

Crossroads LED



“Astrophile Series” Narrow Band Amber LED Luminaires
Adjustable 35 to 120 watt output for all street lighting applications

The Problem

What Is Light Pollution?

- Light pollution is the introduction of artificial light into the night sky
- Artificial lighting is the primary cause of sky glow, obscuring the stars and creating perpetual twilight
- Light pollution contributes to light trespass issues on public and private properties
- Today, 80% of the US population cannot see the Milky Way

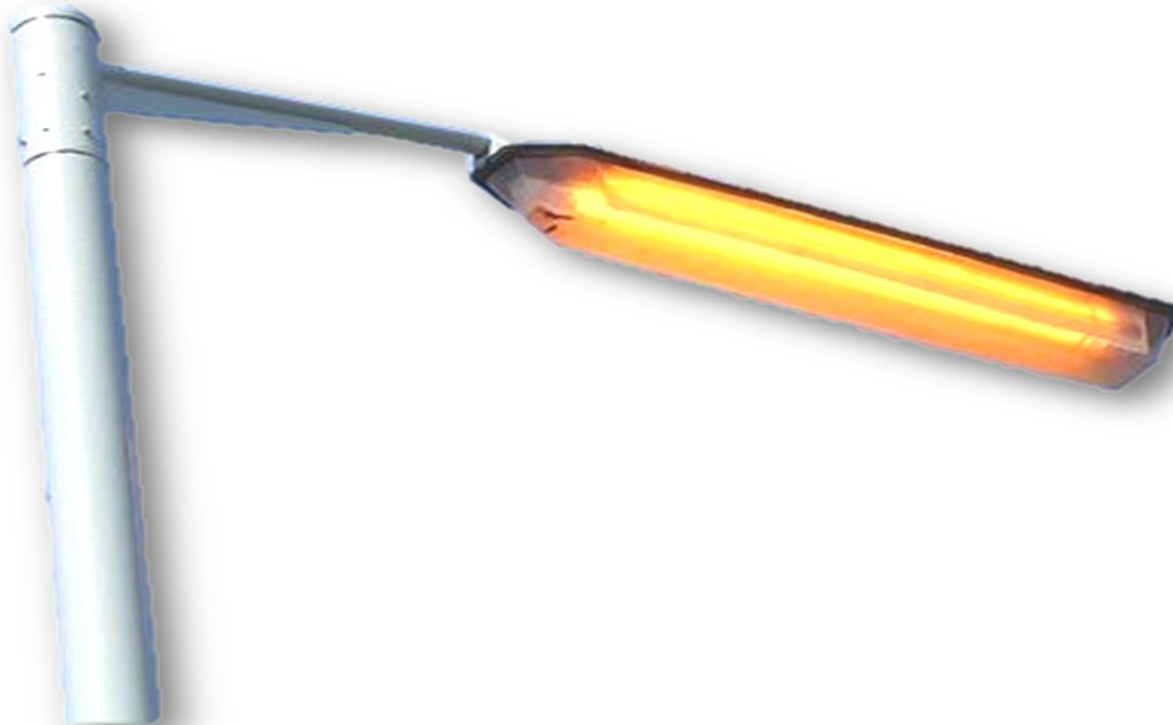


Before and after photos during a power outage that illustrates the consequences of light pollution and sky glow

The Problem

Dark sky requirements and older lighting technology

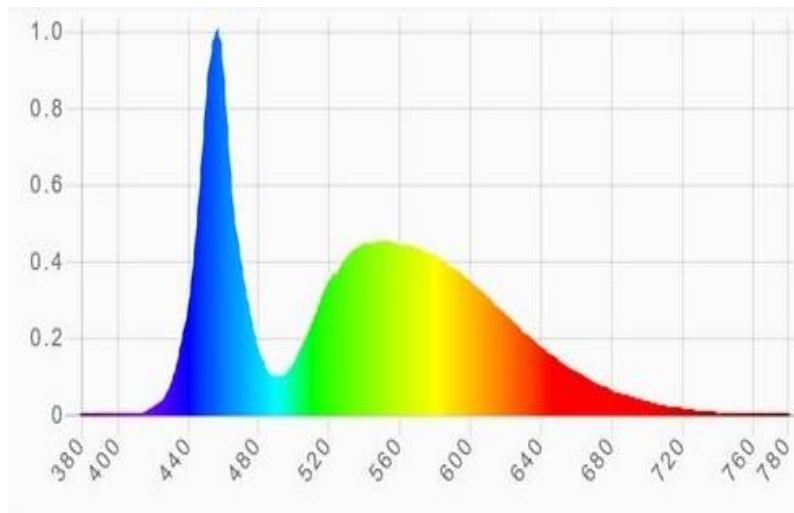
- Low Pressure Sodium (LPS) fixtures were an excellent choice for cities that require Dark Sky compliant lighting as well as astronomical observatories and environmentally sensitive areas
- LPS fixtures have become obsolete and replacement parts are expensive and difficult to obtain



The Problem

Most LED luminaires are not Dark Sky compliant

- White LED's produce a significant amount of blue light
- Blue light scatters in the atmosphere, obscuring the view of stars from the ground and contributing to light pollution and sky glow
- When compared to existing HPS and LPS fixtures, most LED street lights increase light pollution and sky glow anywhere from 170% to nearly 500%
- Externally mounted light shields offer minimal resolution for light pollution and light trespass issues



The Crossroads LED Solution

The Crossroads LED "Astrophile Series" Roadway Fixtures

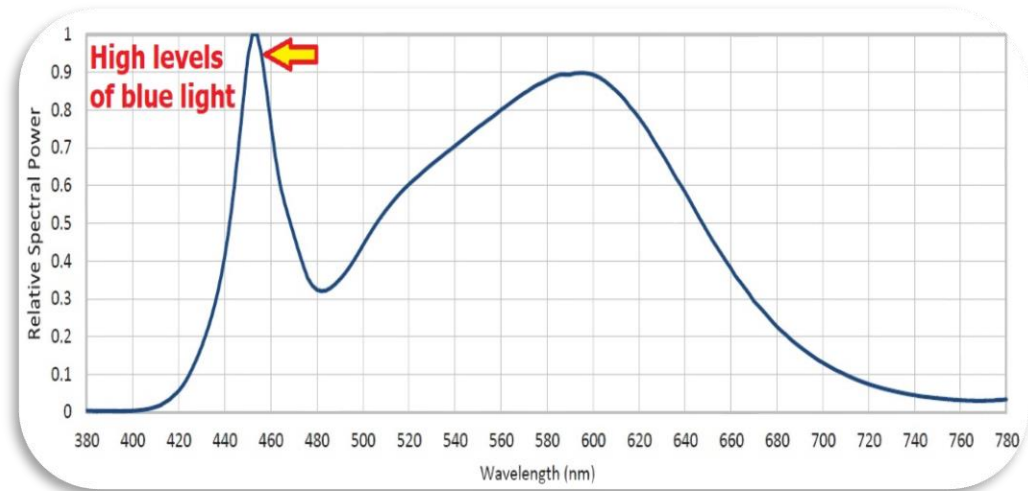
American-made LED luminaires designed specifically for Dark Sky lighting applications.



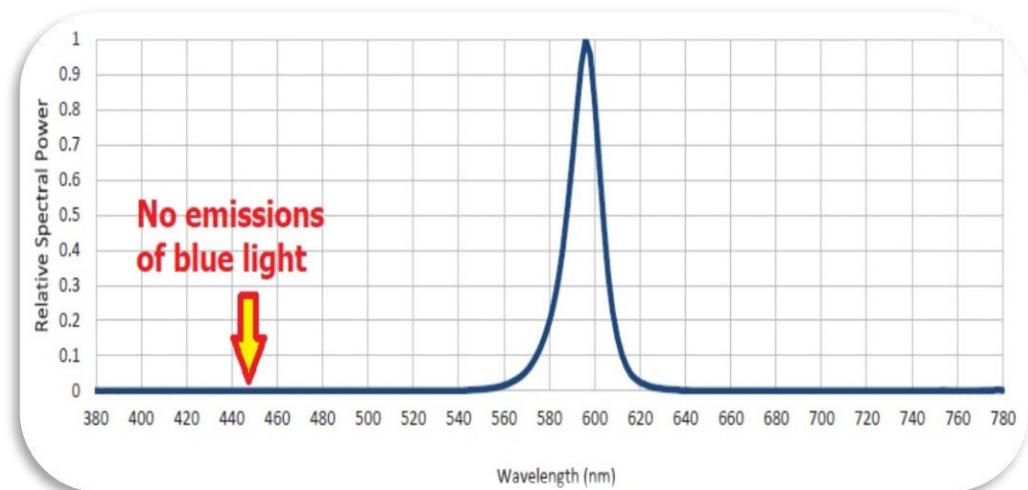
The Crossroads LED Advantage

Dark Sky compatible solutions

- Typical LED roadway fixture spectral power distribution (SPD) measurement



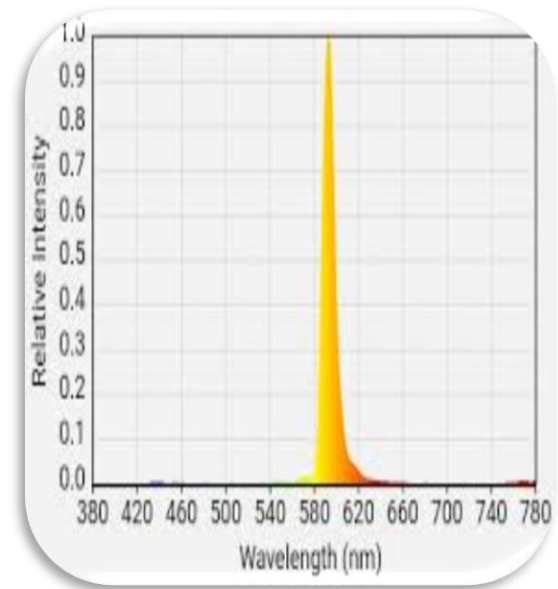
- Crossroads LED Astrophile fixtures spectral power distribution (SPD) measurement



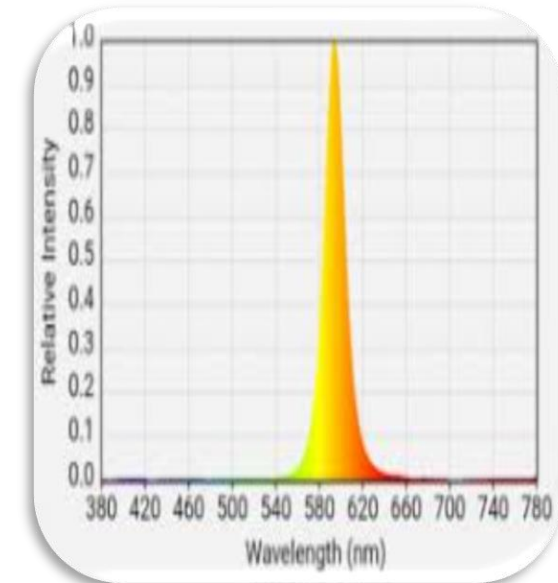
The Crossroads LED Advantage

Dark Sky compatible solutions

- Peak dominant wavelength of low pressure sodium lamps



- Peak dominant wavelength of Crossroads LED Narrow Band Amber "Astrophile Series" fixtures



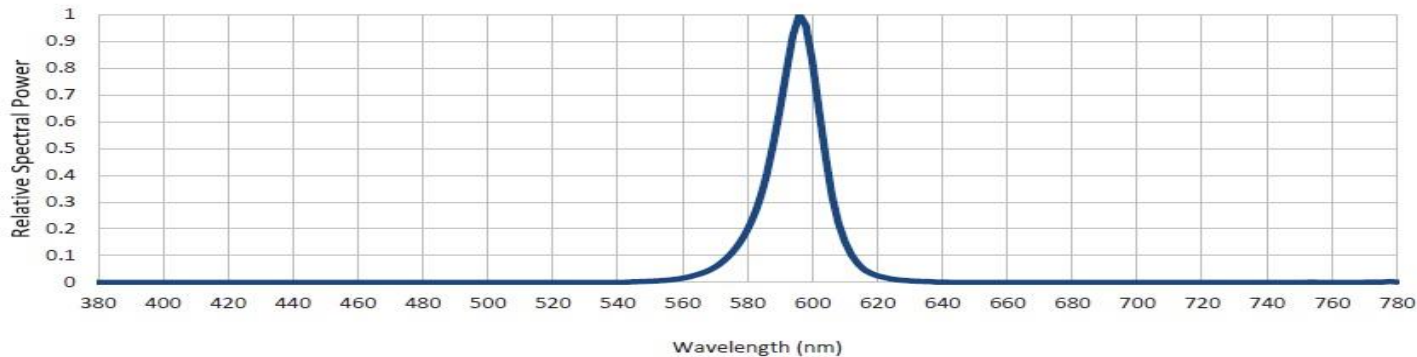
The Crossroads LED Advantage

Dark Sky compatible solutions

- Independent photometric testing verifies the "Astrophiles Series" peak dominant wavelength

Summary relative spectral irradiance distribution (wavelength – nm, irradiance – relative to peak = 1)

380	0.001	480	0.000	580	0.198	680	0.001
385	0.001	485	0.000	585	0.361	685	0.001
390	0.000	490	0.000	590	0.645	690	0.001
395	0.000	495	0.000	595	0.961	695	0.001
400	0.000	500	0.000	600	0.825	700	0.000
405	0.000	505	0.000	605	0.401	705	0.000
410	0.000	510	0.000	610	0.152	710	0.000
415	0.000	515	0.000	615	0.059	715	0.001
420	0.000	520	0.000	620	0.025	720	0.001
425	0.000	525	0.000	625	0.012	725	0.001
430	0.000	530	0.000	630	0.006	730	0.001
435	0.000	535	0.001	635	0.003	735	0.001
440	0.000	540	0.001	640	0.002	740	0.001
445	0.000	545	0.002	645	0.001	745	0.001
450	0.000	550	0.004	650	0.000	750	0.001
455	0.000	555	0.008	655	0.000	755	0.001
460	0.000	560	0.016	660	0.000	760	0.001
465	0.000	565	0.031	665	0.001	765	0.001
470	0.000	570	0.058	670	0.001	770	0.001
475	0.000	575	0.107	675	0.001	775	0.002
				680	0.002	780	0.002



The relative spectral power distribution combines the weighted spectral power distributions of all spatial measurements.

The Crossroads LED Advantage

Key benefits

- **Modular and flexible design is future-proof.** All components, including the Narrow Band Amber (NBA) LED modules and power supplies are both field replaceable and upgradable
- **Fully integrated and adjustable internal house side shielding** completely eliminates light trespass issues
- **Fully recessed NBA LED modules** eliminate up-light and glare
- Adjustable lumen output from 2,000 to 7,000 lumens
- NBA LED's available in 589nm, 592nm, and 595nm
- Available in type I, II, III, IV, and V distribution patterns
- Proprietary, advanced two-stage thermal management system ensures low LED die temperatures, guarantees years of reliability and long life
- L70 rating of 85,000hrs (19.40 years)
- Standard 7 pin ANSI photo cell socket is compatible with all electronic lighting controls
- Easily accessible internal bubble level
- Patented, proven and reliable technology (US Patent number: 9,964,288)



The Crossroads LED Advantage

"Astrophile Series" VS New Product Comparison



Crossroads LED "Astrophile Series"

**Available in peak dominant wavelengths
of 589, 592 and 595nm
60 lumens per watt**

Hubbell LED street light

**NBA LED - varies from
586 to 590nm
18 lumens per watt**



Beacon LED street light

**NBA LED - varies
586 to 590nm
24 lumens per watt**



Kim Lighting

**NBA LED - 580nm
27 lumens per watt**



The Crossroads LED Advantage

American Made LED luminaires

- All aluminum fixture housings and electronics 100% designed and manufactured in the USA
- Fully rated and certified facilities
- Rigorous Quality Control testing procedures
- Luminaires thoroughly tested by independent third party photometric laboratories
- Available factory-direct and through distribution



In Conclusion

Unlike other LED companies, **Crossroads LED** is committed to leading the industry by ...

- Designing new dark sky compliant fixtures that will meet all lighting specifications;
- Delivering the highest light output and reliability rating in the industry;
- Providing independent test data to verify luminaire performance;
- Offering direct sales options to cities and municipalities;
- Manufacturing the only **future-proof LED lighting fixture** on the market today.

Crossroads LED ... on the leading edge of lighting ... on the leading edge of innovation!





Crossroads LED

... where innovation and imagination meet.

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