

July 23, 2018

Leanna Libourel
Plus Development

Re: 1105 Long Beach Boulevard
StudioK1 Project No.: 2018-0274
Exterior Lighting Trespass

Dear Leanna:

Please find below responses for each mitigation measure:

Mitigation Measure AES-2(a) Lighting Plans and Specifications.

Prior to the issuance of building permits for new large development projects, the applicant shall submit lighting plans and specifications for all exterior lighting fixtures and light standards to the Development Services Department for review and approval. The plans shall include a photometric design study demonstrating that all outdoor light fixtures to be installed are designed or located in a manner as to contain the direct rays from the lights onsite and to minimize spillover of light onto surrounding properties or roadways. All parking structure lighting shall be shielded and directed away from residential uses. Rooftop decks and other similar amenities are encouraged in the Plan. Lighting for such features shall be designed so that light is directed so as to provide adequate security and minimal spill-over or nuisance lighting.

Included are the lighting plans and specifications for the exterior lighting for the new development as it relates to off-site lighting intrusion. All fixtures have been selected to mitigate high angle glare, backlight, and uplight and are focused in the downward direction as to only light the property of the new development.

Included are the poles suggested at the rooftop pool as well as the unit balcony lights which could be viewed off-site.

Also included are the lighting fixtures for the parking structure which have some, though minimal, visibility off-site. Parking garage openings are limited in size as to minimize the effects of any lighting spill.

The photometrics show that little or no lighting is leaving the project site and the immediate surrounding. The only areas affected are the city streets and the drive to the parking garage entry, both of which will already have street lighting in place and are public rights of way and not sensitive to lighting increases. Given the urban environment of Long Beach, any 0.1 or 0.2 footcandle difference will be unnoticeable because the average footcandle levels are already far above these values. The average ratio of visual detection is approximately 5:1 for lighting changes meaning these minimal values will be unnoticed from the existing conditions.

Mitigation Measure AES-2(c) Light Fixture Shielding.

Prior to the issuance of building permits for development projects within the Downtown Plan Project area, applicants shall demonstrate to the Development Services Department that all night lighting installed on private property within the project site shall be shielded, directed away from residential and other light-sensitive uses, and confined to the project site. Rooftop lighting, including rooftop decks, security lighting, or aviation warning lights, shall be in accordance with Airport/Federal

Aviation Administration (FAA) requirements. Additionally, all lighting shall comply with all applicable Airport Land Use Plan (ALUP) Safety Policies and FAA regulations.

All lighting on the building exterior has been selected and designed such that no lighting is unshielded or directed in a manner to spill lighting off-site. Light fixtures utilize only downward facing optics, all of which comply with the CALGreen BUG ratings for Backlight, Uplight, and Glare for the development site. None of the proposed lighting fixtures on the building exterior will interfere with FAA or ALUP policies and proper FAA identification lighting will be provided at the building's roof.

Mitigation Measure AES-3 Shadow Impacts. Prior to the issuance of building permits for any structure exceeding 75 feet in height or any structure that is adjacent to a light sensitive use and exceeds 45 feet in height, the applicant shall submit a shading study that includes calculations of the extent of shadowing arches for winter and equinox conditions. If feasible, projects shall be designed to avoid shading of light sensitive uses in excess of the significance thresholds outlined in this EIR. If avoidance of shadows exceeding significance thresholds is determined to be infeasible, the shadow impact will be disclosed as part of a project environmental impact report (EIR).

The site of the proposed 1105 Long Beach Boulevard project has a few sensitive receptors within its immediate vicinity. On the East side of Long Beach Blvd. is an open grass park area that sits on 11th street. To the North across 12th street there are a few multi-story residential buildings with facades facing the project. And to the west, there are several 2-story residential dwellings just across Waite Court along the 12th street side of the project. Each of these receptors has different exposure to the project at 1105 and are affected at different times of the year and even time of day. Refer to the Daylighting Studies diagrams for reference and understanding of the shadow impacts.

During the winter the shadow arcs are the most extreme because of the low sun angles, the worst of which is seen during the winter solstice. At this time, sunrise casts long shadows northwest along 12th street, which impact the residential units to the north of 12th. By 9:00 am, these shadows are retracting to the south and east pulling back down the southern façade of the residential units. As the sun rises, the impacted residences changes east along 12th street, limiting the exposure of shadows on each receptor to a little under three hours at the worst case. During the middle part of the day the shadows are crossing along 12th street at the base of the residential units without impacting the buildings themselves. By 1:00pm, the shadows are extending the northeast across Long Beach Boulevard until sunset sometime after 4:00pm. In the sunset direction of the project, there are only commercial uses that are not shadow sensitive, though the project only casts a shadow on these areas for approximately two hours.

During the equinox periods of March and September, the shadows travel nearly perfectly west to east. The morning shadows are cast on the residential units of Waite Court, though by 11:00am the shadows are no longer impacting the residential units limiting the shaded time to only three hours. In the evening the shadows are cast across Long Beach Boulevard toward commercial uses which are not shadow sensitive, though their exposure to the project's shadows are less than 3 hours in length.

At the summer solstice, the shadow arcs reach the other extreme casting slightly south of the building footprint. During this time, the morning shadows are impacting the residential units of Waite Court until about 11:00am. This shadowing exposure is right at the threshold of 4 hours for the summer period. Through the middle portion of the day the shadows of the building fall upon its own footprint until

about 3:00pm when the shadows begin to cast southeast. In this direction is a grass park area that can be used for recreation and is thus shadow sensitive. The shadowing reach into the grass before 6:00pm and partially shade the grass until sunset. The exposure at this receptor is also limited to less than four hours by the time the sun sets.

Mitigation Measure GHG-2(b) Implement Additional Measures to Reduce Operational GHG Emissions. Energy Efficiency

- ***Include clean alternative energy features to promote energy self-sufficiency (e.g., photovoltaic cells, solar thermal electricity systems, small wind turbines).***
 - California Title-24 requires that residential buildings provide roof space that is solar-ready allowing occupants or owners to install Photovoltaic or Solar Thermal electricity systems on a new building's roof.
- ***Design buildings to meet CEC Tier II requirements (e.g., exceeding the requirements of Title 24 [as of 2007] by 20 percent).***
 - Current code year, 2016, has more restrictive energy requirements than 2007 by at least 10% across all areas of the power density chart.
 - The Building's exterior lighting will use less than 90% of the allowable per 2016 Title 24, Part 6, Section 140.7 – Requirements for Outdoor Lighting. Given the limited amount of exposed exterior building frontage and modern architectural design coupled with the use of CALGreen compliant LED light sources, exceeding the current Title 24 is easily attainable plus the already more efficient code year 2016 versus 2007 codes.
 - The Building's interior lighting will use less than 90% of the allowable per 2016 Title 24, Part 6, Section 140.6 – Prescriptive Requirements for Interior Lighting. By utilizing the latest in LED technology, all of the designed lighting fixtures will be highly efficient nearing 100 lumens per watt in nearly all cases. This allows for adequate lighting levels to be achieved without the use of high wattage in any lighting fixture throughout. Additionally, employing simple daylighting and occupancy controlled dimming in public areas as well as appropriate use of vacancy sensors within residential units allows to further reduce the energy usage of the whole building bringing the efficiency well below the prescribed power density for the project.
- ***Site buildings to take advantage of shade and prevailing winds and design landscaping and sun screens to reduce energy use.***
 - Refer to landscape plans and responses.
 - Building is shaded by the neighbor to the south a fair amount which reduces in solar heat gain for the area of façade affected, thus reducing the HVAC demands of the building.
- ***Install efficient lighting in all buildings (including residential). Also install lighting control systems, where practical. Use daylight as an integral part of lighting systems in all buildings.***
 - Refer to CEC Tier 2 requirements.
 - The lighting for the building will exceed the prescribed power density by at least 10% over the current code year. The building's interior lighting will employ daylight and occupancy dimming devices within the public way to reduce the lighting energy usage when a space is unoccupied or well illuminated with the use of daylighting. Dimming allows for public lighting to be reduced to a low but safe level and return to full when occupancy is detected.

- Residential units may also use vacancy switches/dimmers to reduce energy in appropriate spaces such that users cannot leave lighting on for longer than 15-minutes maximum.
- The building's exterior lighting will be controlled with the use of a central astronomical timeclock which will allow for exterior lighting to only be used during the hours of operation based on the lighting locations. Exterior lighting may also be controlled with occupancy to reduce the lighting loads to ~50% during unoccupied states and returning to full when occupancy is detected. This allows the building to reduce energy while still maintaining safety on the exterior.
- Exceeding the requirements for current code year 2016 will push the project well past 20% savings over the 2007 reference mark.
- ***Install light-colored "cool" pavements, and strategically located shade trees along all bicycle and pedestrian routes.***
 - Refer to landscape plans and responses.
 - Cool pavements and shading will reduce the reflectance of heat from hardscape surfaces which would then be absorbed by the building, such methods reduce the solar heat gain of the building allowing for less HVAC usage.

Regards,

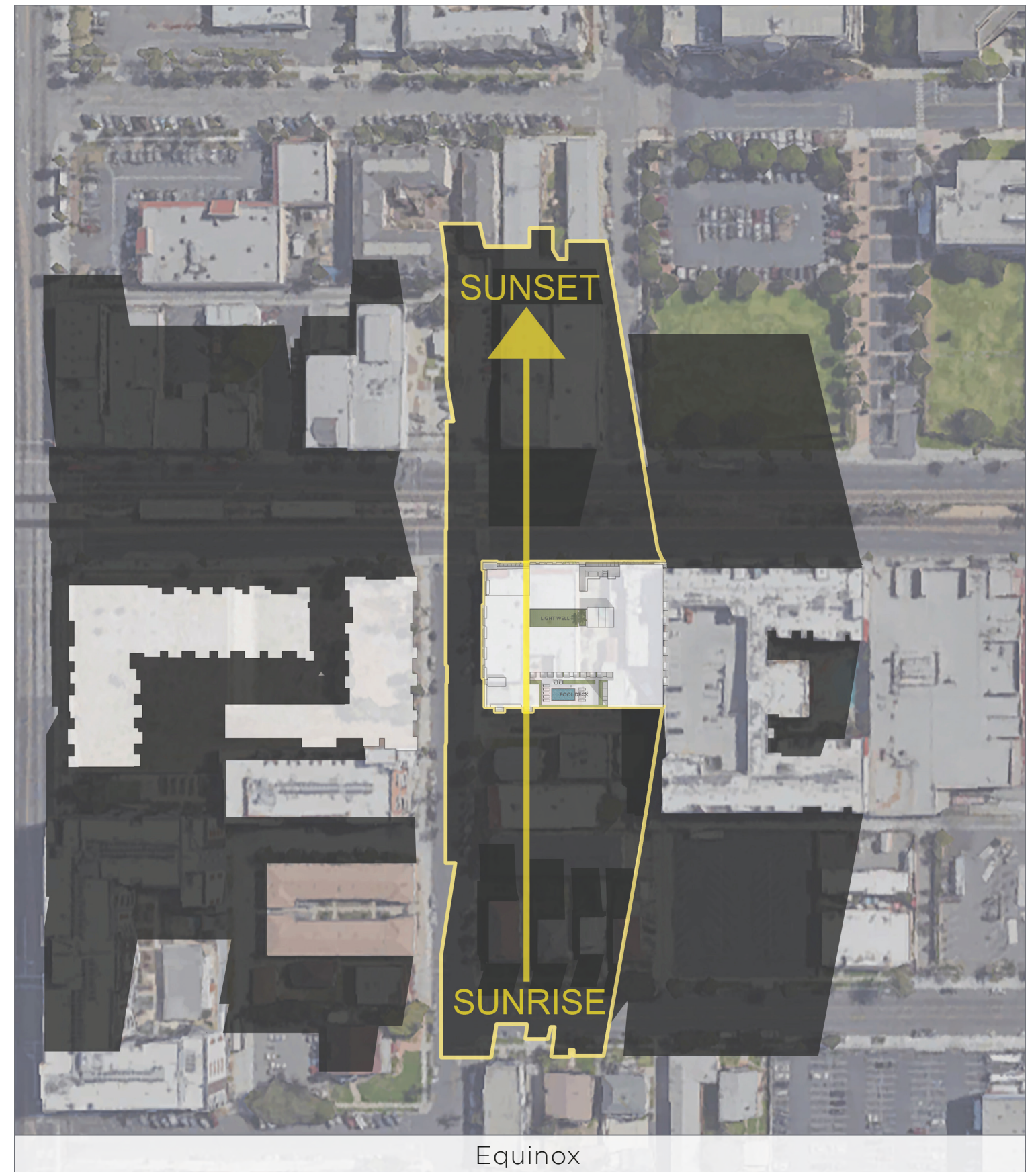
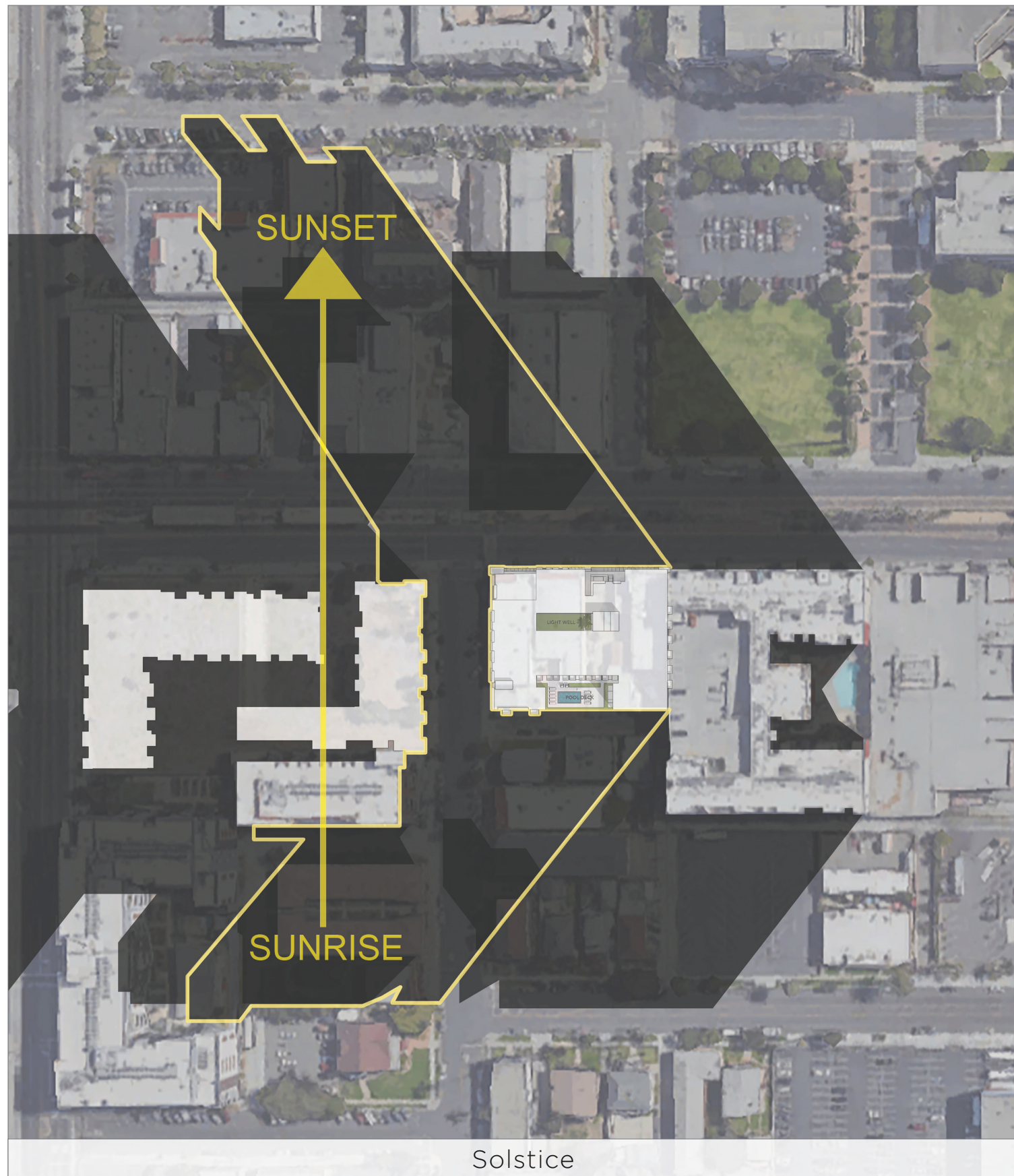
Brad Nelson

Brad Nelson, LC | LEED® AP

Director - Lighting

bnelson@studiok1.com

BN/bn



April 2, 2018

Leanna Libourel
Plus Development

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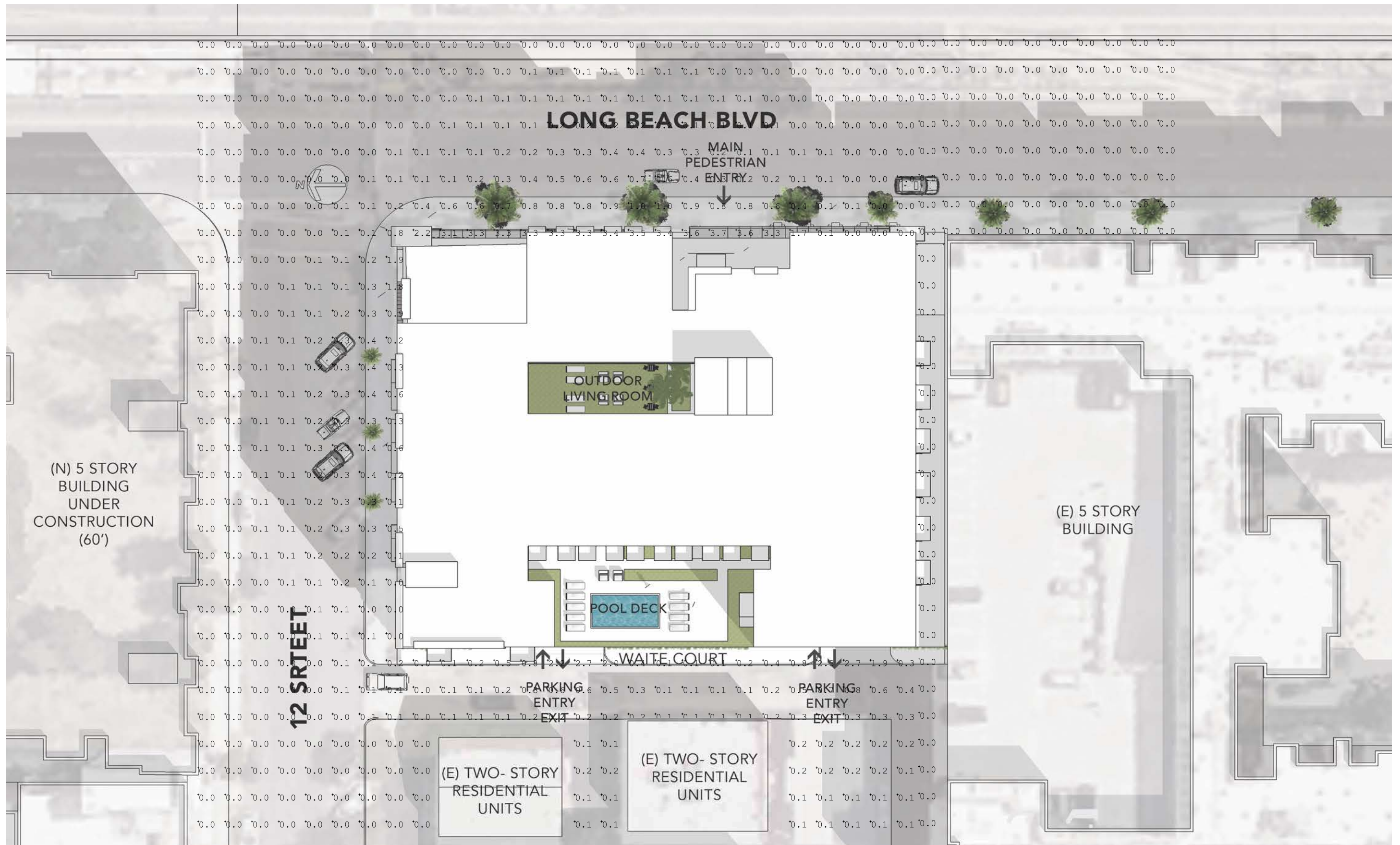
Brad Nelson

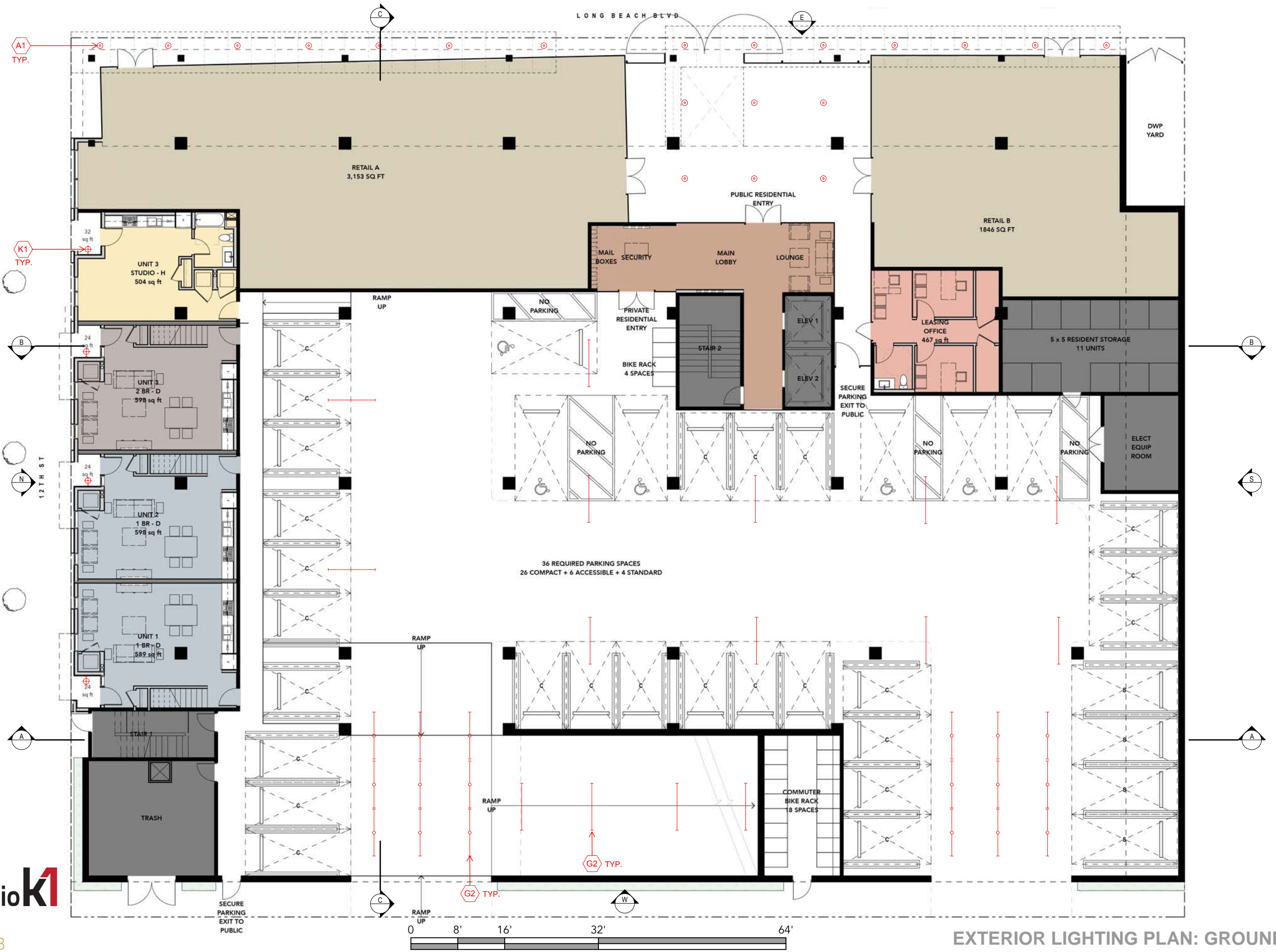
Brad Nelson, LC | LEED® AP

Director - Lighting

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BN/bn





StudioK1

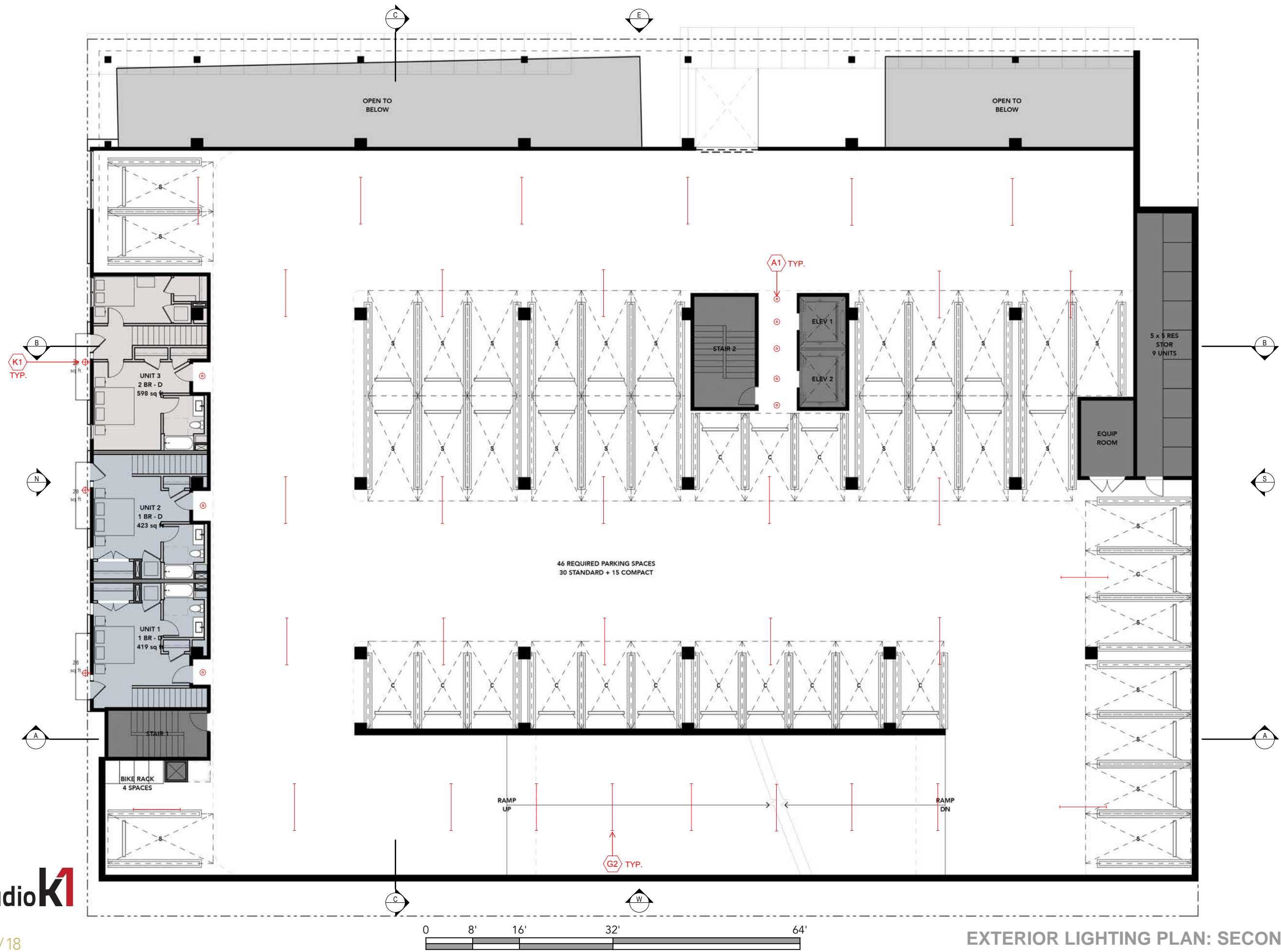
4/2/18

ROCKEFELLER PARTNERS ARCHITECTS



EXTERIOR LIGHTING PLAN: GROUND LEVEL

1105 Long Beach Blvd Long Beach CA 90813



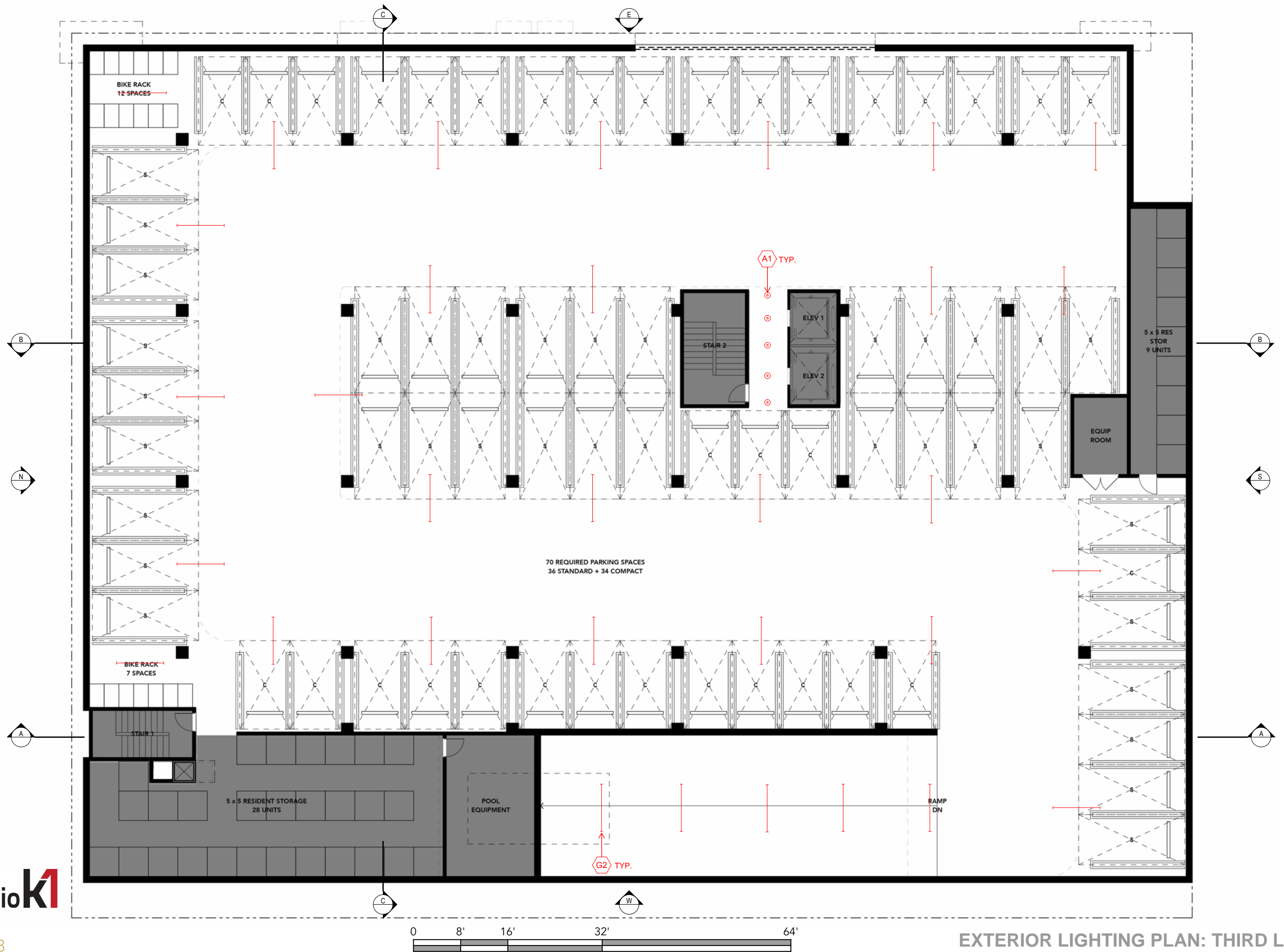
Studio**K1**

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ROCKEFELLER PARTNERS ARCHITECTS

EXTERIOR LIGHTING PLAN: SECOND LEVEL

1105 Long Beach Blvd Long Beach CA 90813



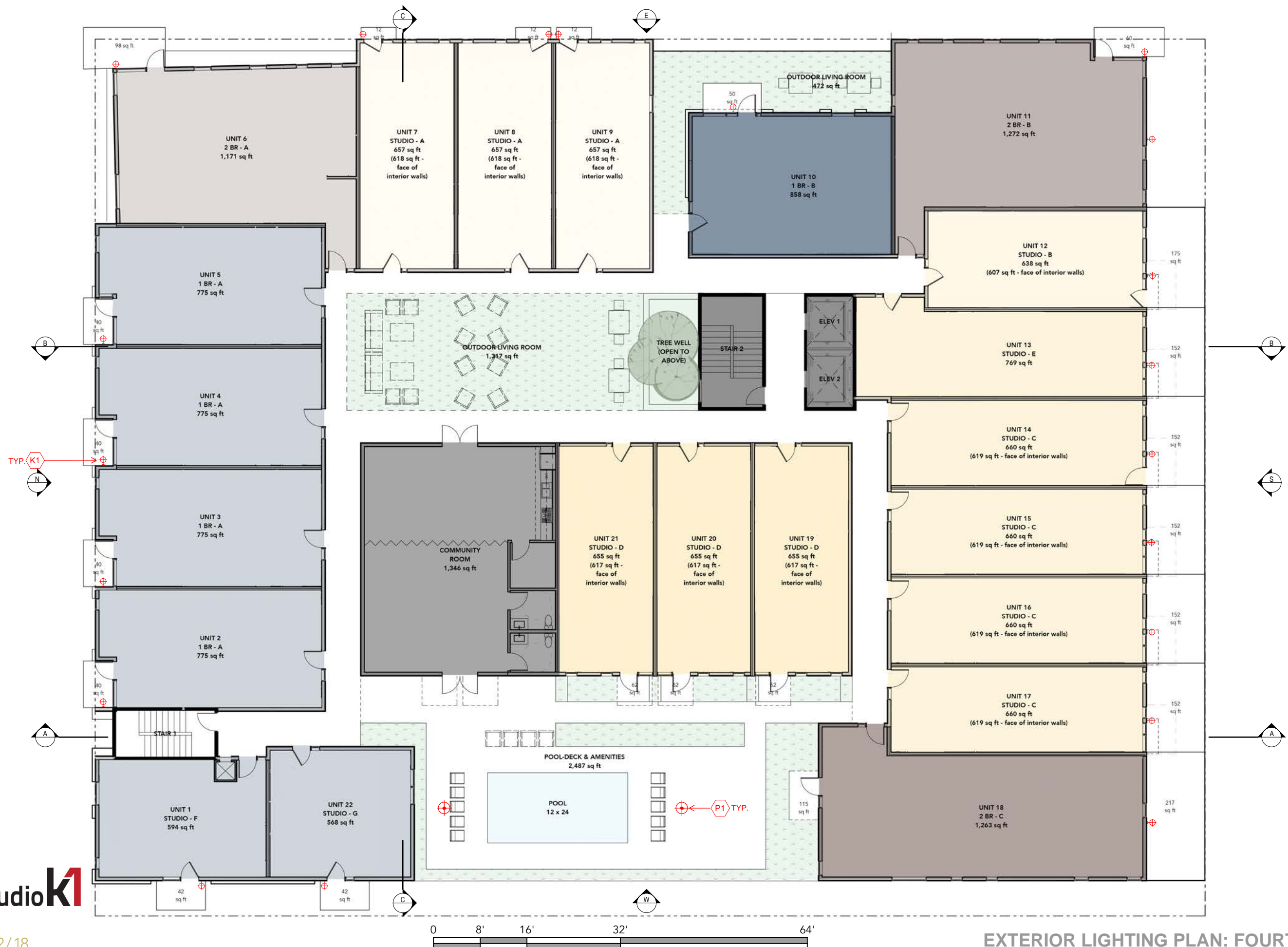
Studio**K1**

4/2/18

ROCKEFELLER PARTNERS ARCHITECTS

EXTERIOR LIGHTING PLAN: THIRD LEVEL

1105 Long Beach Blvd Long Beach CA 90813





Studio**k1**

4/2/18

ROCKEFELLER PARTNERS ARCHITECTS

EXTERIOR LIGHTING PLAN: FIFTH LEVEL

1105 Long Beach Blvd Long Beach CA 90813

1105 Long Beach Boulevard - Outdoor Lighting Photometric Study

Long Beach, CA
Developer: Leeward Capital of Long Beach LLC

LIGHTING FIXTURE SCHEDULE

Appendix No.: A



StudioK1 Project No.: 2018-0274

TYPE	MANUFACTURER & MODEL #	LAMP	CCT	VA SYSTEM WATTS	GENERAL DESCRIPTION	NOTES	LOCATION
A1	INTENSE SS4G3DS-L2-358/ICS430-HZ-SF	LED	3500	16 16	RECESSED DOWNLIGHT FOR USE WITH 16W LED MODULE AT 3500K/80 CRI. 4.5-INCH SQUARE APERTURE WITH HAZE SELF-FLANGED REFLECTOR. 0-10V DIMMING DRIVER.	-	-
G1	GAMMALUX GB34U2-1HL358-UNIV-ZTV10-8'N-C24"-LDC-[FINISH?]	LED	3500	8.83 8.83/FT	LINEAR INDIRECT PENDANT FOR USE WITH HIGH OUTPUT 8.83W/PER FOOT LED MODULE AT 3500K/80 CRI. PROVIDE WITH DUST COVER. 3-INCH W X 4-INCH H. X 8-FOOT L. CABLE MOUNTED.	-	-
G2	GAMMALUX GB34D2-1HL358-ZTV10-8'N-C24"-ASLMD3D.5-[FINISH?]	LED	3500	8.83 8.83/FT	LINEAR DIRECT PENDANT FOR USE WITH HIGH OUTPUT 8.83W/PER FOOT LED MODULE AT 3500K/80 CRI. PROVIDE WITH ACRYLIC SATIN LENS. 3-INCH W X 4-INCH H. X 8-FOOT L. CABLE MOUNTED.	-	-
K1	HUNZA DL/L-D10-[FINISH?]-38-3-[ACCESSORIES?]	LED	3000	6 6	EXTERIOR RATED WALL MOUNTED DOWNLIGHT FOR USE WITH 6W LED MODULE AT 3000K. 38 DEGREE BEAM SPREAD. WITH INTEGRAL DRIVER.	-	-
P1	LOUIS POULSEN KIPP-PT-86WLED/3000K/T-RSA-4.5/DRA-5-3-10.5-[FINISH?]	LED	3000	86 86	PEDESTRIAN SCALE POLE WITH DECORATIVE FIXTURE FOR USE WITH 86W LED MODULE AT 3000K. 10.5-FOOT POLE, OVERALL HEIGHT TO BE 12-FOOT.	-	-

SS4G3DS / ICS430

4" SS LED Square Downlight Gen 3

1105 Long Beach Blvd
Outdoor Lighting Photometric Study

Product Name		CATALOG NUMBER	A1
NOTES		TYPE	

ELECTRICAL DATA

LED Light Engine	System Wattage *	CCT	Nominal Delivered Lumens **
L1	13W	3500K	850lm
L2	16W	3500K	1300lm
L3	21W	3500K	1700lm
L4	26W	3500K	2100lm
L5	32W	3500K	2600lm
L6	42W	3500K	3400lm

* System Wattage include driver and LED Module consumption.

** Delivered lumen output will vary depending on CCT selection.

LED MODULE

- Powered by OSRAM PrevaLED® Cube LED Module
- 50,000 hours at 70% lumen maintenance
- Available in 1100, 1500, 2000, 2500, 3000lm and 4000lm
- 80 CRI & 2700K, 3000K, 3500K, 4000K

ELECTRICAL SYSTEM

- Universal voltage 120-277V (347V available, consult factory)
- Osram Optotronic® standard with 0-10V dimming to 1%
- Power factor > .9, 50/60Hz
- Multiple dimming options available

OPTICAL SYSTEM

Specification grade reflector with 1.2mm thickness and haze finish. Architectural, discrete polished self flange standard. Optional painted white flange is available. Meets RP-1 requirements with controlled light distribution at a 55° cut off.

FRAME CONSTRUCTION

Heavy duty galvanized steel frame with a large access junction box. ETL listed for through wiring. LED light engine and driver are accessible from above or below ceiling.

INSTALLATION

The luminaire is type Non-IC. Insulation must be kept at a minimum of 3" away from fixture. Universal mounting brackets included. Compatible with C-channel, flat bar, wood joist bar hanger and EMT. Bar hangers must be ordered separately. C-channel is recommended for T-bar ceilings. Maximum ceiling thickness is 1 1/4".

Intellect™

- Integrated control system provides occupancy and light level detection, and controls the load directly by the power control module
- Integrated intelligent fixture controls
- Only hot and neutral power required at all devices, no need for control wires
- Installs into any 7/8" +/- 1/8" diameter mounting hole; suitable for metal, drywall, ceiling tiles and related surfaces (requires top access for removal)
- 12" Ceiling Height Maximum
- 24" Cable provided for connection between sensor and power control module
- DLC compliant (certification pending)
- Keypad Room Controller must be specified separately
- Visit Leviton.com for more information
- [Intellect™ Keypad Room Controller](#)
- [Intellect™ Power Control Module](#)
- [Intellect™ Sensor Control Module](#)

EMERGENCY BACKUP

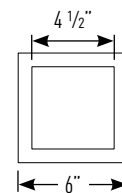
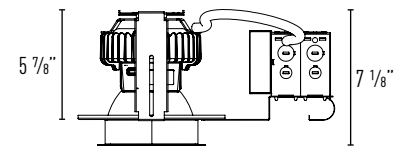
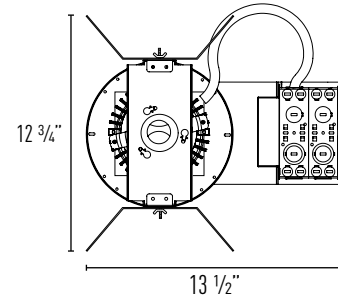
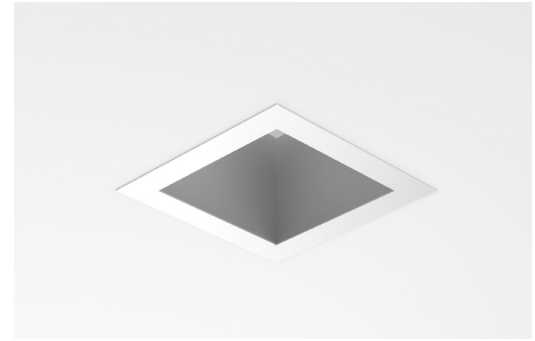
External battery operates LED load of up to 7W at a minimum of 450 lumens for 90 minutes (EM7), or 20W at a minimum of 1600 lumens for 90 minutes (EM20). Available with remote or integral test switch, must specify.

LISTING/WARRANTY

- ETL listed to US and Canadian standards for damp locations.
- 5-Year Intense LED Limited Warranty



Intellect
enabled



Sensor Control Module



Ceiling Cut Out: 5 5/8" x 5 5/8"

Maximum Ceiling Thickness: 1 1/4"

Housing Part Number (Example: SS4G3DSL4358)

Housing	LED Module	CCT / CRI	Dimming (120-277V)	Options
SS4G3DS	L1 (13 Watts)	278 (2700K / 80 CRI)	blank (0-10V Dimming 1%)	EM7 (7W Emergency Backup w/ Remote Test Switch IOTA part #ILB-CP07-A)
	L2 (16 Watts)	308 (3000K / 80 CRI)	-IE* (Intellect Wireless 1%)	EM7T (7W Emergency Unit w/ Integral Test Switch IOTA part #ILB-CP07-R)
	L3 (21 Watts)	358 (3500K / 80 CRI)	-ED10V1 (eldoLED 0-10V 1%)	EM20 ³ (20W Emergency Backup w/ Remote Test Switch Bodine part #BSL20LV)
	L4 (26 Watts)	408 (4000K / 80 CRI)	-ED10V01 (eldoLED 0-10V 0.1%)	I100 (C-Channel Bar Hangers)
	L5 (32 Watts)		-LUT (Lutron EcoSystem 1%)	I200 (Flat Bar Hangers)
	L6 (42 Watts)		-LUT5 ¹ (Lutron EcoSystem 5%)	I400 (Wood Joist Bar Hangers)
			-LUT1 (Lutron Hi-Lume 1%)	
			-EDALI1 (eldoLED DALI 1%)	
			-EDALI01 (eldoLED DALI 0.1%)	
			-DMXR ² (DMX512 RDM 0.1%)	

Reflector Part Number (Example: ICS430HZ-SF)

Reflector	Reflector Finish	Trim	Option
ICS430	HZ (Haze)	-SF (Self Flanged)	EM7T (Integral Test Switch)
		-SFW (Self Flanged White)	

Notes:

- Lutron EcoSystem 5% not available in L2 & L6 LED module
- DMX512 RDM not available in L1 & L2 LED module
- 20W emergency not available in L1, L2 & L3 LED module
- Intellect not available with eldoLED, Lutron, Dali or DMX Dimming (Integrated intellect control system includes sensor and power pack. Keypad Room Controller must be specified separately.)

SS-DOWNLIGHTING L/M-022718 P-13

INTENSE LIGHTING | 3340 E La Palma Ave, Anaheim, CA 92806 | tel 714 630-9877 | fax 714 630-9883

For Intense Lighting's limited product warranty, go to www.intenselighting.com. For a printed copy of the warranty, you may call 800 961-5321.

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intense[®] | a LEVITON[®] company

SS4G3DS / ICS430

4" SS LED Square Downlight Gen 3

1105 Long Beach Blvd
Outdoor Lighting Photometric Study

Job NAME		CATALOG NUMBER	A1
NOTES		TYPE	

SS4G3DSL1358 / ICS430HZ

Test Number: ILL-20170302-03
Lumens: 868lm
Watts: 13W
Efficacy: 67 lm/w
Spacing Criteria: 1.54 (0-180°)
1.52 (90-270°)

Emergency Multiplier:

7W Emergency (x 0.54)
20W Emergency (N/A)

Distance to Floor (Feet)	Footcandles at Nadir	Beam Diameter (Feet)
6'	11.8fc	7' 8"
7'	8.6fc	9'
8'	6.6fc	10' 4"
9'	5.2fc	11' 6"
10'	4.2fc	12' 10"
11'	3.5fc	14' 1"
12'	2.9fc	15' 5"

Candela Distribution

Angle	Candela
0°	424
5°	425
15°	452
25°	517
35°	471
45°	190

Zonal Lumen Summary

Zone	Lumens	%Fixture
0-30	400	46.1
0-40	346	74.4
0-60	836	96.4
0-90	868	100
40-70	209	24.1
60-80	28	3.2
90-180	0	0
0-180	868	100

L1 LED Module - CCT Multipliers:

2700K (x 1.00), 3000K (x 1.00), 3500K (x 1.00), 4000K (x 1.08)

SS4G3DSL2358 / ICS430HZ

Test Number: ILL-20170302-03
Lumens: 1304lm
Watts: 15.7W
Efficacy: 83 lm/w
Spacing Criteria: 1.54 (0-180°)
1.52 (90-270°)

Emergency Multiplier:

7W Emergency (x 0.45)
20W Emergency (N/A)

Distance to Floor (Feet)	Footcandles at Nadir	Beam Diameter (Feet)
6'	17.7fc	7' 8"
7'	13fc	9'
8'	9.9fc	10' 4"
9'	7.9fc	11' 6"
10'	6.4fc	12' 10"
11'	5.3fc	14' 1"
12'	4.4fc	15' 5"

Candela Distribution

Angle	Candela
0°	637
5°	638
15°	379
25°	776
35°	707
45°	285

Zonal Lumen Summary

Zone	Lumens	%Fixture
0-30	601	46.1
0-40	970	74.4
0-60	1256	96.4
0-90	1304	100
40-70	314	24.1
60-80	42	3.2
90-180	0	0
0-180	1304	100

L2 LED Module - CCT Multipliers:

2700K (x 0.95), 3000K (x 0.97), 3500K (x 1.00), 4000K (x 1.03)

SS4G3DSL3358 / ICS430HZ

Test Number: ILL-20170302-03
Lumens: 1736lm
Watts: 20.6W
Efficacy: 84 lm/w
Spacing Criteria: 1.54 (0-180°)
1.52 (90-270°)

Emergency Multiplier:

7W Emergency (x 0.34)
20W Emergency (N/A)

Distance to Floor (Feet)	Footcandles at Nadir	Beam Diameter (Feet)
6'	23.5fc	7' 8"
7'	17.3fc	9'
8'	13.2fc	10' 4"
9'	10.5fc	11' 6"
10'	8.5fc	12' 10"
11'	7fc	14' 1"
12'	5.9fc	15' 5"

Candela Distribution

Angle	Candela
0°	848
5°	850
15°	904
25°	1034
35°	941
45°	380

Zonal Lumen Summary

Zone	Lumens	%Fixture
0-30	800	46.1
0-40	1292	74.4
0-60	1673	96.4
0-90	1736	100
40-70	418	24.1
60-80	55	3.2
90-180	0	0
0-180	1736	100

L3 LED Module - CCT Multipliers:

2700K (x 0.97), 3000K (x 0.97), 3500K (x 1.00), 4000K (x 1.03)

SS4G3DSL4358 / ICS430HZ

Test Number: ILL-20170302-03
Lumens: 2171lm
Watts: 25.8W
Efficacy: 84 lm/w
Spacing Criteria: 1.54 (0-180°)
1.52 (90-270°)

Emergency Multiplier:

7W Emergency (x 0.27)
20W Emergency (x 0.77)

Distance to Floor (Feet)	Footcandles at Nadir	Beam Diameter (Feet)
6'	29.5fc	7' 8"
7'	21.6fc	9'
8'	16.6fc	10' 4"
9'	13.1fc	11' 6"
10'	10.6fc	12' 10"
11'	8.8fc	14' 1"
12'	7.4fc	15' 5"

Candela Distribution

Angle	Candela
0°	1060
5°	1063
15°	1131
25°	1293
35°	1177
45°	475

Zonal Lumen Summary

Zone	Lumens	%Fixture
0-30	1001	46.1
0-40	1616	74.4
0-60	2093	96.4
0-90	2171	100
40-70	523	24.1
60-80	69	3.2
90-180	0	0
0-180	2171	100

L4 LED Module - CCT Multipliers:

2700K (x 0.97), 3000K (x 0.97), 3500K (x 1.00), 4000K (x 1.03)

SS4G3DS / ICS430

4" SS LED Square Downlight Gen 3

1105 Long Beach Blvd
Outdoor Lighting Photometric Study

PROJECT NAME		CATALOG NUMBER	A1
NOTES		TYPE	

SS4G3DSL5358 / ICS430HZ

Test Number: ILL-20170302-03

Lumens: 2604lm

Watts: 31.5W

Efficacy: 83 lm/w

Spacing Criteria: 1.54 (0-180°)
1.52 (90-270°)

Emergency Multiplier:

7W Emergency (x 0.22)

20W Emergency (x 0.64)

Distance to Floor (Feet)	Footcandles at Nadir	Beam Diameter (Feet)
6'	35.3fc	7' 8"
7'	25.9fc	9'
8'	19.9fc	10' 4"
9'	15.7fc	11' 6"
10'	12.7fc	12' 10"
11'	10.5fc	14' 1"
12'	8.8fc	15' 5"

Candela Distribution

Angle	Candela
0°	1271
5°	1275
15°	1357
25°	1551
35°	1412
45°	570

Zonal Lumen Summary

Zone	Lumens	%Fixture
0-30	1200	46.1
0-40	1937	74.4
0-60	2509	96.4
0-90	2604	100
40-70	627	24.1
60-80	83	3.2
90-180	0	0
0-180	2604	100

L5 LED Module - CCT Multipliers:

2700K (x 0.91), 3000K (x 0.99), 3500K (x 1.00), 4000K (x 1.02)

SS4G3DSL6358 / ICS430HZ

Test Number: ILL-20170302-03

Lumens: 3471lm

Watts: 42.1W

Efficacy: 82 lm/w

Spacing Criteria: 1.54 (0-180°)
1.52 (90-270°)

Emergency Multiplier:

7W Emergency (x 0.16)

20W Emergency (x 0.47)

Distance to Floor (Feet)	Footcandles at Nadir	Beam Diameter (Feet)
6'	47.1fc	7' 8"
7'	34.6fc	9'
8'	26.5fc	10' 4"
9'	20.9fc	11' 6"
10'	17fc	12' 10"
11'	14fc	14' 1"
12'	11.8fc	15' 5"

Candela Distribution

Angle	Candela
0°	1695
5°	1699
15°	1809
25°	2067
35°	1882
45°	760

Zonal Lumen Summary

Zone	Lumens	%Fixture
0-30	1600	46.1
0-40	2583	74.4
0-60	3346	96.4
0-90	3471	100
40-70	836	24.1
60-80	111	3.2
90-180	0	0
0-180	3471	100

L6 LED Module - CCT Multipliers:

2700K (x 0.91), 3000K (x 0.99), 3500K (x 1.00), 4000K (x 1.02)

DIMMING COMPATIBILITY

1105 Long Beach Blvd
Outdoor Lighting Photometric Study

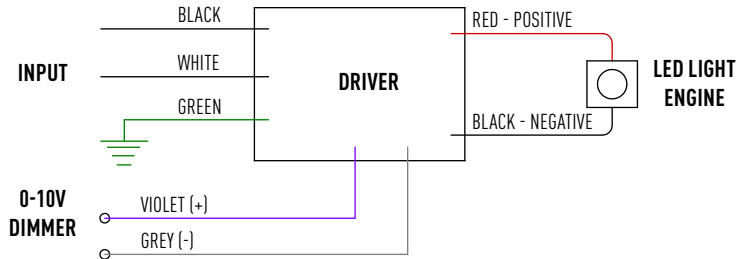
FOR NAME		CATALOG NUMBER	A1
NOTES		TYPE	

0-10V DIMMING

- 120V/277V
- Dims down to 1% or 0.1% light output
- Consult dimming manufacturer for installation instructions and power packs

COMPATIBLE DIMMERS

Manufacturer	Part Number(s)
HUNT	PS-010-IV-120V, PS-010-WH-120V, PS-010-3W-IV-120, PS-010-3W-WH-120V, PS-010-IV-277V, PS-010-WH-277V, PS-010-3W-IV-277V, PS-010-3W-WH-277V, FD-010: PS-IFC-010-IV, PS-IFC-010-WH-120/277V, FD-010: PS-IFC-010-3W-IV, PS-IFC-010-3W-WH-120/277V, FD-010-120V, FD-010-277V
Leviton	Leviton Centura Fluorescent Control System, IlumaTech™ IP7 Series, DPSPE-212
Lightolier	ZP600FAM120, MP1500FAM120, V2000FAMU
Lithonia	LEQ BC, LEQ LVBC, SLD LVBC, SQ1DC
Lutron	DVTV, NTFTV
Synergy	ISD BC 120/277

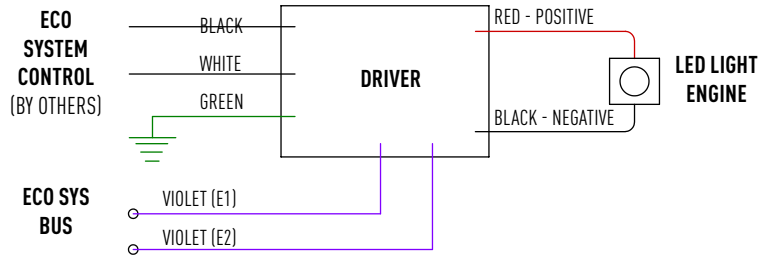


LUTRON ECOSYSTEM® DIMMING

- 120V or 277V
- Dims down to 1% or 5%
- Consult dimming manufacturer for installation instructions

COMPATIBLE DIMMERS

CS-1L-WM, CS-2L-WM, CS-1L-CM, CS-2L-CM,
EcoSystem ESN, Grafik Eye QS with EcoSystem, Quantum



LUTRON HI-LUME® DIMMING

- 120V or 277V
- Dims down to 1%
- Consult dimming manufacturer for installation instructions

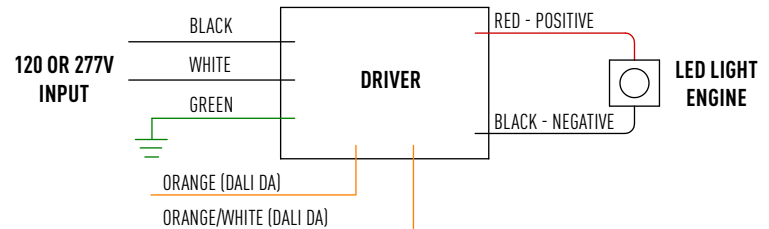
COMPATIBLE DIMMERS

AYF-103P, AYF-103P-277, DVF-103, DVF-103P-277, DVSCF-103P, DVSCF-103P-277, HQRD-F6AN-DV, LXF-103PL, LXF-103PL-277, NF-10, NF-103P, NF-103P-277, NF-10-277, NTF-10, NTF-103P, NTF-103P-277, NTF-10-277, RRD-F6AN-DV, SF-12P-277-3, SF-103P, MAF-6AM, MAF-6AM-277, MSCF-6AM, MCSF-6AM-277, MRF2-F6AN-DV, SF-10P, SF-12P-277, SPSF-6A, SPSF-6A-277, SPSF-6AM, SPSF-6AM-277, VF-10, VTF-6AM



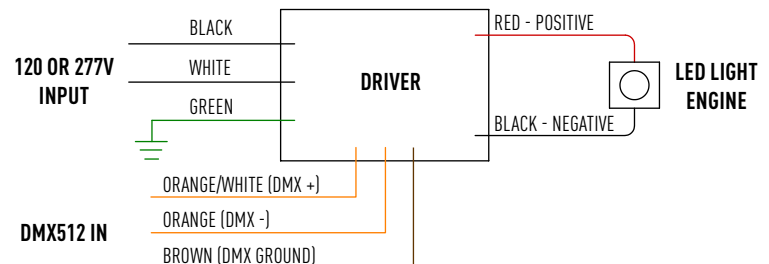
DALI DIMMING

- 120V or 277V
- Dims down to 1% or 0.1% light output



DMX512 RDM DIMMING

- 120V or 277V
- Dims down to 0.1% light output
- RDM channel programmable

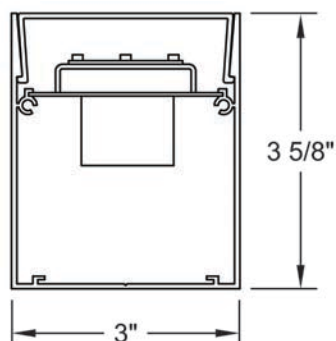




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Revision Date: February 28, 2018
 Gammalux Lighting Systems reserves the right to change details of fixture designs and construction at any time.



LED Lamping



Click photo to view product page

Page 1: Overview & Nomenclature
 Pages 2-3: Specifications
 Pages 4-5: Photometric Info / Downloads
 Page 6: Mounting Details
 Pages 8-9: Custom Programming

Product Overview (for complete specifications, see pages 2 & 3)

Upgrade Capability: LED components may be easily upgraded in the field to increase energy efficiency. Tool-less fastener allows quick LED retrofit while fixtures are still installed on site.

Construction: Extruded aluminum housing provides superior fit and finish. Runs of fixtures can be built to match field conditions, including complex patterns. Continuous runs and patterns are ordered, built and shipped with a single item #.

Continuous Illumination: Optimized LED arrays provide consistent illumination in custom-length runs and patterns.

Electrical: LED components by major manufacturers. Fixtures can be fitted with integral sensors, control interface devices and specialty LED components (consult factory). Standard Output, High Output and Custom Output options available.

Optical: Clear acrylic linear prismatic lens reduces shadows and striations on ceiling and walls.

Standard Nomenclature

Manufacturer	Output *	Driver Options	Mounting Method	Paint Colors
Gammlux	S Standard Output H High Output C Custom-Programmed Output	DVR Static Driver For Dimming Options, See pg 2	C Cable S Swivel Stem SEQ CA Earthquake Stems/fittings	W White (Consult Color Chart for other standard colors) CCM Custom Color Match Wood Finishes, see last page
Cross Section (nom) 3" x 4"	Color Temp. (nom) 27 2700 K 50 5000 K 30 3000 K RGB 35 3500 K 40 4000 K	N Nominal length S Specific length	Suspension Length 24" ceiling to top of fixture.	
Distribution U-Indirect				
GB34U2 - 1SL358 - 120V - DVR - 4' N - C24" - LDC - WH - XX				
Luminaire Model 2nd Generation	CRI ** 8 for 80+ 9 for 90+	Run Length Specify total run length (i.e. 43' 5 1/8", etc). Single-piece housing max in 12' unless coordinated with factory.	Shielding LDC LED Dust Cover	Paint Finish H High Gloss SG Semi-Gloss
Cross Section Shape Beam	Lamp Type LED			Options BPE Battery Pack EM. Kit DL UL Damp Label EMERG Emergency ckt. SBO = Sensor By Others#
LED Arrays in X-Sec 1 (for white only) 2 (for RGB only)				

* For other than SO or HO, see Custom Programmed Output page. RGB must be High Output and controlled by DMX driver option.

** 90+ CRI option has longer lead time and increases wattage by nom. 27%. For RGB, do not select a CRI option.



Specifications (continued on next page)

Electrical

Output: Standard (S) and high (H) options deliver a pre-set lumen package (see chart below). Custom-programmed output (C) is specified as LPF, WPF or % of High Output (see Custom Programmed Output page).

Static Driver: Osram [Optotronic](#)* programmable driver, wired for static operation (DVR).

0-10V Dimming: Osram [Optotronic](#)* programmable driver, wired for 0-10v control and dimming to 10% (ZTV10) or to 1% (ZTV1).

Step Dimming: Generic step dimming driver, two hot inputs for 100% and 50% output (SD2).

DMX Dimming: Generic DMX driver with three loose control wires exiting fixture at power feed location (DMX).

DALI Dimming: Generic DALI driver with two loose control wires exiting fixture at power feed location (DALI).

Lutron Dimming: Hi-lume Premier dim to 0.1% EcoSystem with Soft-On, Fade-to-Black AVAILABLE SPRING 2018 (PEQ0E). [Hi-lume LTE](#) dim to 1% 2-wire 120V forward phase (LTEA2W). [Hi-Lume](#) dim to 1% EcoSystem with Soft-On, Fade-to-Black (LDE1). [5-Series](#) dim to 5% EcoSystem (LDE5).

White Emitter*: Nichia 757G emitters binned within 3 MacAdam ellipses in Osram or Gammalux proprietary array. 90+ CRI option with extended lead time (CRI code 9) results in nom. 27% drop in efficacy; increase calculated wattage by nom. 27%

RGB: Uses two rows of Osram [72618](#)*. RGB with all channels at full output consumes approximately 11 watts per foot.

- Red channel at full output will provide approximately the same # of lumens compared to 3,500K white at High Output.

- Green channel at full output will provide approximately 171% of lumens compared to 3,500K white at High Output.

- Blue channel at full output will provide approximately 35% of lumens compared to 3,500K white at High Output.

Battery Pack: Integral Bodine [BSL310LP](#)* (BPE). 4W max input. 10W initial output.

LED System: 70% lumen output (L70) at max 85 degrees C calculated at >60k hours. Fixtures are shipped with anti-static gloves to minimize the risk of damage to LEDs during installation. [5 year limited warranty](#).

Upgrade Capability: LED assemblies can be replaced in the future with the latest factory-provided and fully warranted components. On-board sensors, control interface devices and alternate LED components may be specified (consult factory). Max driver cross section 1.0" x 1.2". Fixtures bear UL & cUL Dry Location label. Damp Location label available (DL).

*Subject to availability; may be substituted by Gammalux. Components and specifications may be changed without notice.

ESTIMATED LUMENS PER FOOT DELIVERED BY COMBINATION OF WHITE LEDS AND LENS OPTION											
STANDARD OUTPUT 6.35 WPF (nom)						HIGH OUTPUT 8.83 WPF (nom)					
OPTIONS	2700 K	3000 K	3500 K*	4000 K	5000 K	OPTIONS	2700 K	3000 K	3500 K*	4000 K	5000 K
LDC	705.35	751.35	766.69	797.36	812.69	LDC	940.47	1001.81	1022.25	1063.14	1083.585

Consult factory for options on custom output or wattage consumption. *IES files were created using 3500K boards. Values were then adjusted by a factor of .92 for 2700K, .98 for 3000K, 1.04 for 4000K and 1.06 for 5000K boards.

Construction

Housing: Extruded aluminum body 3.00" wide x 3.62" high, 6063T5, 0.070" min thickness. In continuous runs, each housing is 12' max unless longer housings are pre-coordinated with the factory to reduce joints and save installation labor. All fixtures are built per approved factory drawings and tested as a complete system at the factory. Continuous runs and patterns are ordered, built and shipped with a single item #. Fixtures ordered as individuals are not designed to be joined together in the field.

Joiner System: Automatic alignment, no loose parts, one tool to tighten two factory installed bolts for hairline seam. No light leaks.

Lamping: Runs ordered in Specific Length (Length Option S) may require special lamping components which consume more energy than posted values. Runs ordered in Nominal Length (Option N) may be length-adjusted at the factory to use standard lamping components. Factory drawings will show all dimensions for approval prior to production. Fixtures built to less than 4' may require master/satellite installation - consult factory.

Mounting: Aircraft cable is 7x7 stranded stainless steel with stopper fitting at the top end. Lower end strands are welded and ground for easy insertion into adjustable cable gripper (C). Feed cord is straight, white 3/C SVT or SJT #18 AWG. Stems are 3/8" schedule 40 pipe with top swivels (S). California UBC compliant stems with internal safety cables available (SEQ). Direct to surface mounting available for indirect illumination (SF). Housing can be mounted direct to wall (WM). Wall Spacer mounting (WSP) allows projection from wall of 3.50" to meet ADA requirements.

Specifications (continued)

Optical

Reflectors: Shall be formed diffuse high reflectance aluminum.

LED Diffusing Lens: Snap-in. Shall be 90% DR clear acrylic (**LDC**).

Finish

Housing is electrostatically sprayed with high solids aliphatic two component polyurethane to an average thickness of 2 mills. over acid etching primer or commercial clear anodizing. Specify **H** for high gloss or **SG** for semi-gloss. See Wood Finishes on back page.

High Gloss Finish

Semi Gloss Finish

						
White (WH)	Red (RH)	Yellow (YH)	White (WSG)	Silver (SSG)	Gray (GYSG)	Off White (OWSG)
						
Green (GH)	Blue (BH)	Black (BKH)	Light Gray (LGYSG)	Bronze (BZSG)	Satin Aluminum (SAPSG)	

Packing and Shipping

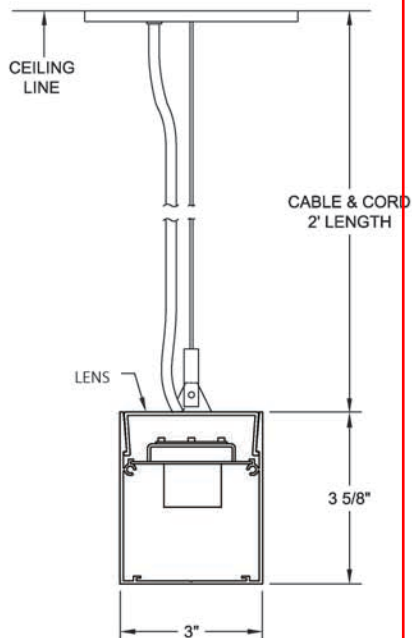
Fixtures built for continuous rows and patterns are given a specific location identifier, clearly identified on factory layout drawings provided to installing contractor. Location identifier is printed on the fixture's ID Label, protective wrapping and on each end of fixture carton. Shipping pallets are built with 2" clearance, extending beyond the length and width of cartons, providing shipping protection.

Approx. weight of 4' module is 12 lbs. including carton. Weight of pallet and supplemental packing materials not factored in.

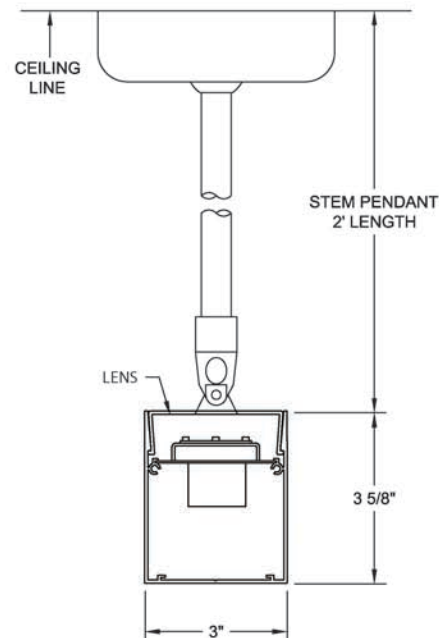
Mounting Details

Factory Drawings: Fully dimensioned factory drawings will be provided upon receipt of purchase order.

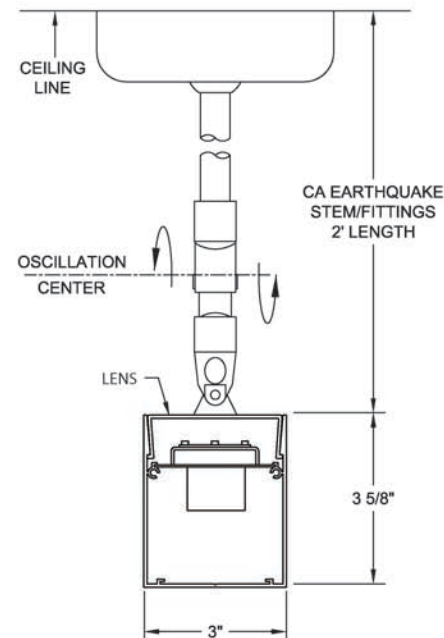
Cable Mount:
Specify **C** code in catalog #



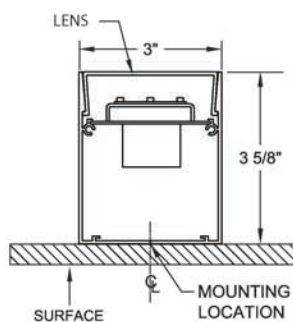
Swivel Stem Mount:
Specify **S** code in catalog #



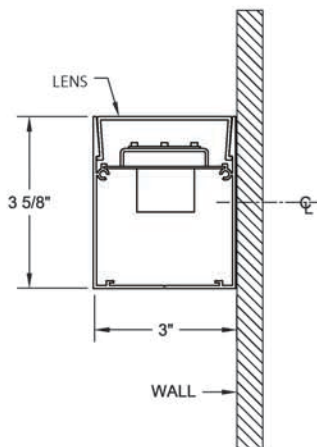
CA Earthquake Stem Mount:
Specify **SEQ** code in catalog #



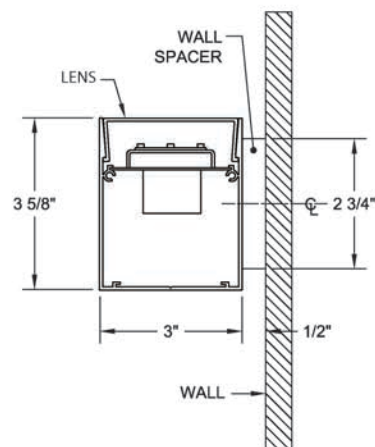
Surface Mount:
Specify **SF** code in catalog #



Wall Mount:
Specify **WM** code in catalog #



Wall Spacer Mount:
Specify **WSP** code in catalog #



Gammalux Lighting Systems reserves the right to change the details of fixture design and construction at any time.

**G-Beam Series GB34U2-LED-LENS**

General Illumination - Suspended, Surface or Wall Mount
Indirect Distribution

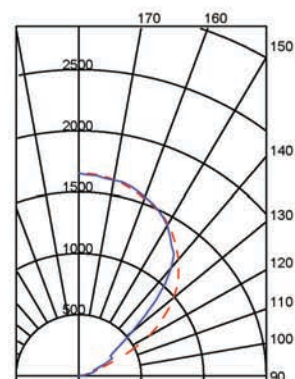
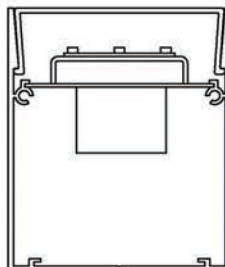
Photometric Reports for
HIGH OUTPUT FIXTURES

FIXTURE USES LENS LDC AND 3500 K BOARDS. @ 80+ CRI

IESNA: LM 79-2008
ISSUEDATE: 04/19/13
TEST: ITL76974 mod to DA 73571
TESTLAB: ITL, INC
MANUFAC: GAMMALUX LIGHTING SYSTEMS
LUMCAT: GB34U-HOLED35-4'-APL
LAMPS: 73571 PLPG2-Bar-1100-835-289x38-DC

EFFICACY (Total): 109.2 LPW
DISTRIBUTION % UP: 100%
DISTRIBUTION % DOWN: 0%
CIE CLASSIFICATION: INDIRECT

LUMINOUS OPENING: RECTANGULAR
Width: 0.24 (Feet)
Length: 3.96
Height: 0.00
INPUT WATTS: 35.3

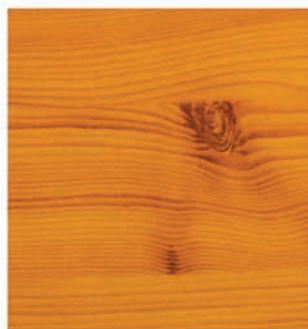


Quadrilaterally Symmetric
Dashed: 0 Degrees Solid: 90 Degrees



Wood Finishes

Fixture housings are powder coated with a base finish, baked, then wrapped in a film with the decorative grain pattern. Baking the housing again allows the grain to become embedded into the powder coated finish. This is not a decal or veneer. Additional lead time and cost increases apply. Consult factory for pricing. Swatches are scaled accurately for 8.5" x 11" page.



FINISH CODE: KPI



FINISH CODE: MED



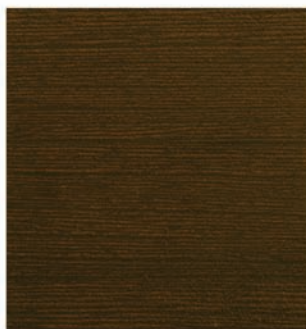
FINISH CODE: HCH



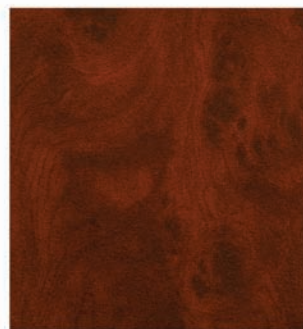
FINISH CODE: WAL



FINISH CODE: AOK



FINISH CODE: FWG



FINISH CODE: MH1



FINISH CODE: MH2



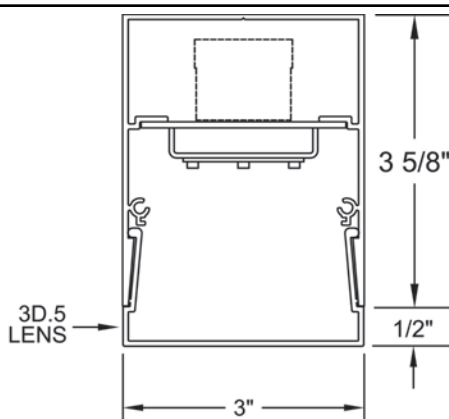
SAMPLE FIXTURE WITH WOOD FINISH

DUE TO VARIANCES IN MONITORS AND PRINTERS, ACTUAL FINISHES MAY APPEAR DIFFERENT FROM SWATCHES.



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LED Lamping



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Page 1: Overview & Nomenclature
 Pages 2-3: Specifications
 Pages 4-5: Photometric Info / Downloads
 Page 6: Mounting Details
 Pages 8-9: Custom Programming

Revision Date: February 28, 2018
Gammalux Lighting Systems reserves the right to change details of fixture designs and construction at any time.

Product Overview (for complete specifications, see pages 2 & 3)

Upgrade Capability: LED components may be easily upgraded in the field to increase energy efficiency. Tool-less fastener allows quick LED retrofit while fixtures are still installed on site.

Construction: Extruded aluminum housing provides superior fit and finish. Runs of fixtures can be built to match field conditions, including complex patterns. Continuous runs and patterns are ordered, built and shipped with a single item #.

Continuous Illumination: Optimized LED arrays provide consistent illumination in custom-length runs and patterns.

Electrical: LED components by major manufacturers. Fixtures can be fitted with integral sensors, control interface devices and specialty LED components (consult factory). Standard Output, High Output and Custom Output options available.

Optical: 3D lenses available in medium or heavy diffusion.

Standard Nomenclature

Manufacturer
Gammlux

Cross Section (nom)
3" x 4"

Distribution
D-Direct

Output *
S Standard Output
H High Output
C Custom-Programmed Output

Color Temp. (nom)
27 2700 K
30 3000 K
35 3500 K
40 4000 K
50 5000 K
RGB

Driver Options
DVR Static Driver
For Dimming Options,
See pg 2

Length Option
N Nominal length
S Specific length

Mounting Method
C Cable
S Swivel Stem
SEQ CA Earthquake
Stems/fittings

Suspension Length
24", ceiling to top
of fixture.

Paint Colors
W White (Consult Color
Chart for other
standard colors)
CCM Custom Color
Match
Wood Finishes, see
last page

Luminaire Model
2nd Generation

Cross Section Shape
Beam

LED Arrays in X-Sec
1 (for white only)
2 (for RGB only)

CRI **
8 for 80+
9 for 90+

Voltage
120, 277,
UNIV

Lamp Type
LED

Run Length
Specify total run length
(i.e. 43' 5 1/8", etc).
Single-piece housing
max in 12' unless
coordinated with factory.

Shielding
ASLMD3D.5 Acrylic
Satin Lens
(Medium Diffuse)
ASLHD3D.5 Acrylic
Satin Lens
(Heavy Diffuse)

Paint Finish
H High Gloss
SG Semi-Gloss

Options
BPE Battery Pack EM. Kit
DL UL Damp Label
EMERG Emergency ckt.
SBO = Sensor By Others*

ZTV10

8'N

GB34D2 - 1SL358 - 120V - DVR - 4' N - C24" - ASLMD3D.5 - WH - XX

* For other than SO or HO, see Custom Programmed Output page. RGB must be High Output and controlled by DMX driver option.

** 90+ CRI option has longer lead time and increases wattage by nom. 27%. For RGB, do not select a CRI option.



248 East Arrow Highway, San Dimas, CA 91773 Tel 909.599.9669 | 800.356.3275

Fax 909.599.5288 E-mail: info@gammalux.com

Gammalux products comply with ARRA Buy American requirements



Specifications (continued on next page)

Electrical

Output: Standard (S) and high (H) options deliver a pre-set lumen package (see chart below). Custom-programmed output (C) is specified as LPF, WPF or % of High Output (see Custom Programmed Output page).

Static Driver: Osram [Optotronic](#)* programmable driver, wired for static operation (DVR).

0-10V Dimming: Osram [Optotronic](#)* programmable driver, wired for 0-10v control and dimming to 10% (ZTV10) or to 1% (ZTV1).

Step Dimming: Generic step dimming driver, two hot inputs for 100% and 50% output (SD2).

DMX Dimming: Generic DMX driver with three loose control wires exiting fixture at power feed location (DMX).

DALI Dimming: Generic DALI driver with two loose control wires exiting fixture at power feed location (DALI).

Lutron Dimming: Hi-lume Premier dim to 0.1% EcoSystem with Soft-On, Fade-to-Black AVAILABLE SPRING 2018 (PEQ0E). [Hi-lume LTE](#) dim to 1% 2-wire 120V forward phase (LTEA2W). [Hi-Lume](#) dim to 1% EcoSystem with Soft-On, Fade-to-Black (LDE1). [5-Series](#) dim to 5% EcoSystem (LDE5).

White Emitter*: Nichia 757G emitters binned within 3 MacAdam ellipses in Osram or Gammalux proprietary array. 90+ CRI option with extended lead time (CRI code 9) results in nom. 27% drop in efficacy; increase calculated wattage by nom. 27%

RGB: Uses two rows of Osram [72618](#)*. RGB with all channels at full output consumes approximately 11 watts per foot.

- Red channel at full output will provide approximately the same # of lumens compared to 3,500K white at High Output.

- Green channel at full output will provide approximately 171% of lumens compared to 3,500K white at High Output.

- Blue channel at full output will provide approximately 35% of lumens compared to 3,500K white at High Output.

Battery Pack: Integral Bodine [BSL310LP](#)* (BPE). 4W max input. 10W initial output.

LED System: 70% lumen output (L70) at max 85 degrees C calculated at >60k hours. Fixtures are shipped with anti-static gloves to minimize the risk of damage to LEDs during installation. [5 year limited warranty](#).

Upgrade Capability: LED assemblies can be replaced in the future with the latest factory-provided and fully warranted components. On-board sensors, control interface devices and alternate LED components may be specified (consult factory). Max driver cross section 1.0" x 1.2". Fixtures bear UL & cUL Dry Location label. Damp Location label available (DL).

*Subject to availability; may be substituted by Gammalux. Components and specifications may be changed without notice.

ESTIMATED LUMENS PER FOOT DELIVERED COMBINATION OF 80+ CRI LEDs AND LENS											
STANDARD OUTPUT 6.35 WPF (nom)						HIGH OUTPUT 8.83 WPF (nom)					
OPTIONS	2700 K	3000 K	3500 K*	4000 K	5000 K	OPTIONS	2700 K	3000 K	3500 K*	4000 K	5000 K
ASLMD3D.5	386.4	561.3	572.8	595.7	607.2	ASLMD3D.5	702.6	748.4	763.7	794.2	809.5
ASLHD3D.5	386.4	411.6	420	436.8	445.2	ASLHD3D.5	512.9	546.4	557.5	579.8	591

Consult factory for options on custom output or wattage consumption. *IES files were created using 3500K boards. Values were then adjusted by a factor of .92 for 2700K, .98 for 3000K, 1.04 for 4000K and 1.06 for 5000K boards.

Construction

Housing: Extruded aluminum body 3.00" wide x 3.62" high, 6063T5, 0.070" min thickness. In continuous runs, each housing is 12' max unless longer housings are pre-coordinated with the factory to reduce joints and save installation labor. All fixtures are built per approved factory drawings and tested as a complete system at the factory. Continuous runs and patterns are ordered, built and shipped with a single item #. Fixtures ordered as individuals are not designed to be joined together in the field.

Joiner System: Automatic alignment, no loose parts, one tool to tighten two factory installed bolts for hairline seam. No light leaks.

Lamping: Runs ordered in Specific Length (Length Option S) may require special lamping components which consume more energy than posted values. Runs ordered in Nominal Length (Option N) may be length-adjusted at the factory to use standard lamping components. Factory drawings will show all dimensions for approval prior to production. Fixtures built to less than 4' may require master/satellite installation - consult factory.

Mounting: Aircraft cable is 7x7 stranded stainless steel with top end stopper fitting. Lower end is welded and ground for easy insertion into adjustable cable gripper (C). Feed cord is straight, white 3/C SVT or SJT #18 AWG. Stems are 3/8" schedule 40 pipe with top swivels (S). California UBC compliant stems with internal safety cables available (SEQ). Direct to surface mounting available (SF). Housing can be mounted direct to wall (WM). Wall Spacer mounting (WSP) allows projection from wall of 3.50" to meet ADA requirements.



Specifications (continued)

Optical

Reflectors: Shall be formed diffuse high reflectance aluminum.

Acrylic Satin Lens, Medium Diffuse: Snap-in. Shall be 100% DR acrylic (**ASLMD3D.5**).

Acrylic Satin Lens, Heavy Diffuse: Snap-in. Shall be 100% DR acrylic (**ASLHD3D.5**).

See lens images on photometric pages.

Finish

Housing is electrostatically sprayed with high solids aliphatic two component polyurethane to an average thickness of 2 mils. over acid etching primer or commercial clear anodizing. Specify **H** for high gloss or **SG** for semi-gloss. See Wood Finishes on back page.

High Gloss Finish



White (WH)



Red (RH)



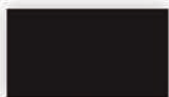
Yellow (YH)



Green (GH)



Blue (BH)



Black (BKH)

Semi Gloss Finish



White (WSG)



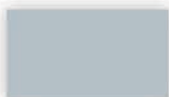
Silver (SSG)



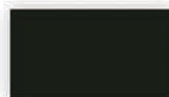
Gray (GYSG)



Off White (OWSG)



Light Gray (LGYSG)



Bronze (BZSG)



Satin Aluminum (SAPSG)

Packing and Shipping

Fixtures built for continuous rows are given a specific location identifier, clearly identified on factory layout drawings provided to installing contractor. Location identifier is printed on the fixture's ID Label, protective wrapping and on each end of fixture carton. Shipping pallets are built with 2" clearance, extending beyond the length and width of cartons, providing shipping protection.

Approx. weight of 4' module is 12 lbs. including carton. Weight of pallet and supplemental packing materials not factored in.

**G-Beam Series GB34D2-LED-LENS3D**

General Illumination - Suspended, Surface or Wall Mount
Direct Distribution with 3D Lens

Photometric Reports for
HIGH OUTPUT FIXTURES

FIXTURE USES LENS ASLMD3D.5 (MEDIUM DIFFUSE) AND 3500 K BOARDS. @ 80+ CRI

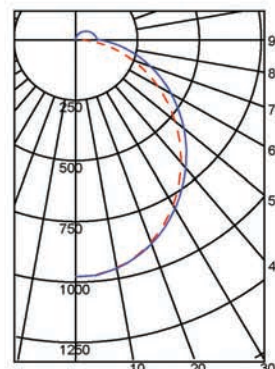
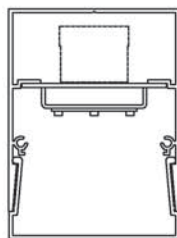
IESNA: LM 79-2008
ISSUEDATE: 05/28/14
TEST: ITL81655 mod to 73571
TESTLAB: ITL, INC.
MANUFAC: GAMMALUX LIGHTING SYSTEMS
LUMCAT: GB34D2-1HOLED35-4-ASLMD.5
LAMPS: 73571 PLPG2-Bar-1100-835-289x38-DC

EFFICACY (Total): 86.5 LPW
DISTRIBUTION % UP: 7%
DISTRIBUTION % DOWN: 93%
CIE CLASSIFICATION: DIRECT

LUMINOUS OPENING: RECTANGULAR
Width: 0.25 (Feet)
Length: 3.91
Height: 0.04
INPUT WATTS: 35.3



Acrylic Satin Lens,
Medium Diffuse
(ASLMD3D.5)



Quadrilaterally Symmetric
Dashed: 0 Degrees Solid: 90 Degrees



FIXTURE USES LENS ASLHD3D.5 (HEAVY DIFFUSE) AND 3500 K BOARDS. @ 80+ CRI

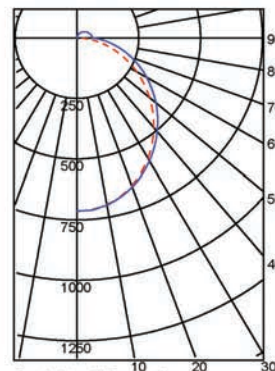
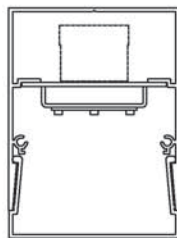
IESNA: LM 79-2008
ISSUEDATE: 05/28/14
TEST: ITL81655 mod to 73571
TESTLAB: ITL, INC.
MANUFAC: GAMMALUX LIGHTING SYSTEMS
LUMCAT: GB34D2-1HOLED35-4-ASLHD.5
LAMPS: 73571 PLPG2-Bar-1100-835-289x38-DC

EFFICACY (Total): 63.2 LPW
DISTRIBUTION % UP: 7%
DISTRIBUTION % DOWN: 93%
CIE CLASSIFICATION: DIRECT

LUMINOUS OPENING: RECTANGULAR
Width: 0.25 (Feet)
Length: 3.91
Height: 0.04
INPUT WATTS: 35.3



Acrylic Satin Lens,
Heavy Diffuse
(ASLHD3D.5)



Quadrilaterally Symmetric
Dashed: 0 Degrees Solid: 90 Degrees

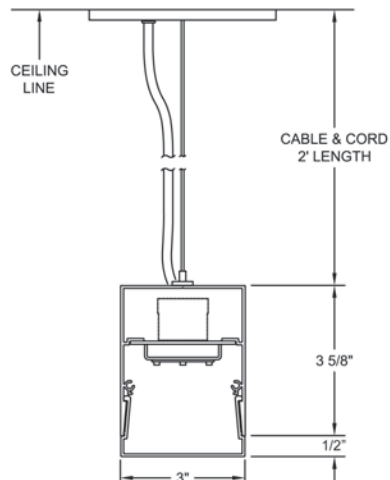


Mounting Details

Factory Drawings: Fully dimensioned factory drawings will be provided upon receipt of purchase order.

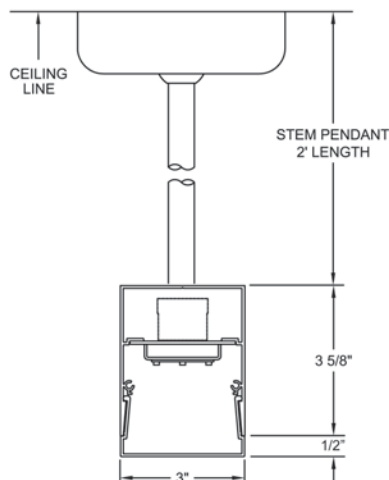
Cable Mount:

Specify **C** code in catalog #



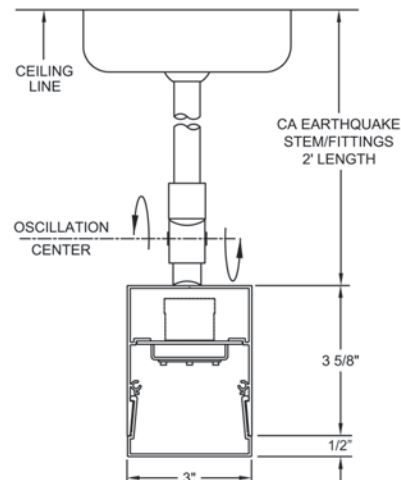
Swivel Stem Mount:

Specify **S** code in catalog #



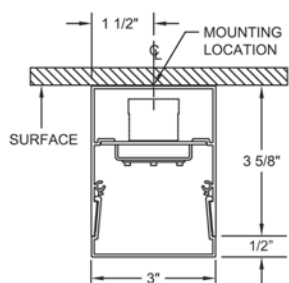
CA Earthquake Stem Mount:

Specify **SEQ** code in catalog #



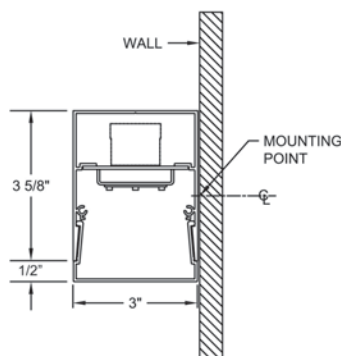
Surface Mount:

Specify **SF** code in catalog #



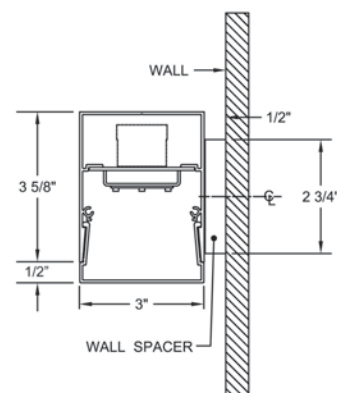
Wall Mount:

Specify **WM** code in catalog #



Wall Spacer Mount:

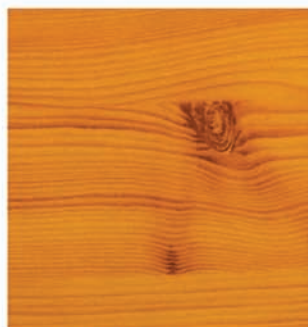
Specify **WSP** code in catalog #



Gammalux Lighting Systems reserves the right to change the details of fixture design and construction at any time.

Wood Finishes

Fixture housings are powder coated with a base finish, baked, then wrapped in a film with the decorative grain pattern. Baking the housing again allows the grain to become embedded into the powder coated finish. This is not a decal or veneer. Additional lead time and cost increases apply. Consult factory for pricing. Swatches are scaled accurately for 8.5" x 11" page.



FINISH CODE: KPI



FINISH CODE: MED



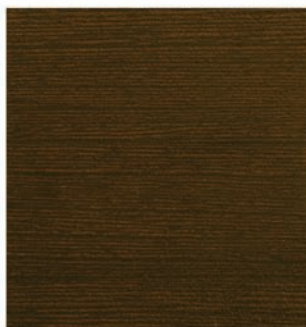
FINISH CODE: HCH



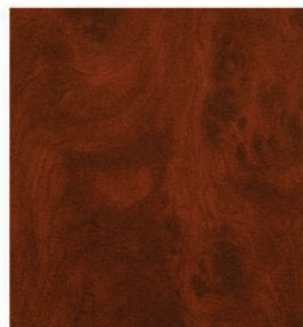
FINISH CODE: WAL



FINISH CODE: AOK



FINISH CODE: FWG



FINISH CODE: MH1



FINISH CODE: MH2



SAMPLE FIXTURE WITH WOOD FINISH

DUE TO VARIANCES IN MONITORS AND PRINTERS, ACTUAL FINISHES MAY APPEAR DIFFERENT FROM SWATCHES.

HUNZA™

PURE
OUTDOOR
LIGHTING

Down Lite PURE LED

PROJECT:

TYPE:

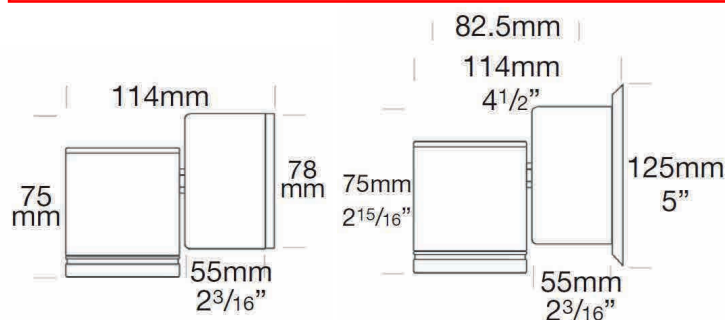
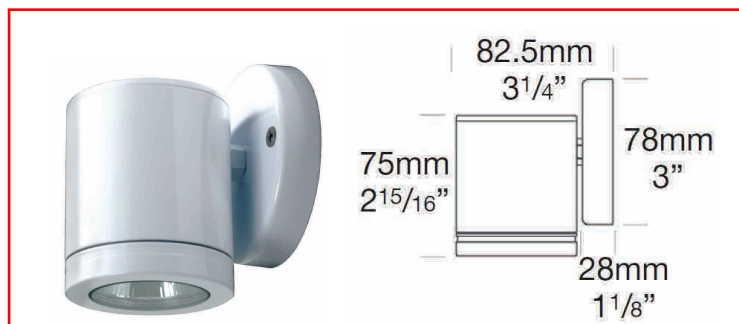
SOURCE:

NOTES:

SPECIFICATIONS



LED Chip	Cree XHP-50-2 Plug and Play field replaceable LED board
Luminaire Output	600 Lumens @ 1050mA (6 watts), 420 Lumens @ 700mA (4 watts), 240 Lumens @ 350mA (2 watts), delivered from luminaire with unobstructed beam.
Lumens Per Watt	100 Lumens minimum @ 6 watts, delivered from luminaire with unobstructed beam
CRI (3000K)	85+ Standard, 90+ Optional
Colour Temperatures	2700K, 3000K, 4000K
Beam Angles	15, 25, 38, 60
Ingress Protection	IP66
Warranty	Electronics = 5 years Body Cop/ SS = 10 years Body Aluminium = 5 years
Standards	AS/NZS 61046, EN60598 cUL 1838, 2108, 1598 CSA 22.2 No. 250.7, No. 250.0-08, No. 250.0 CE



Retro

Retro USA/Canada

PRODUCT CONFIGURATION

Please fill in appropriate codes into boxes provided

Cat. No. DL/L

Luminaire	Power	Material/ Finish	Beam	Colour	Accessories
DL/L					
S SERIES, REMOTE DRIVER		EBK BLACK	15 15°	2 2700K	HCL HEX CELL LOUVRE
D3 12VAC, 2W INTEGRAL		EBZ BRONZE	25 25°	3 3000K	SNT SNOOT
D7 12VAC, 4W INTEGRAL		EOGR OLIVE GREEN	38 38°	4 4000K	GG GLARE GUARD
D10 12VAC, 6W INTEGRAL		EWB WHITE	60 60°	39 3000K, 90+ CRI	LF FROSTED LENS
R RETRO, 110/240V DRIVER		EDG DARK GREY			WBAP WALL BOX ADAPTOR
		ESTAR SILVER STAR			CJK CABLE JOINT KIT
		ECT CORTEN			TLTM TILTING MODULE
		COP SOLID COPPER			
		SS STAINLESS STEEL			

SERIES, REMOTE DRIVER REQUIRED:

Constant current driver
Individual fixtures require 6vdc
@ 1050mA maximum

12VAC INTEGRAL DRIVER:

Hunza integrated plug and play
driver (included)
Input: 9-15VAC.
Output: 6vdc @ D3=350mA,
D7=700mA, D10=1050mA
(1050mA limited to ≤ 40°C
(104°F) ambient temperature in
stainless steel)

110/240VAC RETRO DRIVER:

Input: 120/240vac, 5 watt total
(driver included)
Output: 6vdc, 700mA
0-10 volt dimming
(USA - non dimming)

ADDITIONAL COMMENTS:

[Please click for Hunza Power Supply selection Chart](#)
[Please click for Hunza Voltage drop Chart](#)

HUNZA™

PURE
OUTDOOR
LIGHTING

HUNZA FACTORY

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Auckland 1072
New Zealand

Ph: +64-9-528 9471
Fax: +64-9-528 9361
hunza@hunza.co.nz
www.hunzalighting.com

INTERNATIONAL CONTACTS:

<http://www.hunzalighting.com/contact.php>

Specifications may change without notice. This document contains proprietary information of Hunza. Its receipt or possession does not convey an rights to reproduce or disclose its content.

CNC machined from one of the following metals:

Aluminium:

Body: high corrosion resistant 63.5mm (2^{1/2"}) x 10mm (3/8") aluminium.

End cap: solid aluminium 63.5mm (2^{1/2"}) rod.

Base and Mounting Plate (Retro™): hand spun 2mm aluminium disk. Base cast from virgin high corrosion resistant CC401 low copper aluminium alloy chromate substrate and high UV resistant polyester powder coat.

Colours:

Black, Bronze, Silver Star, White, White Birch, Olive Green, Dark Grey, Corten.

Copper:

Body: 63.5mm (2^{1/2"}) x 10mm (3/8").

End cap: solid copper 63.5mm (2^{1/2"}) rod.

Base and Mounting Plate (Retro™): handspun 2mm (5/64") copper disk and forged brass

316 Stainless Steel:

Body: 63.5mm (2^{1/2"}) x 10mm (3/8").

End cap: solid 316 stainless steel 63.5 (2^{1/2"}) rod.

Base and Mounting Plate: investing cast and CNC machined 316 stainless steel.

Step Lens:

10mm (3/8") extra clear, low iron, shatter resistant glass.

Lifetime warranty

Gaskets:

Silicone, iron impregnated 220°C (428°F)

Mounting:

12 volt: the luminaire is mounted to the wall using two 316 stainless screws through a shallow base 28mm (1^{1/8"}) in depth.

Retro™ (110/240-12volt): a mounting plate is fixed to the wall using two screws and the luminaire is fitted to the mounting plate.

Luminaire Weight:

Low voltage

Alum: 0.460kg (1lb)

Cop: 1.200kg (2lb 10oz)

SS: 1.080kg (2lb 6oz)

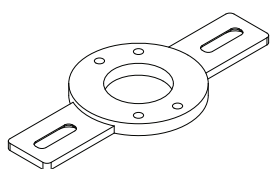
Retro™

Alum: 0.780kg (1lb 11oz)

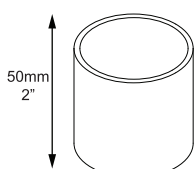
Cop: 1.680kg (3lb 11oz)

SS: 1.505kg (3lb 5oz)

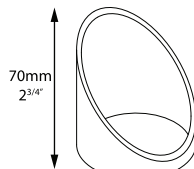
ACCESSORIES



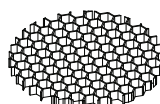
Wall Box Adaptor



Snoot



Glare Guard

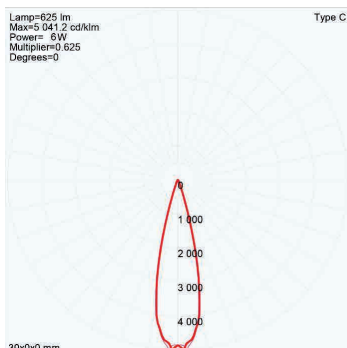


Hex Cell Louvre

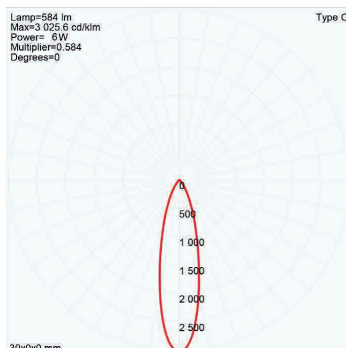
BEAM ANGLES

High efficiency PMMA TIR lenses. Field replaceable

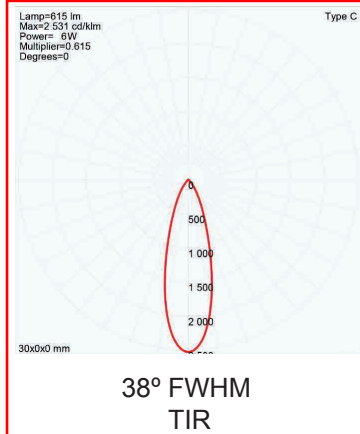
IES files available for download: <http://www.hunzalighting.com/download.php>



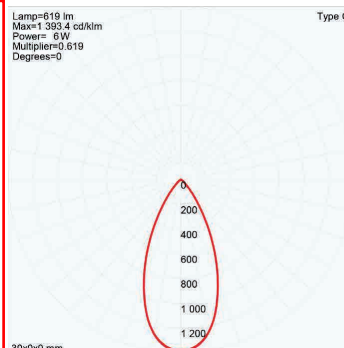
15° FWHM
TIR



25° FWHM
TIR



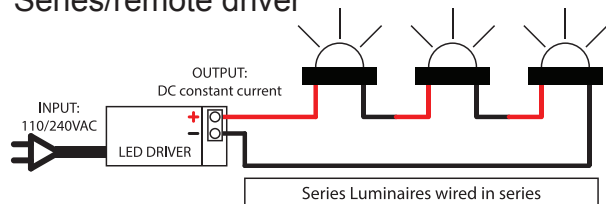
38° FWHM
TIR



60° FWHM
TIR

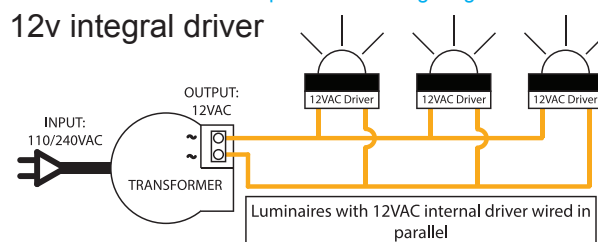
WIRING GUIDE

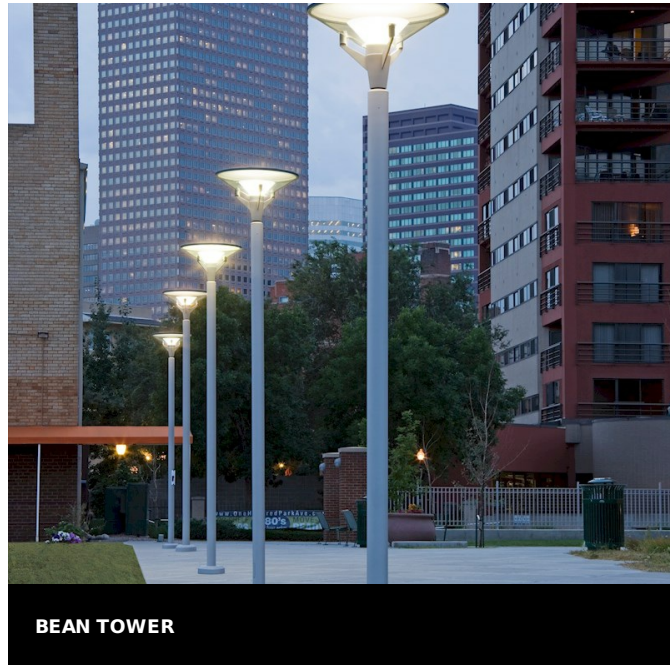
Series/remote driver



Diagrams are a guide only, wire colours and polarity may change depending on fixture and country

12v integral driver



**louis
poulsen**

Kipp Post

Design:

Alfred Homann

Concept:

The fixture emits symmetrical light directed downwards. The angle of the internal diffuser, together with the slightly curved top shade, ensures a wide band of glare-free, uniform lighting.

Finish:

Black or natural painted aluminum, powder coated.

Material:

Diffuser: Injection molded white opal acrylic. Top shade: Black or white, injection molded ASA. Enclosure: Injection molded U.V. stabilized clear polycarbonate. Frame: Die cast aluminum.

Mounting:

Post top: Mounted on round straight aluminum (RSA) pole.

Weight:

Min: 10 lbs. Max: 29 lbs.

Compliance:

cULus, Wet location.

Specification notes:

a. Consult factory for product specifications for Photo Sensor and Wireless Control options.

PRODUCT OVERVIEW

Product Code	Light source	Voltage	Finish	Electric shock protect.	Transition to pole	Features	Item number
KIP-PT	41W LED/3000K	120-277V/60HZ	BLK	SURGE PROTECTOR	T-RSA-4.5 IN	DIM 0-10V	10000130218
KIP-PT	41W LED/3000K	120-277V/60HZ	NAT PAINT ALU	SURGE PROTECTOR	T-RSA-4.5 IN	DIM 0-10V	10000130220
KIP-PT	41W LED/3000K	120-277V/60HZ	NAT PAINT ALU	NOT APPLICABLE	T-RSA-4.5 IN	DIM 0-10V	5747920613
KIP-PT	41W LED/3000K	120-277V/60HZ	BLK	NOT APPLICABLE	T-RSA-4.5 IN	DIM 0-10V	5747920639
KIP-PT	41W LED/4000K	120-277V/60HZ	BLK	SURGE PROTECTOR	T-RSA-4.5 IN	DIM 0-10V	10000130219
KIP-PT	41W LED/4000K	120-277V/60HZ	NAT PAINT ALU	SURGE PROTECTOR	T-RSA-4.5 IN	DIM 0-10V	10000130221
KIP-PT	41W LED/4000K	120-277V/60HZ	NAT PAINT ALU	NOT APPLICABLE	T-RSA-4.5 IN	DIM 0-10V	5747920626
KIP-PT	41W LED/4000K	120-277V/60HZ	BLK	NOT APPLICABLE	T-RSA-4.5 IN	DIM 0-10V	5747920642
KIP-PT	86W LED/3000K	120-277V/60HZ	BLK	SURGE PROTECTOR	T-RSA-4.5 IN	DIM 0-10V	10000121659
KIP-PT	86W LED/3000K	120-277V/60HZ	NAT PAINT ALU	SURGE PROTECTOR	T-RSA-4.5 IN	DIM 0-10V	10000121661
KIP-PT	86W LED/3000K	120-277V/60HZ	NAT PAINT ALU	NOT APPLICABLE	T-RSA-4.5 IN	DIM 0-10V	5747920655
KIP-PT	86W LED/3000K	120-277V/60HZ	BLK	NOT APPLICABLE	T-RSA-4.5 IN	DIM 0-10V	5747920671
KIP-PT	86W LED/4000K	120-277V/60HZ	BLK	SURGE PROTECTOR	T-RSA-4.5 IN	DIM 0-10V	10000121660
KIP-PT	86W LED/4000K	120-277V/60HZ	NAT PAINT ALU	SURGE PROTECTOR	T-RSA-4.5 IN	DIM 0-10V	10000121662
KIP-PT	86W LED/4000K	120-277V/60HZ	NAT PAINT ALU	NOT APPLICABLE	T-RSA-4.5 IN	DIM 0-10V	5747920668
KIP-PT	86W LED/4000K	120-277V/60HZ	BLK	NOT APPLICABLE	T-RSA-4.5 IN	DIM 0-10V	5747920684



Pole Dual Round

Design:

Louis Poulsen A/S

Finish:

Brushed aluminum, black, graphite grey, grey, natural painted aluminum or white, powder coated.

Material:

Aluminum.

Mounting:

Base cover dimension: 14" diameter. Base plate: Mounted to a concrete base with 4 anchor bolts on a bolt circle of 9.2" diameter. Installation: Refer to mounting instruction download for installation details.

Weight:

Min: 35 lbs. Max: 45 lbs.

PRODUCT OVERVIEW

Product Code	Dimension	Finish	Features	Item number
DRA-5-3	10 FT 10.5	BLK	GFI AT 28 IN	10000113603
DRA-5-3	10 FT	BLK	NOT APPLICABLE	7002012
DRA-5-3	10 FT	BR ALU	GFI AT 28 IN	10000113598
DRA-5-3	10 FT	BR ALU	NOT APPLICABLE	7002010