

LUMASCAPE

architectural lighting



LS422LED
Source: 34W Luxeon K2 LED array

LS422
Source: 20W MH CDM-Tm

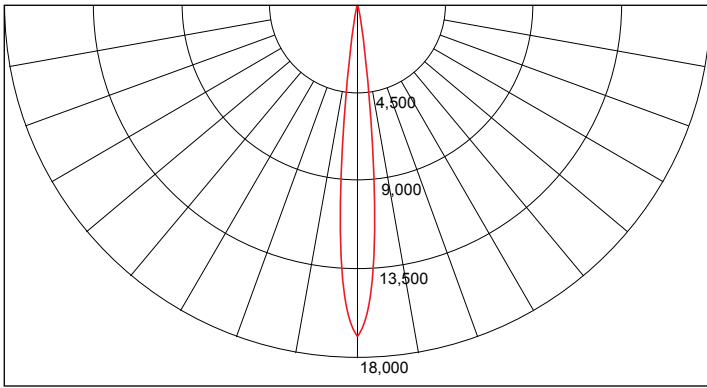
20W MH vs 34W LED

	LS422LED	LS422
Source	34W Luxeon K2 LED array	20W MH CDM-Tm
Colour Temperature	Warm white: 3,375K	Warm white: 3,000K
	White: 5,300K	
Colour Rendering Index	Warm white: 80	Warm white: 80
	White: 75	
Total Lumens (initial)	869lm (white)	1,046lm

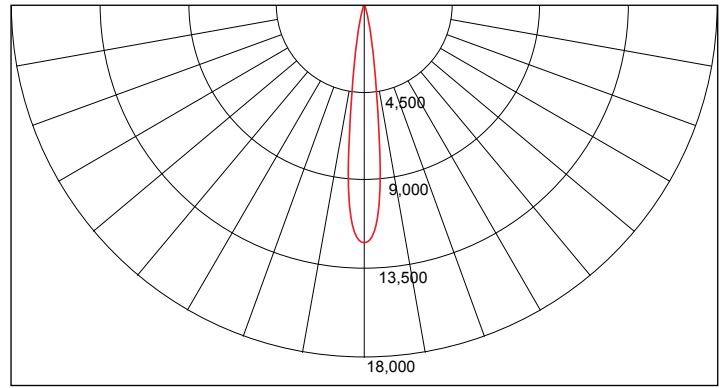
LED technology is moving forward quickly, and until recently has featured primarily in low power decorative applications.

Lumascap is moving with the technology to test its performance in applications traditionally the domain of other lamp types. In this scenario, we compare the performance of the 20W CDM-Tm lamp from Philips, and a 34W, 18 LED array in a landscape lighting application.

A picture speaks a thousand words. Seeing the fittings in operation side by side is a great way to compare the effects for accent lighting applications. Both exhibit very good colour rendering and a visually appealing final effect. The result is quite similar, and certainly performing to acceptable illuminance requirements to light objects in the built and landscape environments. The LED does exhibit a softer contrast ratio, which may suite many decorative accent lighting applications. There are other performance characteristics of the LED which make it well suited to environments where maintained illuminance is more important...

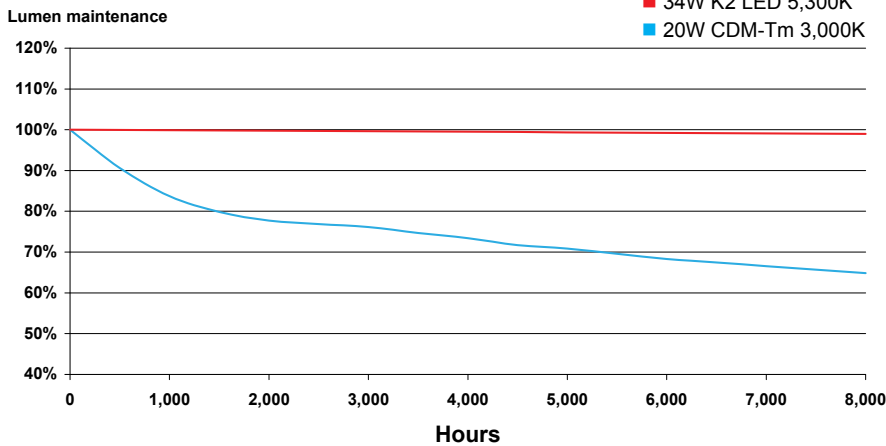


20W MH CDM-Tm 3,000K 30° beam angle



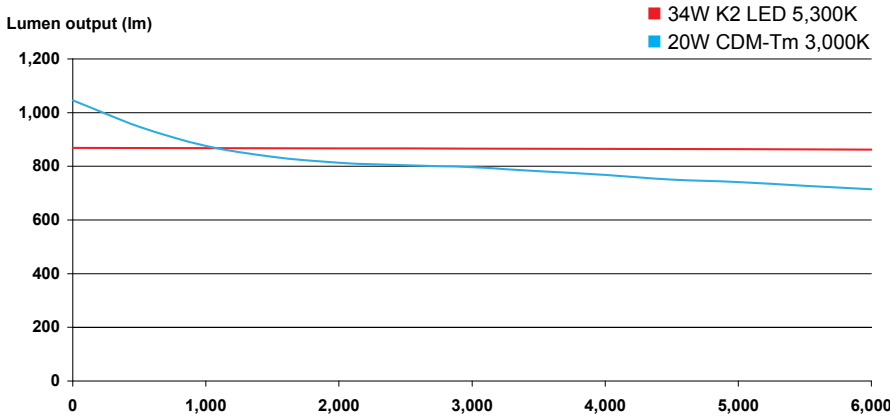
34W K2 LED array 5,300K medium beam angle

Lumen Maintenance 20W MH vs 34W LED at 25°C



This graph shows the steep lumen depreciation curve of Metal Halide lamp types. The very gradual depreciation of LED is more favourable, particularly when maintained illuminance calculations are required.

Lumen Output 20W MH vs 34W LED at 25°C



This graph shows the actual fixture output of the Metal Halide and LED versions are the same after about 1,000hrs, with the Metal Halide depreciating further up to its end of life. LED lumen depreciation typically starts much later in its operating life, reaching 70% after about 50,000hrs, as opposed to Metal Halide which is nominally 6,000hrs.

This sees LED as a real contender for lighting applications traditionally reserved for Metal Halide.

Benefits of LED

LED technology features instant restart, and does not require warm-up time.

LEDs are also well suited to dimming, without effecting life or colour temperature, as is the case with Metal Halide.

Conclusion

LEDs are a new and exciting tool, and when used appropriately can provide some great benefits. This brief summary has highlighted some of the key performance characteristics of LED, and when it might be appropriate to use LED over Metal Halide.

Lumascope has produced a comprehensive White Paper on LED technology. If you wish to receive a copy, please contact us at expert@lumascope.com.au