

Rolle

LED smart street
lighting





Rolle

Smart street lighting

A simple and linear design, combined with sophisticated technology for exceptional technical performance: these are the features of Rolle, the street lighting fixture designed to take full advantage of the qualities offered by the new high-efficiency LEDs.

The energy-saving benefit guaranteed by LEDs is further increased by advanced management and control systems that can run the fixture at pre-scheduled times to reduce energy use.

The range has been remarkably extended with the introduction of new fixtures offering different light outputs in order to meet all urban lighting needs and allow designers to adjust their designs to any type of setting.

Remarkable results are achieved by using new light sources like LEDs. However, the advantages of new technologies can be fully exploited only by using the technical requirements and reliability of the lighting fixtures designed by a company that prides itself on fifty years of experience in the sector. Rolle PowerLED is designed by Alessandro Pedretti.



Rolle

Always use the power you need

The modular optical system and the possibility to choose the correct drive current for LEDs will always allow you to have the right power under specific design conditions, and also help you deal with maintenance and retrofitting problems.

Using a lower current will improve the efficiency of fixtures and therefore increase energy savings, whilst a higher current will result in a higher light flux so that you can reduce the number of fixtures.

+ efficiency

+ emission

Rolle 3280 3281 3282 3283 3284

	350 mA		530 mA		700 mA		Colour temperature	Colour rendering index
5 LED	2700 lm	19 W	3675 lm	29 W	4900 lm	39 W	4000 K	CRI ≥80
10 LED	5400 lm	39 W	7350 lm	58 W	9800 lm	78 W		
14 LED	7560 lm	53 W	10290 lm	82 W	13720 lm	110 W		
LED module efficiency	140 lm/W		125 lm/W		125 lm/W			

80% luminous flux maintenance after 50,000 hrs (L80B20)



Technical specifications

Housing and frame: in die-cast aluminium and designed with a very small surface exposed to the wind. Cooling fins integrated into the cover.
Pole connection: in die-cast aluminium, equipped with gaskets to secure the frame according to different inclinations. Adjustable from 0° to 20° for side mount; and from 0° to 15° for mast-top mounting. Inclination angle of 5°. Ideal for poles with a diameter of 46-76 mm.

Diffuser: transparent glass, 4 mm thick, tempered, resistant to thermal shocks and impacts (UNI-EN 12150-1 : 2001).

Coating: powder-coated with polyester resin, resistant to corrosion and saline environments.
Standard supply: automatic temperature control device inside the lamp with automatic recovery.
Safety diode to protect against voltage peaks pursuant to EN 61547. With dedicated electronic device to protect the LED module.

Street lighting comparison, distance between fixtures 32 (SAP), 35(LED) at a height of 9 m

	SAP 150 W Sodium Vapour	Rolle
Watt	150 W	110 W
fixture power	168.1 W	116.5 W
total power (%)	100 %	63.4 %
luminous flux	17200 lm	13720 lm
savings %		34%



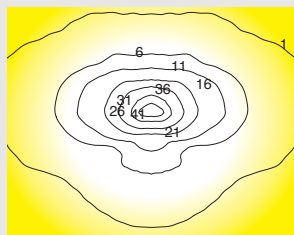
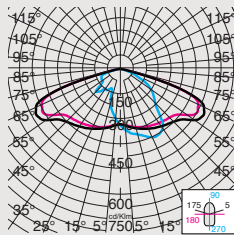
Rolle

Outstanding photometric performance

This product was designed with an optical system capable of controlling the potential glare created by the growing light intensity of LEDs while achieving high photometric performance. This allows the application in street lighting schemes where there is a significant distance between the poles. Combined optical system made in high performance PMMA, resistant to high temperature and UV radiation. Flux recovery systems in metallic V0 polycarbonate.



3280 Rolle T1



code (700 mA)

330400-00

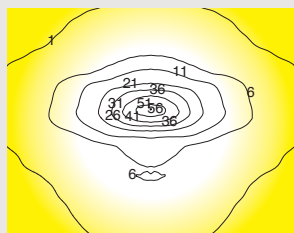
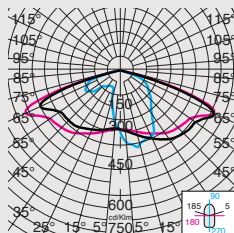
330401-00

330402-00

Examples of installation:



3281 Rolle T2



code (700 mA)

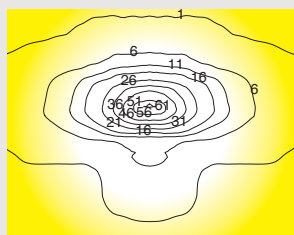
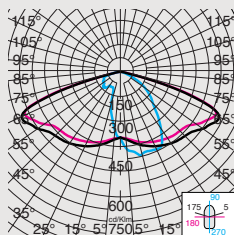
330410-00

330411-00

330412-00



3282 Rolle T3



code (700 mA)

330420-00

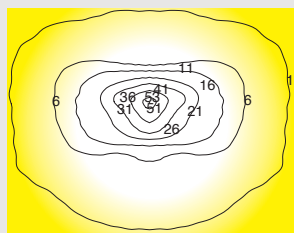
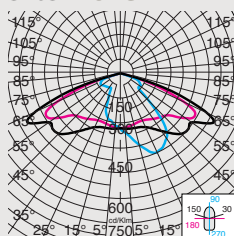
330421-00

330422-00





3283 Rolle T4



code (700 mA)

330430-00

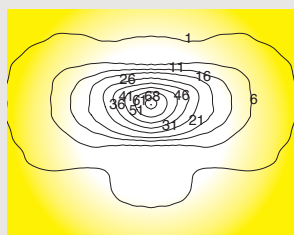
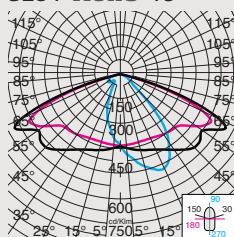
330431-00

330432-00

Examples of installation:



3284 Rolle T5



code (700 mA)

330440-00

330441-00

330442-00



Rolle

Optical design

The modular optical system and the solutions implemented in the electronic circuit design and in the control of operating temperatures, make the Rolle range a highly professional, flexible and reliable product, capable of guaranteeing huge application advantages in several situations.



Energy efficiency and energy saving

Consuming less energy without giving up the benefits of technological progress. This is the great challenge for the future of our planet. This is because greater energy efficiency means lower consumption without compromising light quality. Being able to distinguish colours and perceive clear details when transiting on urban streets helps improve the safety of drivers and pedestrians. In addition, lights that mimic daylight will improve the perception of faces and increase our sense of safety. Thanks to white LED light, cities are safer and more liveable even after dusk.



Heat dissipation

The heat dissipation system was designed and manufactured to allow LED operation at adequate temperatures and guarantee excellent performance/efficiency and long life.



Reduced resistance to wind

The fixture's design is configured to minimise wind-exposed surfaces, 400 sqcm of side surfaces.

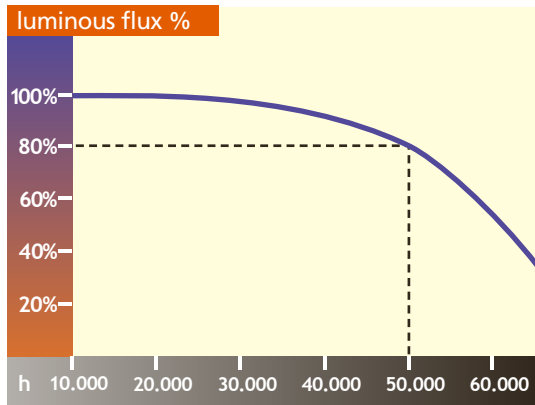


Life expectancy

LEDs, unlike traditional sources, will not turn off suddenly when their working life ends, but will slowly fade their initial luminous flux until they turn off completely. In fact, LEDs do not break (except for manufacturing damages) but decay gradually and constantly.

The decrease of LED flux is defined by the working life and is represented by the L80 mark (see chart), which means that the flux is kept up to 80%. The "B" letter followed by a number ranging between 10 and 50 indicates the quality of the fixture and defines the LED percentage that keeps the declared characteristics when it reaches 50,000 working hours.

EXAMPLE: LED declared L80/B10 = 50,000 hrs
This means that when the LED reaches 50,000 hours of operation, 90% (B10) of the LED will have a luminous flux corresponding to 80% of the initial flux (L80)



State-of-the-art technology

The Rolle line was designed with a series of features and solutions to maximise lamp life and system usage.

Use of the best available LEDs and power supplies
Modular optics with electronic circuits equipped with bypass circuit (in case of defects in single semiconductors)

Overheating control system with automatic reduction of current

Anti-condensation valve

Version with safety device against peak power beyond 10 KW available on request

Low temperature electronics

All these features help to extend lamp life past 50,000 hours.



Photobiological safety

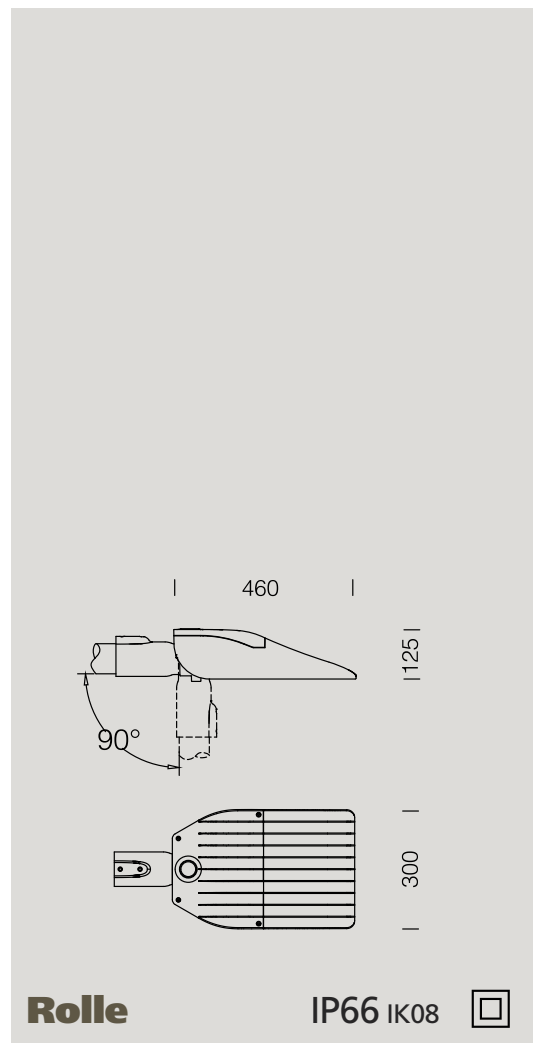
We often read about photobiological safety in lighting design. This very important factor is determined by the amount of radiations emitted by all the sources with a wave length ranging between 200 nm and 3000 nm. Excessive radiation exposure can be harmful for human health. The EN62471 standard classifies light sources into risk groups.

RG0 (exempt risk group): the lighting source is exempt from risks in compliance with EN 62471 Standard.

RG1 (low risk group): no risk deriving from a limited emission of radiation.

RG2 (moderate risk): the lighting source does not pose hazards because of our aversion response to very bright light sources, or due to the fact that we would experience thermal discomfort.

The products of the Rolle range belong to the RG0 group (exempt risk group).





Light dimming

In order to exploit the energy-saving potential of LED technology, lighting fixtures are equipped with an internal electronic system comprising a microprocessor which controls the luminous flux from zero to 100%, making energy savings increase accordingly.

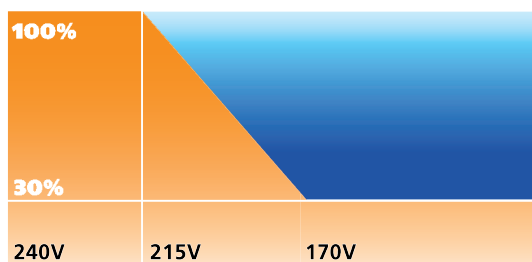
This will enable users to operate a lighting fixture at reduced power rates in specific applications, according to programmable periods of time using dedicated sensors, such as light sensors or presence detectors.

In particular, according to the UNI-11248:2007 road standard, it is possible to classify roads dynamically into two categories, and reduce the luminous flux at night when traffic is low.

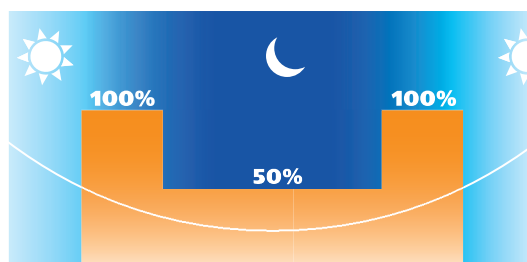
Dynamic light is also recommended for less crowded places like underground car parks and underpasses.

Programmable lighting control systems

At the customer's request, the Rolle range of products can be equipped with a special device to dim the lighting flux during the night-time without the need to install additional infrastructure. These fixtures can be installed into existing luminaires in the place of traditional street lighting systems, increasing energy savings resulting from the use of LEDs, with the automatic night-time dimming function. The device is capable of performing up to 5 night-time dimming steps; the system is supplied already programmed by Disano illuminazione and the user does not need to perform any type of programming during installation.



1-10V dimming
10%-100% dimming
with 1-10V system (subcode -12)



Virtual midnight
Stand-alone system with automatic flux reduction
(subcode -30)

**Light
only when and where
it is needed**



Smart Lighting

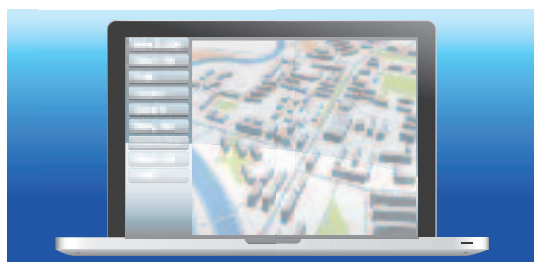
Power line carrier remote control systems

A special control system can be inserted inside the lighting fixture or into the lamp pole to monitor the product's operating parameters.

This type of remote control system is called "point-to-point". A "point-to-point" system is based on the power line carrier (PLC) technology that enables a digital two-way communication between the module installed in the fixture and the control system. The control system is located inside the control panel. The digital data are adjusted to the mains voltage, so no BUS or extra conductors are needed.

Thanks to this "point-to-point" system, it is possible, for example, to monitor and save the fixture's electrical parameters and, based on these settings, generate failures or alarms, turn off/on or adjust the fixture's brightness. This is done through either manual or pre-set commands.

The communication between the control centre (PC) and the "point-to-point" system occurs through a control panel using normal communication channels (GSM-GPRS-LAN network, etc.).



**Point-to-point control,
management and diagnosis system
(subcode -0078)**

Wi-Fi remote control

LED lighting also comes with Wi-Fi connectivity. The LEDs in Rolle can be "controlled" via the system's remote control or smartphones.



**Point-to-point control,
management and diagnosis system with Wi-Fi
technology (upon request)**

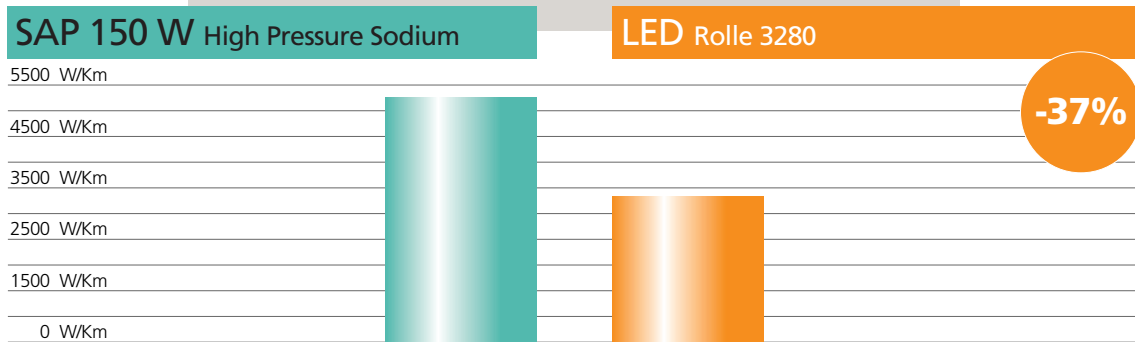
Advantages in replacing old luminaires

The replacement of obsolete lighting systems based on mercury vapour fixtures (still very common in residential zones despite being outdated and poorly efficient), will enable to reduce energy consumptions by 50-60%, while increasing the light output to the levels currently required by applicable legislation,

without the need to modify neither the poles nor the systems. With the modularity offered by Rolle fixtures you can always choose the exact amount of power necessary to deliver the right lighting levels without over-dimensioning and therefore wasting energy.

	W	Width	H	Distance	Cd/m ²	P (w)	P/km
SAP 150	150	8	9	32.0	1.2	168	5300
Rolle 3280	110	8	9	35.0	1.14	116	3300

Comparison of consumptions on a ME3 road (C2 type of asphalt):



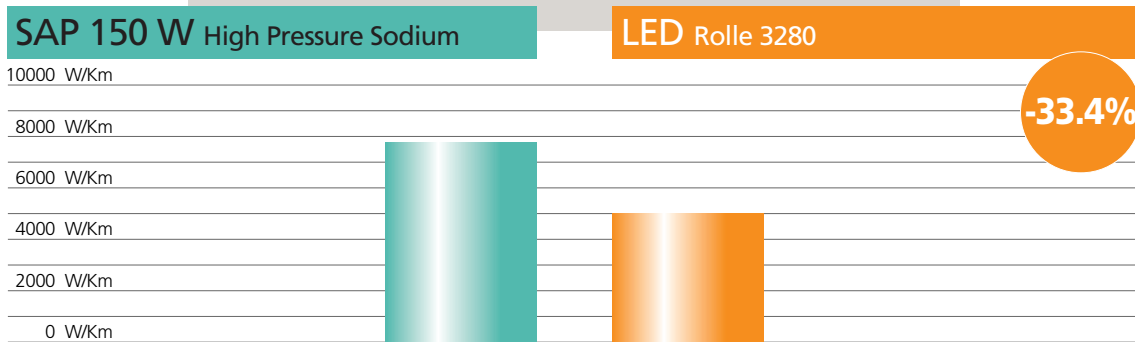
Advantages in installing new projects

Using Rolle LED lights instead of high-pressure sodium luminaires enables you to obtain the same lighting results, reducing power and consumptions by 25%-30% depending on the type of road. Compared to high pressure sodium, LED technology will significantly improve both the quality of the light (which is white and not yellow) and the colour rendering; moreover regular maintenance is no longer needed.

Thanks to high performance LED optics (reflector + auxiliary lens), Rolle LED fixtures can be used along roads and keeping the same distance between poles, like for high-pressure sodium lamps. In this way you can save energy without increasing the number of light fixtures.

	W	Width	H	Distance	Cd/m ²	P (w)	P/km
SAP 150	150	8	8	24.0	1.60	175	7300
Rolle 3280	110	8	8	24.0	1.72	116	4900

Comparison of consumptions on a ME3 road (C2 type of asphalt):





Disano illuminazione spa
viale Lombardia 129
20089 Rozzano, Milan, Italy
tel +39 02 824771 (20 lines)
fax +39 02 8252355
info@disano.it
www.disano.it

