



# SUPERPLANE 4

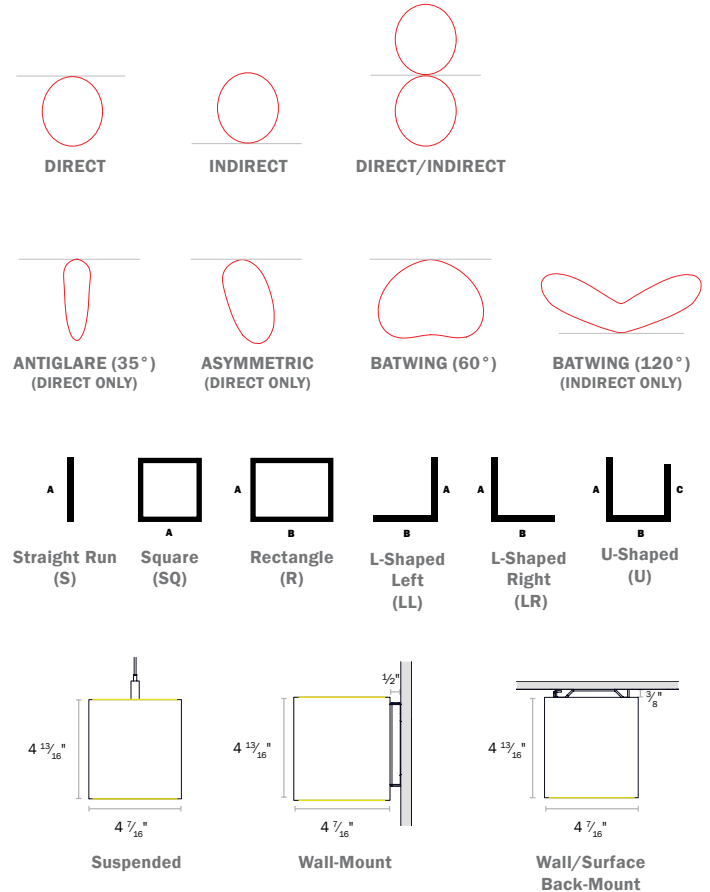
SP4 | CONTROLROLL OPTICS | SUSPENDED, WALL, SURFACE



## SPECIFICATIONS

<b>PROFILE</b>	4" Aperture, 4 13/16" height ( +3/8" for surface mount )
<b>SIZES</b>	2ft - 8ft straight sections
<b>LED OUTPUT</b>	350lm/ft - 1,525lm/ft. Accent downlights available (800/1000/1500lm Output Options).
<b>CCT/CRI</b>	2700K/3000K/3500K/4000K • 80 or 90+ CRI Tunable White (2700K - 6500K) • RGB and RGB+W
<b>DIMMING/ DRIVER</b>	Integral and Remote Driver: 0-10V, DALI, DMX, eldoLED, Lutron®, PoE (Molex, Igor, NuLEDs). Dimming to 0% for select models.
<b>POWER</b>	3.1W - 10.7W per ft
<b>INPUT</b>	120VAC, 277VAC, or 347VAC
<b>OPTICS</b>	ControlRoll Optics - Continuous lens up to 250ft. Direct/indirect. Lambertian, Asymmetric, Batwing and Antiglare/Grazer optics available.
<b>FINISHES</b>	16 powder coat finishes - Custom finishes also available
<b>MATERIAL</b>	6063-T6 Extruded Aluminum
<b>ENVIRONMENT</b>	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 082324



**PRODUCT SPECIFICATION SHEET**

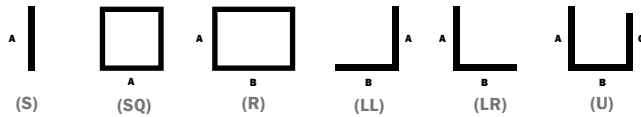
1	2	3a	3b	3c	4	5	6a	6b	6c	7	8	9a	9b	9c	9d	10	11
12	13	14	15a	15b	15c												

**EXAMPLE: SP2.4S – S5 – MED/90/3500 – LDE1 – CR/S – LOW/90/3500K – LDE1 – CR/S – DL1000/80/3500/25 – HEX – LTEA – 1 – SW – UNV – EMB/1 – NLT – SB**

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 <b>SP4S</b>	4.0" Suspended	QS <b>S__</b>	Individual/Straight Run Section (enter length in product code above, ex. S5)	QS <b>N</b> None. Lens will be substituted with aluminum lid.		
QS <b>SP4W</b>	4.0" Wall Mount	QS <b>SQ__</b>	Square Configuration (enter side length A, ex: SQ5)	<b>A. OUTPUT*</b>	<b>B. CRI<sup>2</sup></b>	<b>C. CCT<sup>2</sup></b>
QS <b>SP4SMB<sup>5</sup></b>	4.0" Wall/Surface, Back-Mounted	QS <b>R__</b>	Rectangular Configuration (enter side lengths A and B, ex. R5-7)	QS <b>MIN</b> (350 lm/ft)	<b>NO CRI/CCT<sup>3</sup></b>	
		QS <b>LL__</b>	L-Shaped, Left Configuration (enter side lengths A and B, ex. LL5-7)	QS <b>LOW</b> (475 lm/ft)	QS <b>80</b>	QS <b>2700K<sup>4</sup></b>
		QS <b>LR__</b>	L-Shaped, Right Configuration (enter side lengths A and B, ex. LR5-7)	QS <b>MED</b> (750 lm/ft)	QS <b>90</b>	QS <b>3000K</b>
		QS <b>U__</b>	U-Shaped Configuration (enter side lengths A, B, and C, ex. U5-7-4)	QS <b>HI</b> (1020 lm/ft)	QS <b>BIOS<sup>6</sup></b>	QS <b>3500K</b>
				QS <b>MAX</b> (1250 lm/ft)	QS <b>STATIC BIOS)</b>	QS <b>4000K</b>

<sup>5</sup>SMB only available with direct lamping

\*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.  
<sup>6</sup>Shape orientation (Looking from the Ceiling down to the floor)

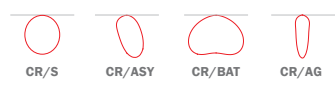


TUNE (2700K-6500K, 90 CRI, 470/510 lm/ft)  
 RGBW (3500K, White, 80 CRI, 140/220 lm/ft)  
 CSTM\_\_\_\_\_ <sup>6</sup>(Enter lumens in product code above. Ex. 0100=100lm/ft)

<sup>7</sup>For delivered lumens and watts, see 'Performance Details'  
<sup>2</sup>CRI/CCT options not applicable for TUNE, RGB, or RGBW lamping  
<sup>4</sup>Choose when TUNE, RGB, or RGBW is desired output  
<sup>5</sup>Static 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.  
<sup>9</sup>90 CRI only, 2700K is not available in BIOS options  
<sup>6</sup>Consult 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 <b>N</b> (None)	<b>POEM</b> (POE Molex)	QS <b>N<sup>8</sup></b>	None.	QS <b>N</b> None. Select for SMB mount or when indirect lamping is not desired. Lens substituted with aluminum lid.	<b>A. OUTPUT*</b>	<b>B. CRI<sup>2</sup></b>	<b>C. CCT<sup>2</sup></b>	QS <b>N</b> (None)	<b>POEM</b> (POE Molex)
QS <b>V00</b> (0-10V, dim to 0%)	<b>POEI</b> (POE IGOR)	QS <b>CR/S</b>	ControlRoll lens with diffused, lambertian distribution	QS <b>MIN</b> (400 lm/ft)	<b>NO CRI/CCT<sup>3</sup></b>			QS <b>V00</b> (0-10V, dim to 0%)	<b>POEI</b> (POE IGOR)
QS <b>V01</b> (0-10V, dim to 1%)	<b>POEN</b> (POE Nuleds)	QS <b>CR/ASY</b>	ControlRoll lens with asymmetric/wall wash distribution (peak intensity 25°)	QS <b>LOW</b> (540 lm/ft)	QS <b>80</b>	QS <b>2700K<sup>4</sup></b>		QS <b>V01</b> (0-10V, dim to 1%)	<b>POEN</b> (POE Nuleds)
QS <b>V05</b> (0-10V, dim to 5%)	<b>POE<sup>7</sup></b> (POE Ready)	QS <b>CR/BAT<sup>9</sup></b>	ControlRoll lens with batwing/flood distribution (peak intensity 60°)	QS <b>MED</b> (840 lm/ft)	QS <b>90</b>	QS <b>3000K</b>		QS <b>V05</b> (0-10V, dim to 5%)	<b>POE<sup>7</sup></b> (POE Ready)
<b>P01</b> (ELV/TRIAC phase dim to 1%)		QS <b>CR/AG</b>	ControlRoll lens with antiglare/grazer optics (35° distribution)	QS <b>HI</b> (1150 lm/ft)	QS <b>BIOS<sup>6</sup></b>	QS <b>3500K</b>		<b>P01</b> (ELV/TRIAC phase dim to 1%)	
<b>LDE1</b> (Lutron ECOSYS1, 0-10V, dim to 1%)				QS <b>MAX</b> (1400 lm/ft)	QS <b>STATIC BIOS)</b>	QS <b>4000K</b>		<b>LDE1</b> (Lutron ECOSYS1, 0-10V, dim to 1%)	
<b>TSERIES</b> (Lutron HI-Lume, Phase dim, 2-wire to 1%)				QS <b>RGB</b> (160 lm/ft)	QS <b>BIOSD<sup>6</sup></b>	QS <b>4000K</b>		<b>TSERIES</b> (Lutron HI-Lume, Phase dim, 2-wire to 1%)	
<b>ELDVO</b> (eldoLED, 0-10V, dim to 0%)				<b>TUNE</b> (2700K-6500K, 90 CRI, 530/575 lm/ft)				<b>ELDVO</b> (eldoLED, 0-10V, dim to 0%)	
<b>ELDDW</b> (eldoLED dim to warm)				<b>RGBW</b> (3500K, White, 80 CRI, 160/250 lm/ft)				<b>ELDDW</b> (eldoLED dim to warm)	
<b>DALI</b> (DALI, dim to 0%)				<b>CSTM/_____</b> <sup>6</sup> (Enter lumens in product code above. Ex. 0100=100lm/ft)				<b>DALI</b> (DALI, dim to 0%)	
<b>DMX</b> (DMX, dim to 0%)								<b>DMX</b> (DMX, dim to 0%)	

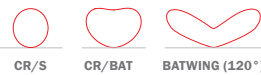
<sup>8</sup>Select when direct lamping is not desired. The lens will be substituted with an aluminum lid with same finish as fixture.  
<sup>9</sup>Not available for TUNE, RGB, RGBW, BIOS, or BIOSD lamping.



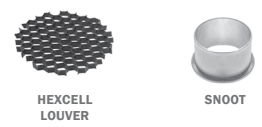
<sup>7</sup>For delivered lumens and watts, see 'Performance Details'  
<sup>2</sup>CRI/CCT options not applicable for TUNE, RGB, or RGBW lamping  
<sup>4</sup>Choose when TUNE, RGB, or RGBW is desired output  
<sup>5</sup>Static BIOS SkyBlue® 490nm LED is always on. Dynamic BIOS SkyBlue® 490nm LED can be tuned out with most LED driver and dimmer combinations. See pages 9-10 for details.  
<sup>9</sup>90 CRI only, 2700K is not available in BIOS options  
<sup>6</sup>Consult ALW for custom lumen packages.

8. LENS - INDIRECT (CHOOSE 1)		9. ACCENT - DOWNLIGHT* (CHOOSE 1 FOR EACH)			10. ACCESSORY-ACCENT DOWNLIGHT (CHOOSE 1)		11. DRIVER - ACCENT DOWNLIGHT (CHOOSE 1)
QS <b>N<sup>10</sup></b>	None.	QS <b>N</b>	None. Select when Accent Downlight Lamping not desired.			QS <b>N</b>	None. Select when Accent Downlight Lamping not desired.
QS <b>CR/S</b>	ControlRoll lens with diffused, lambertian distribution	<b>A. SPOT</b>	<b>B. CRI<sup>11</sup></b>	<b>C. CCT</b>	QS <b>HEX SNT</b>	Snoot	[____] <sup>12</sup> Manually type code for desired driver in product code above. Driver must match type specified for DIRECT and/or INDIRECT lamping.
QS <b>CR/BAT</b>	ControlRoll lens with batwing/flood distribution (peak intensity 60°)	DL1800 (800 lm/ft)	<b>80</b>	<b>2700K</b>	QS <b>HEXSNT</b>	Both Hexcell louver and Snoot	
QS <b>BAT<sup>11</sup></b>	Rigid batwing optic (peak intensity 120°)	DL1000 (1000 lm/ft)	<b>90</b>	<b>3000K</b>			
		DL1500 (1500 lm/ft)		<b>3500K</b>			
		<b>D. BEAM SPREAD</b>		<b>4000K</b>			
		<b>25</b>					
		<b>40</b>					

<sup>10</sup>Lens will be substituted with an aluminum lid with same finish as fixture.  
<sup>11</sup>Not available for TUNE, RGB, RGBW, BIOS, or BIOSD



<sup>12</sup>Downlights are not available in BIOS options as the COB is too large to fit in downlight housing.  
<sup>13</sup>If Direct linear lamping is not selected, Lens will be replaced with Aluminum lid between Downlights.



<sup>12</sup>Accent downlights not available with TSERIES and ELDO/DW driver types.

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.

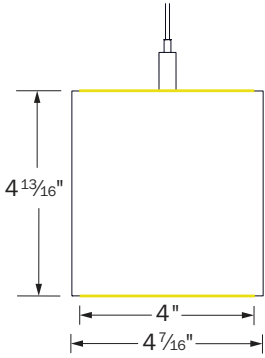




**MECHANICAL DIAGRAMS**

**SUSPENDED**

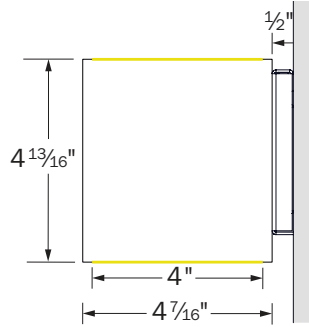
Suspended mounting can be specified with direct, indirect, or both direct and indirect lamping.



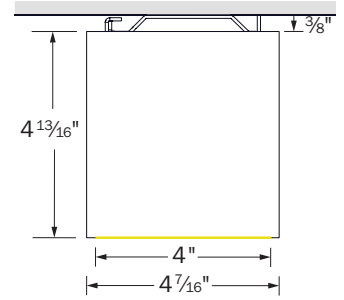
**SP4S  
SUSPENDED MOUNT**

**SURFACE/WALL MOUNT**

Wall mounting can be specified with direct, indirect, or both direct and indirect lamping - surface back mount is only available with direct lamping. 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.

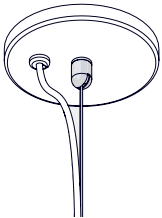


**SP4W  
WALL MOUNT**



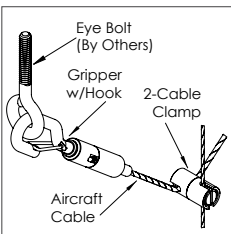
**SP4SMB  
SURFACE  
(BACK) MOUNT**

**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)**

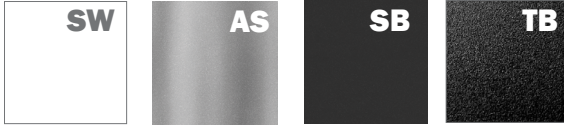
Add-on hardware includes cable gripper with hook, 2-cable clamp and specified length of aircraft cable per suspension point.



## FINISHES

Standard finishes are available at no additional charge.

### STANDARD FINISHES - QS ELIGIBLE



Satin White  
QS

Aluminum Silver Anodized Effect  
QS

Satin Black  
QS

Textured Black  
QS

### PREMIUM FINISHES

#### BASIC POWDER COAT



Gloss White

Antimicrobial Gloss White

Textured Matte White

#### METALLIC POWDER COAT



Charcoal Gray

Copper

Brass

#### SATIN ANODIZED EFFECT POWDER COAT



Oil-Rubbed Bronze

Dark Bronze

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



Orange  
RAL 2003

Red  
RAL 3020

Magenta  
RAL 4010

Blue  
RAL 5015

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](http://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
<b>CCT</b>	3000K	3500K	4000K	3000K	3500K	4000K	1. Select <b>BIOS</b> or <b>BIOSD</b> for <b>LED LAMPING</b> 2. Select the appropriate Lumen <b>OUTPUT</b> 3. Select the appropriate <b>CCT</b>
<b>CRI / R9</b>	83 / 80+	83 / 80+	83 / 80+	83 / 80+	83 / 80+	83 / 80+	
<b>LUMINOUS FLUX MULTIPLIER</b>	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.
<b>MELANOPIE RATIO (R)*</b>	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 <b>N</b> (None) for <b>LED LAMPING - DIRECT</b> 2. Select <b>any of the options</b> for <b>LED LAMPING - INDIRECT</b>
b. Unified Glare Rating (UGR)*	✓	13.47 @ 16ft (MED Output) 11.81 @ 20ft (MED Output)	1. Select <b>ANY</b> output for <b>LED LAMPING - DIRECT</b> 2. Select <b>CR/S</b> (ControlRoll Diffused Lens) or <b>CR/AG</b> (ControlRoll Antiglare Lens) for <b>LENS - DIRECT</b>
c. Shielding Angle	No	-	-
d. Max. Luminance (45°-90°) Max. Intensity (45°-90°)	✓	4907 cd/m <sup>2</sup> @ MED Output 471.17 cd @ MED Output	1. Select an output of <b>MIN, LOW, or MED</b> for <b>LED LAMPING - DIRECT</b> 2. Select <b>CR/AG</b> (ControlRoll Antiglare Lens) for <b>LENS - DIRECT</b>

\*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.

<b>PART 1 - ENSURE COLOR RENDERING QUALITY (1PT MAX)</b>	<b>COMPLIANT</b>	<b>VALUE</b>	<b>HOW TO SPECIFY</b>
a. CRI > 90	✓	CRI = 93 - 95	• Select <b>90</b> (90CRI) for <b>LED LAMPING</b>
b. CRI > 80 with R9 > 50	✓	CRI = 83, R9 > 90	• Select <b>BIOS</b> or <b>BIOSD</b> for <b>LED LAMPING</b>
c. IES Rf ≥ 78, IES Rg ≥ 100, -1% ≤ IES Rcs, h1 ≤ 15%	No	-	-
<b>PART 2 - MANAGE FLICKER (1PT MAX)</b>	<b>COMPLIANT</b>	<b>VALUE</b>	<b>HOW TO SPECIFY</b>
Meets IEEE 1789-2015 Standard Recommended Practice	✓	Modulation = 1% Flicker Frequency = 120 - 2000Hz	• Select <b>V05, V01, LDE1, DALI</b> or <b>DMX</b> for <b>LED DRIVER</b>



**PERFORMANCE DETAILS**

OUTPUT	OPTIC TYPE	DELIVERED LUMENS/FT	DELIVERED LUMENS/FT	EFFICACY (LM/W)	EFFICACY (LM/W)	WATTS/FT <sup>14</sup>	CRI OPTIONS	CCT OPTIONS
		DIRECT	INDIRECT	DIRECT	INDIRECT			
MIN <sup>15</sup>	CR/S	350	400	113	129	3.1	80+ 90+	2700K (90CRI Only) 3000K 3500K 4000K 5000K
	CR/ASY	400	N/A	129	N/A			
	CR/BAT	380	400	123	129			
	CR/AG	340	N/A	110	N/A			
	BAT	N/A	440	N/A	142			
LOW <sup>15</sup>	CR/S	475	540	113	129	4.2		
	CR/ASY	540	N/A	129	N/A			
	CR/BAT	525	540	125	129			
	CR/AG	460	N/A	110	N/A			
	BAT	N/A	590	N/A	140			
MED <sup>15</sup>	CR/S	750	840	115	129	6.5		
	CR/ASY	840	N/A	129	N/A			
	CR/BAT	800	840	123	129			
	CR/AG	720	N/A	111	N/A			
	BAT	N/A	925	N/A	142			
HI <sup>15</sup>	CR/S	1020	1150	116	131	8.8		
	CR/ASY	1150	N/A	131	N/A			
	CR/BAT	1100	1150	125	131			
	CR/AG	980	N/A	111	N/A			
	BAT	N/A	1250	N/A	142			
MAX <sup>15</sup>	CR/S	1250	1400	117	131	10.7		
	CR/ASY	1400	N/A	131	N/A			
	CR/BAT	1350	1400	126	131			
	CR/AG	1200	N/A	112	N/A			
	BAT	N/A	1525	N/A	143			
TUNE	CR/S	WW: 470, CW: 510	WW: 530, CW: 575	WW: 112, CW: 121	WW: 126, CW: 137	4.2/channel	90+	2700K - 6500K
	CR/ASY	WW: 530, CW: 570	N/A	WW: 126, CW: 136	N/A			
	CR/BAT	WW: 510, CW: 555	WW: 530, CW: 585	WW: 121, CW: 132	WW: 126, CW: 139			
	CR/AG	WW: 500, CW: 540	N/A	WW: 119, CW: 129	N/A			
	BAT	N/A	N/A	N/A	N/A			
RGB <sup>16</sup>	CR/S	140	160	28	32	5	N/A	N/A
	CR/ASY	160	N/A	32	N/A			
	CR/BAT	150	160	30	32			
	CR/AG	150	N/A	30	N/A			
	BAT	N/A	N/A	N/A	N/A			
RGBW <sup>17</sup>	CR/S	RGB: 140, W: 220	RGB: 160, W: 250	RGB: 28, W: 44	RGB: 32, W: 50	5	80+ (White Chip)	3500K (White Chip)
	CR/ASY	RGB: 160, W: 250	N/A	RGB: 32, W: 50	N/A			
	CR/BAT	RGB: 150, W: 240	RGB: 160, W: 250	RGB: 30, W: 48	RGB: 32, W: 50			
	CR/AG	RGB: 150, W: 230	N/A	RGB: 30, W: 46	N/A			
	BAT	N/A	N/A	N/A	N/A			

<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%.

<sup>15</sup> 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.

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

<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.





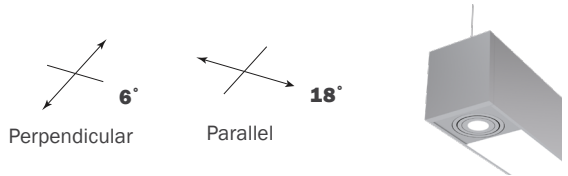
**PERFORMANCE DETAILS CONT'D**

**TM-30-18 DETAILS (90 CRI LAMPING)**

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

**PERFORMANCE DETAILS - ACCENT/DOWNLIGHT LAMPING**

SPOT	DELIVERED LUMENS (LM)	WATTS (W)	EFFICACY (LM/W)	CRI	CCT OPTIONS	BEAM SPREAD OPTIONS (DEGREES)
<b>DL800</b>	800	5.1	157	80 90	2700K 3000K 3500K 4000K	25 40
<b>DL1000</b>	1000	6.7	150			
<b>DL1500</b>	1500	10.5	143			



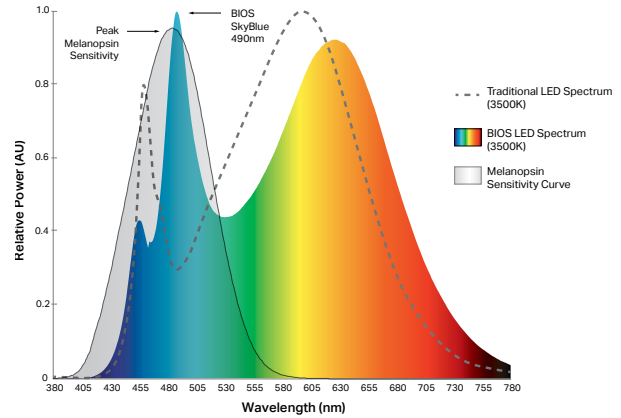


## BIOS OVERVIEW



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)
<b>DESCRIPTION</b>	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.
<b>TYPICAL APPLICATIONS</b>	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.
<b>CONTROLS &amp; DIMMING*</b>	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	DELIVERED LUMENS (LM/FT) INDIRECT	EFFICACY (LM/W) DIRECT	EFFICACY (LM/W) INDIRECT	WATTS (W/FT)	CRI
	CR/S CR/ASY CR/BAT CR/AG	CR/S CR/BAT BAT	CR/S CR/ASY CR/BAT CR/AG	CR/S CR/BAT BAT		
<b>MIN<sup>18</sup></b>	350	400	113	129	3.1	82+
	400	400	129	129		
	380	440	123	142		
	340	-	110	-		
<b>LOW<sup>18</sup></b>	475	540	113	129	4.2	
	540	540	129	129		
	525	590	125	140		
	460	-	TBD	110		
<b>MED<sup>18</sup></b>	750	840	115	129	6.5	
	840	840	129	129		
	800	925	123	142		
	720	-	111	-		
<b>HI<sup>18</sup></b>	1020	1150	116	131	8.8	
	1150	1150	131	131		
	1100	1250	125	142		
	980	-	111	-		
<b>MAX<sup>18</sup></b>	1250	1400	117	131	10.7	
	1400	1400	131	131		
	1350	1525	126	143		
	1200	-	112	-		

### 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 <sup>19</sup> <i>Static BIOS Dynamic BIOS</i>	NIGHTTIME M/P RATIO <sup>20</sup> <i>Static BIOS Dynamic BIOS</i>	COI <sup>21</sup> <i>Static BIOS Dynamic BIOS</i>
<b>3000K</b>	82	94	0.70	0.70	3.0
	83	90	0.73	0.45	3.3
<b>3500K</b>	83	91	0.80	0.80	3.1
	83	90	0.84	0.50	3.1
<b>4000K</b>	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, MAX output. MIN, LOW, MED and HIGH calculations are extrapolated values.

<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.

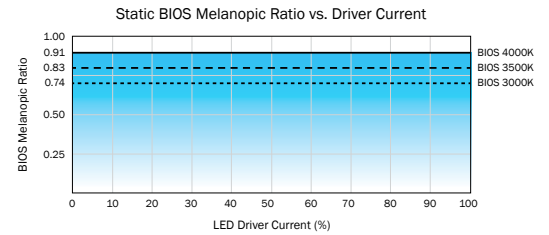
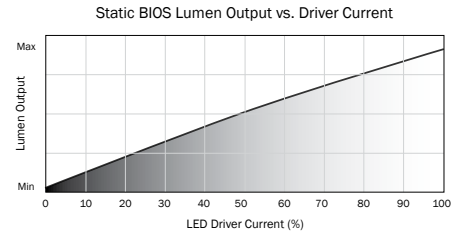
<sup>21</sup>BIOS SkyBlue® meets the Cyanosis Observation Index (COI) requirements for visual assessment of cyanosis, providing a COI up to 3.3.



## BIOS STATIC DIMMING CONTROL CHARACTERISTICS

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.

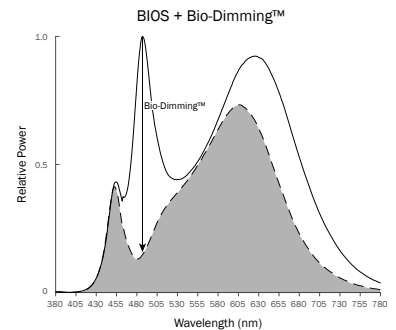
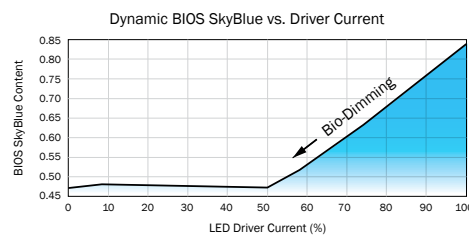
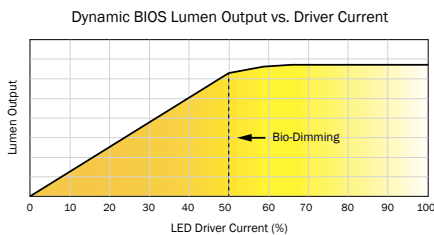
## BIOS DYNAMIC + BIO-DIMMING™ DIMMING CONTROL CHARACTERISTICS

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
<b>N</b>	None. Choose when indirect lambing is not desired.
<b>V00</b>	0-10V dimming down to 0% (dim to off).
<b>V01</b>	0-10V dimming down to 1%.
<b>V05</b>	0-10V dimming down to 5% (Down to 10% for TUNE lambing).
<b>P01</b>	Driver supports both TRIAC Forward Phase 2-Wire and ELV Reverse Phase 3-Wire dimming controls.
<b>LDE1</b>	(LDE1) Lutron Hi-lume 1% EcoSystem LED driver with Soft-on, Fade-to-Black dimming technology.
<b>ELDV0</b>	eldoLED 0/10V dimming down to 0% (when choosing nLight Air integral sensors a compatible eldoLED LEDcode version will be specified)
<b>TSERIES</b>	Lutron T-Series Tunable White Class 2 LED Driver (For use with Lutron Quantum Control Systems)
<b>ELDDW</b>	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)
<b>DALI</b>	DALI flicker-free dimming down to 0%.
<b>DMX</b>	DMX flicker-free dimming down to 0%.
<b>POEM</b>	Molex CoreSync PoE LED Driver. Contact ALW to assist with your project.
<b>POEI</b>	IGOR PoE LED Driver. Contact ALW to assist with your project.
<b>POEN</b>	NuLEDS PoE LED Driver. Contact ALW to assist with your project.
<b>POE</b>	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 JAS/JA10 <sup>22</sup>	IEEE P1789 & HD TV STUDIO <sup>23</sup>
<b>V00</b>	●	●	●			●	
<b>V01</b>	●	●	●			●	
<b>V05</b>	●	●	●			●	
<b>P01</b>	●	●	●			●	
<b>LDE1</b>	●	●				●	●
<b>ELDV0</b>	●	●	PER REQUEST			●	●
<b>TSERIES</b>			●			●	●
<b>ELDDW</b>	●		●			●	●
<b>DALI</b>	●	●	●			●	
<b>DMX</b>	●		●		●	PER REQUEST	PER REQUEST
<b>POEM</b>			PER REQUEST			●	●
<b>POEI</b>			PER REQUEST			●	●
<b>POEN</b>			PER REQUEST			●	●

● - Indicates compatibility  
 \*Standard lambing (STD) - MIN/LOW/MED/HI/MAX  
<sup>22</sup> Fixtures specified with 90CRI 2700K, 3000K, 3500K, and 4000K lambing with applicable LED drivers have the ability to conform to California Title 24 JAS and JA10 Appendices  
<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.



**SENSORS**

	<b>PRODUCT CODE</b>	<b>DESCRIPTION</b>	<b>Location</b>
	<b>N</b>	None. Choose when sensors are not desired.	-
<b>COOPER WAVELINX</b>	<b>WLNx/INT</b>	Wavelinx Wireless integral occ/daylight sensor (WaveLinX part: OEM-WAA)	Integral
	<b>WLNx</b>	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
<b>ENLIGHTED™</b>	<b>ENLGHt/INT</b>	Enlighted integral connected lighting smart sensor - occ/daylight/networking (Enlighted Part: SU-5E-CL)	Integral
	<b>ENLGHt</b>	Enlighted® remote connected lighting smart sensor - occ/daylight/networking (Enlighted Part: SU-5S-H-CL)	Remote
<b>LUTRON VIVE</b>	<b>VRF</b>	Lutron® Vive integral RF wireless fixture control (Lutron Part: DFCSJ-OEM-RF)	Integral
	<b>VDO</b>	Lutron® Vive integral RF wireless fixture control + daylight/occ sensor (Lutron Part: DFCSJ-OEM-OCC)	Integral
	<b>FCJS</b>	Lutron® Vive remote RF wireless fixture control (Lutron Part: FCJS-ECO or FCJS-010)	Remote
	<b>FCJS/S</b>	Lutron® Vive remote RF wireless fixture control + daylight/occ sensor (Lutron Part: FCJS-ECO or FCJS-010, & FC-Sensor)	Remote
<b>MOLEX POE CORESYNC</b>	<b>MLX/INT</b>	Molex CoreSync PoE Integral Fixture-Mounted Sensor R - occ/daylight/temperature/humidity (Molex Part: 182091-1000)	Integral
	<b>MLX</b>	Molex PoE sensors for use with Molex/PoE drivers. Customer will need to determine who to purchase PoE equipment from	Remote
<b>NLIGHT WIRED®</b>	<b>NLT/INT</b>	Fixture is built with nLight Wired integral components specified by agency. Contact ALW to review project details.	Integral
	<b>NLT</b>	Fixture is built to connect to nLight Wired remote components specified by agency. Contact ALW to review project details.	Remote
<b>NLIGHT WIRELESS®</b>	<b>NLTAIR/INT</b>	Fixture is built with nLight Air (Wireless) components specified by agency. Contact ALW to review project details.	Integral
	<b>NLTAIR</b>	Fixture is built to connect to nLight Air (Wireless) remote components specified by agency. Contact ALW to review project details.	Remote
<b>VALUE SENSORS</b>	<b>OS/PH/INT</b>	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
	<b>OS/INT/HV</b>	Legrand Wattstopper <b>High Voltage</b> 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
	<b>OS/PH/HV</b>	Hubbell WASP <b>High Voltage</b> 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/photoCell 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 <sub>X</sub> /INT	OCCUPANCY/PHOTOCELL	15 ft	●	●			
	WLN <sub>X</sub>		15 ft	●	●			
ENLIGHTED™	ENLGH <sub>T</sub> /INT	OCCUPANCY/PHOTOCELL	15 ft	●	●	CUSTOM REQUEST		
	ENLGH <sub>T</sub>	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/MAX



**SENSORS (CONT'D)**

DRIVER/SENSOR COMPATIBILITY									
	WLNX/INT	WLNX	ENLGH/INT	ENLGH	VRF	VDO	FCJS	FCJS/S/	MLX/INT
V00	●	●					●	●	
V01	●	●					●	●	
V05	●	●					●	●	
P01									
LDE1					●	●	●	●	
ELDVO									
TSERIES									
ELDDW									
DALI			●	●	●	●			
DMX									
POEM									●

- - 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						●	■	▲	●
P01									●
LDE1									●
ELDVO		●	●	●	●	●	■	▲	●
TSERIES							■	■	●
ELDDW							■	■	●
DALI							■	■	●
DMX							■	■	●
POEM	●								●
POEI	Sensor types will depend on the PoE system configuration. Contact ALW for details.								
POEN	Sensor types will depend on the PoE system configuration. Contact ALW for details.								
POE	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) <sup>24</sup> (0° - 180°) (90° - 270°)	MAX INTENSITY (CD)	OUTPUT (LM/FT)
<b>CR/ASY<sup>25</sup></b>		2 - 2.5 ft RECOMMENDED DISTANCE FROM WALL		1.14 1.24	1390.8	1400
<b>CR/BAT</b>		6 ft	20.9	1.22 1.64	861.3	1350
		8 ft	11.8			
		10 ft	7.5			
		12 ft	5.2			
		14 ft	3.8			
		16 ft	2.9			
<b>CR/AG</b>		6 ft	45.7	.74 1.12	1646.4	1200
		8 ft	25.7			
		10 ft	16.5			
		12 ft	11.4			
		14 ft	8.4			
		16 ft	6.4			
<b>CR/S</b>		6 ft	25.2	1.2 1.2	907.1	1250
		8 ft	14.2			
		10 ft	9.1			
		12 ft	6.3			
		14 ft	4.6			
		16 ft	3.5			
<b>BAT<sup>26</sup></b>		0.5 ft	38	1.28 3.14	1235	1400
		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](#)

<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).

<sup>25</sup>Recommended distance from wall calculated at 10ft mounting height

<sup>26</sup>BAT mounting height for BAT refers to distance from ceiling since BAT optic is only offered in indirect output.





## ADDITIONAL OPTIONS & SPECIFICATIONS

### LED PERFORMANCE

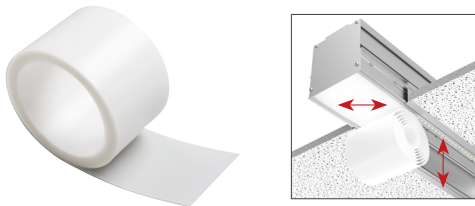
> 54,000 hours at 70% lumen maintenance, LM80 / TM-21

### 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;G

### WARRANTY

Limited 5-year warranty. Details: [alw-inc.com/warranty](http://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 5.5 lbs. per linear foot (not including downlight option). Weight may vary depending on mounting, downlight, and additional options selected.