# MARK ARCHITECTURAL

# SPECIFICATIONS

PROJECT:

TYPE:



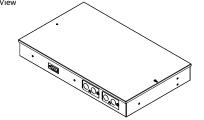
SLOT1 RECESSED POWERED BY MODULUS™

# **HIGHLIGHTS**

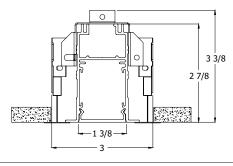
- 200 to 1000 lumens per foot
- Up to 117 Lumens per Watt
- Flush or regressed lens
- Five distributions: Lambertian, Batwing, Wall Wash, Wall Graze or Asymmetric
- Multiple lens treatment options include drop and edge view
- Shielding provided by integrated deep cell quiet ceiling baffle
- Powered and controlled by Modulus Remote Driver kit that combines all power and control system inputs into a single feed cord
- Flicker free dimming to dark (0.01%) enabled by Modulus power and control architecture with integrated digital nLight<sup>®</sup> module for system networking
- Total System Integration features 5-year limited warranty by Acuity Brands, covers all components and construction
- UGR data available on Page 3

# DIMENSIONS





Detail information on head unit located on Modulus spec sheet.



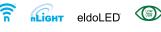


# **FIXTURE PERFORMANCE**

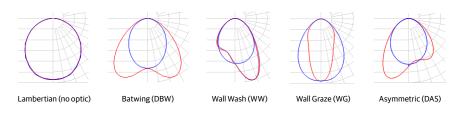
Nominal Lumens/Foot	200LMF	400LMF	600LMF	800LMF	1000LMF
Delivered Lumens/Foot	240	370	550	750	935
Input Watts/Foot*	2.06	3.27	5.08	7.27	9.45
Lumen/Watt	117	113	108	103	99

Based on a 4ft 35K fixture with standard lambertian distribution

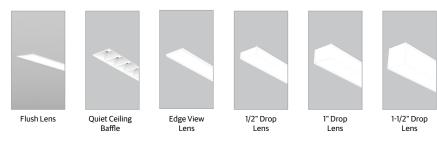
\*See Modulus power and control driver kit details for wattage consumption.



# **DIRECT DISTRIBUTION**



# **DIFFUSERS/SHIELDING**



**Scuity**Brands

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SL1L RECESSED 02/14/23

# **Slot 1** Recessed Powered by Modulus™

RDER										EXd			5211	90				I MVOLT
Series SL1L Slot	t1Recessed	Plan LOP	Linear optimizec plan	Unit le 2'&3' Forru ALWA RUNL indivi corre	Specify co (in whole f	e as individu nan 8FT: ne run by th dering the not provide ndware to	n length nes, i.e. imum) e options. Jal units retTOTAL sections ethe	Fla TGT Gr FL 3/3 GB Tri *For other o	id ceiling, 9/16 It or inverted t id Ceiling, Slot 3" Flange (she mless (sheetro eiling types like or large form fa	ee or Tegular etrock) ock) wood	Color R	<b>ght Sour</b> lendering 90 CRI		к 30 к 35 к 40		200LMF 400LMF 600LMF 800LMF 1000LMF _LMF	400 lun 600 lun 800 lun 1000 lu # lumen 200 LMF - 10	hens per FT hens per FT hens per FT hens per FT mens per FT s per FT
Direct Di	stribution (Onti	cc)	Raimine	um Dimmina			Direct Chield	ling		(altaga		Trim	Finich			Emora	ency Opt	ione
(blank) S WW V WG V DBW C DBW C	distribution dimming to 1% W Walkwash distributions DARK Constant current, dimming to 0.1% Wall graze distribution BW Direct Batwing distribution AS Direct Asymmetric Distribution Distribution AS Direct Asymmetric Distribution Distribution COMPACTION Direct Asymmetric Distribution Direct Asymmetric Distribution COMPACTION DIRECT DISTRIBUTION CONSTANT DIRECT DIRECT DISTRIBUTION CONSTANT DIRECT		Flush lens Regressed len Quiet ceiling b Quiet Ceiling E Specular Silve 1/2" Drop lens 11/2" Drop lens 11/2" Drop lens Edge View diri goptions availa DAS. RP1& DRP15 are ements. ailable in whole	ens MVOLT Multi-volt, 120-277 gbaffle, white 120 120V gbaffle, black 277 277V gBaffle, black 347 347V gBaffle, 347 347V wer 347V is not available wer Struct ESDINV, EC, WEC, GTD.		THIM Finish(blank)White (satin)XXX/BLKTBlack (satin)XXX/SLVTSilver (satin)XXX/CALTBDRAL paint finishesXXX-Ceilling Trin, Only trims are painted (TG/BLKT).RALTBD is for pricing only. Replace with applicable RAL number & finish when placing order.			E35IN E50II WEC _EC MVOL Use E1 requir	(blank)         No Emergency Option           E3SINV         35W Micro Inverter           E5OINV         50W Micro Inverter (Not California Title 20 (T20) Compliant.)           WEC         Emergency circuit for entirer run								
	Control Input				Primary					lary Zone				ertiary 7				Option
ECOI is not a E50INV. 'With ZT, he	0-10V control nLight enabled nLight AIR (wirele: DALI compatible Lutron EcoSystem railable with 2 zones available with E35IN read unit intended for on an unswitched ci	n Interfa 5. IV or r	Ned Ice *	olank) S_ VPIR15 ADC ot available wit Dnly available w RPO5, DRP1, D eccondary or Tei ecction. Not avai	no sensors feet. Zones Vertex Pass sensor with h NLTAIR2 ith NLIGHT. RP15 or EGLI tiary zones.	, call out len , call out len cannot end sive Infrared nauto-dimn Not availab D. Not availab	able with or per fixture	<b>(blank)</b> SNS_ Not availa	(with no sense	ndary zone is re ors), call out ler cannot end m	ngth of zone	<b>(blani</b> TNS_ Not av	Selecti	iors), call ines canr	zone is requ out length not end mic	ofzonein	<b>CP</b> CP is not	No Option Chicago plenum available with Ceiling Trim of
Fixture sect	ions will turn on at v d unit is powered up	ariable	50															

# Slot 1

Recessed Powered by Modulus™

# **PHOTOMETRICS**



# Test Report: ISF 201609P73

 IES LM79-08

 S1LD 4FT 90CRI 35K 1000LMF

 Lumens:
 3732.4

 Wattage:
 37.82

 Efficacy:
 98.69



# Test Report: ISF 201590P73 IES LM79-08 S1LD 4FT 90CRI 35K 1000LMF DBW Lumens: 2992 Wattage: 37.82

79.11

Efficacy:



 Test Report:
 13706636.01P93

 IES LM79-08
 S1LD 4FT 90CRI 35K 1000LMF DAS

 Lumens:
 3038.5

Wattage: 37.82 Efficacy: 80.34



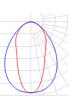
# Test Report: ISF 201614P73 IES LM79-08

 S1LD 4FT 90CRI 35K 1000LMF WW

 Lumens:
 3362.3

 Wattage:
 37.82

 Efficacy:
 88.90



# Test Report: ISF 201613P73 IES LM79-08 S1LD 4FT 90CRI 35K 1000LMF WG Lumens: 3403.9 Wattage: 37.82 Efficacy: 90.0026441

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

# **CCT SCALING CHART**

ССТ	CRI	MULTIPLIER
27К	90CRI	1
ЗОК	90CRI	1.02
35K	90CRI	1.04
40K	90CRI	1.05
50K	90CRI	1.02

OPTICAL	CCALIN		ъ
UPTICAL	JUALIN	и спакі	9

1
0.8
0.81

SHEILDING	MULTIPLIER				
QCBFW	0.81				
QCBFB	0.52				
QCBFS	0.67				
DRP05	1.11				
DRP1	1.13				
DRP15	1.17				
EGLD	1.08				

\*Base fixture with lambertian distribution and flush lens

# **UGR CHART**

				U	GR (70% 50% 2	0% REFLECTAN	ICE USING A 4H	X 8H ROOM SIZ	E)			
Lumen						Cros	swise					
Package	Lambertian	ww	WG	DBW	DAS	RL	QCBFW	QCBFB	DRP05	DRP1	DRP15	EGLD
200LMF	21.9	19.3	18.9	18.4	19.3	21.2	16.2	3.7	18.8	17	16.1	21.7
400LMF	23.4	20.8	20.4	19.9	20.8	22.7	17.6	5.2	20.3	18.5	17.6	23.2
600LMF	24.8	22.2	21.8	21.3	22.1	24.1	19	6.6	21.7	18.9	19.9	24.6
800LMF	25.9	23.3	22.9	22.3	23.2	25.2	20.1	7.7	22.8	21	20	25.6
1000LMF	26.6	24	23.6	23.1	24	25.9	20.9	8.4	23.5	21.7	20.8	26.4
						End	wise					
	Lambertian	ww	WG	DBW	DAS	RL	QCBFW	QCBFB	DRP05	DRP1	DRP15	EGLD
200LMF	22.1	19.9	18.7	20.1	21.2	17.6	14.4	0	23.1	23.4	23.5	22.7
400LMF	23.6	21.4	20.2	21.6	22.7	19.1	15.9	1.2	24.5	24.9	25	24.1
600LMF	25	22.7	21.6	23	24.1	20.4	17.2	2.6	25.9	26.4	26.3	25.5
800LMF	26	23.8	22.7	24	25.2	21.5	18.3	3.6	27	27.3	27.5	26.6
1000LMF	26.8	24.6	23.4	24.8	25.9	22.3	19.1	4.4	27.8	28.1	28.2	27.4

\*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.

# Slot 1

Recessed Powered by Modulus™

# **REMOTE MODULUS POWER AND CONTROL UNIT**

# **TYPES OF LAYOUT RUN**

I IGHTING<sup>™</sup>

ARCHITECTURAL

MARK



\*Number of fixtures that can be powered by a single head unit is a function of lumen package and desired control zones. See spec sheet for table of feet/head unit. \*\* Fixture zoning is done by digitally addressing drivers in the fixture - for example, "GA1" in the nomenclature means the drivers are factory-programmed to the first zone. Care should be taken when installing to place fixtures in the correct zone according to job drawings. Zone #s restart at each new head unit. \*\*\* Fixtures on separate head units should not be connected together - this is prevented by an FK/L or FK/R fixture having a harness connector that's incompatible with the right (or left) end harness on a standard fixture.

Note: For additional information on Modulus head unit and emergency options, reference Modulus spec sheet.

# ELEVATION VIEW TYPICAL LUMINAIRE LAYOUT (\*HANGING POINTS CAN VARY BASED ON CONFIGURATIONS)

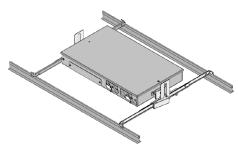
		Control Typ	es and Available Zone	s per Head Unit	
Control type	Max addressable zones	nLight devices	Max sensors	nLight devices consumed with max sensors	Fixture zoning method
nLight	16	17	5	22	Field programmed - Sensorview
Dali <sup>1</sup>	16	-	0	-	Field programmed - 3rd party DALI commissioning to
ZT (0-10)	2	-	0	-	Factory programmed - use NS, SNS fields in order
ECOI <sup>3</sup>	1	-	0	-	N/A (only one zone available)
NLTAIR2 <sup>2</sup>	1	-	0	-	N/A (only one zone available)
TUWH NLT	8	17	5	22	Field programmed - Sensorview
TUWH ZT	1	-	0	-	N/A (only one zone available)
NLTAIR2 with ZT <sup>4</sup>	2	-	0	-	Factory programmed - Use NS, SNS fields in order
NLTAIR2 with TUWH ZT <sup>4</sup>	1	-	0	-	N/A (only one zone available)

1. Class 1 DALI with no internal isolation from fixture run. Requires user-supplied DALI master controller and power supply

2. Uses factory-installed internal single-channel rIO with external antenna.

3. Internal EcoSystem to 0-10 Interface

4. Requires 2x user-installed external rPP20D with 0-10V wiring into a standard ZT-type head unit. Order ZT or TUWH ZT fixtures and rPP separately







FL/GB Ceiling Mount (F2) (Painted to match fixture housing)



FL/GB Wall Mount (F2) (Painted to match fixture housing)

# **REMOTE MODULUS POWER AND CONTROL UNIT**

Each Modulus remote driver kit can power up to 32 linear feet of luminaires. Use tables to calculate the number of remote driver units needed in a run or pattern by finding the intersection between your direct and indirect lumen outputs (If Indirect or Direct only, use the zero to represent the direction not applicable.) Modulus units can be a maximum of 50 feet from the mounting junction box. Mounting junction box must be within 6 feet of fixture feed end.

These tables indicate 1 Head Unit required for the identified run length in feet.

	SLO	T 1 DK320	M Head Ur	nit Maximu	ım Run Leı	ngth	
				Indirect			
	LMF	0	400	600	800	1000	1200
	0	N/A	32	32	32	32	32
	200	32	32	32	32	32	28
Direct	400	32	32	32	32	28	24
	600	32	32	32	28	24	24
	800	32	32	28	24	24	20
	1000	32	28	24	24	20	18

SLOT 1 DK75M Head Unit Maximum Run Length (also with E35INV or E50INV)

				Indirect	Indirect										
	LMF	0	400	600	800	1000	1200								
	0	N/A	25	15	11	8	7								
	200	32	14	10	8	6	5								
Direct	400	20	11	8	7	6	5								
	600	12	8	7	6	5	4								
	800	9	6	5	5	4	3								
	1000	6	5	4	4	3	3								

	SLOT 1 DK	320M with	<b>E35INV</b> H	lead Unit N	laximum I	Run Lengtl	1					
		Indirect										
	LMF	0	400	600	800	1000	1200					
	0	N/A	23	21	18	16	14					
	200	31	21	18	16	15	13					
Direct	400	21	17	16	14	13	12					
	600	18	15	14	13	12	11					
	800	16	13	12	11	11	10					
	1000	13	12	11	10	10	9					

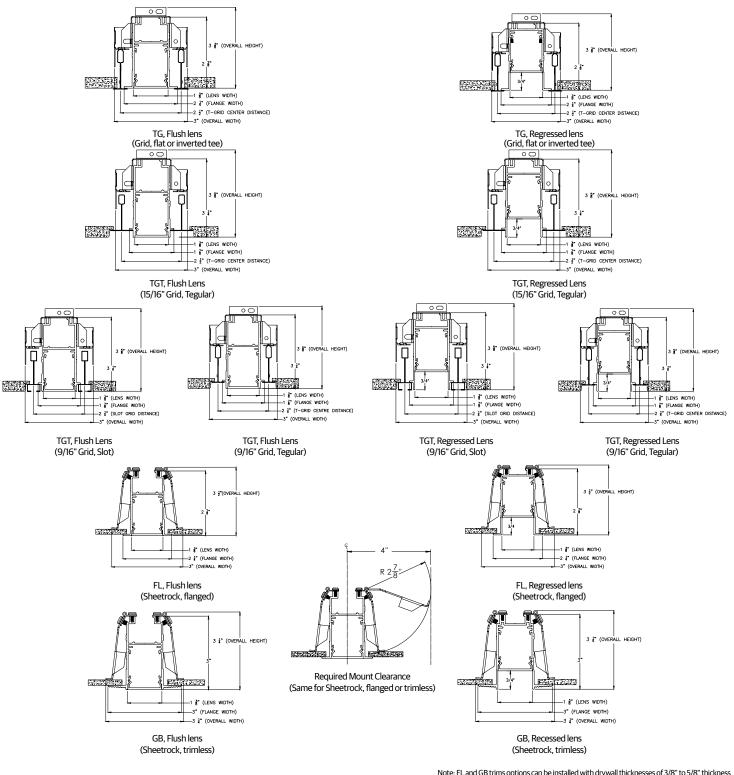
9	SLOT 1 DK3	B2OM with	E50INV H	lead Unit N	/laximum l	Run Lengtl	h					
		Indirect										
	LMF	0	400	600	800	1000	1200					
	0	N/A	32	32	29	26	23					
	200	32	32	30	27	24	21					
Direct	400	32	28	25	23	21	19					
	600	30	24	22	21	19	18					
	800	25	21	20	19	17	16					
	1000	22	19	18	17	16	15					

# Slot 1 MARK ARCHITECTURAL LIGHTING

Recessed Powered by Modulus™

# **MOST COMMON MOUNTING TYPES AND OPTIONS**

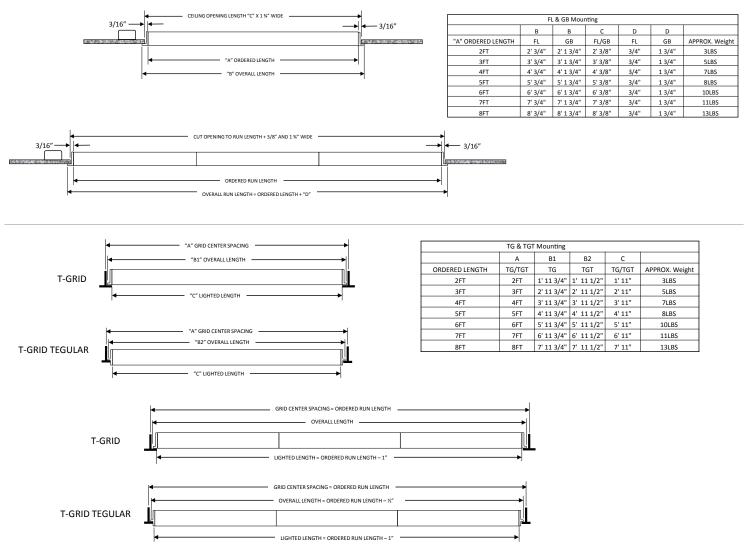
\*For other ceiling types like wood slate, metal or large form factor tiles, consult factory. \* Junction box (by others) and conduit (by others) must be within 6-feet of fixture feed end and within 50-feet of Modulus head unit.



Note: FL and GB trims options can be installed with drywall thicknesses of 3/8" to 5/8" thickness and wood ceiling thicknesses of 3/8" to 1/2".

# 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.



### **Total Run Length**

Page 7

This system is not modular. Runs longer that 8FT will be automatically configured with left, intermediate and right sections, based on the TOTAL RUN LENGTH. Always order the total run length, not the individual sections.



Example: This run must be ordered as 1pc "SL1L LOP 32FT..."

			•
D D	0	α	

Example: If you order as 4pcs "SL1L LOP 8FT... you will receive these INDIVIDUAL sections that cannot be joined together

# Patterns

Slot 1 LED patterns can be configured in 1' increments with illuminated 90° standard 2' corners, Xs & Ts. For custom angles, corner or junction lengths, consult factory. See pattern spec sheet for more details.

# Slot 1 Recessed Powered by Modulus™

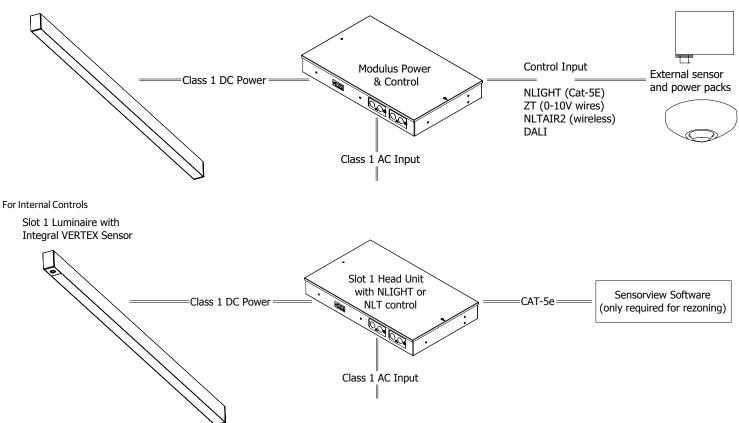
# **INTELLIGENT LUMINAIRE CHARTS**

	Choose nomenclature from these columns					
Configurations	Minimum Dimming Level	Control Input	Driver	Dimming Range	Notes	
	MIN1	DALI	eldoLED DCDC DUALdrive	100 to 1%	Logarithmic Dimming, DALI controls and power supply supplied by others	
	MIN1	ZT	eldoLED DCDC DUALdrive	100 to 1%	Linear Dimming, supplied with leads for two independent zones of 0-10V	
	MIN1	NLIGHT	eldoLED DCDC DUALdrive	100 to 1%	Logarithmic Dimming, nIO EZDCA 16Z in head unit	
onfi	MIN1	NLTAIR2	eldoLED DCDC DUALdrive	100 to 1%	Logarithmic Dimming, rIO EZDL in head unit with external antenna	
Driver C	DARK	DALI	eldoLED DCDC DUALdrive	100 to 0.1%	Logarithmic Dimming, DALI controls and power supply supplied by others	
	DARK	ZT	eldoLED DCDC DUALdrive	100 to 0.1%	Linear Dimming, supplied with leads for two independent zones of 0-10V	
	DARK	NLIGHT	eldoLED DCDC DUALdrive	100 to 0.1%	Logarithmic Dimming, nIO EZDCA 16Z in head unit	
	DARK	NLTAIR2	eldoLED DCDC DUALdrive	100 to 0.1%	Logarithmic Dimming, rIO EZDL in head unit with external antenna	
δυ	Control	Sensor	Sensor		Notes	
Control + Sensor Configurations	NLIGHT	VPIR15 ADC	VERTEX 15F EZ ADC VLP	Only 5 sensors per Modulus driver unit. Zoning reconfigurable via Sensorview software.		

# CONTROLS

Remote sensors can be paired with NLIGHT options to control your runs.

# SLOT1 Luminaire



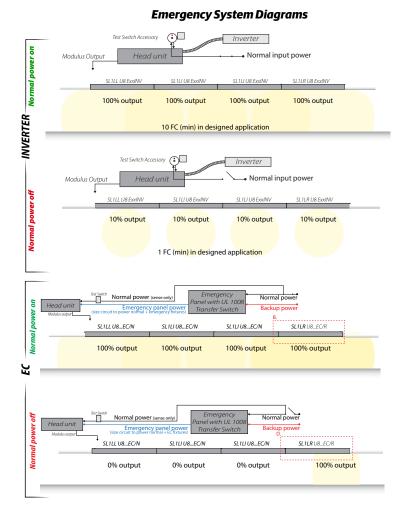
# **EMERGENCY OPTIONS**

# SL1L

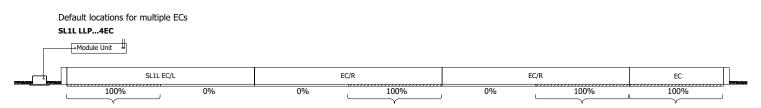
EC circuits default to the right side 4' section, of an 8' fixture (EC/R) and the complete section of a 4' fixture (EC/L). Single EC circuit defaults to the last 4' of the run. Additional circuits will be added from the end of the run using the last 4' of an 8' fixture or complete 4' fixtures. Inverter = E35INV (IIS-35-HE) or E50INV (IIS-50-I) Caution: Inverters cannot be ordered separately.

# EXAMPLES

For additional information on Modulus head unit and emergency options, reference Modulus spec sheet.



\*Since there's only one power supply in the head unit to power both EC and non-EC sections in the same run, ALL fixtures will draw power from the emergency circuit during normal power operation. Consult the Modulus Emergency Guide on Modulus fixture webpages to calculate the normal power and emergency power consumption for your fixture run length, lumen package, and emergency type.



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# **INTERGRATED SENSOR LAYOUT**

# CORRECT:

8FT MSL8 run with one sensor on the left VPIR15 ADC 0

8FT MSL8 run with one sensor on the right VPIR15 ADC 0

32FT MSL8 run with two sensors - 2VPIR15 ADC 0

32FT MSL8 run with four sensors - 4VPIR15 ADC • 0

# **INCORRECT:**

8FT MSL8 run with two sensor - 2VPIR15 ADC ٥ ×

Doesn't work because each luminaire supports only one sensor

8FT MSL8 run with one sensor - VPIR15 ADC

Doesn't work because sensor cannot be anywhere besides the ends of the luminaire

### NOTES:

- 5 sensors max per Modulus driver unit

- Only 1 sensor per fixture - Sensors appear as nLight devices and can be re-zoned in the field using Sensorview software

- Factory zoning isn't available with sensors since they can be re-zoned in the field using Sensorview

- Internal sensors are only available with NLIGHT and NLT control types

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# SPECIFICATIONS

## Housing

Nominal 2" x 2', 3', 4', 5', 6', 7', 8' and continuous rows in 1" increments as standard, upper housing fabricated from cold-rolled steel with extruded aluminum ceiling trim.

### Finish

Painted high reflectance matte white powder coat.

# Reflector

Precision-formed steel; high reflectance matte white powder coat; 93% reflectivity.

### **Distribution/Shielding**

Wall Wash (WW), Wall Graze (WG) and Direct Batwing (DBW), and Direct Asymmetric (DAS) are available to provide precise distribution for specific applications. Shielding is available by using a Quiet Ceiling Baffle (not available with specific optics) that aids in hiding the light source from normal view.

### **LED Components**

Linear: Nichia®- 757 series LED chips (>80 CRI)

### Electrical

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).

### Modulus™ Remote Power and Control System

Remote power source provides "natural dimming" with smooth, continuous, and flicker-free dimming to dark (0.1%). Syncing for controls: 2mA max.

THD: <10%. Insignificant inrush current at 120 and 277VAC. FCC Class A and B tested for EMI and RFI. When NLIGHT or DALI is specified, driver will be set for logarithmic dimming curve. If control Input of O-10V is specified driver will be set for linear dimming curve.

Integrated digital nLight<sup>®</sup> module enables 16-channel wired networking via Cat-5e and daylighting and occupancy detection via internal sensors located in luminaires. The Modulus<sup>™</sup> head unit outputs a maximum of 10mA into the nLight<sup>®</sup> bus. See controls page for internal sensor options.

Each integral nLight<sup>®</sup> modulus head unit utilizes a maximum of 22 device addresses. nLight<sup>®</sup> Tunable White head unit utilizes a maximum of 22 device addresses.

### **Color Consistency**

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 (2.5SDCM) along the black body locus from board to board.

# Driver

eldoLED® driver provides natural dimming with smooth, continuous and flickerfree deep dimming. Supports operation between 120 VAC and 277 VAC, with low inrush current (NEMA 410) and THD < 20%. Meets FCC Title 47 C.F.R. 15 Class A or Class B requirements. Lutron interface module is also available.

Acuity luminaires incorporating eldoLED LED drivers perform within the recommended operating areas for flicker as a function of frequency and modulation (%) outlined in 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.

### Certification

UL certified to meet US and Canadian standards for UL 2108. This product is IC rated.

Modulus Head Unit is RoHS compliant, plenum rated per UL2O43, UL2108, UL924 for emergency applications, damp location, and IC rated with F1 mounting style.

### Environment

Suitable for damp location.

### 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.