



Joint Appendix 8 (JA8), Compatibility Guide

For all Vode® systems

What is JA8?

As of January 1, 2017, new lighting requirements in California's Building Energy Efficiency Standards (Title 24, Part 6 of Energy Standards) for new construction are in effect. The Energy Standards require high efficacy lighting throughout newly constructed homes, and the definition of "high efficacy" luminaire has been expanded to include luminaires containing light sources that meet the new performance requirements outlined in Title 24 Reference Joint Appendix JA8 (JA8), Qualification Requirements for High Efficacy Light Sources. Whew!

In addition to more quality and efficacy requirements, JA8 now also references Joint Appendix 10 (JA10), Test Method for Measuring Flicker of Lighting Systems and Reporting Requirements, for additional flicker testing and data reporting requirements for JA8 light sources.

Why JA8?

These new lighting requirements are designed to significantly reduce energy use in new homes, multi-family dwellings, motel/hotels, fire stations, dormitories & senior housing. The California Energy Commission (CEC) estimates hundreds of thousands of single-family homes and multifamily dwelling units will be built in California over the next few years. The new requirements are projected to reduce lighting energy use in homes by roughly 50%. Projected energy savings for the first year of implementation (2017) was equal the amount of electricity consumed annually by 13,000 typical California homes (85 GWh).

For more complete information on JA8's purpose and requirements, we recommend the following documents from the CLTC, Energy Ace, the CEC and Lutron Electronics.

California Lighting Technology Center
WHAT'S NEW IN THE 2016 CODE?

Energy Code Ace
2106 ENERGY CODE FACT SHEET
High Efficacy Lighting for Manufacturers

Fact Sheet, Residential Lighting
JA8 Compliance

Lutron Electronics
CALIFORNIA TITLE 2016 - OVERVIEW
(YAY, California!)

California Energy Commission
REFERENCE APPENDICES FOR THE
2016 BUILDING ENERGY EFFICIENCY
STANDARDS

JA8 LED Luminaire Requirements

Initial Efficacy	≥ 45 lumens/Watt
Power Factor at Full Rated Power	≥ 0.90
Correlated Color Temperature (CCT)	≤ 4000 Kelvin.
Color Rendering Index (CRI)	≥ 90
R9	≥ 50
Rated Life	≥ 15,000 hours
Min. Dimming Level	≤ 10%
Flicker	<30% for frequencies of 200 Hz or below, at 100% and 20% light output.
Start Time	≤ 0.5 sec
Duv	≥ -0.0033 and ≤ ± 0.0033
Projected Time to L70	≥ 25,000 hours, or N/A for light sources providing 6,000 hour lumen maintenance testing
100% Light Output: Audible Noise	≤ 24 dBA
20% Light Output: Audible Noise	≤ 24 dBA

Vode and JA8

In accordance with the certification guidelines, the Vode product line has been evaluated by an NVLAP accredited third party testing laboratory (participating in the ISO/IEC 17025). Vode products compliant with JA8 are listed below and on the California Energy Commission MAEDBS [database](#).

There are combinations of Rail type, length, power and optics that are NOT compliant. Please refer to the data below to ensure Vode specifications are 100% JA8 compliant.

Vode JA8 Compliant Products

VODE OPTIONS THAT MEET JA8 REQUIREMENTS

Power Type	AE	eldoLED 0-10v, 1.0% Dimming	
	AT	eldoLED 0-10v, 0.1% Dimming	
	AH	Lutron Hi-lume 1% EcoSystem (LDE1)	
CCT	90+CRI	279	2700K
		309	3000K
		359	3500K
		409	4000K
LED Type	Z	Zipper Board	

VODE OPTIONS THAT DO NOT MEET JA8 REQUIREMENTS:

Power Type	AD	eldoLED DALI, 0.1% Dimming	
	AX	eldoLED DMX, 100-0% Dimming	
	AH2	Lutron Hi-lume 1% 2-wire (LTE)	
	AH3	Lutron Hi-lume 1% EcoSystem/3-wire (L3D)	
CCT	80+CRI	27	2700K
		30	3000K
		35	3500K
		40	4000K
LED Type	B	Button Board	

JA8 Compliance of Length and Power Combinations

Vode System: 707

Rail Length	DRIVER: AE eldoLED 0-10v, 1.0% Dimming AT eldoLED 0-10v, 0.1% Dimming		
	LO	SO	HO
24" (610 mm)	Yes	Yes	Yes
36" (914 mm)	Yes	Yes	Yes
48" (1219 mm)	Yes	Yes	Yes
60" (1524 mm)	Yes	Yes	No (Z3 & Z9 only)
72" (1829 mm)	Yes	Yes	No

LO	SO	HO	DRIVER: AH Lutron Hi-Lume 1% EcoSystem (LDE1)
No	No	No	
Yes	Yes	Yes	
Yes	Yes	Yes	
Yes	Yes	Yes	
Yes	Yes	No	

Vode Systems: 107, 117, 907

Rail Length	DRIVER: AE eldoLED 0-10v, 1.0% Dimming AT eldoLED 0-10v, 0.1% Dimming		
	LO	SO	HO
24" (610 mm)	Yes	Yes	Yes
36" (914 mm)	Yes	Yes	Yes
48" (1219 mm)	Yes	Yes	Yes
60" (1524 mm)	Yes	Yes	Yes
72" (1829 mm)	Yes	Yes	No
96" (2438mm)	Yes	Yes	No

LO	SO	HO	DRIVER: AH Lutron Hi-Lume 1% EcoSystem (LDE1)
No	No	No	
Yes	Yes	Yes	
Yes	Yes	Yes	
Yes	Yes	Yes	
Yes	Yes	No (907 only)	
Yes	Yes	No	

JA8 Compliance of Rail and Optic Combinations

Vode System: 707

COMPLIANT			NOT COMPLIANT		
ZipOne®	A2	100° Asymmetric	ZipOne		
ZipTwo®	S1	40° Symmetric, white	ZipTwo	S1	40° Symmetric, black
	S2	60° Symmetric, white		S2	60° Symmetric, black
	S3	120° Symmetric, white		S3	120° Symmetric, black
	A1	85° Asymmetric, white		A1	85° Asymmetric, black
	S4	Round, Diffuse			
	S5	Square, Critical Edge™			
ZipThree®	S6	Square, Diffuse	ZipThree		
	B1	Ceiling Wash, up Wall Graze, down			
	B2	Ceiling Wash with EdgeGlow™, up Wall Graze, down			
	U1	Ceiling Wash, uplight only			
	U2	Ceiling Wash with EdgeGlow, uplight only			
ZipWave®	D1	Wall Graze, downlight only	ZipWave		
	C1	Clear with EdgeSoft™			

Vode System: 107, 117, 907

COMPLIANT

BoxRail®	1	Diffuse
	G1	120° Batwing
	G2	120° FlyWing™
	S1	40° Symmetric, white
	S2	60° Symmetric, white
	A1	85° Asymmetric, white
RaceRail®	2	Diffuse, Round
	G1	120° Batwing, Flat
	G2	120° Flywing, Flat
WingRail®	C1	Clear with EdgeSoft
	D1	Diffuse
	WB	White Baffle with EdgeSoft
DoubleRace™	22	Diffuse, Round, up Diffuse, Round, down
	G12	120° Batwing, Flat, up Diffuse, Round, down
	G1G2	120° Batwing, Flat, up 120° FlyWing, Flat, down
DoubleBox™	G12	120° Batwing, up Diffuse, down
	G1S1	120° Batwing, up 40° Symmetric, white, down
	G1S2	120° Batwing, up 60° Symmetric, white, down
	G1A1	120° Batwing, up 85° Asymmetric, white, down
	G1G2	120° Batwing, up 120° FlyWing, down

NOT COMPLIANT

BoxRail	WB	White Baffle
	BB	Black Baffle
	S1	40° Symmetric, black
	S2	60° Symmetric, black
	A1	85° Asymmetric, black
RaceRail		
WingRail	BB	Black Baffle with EdgeSoft
DoubleRace		
DoubleBox	G1WB	120° Batwing, up White Baffle, down
	G1BB	120° Batwing, up Black Baffle, down
	G1S1	120° Batwing, up 40° Symmetric, black, down
	G1S2	120° Batwing, up 60° Symmetric, black, down
	G1A1	120° Batwing, up 85° Asymmetric, black, down

