Dazzletek
Intelligent Lighting Control

Paris Climate Summit 2015

it bijna alle openingstoespraken sprak een hoog gevoel van urgentie

Laatste generatie die iets aan klimaatverandering kan doen'

toespraken van 150 wereldleiders teren de klimaattop in waarbewaakte Parijs gestart.

s Boogaard

nd volgende week moet ttop leiden tot een mon- in potentie wereldred- oord. Dat klinkt drama- ar zo klonken ook de van de Franse president in zijn openingsrede. hier in Parijs over de toe- de planeet zelf", aldus llande.

optiek, zo kort na de aan- 13 november, is dat een nder terreur en zonder bare temperatuurstij- die dreigt behalve tot u al zichtbare fenome- kanen, overstromingen droogte, straks ook te ooit geziene volksver- n gewapende conflic- r en de nog wel leefba- aarde, hield Hollande tiedeelnemers voor.

hoe 1,5 miljoen mi- Europa al compleet regelen, kan zich mak- evolgen voorstellen als ks ettelijke miljoenen dien, aldus onder meer rins Charles, zijn kli-

temperatuurstijging te beperken tot 1,5 graden. Dat is de helft van waarop de wereld uitkomt als de tot nu toe beloofde broeikasgasreducties van alle landen bij elkaar worden opgeteld. En minder dan een halve graad boven de gemiddelde temperatuurstijging waarop we dit jaar al uitkomen.

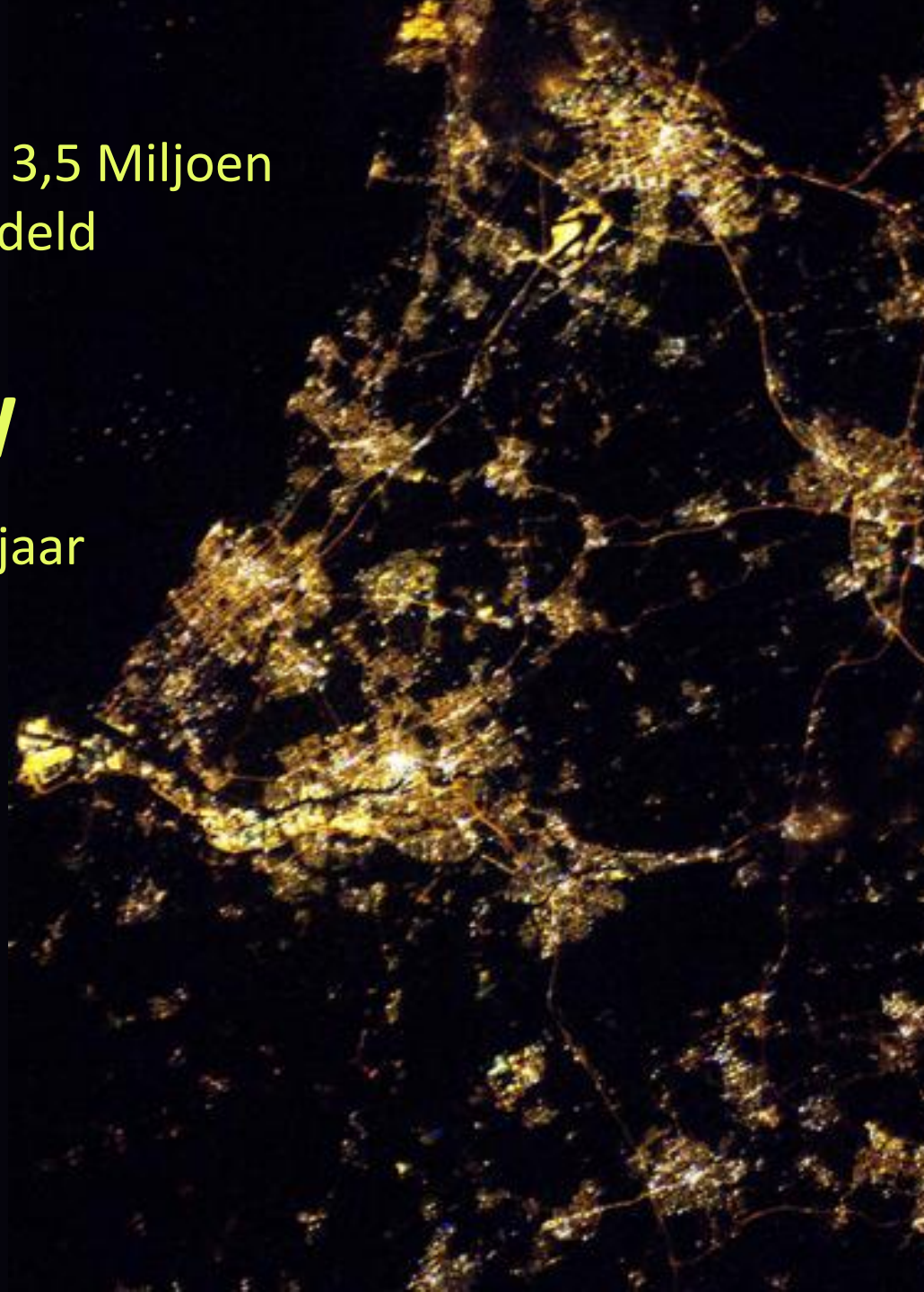
Het gevoel van urgentie was er ook op vorige klimaathoogmissen (Kyoto, 1997; Kopenhagen, 2009). Maar de roep om maatregelen klinkt dwingender. Hollande mikt op een wereldwijd, bindend en gedifferentieerd akkoord. Met dat laatste bedoelt hij dat de industrielanden, die de afgelopen decennia groei realiseerden met gratis gebruik van schone lucht die aan iedereen toebehoorde, een grotere inspanning moeten doen dan de ontwikkelingslanden. Die staan nog aan het begin van hun groei, en mogen niet worden geremd doordat aan het gebruik van schone lucht nu ineens een fors prijskaartje hangt. Geef ons de technologie om schoner te produceren, aldus het appel van de Chinese president Xi Jinping. Zoals zes jaar geleden trekken grootvervuilers Amerika en China samen op,

19% of the global energy is used for lighting
Dazzletek can Help
Reducing the Energy Content
without Compromising on Safety

In Nederland gebruiken ruim 3,5 Miljoen Lantaarnpalen gemiddeld

700.000.000 kW

energie/jaar



Vraagstelling

Hoe kunnen we in Nederland duurzame Solar verlichting toepassen

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LED EVENEMENT 2015

LED applicaties voor designers, engineers en lichtarchitecten

Dazzletek

Intelligent Lighting Control

Dazzletek provides

Intelligent, wireless Lighting Control Solutions that contribute to a sustainable environment

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Systeem overview
Intelligent Lighting Control System

http://youtu.be/0Ezo-UTg90U

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System Products : Mira Lighting Control Module

The **Mira** Lighting Control Module (LCM) is a wireless Module that can be placed inside a Luminaire. It controls the ballast of the Luminaire by means of an analogue or a digital control signal.
The Mira is connected to the 230V mains or 24Vdc (Solar) and receives the operational instructions through a radiofrequency command.
All Mira's are wirelessly connected with each other and form a wireless network that connects to a Back Office System by means of the Antares Gateway.
The internal Antenna makes it easy to integrate the Mira in a fixture without the need for drilling a hole for the placement of an antenna on top, which jeopardizes the IP67 rating.

4 Versions :

- DALI
- 1-10V
- DMX
- Solar

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System Products : Antares Gateway

3 Versions :

- 2G/3G
- LAN
- Solar

The **Antares** Gateway is a product that connects the Mira LCM's to the Back Office on an internet Server.
The Antares is connected to the 230Vac or 12/24Vdc for Solar applications. It contains 868-915 MHz. RF circuits for connecting to the Mira LCM's and a GPRS engine to connect to the Back Office Server.
A special data-SIM card makes it possible also to upload new software to the Gateway and LCM's through a RDMS network layer.

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System Products : Solar Powered Solutions

Both Gateway and Lighting Control Modules have a Solar Version.
So both Products can operate on a +12 or +24Vdc stabilized Solar Powered Battery.
Biggest benefit of this solution is the reduced power rating for the Gateway and Light fixtures, so *smaller Solar panels and batteries* can be used in the system due to the Intelligent (solar) Lighting Control.

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System Products : Wireless DMX

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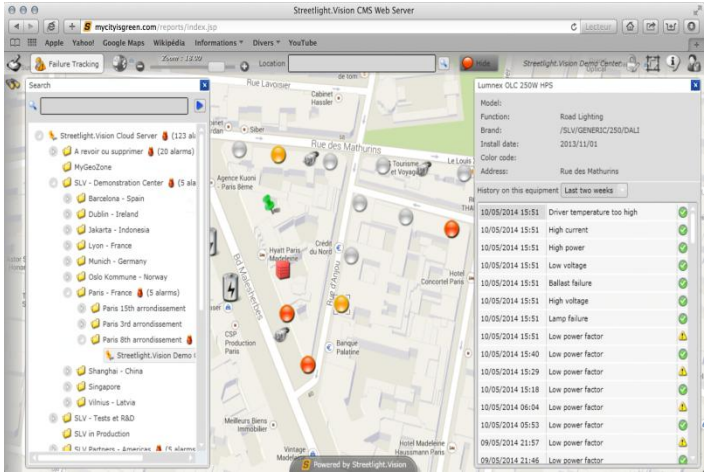
System Products : SLV Back Office



The **StreetLight.Vision** Back Office System (SLV) is an open source software program , already worldwide in use.
It is installed on a (Local or Cloud) Back End Server, that can be reached through a login screen on any internet enabled PC or Tablet.
Each project can be accessed through a specific login combination, but it is also possible to create a multi-project login, or a login as an administrator, in which more freedom (and complexity) is added to the operation. In case of an outsourced operation it's possible to only see the project visuals and reports.

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System Products : Smart Phone Apps

"Emergency switch-on" and "Real Time Control" Apps

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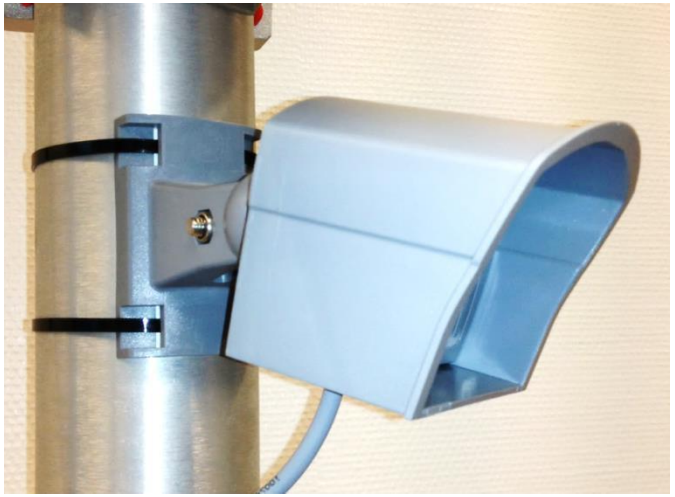
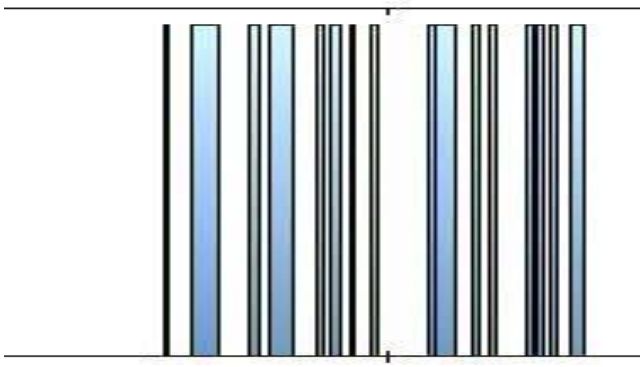
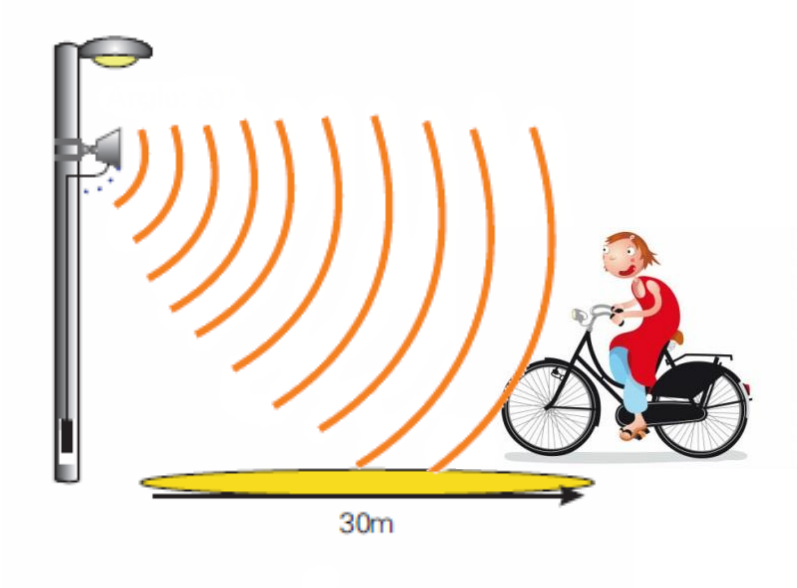


Basic Functions : Control on Interupt





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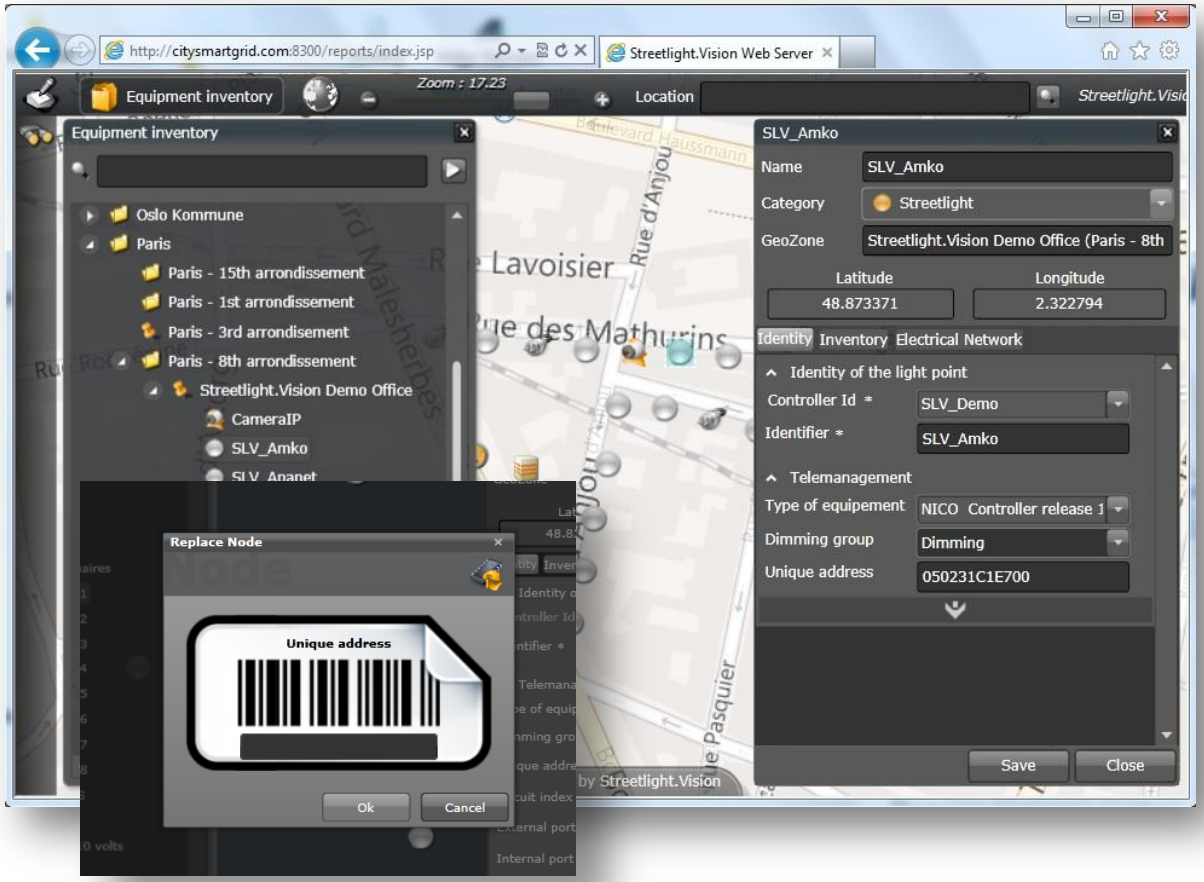
Back Office functionality 1

Multiple
map sources

Light Points, Segment Controllers, Cameras, Sensors, EV Chargers, Switches, Signages, …



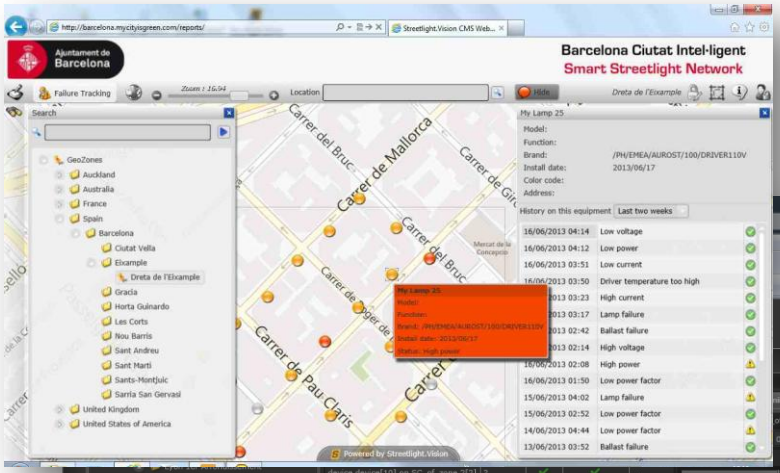
Inventory

Drag/drop
Export/import

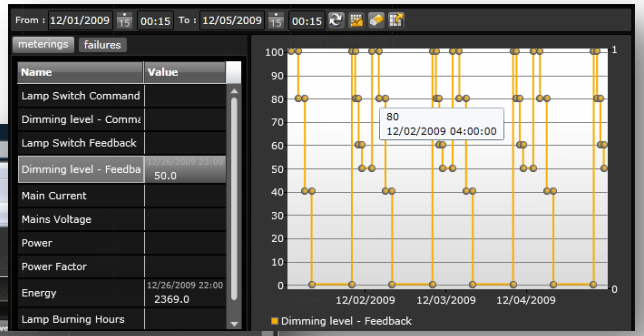
Add your own
device attributes

Back Office functionality 2

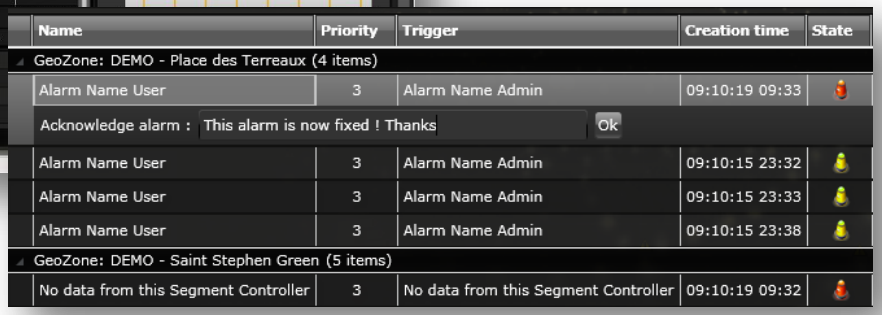
Failure geolocalisation



Data history



Master Alarms



Failure Analysis

Back Office functionality 3

The StreetLight Vision Open Source platform adds up to the maturity of the complete Lighting Control solution.

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Dazzletek Projects 2013-2015

Vraagstelling

Hoe kunnen we in Nederland duurzame Solar verlichting toepassen

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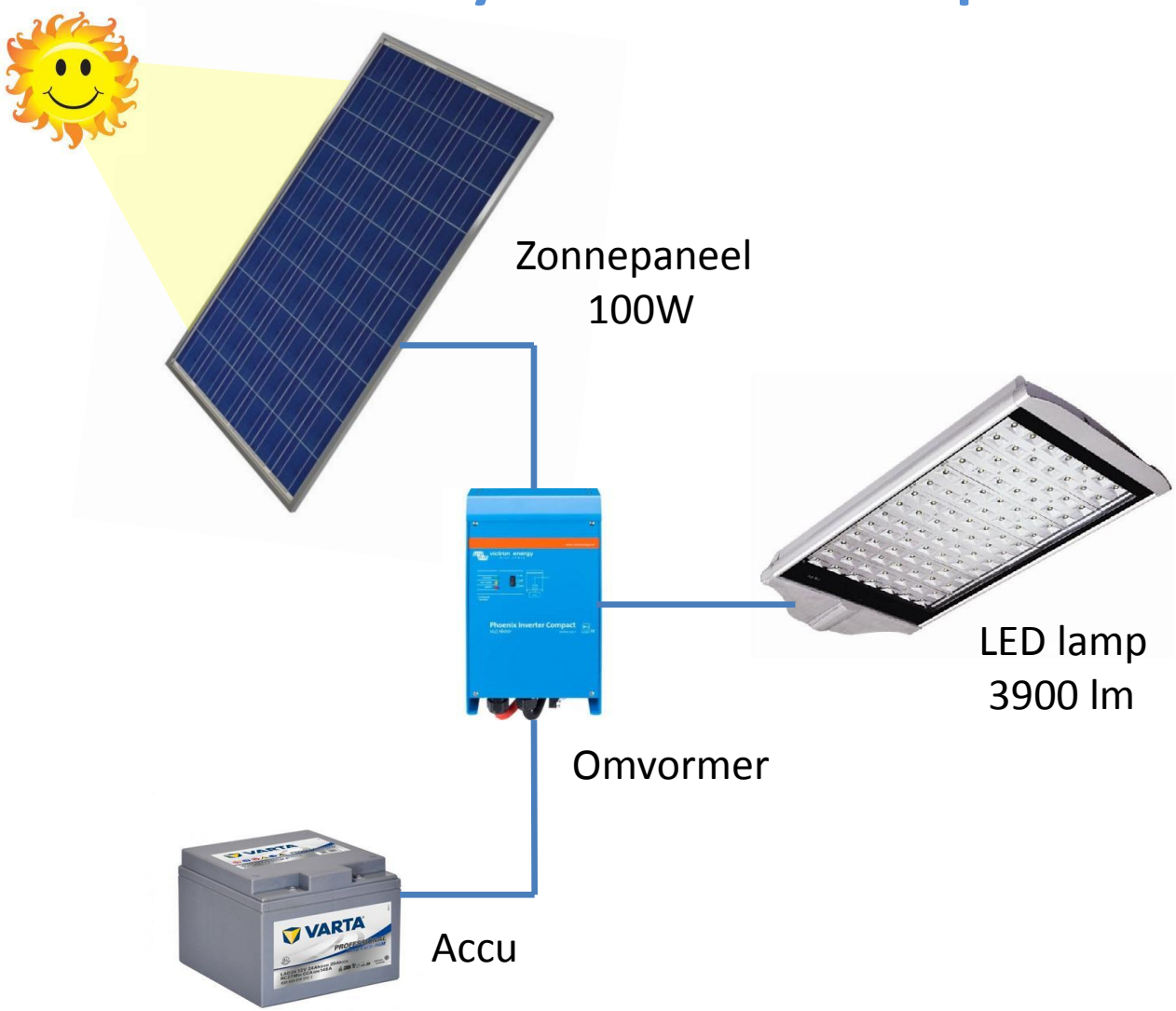
Solar System Setup



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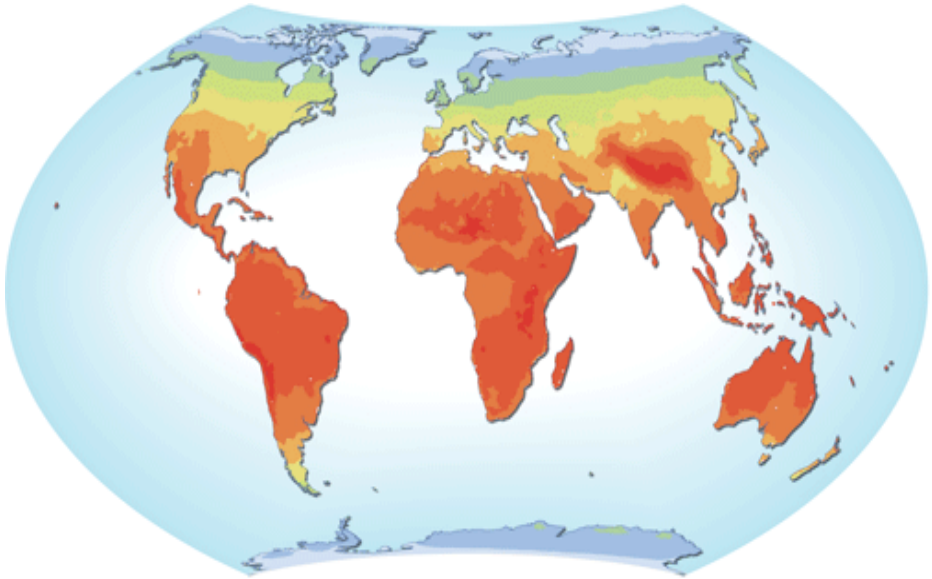
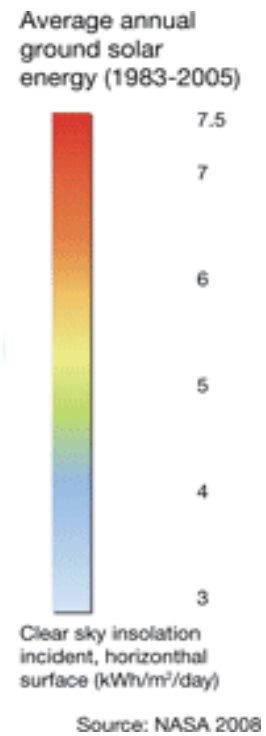
Worst case opbrengst PV paneel

Location	Day length	Solar energy / day with 100W panel
Nairobi	12:02:54	546 Wh
Madrid	9:17:07	167 Wh
Amsterdam	7:40:39	56 Wh
Reykjavik	4:07:08	6,5 Wh

→ 49 W lamp

→ 5W lamp





www.timeanddate.com/worldclock/sunrise.html).

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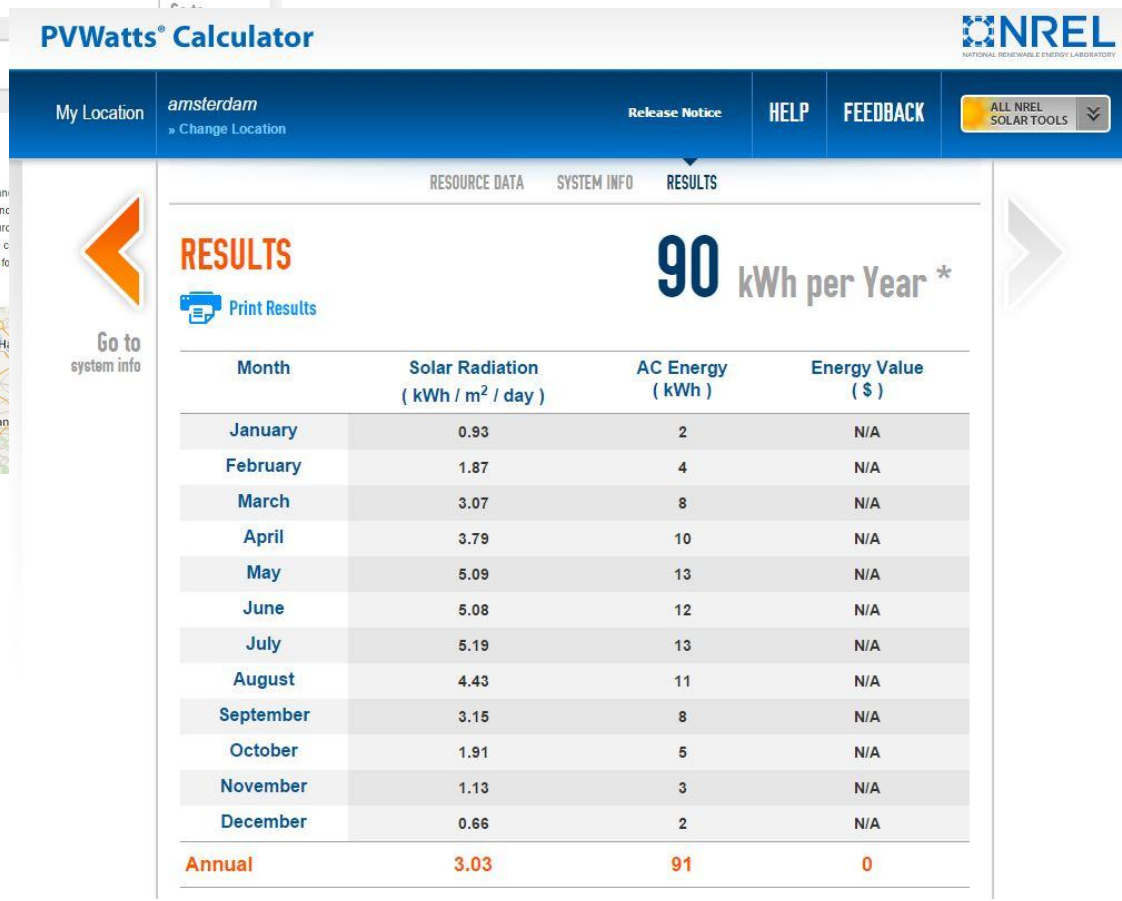
. http://pvwatts.nrel.gov/pvwatts.php



Month	Solar Radiation (kWh / m² / day)	AC Energy (kWh)	Energy Value ($)
January	0.93	2	N/A
February	1.87	4	N/A
March	3.07	8	N/A
April	3.79	10	N/A
May	5.09	13	N/A
June	5.08	12	N/A
July	5.19	13	N/A
August	4.43	11	N/A
September	3.15	8	N/A
October	1.91	5	N/A
November	1.13	3	N/A
December	0.66	2	N/A
Annual	3.03	91	0

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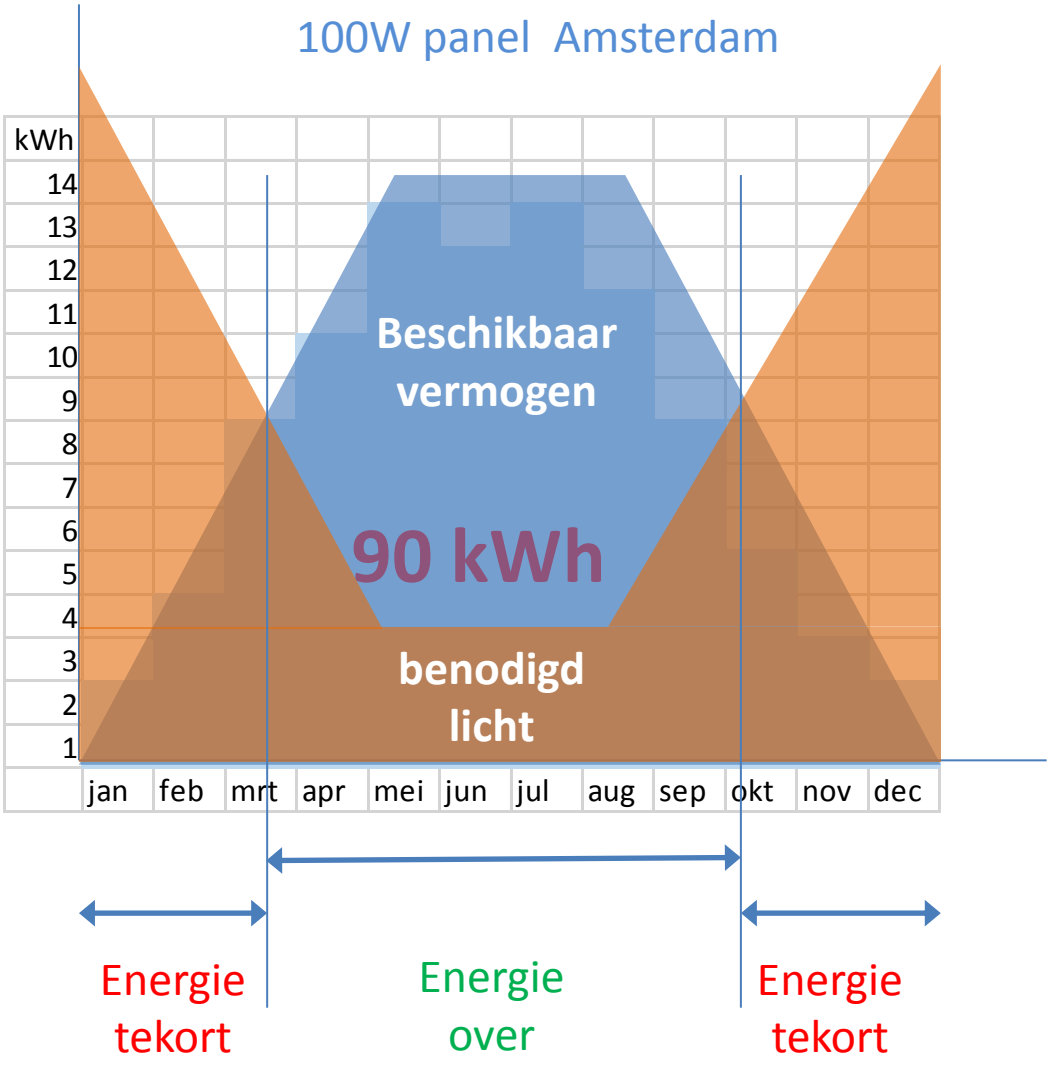
Solar power



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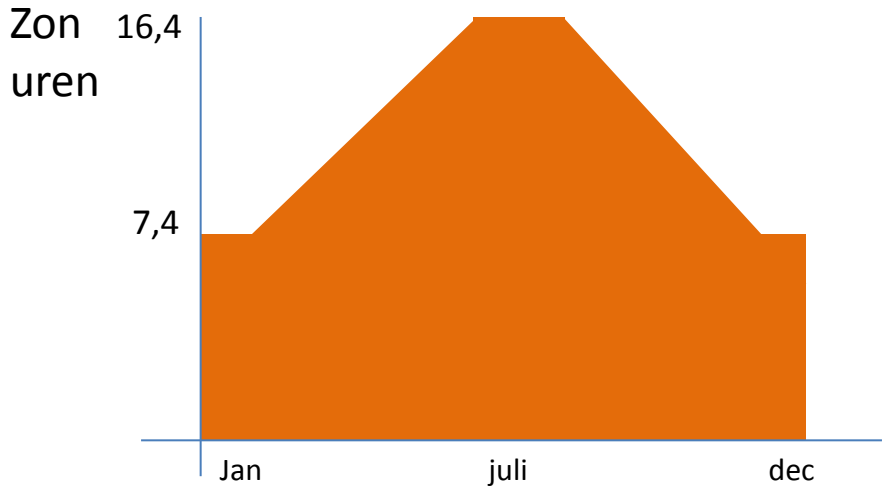

100W paneel → NL 90kWh per jaar → 246 Wh per dag

Zonuren varieert tussen 7,4 uur en 16,4 uur → gem. 11,9 uur -/- (2 x 15 min.)= 11,4 uur /dag

246 Wh : 11,4 = 21,6 W energie wanneer extra energie van de zomer 100% gebruikt kan worden in de winter

december 2015 — Sun in Amsterdam

2015	Sunrise/set		Daylength
dec	Sunrise	Sunset	Length
1	08:27 ↘ (126°)	16:31 ↙ (234°)	8:03:52
2	08:29 ↘ (126°)	16:30 ↙ (234°)	8:01:46
3	08:30 ↘ (127°)	16:30 ↙ (233°)	7:59:45
4	08:31 ↘ (127°)	16:29 ↙ (233°)	7:57:50
5	08:33 ↘ (127°)	16:29 ↙ (233°)	7:56:00

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Overwinter-accu’s

Om te kunnen “**overwinteren**” komen we 21,5 kWh tekort welke bij 12V dc systeem resulteert in 8x 220Ah accu’s

Bij Accu’s rekening houden met aantal laad cycli (1000 x is amper 3 jaar) !

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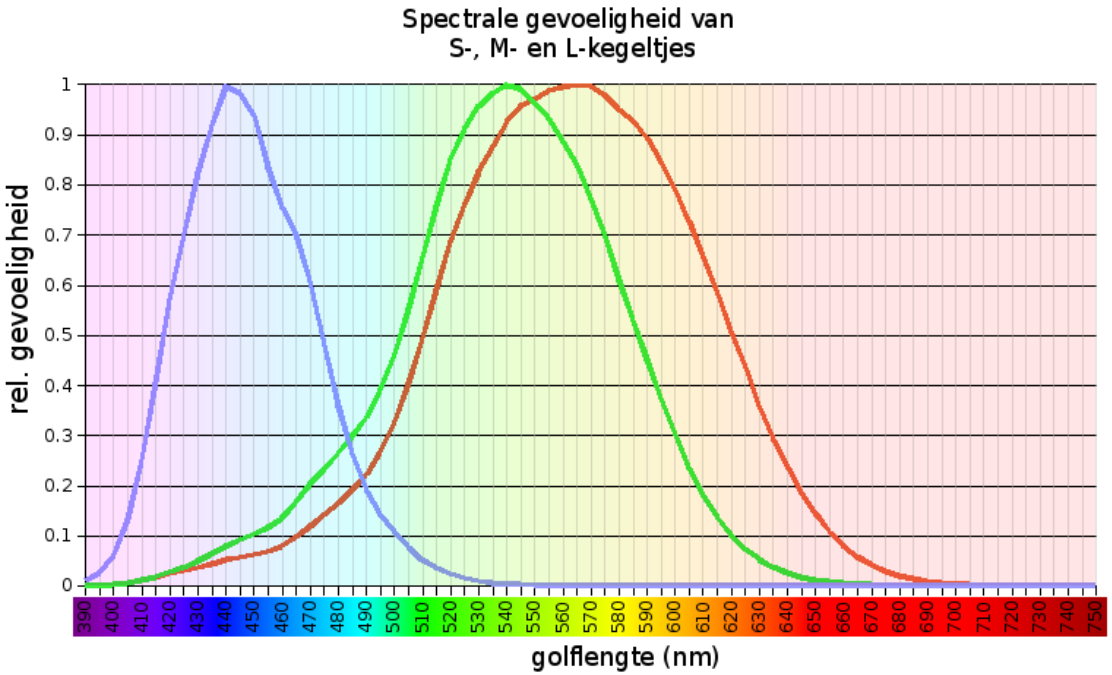
Oplossing 1

Meer licht uit LEDs

25W paneel → 23 kWh /jr. → 62 Wh/ dag → 11,4 uur → **5,4W**

- Bij 110 lm/W → 594 lm
- Bij 300 lm/W → 1620 lm
- Bij 600 lm/W → 3240 lm



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Oplossing 2

Combi zon en wind

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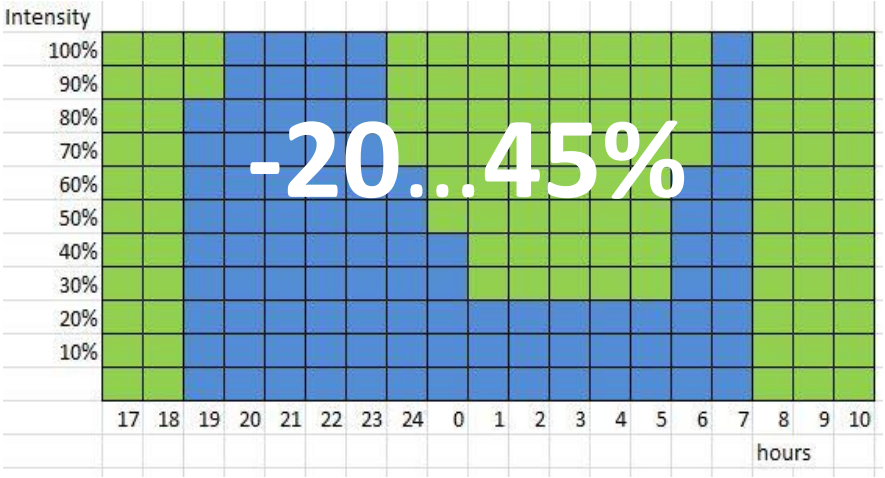
Oplossing 3

Door slimme aansturing ;
- enerzijds door ‘s-nachts te dimmen
- anderzijds door met motion triggers te werken



-20…85 %

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Bedankt voor jullie aandacht

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