

# **LIGHTPLANE 2 UP + UNDER**

LP2UU | SUSPENDED, WALL



#### **SPECIFICATIONS**

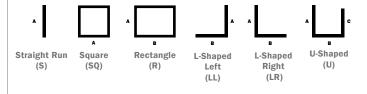
PROFILE	2" Aperture
SIZES	Configurable linear sections and shapes.
LED OUTPUT	140/ft - 1220/ft
CCT/CRI	2700K/3000K/3500K/4000K • 80 or 90+ CRI Tunable White (2700K - 6500K) • RGB and RGB+W
DIMMING/ DRIVER	Integral Driver: 0-10V, DALI, DMX, eldoLED, Lutron®, PoE (Molex, Igor, NuLEDS). Dimming to 0% for select models.
POWER	3.1W - 10.7W per ft
INPUT	120VAC, 277VAC, or 347VAC
OPTICS	Lambertian distribution, Flush and reveal lens options.
FINISHES	16 standard finishes at no extra charge Custom finishes available
MATERIAL	6061 Extruded Aluminum
ENVIRONMENT	Indoor/outdoor, dry or damp locations
WELL/UGR	See ALW WELL and BIOS pages for recommended options that contribute to meeting the WELL Building Standard™

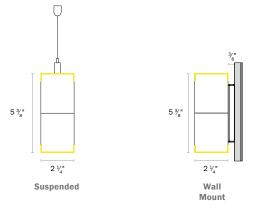
<sup>\*</sup>Safety and Performance information available on last page. Output and other specifications available on page 6.

#### **DISTRIBUTIONS & PROFILES**



DIRECT/INDIRECT LAMBERTIAN





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















NULEDS bios

Rev 121724



## PRODUCT SPECIFICATION SHEET -

	_	-		_			-		_						
1	2	3a	3b	3c	4	5	6a	6b	6c	7	8	9	10	<b>11</b> a	11b
	-	EXAMPLE	LP2UL	IS — SQ5 —	HI/90/350	0 — V01 —	EXT/R —	MED/90/	⁄3500 — V0	1 — EXT/F	R — AS — UN	V — EMC/1	- AY/xx	-SB-QS	

1. B/	ASE MODEL (CHOOSE 1)	2. SI	HAPE/LENG	TH (CHOOSE	1 & ENTER LENG	GTH IN FEET) - FOF	R CUSTOM ANGLES	, CONTACT ALW	3. LI	ED LAMPING - DI	RECT	(CHOOSE 1	FOR EACH
QS	LP2UUS 2" Suspended Direct & Indirect		s	,	_	, ,	th in product code	above, ex. S5)		. OUTPUT		3. CRI¹	C. CCT <sup>1</sup>
QS	LP2UUW 2" Wall Direct & Indirect	QS	sq			er side length A, e	• /		QS	LOW (700 lm/ft)	-	NO CRI/C	
		QS	R	_	•	, ,	hs A and B, ex. R5	,	QS	MED (960 lm/ft)	- 1	80	2700
		QS	LL		· ·	,	gths A and B, ex.	*	QS	HI (1220 lm/ft)	QS	90 QS	
		QS	LR	-			engths A and B, ex			<b>RGB</b> (140 lm/ft)		BIOS <sup>3</sup> QS (STATIC	
		QS	U <u>-</u>	U-Shaped	Configuration (e	nter side lengths	A, B, and C, ex. U	5-7-4)		TUNE (2700K-65 90 CRI, 460/500 I		BIOS) QS	
						and other specificati	on selections.			RGBW (3500K, )	, ,	BIOSD <sup>3</sup> (E 80 CRI, 250 Im	OYNAMIC BIO
		Con: *Sha	sult ALW when pe orientation	exact lengths a (Looking from th	re required. ne Ceiling down to t	he floor)				CSTM 5(Er	nter lur		
		A (	(S)	A (SQ)	B (R)	B (LL)	B (LR)	А с (U)	CRI/( lampi Choc Stati BIOS drive	lelivered lumens and CCT options not appling see when TUNE, RGB or BIOS SkyBlue® 49 skyBlue® 490nm Ler and dimmer combi RI only. 2700K is not sult ALW for custom li	or RG onm L ED car nations availa	for TUNE, RGB, BW is desired of ED is always or be tuned out of s. See pages 7- ble in BIOS opt	or RGBW output n. Dynamic with most LEI 8 for details.

DRIVER* (CHOOSE 1)	5. LENS - DIRECT*	6. LED LAMPING - INDIRECT* (CHOOSE 1 FOR EA.) 7. DRIVER - INDIRECT* (CHOOSE	1)
QS V00 (dim to off)  V01 (0-10V, dim to 1%)  V05 (0-10V, dim to 5%)  LDE1 (Lutron ECOSYS1, 0-10V, dim to 1%)  P01 (ELV/TRIAC Dim to 1%)  TSERIES (Lutron tuneable white)  ELDV0 (eldoLED 0/10V/0%)  ELDDW (eldoLED dim to warm)  DALI (DALI, dim to 0%)	QS EXT/R Diffuse reveal lens.  "Looking for an asymmetric lens? Refer to ALW's SP2.5 or SP4 fixtures.	A. OUTPUT B. CRI  C. CCT  QS  V00 (0-10V, dim to 0%)  V01 (0-10V, dim to 1%)  V05 (0-10V, dim to 5%)  V05 (0-10V, dim to 1%)  V05 (0-10V, dim to 1%)  V05 (0-10V, dim to 1%)  V05 (0-10V, dim to 0%)  V05 (0-10V, dim to 1%)  V05 (0-10V, dim to 5%)  V05 (0-10V, dim to 1%)  V05 (0-10V, dim to 5%)  V05 (0-10V, dim to 1%)  V05 (0-10V, dim to 1%)	,
DMX (DMX, dim to 0%) POEM (PDE Molex) POEI (PDE IGOR) POEN (PDE Nuleds) POE* (PDE Ready)  "See 'Driver', 'Sensor' and lamping charts for driver details and sensor compatibility. Choose desired PDE solution not listed. Contact customer service to review and confirm the PDE system of your choice.		For delivered lumens and watts, see 'Performance Details' 'CRI/CCT options not applicable for TUNE, RGB, or RGBW lamping 'Choose when TUNE, RGB, or RGBW is desired output 'Static BIOS SkyBlue® 490nm LED can be tuned out with most LED driver and dimmer combinations. See pages 7-8 for details. 199 CRI only, 2700K is not available in BIOS options 'Consult ALW for custom lumen packages.	d. Contact cust

8. LENS - INDIRECT*	9. FINISH* (CHOOSE 1)	10. VOLTAGE (CHOOSE 1)	L1a. EMERGENCY OPTIONS (OPTIONAL, CHOOSE 1)
QS EXT/R Diffuse reveal lens.  *Looking for an asymmetric lens? Refer to ALW's SP2.5 or SP4 fixtures.	STANDARD FINISHES  SW Satin White  QS SB Satin Black  QS AS Aluminum Silver Anodized Effect  QS TB 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	QS UNV Universal Voltage (120VAC-277VAC) Q 347 347 Volt (Driver options may be limited. Not available with EMB)	
	Manually type in the finish code for special order finishes types		

 $QS = QuickShip-qualifying\ option.\ For\ the\ entire\ luminaire\ configuration\ to\ be\ QuickShip-eligible,\ \underline{ALL}\ options\ specified\ in\ the\ configuration\ \underline{must\ be}\ ones\ notated\ with\ "QS".\ NOTE:\ Maximum\ 800\ ft.\ of\ QuickShip-eligible\ product\ per\ order.$ 



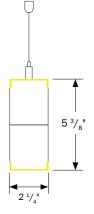
## PRODUCT SPECIFICATION SHEET CONT'D -

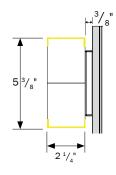
L1b. CONTROL OPTIONS* (OPTIONAL)		IS* (OPTIONAL)	11c. /	ADDIT	IONAL OPTIONS* (OPTIONAL)	12. 0	12. QUICKSHIP OPTIONS		
2S	N	None	QS	SB	Seismic Bracing	QS	Select if you want your fixture to be QS		
F	FACTORY CONTROLS		*Only	*Only compatible with suspended mount models.			Note: To be eligible for the Quickship		
QS	OS/PH/INT/	Integral Occupancy/					(QS) program, all previous selected		
		Daylight sensor					options must also be marked QS		
QS	OS/PH/HV/	Remote Occupancy/							
		Daylight sensor							
	NETWORK CONTRO	LS							
		ow are placeholder specs. See t inalize your final control spec.	he						
	AY/xx	Acuity							
	AN/xx	Avi-on							
	CA/xx	Casambi							
	CW/xx/	Cooper Wavelinx							
	CW/xx/ EC/xx/	Cooper Wavelinx Encelium							
		•							
	EC/xx/	Encelium							
	EC/xx/ EN/xx/	Encelium Enlighted							

QS = QuickShip-qualifying option. For the entire luminaire configuration to be QuickShip-eligible, <u>ALL</u> options specified in the configuration <u>must be</u> ones notated with "QS". NOTE: Maximum 800 ft. of QuickShip-eligible product per order.



## **MECHANICAL DIAGRAMS**





LP2UUS SUSPENDED MOUNT

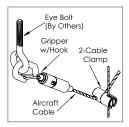
LP2UUW
WALL MOUNT

## **SUSPENSION MOUNTING OPTIONS**



## **CEILING HARDWARE**

- 4.5" canopy per power feed location. Canopy finish is always white. Contact ALW for alternate colors.
- Bullet mount,
- 8' aircraft cable
- 2" canopy (for use with T-bar mounting) per suspension point



## SEISMIC BRACING (SB)

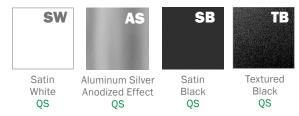
Add-on hardware includes cable gripper with hook, 2-cable clamp and specified length of aircraft cable per suspension point.



## **FINISHES**

Standard finishes are available at no additional charge.

#### **STANDARD FINISHES - QS ELIGIBLE**



#### **PREMIUM FINISHES**

#### **BASIC POWDER COAT**



## SATIN ANODIZED EFFECT POWDER COAT



Contact ALW Quotes for sample paint finish swatches.

## **METALLIC POWDER COAT**



## **GLOSS POWDER COAT (80-95% GLOSS)**



#### **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 <a href="https://www.alw-inc.com/resources/finishes">www.alw-inc.com/resources/finishes</a>



## CUSTOM COLOR MATCH: CCM\_\_\_\_

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

<sup>\*</sup>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)

<sup>\*</sup>Printed or on-screen colors are only approximations - consult actual Color Chip Set before specifying



## PERFORMANCE DETAILS (DIRECT OR INDIRECT)

ОИТРИТ	DELIVERED LUMENS/FT	EFFICACY (LM/W)	WATTS/FT <sup>14</sup>	CRI OPTIONS	CCT OPTIONS	
LOW <sup>15</sup>	700		6.2			
MED <sup>15</sup>	960	Up to ~114	8.4	80 90	2700K (90CRI Only) 3000K 3500K 4000K 5000K	
HI <sup>15</sup>	1220		10.7			
TUNE	WW: 460, CW: 500	Up to ~119	8.4	90+		
RGB <sup>16</sup>	<b>RGB<sup>16</sup></b> 140		4.4	N/A		
RGBW <sup>17</sup>	RGB: 140 RGB+W: 250 White Only: 110	N/A	7.2	80 (White Chip)	2700K - 6500K	

<sup>&</sup>lt;sup>14</sup>Lumens/Watt and Watts/ft have been calculated assuming a driver efficiency of 85%. Depending on field conditions, actual measured values may fluctuate by 5-8%.

## **LAMPING OPTIONS** —

LED Lamping limitations exist due to heat. Please follow these guidelines when specifying.

		Indirect				
		NONE	LOW	MED	HI	
	NONE	×	✓	✓	✓	
irect	LOW	✓	✓	<b>✓</b>	✓	
Dir	MED	✓	✓	✓	✓	
	HI	✓	✓	✓	×	

<sup>15</sup> Performance calculations are based on LM-79 test of HI output at 80 CRI and 4000K. LOW and MED calculations are extrapolated values.

<sup>&</sup>lt;sup>16</sup>Performance calculations are derived from LM-79 test with all RGB LEDs illuminated (Red, Green, Blue).

<sup>&</sup>lt;sup>17</sup>Performance calculations are derived from the following LM-79 tests: 1) RGB LEDs illuminated, 2) RGB+W LEDs illuminated, 3) White LED only illuminated.

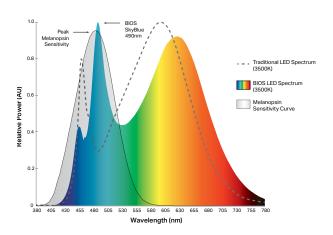


#### **BIOS OVERVIEW**



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, glareinducing 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 SkyBlue® LED can be dimmed-out using a standard control/dimmer.

<sup>\*</sup>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)**

OUTPUT	DELIVERED LUMENS (LM/FT)	WATTS (W/FT)	EFFICACY (LM/W)	CRI OPTIONS	
LOW18	700	6.2			
MED <sup>18</sup>	960	8.4	Up to ~114	82+	
HI <sup>18</sup>	1220	10.7			

## **BIOS LED PERFORMANCE DETAILS**

сст	CRI (Ra) Static BIOS Dynamic BIOS	CRI (R9) Static BIOS Dynamic BIOS	DAYTIME M/P RATIO <sup>19</sup> Static BIOS Dynamic BIOS	NIGHTTIME M/P RATIO <sup>20</sup> Static BIOS Dynamic BIOS	COl <sup>21</sup> Static BIOS Dynamic BIOS
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

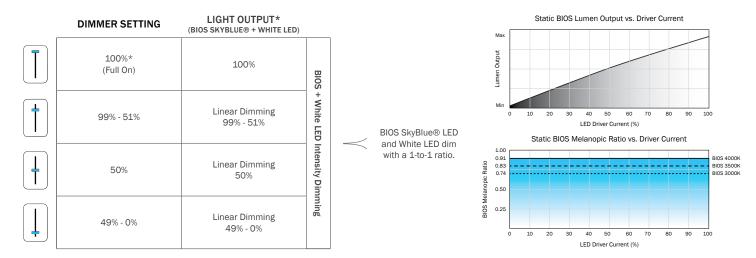
<sup>18</sup> Performance calculations are based on LM-79 test of BIOS 4000K, HI output. LOW and MED calculations are extrapolated values.

<sup>&</sup>lt;sup>19</sup>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. <sup>20</sup>Static LED nighttime M/P ratios remain the same as daytime M/P ratios as BIOS SkyBlue® always remains at full output.

<sup>&</sup>lt;sup>21</sup>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**

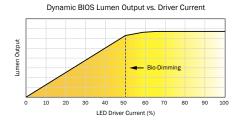


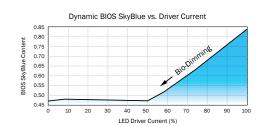
<sup>\*</sup>While melanopic ratio remains constant, dimming/reducing light output will have an overall impact on Equivalent Melanopic Lux (EML). That is because EML = Vertical Lux \* melanopic ratio. Therefore, if you reduce light levels by dimming the LEDs, you will reduce your effective EML, even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

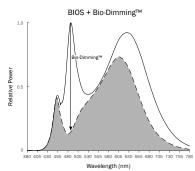
#### BIOS DYNAMIC + BIO-DIMMING™ DIMMING CONTROL CHARACTERISTICS

	DIMMER SETTING	BIOS SKYBLUE® LED	WHITE LED	LIGHT OUTPUT				
T	100%* (Full On)	100%	100%	100%	Bio-Dir		BIOS SkyBlue® maintained for maximum circadian impact.	
†	99% - 51%	100% - 0%	100%	100% - 90%	Dimming		Light output remains relatively constant.	
+	50%	NO BIOS	100%	~90%	White LED Intensity Dimming	$\prec$	BIOS SkyBlue® removed to provide minimal circadian impact.	
	49% - 0%	NO BIOS	100% - 0%	Linear Dimming 90% - 0%	Dimming		White LED output dims linearly.	

<sup>\*</sup>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 lamping 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 lamping).
P01	Driver supports both TRIAC Forward Phase 2-Wire and ELV Reverse Phase 3-Wire dimming controls.
LDE1	(LDE1) Lutron Hi-lume 1% EcoSystem LED driver with Soft-on, Fade-to-Black dimming technology.
TSERIES	Lutron T-Series Tunable White Class 2 LED Driver (For use with Lutron Quantum Control Systems)
ELDV0	eldoLED 0/10V dimming down to 0% (when choosing nLight Air integral sensors a compatible eldoLED LEDcode version will be specified)
ELDDW	eldoLED 0/10V dim-to-warm dimming down to 0% (specify with TUNE LED lamping. 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

<sup>\*</sup>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 <sup>22</sup>	IEEE P1789 & HD TV STUDIO <sup>23</sup>			
V00	•	•	•			•				
V01	•	•	•			•				
V05	•	•	•			•				
P01	•	•	•			•				
LDE1	•	•				•	•			
TSERIES			•			•	•			
ELDV0	•	•	PER REQUEST			•	•			
ELDDW			•							
DALI	•	•	•			•				
DMX	•		•		•	PER REQUEST	PER REQUEST			
POEM			PER REQ	•	•					
POEI			PER REQ	•	•					
POEN			PER REQ	•	•					

Indicates compatibility

<sup>\*</sup>Standard lamping (STD) -LOW/MED/HI

<sup>&</sup>lt;sup>22</sup>Fixtures specified with 90CRI 2700K, 3000K, 3500K, and 4000K lamping with applicable LED drivers have the ability to conform to California Title 24 JA8 and JA10 Appendices

<sup>&</sup>lt;sup>23</sup>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.



## PHOTOMETRICS -

OPTIC	POLAR PLOT (CD)	MTG HEIGHT	LIGHT LEVEL (FC)	SPACING CRITERION (SC) <sup>24</sup> (0°-180°) (90°-270°)	MAX INTENSITY (CD)	OUTPUT (LM/FT)
EXT/R		6 ft	22.7	1.24 1.18	816	1160.5
		8 ft	12.8			
		10 ft	8.2			
		12 ft	5.7			
		14 ft	4.2			
		16 ft	3.2			

<sup>\*</sup>Photometric calculations based on HI 4000K 80 CRI fixture combination. Actual results may vary in the field. For footcandle and output multipliers refer to the ALW IES File Multipliers Chart

<sup>24</sup> Spacing criterion refers to maximum distance luminaires can be spaced to provide uniform illumination on the working plane or surface. Luminaire spacing = Spacing Criterion (SC) x Mounting Height (MH) (ex. 1.14 (SC) x 10' (MH) = 11.4' Luminaire Spacing).



#### **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 lamping 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 3 lbs. per linear foot (not including downlight option). Weight may vary depending on mounting, downlight, and additional options selected.