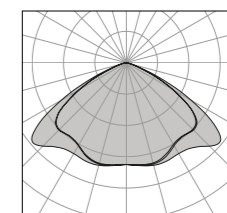
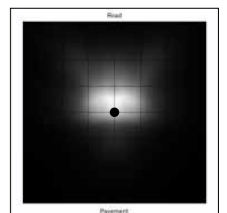
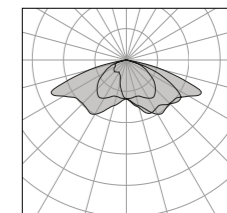
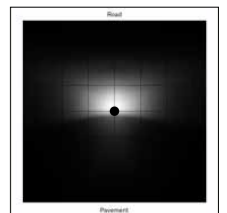
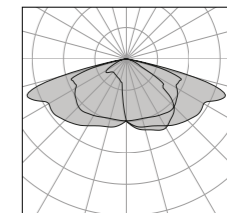
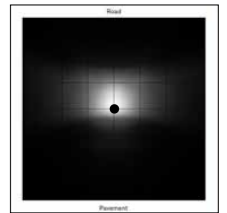
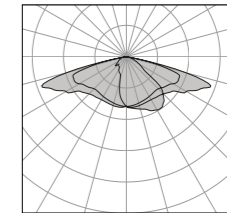
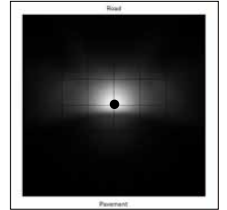
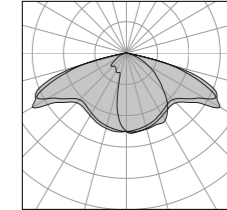
CLASS	H 6m, A 20x20m		H 6m, A 22x22m	
	Spacing	Flux	Spacing	Flux
S1	20m*	9,000lm	-	-
S3	-	-	22m*	6,000lm

\* on both sides

### Pedestrian crossings (NLG 23)

Calculations to establish the required vertical lighting levels are necessary to position the light.

## Photometric light distribution



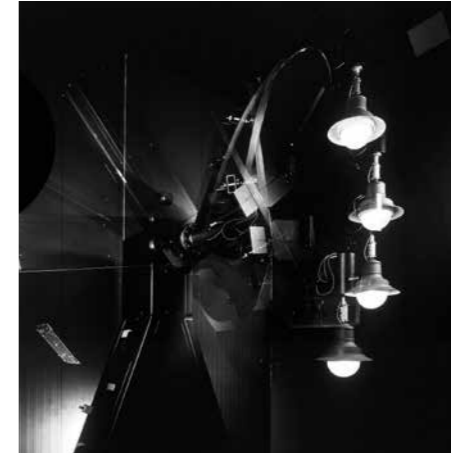


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**More than two hundred patents and over 25% of our staff in the Research and Development department are the demonstration of the value we place on innovation.**

## OUR LABORATORIES

- Lighting projects testing
- Visual comfort
- Light quality
- Salt spray
- IP
- IK
- Duration
- Heating
- Goniophotometer
- Integrating sphere



The Neri laboratories, a distinctive asset of the company where a passionate team of technicians and engineers work together intensely, simulate and exacerbate the environments in which the products will be placed, measuring their behaviour and effects.

Each component is subjected to several tests that reproduce the effects of dozens of years of operation of the structures and the devices in the space of just a few hours. The design stage of new products also takes place in these facilities within the company in a highly rigorous and scientific environment. The tests concern the lighting devices, the light sources and the surface coverings.

### LIGHT ROOM – LIGHTING PROJECTS TESTING

The environment similar to a street allows a real installation to be simulated with characteristics of spacing between the lamp posts and street geometry proportions. These are characteristics that permit the assessment of the lighting's effect on the ground, thanks in part to a porous surface like that of asphalt. During the simulations, you can walk through the lighting project and see the result with your own eyes. From this layout, you can appreciate the coincidence between the calculation made (spot and isolux) and the actual situation.

### VISUAL COMFORT

The installation of luminaires on posts, with determined spacing between them, permits assessment of the visual comfort provided by Neri optical systems. This data is just barely deducible through the usual lighting simulations or calculations, but it is never fully perceived except through a real experience. In fact, the eye is the only instrument available to assess the actual comfort of a lighting source.

### LIGHT QUALITY

The quality of the light can be measured in the laboratory, the actual perception of the light colour is definitely the most accurate. LED lights in particular are sources that have a significant light colour difference upon variation of the angle of emission. Surprises could therefore be encountered in terms of how the LED light sources appear on ground areas with different colour shades: some areas more blue and others more green. This visual test permits the assessment and selection of the ideal light sources and optical system that correspond to a high level of lighting quality.

### SALT SPRAY

Resistance to corrosion in neutral salt spray is a performance test related to surface treatments. Paints and other types of protective surface treatments are subjected to tests to determine resistance to corrosion through ageing in neutral salt spray in accordance with standard ISO 9227.

### IP

This is a safety and performance test related to the luminaire housings. The purpose is to determine the grade of resistance to water infiltration. The reference standards are EN60598-2-3 and EN60598-1.

### IK

This is a performance test related to the luminaire housings. The purpose is to determine the grade of resistance to external mechanical impact. The reference standard is EN62262.

### DURATION

This is a safety test on the luminaires to determine resistance to cyclic heating and cooling in operating conditions. The test takes place in an environment that is constantly climate controlled at 35°C. The purpose is to ensure that the characteristics of the luminaire do not change over time. The reference standards are EN60598-2-3 and EN60598-1.

### HEATING

This is a safety test on the luminaires. It carries out a check on the reaching of critical temperatures for safety during normal and abnormal operation. The lighting devices are subjected to a test to check thermal, mechanical and electrical safety in accordance with the specifications set forth in the harmonised product standards with respect to LVD directive, EN 60598-2-3 and EN 60598-1. Safety tests are also conducted here on the LED modules in accordance with the product standard EN 62031. The LED modules are generally tested as integrated components in the lighting device. These types of tests take place in constant temperature controlled areas.

### GONIOPHOTOMETER

This consists in a performance test on luminaires and light sources. The performance, optical rendering (LOR [%]), effectiveness ( $\mu$  [lm/W]) and distribution of luminous intensity, is determined by means of a mirror goniophotometer in conformity to standards EN 13032-1 and EN 13032-4. The room where the test equipment resides is climate controlled in terms of constant temperature, humidity and air speed.

### INTEGRATING SPHERE

This is a performance test on luminaires and light sources. The performance tests on the bulbs and LED modules (deterioration of the luminous flow, effectiveness and chromatic characteristics) are carried out here. The room that contains the spectrum radiometer, capable of detecting the colorimetric characteristics of the light sources, is climate controlled, but without the temperature control.

## SURGE PROTECTION

In the street lighting area, because of their exposed position, the devices are subject to voltage surges and external disturbances (discontinuous insertion of loads on the line, faults on the lines up or downstream, direct or nearby lightning) that may cause damage or malfunctions. Furthermore, in the LED lighting devices, where electronic components are predominant, resistance to voltage surges becomes even more necessary.

Given a class I or class II system, the installed device must correspondingly be a class I or class II device (recommended from a product protection point of view).

### Protection of Neri products

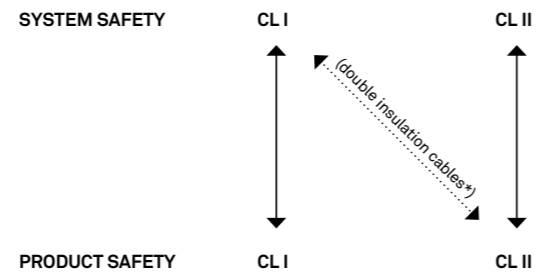
#### CL II 6kV/10kV (standard protection)

- Equipotential connection useful for protecting drivers and LED modules
- Use of components approved by safety standards
- Additional differential protection can be inserted up to 10kV/10kV

#### CL I 6kV/10kV (standard protection)

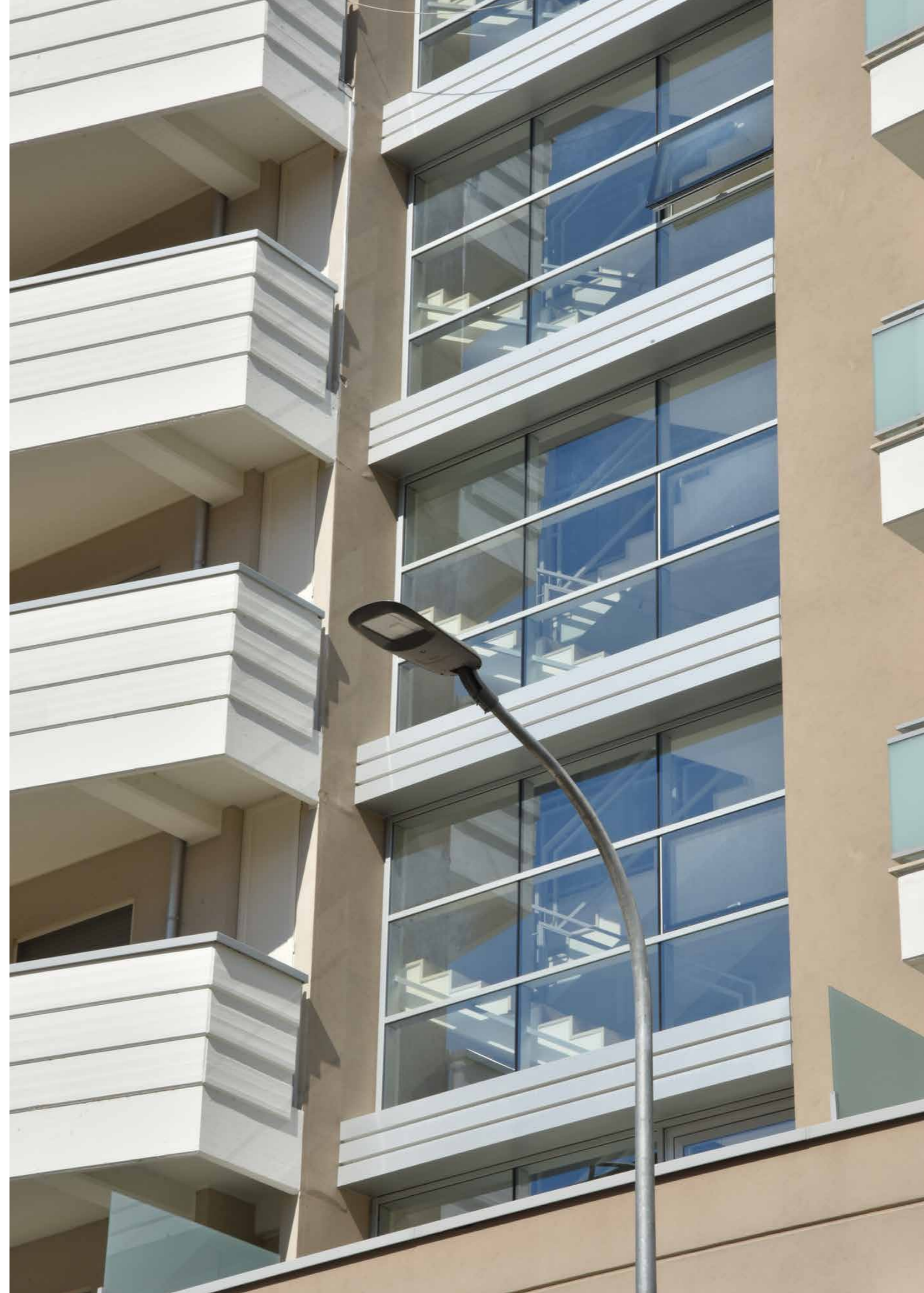
- Protective earth connection
- Presence of SPD to guarantee 10kV/10kV (on request)

The supplementary power dischargers (SPD) can be present only on class I devices and systems, since they have the function of discharging the overvoltage energy to ground. Ground tests must therefore be conducted on every product.



\* If the system is a CL I system and you want to install a CL II product, the product input cables must be double or reinforced insulation in order to guarantee the safety of the product itself.

NERI LUMINAIRE	DM/CM STANDARD PROTECTION	DM/CM CUSTOM PROTECTION
CLASS II	6kV/10kV	10kV/10kV
CLASS I	6kV/10kV	10kV/10kV







## HIGHLIGHTS

### Main features

- Archilede S is a 'Performance' category devices
- Particularly suited for roads and lanes with mixed traffic, essentially vehicular
- Designed in full compliance with the lighting standards, with minimal energy consumption, using LEDs and high performance optical solutions
- Designed to reduce glare, without compromising the lighting effectiveness

### Flux sizes

- The main factor in lighting design is system flux and photometry
- Neri presents products with their flux sizes, to ensure these values remain constant over time

### The flux sizes approach permits:

- Same light regardless of the number of LEDs
- Using the best technology on the market (easy upgrade)

### Multilayer

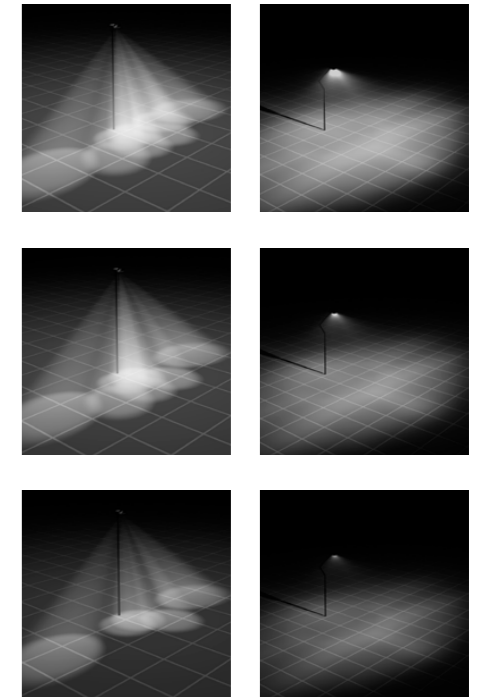
Archilede S adopts a technology with multilayer lenses:

- Each LED is associated with a lens
- All lenses are equal and cover the entire area to be illuminated; in case of failure of a single source, there is no loss in the uniformity of illumination on the ground

### Light emitting area

The glaring effect, typical of the individual point sources, is drastically reduced due to some technical devices:

- White color PCB
- Perimeter reflector
- Large light emitting area



On the left, from top to bottom, diagrammatic views of LEDs without multilayer lenses.  
On the right, from top to bottom, LEDs with multilayer lenses.

## VERSIONS AND CODES

In order to configure the Archilede S luminaire, type of optic, luminous flux related to colour temperature and driver functions need to be chosen. Their related codes have then to be added in sequence, one after another, following the order of the tables below, starting from type of mounting (**MNARCL**), optic (eg: **17**), luminous flux (eg: **1E1**) and driver (eg: **02**). The code of the chosen configuration will be: **MNARCL 17 1E1 02**.

### Archilede S – Performance

CODE	CODE	Optic	CODE	CCT	Flux	CODE	Driver functions
<b>MNARCL</b>	<b>17</b>	Type IV	<b>1E1</b>	3,000K	3,500lm	<b>02</b>	1-10V + NCL
	<b>18</b>	Type V	<b>1E2</b>	3,000K	4,500lm	<b>03*</b>	AmpDim
	<b>20</b>	Type II	<b>1E3</b>	3,000K	6,000lm	<b>04</b>	AmpDim + NCL
	<b>21</b>	Type III	<b>1E4</b>	3,000K	7,500lm	<b>05*</b>	DALI
	<b>22</b>	Type III	<b>1E5</b>	3,000K	9,000lm	<b>06</b>	DALI + NCL
	<b>23</b>	NLG 23	<b>1E6*</b>	3,000K	10,500lm	<b>13*</b>	NVL
			<b>1E7*</b>	3,000K	12,000lm	<b>14</b>	NVL + NCL
			<b>3E1</b>	4,000K	3,500lm		
			<b>3E2</b>	4,000K	4,500lm		
			<b>3E3</b>	4,000K	6,000lm		
			<b>3E4</b>	4,000K	7,500lm		
			<b>3E5</b>	4,000K	9,000lm		
			<b>3E6</b>	4,000K	10,500lm		
			<b>3E7*</b>	4,000K	12,000lm		
			<b>3E8*</b>	4,000K	13,500lm		

\* Asterisks marked codes can only be matched with each other (**1E6, 1E7, 3E7, 3E8** coupled with **03, 05, 13** driver functions).



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