Smart Lighting

Observer

Product sheet

CE RoHS

Sustainder

Sustainder Observer

Product information

Solution

The Sustainder Observer solution offers an integrated outdoor camera solution for both the Anne and the Alexia Luminaires. The Anne Observer contains 4 cameras that provide a 360° view and the Alexia Observer contains 2 cameras with a 226° view (113° view per camera). The video streams can be stored locally or transmitted via a 4G or Wi-Fi wireless link. With the optional integrated 'Edge computing'-modules (CPU) analysis of the video streams can be performed. Audio clips can be played using the optional audio speaker. The Observer can be supplied as a separate cassette as add-on to existing luminaires. If the Observer is needed on another location, it can easily be transferred to another luminaire of the same type by simply swapping the cassettes of the luminaires.

Modes of use

Standard

Recording

The solution offers 3-5 days of storage for 4 camera streams in the highest resolution (1920x1080p).

Video can be downloaded from the required time period.

This enables playback of the timeframe around the time that a criminal event occurred (e.g. theft, vandalism, rioting, etc.) and can provide evidence.

Live viewer

The video streams can be viewed in real-time.

This gives a clear overview of the current situation around the luminaire and may be useful to monitor periodic events (e.g. sport events).

Live viewing may also be desired to monitor a scene after a disturbance has been reported or detected by another sensor (e.g. sound).

Trigger based events

A built-in feature of the cameras is detection of motion and the possibility to trigger an event based on the detection.

An example of a possible event is to send an e-mail with a screen capture of the camera.

This enables immediate action if necessary, without constant monitoring of the video streams.

Advanced

Image recognition

With an optional 'Edge computing' module, video can be analysed real-time and events can be triggered based on image recognition.

This enables detection of specific actions / scenarios rather than any 'motion', allowing for more accurate events.

Examples are detection of a break-in, fence climbing, panic, rioting, fighting, etc.

Re-active: act afterwards — *Pro-active: possibility to act now!*

Benefits

- **Integrated, discrete solution**
- **Fully wireless (4G / WiFi)**
- **Swappable solution**
- **Secured VPN**

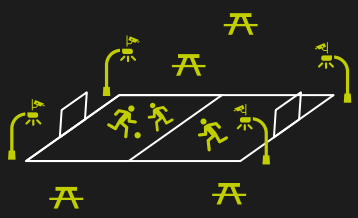
Sustainder Observer

Use cases

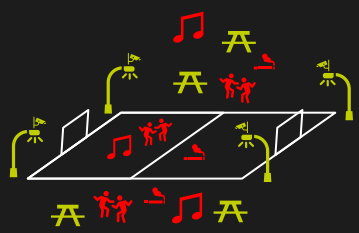
Use case: Nuisance / disturbance

Situation:

- Playground with mostly fun and play, but at night it is prone to nuisance from youths and/or drug addicts.
- People in the neighbourhood feel unsafe and are annoyed by the noise and waste.
- Police and neighbourhood watch are unable to address the issue due to limited capacity and unpredictability.
- Using Sustainder lighting with integrated Observer it is possible to improve lighting and monitor the area.
- The solution can be used in different ways, each with its own (dis)advantages.



"Mostly fun and play"



Occasional disturbances

	Recording	Live viewer	Trigger based events	Image recognition
Scenario	• Video is stored for 5 days in the device. • If an incident occurred (e.g. damage to the playground), user has the possibility to download video for evidence.	• User can check playground periodically or on specific moments (if it is 'known' when youths are hanging around). • If necessary, user may dispatch a car or play an audio clip.	• Solution can send photos in case of movement. • User receives photos within minutes and may decide to check the live viewer or act immediately (dispatch car / play audio clip).	• By video analysis using an onboard CPU it is possible to set triggers based on very specific events: vandalism, panic, fighting, etc. • User can act upon these specific triggers.
Advantages	• Limited effort needed: only human labor needed for very specific incidents. • Strong evidence. • Only data usage for good reasons. • 24/7 storage for 3-5 days.	• Possibility to act immediately. • Human judgement on whether actions are necessary per situation.	• Possibility to act fast, pro-actively (based on human judgement). • 24/7 monitoring. • Limited data usage. • Frequency of triggers can be set. • Area for triggers can be set. • Triggers can be used as input for other applications (e.g. play audio clip).	• High accuracy (other events are ignored). • Possibility to act fast, pro-actively (based on human judgement). • 24/7 monitoring. • Limited data usage. • Frequency of triggers can be set. • Area for triggers can be set. • Triggers can be used as input for other applications (e.g. play audio clip).

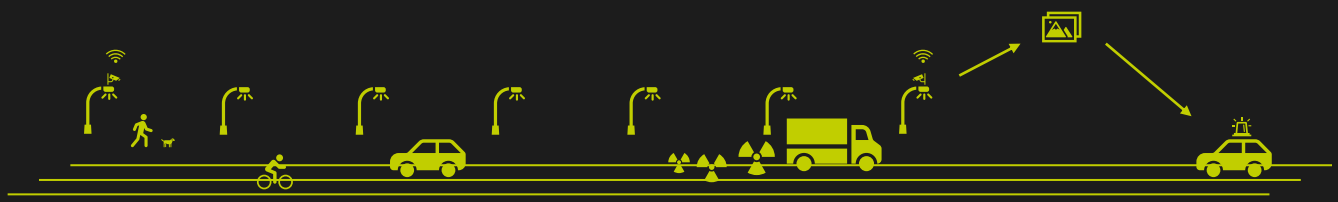
Sustainder Observer

Use cases

Use case: Security Application

Situation:

- The Netherlands faces issues with illegal dumping of waste in rural areas, often related to drugs production.
- Cleaning costs amount up to 100k per incident and impact to local communities is immense.
- Perpetrators are difficult to track down due to large, sparsely populated areas with limited infrastructure and limited social control .
- Using Sustainder lighting with integrated Observer it is possible to improve lighting in these areas and to monitor the area 24/7.
- The solution can be used in different ways, each with its own (dis)advantages.



Regular traffic *Drug dumping detection*

	Recording	Live viewer	Trigger based events	Image recognition
Scenario	• Video is stored for 5 days in the device. • If an incident occurred (i.e. drugs dumping in the area), user has the possibility to download video for evidence.	• User can check area periodically or on specific moments (e.g. around midnight). • If necessary, user may dispatch a car or play an audio clip.	• Solution can send photos in case of movement. • User receives photos within minutes and may decide to check the live viewer or act immediately (dispatch car / play audio clip).	• By video analysis using an onboard CPU it is possible to set triggers based on very specific events: e.g. a van in the area between 0:00 AM and 5:00 AM. • User can act upon these specific triggers.
Advantages	• Limited effort needed: only human labor needed for very specific incidents. • Strong evidence. • Only data usage for good reasons. • 24/7 storage for 3-5 days.	• Possibility to act immediately. • Human judgement on whether actions are necessary per situation.	• Possibility to act fast, pro-actively (based on human judgement). • 24/7 monitoring. • Limited data usage. • Frequency of triggers can be set. • Area for triggers can be set. • Triggers can be used as input for other applications (e.g. play audio clip).	• High accuracy (other traffic / events are ignored). • Possibility to act fast, pro-actively (based on human judgement). • 24/7 monitoring. • Limited data usage. • Frequency of triggers can be set. • Area for triggers can be set. • Triggers can be used as input for other applications (e.g. play audio clip).

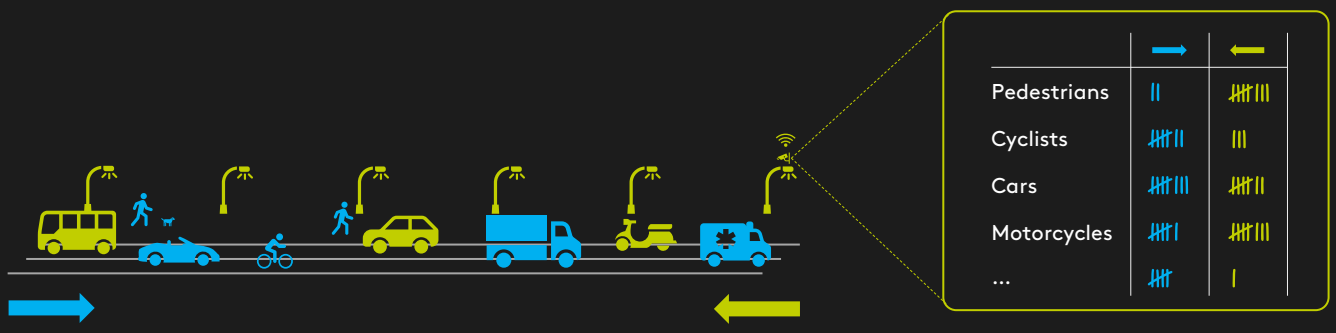
Sustainder Observer

Use cases

Use case: Traffic counter (Advanced)

Situation:

- Many municipalities need accurate traffic intensity data in order to decide on effective policies.
- Existing solutions such as traffic loops often require high investments and often have several limitations.
- For example, it is usutally not possible to (accurately) determine the difference between cars, (mini)vans, trucks, buses, motorcycles, ambulances, tracotrs, cyclists, etc. Pedestrians cannot be measured using loops at all.
- With loops it is also not possible to detect the direction of the traffic (on lanes with 2-way traffic).
- Using Sustainder lighting with an integrated Observer Advanced, it it possible to execute highly detailed traffic counting – completely safe and completely anonymous.
- Using our solution, it is possible to determine the type of traffic in multiple directions. It is even possible to count how much traffic turns left, right or goes straigt on an interesection.
- Users get access to both the raw data and an easy-to-use dashboard.
- The Sustainder Observer is very flexible: you can use it for temporary traffic counting on multiple locations without building new infrastructure, but simply using the existing street lighting infrastructure.



	Observer Advanced	Traditional Loops
Accurate data	+	+
Privacy ensured	+	+
Possibility to count in multiple directions	+	
Possibility to accurately distinguish traffic types	+	
Possibility to count pedestrians	+	
Easy to move to other locations	+	
Easy to replace in case of issues	+	
Usable for other applications (e.g. safety)	+	

Sustainder Observer

Examples of applications

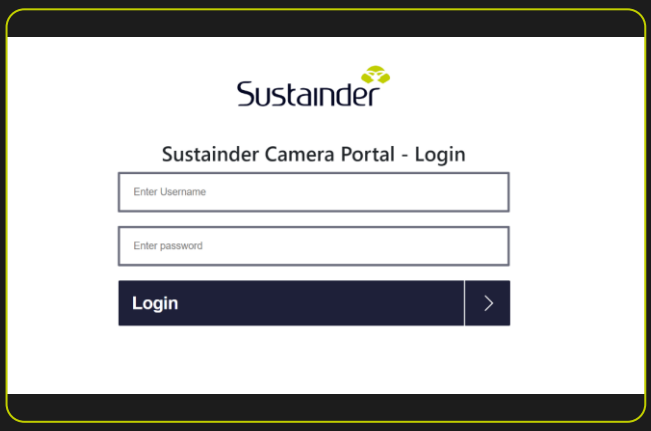
	Applications (non-exhaustive)	Standard	Advanced
Surveillance	Surveillance of parking lots	+	+
	Surveillance of data centers	+	+
	Surveillance of entrances	+	+
	Surveillance of gas stations	+	+
	(temporary) Surveillance of events (sports, festivals, carnival, etc.)	+	+
	Surveillance of playgrounds	+	+
	Surveillance of alleys	+	+
	Surveillance in parks	+	+
Detection	Detection of motion	+	+
	Detection of unusual presence (e.g. movement between 0:00 AM and 5:00 AM)	+	+
	Detection of burglaries		+
	Detection of aggression		+
	Detection of panic		+
	Detection of 1,5m social distancing		+
	Detection of traffic accidents		+
	Detection of drug dumping		+
Counting	Counting of pedestrians		+
	Counting of cyclists		+
	Counting of cars		+
	Counting of tractors		+
	Counting of trucks		+
	Counting of wildlife		+
	Counting of the number of yellow umbrella's...		+
	Counting of red mini coopers with the British flag on the roof top...		+

Sustainder Observer

Camera Portal (Standard)

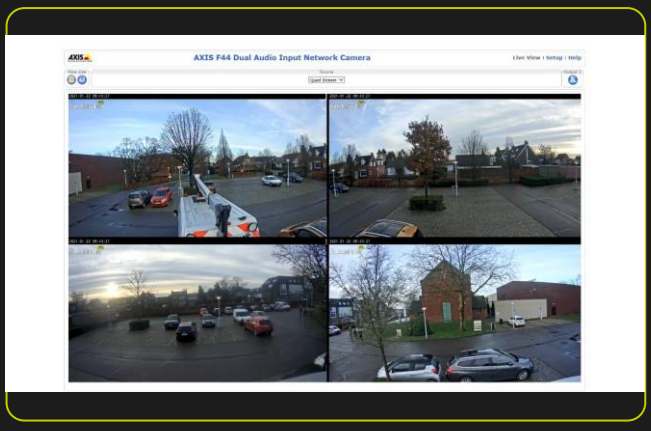
Log in

- Safe log-in via Sustainder Camera Portal.
- No extra applications / VPN needed.
- The Sustainder portal covers the VPN.



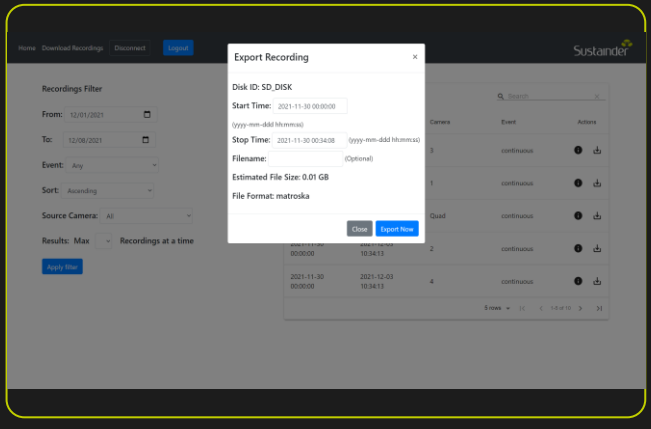
Live viewing

- Select a camera view of choice (up to 4 camera feeds in case of the Anne).
- With ‘Quad stream’ it is possible to view all (2 in case of Alexia, 4 in case of Anne) feeds simultaneously.
- Watch the live images.



Download

- Download recordings.
- You can choose:
    - Date and time.
    - Duration of the recording.
    - From which camera(s) you wish to download the recordings.
    - File name.
- An estimated file size is provided in order to manage data usage.

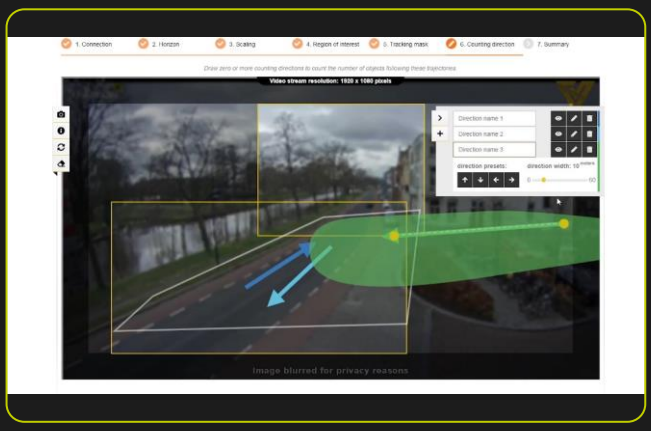


Sustainder Observer

ViSense Portal (Advanced)

Easy configuration

1. Set up the connection.
2. Calibrate the horizon.
3. Calibrate the scale based on an object with known dimensions (e.g. a person of 1,80m).
4. Mark your ‘region of interest’.
5. Create 1 or more ‘tracking masks’ in which you wish to monitor the traffic.
6. Indicate in which direction(s) you wish to monitor the traffic.
7. Check your set-up in a summary view.



Live viewing

After the system set-up you have access to an anonymized live viewer in which you can observe if the system functions as required, and that traffic is counted as expected in your ‘region of interest’. Users can see:

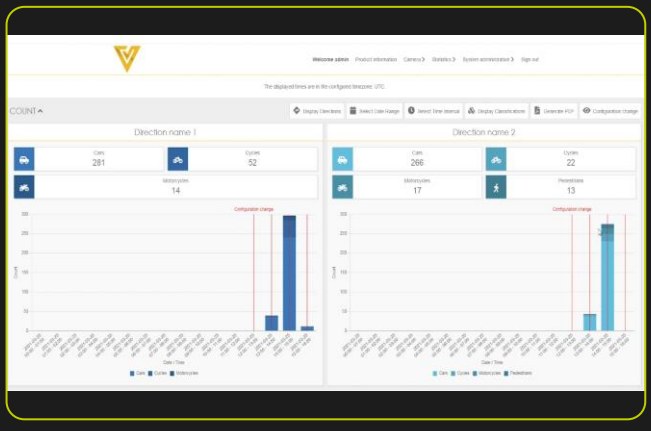
- A trajectory of traffic within view.
- An icon for the traffic type (pedestrians, cyclists, motorcycles, cars, etc.).
- As soon as an object leaves the ‘region of interest’ a “+” symbol appears on screen.

Access to relevant statistics

Users get access to the system statistics in a clear dashboard. All data are fully anonymous. Options in the dashboard are:

- Select the desired ‘direction’.
- Select the desired date + time interval.
- Select the desired traffic type.
- Generate a .pdf report.
- Export the raw data.

If required, the dashboard can be tailored to your personal needs. Please contact Sustainder for the possibilities.



Sustainder Observer

Image quality

Person @ 5 m

Person @ 10 m

Person @ 25 m

Person @ 50 m

Sunny day

Night

Camera height = 4.5m

Sustainder Observer

Technical specifications

Camera Specifications

Number of cameras	Anne: 4 / Alexia: 2
Image Sensor	1/2.8" (effective) progressive scan RGB CMOS
Resolution	Max. 1920x1080p
Horizontal field of view	113°
Vertical field of view	62°
Lens	Fixed iris 2.8mm F2.0
Minimum illumination	Color: 0.3 lux
Max frame rate	50 fps (50Hz)

Camera Features

Video Streaming	Quad view
Video Compression	H.264, Motion JPEG
Wide dynamic range (WDR)	Forensic Capture
Max resolution	1920x1080p
Analytics	AXIS Video Motion Detection Active Tempering Alarm AXIS Cross Line Detection Analytics
Event Triggers	Edge storage events

Storage

SD Card #1	Surveillance High Endurance Card 256GB
SD Card #2	Optional
Storage capacity 256GB	Anne: 4 streams 1920x1080p 72 hours (3 days) Alexia: 2 streams 1920x1080p 144 hours (6 days)

Connectivity

Mobile	4G (LTE)-Cat 4, UMTS, EDGE, GPRS
Wi-Fi	IEEE 802.11b/g/n
SIM	Dual SIM
Location Tracking	GPS, GLONASS
Security	VPN, Embedded Firewall

Edge computing (optional)

Number of modules	Anne / Alexia: 1
GPU	Pascal 256 core, Max. 1.12GHz
CPU	ARMv8 (64-bit) Denver 2, 2.0GHz ARM Cortex-A57, 2.0GHz
Memory	8GB LPDDR4, 32GB eMMC

Audio Speaker (optional)

Rated Power	20W
Max Power	40W
Sound Pressure Level	107 dBA
Frequency Range	60 ~ 20.000 Hz

Environmental

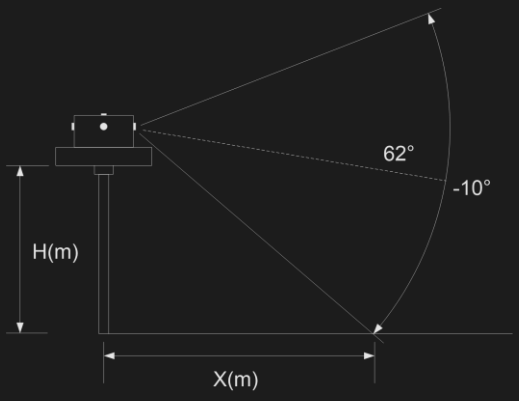
Operating temperature	-30 .. +35°C
IP rating	IP66

Sustainder Observer

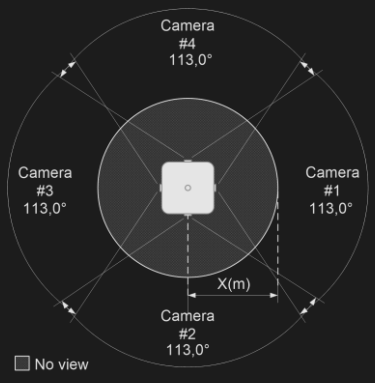
Viewing angles

Anne

Vertical view



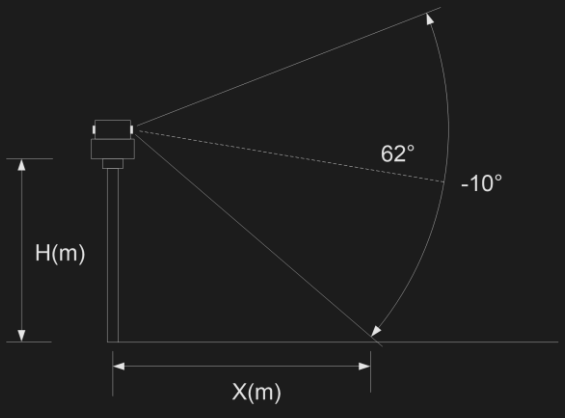
Horizontal view



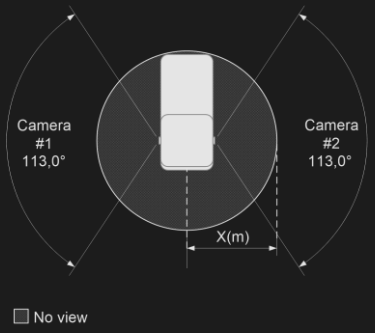
Height H(m)	Distance X (m)
4	4,8
5	6,0
6	7,1

Alexia

Vertical view



Horizontal view



Height H(m)	Distance X (m)
4	4,8
5	6,0
6	7,1

Contact
info@sustainder.com
+31 (0)85 047 11 75
sustainder.com

Emmen
Kapitein Grantstraat 9
7821 AP Emmen (NL)

Breda
Emmastraat 2A
4811 AG Breda (NL)

Grefrath
Weststraße 12
47929 Grefrath (DE)

2203

Sustainder