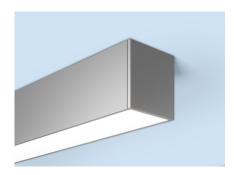
# MARK ARCHITECTURAL

# SPECIFICATIONS

PROJECT:

TYPE:



# **SLOT 4** SURFACE DIRECT

JOINI ACL DINLC

# HIGHLIGHTS

- 300 to 1500 lumens per foot Direct
- Up to 126 Lumens per Watt
- 5 direct distributions: Lambertian, Batwing, Wall Wash Wall Graze or Asymmetric
- Multiple lens treatment options include Continuous, Drop, in 1/2", 1"or 1 1/2" and Edge View
- Shielding provided by optional deep cell baffle
- Integrated control with optional nLight or nLight Air for system networking
- Driver options for Dim to Dark, 1% or 10% minimum dimming
- White, black or silver paint with satin finish
- Declare listed
- UGR data available on page 3



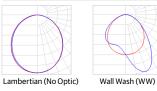
# **FIXTURE PERFORMANCE**

			Dir	ect			
300LMF	400LMF	600LMF	800LMF	1000LMF	1200LMF	1400LMF	1500LMF
292	394	575	791	973	1192	1352	1442
2.39	3.14	4.68	6.33	7.96	10.00	11.93	13.01
122	126	123	125	122	119	113	111
	292 2.39	292      394        2.39      3.14	292      394      575        2.39      3.14      4.68	300LMF      400LMF      600LMF      800LMF        292      394      575      791        2.39      3.14      4.68      6.33	292      394      575      791      973        2.39      3.14      4.68      6.33      7.96	300LMF      400LMF      600LMF      800LMF      1000LMF      1200LMF        292      394      575      791      973      1192        2.39      3.14      4.68      6.33      7.96      10.00	300LMF      400LMF      600LMF      800LMF      1000LMF      1200LMF      1400LMF        292      394      575      791      973      1192      1352        2.39      3.14      4.68      6.33      7.96      10.00      11.93

Based on 4FT, 80CRI, 35K with standard Lambertian distribution.



# **DIRECT DISTRIBUTION**

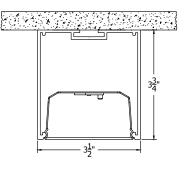




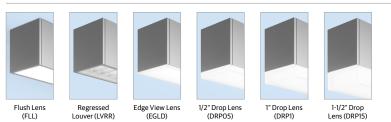


### DIMENSIONS

See page 5 for additional details.



## **DIFFUSERS/SHIELDING**



# MARK ARCHITECTURAL Surface Direct LIGHTING

# **SLOT 4**

JRUE	RING							EX	ampie	: 5450	LLP 32F		S 90CK	1358 800		IFLL		LT WHTT 2
Series		Linea	ar Plan		Total Ru	ın Length	Max Sec	tion Le	ngth		ght Source endering		ect LED r Temp	Direct	: LED Light Ou	Itput		t Distribution (Optics)
S4SD	SLOT 4 Surface Direct (Formerly S4LS)		Linear Longest Possible Linear Center Balanced Longest Same Length Jore information ear plans, see 4.	ava Fo AL rui LE se no joi	Run L 1" incr minim it length ma ailable optic <b>r runs long</b> WAYS ord <b>n by the TC</b> <b>Ctions indi</b> <b>t provide t</b>	ay affect ins. er than 8FT: er the DTAL RUN lering the vidually will he correct vare to allow	MSL4 MSL5 MSL6 MSL7	2FT Ler 3FT Ler 4FT Ler 5FT Ler 6FT Ler 7FT Ler 8FT Ler	ngth ngth ngth ngth ngth		80 CRI 90 CRI	30K 35K 40K	2700K 3000K 3500K 4000K 5000K	300LMF 400LMF 600LMF 800LMF 1000LMF 1200LMF 1400LMF 1500LMF _LMF	1400 Lumens	per Foot per Foot per Foot per Foot per Foot per Foot per Foot ns	WW WG DBW Direct D	Lambertian Wallwash Distribution Wall Graze Distribution Direct Batwin Distribution are only availabl lens.
Sw	vitching	Minimu	um Dimming Le	vel		Direct Shieldin	g			Voltage			Finish			Emerg	gency Option	15
SCT	Single Circuit	MIN1 MIN10 <sup>2</sup> DARK 1. Not avail Input optic 2. MIN10 is	Non Dimming Constant Curren Dimming To 10% Constant Curren Dimming To 10% Constant Curren Dimming To 10% able with Control ons. snot available with D or ECOD2.	t, 5 t, 6	available ir 2. EGLD is GTD, NLTA in whole fo 3. Drop ler foot increr with E10W	Flush Lens (Defau Regressed Louve Aluminum Edge Glow, Direct Drop Lens, 1/2" Drop Lens, 1/2" Drop Lens, 1/2" Continuous Flush able with NLTAR2. Whole foot increm not available with E UR2 or sensors. On characteristic sensors. On characteristic sensors. On clare only available ents. They are no /LCP or GTD.	r, Natural Lens Only ents. 10WLCP, Iy available ke in whole t available	12 2 3 1. Z	20 77 47' 347 is or T. 347 is	Multi-Volt, 12OV 277V 347V Ily available not available sy options or	with	Replace	White (S Black (S Silver (S P RAL Pai is for pricing with applicat	atin) atin) <u>nt Finish</u> only. ble RAL	with NLTAIR2 available with 2. WEC is not a 3. GTD is remo	# of 10V Power, Compli Emerge # of Em Genera mounte not avaik is only av EGLD, Di available be te mount s not ava	ency Circuit for lergency Circui tor Transfer De ed) able in units un- railable in units RPO5, DRP1, DI with sensors. Ited. (See more ilable with MV(	s, Constant rs, T2O Entire Run ts evice (Remote der 6'. E1OWLCI
	Contro	Input			Prim	ary Sensor				Secondar	y Zone			Tertiary Zor	1e		Optio	ns
device for EM eme NODIM be less th 2. DALI is available 3. ECOD available	0-10V nLight Wired 12 <sup>1</sup> nLight Air 2 W DALI Lutron EcoSy R2 can be used as a or ML_INLTAIR2 with han 4 <sup>1</sup> . s only available with with sensors. tis only available with with SIOWLEP & with SIOWLE	fireless Enat stem Digital normal pous and lumin is not availal th DCT fixtu h DARK. DA th MIN1. It is sensors. It is	IDriver wersensing aires with ble with ures cannot Ll is not s not s only	4' and ab details. 1. ADC &	Primary Z (Specify k Daylight I Dual Tech PIR and M Passive Ir Daylight I Dual Tech Daylight I are only ava ove. Please PDT are ava	rs ione with No Senso angth in freet) Dimming Sensor Inology Occupancy Dimming Sensor Jimming Sensor Jiable with FLL and see page 8 for mor ilable with ZT or NL vailable with ZT, NI	/Sensor, r and vand fixtures e IGHT.	4' and	Sec (Sp C <sup>1</sup> Day PIR Sec R <sup>2</sup> Pas ann Sec DT <sup>2</sup> Dua ann Sec DT <sup>2</sup> Dua ann Sec DT <sup>2</sup> Dua	condary Zon ecify length vlight Dimm condary Zon al Technolog condary Zon ssive Infraree d Daylight Di condary Zon al Technolog d Daylight Di condary Zon al Technolog d Daylight Di condary Zon hy available v Please see pi	ing Sensor, le gy Occupancy: honics Sensor, le d Occupancy mming Sensor le gy Occupancy mming Sensor	sor Sensor, r, r, xtures details.	(blank) TNS_	No Tertiary Zone Tertiary Zone (Specify leng	e	BAA	Manufacture	d in US

Note: Unit length and lumen outputs may affect available options.

# MARK ARCHITECTURAL LIGHTING<sup>™</sup>

# **SLOT 4** Surface Direct

# **PHOTOMETRICS**



Test Report: ISF 222300P1301 IES LM79-08 S4SD U4 80CR1 35K 1000LMF Lumens: 3889.8 Wattage: 31.85 Efficacy: 122.13



Test Report: ISF23344P741 IES LM79-08 S4SD U4 80CRI 35K 1000LMF DBW Lumens: 3103.9 Wattage: 31.85 Efficacy: 97.45

#### EXPECTED LIFE: L90 @ 60,000 HOURS CALCULATED LIFE: L80 @ 120,000 HOURS

## **CCT SCALING CHART**

ССТ	CRI	MULTIPLIER
27K	80CRI	0.94
30K	80CRI	0.97
35K	80CRI	1.00
40K	80CRI	1.02
50K	80CRI	1.04
27K	90CRI	0.79
30K	90CRI	0.81
35K	90CRI	0.83
40K	90CRI	0.84
50K	90CRI	0.88

Lumen scaling charts can be used to approximate the lumen values at different Kelvin temperatures, color rendering indices, optics or sheilding.

Example: Find base lumen value x multiplier value = new lumen value

#### **UGR CHART**



UGR varies based on luminaire options and is affected by application dependent parameters. Numbers depicted here are considered "Luminaire-UGR" and/or "Point-UGR" values. To determine a more precise maximum UGR value ("Application-UGR"), a full lighting design layout should be completed with the selected luminaire configuration for each application.

# **OPTICAL SCALING CHARTS**

DOWN	ILIGHT
DISTRIBUTIONS	MULTIPLIER
WW	0.80
WG	0.85
DBW	0.80

\*Base fixture with Lambertian distribution and flush lens

# **LINEAR PLAN**

Mark Lighting offers the ability to provide a continuous run plan to suit your requirements by optionally offering three different methods of configuration.

#### LLP- Linear Longest Possible

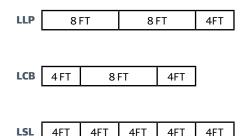
In this configuration, the longest length available is optimized, resulting in the fewest segments and mounting locations. Caution should be used where balanced appearance is a concern. Example: 20 FT run would have 2, 8 FT segments and 1, 4 FT segment at the end of the run.

#### LCB- Linear Center Balanced:

This configuration incorporates the longest center segment(s) along with any additional lengths required to fill the run length, added to the run ends. Example: 16 FT run would have 2, 4 FT segments (one at each end) and 1, 8 FT segment in the center.

# LSL- Linear Same Length:

In this configuration, each segment is the same length and is standardized based on the longest length available and is the only option provided. Because it is dependent on one segment length and there are mathematical limitations on what overall row lengths can be achieved. Example: 20 FT row would be achieved with 5, 4 FT long segments equaling 20 FT (nominal).

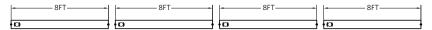


#### **Total Run Length**

This system is not modular. Runs longer that 8FT will be automatically configured with left, intermediate and right sections, based on how you specify the TOTAL RUN LENGTH and MAXIMUM SECTION LENGTH parameters in the ordering information. Always order the total run length, not the individual sections.

8FT 8FT 8FT 8FT 8FT 8FT 8FT 8FT 8FT 8FT

Example: This run must be ordered as 1pc "S4SD LLP 32FT MSL8..."



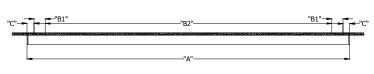
Example: If you order as 4pcs "S4SD LLP 8FT MSL8... you will receive these INDIVIDUAL sections that cannot be joined together

### **Maximum Section Length**

The run will be broken out using as many sections at the chosen maximum section length as possible. Shorter sections will then complete the desired run length.

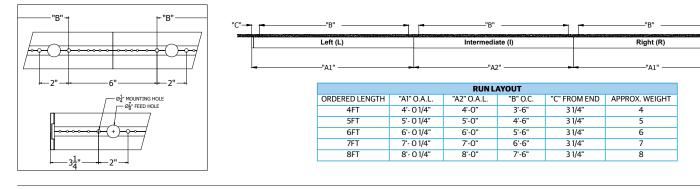
Examples:

S4SD LLP 21FT MSL5... = 5FT / 4FT / 4FT / 4FT / 4FT S4SD LLP 21FT MSL6... = 6FT / 6FT / 5FT / 4FT S4SD LLP 21FT MSL7... = 7FT / 7FT / 7FT S4SD LLP 21FT MSL8... = 8FT / 8FT / 5FT



		INDIVIDUA	AL FIXTURES		
ORDERED LENGTH	"A" O.A.L.	"B1" O.C.	"B2" O.C.	"C" FROM END	APPROX. WEIGHT
2FT	2'- 0 9/16"	2"	1'- 2"	3 1/4"	2
3FT	3'- 0 9/16"	2"	1'- 2"	3 1/4"	3
4FT	4'- 0 9/16"	2"	1'- 2"	3 1/4"	4
5FT	5'- 0 9/16"	2"	1'- 2"	3 1/4"	5
6FT	6'- 0 9/16"	2"	1'- 2"	3 1/4"	6
7FT	7'- 0 9/16"	2"	1'- 2"	3 1/4"	7
8FT	8'- 0 9/16"	2"	1'- 2"	3 1/4"	8

Mounting

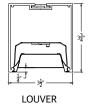


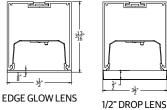
# MARK ARCHITECTURAL LIGHTING

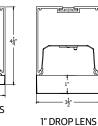
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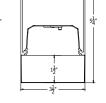
# **SHIELDING, OPTICS & CONNECTORS**

# **Direct Shielding**





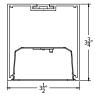




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1-1/2" DROP LENS

# **Direct Optics**

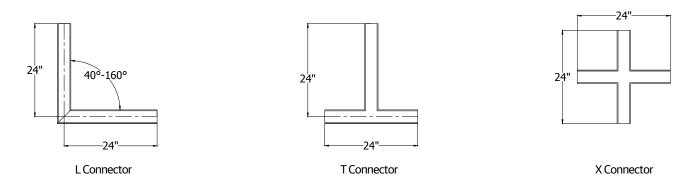


CO-EXTRUDED LENS

Optical Film with Co-Extruded Lens (Batwing (DBW), Wall Graze (WG), Wall Wash (WW))

# **Run Patterns, Corners and Junction**

Patterns can be configured in 1' increments with illuminated L, T & X connectors with standard 2' corner. L connectors are available in 40-160 degrees in 1 degree increments. T & X connectors available in 90 degrees. For custom angles, corner or junction lengths, consult factory. See separate pattern spec sheet for more details.



# **SLOT 4** Surface Direct

#### **INTELLIGENT LUMINAIRE TECHNOLOGY GUIDE**

**Driver Configurations** 

Dir

DARK

DARK

DARK

Choose n from the		
Minimum 1ming Level		Control Input
NO DIM	+	(blank)
MIN10	+	ZT
MIN1	+	ZT
MIN1	+	NLIGHT
MIN1		ECOD

ΖT

NLIGHT

DALI

еп	omer	iciat	ure
the	se co	hum	nc
cine		hann	

Notes
No 0-10V leads from the driver.
Lutron Hi-lume 1% EcoSystem LED Driver with Soft-on, Fade-to-Black (model LDE1)
"Compatible with DALI. Formerly (EDB & EDAB) nomenclature." Logarithmic dimming

# Choose nomenclature from these columns

	Control Input		Sensor		Sensor	Notes
	ZT	+	ADC	=	MSD ADC	Automatic dimming control integral photocell.
	ZT	+	PDT	=	MSD PDT 7	Dual technology integral occupany sensor.
ations	ZT	+	APIR	=	MSD 7 ADC	PIR integral occupancy sensor with automatic dimming control photocell.
gurati	ZT	+	APDT	=	MSD PDT 7 ADC	Dual technology integral occupany sensor with automatic dimming control photocell.
Config	NLIGHT	+	(blank)	=	nIO EZ PH	nLight enabled only. No onboard sensor.
S	NLIGHT	+	ADC	=	nIO EZ PH + nES ADCX	Automatic dimming control integral photocell. nLight enabled.
ensor	NLIGHT	+	PDT	=	nIO EZ PH + nES PDT 7	360° Dual technology integral occupany sensor. nLight enabled.
Š.	NLIGHT	+	APIR	=	nIO EZ PH + nES 7 ADCX	360° PIR integral occupancy sensor with automatic dimming control photocell. nLight enabled.
ontrol	NLIGHT	+	APDT	=	nIO EZ PH + nES PDT 7 ADCX	360° Dual technology integral occupany sensor with automatic dimming control photocell. nLight enabled.
Ŭ	NLTAIR2	+	(blank)	=	RIO EZDL EXT900 ACWH 90D G2	nLight AIR enabled only. No onboard sensor.
	NLTAIR2	+	APIR	=	RES7 EXT900 ACWH 90D G2	PIR integral occupancy sensor with automatic dimming control photocell. nLight AIR enabled.
	NLTAIR2	+	APDT	=	RES7 PDT EXT900 ACWH 90D G2	Dual technology integral occupany sensor with automatic dimming control photocell. nLight AIR enabled.

For more information, please consult our technical guides for nLight or nLight Air.

#### **UL924 Sequence of Operation**

- The below information applies to all nLight AIR devices with an EM option.
- EM devices will remain at their high-end trim and ignore wireless lighting control commands, unless a normal-power-sensed (NPS) broadcast is received at least every 8 seconds.
- Using the CLAIRITY+ mobile app, EM devices must be associated with a group that includes a normal power sensing device to receive NPS broadcasts.
- Only non-emergency rPP20, rLSXR, rSBOR, rSDGR, and nLight AIR luminaires with version 3.4 or later firmware can provide normal power sensing for EM devices. See specification sheets for control devices and luminaires for more information on options that support normal power sensing.

nLight <sup>®</sup> Wired Conte Order as separate co	
Wall Switches	Model Number
On/Off single pole	nPODMA (color)
On/Off two pole	nPODMA 2P (color)
On/Off single pole, dimming	nPODMA DX (color)
On/Off two pole, dimming	nPODMA 2P DX (color)
On/Off, two level	nPODMA 2L (color)
Graphic touchscreen	nPOD TOUCH (color)

For more information see  $\ensuremath{\mathsf{nPOD}}$  and  $\ensuremath{\mathsf{nPOD}}$  TOUCH spec sheets

nLight AIR <sup>®</sup> Contro Order as separate co	
Wall Switches	Model Number
On/Off single pole	rPODBA (color)
On/Off two pole	rPODBA 2P (color)
On/Off single pole, dimming	rPODBA DX (color)
On/Off two pole, dimming	rPODBA 2P DX (color)
On/Off, 4 scene control	rPODBA 4S (color)
E	Barra a sharata

For more information see rPOD spec sheets

### **INTEGRATED SENSOR LAYOUT**

#### For runs longer than 8FT:

ALWAYS order the run by the TOTAL RUN LENGTH. Ordering the sections individually will not provide the correct joining hardware to allow connection in the field.

SLOT 4

Surface Direct

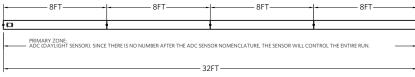
#### CORRECT:

32FT MSL8 RUN WITH 2 SENSORS WITH PRIMARY ZONE 24FT AND SECONDARY ZONE 8FT -- PDT24 SADC8





32FT MSL8 RUN WITH 1 SENSOR ALL ONE ZONE -- ADC



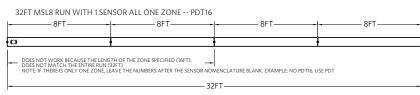
#### **Total Run Length to Order**

32FT MSL8 RUN WITH 2 SENSORS WITH PRIMARY ZONE 16FT, SECONDARY ZONE 8FT, AND TERTIARY ZONE 8FT-- ADC16 SPDT8 TNS8



#### Total Run Length to Order

#### **INCORRECT:**



Notes:

Only one sensor per zone

- At the most, the entire run can only have 2 sensors (thus 2 sensors zones at the most)
  Sensor zone can not split fixture sections
- No overlapping zones

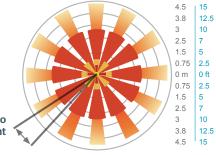
## **OCCUPANCY DETECTION COVERAGE**

At the 7.5 ft (2.9 m) hanging height of a typical pendant mount fixture the sensor provides 10 ft (3.05 m) radial detection of small motion. At a 9 ft (2.74 m) hanging height the radius is 12 ft (3.66 m) for small motion.

Adequate for walking motion detection from mounting heights between 7.5 ft (2.29 m) and 20 ft (6.10 m).

Initial detection will occur earlier when walking across sensor's field of view than when walking directly at sensor.

Initial detection of walking motion into long coverage segment will occur at distances of 2x the mounting height up to 15 ft (4.57 m) and 1.75x up to 20 ft (6.10 m). Lens assembly rotates 15° to enable adjustment in order to line up long segments.

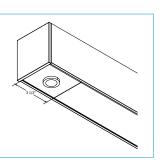


Lens rotates 15° to enable adjustment



#### **Integrated Controls**

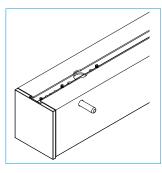
Optional nLight® integrated controls make Slot LED luminaires addressable- allowing them to digitally communicate with other nLight enabled controls such as dimmers, switches, occupancy sensors and photocontrols. Simply connect all the nLight enabled control devices using standard CAT5 Cabling (included).



Occupancy Sensor and/or Photocell

# nLight Air Wireless Antenna Location

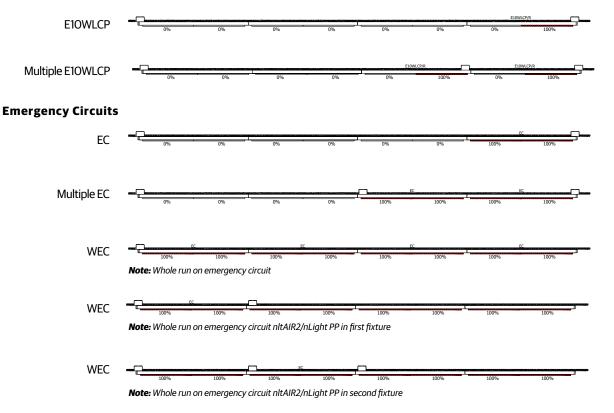
Note: Antenna will be shipped separately and will need to be attached to the coax connector.



# **EMERGENCY OPTIONS**

# **Emergency Battery Packs**

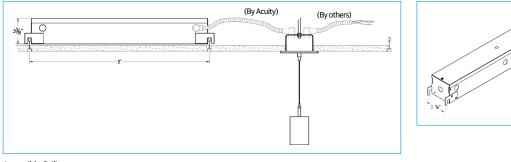
The PS1055LCP battery is integral to the fixture and comes standard with a remote test switch and self-diagnostics. Only direct light portion operated by emergency, as indicated below.

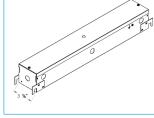


How to Estimate Delivered Lumens in Emergency Mode	[	Section Length	E10WLCP
se the formula below to estimate the delivered lumens in emergency mode		U2	None
elivered Lumens = 1.25 x P x LPW		U3	None
= 10W for PS1055LCP PW = Lumen per watt rating of the luminaire This information is available		U4	Entire unit
page 1 of this spec sheet or appropriate IES file.		U5	Last 3'
1.3		U6	Last 3'
		U7	Last 4'
		U8	Last 4'

# **Remote GTD Mounting Option**

Recessed in ceiling. Consult factory for other ceiling types or canopy options. 6 foot flexible conduit included, GTD option should be mounted within 6 feet of junction box above fixture.





#### Accessible Ceiling

### **SPECIFICATIONS**

### Housing

One-piece extruded aluminum housing

#### Finish

Standard colors for fixtures and end caps are polyester powder coated white, black, or silver with satin sheen. Consult factory for custom colors and RAL color options.

#### **Optics (Distribution)**

Wall Wash (WW), Wall Graze (WG), and Direct Batwing (DBW) incorporate co-extruded lenses and films.

#### Lenses/Shielding

Direct: Extruded acrylic lens, (FLL, CLL). Edge Glow lens, (EGLD), Aluminum regressed louver with either a powder coat finish (LVRR) or aluminum finish (LVRRA). Extruded acrylic drop lens (DRP05, DRP1, DRP15).

#### **LED Components**

Multiple lumen packages available with 2700K, 3000K, 3500K, 4000K and 5000K CCT. The Acuity Brands circuit boards for the linear LED components use a precise binning algorithm which creates a consistent color temperature from board to board. The color a variation of no greater than a 2.5 Step MacAdam (2.55DECM) along the black body locus from board to board.

#### Electrical

Page 9

Long-life LEDs, coupled with high-efficiency drivers, provide superior quantity and quality of illumination for extended service life. 90% LED lumen maintenance at 60,000 hours (L90/60,000).

#### **Controls System Networking Options**

Optional integrated nLight® controls make each fixture addressable - allowing it to digitally communicate with other nLight enabled controls such as dimmers, switches, occupancy sensors, and photocontrols. Connection to nLight is simple. It can be accomplished with remote nLight AIR wireless or through standard Cat-5 cabling. (cabling "by others") nLight offers unique plug-and-play convenience as devices and luminaires automatically discover each other, while nLight AIR is commissioned easily through an intuitive mobile app.

#### **Emergency Battery (Optional)**

Integral emergency battery (E10WLCP) for 90 minutes of operation. Emergency battery pack, 10W, Linear Constant Power Certified in CA Title 20 MAEDBS.

Remote generator transfer device (GTD) works in conjunction with an auxiliary generator or a central inverter system to power fixtures for safe egress lighting.

#### **Dimming Drivers**

Factory tuned constant current electronic dimming driver is standard. Flicker free dimming available down to <1%. LED drivers perform within the recommended operating areas for flicker as a function of frequency and modulation (%) IEEE Standard 1789-2015 (IEEE Recommended Practices for Modulating Current in High-Brightness LEDs for Mitigating Health Risks to Viewers), in typical operating conditions at representative dimming levels. Electrical specifications at maximum driver load: PF > 0.9 and THD <20%. Meets FCC Title 47 Class A or Class B. Other available drivers include Lutron and DALI protocol drivers. All drivers are RoHS compliant.

#### Environment

Suitable for damp location. Indoor use only.

#### Certification

CSA certified to meet U.S. and Canadian standards (UL1598 and UL8750).

#### **Ambient Operating Temperature**

-20°C (-4° F) to +25°C (+77°F).

#### **Buy American Act**

Product with the BAA option is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT regulations. Please refer to <u>www.acuitybrands.com/buy-american</u> for additional information.

#### **Fixture Weight**

1 lb per foot, less packaging.

#### Warranty

5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: <a href="http://www.acuitybrands.com/support/warranty/terms-and-conditions">www.acuitybrands.com/support/warranty/terms-and-conditions</a>

**Note:** Actual performance may differ as a result of end-user environment and application.

All values are design or typical values, measured under laboratory conditions at 25 °C.

Specifications subject to change without notice.