11 July, 2017

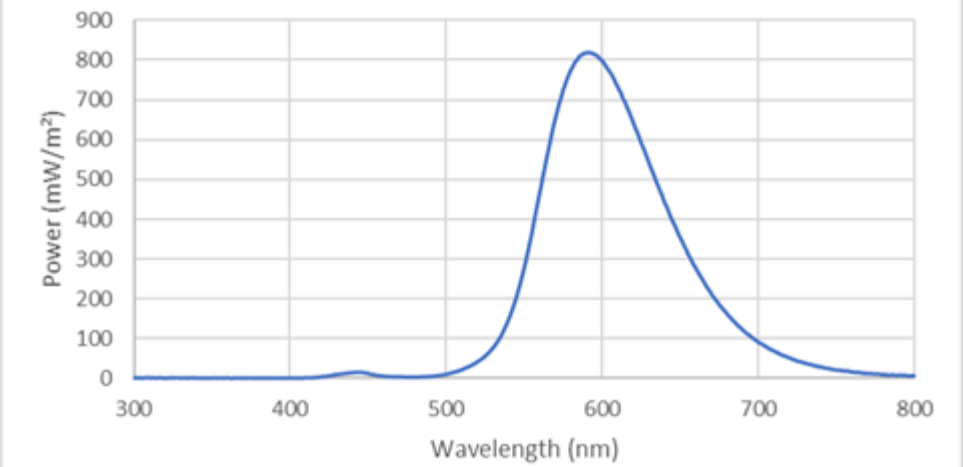
## TECHNICAL RELEASE

## LUZCHEM EXPOSURE STANDARD: LZC-LAM-17

***General information***: Luzchem Research, Inc. produces and distributes freely these standards as a service to scientists involved in research in photochemistry, photobiology and photostability. These standards are available in Luzchem's website so that references to any of our standards can be used to define conditions of exposure, and should allow other scientists to readily replicate irradiation conditions. Luzchem has measured these exposure standards using a Luzchem SPR-4001 spectroradiometer calibrated against traceable NIST standards within the 6 months preceding the determination. To the best of our knowledge spectral information is accurate within the experimental bandwidth of 2 nm.

| | | | |
|---|---|---|---|
| Lamp part number | LZC-LAM | Measurement temperature | 23 °C |
| Photoreactor model | LZC-1 | Measurement date | 05-July-2017 |
| Number of lamps and location | 8 overhead lamps, approx 20 cm from target | Spectral range monitored | 240 to 880 nm |
| Photoreactor model | LZC-1 | Lamp type: | T5 Monochromatic |
| Resolved Peaks | 590-593 nm | FWHM: | Approx. 87 nm |

[#] LED lamps start at a shorter wavelength than their stabilized temperature and take about 5 min to equilibrate.




| Region | Range nm[a] | Dose mW/m$^2$ | % Energy[b] |
|---|---|---|---|
| UVA | 316-400 | (45) [b] | <0.1% |
| Peak Wavelength Range | 525-675 | 71808 | 90% |
| Visible | 400-700 | 76528 | 96% |
| NIR | 701-850 | 3109 | <3.9% |

[a] Integration range. [b] Within experimental error.

The table to the left shows the energy distribution at the target, expressed as total irradiance and as a percentage of the total energy. The calculations refer to the monitored range indicated.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