

## CTM2 & CTM3 FAMILIES ROUND LED COLOR TUNING ARRAYS



Spectral Quality of Daylight  
**90+ CRI**




Broad Tuning Range  
**1650-8000 K**



Color Access  
**Pastels to Saturates**



Halogen Dimming  
**3050 K (100%) – 1800 K (1%)**



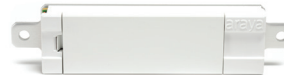
LED Dimming  
**100% – 0.1%\***



Color Consistency Over Life  
**Less than 2 SDCM**



Tunable Color Round LED Arrays



araya Logic Module

araya Logic Modules (ALM2 / ALM3) connect to high-power round LED arrays that mix five colors of LEDs across a tunable color range of 1650–8000 K (CTM2 / CTM3) or a warm dim range of 1800–3050 K (DDM2 / DDM3). The light can be dimmed from 100–0.1%\*. The arrays deliver up to 10000 lm of light at 90+ CRI. The ALM features on-board driver electronics and control logic for precise control of current and PWM while tuning and dimming.

**CTM3 with ALM3** — The ALM3 rapidly generates a unique color model on the spot based on the spectral characteristics stored on the connected array, providing precision tuning of the light engine’s full spectrum color output. This enables the replacement of ALM3 as needed, and provides the ability to mix and match the various types of ALM3 with the various sizes of CTM3 arrays. Another key innovation is the ability of ALM3 to receive firmware upgrades over wired RDM/DMX to ensure field compatibility with previously deployed control systems.

Fixture control integration is achieved by packaging Bluetooth LE (for commissioning only) and 0–10 V on-board the ALM. DMX512-A-RDM, Lutron® EcoSystem, Avi-on™ wireless BLE Mesh platform, DALI Type 8 and Legrand® Wattstopper® DLM protocol compatibilities can be achieved via control cards that connect to an expansion port within the ALM.

### COMMISSION AND CONTROL EFFORTLESSLY

CONTROL SYSTEM / PROTOCOL	CTM2 & CTM3 (TUNABLE COLOR CONTROL)				DDM2 & DDM3 (WARM-DIM)	NOTES
	1 DIM*	2 CCT	3 SAT	4 HUE	1 DIM	
DMX512-A-RDM**	0.1%	1650–8000 K	Yes	Yes	1% (1800–3050K) <sup>3</sup>	1. Requires control card connected to ALM. 2. Refer to the separate DMX Lookup Values table for specific programming values and information. 3. Factory setting or RDM command.
0–10 V	~1% <sup>4</sup>	1650–8000 K	**	**	~1% (1800–3050K) <sup>5</sup>	4. 1–10 V signal dims module to approximately 1%. In-line power relay required to achieve 0% output. 5. Factory setting.
LUTRON ECOSYSTEM**	0.1%	1650–8000 K	N/A	N/A	1% (1800–3050K) <sup>8</sup>	6. Requires control card connected to ALM. 7. Refer to the separate Lutron EcoSystem Lookup Values table for specific programming values and information. 8. Factory setting.
AVI-ON WIRELESS BLE MESH	0.1%	1650–8000 K	Yes	Yes	1% (1800–3050K) <sup>10</sup>	9. Requires control card connected to ALM. 10. Factory setting.
DALI TYPE 8	0.1%	1650–8000 K	N/A	N/A	1% (1800–3050K) <sup>12</sup>	11. Requires control card connected to ALM. 12. Factory setting.
WATTSTOPPER DLM	0.1%	1650–8000 K	N/A	N/A	1% (1800–3050K) <sup>14</sup>	13. Requires control card connected to ALM. 14. Factory setting.

\*100–0.1% LED dimming is available for specific modules/arrays when connected to 0.1% dimming-capable digital controls. May be limited to 1% dimming by controller; see control system specification for details.

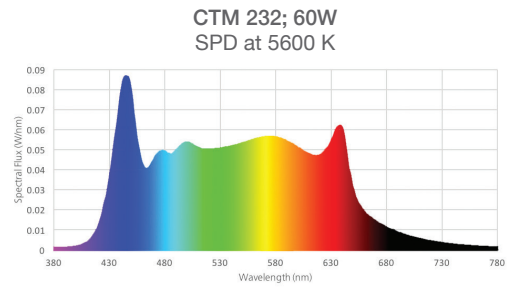
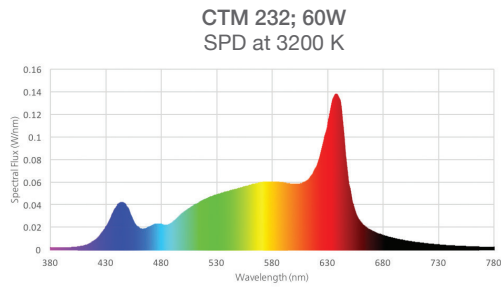
100–1% dimming is available with analog 0–10 V control and for DDM2.

\*\*Two 0–10 V lines can be used to control DIM and CCT independently, or program Scenes—in any combination of DIM, CCT, HUE and SAT—and recall them with five 0–10 V presets.

Individual product specifications may vary; please refer to technical data sheets. Bluetooth LE is provided on board for commissioning purposes only.

# THE CTM2 & CTM3 DATA TELLS THE STORY

## TYPICAL SPECTRAL POWER DISTRIBUTION (SPD) CURVES



## TYPICAL TM-30 DATA

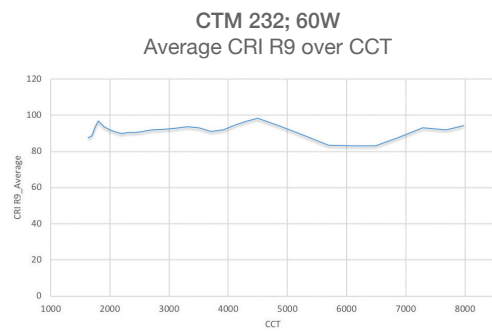
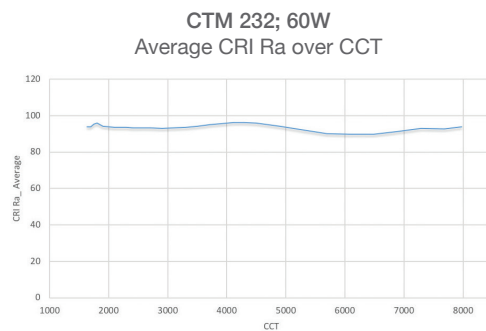
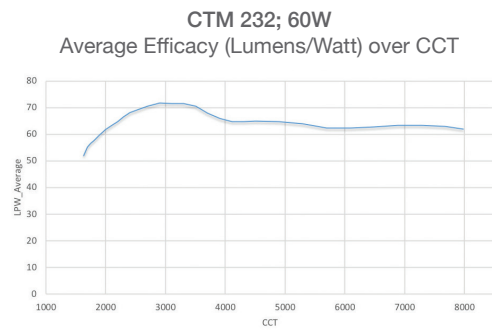
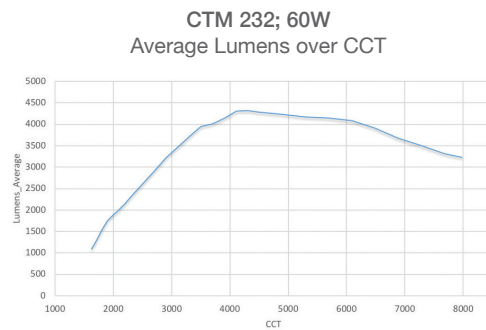


Rf = 92; Rg = 104; CRI Ra = 95



Rf = 92; Rg = 99; CRI Ra = 94

## TYPICAL PERFORMANCE GRAPHS



For additional color and performance data, please refer to [www.erp-power.com](http://www.erp-power.com). Specifications may be subject to change without notice.