

LED Street Lighting in Osnabrück

Osnabrück October 2011



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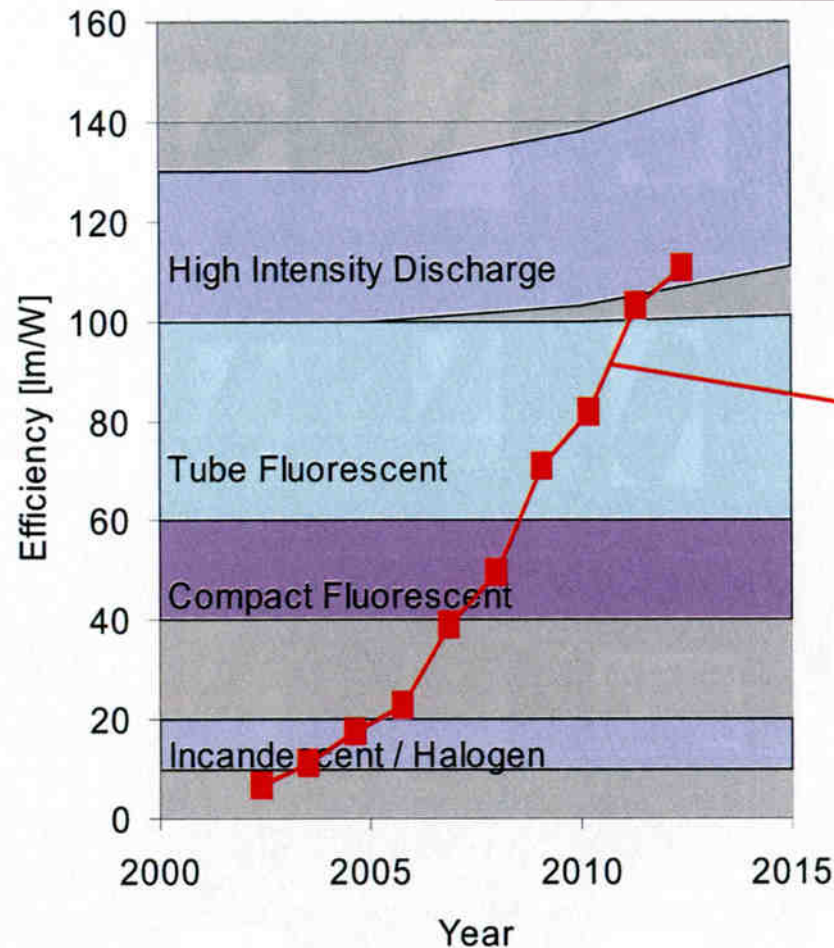
Planetarium, Museum am Schölerberg, Osnabrück



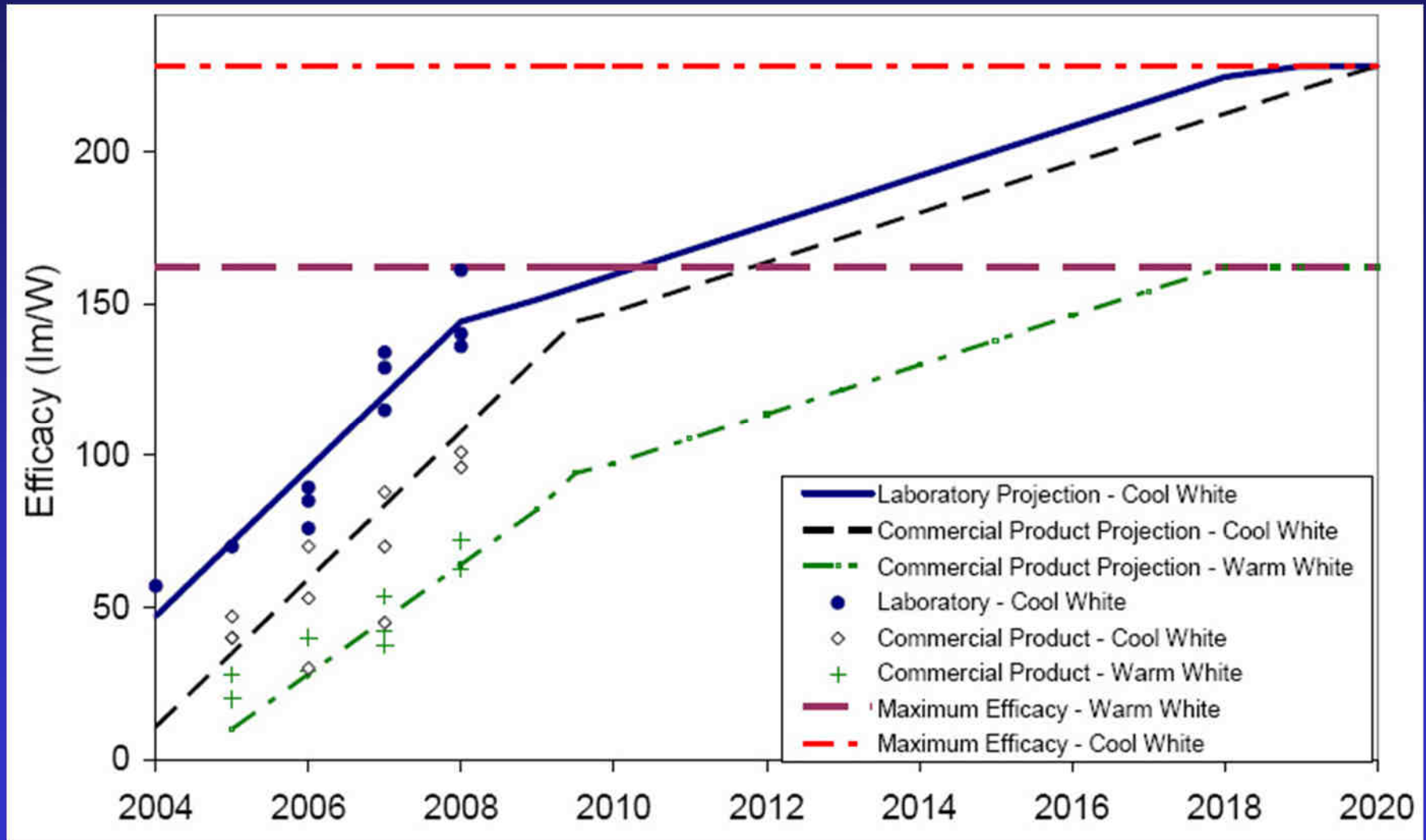
LED lighting



- rapid increase of efficiency of white light LEDs
- long lifetime
- compactness
- dimmable/switchable
- sturdy
- more light at lower temp.
- low light pollution?
- still lower efficiency (NAV)
- expensive
- thermal management
- colour rendition

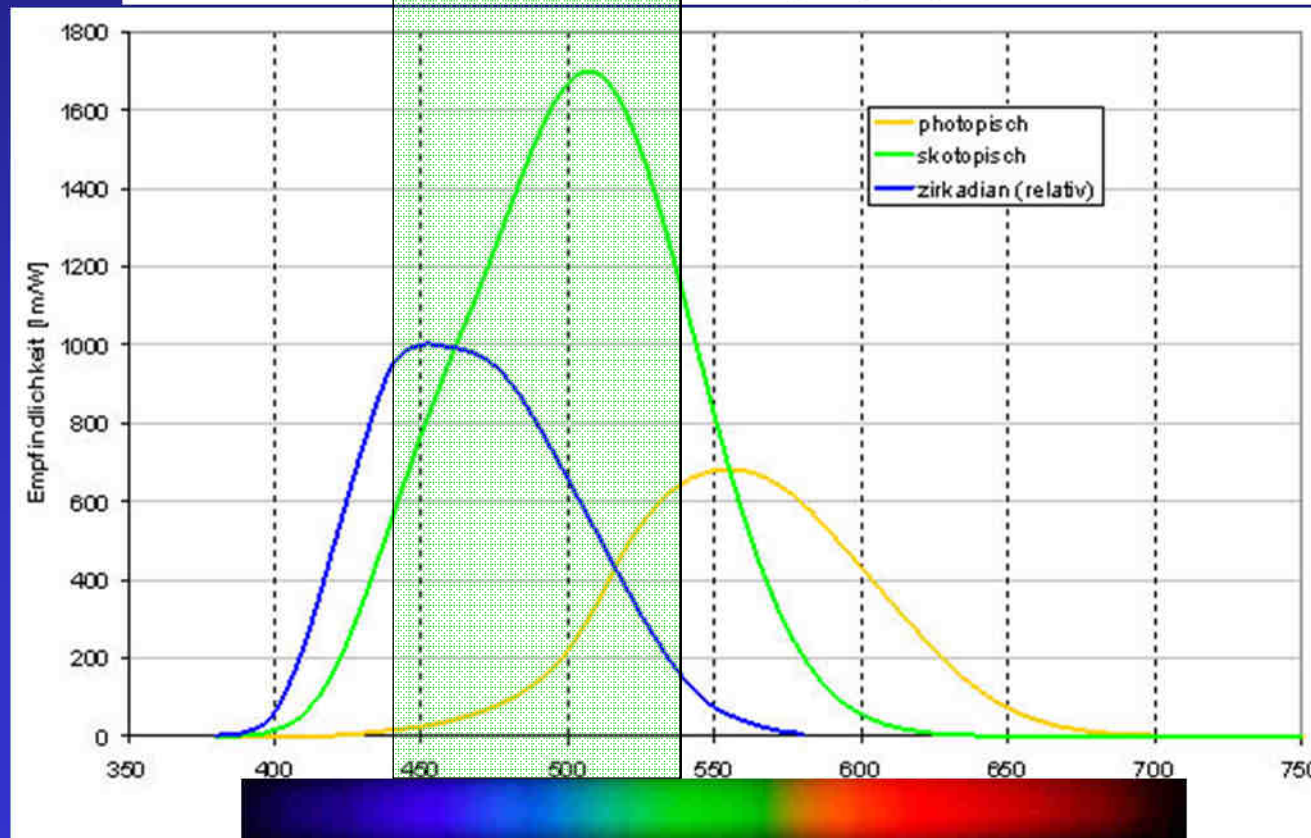
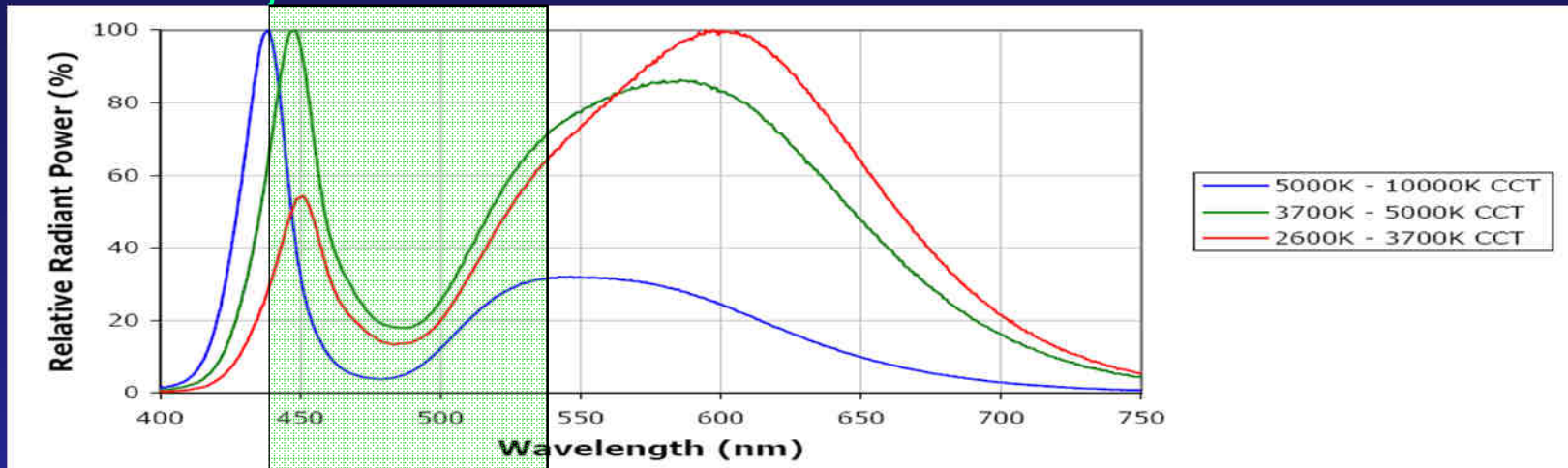


LEDs are getting more efficient, but warm < cool



Light colour, Man and Vision

LED

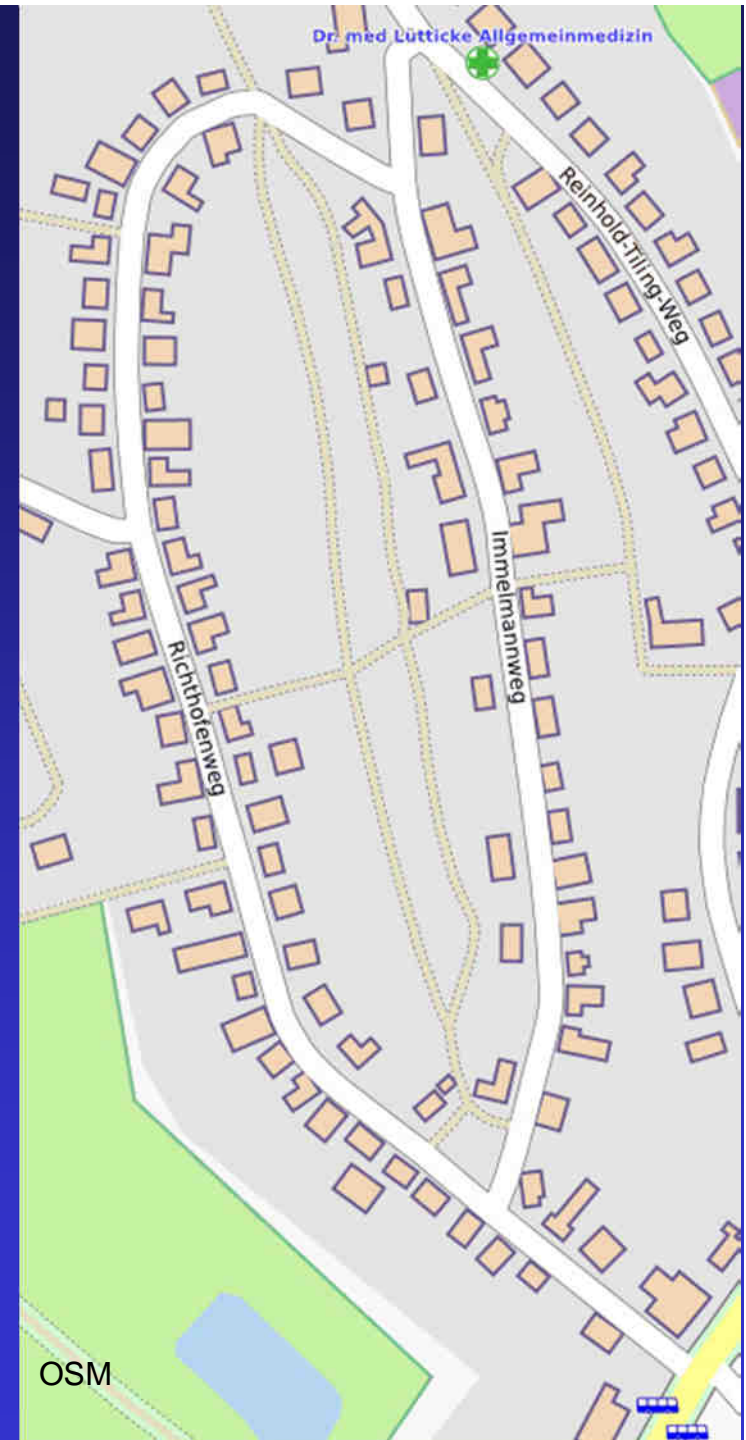


Protected spectral range for visual astronomy (Falchi et al. 2011)

Richthofenweg Immelmannstraße

residential area

Psssst!



conventional lighting

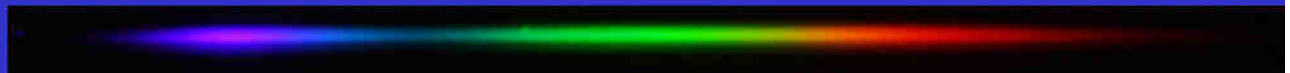


compact fluorescent

Hess Sera



- 34 W
- 2400 lm
- 5600 K
- 80 lx (brightest part)



iGuzzini Delphi

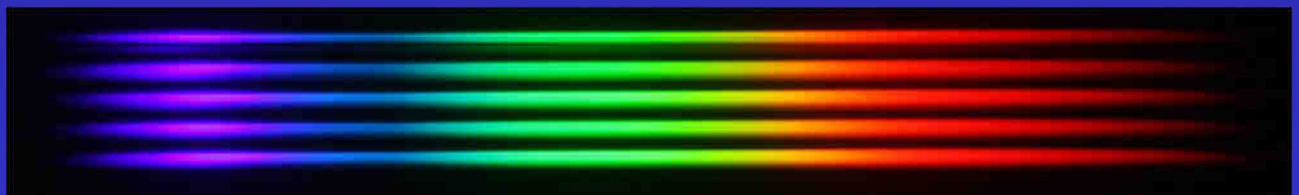


- 39 W
- lm
- 4000 K

Indal Stela



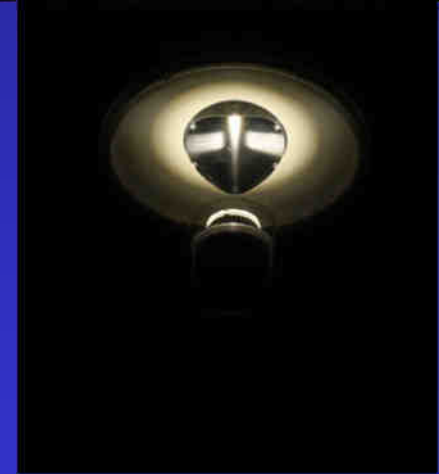
- 21 W
- 91...120...240 lm
- 4000 K
- 30 lx



Philips City Spirit LED



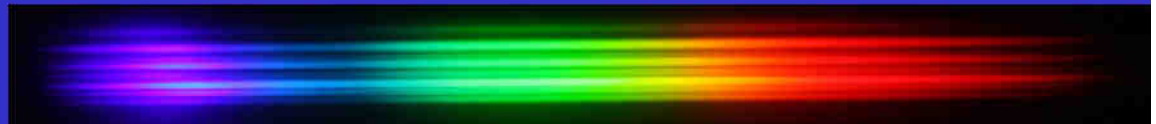
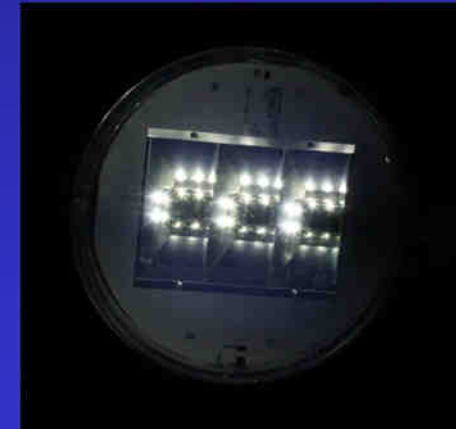
- 29 W
- 1400 lm
- 3000 K
- 13 lx



Trilux 9354 LED



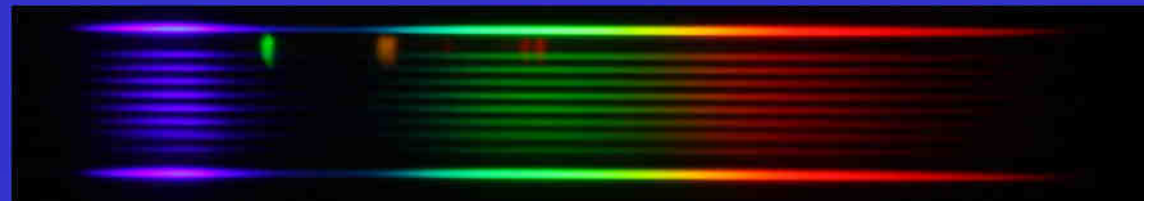
- 24 W
- 2400 lm
- neutral white (4000 K?)
daylight white (5500 K?)
- 43 lx



Hella Eco Streetline



- 45 W
- 2900 lm
- 6300 K
- 25 lx



Richthofenweg Immelmannstraße

