



LIGHTSHAPES PIXEL

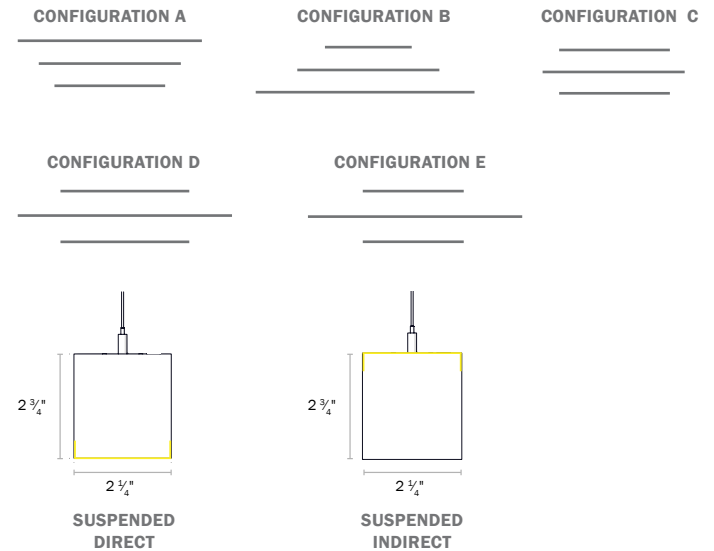
LS2PM | MULTISTAK SUSPENDED



SPECIFICATIONS

PROFILE	2" Aperture
SIZES	2' - 6' Squares in stacks of three
LED OUTPUT	10,800 - 24,000 lm, custom lumen packages available.
CCT/CRI	2700K/3000K/3500K/4000K • 90+ CRI Tunable White (2700K - 6500K) • RGB and RGB+W
DIMMING/ DRIVER	Remote Driver: 0-10V, DALI, DMX, eldoLED, Lutron®, PoE (Molex, Igor, NuLEDs). Dimming to 0% for select models.
POWER	97.5W - 216.7W
INPUT	120VAC, 277VAC, or 347VAC
OPTICS	Lambertian distribution, Reveal Lens
FINISHES	16 powder coat finishes Custom finishes also available
MATERIAL	6061 Extruded Aluminum
ENVIRONMENT	Dry or damp locations
WELL/UGR	See ALW WELL and BIOS pages for recommended options that contribute to meeting the WELL Building Standard™

DISTRIBUTIONS & PROFILES



Not to scale. Dimensions are nominal. Consult factory for CAD drawing



*Safety and Performance information available on last page. Output and other specifications available on page 6.

Rev 121124



PRODUCT SPECIFICATION SHEET

1	2	3	4a	4b	4c	5	6	7	8	9a	9b	9c
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EXAMPLE: LS2PM – A – 2 – HI/90/3500 – V05 – EXT/R – SW – UNV – EMC/1 – MLX – SB

1. BASE MODEL (CHOOSE 1)	2. CONFIGURATION (CHOOSE 1)	3. DISTRIBUTION (CHOOSE 1)	4. LED LAMPING* (CHOOSE 1 FOR EACH)
LS2PM 2" Lightshape Pixel Multistak	A 5' x 5' Top, 4' x 4' Middle, 3' x 3' Bottom B 2' x 2' Top, 4' x 4' Middle, 6' x 6' Bottom C 3' x 3' Top, 4' x 4' Middle, 3' x 3' Bottom D 3' x 3' Top, 5' x 5' Middle, 3' x 3' Bottom E 2' x 2' Top, 5' x 5' Middle, 2' x 2' Bottom 	1 All direct 2 Bottom two direct, top indirect DISTRIBUTION 1 DISTRIBUTION 2 	A. OUTPUT* LOW (300 lm/ft) HI (500 lm/ft) TUNE (2700K-6500K, 90 CRI, 460/500 lm/ft) <small>*Custom. Enter lumens in product code above. Ex. 0100=100lm/ft</small> B. CRI² NO CRI/CCT³ 90 BIOS⁴ (STATIC BIOS) BIOSD⁴ (DYNAMIC BIOS) C. CCT² 2700K⁵ 3000K 3500K 4000K <small>*For delivered lumens and watts, see 'Performance Details' RGB and RGBW available as custom solution. If desired, contact ALW. ¹Consult ALW for custom lumen packages. ²CRI/CCT options not applicable for TUNE lamping. ³Choose when TUNE is desired output. ⁴Static BIOS SkyBlue® 490nm LED is always on. Dynamic BIOS SkyBlue® 490nm LED can be tuned out with most LED driver and dimmer combinations. See pages 7-8 for details. ⁵90 CRI only. 2700K is not available in BIOS options.</small>

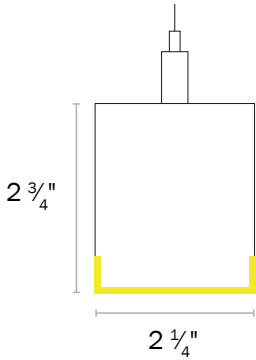
5. DRIVER* (CHOOSE 1)	6. LENS	7. FINISH - FIXTURE* (CHOOSE 1)	8. VOLTAGE (CHOOSE 1)
V00 (0-10V, dim to 0%) V01 (0-10V, dim to 1%) V05 (0-10V, dim to 5%) P01 (ELV/TRIAC phase dim to 1%) LDE1 (Lutron ECOSYS1, 0-10V, dim to 1%) TSERIES (Lutron tuneable white) ELDVO (eldoLED, 0-10V, dim to 0%) ELDDW (eldoLED dim to warm) DALI (DALI, dim to 0%) DMX (DMX, dim to 0%) POEM (POE Molex) <small>*See 'Driver', 'Sensor' and lamping charts for driver details and sensor compatibility. ¹Remote drivers only. ²Choose desired PoE solution not listed. Contact customer service to review and confirm the PoE system of your choice.</small>	EXT/R Diffuse reveal lens	STANDARD FINISHES SW <input type="checkbox"/> Satin White SB <input checked="" type="checkbox"/> Satin Black AS <input type="checkbox"/> Aluminum Silver Anodized Effect TB <input type="checkbox"/> Textured Black PREMIUM FINISHES --- See chart on page 5 for premium finishes. Manually type in the finish code (Ex: OB = Oil-Rubbed Bronze) SPECIAL ORDER FINISHES* RAL_____ Specify RAL Classic Color (Ex: RAL 3003) CCM_____ Custom Color Match <small>*Manually type in the finish code for special order finishes types</small>	UNV Universal Voltage (120VAC-277VAC) 347 347 Volt (<i>Driver options may be limited. Not available with EMB</i>)

9a. EMERGENCY OPTIONS (OPTIONAL)	9b. SENSOR OPTIONS* (OPTIONAL, CHOOSE 1)	9c. ADDITIONAL OPTIONS (OPTIONAL)
EMC/___⁷ Emergency Circuit (<i>indicate QTY of 4ft sections to be illuminated by emergency circuit</i>) <small>⁷For Emergency Battery (EMB) refer to ALW's LP2 fixture. ⁸For fixtures under 4ft in length, entire fixture will be illuminated with a proportional lumen output. Consult ALW for more details.</small>	N (None) WLNx (Cooper Wavelinx, remote) ENLGHt (Enlighted, remote) FCJS (Lutron, remote) FCJS/S (Lutron, remote + occ/daylight sensor) MLX (Molex POE, remote) NLT (nLight wired remote connection) NLTAIR (nLight AIR, remote connection) OS/PH/HV (Hubbel WASP remote occ/daylight sensor) <small>*Quickship availability on occupancy and photocell/daylight sensors may vary. Contact ALW for more information. ⁸Not all sensors are compatible with all drivers. See 'Driver', 'Sensor' and lamping charts for driver details and sensor compatibility.</small>	SB Seismic Bracing

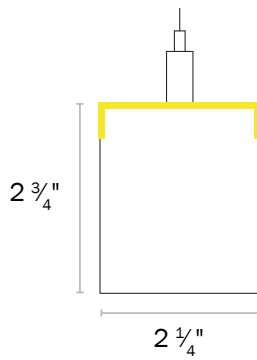


MECHANICAL DIAGRAMS

NOMINAL DIMMENSIONS

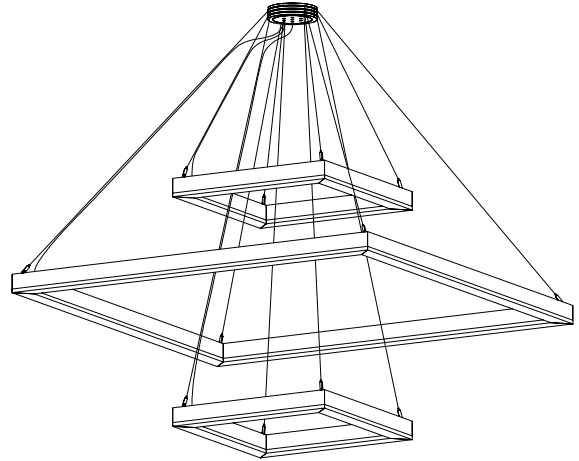


**LP2S
SUSPENDED, DIRECT**

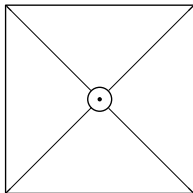


**LP2S
SUSPENDED, INDIRECT**

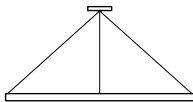
ISOMETRIC VIEW



MOUNTING OPTIONS



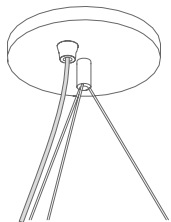
Plan View



Elevation View

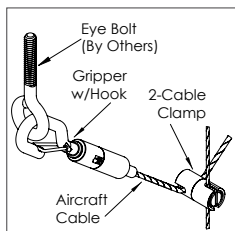
CENTRAL AXIS SUSPENSION (CAS)

- 4.5" white central axis canopy per fixture that all aircraft cables/power feeds route into, as shown.
- 8' aircraft cable. 18" minimum distance from ceiling to fixture.



CEILING HARDWARE

- 4.5" canopy per power feed location. Canopy finish is always white. Contact ALW for alternate colors.
- Bullet mount,
- 2" canopy (for use with T-bar mounting) per suspension point



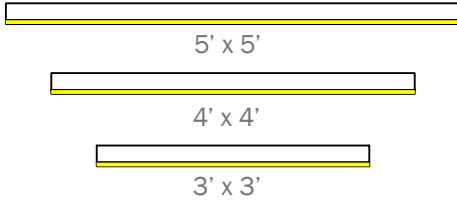
SEISMIC BRACING (SB)

Add-on hardware includes cable gripper with hook, 2-cable clamp and specified length of aircraft cable per suspension point.

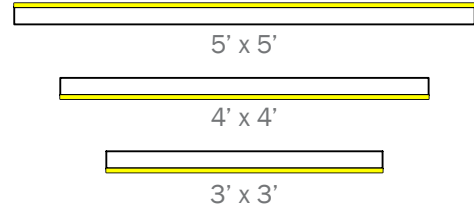


CONFIGURATIONS

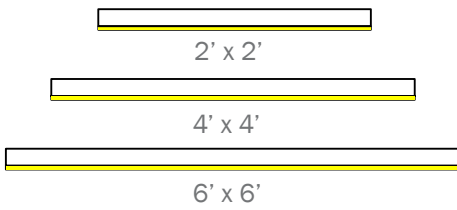
A1



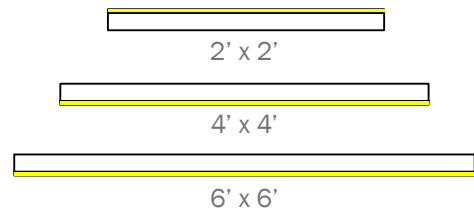
A2



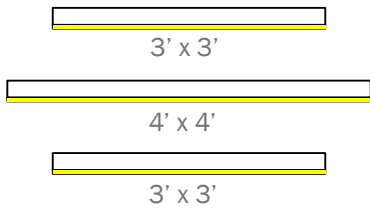
B1



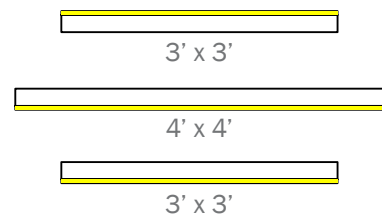
B2



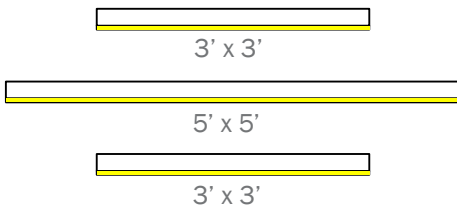
C1



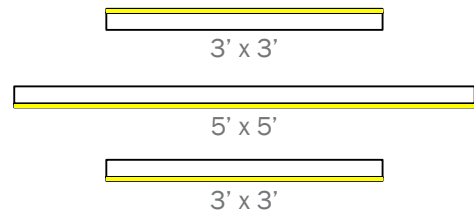
C2



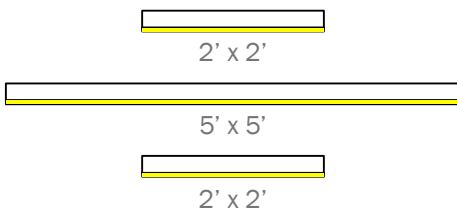
D1



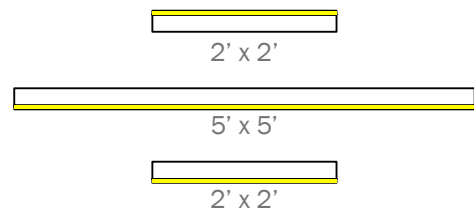
D2



E1



E2





FINISHES

Standard finishes are available at no additional charge.

STANDARD FINISHES

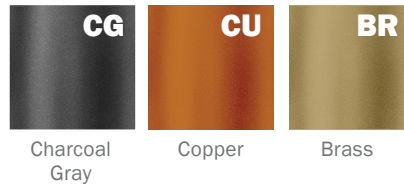


PREMIUM FINISHES

BASIC POWDER COAT



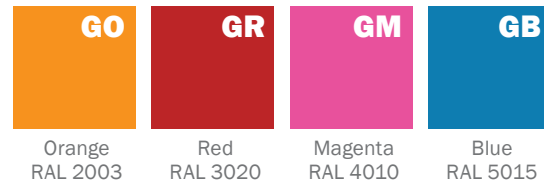
METALLIC POWDER COAT



SATIN ANODIZED EFFECT POWDER COAT



GLOSS POWDER COAT (80-95% GLOSS)



Contact ALW Quotes for sample paint finish swatches.

SPECIAL ORDER FINISHES*



RAL CLASSIC COLORS (80-95% GLOSS): RAL_ _ _ _

Most RAL Classic Colors are available for a minimum setup fee. On your specification submittal choose your RAL color by entering the 4-digit RAL code (Ex: RAL 3003). See www.alw-inc.com/resources/finishes



CUSTOM COLOR MATCH: CCM_ _ _ _

Custom powder coat color matching is available for a premium setup fee. Consult ALW for additional information.

*An individual setup fee will apply to each unique Special Order Finish per purchase order.
(ex: RAL 5023 and RAL 2008 are specified for multiple line items on a purchase order. 2x setup fees will apply)

*Printed or on-screen colors are only approximations - consult actual Color Chip Set before specifying



PERFORMANCE DETAILS

CONFIGURATION/ DISTRIBUTION	OUTPUT TYPE	DELIVERED LUMENS (LM)⁸ <i>direct OR indirect</i>	TOTAL WATTS (W)⁸ <i>direct OR indirect</i>	EFFICACY (LM/W) <i>direct OR indirect</i>	SUSPENSION POINTS	POWER DROPS	APPROX WEIGHT (LBS)	
A1/A2 5 X 5 IN/DIRECT 4 X 4 DIRECT 3 X 3 DIRECT	LOW ⁹	14400	130.0	Up to ~126.3	12	3	96	
	HI ⁹	24000	216.7					
	TUNEABLE	WW: 22080 CW: 24000	190.1					
B1/B2 2 X 2 IN/DIRECT 4 X 4 DIRECT 6 X 6 DIRECT	LOW ⁹	14400	130.0				88	
	HI ⁹	24000	216.7					
	TUNEABLE	WW: 22080 CW: 24000	190.1					
C1/C2 3 X 3 IN/DIRECT 4 X 4 DIRECT 3 X 3 DIRECT	LOW ⁹	12000	108.4					80
	HI ⁹	20000	180.6					
	TUNEABLE	WW: 18400 CW: 20000	158.4					
D1/D2 3 X 3 IN/DIRECT 5 X 5 DIRECT 3 X 3 DIRECT	LOW ⁹	13200	119.2				88	
	HI ⁹	22000	198.7					
	TUNEABLE	WW: 20240 CW: 22000	174.2					
E1/E2 2 X 2 IN/DIRECT 5 X 5 DIRECT 2 X 2 DIRECT	LOW ⁹	10800	97.5				72	
	HI ⁹	18000	162.6					
	TUNEABLE	WW: 16560 CW: 18000	142.6					

⁸Lumens and Watts have been calculated assuming a driver efficiency of 85%. Depending on field conditions, actual measured values may fluctuate by 5-8%.

⁹Performance calculations are based on LM-79 test of HI output at 80 CRI and 4000K. LOW and MED calculations are extrapolated values.

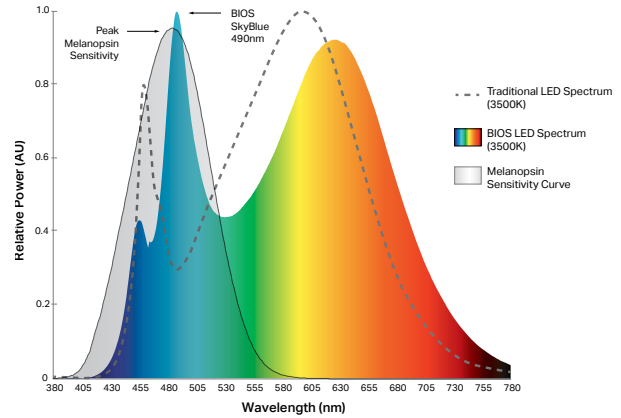


BIOS OVERVIEW



BIOS SkyBlue® technology is designed to provide the specific circadian stimulus required to improve overall sleep by featuring a distinct peak in the 'skyblue' spectral power at 490nm. Unlike traditional white LEDs, BIOS SkyBlue® makes it possible to achieve high EML (Equivalent Melanopic Lux) and Melanopic/Photopic ratios without harsh CCTs or high, glare-inducing light levels.

BIOS light engines are available in Static or Dynamic options for use with a variety of applications. In Static light engines, the SkyBlue 490nm signal always remains on while the fixture is powered. Dynamic options include a dynamic board and Bio-Dimmer module to allow the user to dim-out the SkyBlue 490nm signal during night time hours.



	BIOS STATIC (BIOS)	BIOS DYNAMIC + BIO-DIMMING™ (BIOSD)
DESCRIPTION	490nm SkyBlue light signal always remains on while the fixture is powered.	Dynamic light engine with Bio-Dimming add the ability to fine-tune and dim-out the 490nm SkyBlue signal during night time hours or as desired.
TYPICAL APPLICATIONS	Environments typically occupied only during daylight hours (6am - 8pm) such as offices and schools.	Environments occupied for a 24-hour period such as hospitals, security facilities, behavioral health facilities, factories, etc.
CONTROLS & DIMMING*	Works with any standard dimming controls (0-10V, Dali, EcoSystem, ELV, Triac, DMX, Wireless, etc.). BIOS melanopic ratio remains constant as you dim down the light intensity.	Works with any standard dimming controls (0-10V, Dali, EcoSystem, ELV, Triac, DMX, Wireless, etc.). BIOS SkyBlue® LED can be dimmed-out using a standard control/dimmer.

*No unique wiring instructions required. However, Dynamic + Bio-Dimming™ option must be set up properly during initial startup to the desired light level setpoint. See installation guide for details.

BIOS LED LAMPING DETAILS (STATIC OR DYNAMIC)

SHAPE DIAMETER	OUTPUT ¹⁰	DELIVERED LUMENS (LM)	WATTS (W)	EFFICACY (LM/W)	CRI OPTIONS
A1/A2	LOW	14400	130.0	Up to ~110.7	82+
	HI	24000	216.7		
B1/B2	LOW	14400	130.0		
	HI	24000	216.7		
C1/C2	LOW	12000	108.4		
	HI	20000	180.6		
D1/D2	LOW	13200	119.2		
	HI	22000	198.7		
E1/E2	LOW	10800	97.5		
	HI	18000	162.6		

BIOS LED PERFORMANCE DETAILS

CCT	CRI (Ra) <i>Static BIOS Dynamic BIOS</i>	CRI (R9) <i>Static BIOS Dynamic BIOS</i>	DAYTIME M/P RATIO ¹¹ <i>Static BIOS Dynamic BIOS</i>	NIGHTTIME M/P RATIO ¹² <i>Static BIOS Dynamic BIOS</i>	COI ¹³ <i>Static BIOS Dynamic BIOS</i>
3000K	82	94	0.70	0.70	3.0
	83	90	0.73	0.45	3.3
3500K	83	91	0.80	0.80	3.1
	83	90	0.84	0.50	3.1
4000K	83	91	0.90	0.90	3.1
	83	90	0.95	0.55	3.1

¹⁰ Performance calculations are based on LM-79 test of BIOS 4000K, HI output. LOW is an extrapolated value.

¹¹ Melanopic to photopic (M/P) ratios are used to help calculate equivalent melanopic lux (EML) values which is the metric used for circadian lighting in the WELL™ Building Standard.

¹² Static LED nighttime M/P ratios remain the same as daytime M/P ratios as BIOS SkyBlue® always remains at full output.

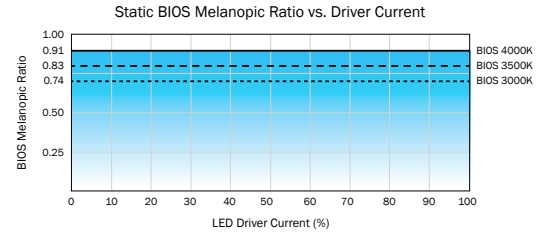
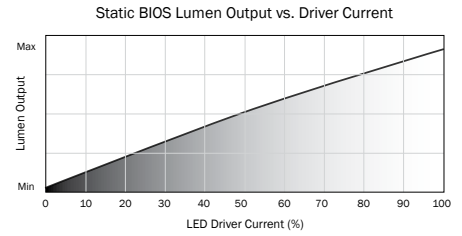
¹³ BIOS SkyBlue® meets the Cyanosis Observation Index (COI) requirements for visual assessment of cyanosis, providing a COI up to 3.3.



BIOS STATIC DIMMING CONTROL CHARACTERISTICS

DIMMER SETTING	LIGHT OUTPUT* (BIOS SKYBLUE® + WHITE LED)		BIOS + White LED Intensity Dimming
100%* (Full On)	100%		
99% - 51%	Linear Dimming 99% - 51%		
50%	Linear Dimming 50%		
49% - 0%	Linear Dimming 49% - 0%		

BIOS SkyBlue® LED and White LED dim with a 1-to-1 ratio.



*While melanopic ratio remains constant, dimming/reducing light output will have an overall impact on Equivalent Melanopic Lux (EML). That is because $EML = \text{Vertical Lux} * \text{melanopic ratio}$. Therefore, if you reduce light levels by dimming the LEDs, you will reduce your effective EML, even when the melanopic ratio stays constant.

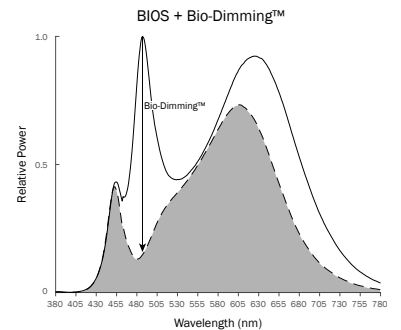
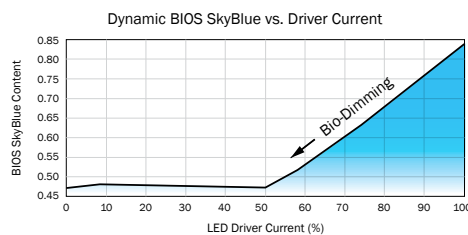
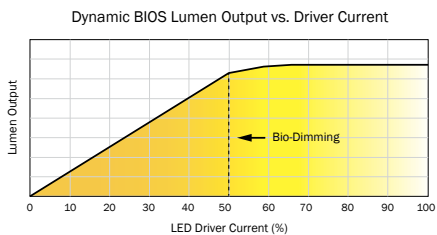
BIOS DYNAMIC + BIO-DIMMING™ DIMMING CONTROL CHARACTERISTICS

DIMMER SETTING	BIOS SKYBLUE® LED	WHITE LED	LIGHT OUTPUT	
100%* (Full On)	100%	100%	100%	Bio-Dimming
99% - 51%	100% - 0%	100%	100% - 90%	
50%	NO BIOS	100%	~90%	White LED Intensity Dimming
49% - 0%	NO BIOS	100% - 0%	Linear Dimming 90% - 0%	

BIOS SkyBlue® maintained for maximum circadian impact.
Light output remains relatively constant.

BIOS SkyBlue® removed to provide minimal circadian impact.
White LED output dims linearly.

*No unique wiring instructions required. However, Dynamic + Bio-Dimming™ option must be set up properly during initial startup to the desired light level setpoint. See installation guide for details.





DRIVERS

PRODUCT CODE	DESCRIPTION
N	None. Choose when indirect lambing is not desired.
V00	0-10V dimming down to 0% (dim to off).
V01	0-10V dimming down to 1%.
V05	0-10V dimming down to 5% (Down to 10% for TUNE lambing).
LDE1	(LDE1) Lutron Hi-lume 1% EcoSystem LED driver with Soft-on, Fade-to-Black dimming technology.
ELDV0	eldoLED 0/10V dimming down to 0% (when choosing nLight Air integral sensors a compatible eldoLED LEDcode version will be specified)
P01	Driver supports both TRIAC Forward Phase 2-Wire and ELV Reverse Phase 3-Wire dimming controls.
TSERIES	Lutron T-Series Tunable White Class 2 LED Driver (For use with Lutron Quantum Control Systems)
ELDDW	eldoLED 0/10V dim-to-warm dimming down to 0% (specify with TUNE LED lambing. Driver will be programmed with LightShape dim-to-warm setting)
DALI	DALI flicker-free dimming down to 0%.
DMX	DMX flicker-free dimming down to 0%.
POEM	Molex CoreSync PoE LED Driver. Contact ALW to assist with your project.
POEI	IGOR PoE LED Driver. Contact ALW to assist with your project.
POEN	NuLEDS PoE LED Driver. Contact ALW to assist with your project.
POE	Specify a PoE driver of your choice. Fixture comes with low voltage leads and no LED driver. Contact ALW to assist with your project

*Most drivers can be programmed to specific dimming levels if desired. Contact ALW for specific dimming level requests. ALW lighting fixtures are intended for use with a wide range of sensors, lighting controls, LED drivers, and building management systems. If there are specific components required for your application that aren't listed on this spec sheet, please contact ALW customer support today to specify a compatible solution of your choice.

DRIVER/LED LAMPING COMPATIBILITY							
	STD	STD/BIOS	TUNE	RGB	RGB(W)	CA TITLE 24 JA8/JA10 ¹⁴	IEEE P1789 & HD TV STUDIO ¹⁵
V00	●	●	●			●	
V01	●	●	●			●	
V05	●	●	●			●	
LDE1	●	●				●	●
ELDV0	●	●	PER REQUEST			●	●
P01	●				●		
TSERIES			●			●	●
ELDDW			●			●	●
DALI	●	●	●			●	
DMX	●		●		●	PER REQUEST	PER REQUEST
POEM			PER REQUEST			●	●
POEI			PER REQUEST			●	●
POEN			PER REQUEST			●	●

● - Indicates compatibility
 *Standard lambing (STD) - LOW/HI

¹⁴ Fixtures specified with 90CRI 2700K, 3000K, 3500K, and 4000K lambing with applicable LED drivers have the ability to conform to California Title 24 JA8 and JA10 Appendices

¹⁵ The following drivers conform to IEEE P1789 Flicker Standard: 'IEEE Recommended Practices for Modulating Current in High-Brightness LEDs for Mitigating Health Risks to Viewers'. These drivers may also be installed in HD TV Studio applications utilizing high frequency camera equipment.



ADDITIONAL OPTIONS & SPECIFICATIONS

LED PERFORMANCE

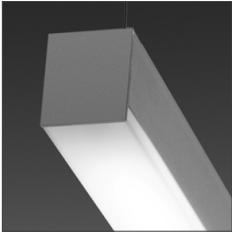
> 54,000 hours at 70% lumen maintenance, LM80 / TM-21

HOUSING

100% recyclable, extruded architectural grade 6061 aluminum with a 0.08" minimum wall thickness.

LENS OPTIONS

Extruded, twin-layered, high-impact acrylic. EXT is white and extra diffuse with minimal- to no-source visibility.



REVEAL LENS - EXT/R

SAFETY & REGULATORY

Fixtures specified with 90CRI, 2700K, 3000K, 3500K, and 4000K lambing with applicable LED drivers have the ability to conform to California Title 24 JA8 and JA10 Appendices. EldoLED drivers can conform to IEEE P1789 Flicker Standard: 'IEEE Recommended Practices for Modulating Current in High-Brightness LEDs for Mitigating Health Risks to Viewers .

Contact [ALW customer support](#) today and we can help you with your project requirements.

ETL Listed (U.S. & Canada). Suitable for dry or damp locations. Conforms to UL std. 1598, Luminaires. Certified to CSA std. C22.2#250.0:2008 Ed. 3+G1;G2.

WARRANTY

Limited 11-year warranty. Details: alw-inc.com/warranty

OPERATING TEMPERATURE

Luminaire should be installed and operated ONLY in dry environments where the ambient temperature ranges from -4 °F to 122 °F (-20 °C to 50 °C). Luminaire operation in environments outside the listed temperature range voids the warranty AND may damage the product or adversely impact lamp life, lumen output and color consistency.

POWER CABLES

Power cables come standard in a transparent sheathing to match steel aircraft suspension cables. Please contact customer support if custom cables are required for your application. Power cables cannot be swapped in the field as it will void the ETL Safety Listing and Product Warranty.



CONTROLS, SENSORS, & LED DRIVER

ALW lighting fixtures are intended for use with a wide range of sensors, lighting controls, LED drivers, and building management systems. Our component portfolio is continually expanding to adopt to the latest technologies and specification needs. We currently support integration with Lutron, Enlighted, nLight, Cooper Wavelinx, eldoLED, Molex PoE, NuLEDs PoE, Igor PoE, Osram, Philips, and more. If there's a component or system needed that you don't see on the spec sheet please contact [ALW customer support](#) today so we can review your requirements.

WEIGHT

Approximately 2 lbs. per linear foot. Weight may vary depending on fixture size.