

What is Human Centric Lighting (HCL)

- Throughout evolution, the human visual system has evolved under the natural light of sun and fire.
- Human-centric lighting by definition encompasses the effects of lighting on the physical and emotional being of people.
- As part of the HCL initiative, there is a drive to develop "natural" sources of lighting. The human species has been conditioned to function in daylight hours by the light of the sun, and after dusk, of the warm glow of fire. Thus, we define natural light sources as those which match the spectral distribution of sunlight and firelight.

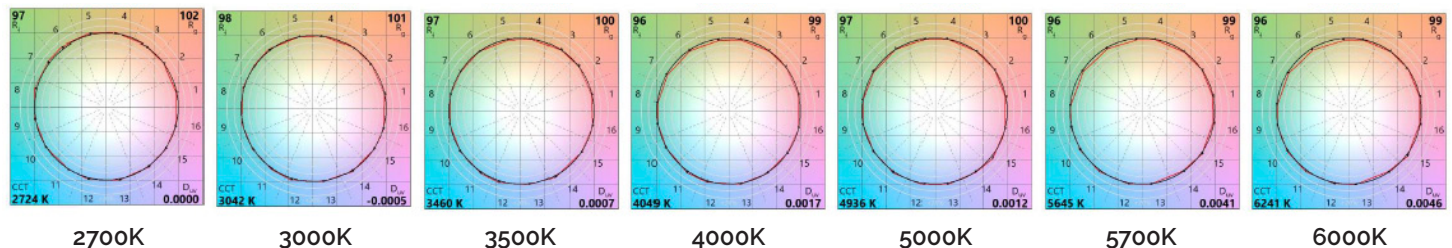
Human Centric Light Spectrum

| FEATURES | BENEFITS |
|---|---|
| Spectrum engineered to closely emulate natural light with reduced short blue wavelength intensity | Full, consistent light spectrum with fewer spectral spikes, the closest match to natural light available |
| Natural and vivid color rendering | Typical 97 CRI with R1-R15 values ranging from 91 to 99 Excellent TM-30 metrics; Rf ranging from 94-97 and Rg from 98-104 |
| High efficacy human-centric spectra | Greater energy savings, lower utility and environment costs |
| Affordable spectra optimized for humans | Accelerate adoption of full spectrum natural lighting |

Excellent Color Rendering and TM-30 Metrics

| CCT | Rf | Rg | R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 | R9 | R10 | R11 | R12 | R13 | R14 | R15 |
|-------|----|-----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|
| 2700K | 95 | 103 | 97 | 99 | 94 | 94 | 97 | 98 | 97 | 98 | 99 | 97 | 91 | 98 | 98 | 95 | 98 |
| 3000K | 95 | 104 | 98 | 99 | 93 | 94 | 97 | 98 | 96 | 96 | 97 | 96 | 92 | 95 | 98 | 95 | 97 |
| 3500K | 95 | 98 | 98 | 98 | 97 | 98 | 98 | 98 | 98 | 97 | 93 | 97 | 97 | 95 | 98 | 97 | 98 |
| 4000K | 97 | 100 | 99 | 99 | 97 | 99 | 99 | 99 | 99 | 98 | 94 | 97 | 99 | 96 | 99 | 98 | 98 |
| 5000K | 97 | 100 | 98 | 99 | 98 | 98 | 98 | 98 | 99 | 96 | 95 | 98 | 98 | 98 | 98 | 98 | 97 |
| 5700K | 94 | 98 | 98 | 98 | 97 | 95 | 98 | 97 | 96 | 95 | 92 | 97 | 96 | 98 | 98 | 98 | 97 |
| 6000K | 95 | 98 | 98 | 98 | 97 | 96 | 98 | 98 | 96 | 96 | 93 | 97 | 96 | 98 | 98 | 98 | 97 |

Note: Typical 85C hot values shown, slight differences may exist



aispire.com
Phone (800) 526.2588
Fax (800) 526.2585

Headquarters/Eastern Distribution Center
44 Harbor Park Drive
Port Washington, NY 11050

Central Distribution Center
1600 Distribution Ct
Lithia Springs, GA 30122

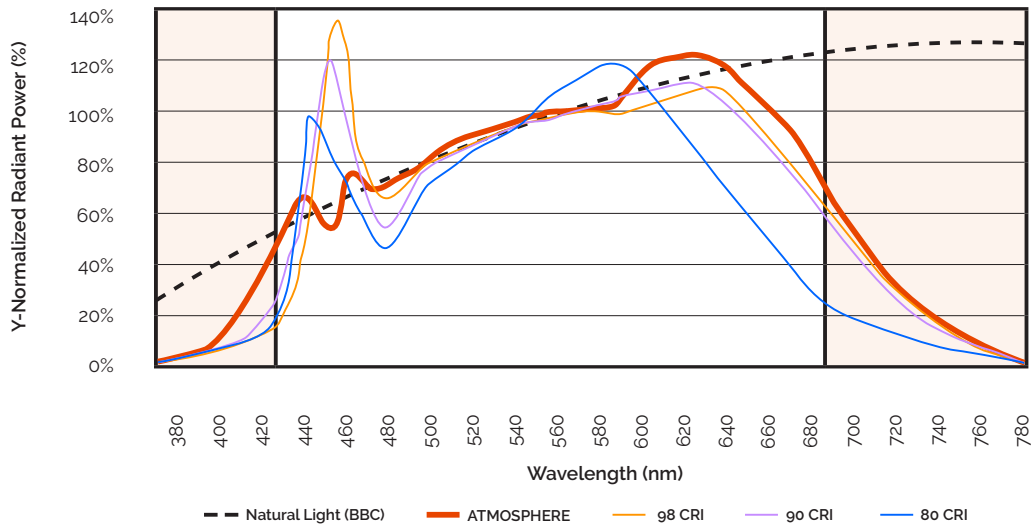
Western Distribution Center
1750 Archibald Avenue
Ontario, CA 91760



Spectral Matching to Natural Light

- As close of a spectral match as possible to natural light
- Standard LED light sources spectral distribution (SPD) have larger deviations from the Blackbody Curve (BBC)
- ATMOSPHERE significantly reduces the blue spike and cyan valley to deliver a closer match to natural light

4000K Spectral Comparison BBC vs LED



SPD's of LED light sources at 4000K against the blackbody curve.

These examples deviate from the natural light that humans have evolved under for millions of years. It is recommended to work within the realm of natural light to avoid tweaking circadian rhythms until the effects on humans are understood.