SOLID STATE AREA LIGHTING

RAZAR SERIES-LED

S P E C I F I C A T I O N S

PROJECT NAME: FIXTURES 'SA', 'SB'

PROJECT TYPE:

OPTICAL HOUSING
Heavy cast low copper aluminum (A356 alloy; <0.2% copper) assembly with integral cooling fins. The Optical Panel mounting surface is milled flat (surface variance <± .002") to facilitate thermal transfer of heat to housing and cooling fins. Solid barrier wall separates optical and electrical compartments. The optical and electrical compartments are integrated to create one assembly. Minimum wall thickness is .188".

ELECTRICAL HOUSING w/ INTEGRATED ARM
Heavy cast low copper aluminum (A356 alloy; <0.2% copper) assembly with integral cooling ribs surrounding the electrical compartment and a flat surface on the top of the arm to accommodate a photocell receptacle. Solid barrier wall separates optical and electrical compartments. The optical compartment and electrical compartment with the integrated support arm combine to create one assembly. Minimum wall thickness is .188". Cast and hinged driver assembly cover is integrated with wiring compartment cover.

PLED™ OPTICS
Emitters (LED's) are arrayed on a metal core PCB panel with each emitter located on a copper thermal transfer pad and enclosed by an LED refractor. LED optics completely seal each individual emitter to meet an IP66 rating. In asymmetric distributions, a micro-reflector inside the refractor re-directs the house side emitter output towards the street side and functions as a house side shielding element. Refractors are injection molded H12 acrylic. Each LED refractor is sealed to the PCB over an emitter and all refractors are retained by an aluminum frame. Any one Panel, or group of Panels in a luminaire, have the same optical pattern. LED refractors produce standard site/area distributions. Panels are field replaceable and field rotatable in 90° increments.

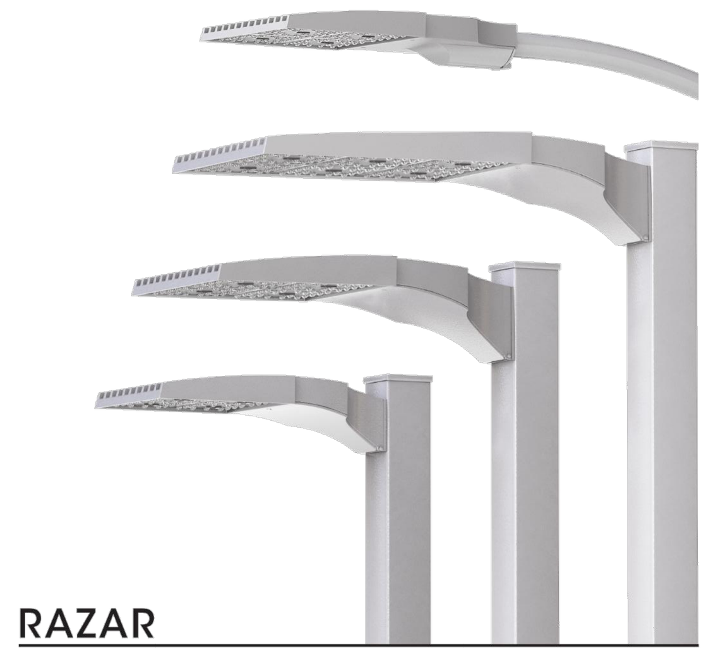
LED DRIVER(S)
Constant current electronic with a power factor of >.90 and a minimum operating temperature of -40°F/-40°C. Driver(s) is/are UL and cUL recognized and mounted directly against the Electrical Housing to facilitate thermal transfer, held down by universal clamps to facilitate easy removal. In-line terminal blocks facilitate wiring between the driver and optical arrays. Drivers accept an input of 120-277V, 50/60Hz or 347V-480V, 50,60Hz. (0 - 10V dimmable driver is standard. Driver has a minimum of 3KV internal surge protection. Luminaire supplied with 20KV surge protector for field accessible installation.)

LED EMITTERS
High output LED's are utilized with drive currents ranging from 350mA to 1050mA. 70CRI Minimum. LED's are available in standard Neutral White (4000K), or optional Cool White (5000K) or Warm White (3000K). Consult Factory for other LED options.

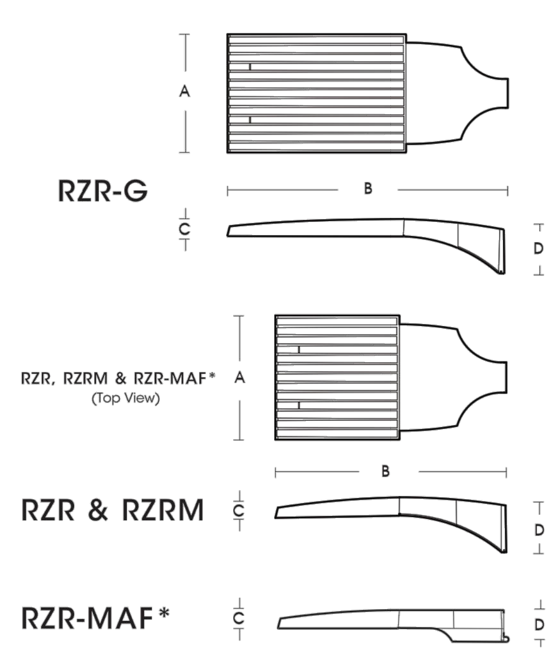
AMBER LED's
PCA (Phosphor Converted Amber) LED's utilize phosphors to create color output similar to LPS lamps and have a slight output in the blue spectral bandwidth. **TRA** (True Amber) LED's utilize material that emits light in the amber spectral bandwidth only without the use of phosphors.

FINISH
Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140°F. Four step media blast and iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability.

MAST ARM FITTER/ELECTRICAL HOUSING
Replaces standard Electrical Housing. Fits standard 2 3/8" O.D. horizontal tenon. Two (2) straps with two (2) bolts each encircle the lower half of the tenon. Upper half of the tenon rests on self-centering steps that position the angle of the luminaire at 0°, +1.5°, +1.5 or +3° up from the horizontal. All hardware is stainless steel.



RAZAR
(MODELS: RZRM, RZR, RZR-G & RZR-MAF*) PATENT PENDING



FIXTURE	A	B	C	D
RZR-G	15" 381mm	36.5" 927mm	3" 76mm	7" 187mm
RZR	14.75" 375mm	28.25" 718mm	2.75" 70mm	6.5" 165mm
RZRM	11.5" 292mm	22" 559mm	2.5" 64mm	5.25" 133mm
RZR-MAF	15" 381mm	28.25" 724mm	2.5" 64mm	4" 102mm

*DLC PENDING AS OF 7/19

2019253

U.S. Architectural Lighting — 660 West Avenue O, Palmdale, CA 93551 Phone (661) 233-2000 Fax (661) 233-2001 www.usaltg.com

U.S. ARCHITECTURAL LIGHTING

SOLID STATE AREA LIGHTING

RAZAR WALLMOUNT-LED

S P E C I F I C A T I O N S

PROJECT NAME: FIXTURE 'W'

PROJECT TYPE:

OPTICAL HOUSING
Heavy cast low copper aluminum (A356 alloy; <0.2% copper) assembly with integral cooling fins. The Optical Panel mounting surface is milled flat (surface variance <± .003") to facilitate thermal transfer of heat to housing and cooling fins. The Optical Housing bolts to the Electrical Housing forming a unified assembly. The minimum wall thickness is .188".

ELECTRICAL HOUSING
Heavy cast low copper aluminum (A356 alloy; <0.2% copper) assembly. Minimum wall thickness is .188". Fixture Mounting Plate affixes to mounting surface over a recessed j-box. Electrical Housing anchors on the top edge of the Mounting Plate and stainless steel recessed socket head screws tighten the Electrical Housing to the Mounting Plate from the bottom.

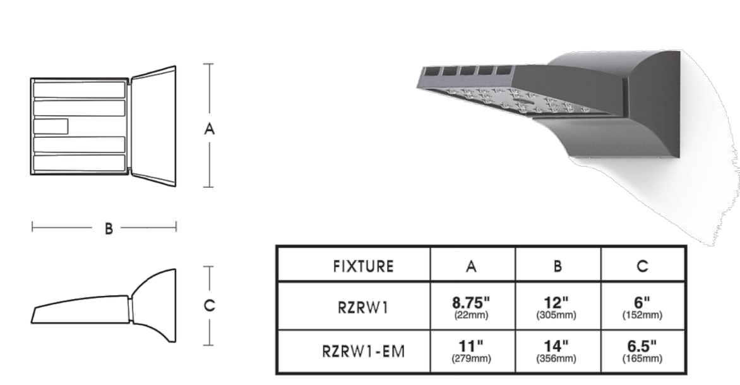
PLED™ OPTICAL MODULES
Emitters (LED's) are arrayed on a metal core PCB panel with each emitter located on a copper thermal transfer pad and enclosed by an LED refractor. LED optics completely seal each individual emitter to meet an IP66 rating. The asymmetric distributions, have a micro-reflector inside the refractor which re-directs the house side emitter output towards the street side and functions as a house side shielding element. Refractors are injection molded H12 acrylic. Each LED refractor is sealed to the PCB over an emitter and all refractors are retained by an aluminum frame. Any one Panel, or group of Panels in a luminaire, have the same optical pattern. LED refractors produce Type II, III, and Type IV site/area distributions as well as other specialty asymmetric distributions. Panels are field replaceable and field rotatable in 90° increments.

LED DRIVER(S)
Constant current electronic with a power factor of >.90 and a minimum operating temperature of -40°F/-40°C. Driver(s) is/are UL and cUL recognized and mounted directly against the Electrical Housing to facilitate thermal transfer, held down by universal clamps to facilitate easy removal. In-line terminal blocks facilitate wiring between the driver and optical arrays. Drivers accept an input of 120-277V, 50/60Hz or 347V-480V, 50,60Hz. (0 - 10V dimmable driver is standard. Driver has a minimum of 3KV internal surge protection. Luminaire supplied with 20KV surge protector for field accessible installation.)

LED EMITTERS
High output LED's are utilized with drive currents ranging from 350mA to 1050mA. 70CRI Minimum. LED's are available in standard Neutral White (4000K), or optional Cool White (5000K) or Warm White (3000K). Consult Factory for other LED options.

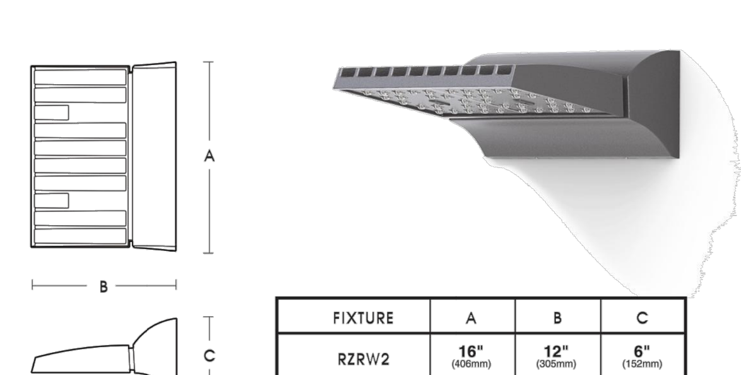
AMBER LED's
PCA (Phosphor Converted Amber) LED's utilize phosphors to create color output similar to LPS lamps and have a slight output in the blue spectral bandwidth. **TRA** (True Amber) LED's utilize material that emits light in the amber spectral bandwidth only without the use of phosphors.

FINISH
Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140°F. Four step media blast and iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability.



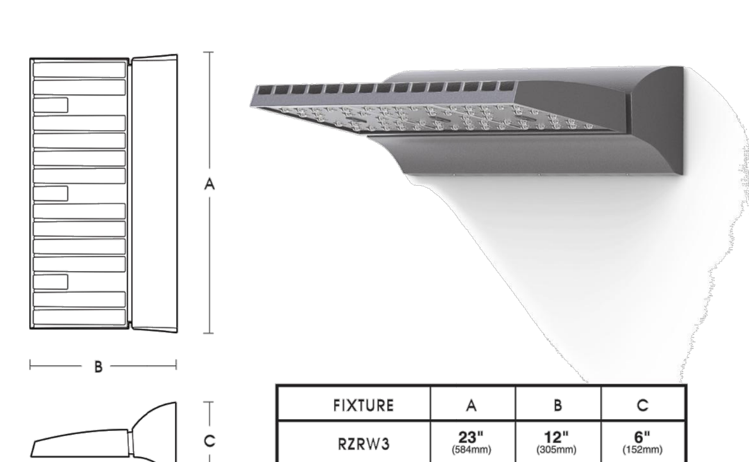
FIXTURE	A	B	C
RZRW1	8.75" (22mm)	12" (305mm)	6" (152mm)
RZRW1-EM	11" (279mm)	14" (356mm)	6.5" (165mm)

RZR-WM1
PATENT PENDING



FIXTURE	A	B	C
RZRW2	16" (406mm)	12" (305mm)	6" (152mm)
RZRW2-EM	16" (406mm)	14" (356mm)	6.5" (165mm)

RZR-WM2
PATENT PENDING



FIXTURE	A	B	C
RZRW3	23" (584mm)	12" (305mm)	6" (152mm)
RZRW3-EM	23" (584mm)	14" (356mm)	6.5" (165mm)

RZR-WM3
PATENT PENDING

2019093

U.S. Architectural Lighting — 660 West Avenue O, Palmdale, CA 93551 Phone (661) 233-2000 Fax (661) 233-2001 www.usaltg.com

U.S. ARCHITECTURAL LIGHTING

SPECIFICATIONS

NO.	DESCRIPTION
1.	DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED FOR THE EXACT LOCATION OF EQUIPMENT, CABLEWAYS OR OTHER ITEMS. REFER TO THE ARCHITECTURAL PLAN AND ELEVATIONS FOR EXACT LOCATION OF ALL EQUIPMENT AND CONFIRM WITH OWNERS' REPRESENTATIVES.
2.	THESE PLANS DO NOT SHOW EVERY MINOR DETAIL OF CONSTRUCTION. THE CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM AND MEET ALL REQUIREMENTS NECESSARY FOR EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER.
3.	ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL ELEMENTS OF THE FLORIDA BUILDING CODE (2017, 6TH EDITION) INCLUDING, BUT NOT LIMITED TO, THE BELOW SECTIONS OF THE NFPA. IN ADDITION, ALL WORKMANSHIP AND MATERIALS SHALL COMPLY WITH APPLICABLE NATIONAL, STATE AND LOCAL CODES, RULES, AND ORDINANCES. 70-14 (NATIONAL ELECTRIC CODE, 2014 EDITION) 72-13 (NATIONAL FIRE ALARM AND SIGNALING CODE, 2013 EDITION) 101-15 (LIFE SAFETY CODE, 2015 EDITION)
4.	THE ELECTRICAL SYSTEM SHALL BE COMPLETELY AND EFFECTIVELY GROUNDED AS REQUIRED IN ARTICLE 250, NATIONAL ELECTRICAL CODE.
5.	THE ELECTRICAL INSTALLATION SHALL MEET ALL STANDARD REQUIREMENTS OF POWER, LIGHT COMPANY.
6.	ALL WORK SHALL BE PERFORMED BY A LICENSED CONTRACTOR IN A FIRST CLASS, WORKMAN-LIKE MANNER. THE COMPLETED SYSTEM SHALL BE OPERATIVE AND ACCEPTANCE BY ENGINEER/ARCHITECT SHALL BE A CONDITION OF ANY SUB-CONTRACT.
7.	THE ELECTRICAL CONTRACTOR SHALL PROVIDE A WRITTEN WARRANTY THAT SHALL GUARANTEE ALL WORKMANSHIP AND MATERIALS FOR ONE YEAR FROM THE DATE OF FINAL WORK ACCEPTANCE BY THE OWNER OR OWNERS REPRESENTATIVE
8.	ARCHITECTURAL AND/OR ENGINEERING EXPENSES THAT ARE INCURRED DUE TO REVISIONS OR SUBSTITUTIONS REQUESTED FOLLOWING THE ISSUE OF APPROVED DRAWINGS SHALL BE PAID FOR BY THE CONTRACTOR.
9.	THE CONTRACTOR SHALL PAY FOR ALL PERMITS, FEES, INSPECTIONS, AND TESTS.
10.	THE CONTRACTOR SHALL BE THOROUGHLY FAMILIARIZED WITH ALL ASPECTS OF THE PROJECT AND SHALL VERIFY ALL CONDITIONS PRIOR TO CONSTRUCTION.
11.	ALL INSTALLATIONS SHALL BE COORDINATED BY THE CONTRACTOR WITH OTHER TRADES TO AVOID IMPACTS.
12.	ALL REQUIRED CONSTRUCTION INSURANCE FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK SHALL BE PROVIDED BY THE CONTRACTOR.
13.	CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY PHASE OF THE INSTALLATION WHICH MAY BE DAMAGED.
14.	ELECTRICAL CONTRACTOR SHALL CHECK AND VERIFY EQUIPMENT FURNISHED AGAINST THOSE SPECIFIED OR INTENDED AND REVISE BRANCH CIRCUITS AS MAY BE REQUIRED WITH PRIOR APPROVAL OF ENGINEER/ARCHITECT.
15.	ANY AND ALL QUESTIONS AS TO THE INTENT OF, OR PROCEDURES SET FORTH IN THESE DRAWINGS MUST BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE SUBMISSION OF A BID. LACK OF KNOWLEDGE OR UNDERSTANDING OF PLANS SHALL NOT JUSTIFY ANY CLAIMS OR EXTRA COMPENSATION.
16.	ALL LIGHTING FIXTURES TO BE SELECTED BY OWNER/ARCHITECT, UNLESS OTHERWISE NOTED.
17.	ARCHITECT TO SET MOUNTING HEIGHT FOR ALL FIXTURES WHERE APPLICABLE, UNLESS OTHERWISE NOTED.

26 NW 6TH AVE - Lighting Schedule

TYPE/DESCRIPTION		Manufacturer	Model#	Lamp	Volts	Watts	Notes
SA	POLE MOUNTED FIXTURE	US ARCHITECTURAL	RZR/PLED-III-M/40LED-350MA-NW/HS-PLED-XXX-XXX	INTEGRAL LED	TBD	45	5997 Lumens - 40K LED Color - 80 CRI - 0-10v Dimmable to 10% SPECIFY FINISH, SPECIFY VOLTAGE
SB	POLE MOUNTED FIXTURE	US ARCHITECTURAL	RZR/PLED-VI-FT/40LED-700mA-NW/HS-PLED-XXX-XXX	INTEGRAL LED	TBD	66	8653 Lumens - 40K LED Color - 80 CRI - 0-10v Dimmable to 10% SPECIFY FINISH, SPECIFY VOLTAGE
W	WALL MOUNTED FIXTURE	US ARCHITECTURAL	RZR-WM1/PLED-III-M/20LED-350mA/NW-XXX-XXX	INTEGRAL LED	TBD	22	2,706 Lumens - 40K LED Color - 80 CRI - 0-10v Dimmable to 10% SPECIFY FINISH, SPECIFY VOLTAGE

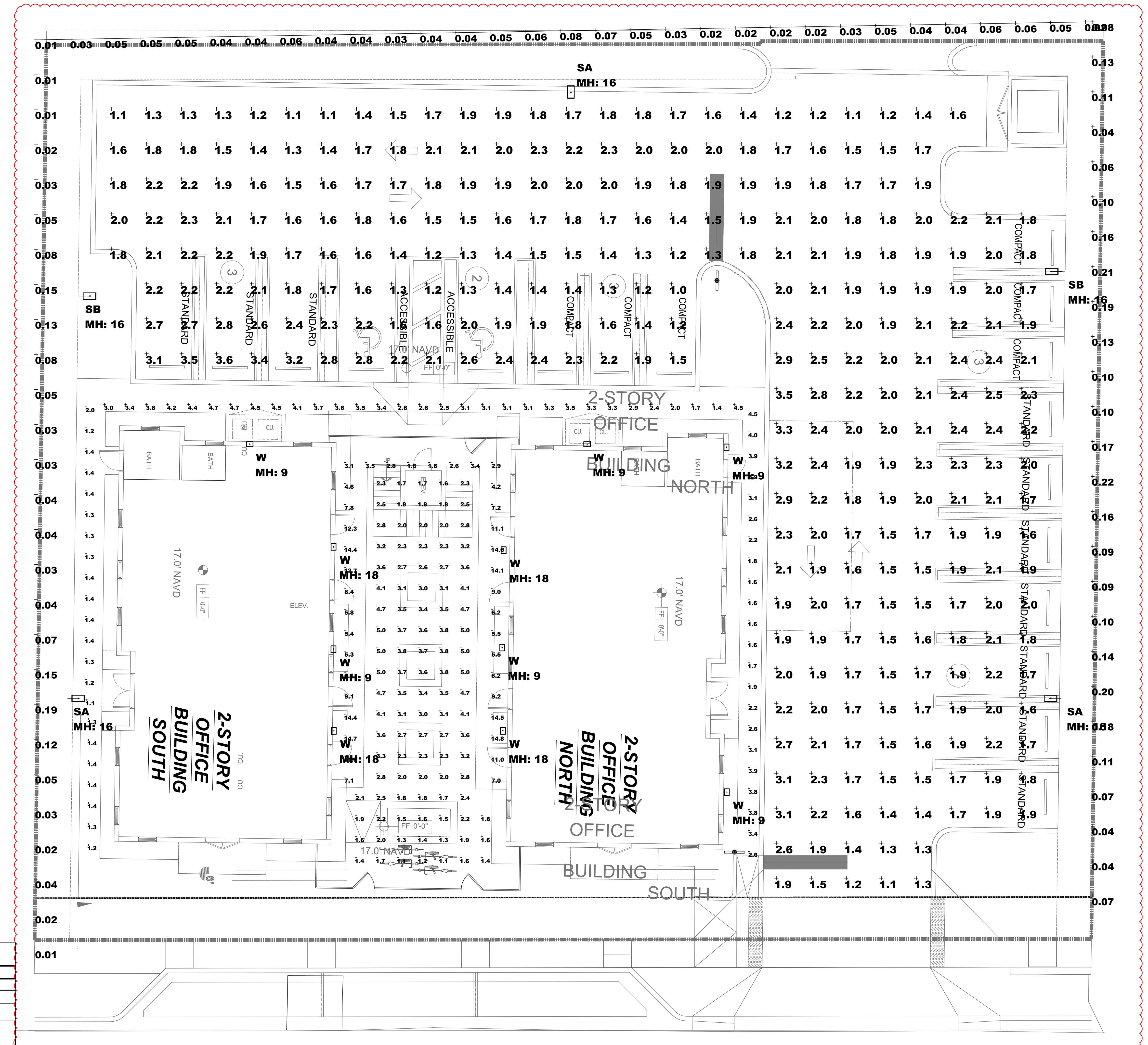
NOTES:
1) CONTACT ANGELA TODD AT 917-903-1177 OR ATODD@P-LS.COM FOR MORE INFO
2) integral low-voltage transformer / ballast / power supply - contractor to verify compatibility with dimming system
3) owner / architect to verify trim finish
4) include remote power supply - contractor to verify compatibility with dimming system
5) include all electrical and mounting accessories, connectors, etc.
6) length in inches per plan
7) dimensions are nominal: contractor to verify exact size prior to fabrication
10) PROVIDE ALL LIGHTING FIXTURES AS SPECIFIED. SUBSTITUTIONS WILL NOT BE ACCEPTED WITHOUT PRIOR APPROVAL FROM THE OWNER AND ARCHITECT.
9) COORDINATE ALL LIGHTING WITH POWER & LIGHTING SYSTEMS, INC.

Power & Lighting Systems, Inc.
Manufacturer's Representatives
Innovative Specification Systems
392 SW 12 Avenue
Deerfield Beach, FL 33442
phone: (954) 360-7608
fax: (954) 360-7633
website: http://p-ls.com/
ANGELA TODD, 917-903-1177

Calculation Summary

Project: 26 NW 6TH AVE - SITE_REV 5 DELRAY BEACH, FL 01/28/2021

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
ACCENT PATHWAY BETWEEN BUILDINGS	Illuminance	Fc	2.78	5.0	1.1	2.53	4.55
ACCENT PATHWAY PERIMETER BLDG	Illuminance	Fc	2.60	4.7	1.1	2.36	4.27
BALCONIES	Illuminance	Fc	7.91	14.8	3.0	4.94	9.25
PARKING LOT & DRIVE LANE	Illuminance	Fc	1.89	3.6	1.0	1.89	3.60
PROPERTY LINE NORTH (horizontal 6' above grade)	Illuminance	Fc	0.12	0.22	0.04	3.00	5.50
PROPERTY LINE NORTH (vertical 6'above grade)	Illuminance	Fc	0.06	0.18	0.02	3.00	9.00
PROPERTY LINE SOUTH (horizontal 6' above grade)	Illuminance	Fc	0.06	0.19	0.01	6.00	19.00
PROPERTY LINE SOUTH (vertical 6' above grade)	Illuminance	Fc	0.07	0.25	0.01	7.00	25.00
PROPERTY LINE WEST (horizontal 6' above grade)	Illuminance	Fc	0.04	0.08	0.01	4.00	8.00
PROPERTY LINE WEST (vertical 6' above grade)	Illuminance	Fc	0.15	0.23	0.07	2.14	3.29



PHOTOMETRIC SITE PLAN

SCALE: 3/32" = 1'-0"

Luminaire Schedule

Project: 26 NW 6TH AVE - SITE_REV 2 DELRAY BEACH, FL 08/17/2020

Symbol	Qty	Label	Arrangement	Manufacturer	Description	Luminaire Lumens	LLF	Luminaire Watts	Assembly Watts
	3	SA	SINGLE	U.S. ARCHITECTURAL LIGHTING	RZR/PLED-III-M/40LED-350mA/NW/HS-PLED MH: POLE MOUNT A.F.G.	4127	0.855	41.5	41.5
	2	SB	SINGLE	U.S. ARCHITECTURAL LIGHTING	RZR/PLED-VI-FT/40LED-700mA/NW/HS-PLED MH: POLE MOUNT A.F.G.	4263	0.855	41.5	41.5
	10	W	SINGLE	U.S. ARCHITECTURAL LIGHTING	RZR-WM1/PLED-III-M/20LED-350mA/NW MH: WALL MOUNT A.F.F. (bottom of fixture)	3027	0.855	21.4	21.4

REVISIONS	BY
INITIAL ISSUE	OL/JL 02.28.20
1 BDC REVS	BW/JL 08.31.20
2 BDC REVS	BW/JL 01.29.21

NEW BUILDING
LOT 20 & 26 NW 6TH AVE,
DELRAY BEACH, FLORIDA 33444

JWL ENGINEERING
JOHN W. LANGFORD ENGINEERING, LLC.
185 NW SPANISH RIVER BLVD. #250
BOCA RATON, FLORIDA 33431
Tel. (561) 237-5223
Fax. (561) 237-5680
www.JWLENGINEERING.com

ANY DESIGN CHANGES TO THE SYSTEM DESCRIBED IN THESE PLANS WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ENGINEER OF RECORD WILL VOID THESE PLANS. ALL EXPENSES INCURRED DUE TO THESE CHANGES WILL BE THE RESPONSIBILITY OF THE PARTY PERFORMING SUCH CHANGES.

JOHN LANGFORD, FL#69962
John W Langford
Digitally signed by John W Langford
Date: 2021.01.29 13:43:58 -05'00'

NORM PAUL, ARCHITECT
12119 SALINAS WAY
DELRAY BEACH FL, 33446
EMAIL: NORMPAUL@GMAIL.COM
AR92781

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CLAY CUBE INC.
751 PARK OF COMMERCE DRIVE
SUITE #128 BOCA RATON FL, 33487
Tel. (561) 271-5441
EMAIL: CLAYCUBE@LIVE.COM

DRAWN JL
DATE 07/03/19
SCALE AS SHOWN

SHEET
PHOTOMETRIC SITE PLAN
E101

19159-DRW-321-100-00_02

FILE NAME: G:\MY DRIVE\PROJECTS\2019\19159_26 NW 6TH AVE (HATCHER)\DEL\DRW\DRW-321-001-00 - PWR PLAN\R02 - OPEN\19159-DRW-321-100-00_02.DWG

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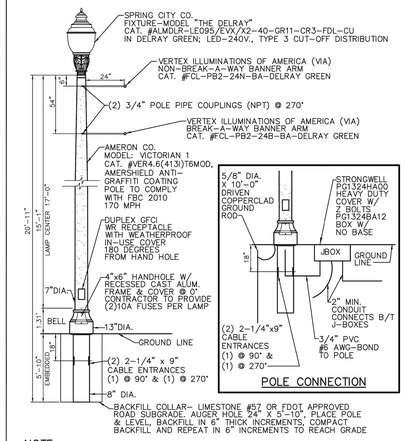
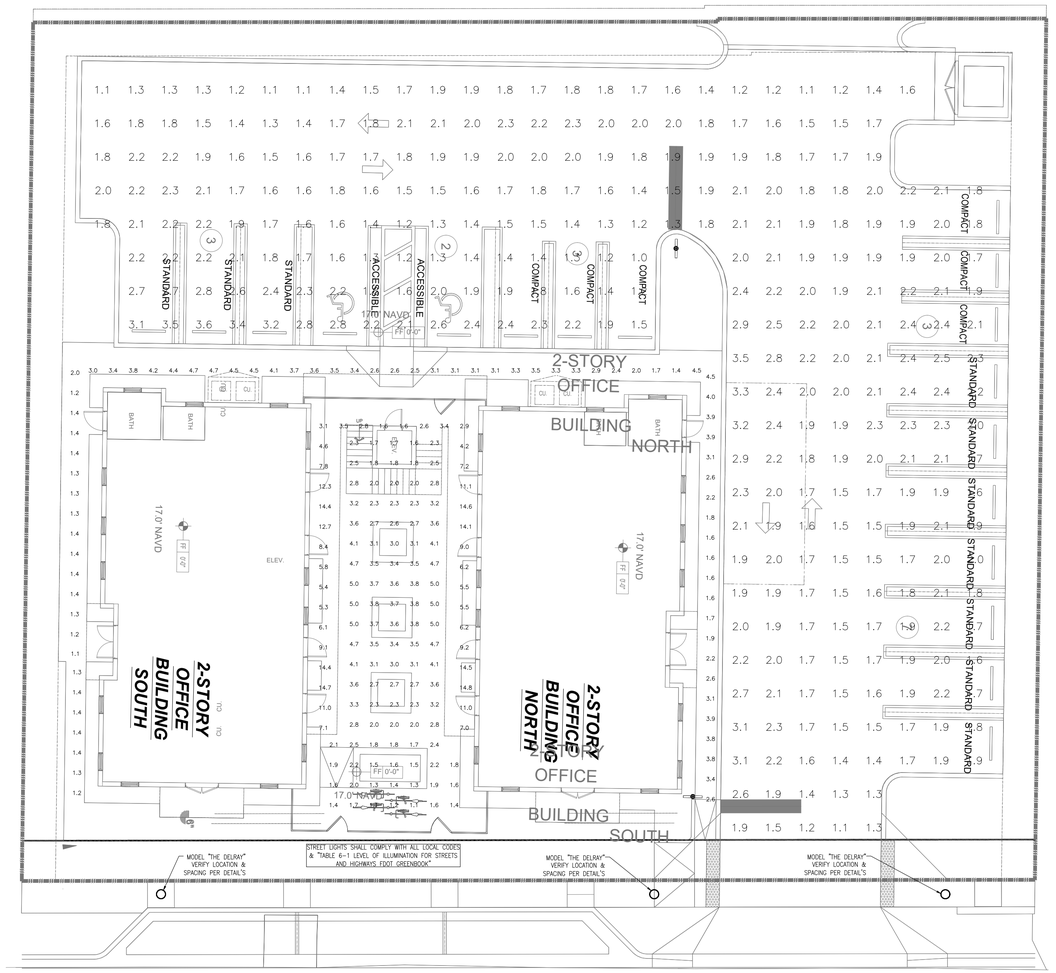


NOTE:

1. ALL MOUNTING HARDWARE SHALL BE STAINLESS STEEL.
2. STREET LIGHT CIRCUITS SHALL BE WIRED AND METERED SEPARATLY FROM BUILDINGS

CITY of DELRAY BEACH ENVIRONMENTAL SERVICES DEPARTMENT 434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444	SINGLE HEAD POLE ASSEMBLY	DATE 11-17-2004 RT 11.1



CITY OF DELRAY STREET LIGHTING PLAN

SCALE: 3/32" = 1'-0"

SHEET ADDITION 3

19159-DRW-321-100-00_02

REVISIONS	BY
INITIAL ISSUE	OL/JL 02.28.20
1 BDC REVS	BW/JL 08.31.20
2 BDC REVS	BW/JL 01.29.21

NEW BUILDING

LOT 20 & 26 NW 6TH AVE,
DELRAY BEACH, FLORIDA 33444

JWL ENGINEERING

JOHN W. LANGFORD ENGINEERING, LLC.
185 NW SPANISH RIVER BLVD. #250
BOCA RATON, FLORIDA 33431
Tel. (561) 237-5223
Fax. (561) 237-5680
www.JWLENGINEERING.com

JOHN LANGFORD, FL#69962

John W Langford
Digitally signed by John W Langford
Date: 2021.01.29 13:44:13 -05'00'

01.29.2021

NORM PAUL, ARCHITECT
12119 SALINAS WAY
DELRAY BEACH FL, 33446
EMAIL: NORMPAUL@GMAIL.COM
AR92781

CLAY CUBE INC.
751 PARK OF COMMERCE DRIVE
SUITE #128 BOCA RATON FL, 33487
Tel. (561) 271-5441
EMAIL: CLAYCUBE@LIVE.COM

DRAWN	JL
DATE	07/03/19
SCALE	AS SHOWN

SHEET

CITY OF DELRAY STREET LIGHTING PLAN

E102

02 OF 02

FILE NAME: G:\MY DRIVE\PROJECTS\2019\19159_26 NW 6TH AVE (HATCHER)\DEL\DRW\DRW-321-001-00 - PWR PLAN\R02 - OPEN\19159-DRW-321-100-00_02.DWG

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