

October 2020

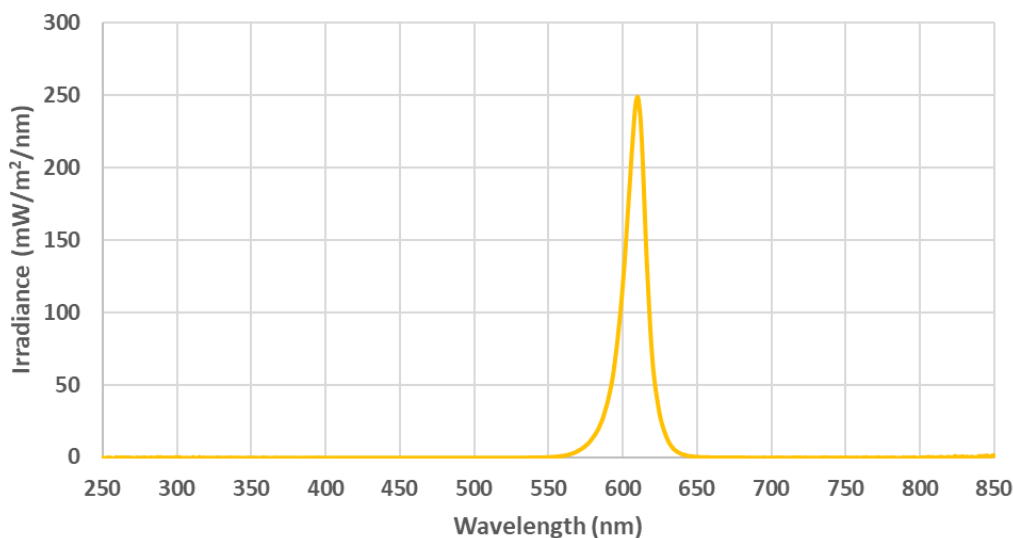
**TECHNICAL RELEASE**

**LUZCHEM EXPOSURE STANDARD: LES-LEDAM-20**

**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 12 months preceding the determination. To the best of our knowledge spectral information is accurate within the experimental bandwidth of 2 nm.

Lamp part number	Luzchem LED-AM-20	Measurement temperature	23 °C
Photoreactor model	LED-L16	Measurement date	7-October-2020
		Spectral range monitored	240 to 850 nm
Number of lamps and location	8 overhead lamps, approx 15 cm from target	Lamp type:	T5 Monochromatic
		FWHM:	Approx. 16 nm
Cold start wavelength	608 nm <sup>#</sup>	Resolved peaks	610 nm

<sup>#</sup> LED lamps start at a shorter wavelength than their stabilized temperature and take about 15 min to equilibrate.



Region	Range nm <sup>a</sup>	Dose mW/m <sup>2</sup>	% Energy <sup>b</sup>
UVA	316-400	(1) <sup>b</sup>	<0.1%
Peak Wavelength Range	590-623	4478	88%
Visible	400-700	5064	>99%
NIR	701-850	(38) <sup>b</sup>	<0.8%

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.

<sup>a</sup> Integration range. <sup>b</sup> Within experimental error.

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