Smart lighting

Aspira Bi-color

Product sheet

2021: good industrial design

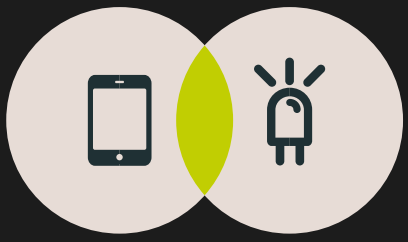
Dutch Design Week 2021

Sustainder

Sustainder
The smartest public lighting for a better world

Sustainder is an innovative Dutch company at the forefront of the development of smart public lighting and smart city solutions. Our roots lie in the combined expertise of the former Philips/Industria luminaire factory and Dazzletek, specialized in intelligent control systems for public lighting.

At Sustainder, we understand how to design a smart city with solutions that go beyond lighting. Our vision is a future where public lighting goes beyond "just light. Within 20 years, our smart lighting solutions will positively transform city life and provide greater comfort, safety and quality of life for citizens. In this, the street lamp will serve as the central focal point and the environment as the defining factor.



A new generation of LED luminaires

Sustainder is introducing a new generation of advanced LED lighting and luminaires. Developed from our vision of the future, their modular concept and open architecture make them ready now for whatever developments tomorrow will bring. By using LED-technology, sensors and smart software, the energy consumption of Sustainder luminaires is minimized, whilst CO_2 emissions are also reduced.

Luminaire description

Aspira by Sustainder is an all-round, future-proof luminaire. Choosing this luminaire gives you all the current smart-lighting possibilities – and ensures you are prepared for future developments and opportunities. Via an API, this energy-saving LED luminaire can be connected online to any back-office or other system for remote control and monitoring. The luminaire comes equipped with various sensors which make installation easier, reduce maintenance costs and extend service life. And thanks to a unique cassette system, it is also possible to easily extend the luminaire's capabilities in the future. Just add new sensors to the cassette and turn the luminaire into an advanced smart city hub.

Advantages

- Energy efficient LED.
- Standard remote control and monitoring through built-in connectivity.
- Easy to expand with sensors and smart applications by simply replacing the cassette.
- No tooling required for cassette replacement, minimizing replacement times and traffic hindrance.
- Smart applications are inconspicuous by design, preventing any unrest from the public.

The Sustainder concept

Our mission is to transform the public lighting network into a sustainable, future-proof and smart infrastructure.

Our modular cassette system makes it possible to use the public lighting infrastructure as locations for sensors and communication.

We believe in fully open technology to enable the city of the future:

- Open hardware (24V / 230V)
- Open API
- Open standards

The cassette, including electronics, makes maintenance and installation very easy:

- No tooling required
- Quick cassette replacements
- Automatic error reporting and configuration

Sustainder
Bi-color

The "Bi-color" service allows you to switch between color temperatures. By default, Sustainder luminaires are equipped with the most energy-efficient and efficient LEDs (in color temperature ranging from 2200K to 5700K). With the service 'Bi-color' you get the possibility to make combinations between two color temperatures. This change of color temperature is possible time-controlled but can also be used in combination with motion sensors where a color change occurs when motion is detected.

How does it work?

You are given the option at Sustainder to order three different Aspira Bi-color luminaires: 2200K with 3000K, 4000K or 5700K. The luminaires are designed so that half of the available power is reserved for 2200K and the other half for the complementary color temperature. This means that in theory both color temperatures can also be turned on simultaneously to increase luminous flux. When programming the luminaires, however, Sustainder ensures that only 1 color temperature is on at a time.

To configure the product, you simply specify which color temperatures you want, which lumen output you need, at what times the colors are desired, and optionally what dimming scheme you want to apply. Sustainder takes care of the rest.

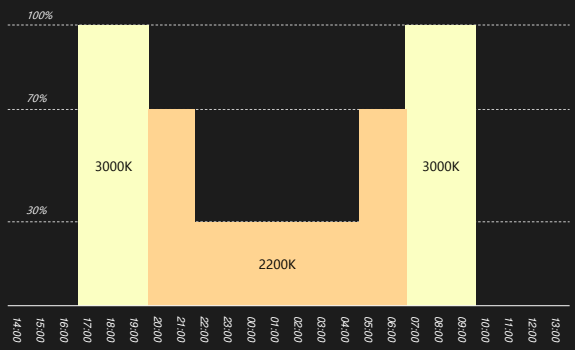
Example:

- You require 2.000 lm, 2200K + 3000K
- You want to switch colors as follows:

On to 20:00:	3000K
20:00 to 5:00:	2200K
5:00 to Off:	3000K

- You apply this dimming scheme:

On to 20:00:	100%
20:00 to 22:00:	70%
22:00 to 5:00:	30%
5:00 to 7:00:	70%
7:00 to Off:	100%



Ready for the future, today

Standard functionality

GPS · Mesh RF · Temp IN · Power Meter · Accelerometer

Optional functionality*

Humidity · Camera · Counter · Sound · Gas · Movement · Temp OUT

CO_2 · Wifi · Ethernet · 2G/3G/4G · NB-IoT · Fiber

**Optional functionalities are custom developed with our clients.*

Back-office connectivity

The luminaire is exceptionally easy to control and manage via any back-office system for public lighting. Use an API to hook it up to your platform for immediate and optimum control.

Luminaire features

- Energy-saving LED technology reduces CO_2 emissions.
- Dimmable.
- Constant light output (CLO) throughout full life of the LEDs (100,000 hours).
- Cassette system supports addition of further sensors in the future.

Luminaire management and maintenance

Thanks to its open architecture, the luminaire can be connected to all back-office systems, using an API. This in turn supports remote monitoring and control that enables you to:

- Configure each luminaire remotely after installation.
- Change configurations remotely.
- Map and monitor your installed base using GPS positioning.
- Monitor the performance of each luminaire remotely.
- Measure the actual energy use of each luminaire.
- Receive errors and defects on luminaire level.

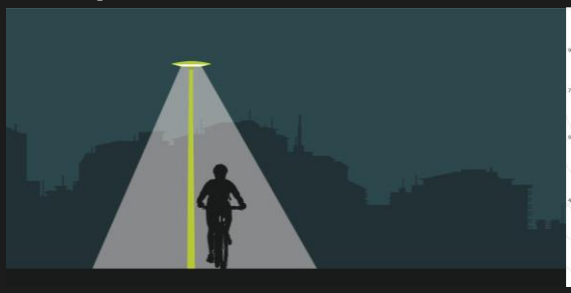
Applications

- Urban areas: city centres, squares, parks and car parks.
- Roads: through roads, roundabouts and cycle paths.
- Residential areas: streets, shopping centres, cycle paths, footpaths, playgrounds and car parks.
- Large sites: industrial parks, ports, airports and stations.

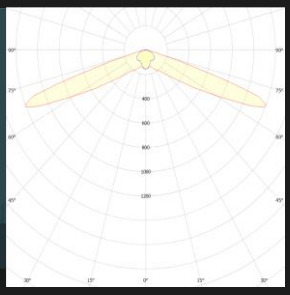
Quality marks

The luminaire is CE, ENEC and RoHS certified.

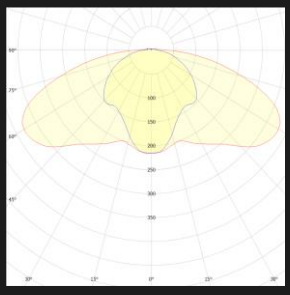
Bike path



Without LED covers

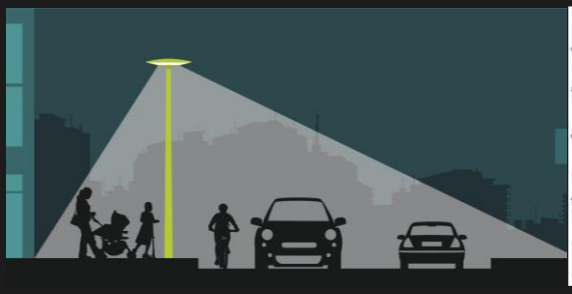


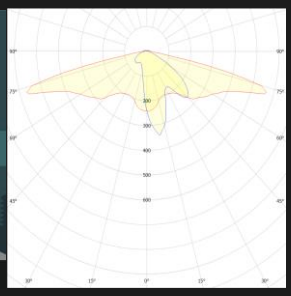
With LED covers[1]

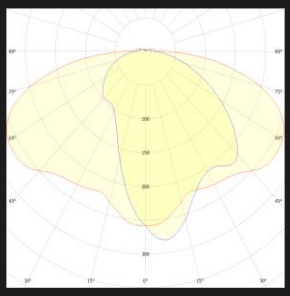


stas 1

Street

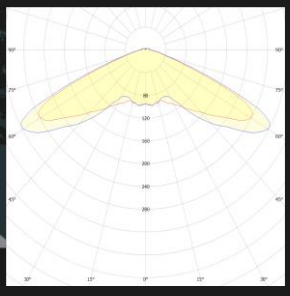


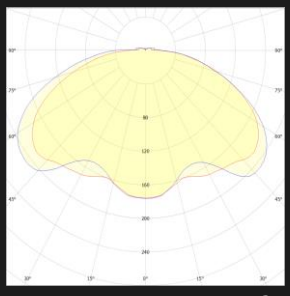




stas 2

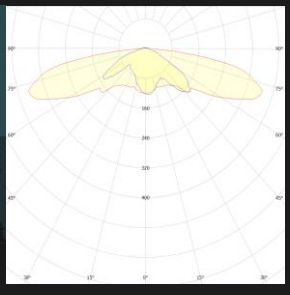
Area symmetrical

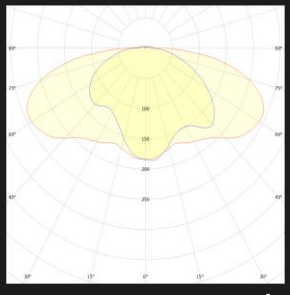




stas 3

Area asymmetrical





stas 4

The Aspira can be supplied with optional comfort LED covers for improved vertical illuminance and reduced glare (G1 class).

[1]Use of the LED covers reduces the efficiency of the luminaire. Please consult the LDT files for the correct values.

Sustainder Aspira Bi-color

Technical specifications

Lumen/power without LED covers and with standard sensors and RF-module					
			Typical luminaire output (lm) – Excl. CLO[1]		
#LEDs	**Driver**	**Power**	**2200K + 3000K**	**2200K + 3000K**	**2200K + 5700K**
24 LED	60W	7 – 33W	800 – 3.800	800 – 3.800	800 – 3.800

Maintenance	
LED	100.000 hrs L95 @ Ta = 25°C
Driver	100.000 hrs

Lighting Classes (EN 13201)	
Residential area	P1 – P7

Color Rendering Index	
CRI	>70, 80 on request

Mains Voltage	
AC	90 .. 305 V ac
Net Frequency	47 .. 63 Hz
Safety Class	I or II

Surge Protection	
	10 kV

LED Driver	
Dimmable	5 .. 100% of maximum

Wireless Mesh Communication	
Frequency	869.525 MHz +/-30 ppm
Output power	16 dBm
Sensitivity	-105 dBm
Baudrate	130 kb/s
RF Range	121 dB

Material	
Housing	Die-cast aluminum LM6-quality non-corrosive
Guard	PC
Lid	ABS
Color	Standard: NOIR2100 or GRIS2150 / Optional: any RAL color

[1]Communicated values are subject to tolerances in technology. For example, the initial flux and power consumption of the luminaire are indicative values and valid for 25°C ambient temperature. The real flux output depends on environmental conditions (such as temperature) and may vary with specific configurations. For more information please check www.sustainder.com.

Specifications may change and should be treated as an indication only. You are welcome to contact us about your needs.

Sustainder Aspira Bi-color

Technical specifications

Environmental	
Operating temperature	-40 .. +55°C
IP rating	IP66
IK rating Housing	IK10

Installation	
Spigot diameter	60 or 76 mm
Height	4 .. 6 m

Cable	
Cable gland	M20
Cable Clamping Range	6 .. 11 mm

Dimensions	
Diameter	602 mm
Height	470 mm
Weight	6.5 kg

Sensors

Power meter	
Resolution	0.5 W
Accuracy 1 .. 5 W	0.5W
Accuracy 5 .. 90W	±5.0%

Temperature (for internal temperature)	
Measurement range	-25 .. 100°C
Accuracy	±1.0°C

Accelerometer (tilt detection)	
Resolution	0.22 degrees
Accuracy	±0.5 degrees

GNSS (Location – Position on map)	
Signals	GPS, Beidou
Accuracy	CEP50 ≤ 2.5m

Motion sensor
Optional integrated in spigot

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