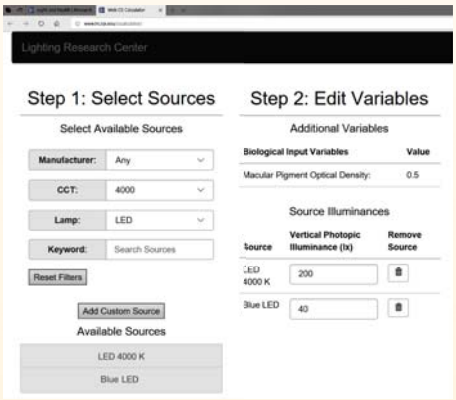
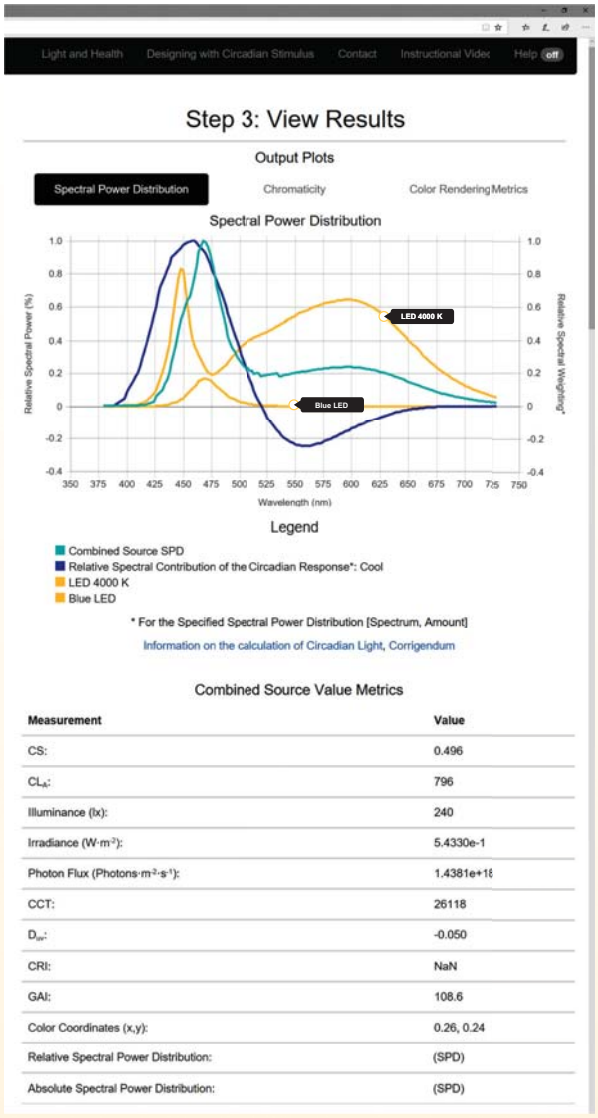
Introducing the LRC's Web-based Circadian Stimulus Calculator

Since December 2016, the LRC has provided a free, open-access Circadian Stimulus (CS) Calculator to help lighting professionals select light spectra and levels to determine the potential for circadian-effective light exposure in architectural spaces. The calculator employs the CS metric developed by LRC researchers, which quantifies light's impact on acute melatonin suppression.

The LRC's new web-based CS Calculator was made available in early 2018 (http://www.lrc.rpi.edu/cscalculator/). The calculator is viewable on all major browsers and devices, even cellphones, for convenient, practical on-the-fly calculations in the field. The latest calculator permits users to estimate CS levels in spaces with multiple light sources by uploading user-specified sources and variables.



The CS Calculator console presents users with a three-step process: (1) select the light source, (2) determine the light level at the eye (vertical photopic illuminance), and (3) view and interpret the results.



Based on the inputted light sources and illuminance levels, the calculator provides a single spectral power distribution (available for viewing and/or download) and key value metrics for the combined sources: CS, circadian light (CL_A), illuminance, irradiance, photon flux, and correlated color temperature (CCT). The calculator also provides results for the combined sources' chromaticity (delta u,v [D_{uv}], color coordinates) and a series of color rendering metrics (color rendering index [CRI], gamut area index [GAI]).

A new LRC video providing instructions on how to use the web-based CS calculator can be found at the LRC's Light and Health homepage:

http://www.lrc.rpi.edu/programs/lightHealth/index.asp

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