



SUPERPLANE 2.5

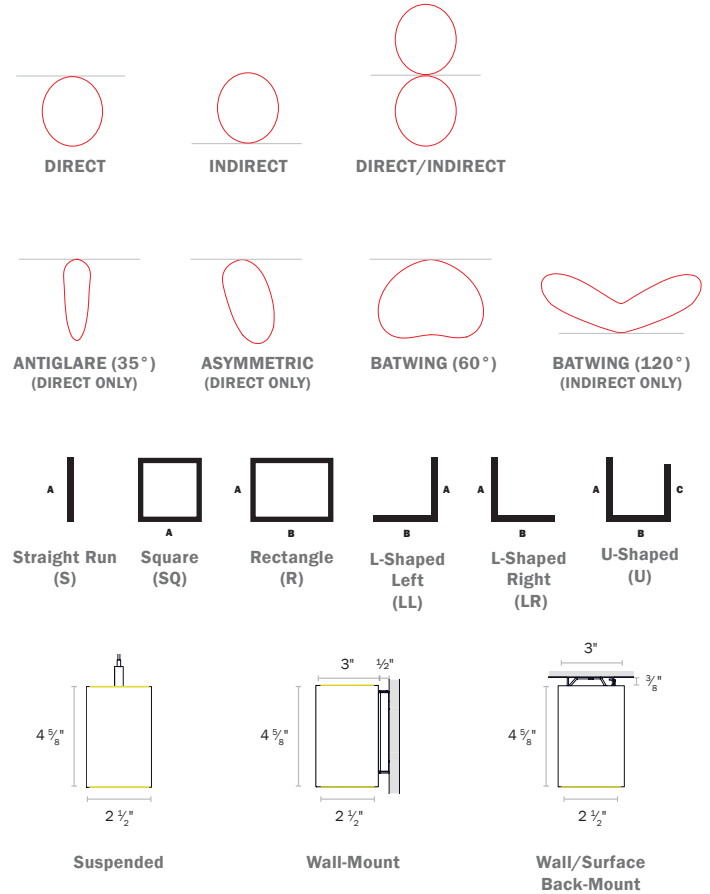
SP2.5 | CONTROLROLL OPTICS | SUSPENDED, WALL, SURFACE



SPECIFICATIONS

PROFILE	2.5" Aperture, 4 5/8" height (+3/8" for surface mount)
SIZES	Individual runs starting at 2ft and precise within 1/16" of desired length
LED OUTPUT	350lm/ft - 1,525lm/ft
CCT/CRI	2700K/3000K/3500K/4000K • 80 or 90+ CRI Tunable White (2700K - 6500K) • RGB and RGB+W
DIMMING/DRIVER	Integral and Remote 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	ControlRoll Optics - Continuous lens up to 250ft. Direct/indirect. Lambertian, Asymmetric, Batwing and Antiglare/Grazer optics available.
FINISHES	16 powder coat finishes Custom finishes also available
MATERIAL	6063-T6 Extruded Aluminum
ENVIRONMENT	Dry or damp locations

DISTRIBUTIONS & PROFILES



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



WELL/UGR See pages 6-7 for recommended options that contribute to meeting the WELL Building Standard™. UGR values available under 'Glare Control' on page 6.

*Safety and Performance information available on last page. Output and other specifications available on pages 8-9.

Rev 080224

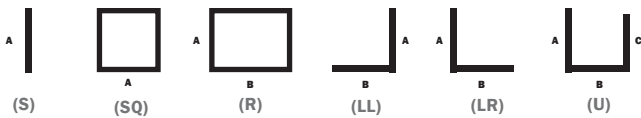


PRODUCT SPECIFICATION SHEET

1	2	3a	3b	3c	4	5	6a	6b	6c	7	8	9	10	11a
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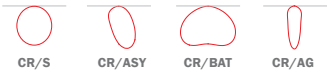
11b	11c	EXAMPLE: SP2.5S – S5 – MED/90/3500 – V00 – CR/S – LOW/90/3500K – V00 – CR/S – SW – UNV – EMB/1 – NLT – SB
		1 2 3 4 5 6 7 8 9 10 11A 11B 11C

1. BASE MODEL (CHOOSE 1)	2. SHAPE/LENGTH (CHOOSE 1 & ENTER LENGTH IN FEET) - FOR CUSTOM ANGLES, CONTACT ALW	3. LED LAMPING - DIRECT* (CHOOSE 1 FOR EACH)
QS SP2.5S 2.5" Suspended QS SP2.5W 2.5" Wall Mount QS SP2.5SMB 2.5" Wall/Surface, Back-Mounted <small>*SMB only available with direct lamping</small>	QS S__ Individual/Straight Run Section (enter length in product code above, ex. S5) QS SQ__ Square Configuration (enter side length A, ex: SQ5) QS R__ Rectangular Configuration (enter side lengths A and B, ex. R5-7) QS LL__ L-Shaped, Left Configuration (enter side lengths A and B, ex. LL5-7) QS LR__ L-Shaped, Right Configuration (enter side lengths A and B, ex. LR5-7) QS U__ U-Shaped Configuration (enter side lengths A, B, and C, ex. U5-7-4) <small>*Lengths greater than 8' consist of multiple individual housing sections joined together, and include ONE continuous ControlRoll lens for the entire straight/linear run. Lengths are nominal and may vary based on lamping and other specification selections. Consult ALW when exact lengths are required. *Shape orientation (Looking from the Ceiling down to the floor)</small>	QS N None. Lens will be substituted with aluminum lid. A. OUTPUT* B. CRI² C. CCT² QS MIN (350 lm/ft) NO CRI/CCT³ QS LOW (475 lm/ft) QS 80 2700K⁴ QS MED (750 lm/ft) QS 90 QS 3000K QS HI (1030 lm/ft) BIOS⁵ QS 3500K QS MAX (1250 lm/ft) BIOS⁵ QS 4000K QS RGB (140 lm/ft) BIOSD⁶ (DYNAMIC BIOS) TUNE (2700K-6500K, 90 CRI, 475/515 lm/ft) RGBW (3500K, White, 80 CRI, 140/220 lm/ft) CSTM ____ <small>⁶(Enter lumens in product code above. Ex. 0100=100lm/ft)</small>



*For delivered lumens and watts, see 'Performance Details'
²CRI/CCT options not applicable for TUNE, RGB, or RGBW lamping
³Choose when TUNE, RGB, or RGBW 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 9-10 for details.
⁵90 CRI only. 2700K is not available in BIOS options
⁶Consult ALW for custom lumen packages.

4. DRIVER - DIRECT* (CHOOSE 1)	5. LENS - DIRECT	6. LED LAMPING - INDIRECT* (CHOOSE 1 FOR EA.)	7. DRIVER - INDIRECT* (CHOOSE 1)
QS N (None) QS V00 (dim to off) QS V01 (0-10V, dim to 1%) QS V05 (0-10V, dim to 5%) LDE1 (Lutron ECOSYS1, 0-10V, dim to 1%) P01 (ELV/TRIAC phase 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) POEI (POE IGOR) POEN (POE Nuleds) POE⁷ (POE Ready)	QS N ⁸ None. QS CR/S ControlRoll lens with diffused, lambertian distribution QS CR/ASY ControlRoll lens with asymmetric/wall wash distribution (peak intensity 25°) QS CR/BAT⁹ ControlRoll lens with batwing/flood distribution (peak intensity 60°) QS CR/AG ControlRoll lens with antiglare/grazer optics (35° distribution) <small>⁸Select when direct lamping is not desired. The lens will be substituted with an aluminum lid with same finish as fixture. ⁹Not available for TUNE, RGB, RGBW, BIOS, or BIOSD lamping.</small>	QS N None. Select for SMB mount or when indirect lamping is not desired. Lens substituted with aluminum lid. A. OUTPUT* B. CRI² C. CCT² QS MIN (370 lm/ft) NO CRI/CCT³ QS LOW (500 lm/ft) QS 80 2700K⁴ QS MED (775 lm/ft) QS 90 QS 3000K QS HI (1050 lm/ft) BIOS⁵ QS 3500K QS MAX (1300 lm/ft) BIOS⁵ QS 4000K QS RGB (150 lm/ft) BIOSD⁶ (DYNAMIC BIOS) TUNE (2700K-6500K, 90 CRI, 490/530 lm/ft) RGBW (3500K, White, 80 CRI, 150/325 lm/ft) CSTM ____ <small>⁶(Enter lumens in product code above. Ex. 0100=100lm/ft)</small>	QS N (None) QS V00 (dim to off) QS V01 (0-10V, dim to 1%) QS V05 (0-10V, dim to 5%) LDE1 (Lutron ECOSYS1, 0-10V, dim to 1%) P01 (ELV/TRIAC phase 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) POEI (POE IGOR) POEN (POE Nuleds) POE⁷ (POE Ready)



*See 'Driver', 'Sensor' and lamping charts for driver details and sensor compatibility.
⁷Choose desired PoE solution not listed. Contact customer service to review and confirm the PoE system of your choice.
⁸For delivered lumens and watts, see 'Performance Details'
⁹CRI/CCT options not applicable for TUNE, RGB, or RGBW lamping
⁴Choose when TUNE, RGB, or RGBW is desired output
⁵Static 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 9-10 for details.
⁶90 CRI only. 2700K is not available in BIOS options
⁷Consult ALW for custom lumen packages.
⁸See 'Driver', 'Sensor' and lamping charts for driver details and sensor compatibility.
⁹Choose desired PoE solution not listed. Contact customer service to review and confirm the PoE system of your choice.

8. LENS - INDIRECT (CHOOSE 1)	9. FINISH* (CHOOSE 1)	10. VOLTAGE (CHOOSE 1)	11a. EMERGENCY OPTIONS (OPTIONAL, CHOOSE 1)
QS N¹⁰ None. QS CR/S ControlRoll lens with diffused, lambertian distribution QS CR/BAT ControlRoll lens with batwing/flood distribution (peak intensity 60°) QS BAT¹¹ Rigid batwing optic (peak intensity 120°) <small>¹⁰Lens will be substituted with an aluminum lid with same finish as fixture. ¹¹Not available for TUNE, RGB, RGBW, BIOS, or BIOSD</small>	STANDARD FINISHES QS SW <input type="checkbox"/> Satin White QS SB <input type="checkbox"/> Satin Black QS AS <input type="checkbox"/> Aluminum Silver Anodized Effect QS 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>	QS UNV Universal Voltage (120VAC-277VAC) 347 347 Volt (Driver options may be limited. Not available with EMB)	QS EMB/___¹² Emergency Battery (indicate QTY – each battery powers 4ft. section @ 1492lm. Not available in 347 V) QS EMC/___¹² Emergency Circuit (indicate QTY of 4ft sections to be illuminated by emergency circuit) <small>¹²For fixtures under 4ft in length, entire fixture will be illuminated with a proportional lumen output. Consult ALW for more details.</small>



CONTINUES ON NEXT PAGE →

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



PRODUCT SPECIFICATION SHEET CONT'D

11b. SENSOR OPTIONS* (OPTIONAL, CHOOSE 1)		11c. ADDITIONAL OPTIONS (OPTIONAL)
N (None)	MLX (Molex POE, remote)	QS SB Seismic Bracing
WLN_X/INT/___ (Cooper Wavelinx, integral)	NLT/INT/___ (nLight wired, integral occ/daylight sensor)	
WLN_X/___ (Cooper Wavelinx, remote)	NLT (nLight wired remote connection)	
QS ENLGH_T/___ (Enlighted, remote)	NLTAIR/INT/___ (nLight AIR, integral)	
QS ENLGH_T/INT/___ (Enlighted, integral)	NLTAIR (nLight AIR, remote connection)	
VRF/___ (Lutron Vive, integral)	OS/PH/INT/___ (Acuity 0-10VDC integral occ/daylight sensor)	
VDO/___ (Lutron Vive, integral+ occ/daylight sensor)	OS/INT/HV/___ (Legrand Wattstopper High Voltage integral occ/daylight sensor)	
FCJS/___ (Lutron, remote)	QS OS/PH/HV/___ (Hubbel WASP remote occ/daylight sensor)	
FCJS/S/___ (Lutron, remote + occ/daylight sensor)		
MLX/INT/___ (Molex POE, integral)		

* Quickship availability on occupancy and photocell/daylight sensors may vary. Contact ALW for more information.
 † Default quantity is 1 sensor per 8ft, type alternate quantity into product code above if desired. Sensor descriptions available on page 12.
 ‡ Not all sensors are compatible with all drivers. See 'Driver', 'Sensor' and lamping charts for driver details and sensor compatibility.

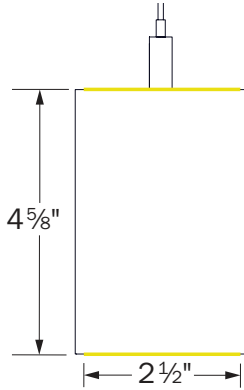
QS = QuickShip-qualifying option. For the entire luminaire configuration to be QuickShip-eligible, ALL options specified in the configuration must be ones notated with "QS".
NOTE: Maximum 800 ft. of QuickShip-eligible product per order.



MECHANICAL DIAGRAMS

SUSPENDED

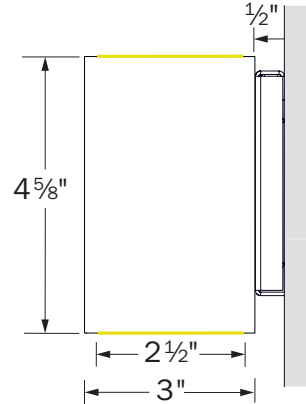
Suspended mounting can be specified with direct, indirect, or both direct and indirect lighting.



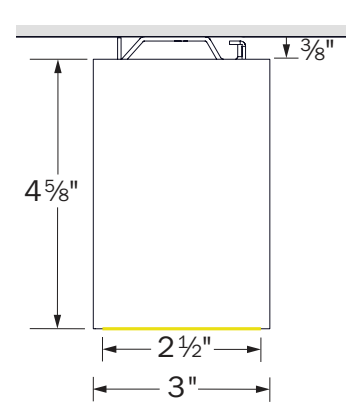
SP2.5S
SUSPENDED MOUNT

SURFACE/WALL MOUNT

Wall mounting can be specified with direct, indirect, or both direct and indirect lighting - surface back mount is only available with direct lighting. The wall mount hardware adds an extra 1/2" to the dimensions of the fixture and the surface/back mount adds an extra 3/8" to the dimensions of the fixture, as shown.

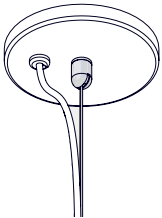


SP2.5W
WALL MOUNT



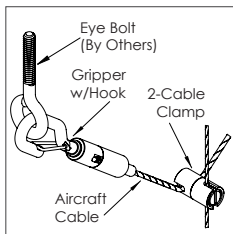
SP2.5SMB
SURFACE (BACK) MOUNT

SUSPENSION MOUNTING OPTIONS



INCLUDED CEILING HARDWARE

- 4.5" canopy per power feed location. Canopy finish is always white. Contact ALW for alternate colors.
- (1) Bullet mount,
- (1) 8' aircraft cable
- (1) 2" canopy (for use with T-bar mounting) per suspension point



SEISMIC BRACING (SB)

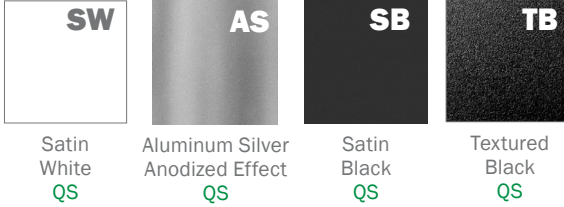
Add-on hardware includes cable gripper with hook, 2-cable clamp and specified length of aircraft cable per suspension point.



FINISHES

Standard finishes are available at no additional charge.

STANDARD FINISHES - QS ELIGIBLE

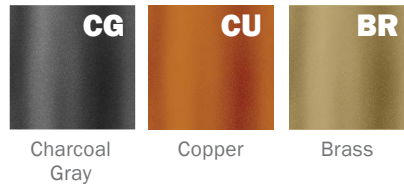


PREMIUM FINISHES

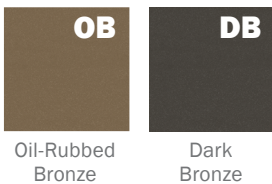
BASIC POWDER COAT



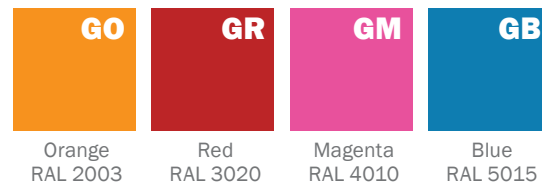
METALLIC POWDER COAT



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



SPECIFYING FOR THE WELL BUILDING STANDARD™ - WELL™

ALW is committed to providing the highest quality luminaires for a multitude of applications, with many versatile lighting solutions that contribute to satisfying the WELL Building Standard. Below is a quick guide to assist you in specifying appropriate product configurations for WELL features. Links to official WELL standards can be found [here](#).

CIRCADIAN LIGHTING DESIGN FEATURE L03

The Circadian Lighting Design feature requires projects to provide users with appropriate exposure to light for maintaining circadian health and aligning the circadian rhythm with the day-night cycle.

To conform to these requirements, the project must meet one of the following 4 light level options (a, b, c, or d) below. These light levels are measured on the vertical plane at eye level of the occupant. The light levels are achieved at least between the hours of 9 a.m. and 1 p.m. and may be lowered after 8 p.m. at night.

DESIGNING WITH ELECTRIC LIGHT ONLY	DESIGNING WITH BOTH ELECTRIC LIGHT & DAYLIGHT	POINTS
a. At least 150 EML [136 melanopic equivalent daylight D65]	b. The project achieves at least 120 EML [109 melanopic equivalent daylight D65] with electric light and at least 2 points in Feature L05: Enhanced Daylight Access	1
c. At least 240 EML [218 melanopic equivalent daylight D65]	d. The project achieves at least 180 EML [163 melanopic equivalent daylight D65] with electric light and at least 2 points in Feature L05: Enhanced Daylight Access	3

Choose from a BIOS Static or BIOS Dynamic light engine to assist in a healthy, circadian lighting design. CCT, CRI, Luminous Flux Multipliers, and Melanopic Ratios are shown below for easy specification.

CIRCADIAN LIGHTING DESIGN (3PT MAX)	BIOS STATIC (BIOS)			BIOS DYNAMIC (BIOSD)			HOW TO SPECIFY
CCT	3000K	3500K	4000K	3000K	3500K	4000K	1. Select BIOS or BIOSD for LED LAMPING 2. Select the appropriate Lumen OUTPUT 3. Select the appropriate CCT
CRI / R9	83 / 80+	83 / 80+	83 / 80+	83 / 80+	83 / 80+	83 / 80+	
LUMINOUS FLUX MULTIPLIER	0.95	0.98	1.00	0.95	0.98	1.00	See BIOS LED Lamping and Performance Details at the back of this spec sheet for lumen outputs, COI index values, and other additional information.
MELANOPIEC RATIO (R)*	0.70	0.80	0.90	0.74	0.83	0.95	

GLARE CONTROL FEATURE L04

Glare is defined as excessive brightness of a light-source, excessive brightness-contrasts and excessive quantities of light. Glare has been associated with a host of health issues that range from visual discomfort and eye fatigue to headaches and migraines.

To conform to Glare Control requirements, each luminaire must meet one of the following options (a, b, or d) for regularly occupied spaces.

GLARE CONTROL CRITERIA (3PT MAX)	COMPLIANT	VALUE	HOW TO SPECIFY
a. Indirect (100% emission above horizontal)	✓	100%	1. Select N (None) for LED LAMPING - DIRECT 2. Select any of the options for LED LAMPING - INDIRECT
b. Unified Glare Rating (UGR)*	✓	14.67 @ 16ft (MAX Output) 12.63 @ 20ft (MAX Output)	1. Select ANY output for LED LAMPING - DIRECT 2. Select CR/S (ControlRoll Diffused Lens) or CR/AG (ControlRoll Antiglare Lens) for LENS - DIRECT
c. Shielding Angle	No	-	-
d. Max. Luminance (45°-90°) Max. Intensity (45°-90°)	✓	4668 cd/m ² @ MED Output 312.21 cd @ MED Output	1. Select an output of MIN or MED for LED LAMPING - DIRECT 2. Select CR/AG (ControlRoll Antiglare Lens) for LENS - DIRECT

*Advertised UGR values are averages and were calculated in AGI32 using the following method: 1) A 5.4m x 3.6m room was created and fixtures were spaced 2m apart center-to-center. Calculations were performed at 16ft. and 20ft.



SPECIFYING FOR THE WELL BUILDING STANDARD™ - WELL™ (CONTINUED)

ELECTRIC LIGHT QUALITY - PART 1: COLOR RENDERING QUALITY + PART 2: FLICKER FEATURE L07

Using light sources that have characteristics similar to daylight, including high color rendering and minimal flicker can improve comfort and well-being of users in a space and contribute to creating a healthy environment.

Part 1: Each luminaire must meet one of the following requirements (a or b) for regularly occupied spaces.

Part 2: Each luminaire must meet the IEEE 1789-2015 Standard Recommended Practice to manage flicker.

PART 1 - ENSURE COLOR RENDERING QUALITY (1PT MAX)	COMPLIANT	VALUE	HOW TO SPECIFY
a. CRI > 90	✓	CRI = 93 - 95	• Select 90 (90CRI) for LED LAMPING
b. CRI > 80 with R9 > 50	✓	CRI = 83, R9 > 90	• Select BIOS or BIOSD for LED LAMPING
c. IES Rf ≥ 78, IES Rg ≥ 100, -1% ≤ IES Rcs, h1 ≤ 15%	No	-	-
PART 2 - MANAGE FLICKER (1PT MAX)	COMPLIANT	VALUE	HOW TO SPECIFY
Meets IEEE 1789-2015 Standard Recommended Practice	✓	Modulation = 1% Flicker Frequency = 120 - 2000Hz	• Select V00, V01, LDE1, DALI or DMX for LED DRIVER



PERFORMANCE DETAILS

OUTPUT	OPTIC TYPE	DELIVERED LUMENS/FT <i>DIRECT</i>	DELIVERED LUMENS/FT <i>INDIRECT</i>	EFFICACY (LM/W) <i>DIRECT</i>	EFFICACY (LM/W) <i>INDIRECT</i>	WATTS/FT ¹³	CRI OPTIONS	CCT OPTIONS
MIN¹⁴	CR/S	350	370	113	119	3.1	80+ 90+	2700K (90CRI Only) 3000K 3500K 4000K 5000K
	CR/ASY	370	N/A	119	N/A			
	CR/BAT	350	350	113	113			
	CR/AG	370	N/A	119	N/A			
	BAT	N/A	440	N/A	142			
LOW¹⁴	CR/S	475	500	113	119	4.2		
	CR/ASY	500	N/A	119	N/A			
	CR/BAT	470	490	112	117			
	CR/AG	500	N/A	119	N/A			
	BAT	N/A	580	N/A	138			
MED¹⁴	CR/S	750	775	115	119	6.5		
	CR/ASY	775	N/A	119	N/A			
	CR/BAT	735	750	113	115			
	CR/AG	775	N/A	119	N/A			
	BAT	N/A	920	N/A	142			
HI¹⁵	CR/S	1030	1050	117	119	8.8		
	CR/ASY	1050	N/A	119	N/A			
	CR/BAT	1000	1030	114	117			
	CR/AG	1050	N/A	119	N/A			
	BAT	N/A	1250	N/A	142			
MAX¹³	CR/S	1250	1300	117	121	10.7		
	CR/ASY	1300	N/A	121	N/A			
	CR/BAT	1200	1250	112	117			
	CR/AG	1300	N/A	121	N/A			
	BAT	N/A	1525	N/A	143			
TUNE	CR/S	WW: 475, CW: 515	WW: 490, CW: 530	WW: 113, CW: 123	WW: 117, CW: 126	4.2/channel	90+	2700K - 6500K
	CR/ASY	WW: 490, CW: 530	N/A	WW: 117, CW: 126	N/A			
	CR/BAT	WW: 460, CW: 500	WW: 480, CW: 520	WW: 110, CW: 119	WW: 114, CW: 124			
	CR/AG	WW: 490, CW: 550	N/A	WW: 117, CW: 131	N/A			
	BAT	N/A	N/A	N/A	N/A			
RGB¹⁵	CR/S	140	150	28	30	5	N/A	N/A
	CR/ASY	140	N/A	28	N/A			
	CR/BAT	140	150	28	34			
	CR/AG	140	N/A	28	N/A			
	BAT	N/A	N/A	N/A	N/A			
RGBW¹⁶	CR/S	RGB: 140, W: 220	RGB: 150, W: 325	RGB: 28, W: 44	RGB: 30, W: 65	5	80+ (White Chip)	3500K (White Chip)
	CR/ASY	RGB: 140, W: 220	N/A	RGB: 28, W: 44	N/A			
	CR/BAT	RGB: 140, W: 220	RGB: 150, W: 230	RGB: 28, W: 44	RGB: 30, W: 46			
	CR/AG	RGB: 140, W: 220	N/A	RGB: 28, W: 44	N/A			
	BAT	N/A	N/A	N/A	N/A			

¹³ 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%.

¹⁴ Performance calculations are based on LM-79 test of MAX output at 80 CRI and 4000K. MIN, LOW, MED and HIGH calculations are extrapolated values.

¹⁵ Performance calculations are derived from LM-79 test with all RGB LEDs illuminated (Red, Green, Blue).

¹⁶ Performance calculations are derived from the following LM-79 tests: 1) RGB LEDs illuminated, 2) RGB+W LEDs illuminated, 3) White LED only illuminated.



TM-30-18 DETAILS (90 CRI LAMPING)

CCT	CRI (Ra)	CRI (R9)	TM-30 Rf	TM-30 Rg	Duv
2700K	94	57	92	100	-0.0012
3000K	93	55	91	100	-0.0012
3500K	93	55	90	98	-0.0002
4000K	92	58	89	97	-0.0003

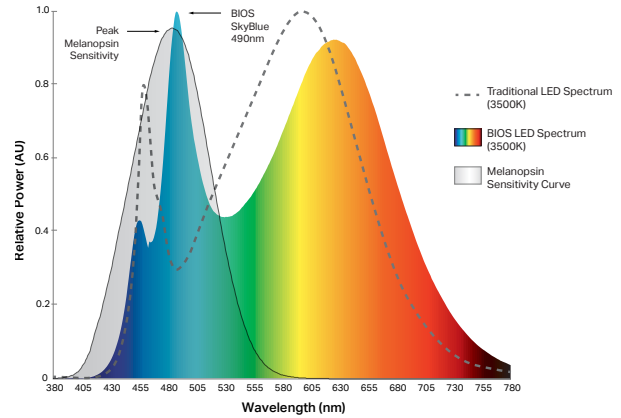


BIOS OVERVIEW



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)

OUTPUT	DELIVERED LUMENS (LM/FT) DIRECT <small>CR/S CR/ASY CR/BAT CR/AG</small>	DELIVERED LUMENS (LM/FT) INDIRECT <small>CR/S CR/BAT BAT</small>	EFFICACY (LM/W) DIRECT <small>CR/S CR/ASY CR/BAT CR/AG</small>	EFFICACY (LM/W) INDIRECT <small>CR/S CR/BAT BAT</small>	WATTS (W/FT)	CRI
MIN¹⁷	350	370	113	119	3.1	82+
	370	350	119	113		
	350	440	113	142		
	370	-	119	-		
LOW¹⁷	475	500	113	119	4.2	
	500	490	119	117		
	470	580	112	138		
	500	-	119	-		
MED¹⁷	750	775	115	119	6.5	
	775	750	119	115		
	735	920	113	142		
	775	-	119	-		
HI¹⁷	1030	1050	117	119	8.8	
	1050	1030	119	117		
	1000	1250	114	142		
	1050	-	119	-		
MAX¹⁷	1250	1300	117	121	10.7	
	1300	1250	121	117		
	1200	1525	112	143		
	1300	-	121	-		

BIOS LED PERFORMANCE DETAILS

CCT	CRI (Ra) <small>Static BIOS Dynamic BIOS</small>	CRI (R9) <small>Static BIOS Dynamic BIOS</small>	DAYTIME M/P RATIO ¹⁸ <small>Static BIOS Dynamic BIOS</small>	NIGHTTIME M/P RATIO ¹⁹ <small>Static BIOS Dynamic BIOS</small>	COI ²⁰ <small>Static BIOS Dynamic BIOS</small>
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

¹⁷Performance calculations are based on LM-79 test of BIOS 4000K, MAX output. MIN, LOW, MED and HIGH calculations are extrapolated values.

¹⁸Melanopic 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.

¹⁹Static LED nighttime M/P ratios remain the same as daytime M/P ratios as BIOS SkyBlue® always remains at full output.

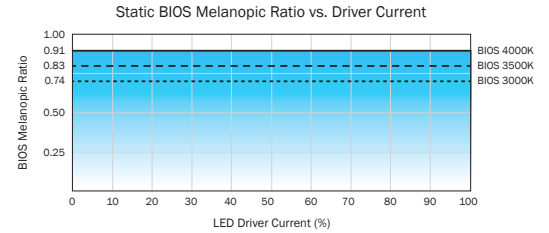
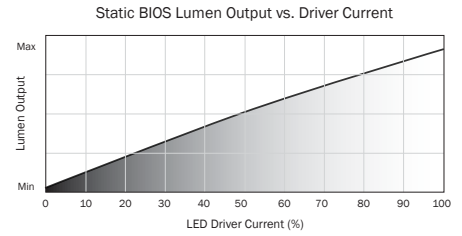
²⁰BIOS SkyBlue® meets the Cyanosis Observation Index (COI) requirements for visual assessment of cyanosis, providing a COI up to 3.3.



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.

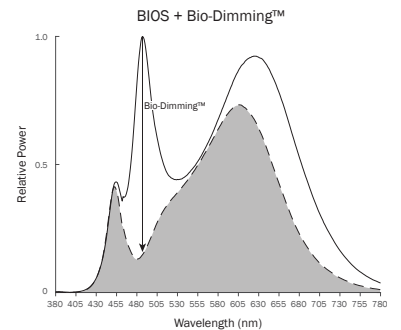
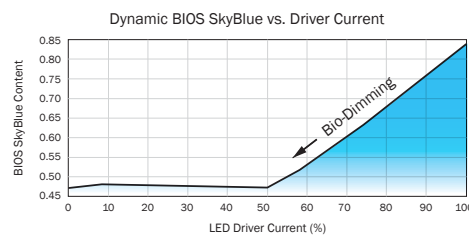
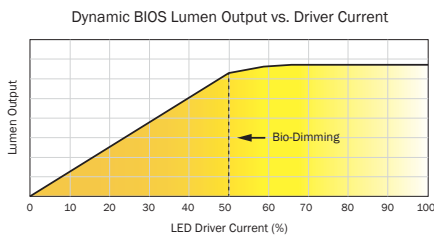
BIOS DYNAMIC + BIO-DIMMING™ DIMMING CONTROL CHARACTERISTICS

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
V00	0-10V dimming down to 0%.
V01	0-10V dimming down to 1%.
V05	0-10V dimming down to 5% (Down to 10% for TUNE lamping).
LDE1	Lutron Hi-Lume 1% EcoSystem LED driver with Soft-on, Fade-to-Black dimming technology.
P01	Driver supports both TRIAC Forward Phase 2-Wire and ELV Reverse Phase 3-Wire dimming controls.
ELDV0	ELDV0 eldoLED, 0-10V dimming down to 0%
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)
TSERIES	Lutron T-Series Tunable White Class 2 LED Driver (For use with Lutron Quantum Control Systems)
DALI	DALI flicker-free dimming down to 0%.
DMX	DMX flicker-free dimming down to 0%.
POE/MOLEX	POE MOLEX. Molex CoreSync PoE LED Driver dimming down to 0.1%
POE/IGOR	IGOR PoE LED Driver. Contact ALW to assist with your project.
POE/NULEDS	NuLEDS PoE LED Driver. Contact ALW to assist with your project.
POE/READY	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 ²¹	IEEE P1789 & HD TV STUDIO ²²
V00	●	●	●			●	
V01	●	●	●			●	
V05	●	●	●			●	
LDE1	●	●				●	●
P01	●	●				●	
ELDV0	●	●	PER REQUEST			●	●
ELDDW	●		●			●	●
TSERIES			●			●	●
DALI	●	●	●			●	
DMX	●		●		●	PER REQUEST	PER REQUEST
POE/MOLEX			PER REQUEST			●	●
POE/IGOR			PER REQUEST			●	●
POE/NULEDS			PER REQUEST			●	●

● - Indicates compatibility

*Standard lamping (STD) - MIN/LOW/MED/HI

²¹Fixtures 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

²²The 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.



SENSORS

	PRODUCT CODE	DESCRIPTION	Location
	N	None. Choose when sensors are not desired.	-
COOPER WAVELINX	WLNK/INT	Wavelinx Wireless integral occ/daylight sensor (WaveLinX part: OEM-WAA)	Integral
	WLNK	Fixture is built with 0/10V wiring to connect to Wavelinx Wireless sensors and power/relay packs (sensors and equipment not provided by ALW)	Remote
ENLIGHTED™	ENLGH/INT	Enlighted integral connected lighting smart sensor - occ/daylight/networking (Enlighted Part: SU-5E-CL)	Integral
	ENLGH	Enlighted® remote connected lighting smart sensor - occ/daylight/networking (Enlighted Part: SU-5S-H-CL)	Remote
LUTRON VIVE	VRF	Lutron® Vive integral RF wireless fixture control (Lutron Part: DFCSJ-OEM-RF)	Integral
	VDO	Lutron® Vive integral RF wireless fixture control + daylight/occ sensor (Lutron Part: DFCSJ-OEM-OCC)	Integral
	FCJS	Lutron® Vive remote RF wireless fixture control (Lutron Part: FCJS-ECO or FCJS-010)	Remote
	FCJS/S	Lutron® Vive remote RF wireless fixture control + daylight/occ sensor (Lutron Part: FCJS-ECO or FCJS-010, & FC-Sensor)	Remote
MOLEX POE CORESYNC	MLX/INT	Molex CoreSync PoE Integral Fixture-Mounted Sensor R - occ/daylight/temperature/humidity (Molex Part: 182091-1000)	Integral
	MLX	Molex PoE sensors for use with Molex/PoE drivers. Customer will need to determine who to purchase PoE equipment from	Remote
NLIGHT WIRED®	NLT/INT	Fixture is built with nLight Wired integral components specified by agency. Contact ALW to review project details.	Integral
	NLT	Fixture is built to connect to nLight Wired remote components specified by agency. Contact ALW to review project details.	Remote
NLIGHT WIRELESS®	NLTAIR/INT	Fixture is built with nLight Air (Wireless) components specified by agency. Contact ALW to review project details.	Integral
	NLTAIR	Fixture is built to connect to nLight Air (Wireless) remote components specified by agency. Contact ALW to review project details.	Remote
VALUE SENSORS	OS/PH/INT	Acuity 0-10VDC Integral occ/daylight sensor (Acuity Part: MSD 7 ADC WH) Automated Dimming Functionality Only. Manual Dimming not available. Customer to set sensor functionality in the field. Lowest dim level depends on driver.	Integral
	OS/INT/HV	Legrand Wattstopper High Voltage Integral occ/daylight on/off sensor (Part: FS-355) On/Off or Manual Dimming Functionality Only (based on occupancy and daylight). Connect fixture 0/10V wires to wall dimmer in the field. No Automated Dimming available.	Integral
	OS/PH/HV	Hubbell WASP High Voltage 0-10V remote surface mount occ/daylight sensor. 120/277/347VAC input (Hubbell Part: WSPDSMUNV) Automated Dimming Functionality: Connect fixture 0/10V wires to sensor in the field. Adjust occ/photo cell settings as desired. On/Off or Manual Dimming Functionality: Turn photocell functionality OFF. Cap off 0/10V wires on sensor. Connect fixture 0/10V wires to wall dimmer in the field.	Remote

*All connected lighting sensors/systems must be programmed in the field by an electrical commissioner familiar with the system. Refer to the 'Sensor Compatibility' and 'Driver/Sensor Compatibility' charts to specify compatible sensors, LED lamping, and LED driver systems.



SENSORS CONT'D

SENSOR COMPATIBILITY								
PRODUCT CODE		SENSOR TYPE	MAX MT HT	CA TITLE 24	STD*	TUNE	RGB	RGB(W)
COOPER WAVELINX	WLN/INT	OCCUPANCY/PHOTOCELL	15 ft	●	●			
	WLN		15 ft	●	●			
ENLIGHTED™	ENLGT/INT	OCCUPANCY/PHOTOCELL	15 ft	●	●	CUSTOM REQUEST		
	ENLGT	OCCUPANCY/PHOTOCELL	40 ft	●	●	CUSTOM REQUEST		
LUTRON VIVE	VRF	WIRELESS CONTROL	12 ft	●	●			
	VDO	OCCUPANCY/PHOTOCELL	12 ft	●	●			
	FCJS	WIRELESS CONTROL	12 ft	●	●			
	FCJS/S/	OCCUPANCY/PHOTOCELL	12 ft	●	●			
MOLEX POE CORESYNC	MLX/INT	OCCUPANCY/PHOTOCELL TEMPERATURE/HUMIDITY	16 ft	●	●			
	MLX		16 ft	●	●	●	CUSTOM REQUEST	CUSTOM REQUEST
NLIGHT WIRED®	NLT/INT	OCCUPANCY/PHOTOCELL	15 ft	●	●			
	NLT		15 ft	●	●			
NLIGHT WIRELESS®	NLTAIR/INT	OCCUPANCY/PHOTOCELL	15 ft	●	●			
	NLTAIR		15 ft (average)	●	●			
VALUE SENSORS	OS/PH/INT	OCCUPANCY/PHOTOCELL	15 ft		●			
	OS/INT/HV	OCCUPANCY/PHOTOCELL	15 ft	●	●	■	■	■
	OS/PH/HV	OCCUPANCY/PHOTOCELL	45 ft	●	●	■	■	■

● - Indicates compatibility ■ - On/off sensor functionality only

*Standard Lamping (STD) - MIN/LOW/MED/HI



SENSORS (CONT'D)

DRIVER/SENSOR COMPATIBILITY									
	WLNx/INT	WLNx	ENLGT/INT	ENLGT	VRF	VDO	FCJS	FCJS/S/	MLX/INT
V00	●	●					●	●	
V01	●	●					●	●	
V05	●	●					●	●	
LDE1					●	●	●	●	
P01									
ELDV0									
ELDDW									
TSERIES									
DALI			●	●	●	●			
DMX									
POE/MOLEX									●
POE/IGOR	Sensor types will depend on the PoE system configuration. Contact ALW for details.								
POE/NULEDS	Sensor types will depend on the PoE system configuration. Contact ALW for details.								
POE/READY	Sensor types will depend on the PoE system configuration. Contact ALW for details.								

- - Indicates compatibility
- ▲ - Fixture can have automated dimming via sensor OR on/off functionality and manual dimming
- - On/off sensor functionality only

DRIVER/SENSOR COMPATIBILITY CONT'D									
	MLX	NLT/INT	NLT	NLTAIR/INT	NLTAIR	OS/PH/INT	OS/INT/HV	OS/PH/HV	NO SENSOR
V00						●	■	▲	●
V01						●	■	▲	●
V05						●	■	▲	●
LDE1									●
P01							■	■	●
ELDV0		●	●	●	●	●	■	▲	●
ELDDW							■	■	●
TSERIES							■	■	●
DALI							■	■	●
DMX							■	■	●
POE/MOLEX	●								●
POE/IGOR	Sensor types will depend on the PoE system configuration. Contact ALW for details.								
POE/NULEDS	Sensor types will depend on the PoE system configuration. Contact ALW for details.								
POE/READY	Sensor types will depend on the PoE system configuration. Contact ALW for details.								



PHOTOMETRICS

OPTIC	POLAR PLOT (CD)	MTG HEIGHT	LIGHT LEVEL (FC)	SPACING CRITERION (SC) ²³ (0°- 180°) (90°- 270°)	MAX INTENSITY (CD)	OUTPUT (LM/FT)
CR/ASY ²⁴		2 - 2.5 ft RECOMMENDED DISTANCE FROM WALL		1.14 1.30	1328	1300
CR/BAT		6 ft	18.6	1.22 1.7	801	1200
		8 ft	10.4			
		10 ft	6.7			
		12 ft	4.6			
		14 ft	3.4			
		16 ft	2.6			
CR/AG		6 ft	39.6	.8 1.12	1424.7	1300
		8 ft	22.3			
		10 ft	14.2			
		12 ft	9.9			
		14 ft	7.3			
		16 ft	5.6			
CR/S		16 ft	5.6	1.16 1.2	927	1250
		8 ft	14.5			
		10 ft	9.3			
		12 ft	6.4			
		14 ft	4.7			
		16 ft	3.6			
BAT ²⁵		0.5 ft	38	1.28 3.14	1235	1525
		1 ft	34.5			
		2 ft	27.8			
		3 ft	22.2			
		4 ft	17.6			
		5 ft	13.5			

*Photometric calculations based on MAX 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](#)

²³Spacing 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).

²⁴Recommended distance from wall calculated at 10ft mounting height

²⁵BAT mounting height for BAT refers to distance from ceiling since BAT optic is only offered in indirect output.



ADDITIONAL OPTIONS & SPECIFICATIONS

LED PERFORMANCE

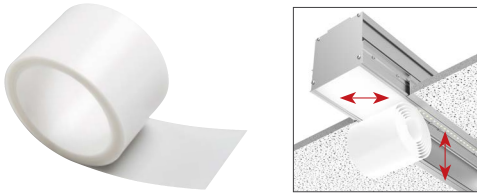
> 54,000 hours at 70% lumen maintenance, LM80 / TM-21

HOUSING

100% recyclable, extruded architectural grade 6063 aluminum with a 0.09" minimum wall thickness.

CONTROLROLL LENS OPTICS

The optically engineered ControlRoll lens provides smooth, uniform, and seamless illumination for linear lengths of 250' while dynamically controlling output and reducing glare. The ControlRoll lens rolls out and snaps into the housing channel for easy installation.



INDIRECT BATWING OPTIC

A 120° rigid batwing optic can be specified for indirect lambing to achieve wide distributions of light across ceilings and to eliminate hotspots.

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. *For integral driver*, Conforms to UL std. 1598 luminaires, *For remote driver*, Conforms to UL std. 2018 luminaires. Certified to CSA std. C22.2#250.0:2008 Ed. 3+G1;G2.

WARRANTY

Limited 11-year warranty. Details at [alw-inc.com](#)

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.



WEIGHT

Approximately 3.4lbs. per linear foot. Weight may vary depending on additional options selected.

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.



WOOD VENEER

Most ALW fixture configurations are available with **real wood veneer** as a custom request. Contact [ALW customer support](#) so we can help you with your custom wood veneer request.