



Alcochem Hygiene

UV-A lamp technology – How to place Electronical Fly Killer Unit

- *Introduction Alcochem Hygiene*
- *Alcochem Hygiene mission statement*
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- *Flies and their behavior*
- *UV-A light Technology*
- *LED Technology*
- *How to place a Electronical Fly Killer Unit*

Introduction Alcochem Hygiene

- *Alcochem was founded in 1975*
- *Started to trade Alcohols from Russia and Chemicals from China*
- *Nowadays 3 business divisions: Alcochem Minerals
Alcochem Steel
Alcochem Hygiene*
- *Operating in over 60 countries worldwide*
- *Offices in the Netherlands, Russia, China and Chile*

Alcochem Hygiene Mission Statement

***To supply non chemical pest control products
to the global market***

*Keywords : Science based
Innovative
High quality*

- UV-A light technology



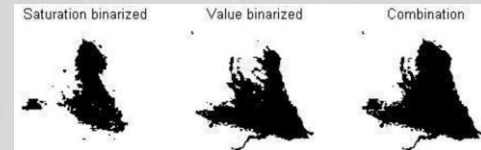
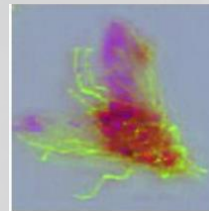
- Dimmable Fly Killer Units – Eco Trap



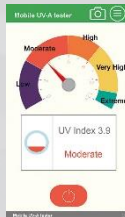
- Glueboardscanner



- Advanced scanning project



- UV-A tester



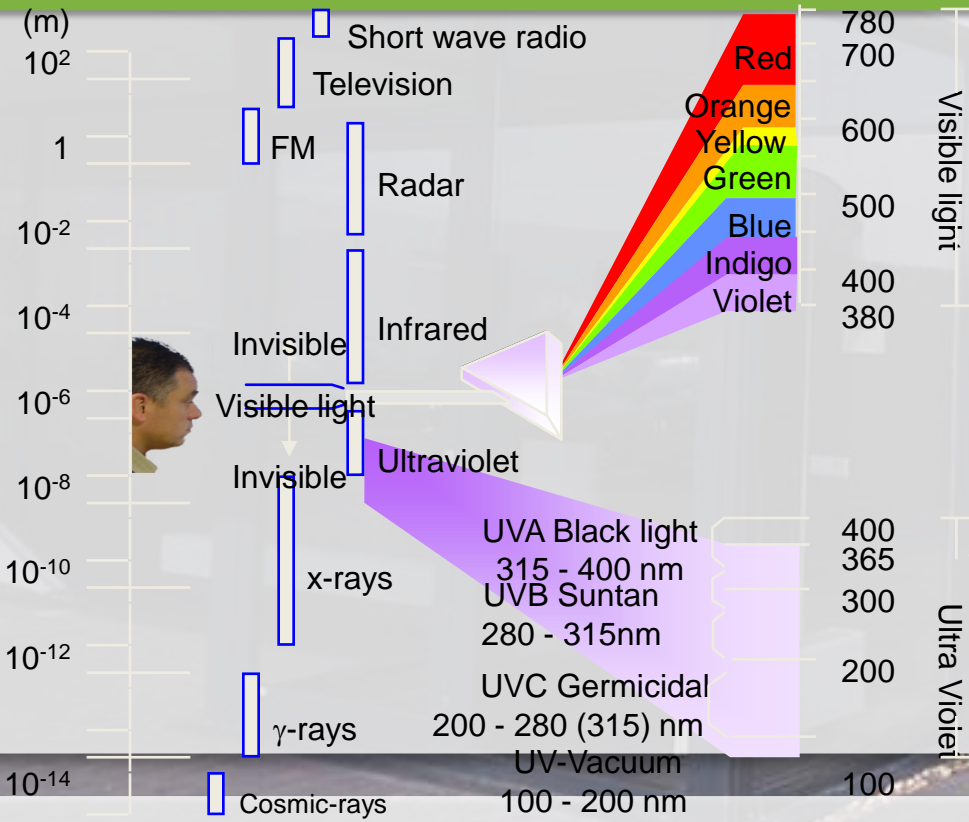
Flies and their behavior



Wavelength
in metres

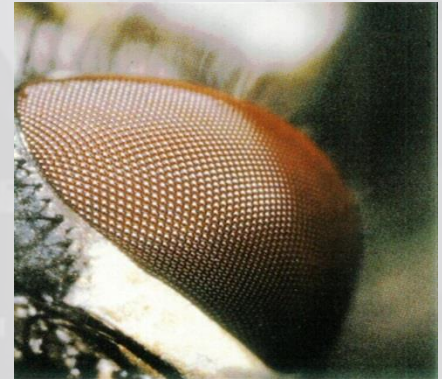
Wavelength
in nanometres

UV Light Technology

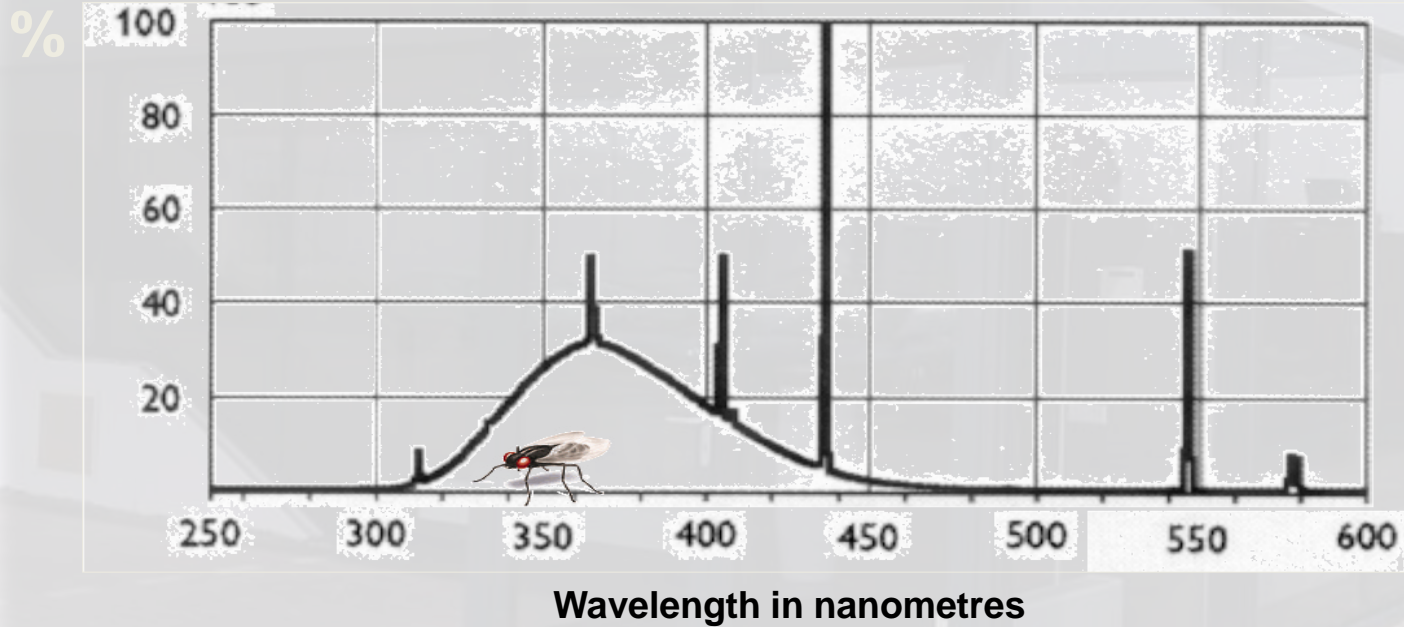


UV-A light Technology

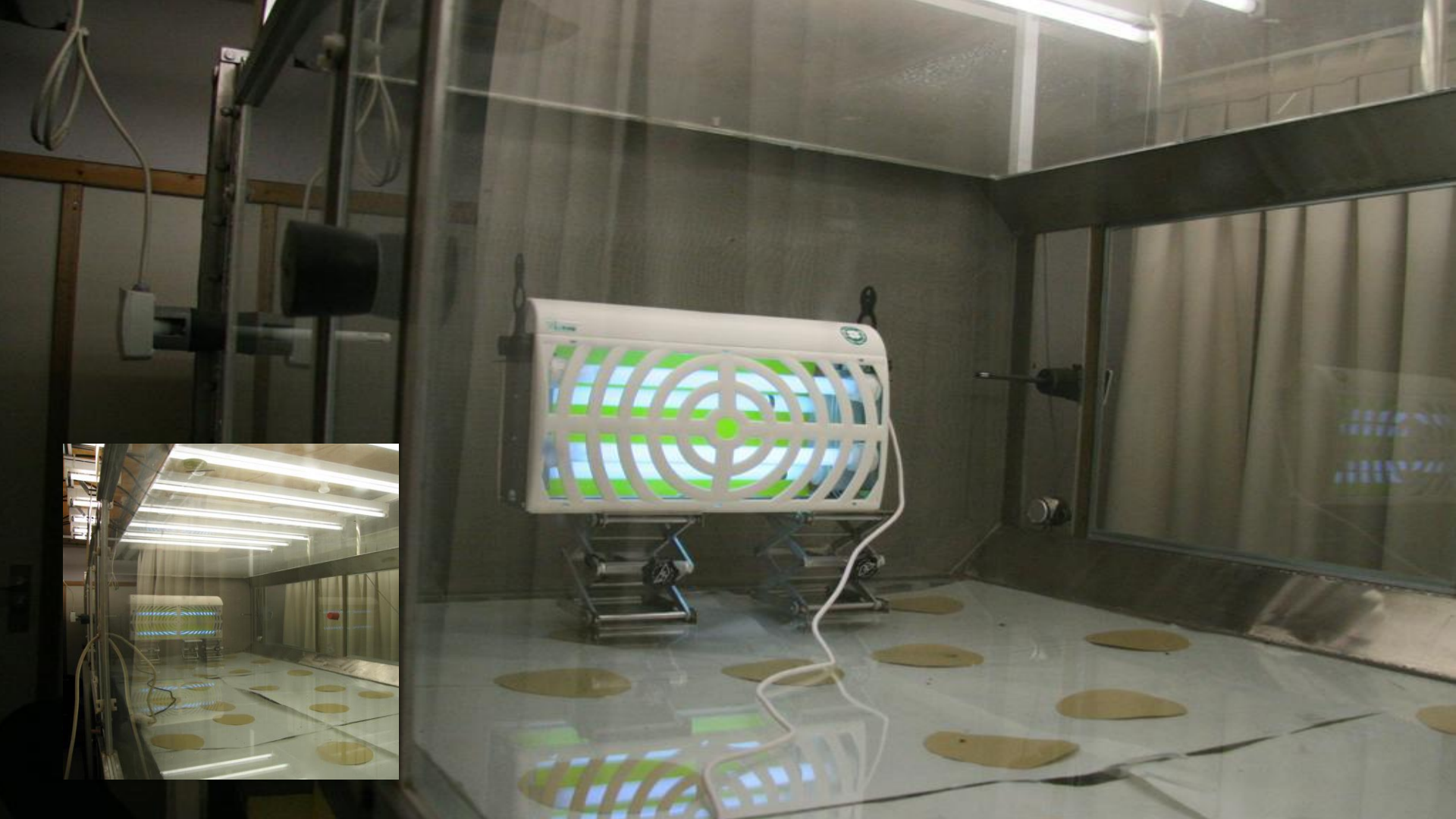
- *UV-C light (Germicidal)*
- *UV-B light (Medical app.)*
- *UV-A light (Insect attraction*



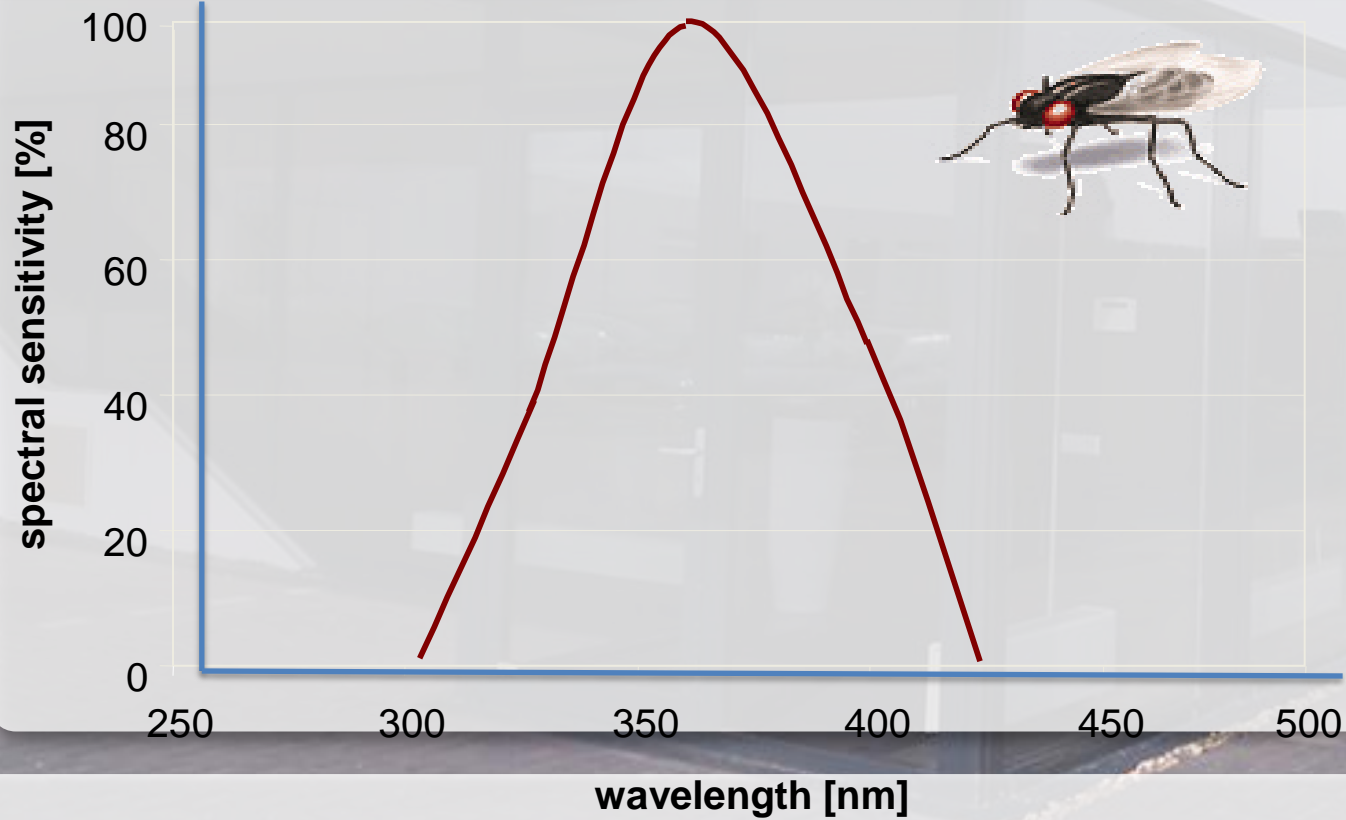
Current UV-A lamp



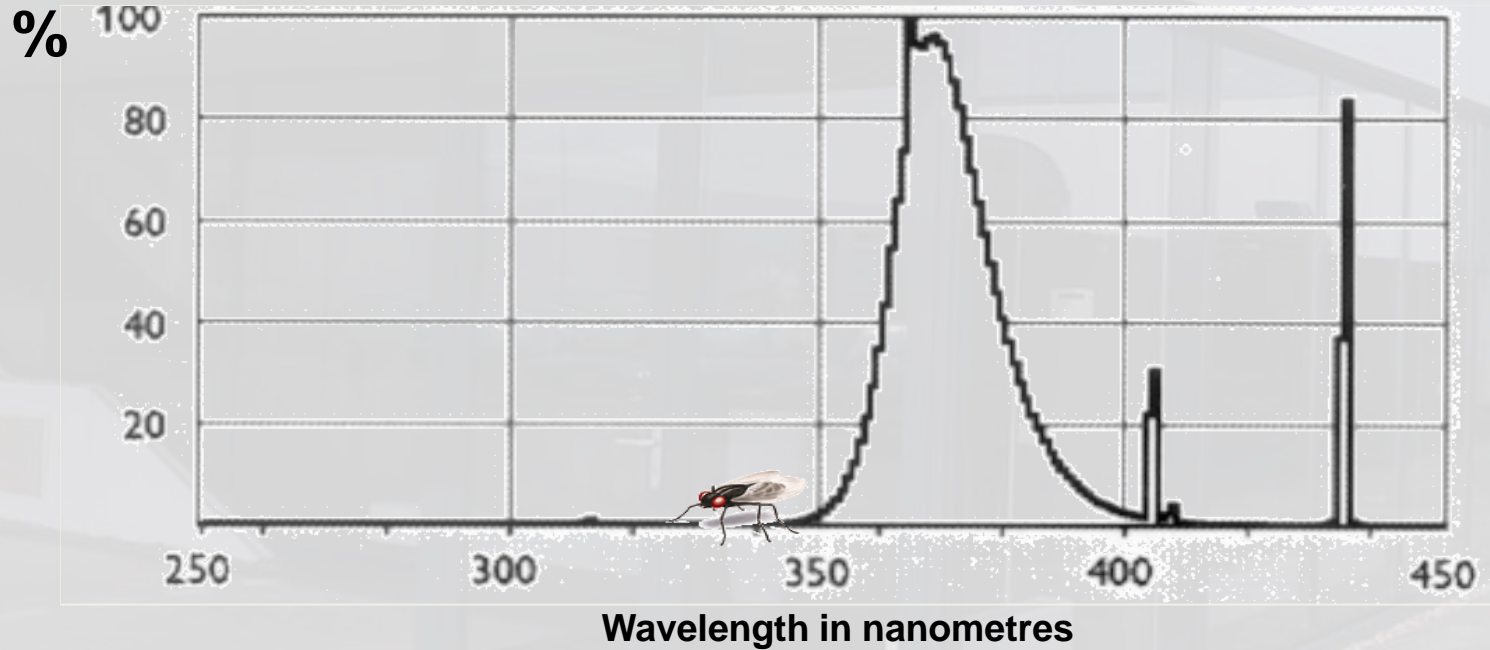




Eye sensitivity curve housefly



New developed UV-A lamp



PHILIPS
ACTINIC BL 15W
MADE IN HOLLAND



CE

RoHS directive – Glass protection

- *RoHS: Restriction of hazardous Substances*

- *Operational: From 1st July 2006/ Update 2012*
- *RoHS certificate required in Europe*
- *Euro 0,14 recycling costs per (UV) lamp*
- *Max amount of mercury in UV lamps:*
 - *5 mg in normal lamps*
 - *10 mg in long life lamps (over 10.000 hours)*

- *FEP coating from Dupont*

- *Durability*
- *Optimized protection over time*
- *High UV-A transparency*
- *Non flammable*



Efficiency of fluorescent lamps

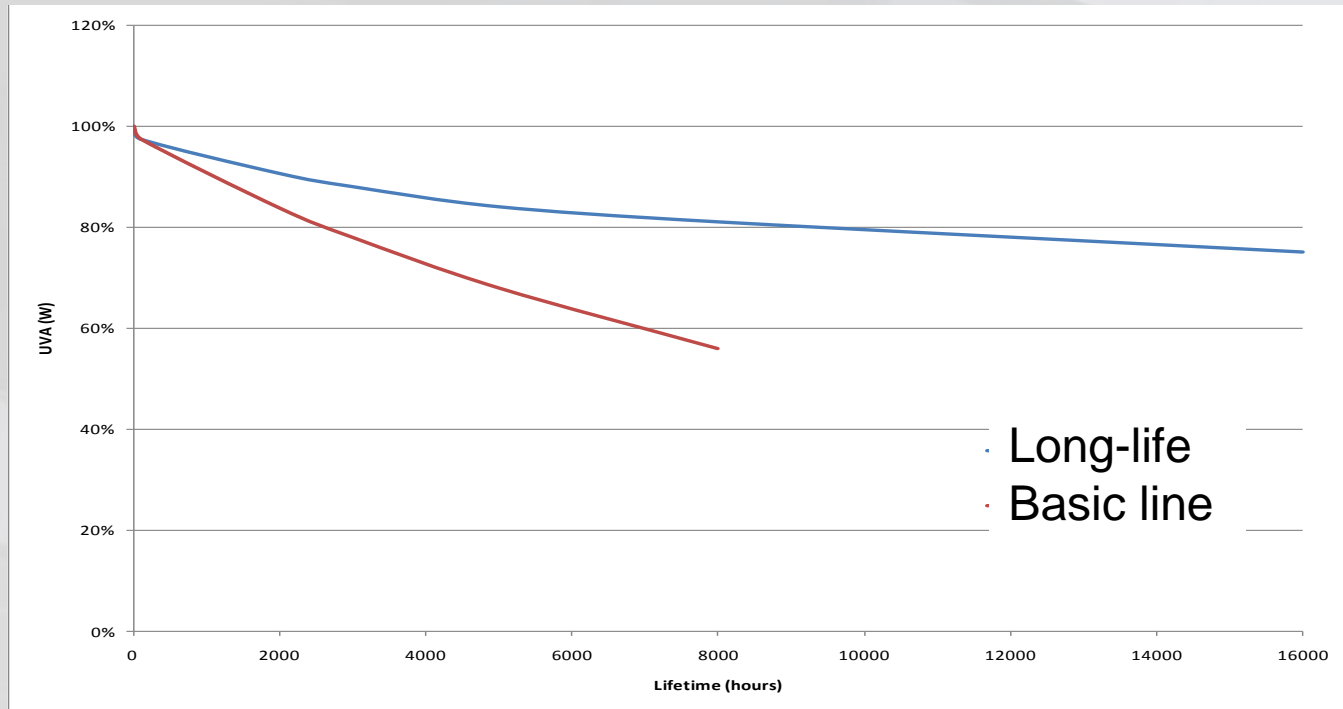
Type of lamp	Incoming power	Maximum conversion to light (Efficiency)
15 watt lamp (T8)	15 Watt	5,0 watt (33%)
18 watt lamp (T8)	18 watt	5,4 watt (30%)
20 watt lamp (T12)	20 watt	5,4 watt (27%)
36 watt PL-L lamp	36 watt	9 watt (25%)

Efficiency Long-life lamp

Type of lamp	Efficiency current UV lamps (*)	Efficiency Long-life lamps (*)
15 watt lamp	2,02 watt UV-A	3,76 watt UV-A
18 / 20 watt lamp	2,60 watt UV-A	4,80 watt UV-A

(*) Begin of lamp life

UV-A output Philips Long-life lamp



LED Technology

- *Incandescent lamp : max 5% (obsolete)*
- *Fluorescent lamp : max 33% total light output*
- *LED Technology : max 80-90% monochromatic*

Current professional UV-A LED's below 10% / roadmap for mass production is min. 5 years

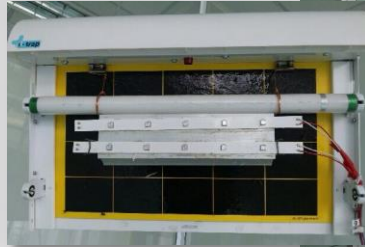
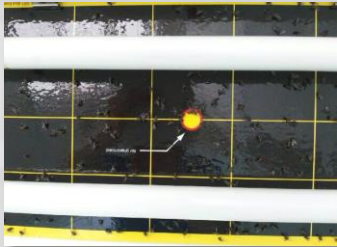
Definition of professional UV-A LED:

- * *50.000 hrs of use (over 5 years)*
- * *Minimum 1 watt on UV-A output*
- * *Wavelength: 360-380nm*






LED Technology

Test Result

*235 flies caught by 50E
12 flies caught by LED
3 flies alive*



LED Technology

	No solution	Solution 1	Solution 2	Solution 3	Solution 4
					
W/cm ²		0.24 mW/cm ² (342%)	0.52 mW/cm ² (743%)	0.27 mW/cm ² (385%)	0.18 mW/cm ² (257%)
W/cm ²		0.07 mW/cm ² (116%)	0.065 mW/cm ² (108%)	0.08 mW/cm ² (114%)	0.18 mW/cm ² (300%)
mW/cm ²		0.012 mW/cm ² (26%)	0.002 mW/cm ² (4%)	0.003 mW/cm ² (6%)	0.004 mW/cm ² (8%)

How to place a Electrical Fly Killer Unit

The 8 Golden Rules:

1. *The lower – The better*
2. *Out of direct sight of windows and doorways*
3. *As less possible projection of light against other surfaces*
4. *The visability of the (UV-A) light must be very good*
5. *Nearby possible entrances*
6. *As less possible airmovement*
7. *Ideal inviromental temperature of 27,4°C*
8. *Never outside*

Questions

Questions

