



Dark Skies and Emerging Technology Summit
Flagstaff, AZ
August 19-20, 2014

Experiences, Challenges and Opportunities
A City of Flagstaff Perspective

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RTS Jan 2015

ENTERING

FLAGSTAFF

ELEVATION

6906

FOUNDED

1882

WORLD'S FIRST INTERNATIONAL DARK SKY CITY

Flagstaff HPS



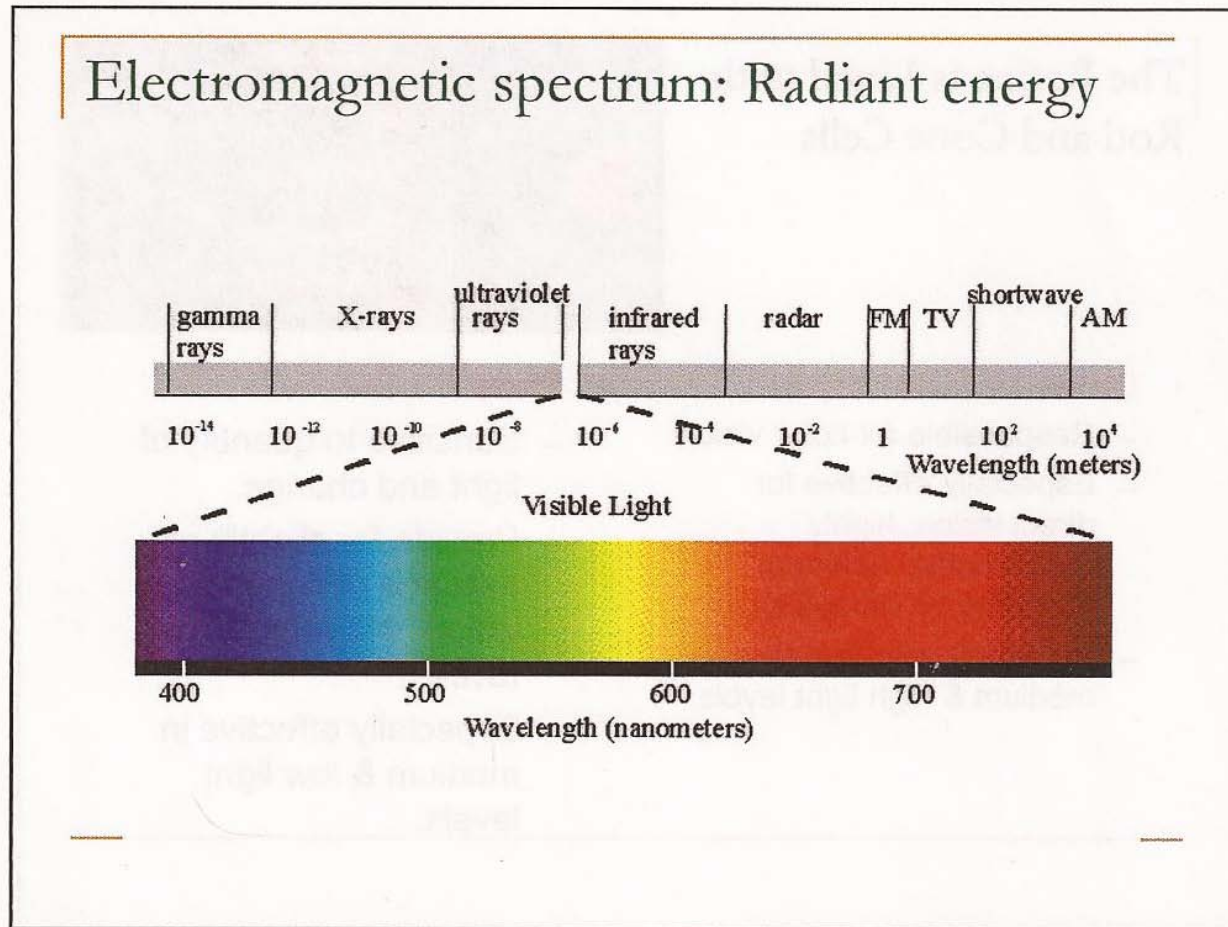
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Low Pressure Sodium

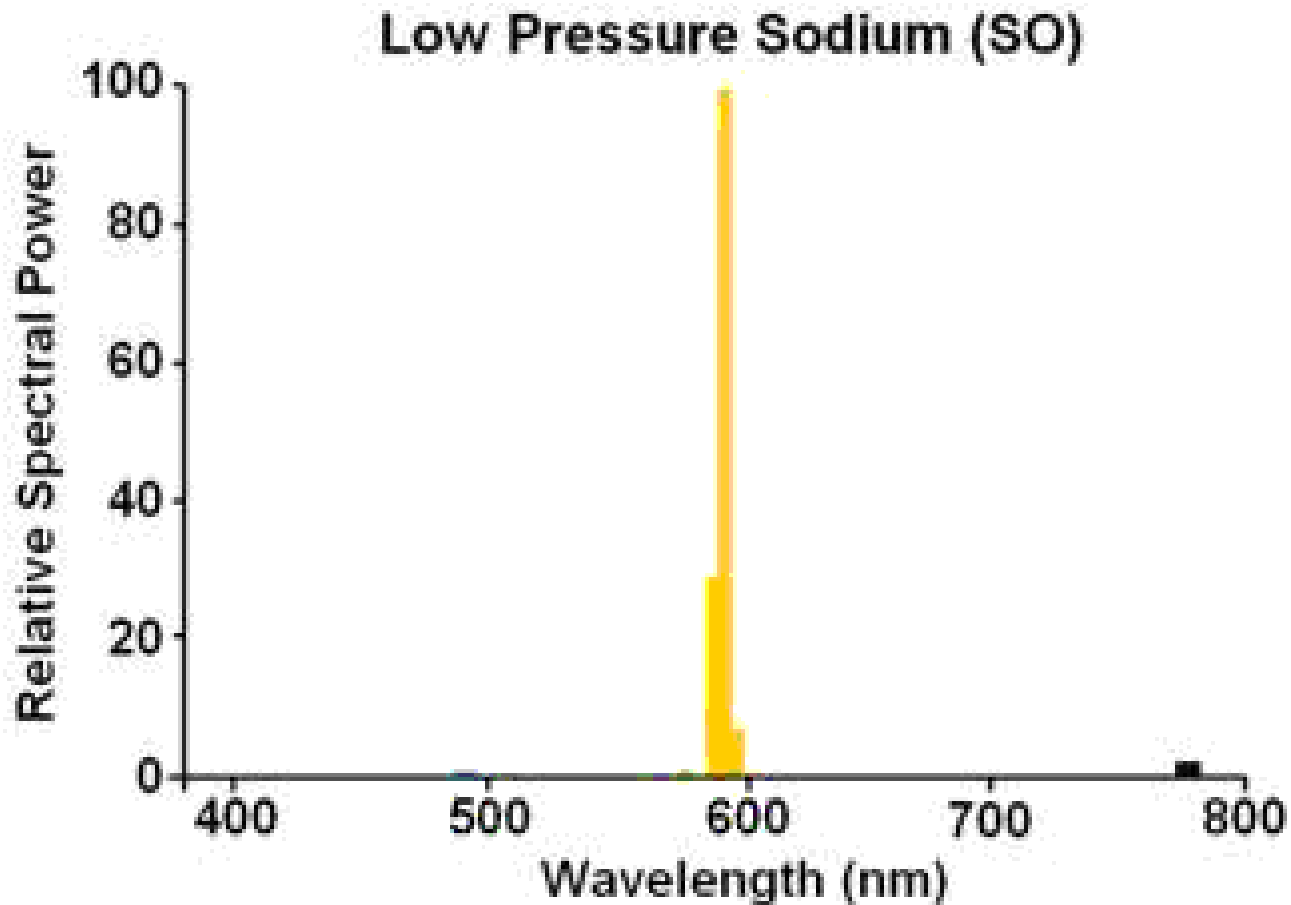


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Spectral Output



LPS Spectral Output



LPS Challenges

“LPS is a dying technology”





KROMA: K2-BK BL/RD





WHITE LED

LED

Widespread usage in many industries

Most efficient - 150 lumens/watt

Lowest cost (\$400)

Spectral output over all visible wavelengths

Health concerns relative to blue light



AMBER LED

NBALED

Least efficient - 39 lumens/watt

Highest cost (\$1800)

Requires additional poles and luminaries

Spectral output (60nm)

Phosphor Converted Amber

PCALED

Lower efficiency - 70 lumens/watt
Moderate cost (\$580)

Spectral output (200 nm)





FILTERED LED

FLED

Efficient - 96 lumens/watt

Low cost (\$500)

Spectral Output (180-220nm)

Flagstaff LED Street Light Test

