

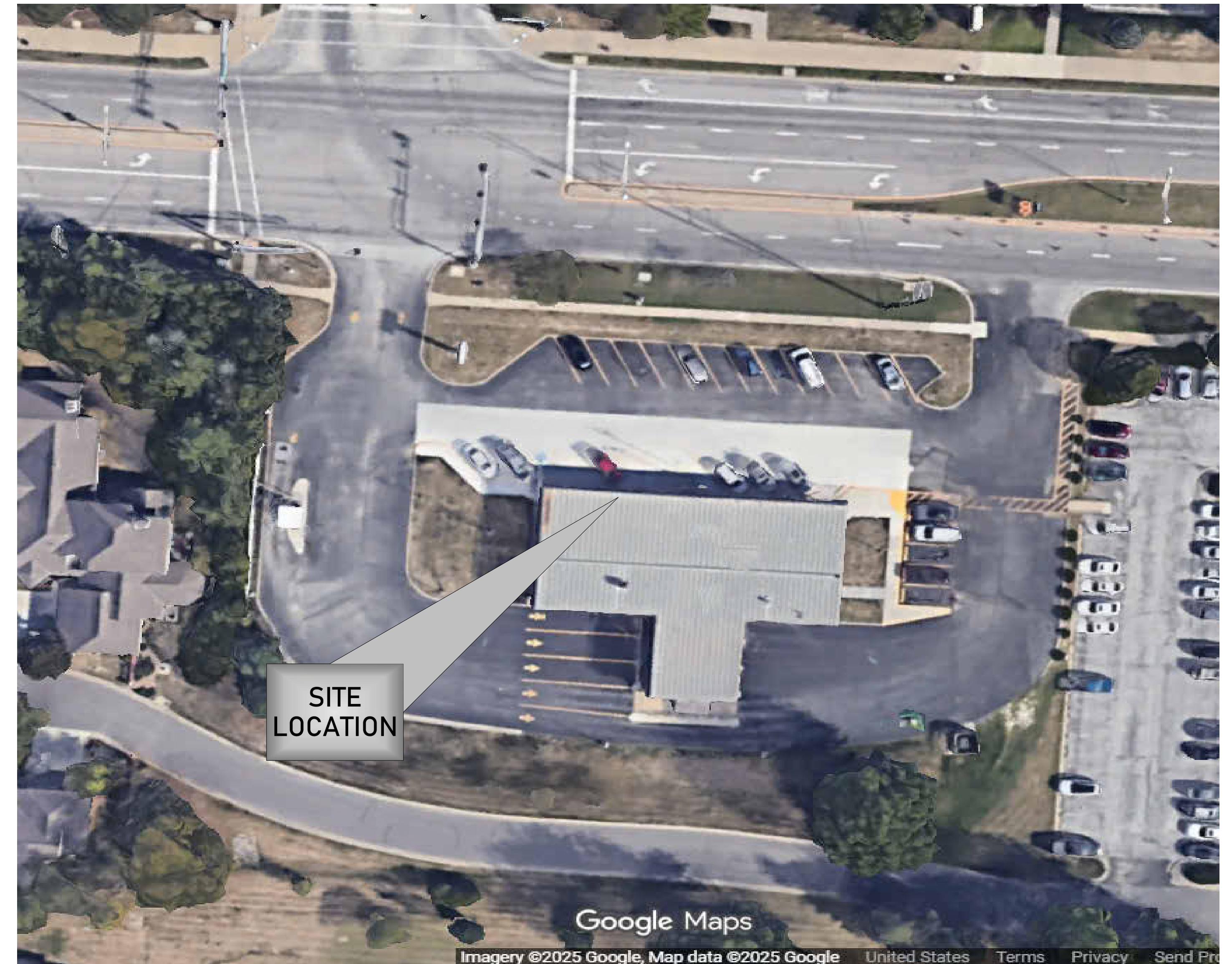


EXTERIOR LIGHTING DESIGN

MO8-306
1801 NW Chipman Rd,
Lees Summit, MO 64081

DRAWING INDEX:

- COVER SHEET
- LU-1 GENERAL NOTES
- LU-2 LUMINAIRE SCHEDULE
- LU-3 OVERALL SITE PLAN
- LU-4 FULL SITE PHOTOMETRICS PLAN AT GRADE
- LU-5 FIXTURE REMOVAL PLAN
- LU-6 DIMENSIONING PLAN
- LU-7 LANDSCAPING PLAN
- LU-8 ATM COMPLIANCE AREA PHOTOMETRICS PLAN - FOR BANK USE ONLY
- LU-9 ELEVATIONS



VICINITY MAP

V1 251113



Office: (972) 771-6038
 1629 Smirl Drive, Suite 200, Heath, Texas 75032
www.gmr1.com

SCOPE OF WORK

FIXTURE COUNT	NOTES	TOTAL NEW POLE COUNT
15	ADD NEW FIXTURE	5
6	OUT OF SCOPE	



CONTRACTOR RESPONSIBILITY NOTES:

- CONTRACTOR SHALL BE RESPONSIBLE FOR PERMITTING, INCLUDING COORDINATION WITH THE LOCAL JURISDICTION AND ANY ASSOCIATED PERMIT FEES OR PROCESSING. CONTRACTOR SHALL NOTIFY GMR UPON RECEIPT OF PERMIT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITTING DOCUMENTS THAT ARE NOT INCLUDED IN THE LIGHTING DESIGN PACKAGE. THESE INCLUDE, BUT ARE NOT LIMITED TO, STAMPED ELECTRICAL DRAWINGS, STAMPED POLE BASE DRAWINGS, AND PROFESSIONAL SURVEYS.
- SHOULD STAMPED PHOTOMETRIC DRAWINGS BE REQUIRED, CONTRACTOR SHALL ENGAGE LOCAL ENGINEER OR LIGHTING DESIGNER AS REQUIRED TO PROVIDE STAMP ON GMR PHOTOMETRIC DESIGN DOCUMENTS.
- CONTRACTOR SHALL PROVIDE THE BANKING CENTER NOTIFICATION AT LEAST ONE WEEK IN ADVANCE OF VISITING SITES OR STARTING WORK.
- CONTRACTOR SHALL VERIFY VOLTAGE REQUIREMENTS FOR FIXTURES PRIOR TO PLACEMENT OF FIXTURE ORDERS.
- CONTRACTOR TO VERIFY LIGHTING CONTROLS PRIOR TO BEGINNING CONSTRUCTION. SEE LIGHTING CONTROL NOTES.
- CONTRACTOR SHALL RECEIVE FORMAL APPROVAL FROM GMR ON ANY FIXTURE MODIFICATIONS OR VARIATIONS FROM THE LUMINAIRE SCHEDULE.
- CONTRACTOR SHALL VERIFY EXISTING AND PROPOSED FIXTURE MOUNTING CONDITIONS IN FIELD. ANY SPECIAL MOUNTING HARDWARE NEEDED FOR PROPOSED FIXTURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- CONTRACTOR SHALL SUPPLY ALL NEW LIGHT POLES. NEW LIGHT POLES SHALL MATCH EXISTING CONDITIONS ON SITE FOR POLE TYPE AND PAINT COLOR.
- CONTRACTOR SHALL ORDER ALL FIXTURES FROM BORDER STATES IN ACCORDANCE WITH BANK OF AMERICA NATIONAL ACCOUNT. CONTACT NATIONAL ACCOUNT QUOTES DEPARTMENT AT BOA@BORDERSTATES.COM OR 704-372-3040.
- CONTRACTOR SHALL PERFORM ALL NECESSARY PATCHING OR REPAINTING FOR ADDED, REMOVED, OR REPLACED FIXTURES.
- CONTRACTOR SHALL REPAIR ANY DISTURBED AREAS BACK TO EXISTING CONDITION INCLUDING PAVED AREAS, LANDSCAPED AREAS, ETC.
- CONTRACTOR SHALL VERIFY AND DOCUMENT COMPLETED WORK DURING NIGHT HOURS. ALL FIXTURES MUST BE FUNCTIONAL DURING NIGHT HOURS PRIOR TO SCHEDULING A FINAL SURVEY WITH GMR.
- CONTRACTOR SHALL PROVIDE BEFORE AND AFTER NIGHT TIME PHOTOS OF THE SITE.
- CONTRACTOR SHALL RECEIVE A PUNCHLIST FROM GMR UPON FINAL SURVEY FOR ANY REMAINING ITEMS TO BE COMPLETED.

SITE ABBREVIATIONS:

- PL = PROPERTY LINE
- AFG = ABOVE FINISHED GRADE
- FC = FOOTCANDLE
- CBO = CONTROLLED BY OTHERS
- AHD = AFTER HOUR DEPOSITORY

CONTROLS & ADDITIONAL NOTES:

LIGHTING CONTROL NOTES:

THE CONTRACTOR SHALL VERIFY THE CONTROLS FOR ALL EXTERIOR LIGHTING AND ATM/AHD INTERIOR LOBBIES ON THE SITE (EXCLUDING SIGNAGE) AND ADJUST ACCORDING TO THE FOLLOWING:

- IC3 CONTROL:**
CONTRACTOR SHALL VERIFY THAT EXTERIOR LIGHTING CIRCUITS ARE CONTROLLED BY THE CORRECT IC3 CIRCUIT. WHERE EXTERIOR LIGHTING IS INCLUDED ON CONTROL CIRCUITS FOR INTERIOR SYSTEMS, INTERIOR LIGHTING, OR EXTERIOR SIGNAGE, CONTRACTOR SHALL ADJUST EXTERIOR LIGHTING TO THE CORRECT CONTROL CIRCUIT AS REQUIRED.
- PHOTOCELL CONTROL:**
CONTRACTOR SHALL REPLACE EXISTING PHOTOCELLS WITH NEW AND INSTALL IN A LOCATION BEST SUITED TO PROVIDE APPROPRIATE LIGHT EXPOSURE SUCH THAT EXTERIOR LIGHTS ARE ON DURING DARKNESS.
- TIME CLOCK CONTROL:**
CONTRACTOR SHALL VERIFY LOCATION OF TIME CLOCK. IF TIME CLOCK IS IN ELECTRICAL ROOM ALONG WITH IC3 CONTROLS, CONTRACTOR SHALL ADJUST CIRCUIT TO BE CONTROLLED BY IC3 EXTERIOR LIGHTING CONTROLS. IF TIME CLOCK IS IN A REMOTE LOCATION NOT IN CLOSE PROXIMITY TO THE IC3 CONTROLS, CONTRACTOR SHALL VERIFY TIME CLOCK IS SET PROPERLY AND LEAVE CIRCUIT ON TIME CLOCK CONTROL.
- MANUAL CONTROL:**
CONTRACTOR SHALL VERIFY THAT NO EXTERIOR LIGHTING IS CONTROLLED MANUALLY. IF ANY EXTERIOR LIGHTING IS ON A MANUALLY CONTROLLED CIRCUIT, CONTRACTOR SHALL ADJUST TO BE CONTROLLED BY PHOTOCELL OR IC3, WHICHEVER IS MOST ECONOMICALLY ACCOMPLISHED.

ADDITIONAL CONTRACTOR NOTES:

CONSTRUCTION COMPLETION VERIFICATION

UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL PROVIDE VERIFICATION IN WRITING TO THE BANK OF AMERICA PJM THAT ALL WORK IS COMPLETE ACCORDING TO THE CONSTRUCTION DOCUMENTS, AND THAT ALL EXTERIOR LIGHTING IS FUNCTIONING DURING NIGHTTIME HOURS. COMPLETION PHOTOS, TAKEN AT NIGHT, SHALL BE PROVIDED IN THE FOLLOWING FORMAT:

- PROVIDE A SINGLE DOCUMENT CONTAINING THE FOLLOWING:
- SITE PHOTOS FROM ALL SIDES OF BUILDING
 - MINIMUM OF 3 PHOTOS OF EACH COMPLIANCE AREA (ATM(S), AFTER-HOUR DEPOSITORIES, ASSOCIATE ENTRY) FROM DIFFERENT ANGLES
 - MINIMUM OF 2 PHOTOS OF ALL NON-COMPLIANCE AREAS FROM DIFFERENT ANGLES

FIXTURE CLARIFICATION NOTES:

- OUT OF SCOPE** - EXISTING FIXTURES TO REMAIN ON SITE WITHOUT MODIFICATION. NO ACTION REQUIRED UNLESS NOTED OTHERWISE.
- REMOVE AND PATCH** - EXISTING FIXTURES TO BE FULLY REMOVED AND ANY PAINTING, PATCHING OR ELECTRICAL WORK NEEDED IS TO BE ASSESSED AND PERFORMED BY CONTRACTOR.
- REPLACE EXISTING FIXTURE** - EXISTING FIXTURE TO BE FULLY REMOVED AND REPLACED IN THE SAME LOCATION WITH A NEW FIXTURE. CONTRACTOR TO VERIFY IF POLE AND/OR POLE BASE IS SUFFICIENT FOR THE NEW FIXTURES. ANY PAINTING, PATCHING OR ELECTRICAL WORK NEEDED IS TO BE ASSESSED AND PERFORMED BY CONTRACTOR.
- ADD NEW FIXTURE** - NEW FIXTURES TO BE ADDED. ANY PAINTING, PATCHING OR ELECTRICAL WORK NEEDED TO BE ASSESSED AND PERFORMED BY CONTRACTOR.
- ADD NEW POLE & FIXTURE** - A NEW POLE AND FIXTURE TO BE ADDED. CONTRACTOR TO SPECIFY POLE TO MATCH EXISTING STYLE AND COLOR AND, IF NOT PROVIDED, POLE BASE DATA FOR NEW POLE LOCATIONS. CONTRACTOR TO VERIFY IF POLE AND POLE BASE IS SUFFICIENT FOR THE HEIGHT, LOCATION AND FIXTURE SPECIFIED.
- GMR DOES NOT SPECIFY MOUNTING HARDWARE FOR ANY SPECIFIED FIXTURES. CONTRACTOR IS TO WORK WITH DISTRIBUTOR AND/OR MANUFACTURER ON A CASE BY CASE BASIS TO IDENTIFY AND ORDER REQUIRED MOUNTING HARDWARE.
- CONTRACTOR TO VERIFY WHETHER EXISTING WIRING LOCATIONS OR THE ADDITION OF WIRING FOR NEW FIXTURE LOCATIONS IS SUFFICIENT FOR THE DESIGNATED FIXTURE LOCATION.
- CONTRACTOR TO SPECIFY POLE COLOR AND TYPE PRIOR TO ORDERING.
- ALL FIXTURES ARE ASSUMED BRONZE IN COLOR UNLESS NOTED OTHERWISE IN THE LUMINAIRE SCHEDULE. CONTRACTOR TO CONFIRM PRIOR TO ORDERING.

GENERAL NOTES:

- EXISTING CONDITIONS SHOWN ON THE DRAWINGS ARE BASED ON A LIMITED AMOUNT OF INFORMATION AVAILABLE TO THE ENGINEER. ALL SUCH CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO SUBMITTING THE BID AND ADJUSTED IF NECESSARY. NO ADDITIONAL COMPENSATION SHALL BE GRANTED AFTER AWARDED A BID FOR ANY EQUIPMENT, MATERIAL OR LABOR REQUIRED TO REWORK OR OTHERWISE MODIFY EXISTING CONDITIONS.
- THIS LIGHTING DESIGN IS BASED ON A COMBINATION OF STATE STANDARDS, THE BANK'S CURRENT SECURITY POLICY FOR EXTERIOR ATM AND AFTER-HOUR DEPOSITORIES AND BANK GUIDELINES FOR NON-SECURITY COMPLIANCE ZONES.
- TRIM ALL TREES/LANDSCAPING TO MINIMIZE IMPEDING LIGHT FROM ANY LIGHT FIXTURES THAT IMPACT THE 60' RADIUS AROUND ALL ATMS AND A RADIUS OF 50' AROUND ALL AFTER-HOUR DEPOSITORIES. CONSIDERATION MUST BE GIVEN TO TREES/LANDSCAPING IN A STATE OF FULL FOLIAGE/BLOOM AND FUTURE GROWTH. ALL LANDSCAPING WORK WILL BE PERFORMED BY OTHERS WITH A SEPARATE PERMIT (IF REQUIRED).
- ALL MOUNTING HEIGHTS ARE INTENDED TO THE BOTTOM OF THE FIXTURE.
- CONTRACTOR TO FIELD VERIFY FIXTURE PLACEMENT DIMENSIONS PRIOR TO CONSTRUCTION.
- DIMENSIONING PROVIDED IS FOR PROPOSED FIXTURE LOCATIONS ONLY, UNLESS OTHERWISE NOTED ON THE DRAWING.
- THE CONTRACTOR SHALL ATTEMPT TO ELIMINATE THE USE OF EXPOSED CONDUIT WHERE POSSIBLE. IF EXPOSED CONDUIT IS NECESSARY, THE CONTRACTOR SHALL VERIFY USE WITH PROJECT MANAGER.
- ALL EXISTING LIGHTS WILL BE REPLACED WITH LED LIGHTS AND ALL PROPOSED LIGHTS WILL ALSO BE LED, UNLESS OTHERWISE NOTED.
- ALL FIXTURES ARE TO BE MOUNTED ABOVE FINISH GRADE. UNLESS OTHERWISE NOTED, MATCH EXISTING POLE BASES.

V1 251113

REVISION NO.	DESCRIPTION	REVISED BY



Chipman Road
MO8-306
1801 NW Chipman Rd,
Lees Summit, MO 64081

GENERAL NOTES

DESIGNED BY:	SPG	DRAWN BY:	SPG
REVIEWED BY:	AWD	APPROVED BY:	KRM
SHEET NO.	LU-1		

THIS LIGHTING PLAN ILLUSTRATES ILLUMINATE LEVELS CALCULATED FROM LABORATORY DATA UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICAN (IESNA) APPROVED METHODS. ACTUAL SITE ILLUMINATION LEVELS AND PERFORMANCE OF LUMINAIRES MAY VARY DUE TO VARIATIONS IN WEATHER, ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS AND OTHER RELATED VARIABLE FIELD CONDITIONS.



SEE FIXTURE CLARIFICATION NOTE #9

LUMINAIRE SCHEDULE

CONTRACTOR TO VERIFY MOUNTING ACCESSORIES BEFORE ORDERING

SYMBOL	TOTAL FIXTURE COUNT	TYPE	NEW POLE COUNT	MANUFACTURER	MODEL	MODEL NUMBER	NOTES	MOUNTING HEIGHT	MOUNTING ACCESSORY	BUG RATING	MOUNTING	KILOWATT PER HOUR	TOTAL WATTAGE
	6	SMJ1	2	SIGNIFY	GARDCO OPF-S	OPF-S-A05-740-T5W-AR1-UNV-BZ	ADD NEW POLE AND FIXTURE	25' - 0" AFG	OPF-AR1-BZ	B4-U0-G3	POLE MOUNT	0.104	624 W
	7	SMK1	2	SIGNIFY	GARDCO OPF-M	OPF-M-A11-740-T5W-AR1-UNV-BZ	ADD NEW POLE AND FIXTURE	25' - 0" AFG	OPF-AR1-BZ	B5-U0-G3	POLE MOUNT	0.131	917 W
	2	SOJ1	1	SIGNIFY	GARDCO OPF-S	OPF-S-A04-740-T4M-AR1-UNV-BZ	ADD NEW POLE AND FIXTURE	25' - 0" AFG	OPF-AR1-BZ	B2-U0-G2	POLE MOUNT	0.091	182 W
	6	ZD1	-	-	-	-	OUT OF SCOPE	-	-	-	RECESSED CANOPY MOUNT	0.064	384 W
GRAND TOTAL WATTAGE												2107 W	

V1 251113

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Chipman Road
MO8-306
1801 NW Chipman Rd,
Lees Summit, MO 64081

LUMINAIRE SCHEDULE

DESIGNED BY: SPG	DRAWN BY: SPG
REVIEWED BY: AWD	APPROVED BY: KRM

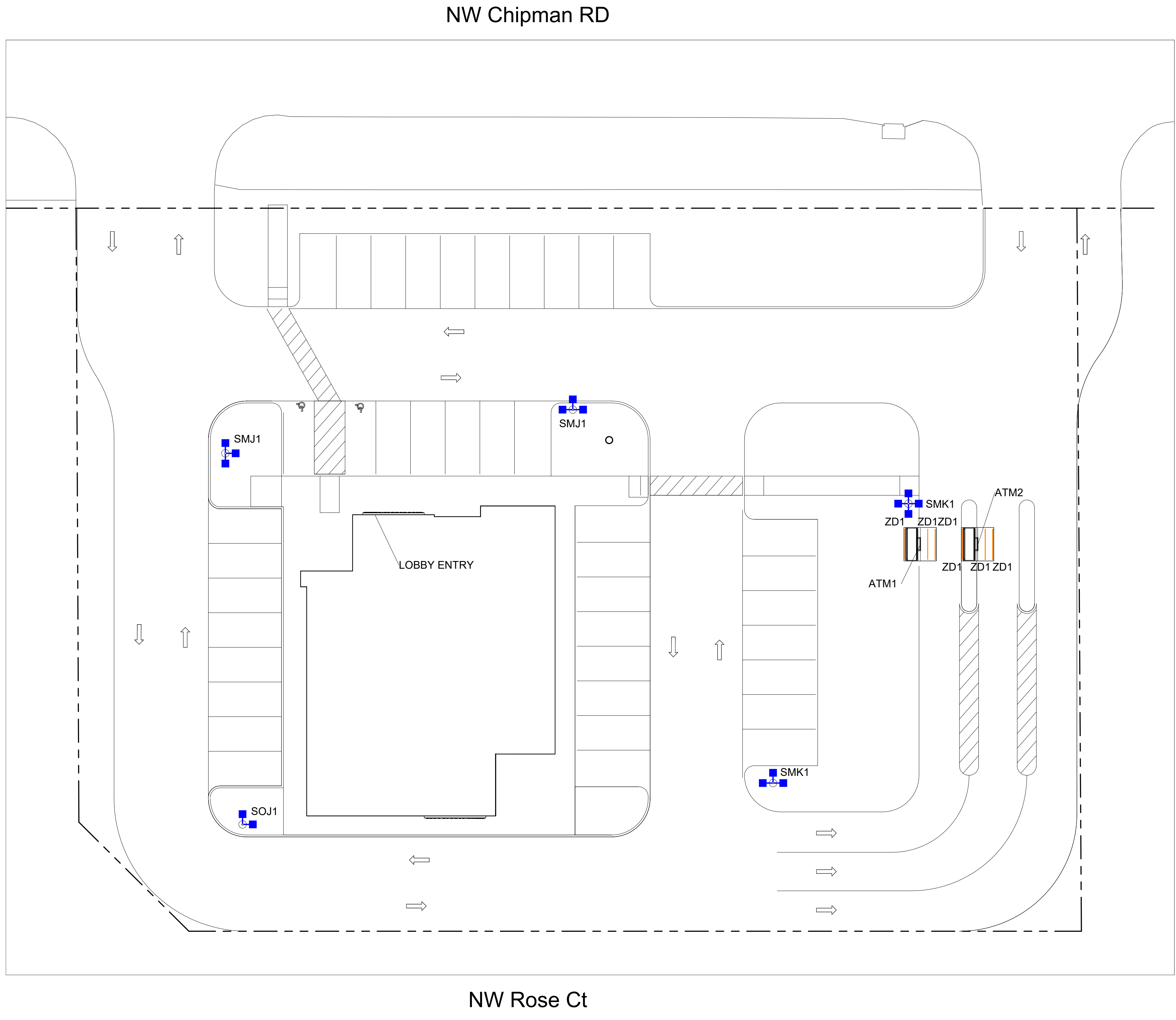
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SHEET NO. LU-2

TOTAL FIXTURE COUNT	TYPE	NOTES	MOUNTING HEIGHT
6	SMJ1	ADD NEW POLE AND FIXTURE	25' - 0" AFG
7	SMK1	ADD NEW POLE AND FIXTURE	25' - 0" AFG
2	SOJ1	ADD NEW POLE AND FIXTURE	25' - 0" AFG
6	ZD1	OUT OF SCOPE	-



BLUE = NEW FIXTURE
 GREEN = EXISTING FIXTURE LOCATION TO BE REPLACED
 ORANGE = EXISTING FIXTURE TO REMAIN
 TURQUOISE = FIXTURE TO BE REMOVED
 PINK = REPLACE WITH NEW POLE AT NEW HEIGHT
 --- = PROPERTY LINE BASED ON COUNTY APPRAISAL INFORMATION
 --- = INDICATES NEW SECURITY FENCE
 - - - = BURIED ELECTRICAL CIRCUIT



NW Jacob Dr

SCALE: 1/16" = 1'-0"
V1 251113

REVISION NO.	DESCRIPTION	REVISED BY



Chipman Road
 MO8-306
 1801 NW Chipman Rd,
 Lees Summit, MO 64081

OVERALL SITE PLAN

DESIGNED BY:	SPG	DRAWN BY:	SPG
REVIEWED BY:	AWD	APPROVED BY:	KRM
SHEET NO.	LU-3		

THIS LIGHTING PLAN ILLUSTRATES ILLUMINATE LEVELS CALCULATED FROM LABORATORY DATA UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICAN (IESNA) APPROVED METHODS. ACTUAL SITE ILLUMINATION LEVELS AND PERFORMANCE OF LUMINAIRES MAY VARY DUE TO VARIATIONS IN WEATHER, ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS AND OTHER RELATED VARIABLE FIELD CONDITIONS.

SITE NOTES:	EXISTING SITE CONDITIONS:
1. INTERIOR LIGHTING TO BE DESIGNED BY OTHERS TO MEET BOA LOBBY LIGHTING STANDARDS.	EXISTING POLES - N/A EXISTING POLE BASES - N/A EXISTING DRIVE THRU CEILING - N/A

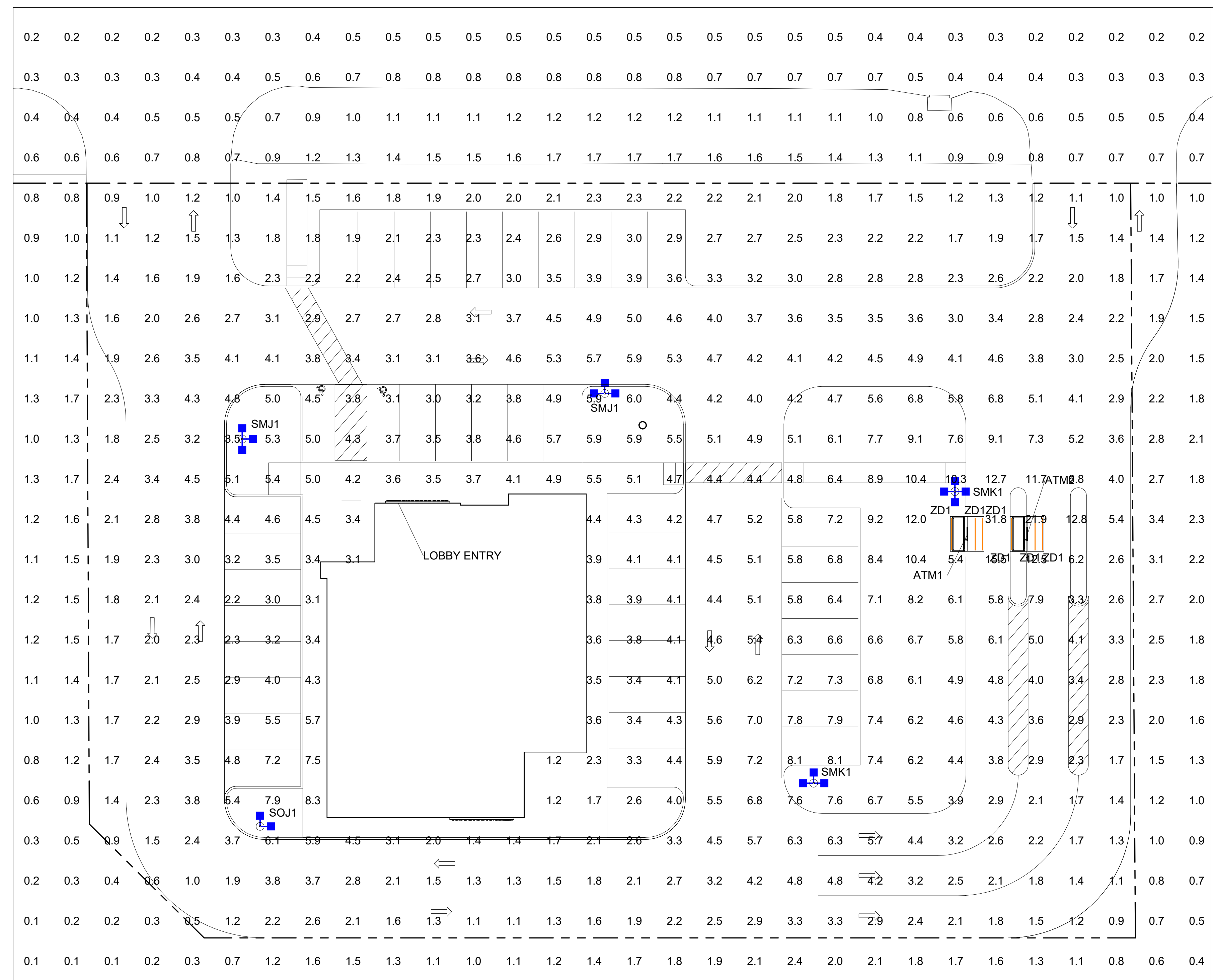


- BLUE = NEW FIXTURE
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NW Jacob Dr

NW Chipman RD



NW Rose Ct

SCALE: 1/16" = 1'-0"

V1 251113

REVISION NO.	DESCRIPTION	REVISED BY



Chipman Road
MO8-306
1801 NW Chipman Rd,
Lees Summit, MO 64081

FULL SITE PHOTOMETRICS PLAN

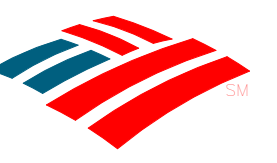
DESIGNED BY:	SPG	DRAWN BY:	SPG
REVIEWED BY:	AWD	APPROVED BY:	KRM
SHEET NO.	LU-4		

THIS LIGHTING PLAN ILLUSTRATES ILLUMINATE LEVELS CALCULATED FROM LABORATORY DATA UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICAN (IESNA) APPROVED METHODS. ACTUAL SITE ILLUMINATION LEVELS AND PERFORMANCE OF LUMINAIRES MAY VARY DUE TO VARIATIONS IN WEATHER, ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS AND OTHER RELATED VARIABLE FIELD CONDITIONS.

- NOTES:
1. THE SCOPE OF WORK FOR THIS PROJECT IS LIMITED TO EXTERIOR LIGHTING RENOVATIONS AS SHOWN ON THE PLANS.
 2. ALL PROPOSED LIGHTS WILL BE FULL CUTOFF LED LIGHT FIXTURES.
 3. ALL EXISTING LIGHTS WILL BE REPLACED WITH FULL CUT OFF LED LIGHT FIXTURES.
 4. REFERENCE THE LUMINAIRE SCHEDULE (SHEET LU-2) FOR ADDITIONAL LIGHT FIXTURE INFORMATION.

CALCULATION SUMMARY FULL SITE

Calculation Points Name	Average	Maximum	Minimum	Ave/Min	Max/Min
FULL SITE @ GRADE	2.9 fc	31.8 fc	0.1 fc	0.0 fc	0.0 fc
PARKING LOT @ GRADE	4.2 fc	8.1 fc	1.7 fc	2.5 fc	4.9 fc



SHEET INTENTIONALLY LEFT BLANK

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REVISION NO.	DESCRIPTION	REVISED BY



Chipman Road
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Lees Summit, MO 64081

FIXTURE REMOVAL PLAN

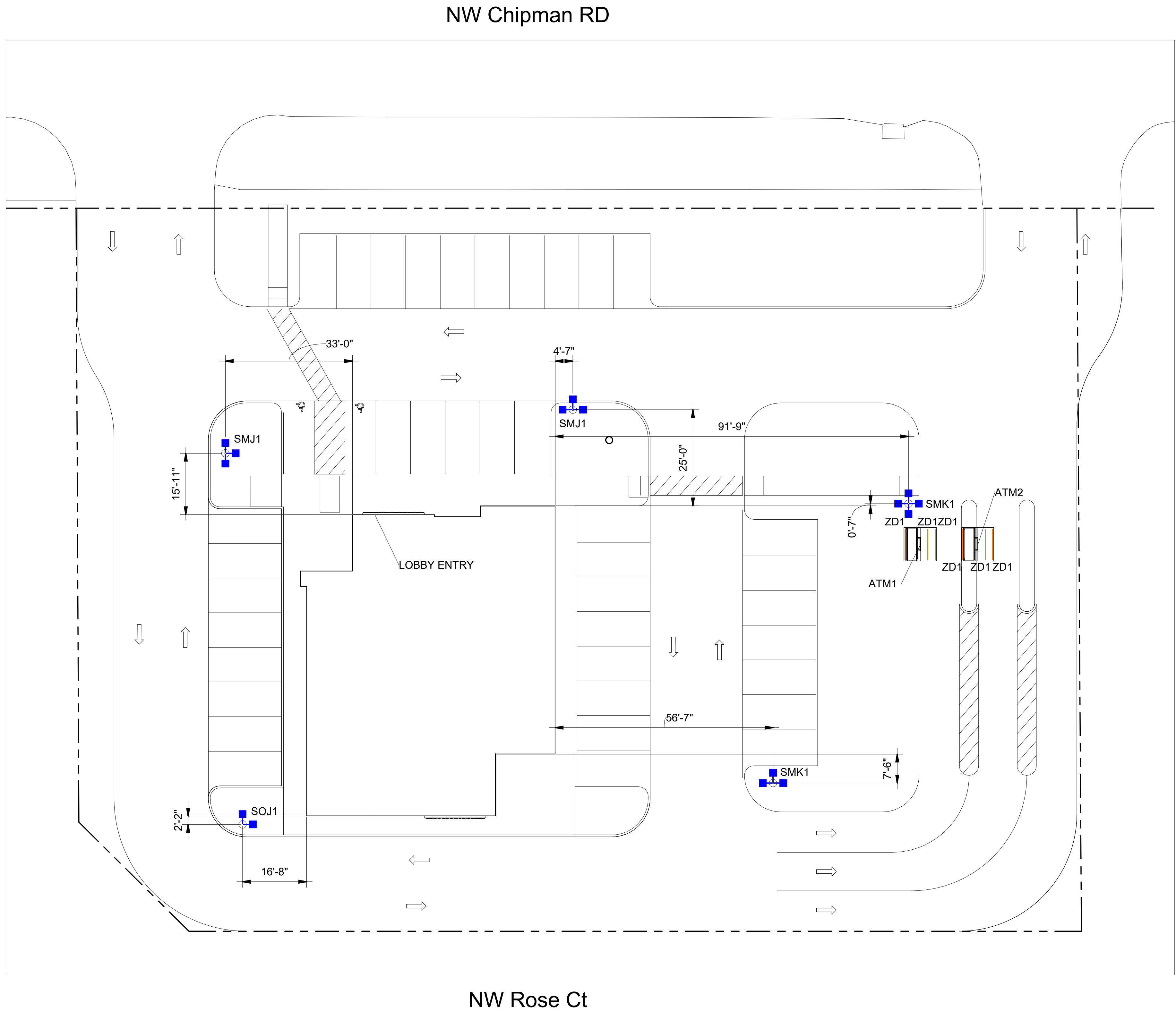
DESIGNED BY:	SPG	DRAWN BY:	SPG
REVIEWED BY:	AWD	APPROVED BY:	KRM

SHEET NO.
LU-5

TOTAL FIXTURE COUNT	TYPE	NOTES	MOUNTING HEIGHT
6	SMJ1	ADD NEW POLE AND FIXTURE	25' - 0" AFG
7	SMK1	ADD NEW POLE AND FIXTURE	25' - 0" AFG
2	SOJ1	ADD NEW POLE AND FIXTURE	25' - 0" AFG
6	ZD1	OUT OF SCOPE	-



- BLUE = NEW FIXTURE
- GREEN = EXISTING FIXTURE LOCATION TO BE REPLACED
- ORANGE = EXISTING FIXTURE TO REMAIN
- TURQUOISE = FIXTURE TO BE REMOVED
- PINK = REPLACE WITH NEW POLE AT NEW HEIGHT
- = PROPERTY LINE BASED ON COUNTY APPRAISAL INFORMATION
- = INDICATES NEW SECURITY FENCE
- = BURIED ELECTRICAL CIRCUIT



NW Jacob Dr

SCALE: 1/16" = 1'-0"
V1 251113

REVISION NO.	DESCRIPTION	REVISED BY



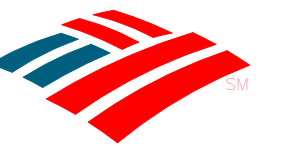
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MO8-306
1801 NW Chipman Rd,
Lees Summit, MO 64081

DIMENSIONING PLAN

DESIGNED BY:	SPG	DRAWN BY:	SPG
REVIEWED BY:	AWD	APPROVED BY:	KRM

SHEET NO. LU-6

THIS LIGHTING PLAN ILLUSTRATES ILLUMINATE LEVELS CALCULATED FROM LABORATORY DATA UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICAN (IESNA) APPROVED METHODS. ACTUAL SITE ILLUMINATION LEVELS AND PERFORMANCE OF LUMINAIRES MAY VARY DUE TO VARIATIONS IN WEATHER, ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS AND OTHER RELATED VARIABLE FIELD CONDITIONS.



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V1 251113

REVISION NO.	DESCRIPTION	REVISED BY
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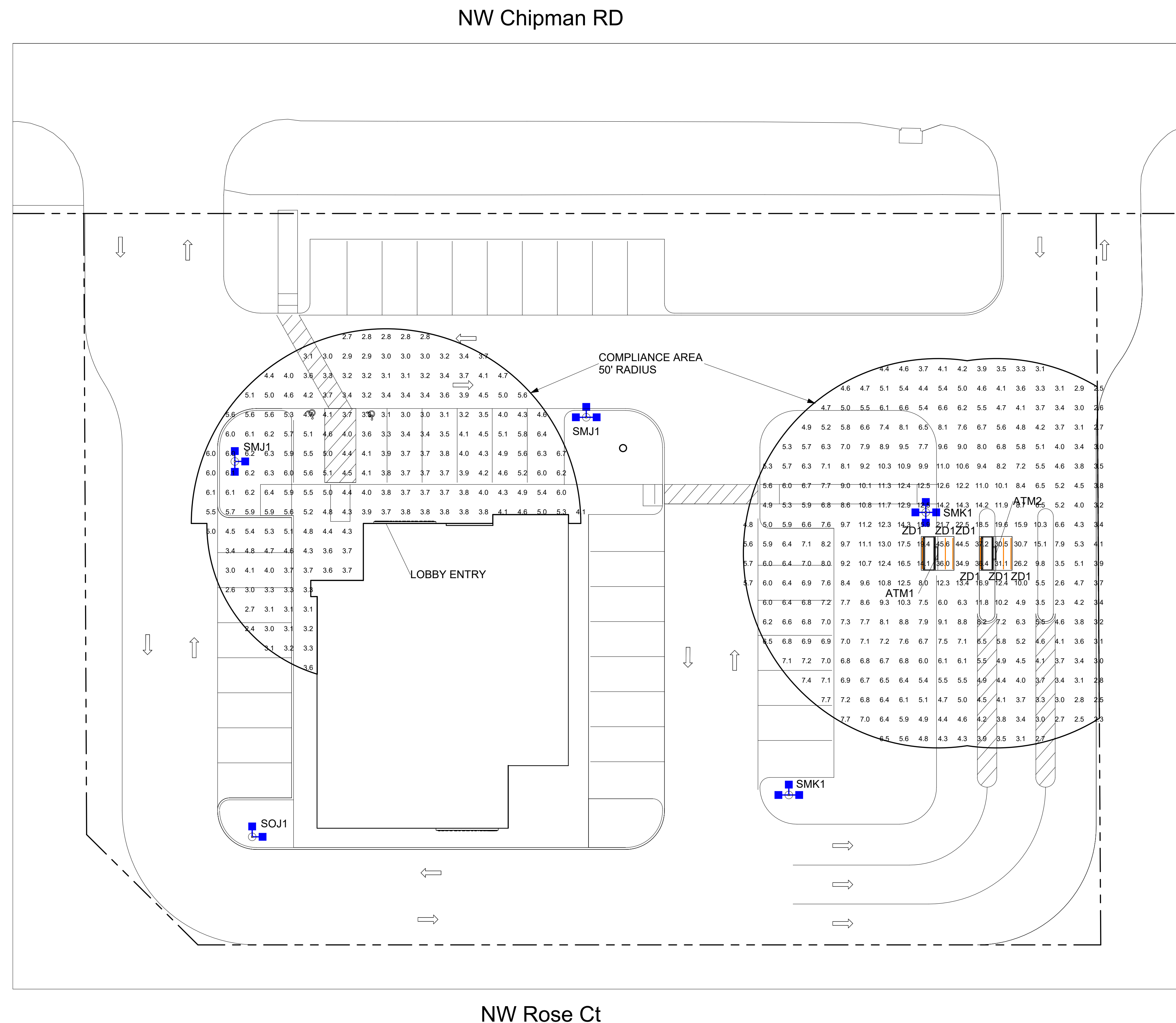
LANDSCAPING PLAN

DESIGNED BY:	SPG	DRAWN BY:	SPG
REVIEWED BY:	AWD	APPROVED BY:	KRM

SHEET NO.
LU-7



BLUE = NEW FIXTURE
 GREEN = EXISTING FIXTURE LOCATION TO BE REPLACED
 ORANGE = EXISTING FIXTURE TO REMAIN
 TURQUOISE = FIXTURE TO BE REMOVED
 PINK = REPLACE WITH NEW POLE AT NEW HEIGHT
 --- = PROPERTY LINE BASED ON COUNTY APPRAISAL INFORMATION
 --- = INDICATES NEW SECURITY FENCE
 - - - = BURIED ELECTRICAL CIRCUIT



NW Jacob Dr

SCALE: 1/16" = 1'-0"

V1 251113

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Chipman Road
 MO8-306
 1801 NW Chipman Rd,
 Lees Summit, MO 64081
 ATM COMPLIANCE AREA
 PHOTOMETRICS PLAN

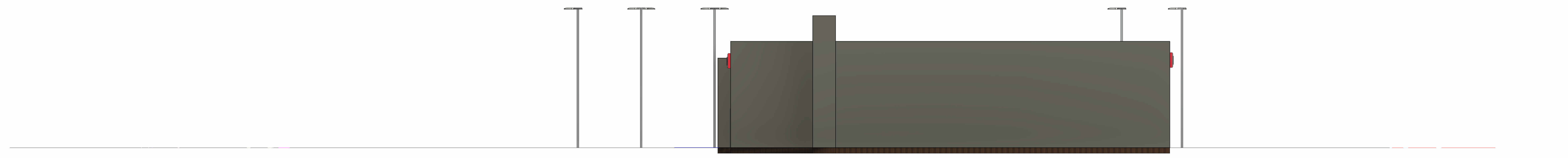
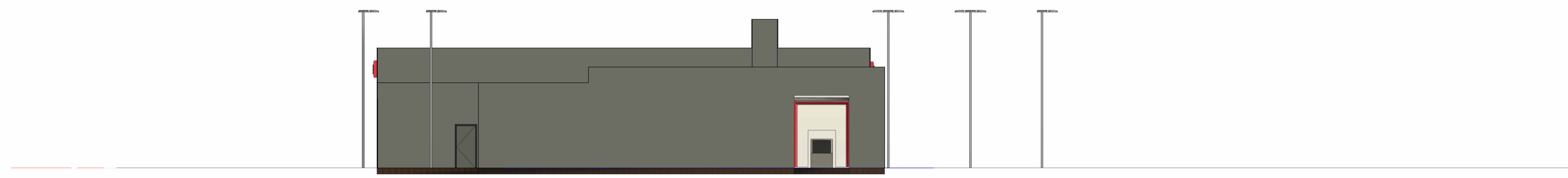
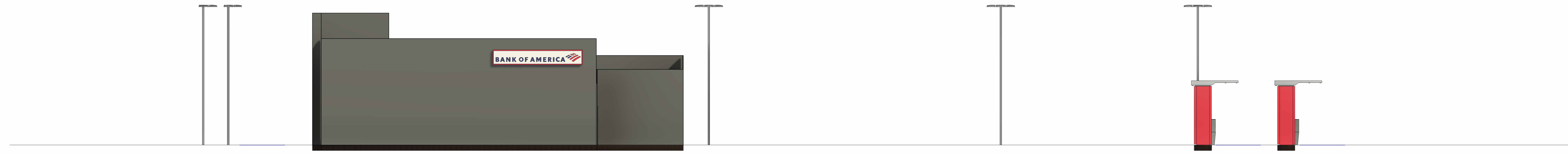
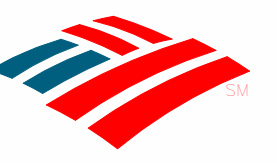
DESIGNED BY:	SPG	DRAWN BY:	SPG
REVIEWED BY:	AWD	APPROVED BY:	KRM

SHEET NO. LU-8

NOTES:
 1. READINGS ARE MEASURED AT 36" (3') ABOVE GRADE.
 2. THE SCOPE OF WORK FOR THIS PROJECT IS LIMITED TO EXTERIOR LIGHTING RENOVATIONS AS SHOWN ON THE PLANS.
 3. REFERENCE THE LUMINAIRE SCHEDULE FOR ADDITIONAL LIGHT FIXTURE INFORMATION.
 4. GC TO VERIFY WITH LOCAL AUTHORITY HAVING JURISDICTION ON TREE TRIMMING AND/OR REMOVAL PRIOR TO COMMENCING WORK.

THIS LIGHTING PLAN ILLUSTRATES ILLUMINATE LEVELS CALCULATED FROM LABORATORY DATA UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICAN (IESNA) APPROVED METHODS. ACTUAL SITE ILLUMINATION LEVELS AND PERFORMANCE OF LUMINAIRES MAY VARY DUE TO VARIATIONS IN WEATHER, ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS AND OTHER RELATED VARIABLE FIELD CONDITIONS.

CALCULATION SUMMARY COMPLIANCE					
Calculation Points Name	Average	Maximum	Minimum	Ave/Min	Max/Min
ATM1 & ATM2 50' @ 36"	7.7 fc	45.6 fc	2.3 fc	3.4 fc	19.9 fc
LOBBY ENTRY 50' @ 36"	4.3 fc	6.7 fc	2.4 fc	1.8 fc	2.8 fc



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1801 NW Chipman Rd,
Lees Summit, MO 64081

ELEVATIONS

DESIGNED BY:	SPG	DRAWN BY:	SPG
REVIEWED BY:	AWD	APPROVED BY:	KRM

SHEET NO.
LU-9



OptiForm

OPF-S Small



OPF-S-A05-740-T5W-AR1-UNV-XX

Gardco OptiForm site and area luminaires are available in three sizes: small, medium and large. Featuring the latest in LED technology, OptiForm achieves up to 192 lumens per watt. Eleven optical distributions are available, suitable for a range of outdoor lighting applications. OptForm features a unique mounting system with a two-piece housing for hassle-free installation. Mounting options include a standard arm, mast arm, and wall mount bracket. Service Tag is a standard feature with every OptiForm luminaire, providing maintenance or upgrade assistance throughout the life of the product.

Project: _____
 Location: _____
 Cat.No: _____
 Type: _____
 Lamps: _____ Qty: _____
 Notes: _____

GC TO VERIFY THAT FIXTURES CAN BE MOUNTED PER PLAN AND ALL NECESSARY HARDWARE IS SPECIFIED FOR INSTALLATION PRIOR TO PURCHASING

GC TO SEE NOTES

Ordering guide

example: OPF-S-A01-840-T4M-AR1-120-BL50-L3-BZ

Luminaire	Configuration (nom. lumens)		Color Temperature	Distribution		Mounting	Voltage
OPF-S							
OPF-S OptiForm Small Area	Site and Area	Precision Plus¹⁶ (T2M, T3M, T4M, T5M only)	827¹ 80CRI 2700K 830 80CRI 3000K 840 80CRI 4000K 727¹ 70CRI 2700K 730 70CRI 3000K 740 70CRI 4000K 750 70CRI 5000K	AFR Autofront row T2M Type 2 medium T3M Type 3 medium T4M Type 4 medium T4W Type 4 wide T5N Type 5 narrow T5M Type 5 medium T5W Type 5 wide	LCL LEED corner optic left LCR LEED corner optic right BLC Back light control 2RL Type 2 rotated left 90° 2RR Type 2 rotated right 270° 3RL Type 3 rotated left 90° 3RR Type 3 rotated right 270° 4RL¹ Type 4 rotated left 90° 4RR¹ Type 4 rotated right 270°	AR^{12,17} Arm mount (standard) MAR³ Mast arm WAL Wall mount MOS⁴ Mounting ordered separately	120 120V 208 208V 240 240V 277 277V 347 347V 480 480V UNV 120-277V HVU¹⁶ 347-480V
	A01 7,000 lumens A02 9,000 lumens A03 11,000 lumens A04 15,000 lumens A05 17,000 lumens A06 19,000 lumens A07 20,000 lumens	P01 2,500 lumens P02 4,000 lumens P03 6,500 lumens P04 9,000 lumens P05 11,500 lumens P06 14,000 lumens P07 16,500 lumens P08 19,000 lumens P09 22,000 lumens				GC TO VERIFY AND SPECIFY IF NOT UNV	

Dimming Controls	Sensing	Options (electrical, mechanical, etc)	Emergency	Finish
The following options include 0-10V Driver		None Surge protector 10kV/10kA standard SP2 Surge protector 20kV/10kA (option) FS1¹¹ Single fuse (120, 277, or 347VAC) FS2¹¹ Double fuse (208, 240, or 480V) PCB^{11,12} Photocontrol button connected to 0-10V driver TR5 NEMA Twist-lock 5-pin receptacle connected to 0-10V driver TR7¹³ 7-pin twist lock receptacle connected to D4i compliant driver TLP^{11,13} 7-pin twist lock receptacle connected to D4i compliant driver w/ 3-pin photocell EHS Housing machined to accept external house side shield for field install. Must be combined with OPF-S-EHS-1 accessory. BAC^{11,18} Meets the requirements of the Buy American Act of 1933 (BAA)	EM^{12,14,15} Emergency Battery Pack (0-40 °C) Available with precision plus optics P01-P03 only	Standard textured finish BK Black WH White BZ Bronze DG Dark Gray MG Medium Gray GC TO REFERENCE PLANS FOR COLOR DESIGNATION Customer specified OC Special optional color or RAL, consult factory SC Special color (must supply color chip, requires factory quote)
none 0-10V dimming driver DLEA^{5,10} Dimming leads externally accessible (controls by others) FAWS^{5,6,10} Field adjustable wattage selector	L2 PIR sensor, #2 lens (Required if BL50 is selected) L3 PIR sensor, #3 lens (Required if BL50 is selected)			
BL50^{5,7} Bi-level with motion sensor	WIAP sensor options LB Low (7'-15' mounting height) sensor, black color housing, wireless Interact, integral LW Low (7'-15' mounting height) sensor, white color housing HB¹ High (15'-40' mounting height) sensor, black color housing HW¹ High (15'-40' mounting height) sensor, white color housing			
The following options include SR/DALI Driver				
WIAP^{5,8,13} Wireless Interact (includes SR drive and SR receptacle) SRDR^{5,8,13} SR driver connected to Zhaga socket (D4i) DynaDimmer: Automatic Profile Dimming CS50^{5,13} Security 50% dimming, 7 hours CM50^{5,13} Median 50% dimming, 8 hours CS30^{5,13} Security 30% dimming, 7 hours CM30^{5,13} Median 30% dimming, 8 hours				

- Extended leadtime applies. Consult factory for details.
- Mounts to a square pole with knockout for 4-5" OD round pole.
- Mounts to a horizontal 2-3/8" OD x 5" Long tenon.
- Must be ordered with mounting accessory. Photocell option (TR7) must be selected with mounting accessory. See Page 2 for options.
- Not available with other dimming control options (mutually exclusive).
- Not available with motion sensor (physical restriction).
- Must be specified with a motion sensor lens (L2).
- Not available with PCB, TR5.
- Must be specified with a motion sensor LW, LB.
- Not available with TR7, TLP.
- Must specify input voltage.
- Not available in HVU [347-480V].
- Not available with lumen packages P01, P02 in UNV [120-277] and with lumen packages A01-A03, P01-P05 in HVU [347-480].
- Not available for lumen packages P04-P09.
- Not available with Dynadimmer, SRDR, FAWS, FS1, FS2, DLEA, BL50 (physical restriction).
- Precision Plus Optics (P01-P09) available only with T2M, T3M, T4M, and T5M optical distributions and are non-rotatable.
- OPF-RMB accessory recommended for retrofit applications.
- Failure to properly select the "BAC" suffix could result in you receiving product that is not BAA compliant product with no recourse for an RMA or refund. This BAC designation hereunder does not address (i) the applicability of, or availability of a waiver under, the Trade Agreements Act, or (ii) the "Buy America" domestic content requirements imposed on states, localities, and other non-federal entities as a condition of receiving funds administered by the Department of Transportation or other federal agencies.



OPF-S OptiForm small

Site & area luminaire

Shielding Accessory Kits (order separately)

One shield kit per luminaire

- OPF-S-EHS-1*** External house side shield (field installed)
- OPF-S-HIS-1***** Internal house side shields. For Area optic types T2M, T3M, and T5N.
- OPF-S-HIS-T4-1***** Internal house side shield for Area optic types T4M and T4W, qty 1.
- OPF-S-HIS-5M/5W-1***** Internal house side shield for Area optic types T5M and T5W, qty 1

*Must select EHS option on luminaire options section

**Not available for Precision Plus (P01-P09)

*** Standard internal house shields (HIS) can be used for rotated optics

Luminaire Accessories (order separately)

Pole Mount Fusing

- FP1** Pole mount single fuse (120V, 277V, or 347V)
- FP2** Pole mount double fuse (208V, 240V, or 480V)
- FP3** Pole mount double fuse canadian double pull (208V, 240V, or 480V)

Photocell Accessories

- P400S** Shorting cap

Mountings (boxed and shipped separately)

Must choose Mounting Ordered Separately (MOS) selection for mounting option of luminaire. Useful for attachment of arm to pole prior to luminaire installation.

Standard Arm

- OPF-AR1-(F)^{2,17}** Standard arm mount
- OPF-AR1-TR7-(F)^{2,19,17}** Mast arm mount with 7-pin (TR7) receptacle

Wall Mount

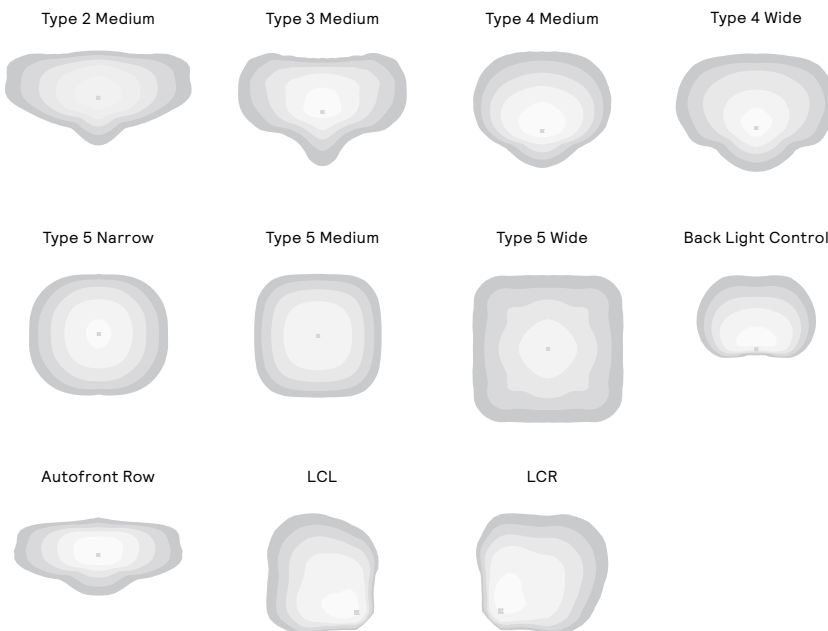
- OPF-WAL-(F)** Wall mount bracket
- OPF-WAL-TR7-(F)¹⁹** Wall mount with 7-pin (TR7) receptacle

Mast Arm

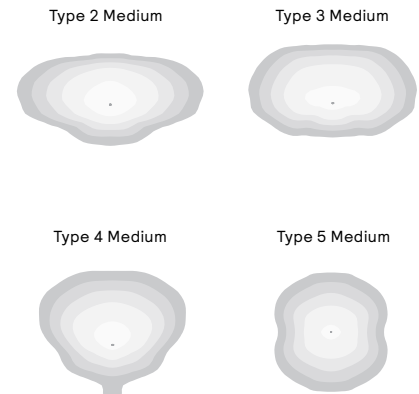
- OPF-MAR-(F)⁹** Mast arm mount
- OPF-MAR-TR7-(F)^{3,13}** Mast arm mount with 7-pin (TR7) receptacle

Optical Distributions

Site and Area Optics



Precision Plus Optics



Mounting Accessories

- OPF-RMB** Retrofit Mounting Bolster Plate for attaching OptiForm to existing poles. Recommended for retrofit applications.

- OPF-RPA** Round Pole Adapter. Fits to 3"- 3.9" O.D. pole. Painted black.

Pole Top Fitters

PTF2 - Pole top fitter fits 2 3/8 - 2 1/2" OD x 4" depth tenon

- PTF2-1-90-(F)** 1 luminaire at 90°
- PTF2-2-90-(F)** 2 luminaires at 90°
- PTF2-3-90-(F)** 3 luminaires at 90°
- PTF2-4-90-(F)** 4 luminaires at 90°
- PTF2-2-180-(F)** 2 luminaires at 180°
- PTF2-3-120-(F)** 3 luminaires at 120°

PTF3 - Pole top fitter fits 3-3 1/2" OD x 6" depth tenon

- PTF3-1-90-(F)** 1 luminaire at 90°
- PTF3-2-90-(F)** 2 luminaires at 90°
- PTF3-3-90-(F)** 3 luminaires at 90°
- PTF3-4-90-(F)** 4 luminaires at 90°
- PTF3-2-180-(F)** 2 luminaires at 180°
- PTF3-3-120-(F)** 3 luminaires at 120°

OPF-S OptiForm small

Site & area luminaire

OPF-S Area Optic Lumen values

Performance Package	System Watts	Distribution Type	70 CRI			70 CRI			70 CRI		
			3000K			4000K			5000K		
			Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)
A01	42	T2M	6991	B2-U0-G2	167	7391	B2-U0-G2	176	7391	B2-U0-G2	176
		T3M	6935	B2-U0-G2	166	7332	B2-U0-G2	175	7332	B2-U0-G2	175
		T4M	7028	B1-U0-G2	168	7431	B1-U0-G2	177	7431	B1-U0-G2	177
		T5M	7244	B3-U0-G1	173	7659	B3-U0-G1	183	7659	B3-U0-G1	183
		AFR	7241	B2-U0-G2	173	7655	B2-U0-G2	183	7655	B2-U0-G2	183
		T4W	6692	B1-U0-G2	160	7075	B1-U0-G2	169	7075	B1-U0-G2	169
		T5N	7193	B3-U0-G1	172	7605	B3-U0-G1	182	7605	B3-U0-G1	182
		T5W	6926	B3-U0-G2	165	7322	B3-U0-G2	175	7322	B3-U0-G2	175
		LCL	3804	B1-U0-G1	91	4021	B1-U0-G1	96	4021	B1-U0-G1	96
		LCR	3804	B1-U0-G1	91	4021	B1-U0-G1	96	4021	B1-U0-G1	96
BLC	4874	B0-U0-G1	116	5153	B0-U0-G1	123	5153	B0-U0-G1	123		
A02	54	T2M	8941	B2-U0-G2	165	9452	B2-U0-G2	175	9452	B2-U0-G2	175
		T3M	8869	B2-U0-G2	164	9377	B2-U0-G2	173	9377	B2-U0-G2	173
		T4M	8989	B1-U0-G2	166	9503	B1-U0-G2	176	9503	B1-U0-G2	176
		T5M	9265	B3-U0-G2	171	9795	B3-U0-G2	181	9795	B3-U0-G2	181
		AFR	9260	B2-U0-G2	171	9790	B2-U0-G2	181	9790	B2-U0-G2	181
		T4W	8558	B2-U0-G2	158	9048	B2-U0-G2	167	9048	B2-U0-G2	167
		T5N	9200	B3-U0-G1	170	9726	B3-U0-G1	180	9726	B3-U0-G1	180
		T5W	8858	B3-U0-G2	164	9365	B3-U0-G2	173	9365	B3-U0-G2	173
		LCL	4864	B1-U0-G1	90	5143	B1-U0-G1	95	5143	B1-U0-G1	95
		LCR	4864	B1-U0-G1	90	5143	B1-U0-G1	95	5143	B1-U0-G1	95
BLC	6234	B0-U0-G2	115	6591	B0-U0-G2	122	6591	B0-U0-G2	122		
A03	64	T2M	10438	B2-U0-G2	164	11035	B2-U0-G2	174	11035	B3-U0-G3	174
		T3M	10354	B2-U0-G2	163	10947	B2-U0-G2	172	10947	B2-U0-G2	172
		T4M	10494	B2-U0-G2	165	11094	B1-U0-G2	174	11094	B2-U0-G2	174
		T5M	10816	B3-U0-G2	170	11435	B3-U0-G2	180	11435	B3-U0-G2	180
		AFR	10811	B3-U0-G3	170	11429	B2-U0-G2	180	11429	B3-U0-G3	180
		T4W	9991	B2-U0-G3	157	10563	B2-U0-G2	166	10563	B2-U0-G3	166
		T5N	10740	B3-U0-G2	169	11355	B3-U0-G1	179	11355	B3-U0-G2	179
		T5W	10341	B4-U0-G2	163	10933	B3-U0-G2	172	10933	B4-U0-G2	172
		LCL	5679	B1-U0-G1	89	6004	B1-U0-G1	94	6004	B1-U0-G1	94
		LCR	5679	B1-U0-G1	89	6004	B1-U0-G1	94	6004	B1-U0-G1	94
BLC	7278	B1-U0-G2	114	7694	B0-U0-G2	121	7694	B1-U0-G2	121		
A04	91	T2M	14465	B3-U0-G3	160	15293	B3-U0-G3	169	15293	B3-U0-G3	169
		T3M	14350	B3-U0-G3	158	15171	B3-U0-G3	167	15171	B3-U0-G3	167
		T4M	14543	B2-U0-G2	160	15375	B2-U0-G2	170	15375	B2-U0-G2	170
		T5M	14990	B4-U0-G2	165	15848	B4-U0-G2	175	15848	B4-U0-G2	175
		AFR	14982	B3-U0-G3	165	15840	B3-U0-G3	175	15840	B3-U0-G3	175
		T4W	13847	B2-U0-G3	153	14639	B2-U0-G3	161	14639	B2-U0-G3	161
		T5N	14884	B4-U0-G2	164	15736	B4-U0-G2	174	15736	B4-U0-G2	174
		T5W	14331	B4-U0-G3	158	15151	B4-U0-G3	167	15151	B4-U0-G3	167
		LCL	7870	B1-U0-G2	87	8321	B1-U0-G2	92	8321	B1-U0-G2	92
		LCR	7870	B1-U0-G2	87	8321	B1-U0-G2	92	8321	B1-U0-G2	92
BLC	10086	B1-U0-G2	111	10663	B1-U0-G2	118	10663	B1-U0-G2	118		

OPF-S OptiForm small

Site & area luminaire

OPF-S Area Optic Lumen values (cont'd)

Performance Package	System Watts	Distribution Type	70 CRI			70 CRI			70 CRI		
			3000K			4000K			5000K		
			Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)
A05	104	T2M	16226	B3-U0-G3	156	17155	B3-U0-G3	164	17155	B3-U0-G3	164
		T3M	16096	B3-U0-G3	154	17018	B3-U0-G3	163	17018	B3-U0-G3	163
		T4M	16313	B2-U0-G3	156	17247	B2-U0-G3	165	17247	B2-U0-G3	165
		T5M	16814	B4-U0-G2	161	17777	B4-U0-G2	170	17777	B4-U0-G2	170
		AFR	16806	B3-U0-G3	161	17768	B3-U0-G3	170	17768	B3-U0-G3	170
		T4W	15532	B3-U0-G3	149	16421	B3-U0-G3	157	16421	B3-U0-G3	157
		T5N	16696	B4-U0-G2	160	17652	B4-U0-G2	169	17652	B4-U0-G2	169
		T5W	16075	B4-U0-G3	154	16995	B4-U0-G3	163	16995	B4-U0-G3	163
		LCL	8828	B1-U0-G2	85	9333	B1-U0-G2	89	9333	B1-U0-G2	89
		LCR	8828	B1-U0-G2	85	9333	B1-U0-G2	89	9333	B1-U0-G2	89
BLC	11314	B1-U0-G2	108	11961	B1-U0-G2	115	11961	B1-U0-G2	115		
A06	122	T2M	18441	B3-U0-G3	151	19496	B3-U0-G3	160	19496	B3-U0-G3	160
		T3M	18294	B3-U0-G3	150	19341	B3-U0-G3	158	19341	B3-U0-G3	158
		T4M	18540	B3-U0-G3	152	19601	B3-U0-G3	160	19601	B3-U0-G3	160
		T5M	19110	B4-U0-G2	156	20203	B4-U0-G2	165	20203	B4-U0-G2	165
		AFR	19100	B3-U0-G3	156	20193	B3-U0-G3	165	20193	B3-U0-G3	165
		T4W	17652	B3-U0-G3	144	18662	B3-U0-G3	153	18662	B3-U0-G3	153
		T5N	18975	B4-U0-G2	155	20061	B4-U0-G2	164	20061	B4-U0-G2	164
		T5W	18270	B5-U0-G3	150	19315	B5-U0-G3	158	19315	B5-U0-G3	158
		LCL	10033	B2-U0-G2	82	10607	B2-U0-G2	87	10607	B2-U0-G2	87
		LCR	10033	B2-U0-G2	82	10607	B2-U0-G2	87	10607	B2-U0-G2	87
BLC	12858	B1-U0-G2	105	13594	B1-U0-G2	111	13594	B1-U0-G2	111		
A07	136	T2M	16776	B3-U0-G3	123	20034	B3-U0-G3	147	21181	B3-U0-G3	156
		T3M	16642	B3-U0-G3	122	19874	B3-U0-G3	146	21012	B3-U0-G3	154
		T4M	16866	B2-U0-G3	124	20142	B3-U0-G3	148	21294	B3-U0-G3	156
		T5M	17384	B4-U0-G2	128	20761	B4-U0-G2	152	21949	B4-U0-G2	161
		AFR	17375	B3-U0-G3	128	20750	B3-U0-G3	152	21938	B3-U0-G3	161
		T4W	16058	B3-U0-G3	118	19178	B3-U0-G3	141	20275	B3-U0-G3	149
		T5N	17262	B4-U0-G2	127	20615	B4-U0-G2	151	21794	B4-U0-G2	160
		T5W	16620	B4-U0-G3	122	19848	B5-U0-G3	146	20984	B5-U0-G3	154
		LCL	9127	B1-U0-G2	67	10900	B2-U0-G2	80	11524	B2-U0-G2	85
		LCR	9127	B1-U0-G2	67	10900	B2-U0-G2	80	11524	B2-U0-G2	85
BLC	11697	B1-U0-G2	86	13969	B1-U0-G2	103	14768	B1-U0-G2	108		

OPF-S OptiForm small

Site & area luminaire

OPF-S Precision Plus Optic Lumen values

Performance Package	System Watts	Distribution Type	70 CRI			70 CRI			70 CRI		
			3000K			4000K			5000K		
			Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)
P01	15	T2M	2691	B1-U0-G1	182	2845	B1-U0-G1	192	2845	B1-U0-G1	192
		T3M	2718	B1-U0-G1	184	2874	B1-U0-G1	194	2874	B1-U0-G1	194
		T4M	2665	B1-U0-G1	180	2817	B1-U0-G1	190	2817	B1-U0-G1	190
		T5M	2610	B2-U0-G1	176	2759	B2-U0-G1	186	2759	B2-U0-G1	186
P02	23	T2M	4022	B1-U0-G1	178	4252	B1-U0-G1	189	4252	B1-U0-G1	189
		T3M	4062	B1-U0-G1	180	4295	B1-U0-G1	191	4295	B1-U0-G1	191
		T4M	3983	B1-U0-G1	177	4211	B1-U0-G1	187	4211	B1-U0-G1	187
		T5M	3900	B2-U0-G1	173	4124	B2-U0-G1	183	4124	B2-U0-G1	183
P03	38	T2M	6465	B2-U0-G2	169	6835	B2-U0-G2	179	6835	B2-U0-G2	179
		T3M	6530	B2-U0-G2	171	6904	B2-U0-G2	181	6904	B2-U0-G2	181
		T4M	6402	B1-U0-G2	168	6768	B1-U0-G2	177	6768	B1-U0-G2	177
		T5M	6269	B3-U0-G2	164	6629	B3-U0-G2	174	6629	B3-U0-G2	174
P04	53	T2M	8759	B2-U0-G2	165	9261	B2-U0-G2	174	9261	B2-U0-G2	174
		T3M	8848	B2-U0-G2	166	9355	B2-U0-G2	176	9355	B2-U0-G2	176
		T4M	8674	B2-U0-G2	163	9171	B2-U0-G2	172	9171	B2-U0-G2	172
		T5M	8495	B3-U0-G2	160	8982	B3-U0-G2	169	8982	B3-U0-G2	169
P05	66	T2M	11253	B2-U0-G2	172	11898	B2-U0-G2	182	11898	B2-U0-G2	182
		T3M	11366	B3-U0-G3	173	12018	B3-U0-G3	183	12018	B3-U0-G3	183
		T4M	11143	B2-U0-G3	170	11782	B2-U0-G3	180	11782	B2-U0-G3	180
		T5M	10913	B3-U0-G2	167	11539	B3-U0-G2	176	11539	B3-U0-G2	176
P06	76	T2M	13987	B3-U0-G3	183	14788	B3-U0-G3	194	14788	B3-U0-G3	194
		T3M	14128	B3-U0-G3	185	14937	B3-U0-G3	196	14937	B3-U0-G3	196
		T4M	13850	B2-U0-G3	182	14644	B2-U0-G3	192	14644	B2-U0-G3	192
		T5M	13564	B4-U0-G3	178	14342	B4-U0-G3	188	14342	B4-U0-G3	188
P07	94	T2M	15850	B3-U0-G3	168	16758	B3-U0-G3	178	16758	B3-U0-G3	178
		T3M	16010	B3-U0-G3	170	16927	B3-U0-G3	180	16927	B3-U0-G3	180
		T4M	15696	B3-U0-G3	167	16595	B3-U0-G3	176	16595	B3-U0-G3	176
		T5M	15372	B4-U0-G3	163	16253	B4-U0-G3	172	16253	B4-U0-G3	172
P08	113	T2M	19800	B3-U0-G3	176	20934	B3-U0-G3	186	20934	B3-U0-G3	186
		T3M	19999	B3-U0-G3	178	21145	B3-U0-G3	188	21145	B3-U0-G3	188
		T4M	19607	B3-U0-G3	174	20730	B3-U0-G3	184	20730	B3-U0-G3	184
		T5M	19202	B4-U0-G3	171	20302	B4-U0-G3	180	20302	B4-U0-G3	180
P09	133	T2M	21655	B3-U0-G3	163	22896	B3-U0-G3	172	22896	B3-U0-G3	172
		T3M	21874	B3-U0-G3	164	23127	B3-U0-G3	174	23127	B3-U0-G3	174
		T4M	21444	B3-U0-G4	161	22673	B3-U0-G4	171	22673	B3-U0-G4	171
		T5M	21002	B4-U0-G3	158	22205	B4-U0-G3	167	22205	B4-U0-G3	167

OPF-S OptiForm small

Site & area luminaire

LED Wattage and Lumen Values (Emergency Mode)

Ordering Code	CCT	CRI	Avg. System Wattage (W)	Type 2M		Type 3M		Type 4M	
				Lumen Output	BUG Rating	Lumen Output	BUG Rating	Lumen Output	BUG Rating
OPF-S-PXX-740-X-EM	4000	70	6	1000	B0-U0-G0	1014	B0-U0-G1	838	B0-U0-G0
OPF-S-PXX-750-X-EM	5000	70	6	960	B0-U0-G0	973	B0-U0-G1	804	B0-U0-G0
OPF-S-PXX-830-X-EM	3000	80	6	856	B0-U0-G0	868	B0-U0-G1	717	B0-U0-G0
OPF-S-PXX-840-X-EM	4000	80	6	887	B0-U0-G0	899	B0-U0-G1	743	B0-U0-G0

Predicted Lumen Depreciation Data

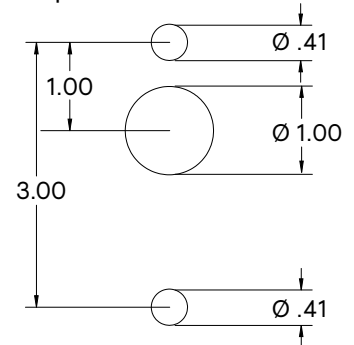
Predicted performance derived from LED manufacturer's data and engineering design estimates, based on IESNA LM-80 methodology. Actual experience may vary due to field application conditions. L70 is the predicted time when LED performance depreciates to 70% of initial lumen output. Calculated per IESNA TM21-11. Published L70 hours limited to 6 times actual LED test hours

Ambient Temp°C	Lumen Package	Calculated L70 Hours	L70 per TM-21	Lumen Maintenance % at 60,000 hrs
25°C	A06-A07	>77,000 hours	>77,000 hours	90%
25°C	All others	>100,000 hours	>100,000 hours	96%

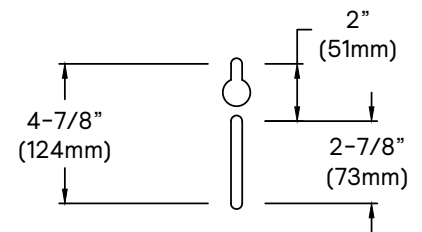
Dimensions

Standard Drill Pattern

Drill Template #5



Standard Arm Mounting Hole Pattern



OPF-S OptiForm small

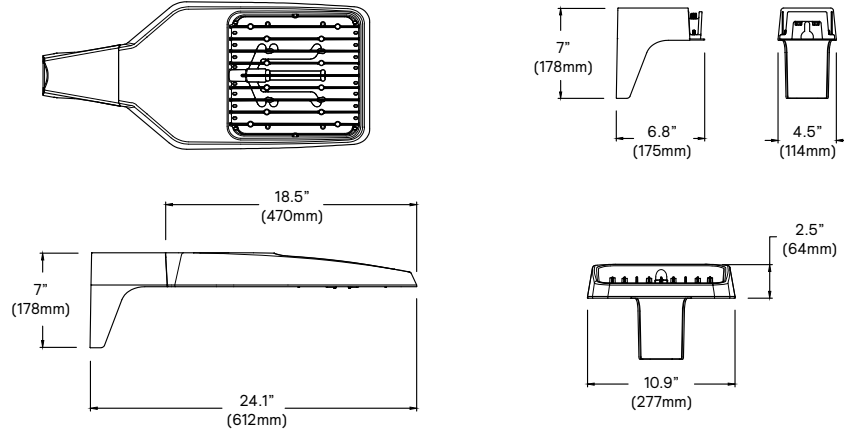
Site & area luminaire

Dimensions

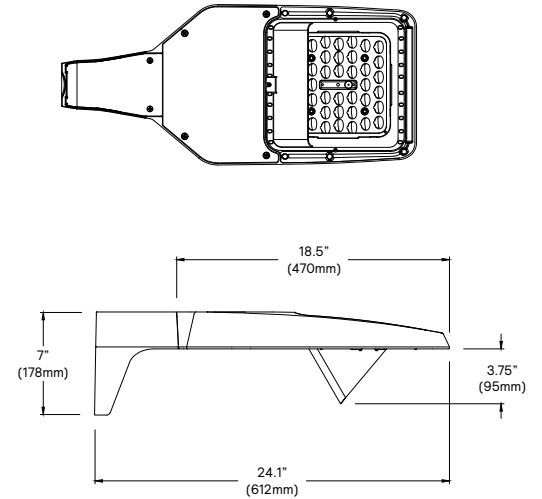
OptiForm Standard Arm

Weight: 11 lb (5.0 kg)

EPA: 0.2 ft² (0.018 m²)

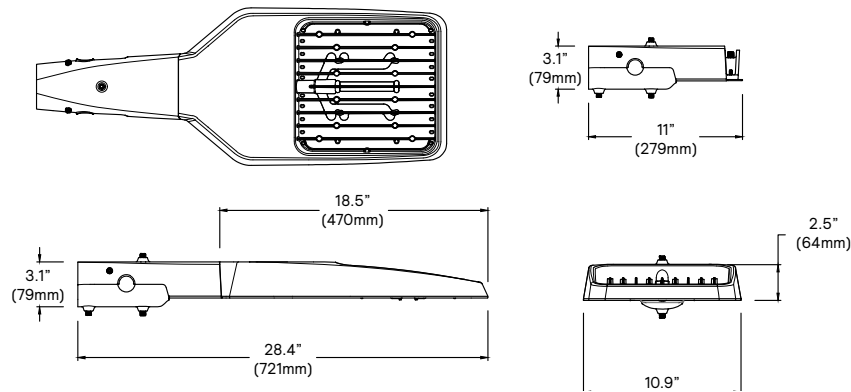


OptiForm External Housing Shield



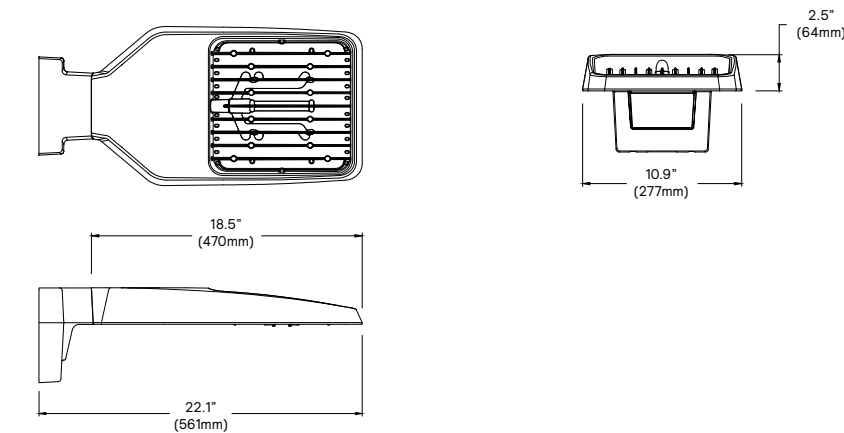
OptiForm Mast Arm

Weight: 12.6 lb (5.7 kg)



OptiForm Wall Mount

Weight: 11.5 lb (5.2 kg)



OPF-S OptiForm small

Site & area luminaire

Specifications

Housing

Housing and door constructed of low copper die cast Aluminum alloy (A360) with detachable arms for quick mounting. Heatsink is integral to the housing providing passive cooling of LEDs to maintain long LED life. Luminaire housing rated to IP65, LED Modules rated IP66 tested in accordance to Section 9 of IEC 60598-1. OptiForm carries and impact rating of IK08.

Vibration resistance

OptiForm is tested and rated to standards set forth in ANSI C136.31-2018 Level 2 for Bridge and Overpass applications.

Light engine

Light engine comprises of a module of 40-LED aluminum metal clad board fully sealed with optics: Medium = 2 Modules with 80 LEDs, Large = 4 modules with 160 LEDs. Module is RoHS compliant. Color temperature as per ANSI/NEMA bin 2700 Kelvin nominal (2725 ±145K), 3000 Kelvin nominal (3045K +/- 175K) or 4000 Kelvin nominal (3985K +/- 275K), CRI 70 Min. 75 Typical. Other CCT/CRI also available, consult factory. LED light engine is rated IP66 in accordance to Section 9 of IEC 60598-1.

Energy saving benefits

System efficacy up to 182 lms/W with significant energy savings over Pulse Start Metal Halide luminaires. Optional control options provide added energy savings during unoccupied periods.

Optical systems

Site and Area optical distributions include Types 2 Medium, 3 Medium, 4 Medium, 4 Wide, 5 Narrow, 5 Medium, 5 Wide, and Auto Front Row. LEED Corner Left, LEED Corner Right, and Backlight Control distributions also available to provide excellent cutoff to meet the most stringent requirements at property lines. Optional internal shields mount to LED optics and are available with Type 2M, 3M, and 4M distributions. Types 2M and 3M can be rotated at 90° or 270° when specified, and are factory set only. Site and Area optics shall be performance tested per LM-79 and TM-15 (IESNA) certifying their photometric performance. Luminaire designed with 0% uplight (U0 per IESNA TM-15).

Precision Plus optical distributions include Types 2, 3, 4 and 5 and are designed to illuminate pedestrian scale applications by providing lower glare, while still achieving desired distribution, optimized spacing, and excellent uniformity. Optics are made of optical grade polymer refractor lenses and shall be performance tested per LM-63, LM-79 and TM-15 (IESNA) certifying their photometric performance. Luminaire designed with 0% uplight (U0 per IESNA TM-15).

Mounting

Standard luminaire arm mounts to square poles with knock-out on the arm to allow for mounting to 4" O.D. round poles. Standard arm casting can accommodate existing bolt spacing from 2" to 4-7/8". It is recommended to use the bolster plate kit OPF RMB when it's not a new installation or if the mounting holes are larger than 0.41" (10mm).

OptiForm features a Mast Arm for Mounting to 2-3/8x4" tenon as well as wall mount casting for exterior building mount applications.

Control options

Dimming Leads Externally Accessible (DLEA): Access to 0-10V dimming leads supplied through back of luminaire (for secondary dimming controls by others). Cannot be used with other control options.

Sensor Ready Zhaga Socket Connector (SRDR): Product is D4i Certified and equipped with Sensor Ready drivers connected to 4-pin Zhaga Book 18 compliant receptacle designed for sensor and other control system applications. Receptacle is rated IP66 assembly in a compact design that provides a sealed electrical interface and rated UV resistance, mounted on underside of the luminaire, protective dust cap included. When a controller not provided by Signify is used with Sensor Ready Zhaga socket connector, the controller must be certified to work with the Xitanium SR LED drivers as part of the SR certified program. SRDR can be used with NEMA 7-pin twist lock receptacle, which is mounted on top of the luminaire.

Automatic Profile Dimming (CS/CM/CE/CA): Standard dimming profiles provide flexibility towards energy savings goals while optimizing light levels during specific dark hours. Dimming profiles include two dimming settings including dim to 30% or 50% of the total lumen output. After 5 minutes with no motion, it will return to the automatic dimming profile schedule. Automatic dimming profile scheduled with the following settings:

- **CS50/CS30:** Security for 7 hours night duration (Ex., 11 PM – 6 AM)
- **CM50/CM30:** Median for 8 hours night duration (Ex., 10 PM – 6 AM)

All above profiles are calculated from mid point of the night. Dimming is set for 6 hours after the mid point and 1 or 2 hours before depending of the duration of dimming. Cannot be used with other dimming control options

Field Adjustable Wattage Selector (FAWS): Luminaire equipped with the ability to manually adjust the wattage in the field to reduce total luminaire lumen output and light levels. Comes pre-set to the highest position lumen output selected. Use chart below to estimate reduction in lumen output desired. Cannot be used with other control options or motion response.

FAWS Position	Percent of Typical Lumen Output	FAWS Position	Percent of Typical Lumen Output
1	25%	6	80%
2	50%	7	85%
3	55%	8	90%
4	65%	9	95%
5	75%	10	100%

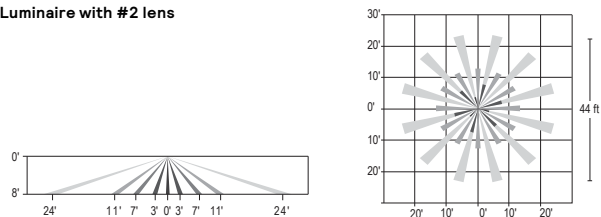
Note: Typical value accuracy +/- 5%

Motion response options

Bi-Level Infrared Motion Response (BL50): Motion Response module is mounted integral to luminaire factory pre-programmed to 50% dimming when not ordered with other control options. BL-IMRI is set/operates in the following fashion: The motion sensor is set to a constant 50%. When motion is detected by the PIR sensor, the luminaire returns to full power/light output. Dimming on low is factory set to 50% with 5 minutes default in "full power" prior to dimming back to low. When no motion is detected for 5 minutes, the motion response system reduces the wattage by 50%, to 50% of the normal constant wattage reducing the light level. Other dimming settings can be provided if different dimming levels are required (contact Technical Support for details).

Infrared Motion Response Lenses (L2): Infrared Motion Response Integral module is available with two different sensor lens types to accommodate various mounting heights and occupancy detection ranges. Lens #2 is designed for mounting heights 8' to 15'. Lens #3 is designed for higher mounting heights up to 20' with a 40' diameter coverage area. See charts for approximate detection patterns:

Luminaire with #2 lens



OPF-S OptiForm small

Site & area luminaire

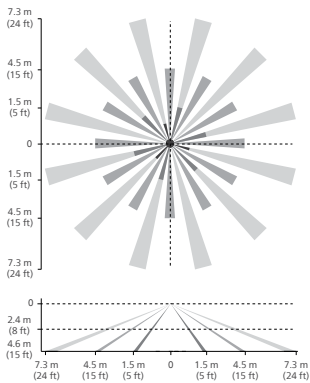
Specifications (cont'd)

Outdoor Interact (WIAP): Connected sensor with integral occupancy and daylight sensing, supports wireless mesh connectivity. Sensor works in the standalone mode when configured without a gateway. When used with a gateway you are able to access additional functionalities such as energy monitoring, scheduling and BMS integration. Interact offers an App, a portal and a broad portfolio of Interact-ready Indoor and Outdoor luminaires, lamps and retrofit kits all working on the same system. The App provides flexibility to choose between a standalone or gateway mode. Setup with the gateway requires wired Internet access to the gateway. WIAP includes SR driver and SR receptacle. Daylight harvesting supported through dimming - activated via the Interact App. Sensors IP66 rated.

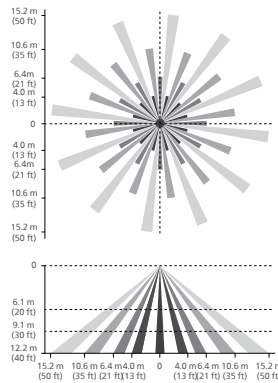
For more information on Interact Pro visit:

www.interact-lighting.com/interactproscalablesystem

LB or LW low sensor



HB or HW high sensor



Note: The beam patterns shown are intended solely as a general guide and are not to scale. Sensing capabilities and coverage area depend on many factors including the size, speed and direction of travel of persons and vehicles; sensor mounting height; environmental and site conditions; etc.

Electrical

Twist-Lock Receptacle (TR5/TR7): Twist Lock Receptacle with 5 pins enabling dimming or with 7 pins with additional functionality (by others) can be used with a twistlock photoelectric cell or a shorting cap. Dimming Receptacle Type B (5-pin) and Type D-24 (7-pin) in accordance to ANSI C136.41. Can be used with third-party control system. Receptacle located on top of luminaire housing. When specifying receptacle with twistlock photoelectric cell, voltage must be specified. When ordering 7-pin Twist-lock receptacle (TR7), all 7 pins are wired to respective pins with the Sensor Ready (SR) driver, and photocell or shorting cap is not included. When ordering a twist-lock receptacle with a photocell (TLP), the receptacle used is a 7-pin receptacle, with pins 6 and 7 connected to SR DALI driver. 0-10V dimming leads (pins 4 and 5) are connected if not ordered with any other dimming option.

Driver: Driver efficiency (>90% standard). 120-480V available (restrictions apply). Open/short circuit protection. All drivers are 0-10V dimming to 10% power standard, except when using Sensor Ready (SR) drivers, which uses DALI protocol (options CS50/CM50/CS30/CM30, SRDR, and TR7). Drivers are RoHS and FCC Title 47 CFR Part 15 compliant.

Button Photocontrol (PCB): Button style design for internal luminaires mounting applications. The photocontrol is constructed of a high impact UV stabilized polycarbonate housing. Rated voltage of 120V or 208-277V with a load rating of 1000 VA. The photocell will turn on with 1-4Fc of ambient light.

Surge protection (SP1/SP2): Surge protection device tested in accordance with ANSI/IEEE C62.45 per ANSI/IEEE C62.41.2 Scenario I Category C High Exposure 10kV/10kA waveforms for Line-Ground, Line-Neutral and Neutral-Ground, and in accordance with DOE MSSLC Model Specification for LED Roadway Luminaires Appendix D Electrical Immunity High test level 10kV/10kA. 20kV / 10kA surge protection device that provides extra protection beyond the SP1 10kV/10kA level.

Listings

UL/cUL wet location listed to the UL 1598 standard, suitable for use in ambient temperatures from -40° to 40°C (-40° to 104°F). All Optiform configurations are qualified under Design Lights Consortium Premium classification. Consult DLC Qualified Products list to confirm your specific luminaire selection is approved. CCTs 3000K and warmer are Dark Sky Approved.

Finish

Each standard color luminaire receives a fade and abrasion resistant, electrostatically applied, thermally cured, triglycidyl isocyanurate (TGIC) textured polyester powdercoat finish. Standard colors include bronze (BZ), black (BK), white (WH), dark gray (DGY), and medium gray (MGY). Consult Factory for specs on optional, custom colors, and marine grade paint.

Service Tag

Each individual luminaire is uniquely identifiable, thanks to the Service tag application. With a simple scan of a QR code, placed on the inside of the mast door, you gain instant access to the luminaire configuration, making installation and maintenance operations faster and easier, no matter what stage of the luminaire's lifetime. Just download the APP and register your product right away. For more details visit: signify.com

Warranty

OptiForm luminaires feature a 5-year limited warranty. See signify.com/warranties for complete details and exclusions.



Site and Area

TYPE SMK1



OptiForm

OPF-M Medium



OPF-M-A11-740-T5W-AR1-UNV-XX

Gardco OptiForm site and area luminaires are available in three sizes: small, medium and large. Featuring the latest in LED technology, OptiForm achieves up to 192 lumens per watt. Eleven optical distributions are available, suitable for a range of outdoor lighting applications. OptForm features a unique mounting system with a two-piece housing for hassle-free installation. Mounting options include a standard arm, mast arm, and wall mount bracket. Service Tag is a standard feature with every OptiForm luminaire, providing maintenance or upgrade assistance throughout the life of the product.

Project: _____
 Location: _____
 Cat.No: _____
 Type: _____
 Lamps: _____ Qty: _____
 Notes: _____

GC TO VERIFY THAT FIXTURES CAN BE MOUNTED PER PLAN AND ALL NECESSARY HARDWARE IS SPECIFIED FOR INSTALLATION PRIOR TO PURCHASING

GC TO SEE NOTES

Ordering guide

example: OPF-M-A08-840-T4M-AR1-240-BL50-L3-BZ

Luminaire	Configuration (nom. lumens)	Color Temperature	Distribution	Mounting	Voltage	
OPF-M						
OptiForm Medium Area	A08 13,500 lumens	827' 80CRI 2700K	AFR Autofront row	LCL LEED corner optic left	AR1^{2,13} Arm mount (standard)	120 120V
	A09 17,000 lumens	830 80CRI 3000K	T2M Type 2 medium	LCR LEED corner optic right	MAR³ Mast arm	208 208V
	A10 20,000 lumens	840 80CRI 4000K	T3M Type 3 medium	BLC Back light control	WAL Wall mount	240 240V
	A11 23,000 lumens	727' 70CRI 2700K	T4M Type 4 medium	2RL Type 2 rotated left 90°	MOS⁴ Mounting ordered separately	277 277V
	A12 26,000 lumens	730 70CRI 3000K	T4W Type 4 wide	2RR Type 2 rotated right 270°		347 347V
	A13 30,000 lumens	740 70CRI 4000K	T5N Type 5 narrow	3RL Type 3 rotated left 90°		480 480V
	A14 32,000 lumens	750 70CRI 5000K	T5M Type 5 medium	3RR Type 3 rotated right 270°		UNV 120-277V
	A15 34,000 lumens		T5W Type 5 wide	4RL¹ Type 4 rotated left 90°		HVU 347-480V
				4RR¹ Type 4 rotated right 270°		

GC TO VERIFY AND SPECIFY IF NOT UNV

Dimming Controls	Sensing	Options (electrical, mechanical, etc)	Finish
The following options include 0-10V Driver		None Surge protector 10kV/10kA standard	Standard textured finish
none 0-10V dimming driver		SP2 Surge protector 20kV/10kA (option)	BK Black
DLEA⁵ Dimming leads externally accessible (controls by others)		FS1¹¹ Single fuse (120, 277, or 347VAC)	WH White
FAWS^{5,6} Field adjustable wattage selector		FS2¹¹ Double fuse (208, 240, or 480V)	BZ Bronze
BL50^{5,7} Bi-level with motion sensor	L3 PIR sensor, #3 lens (Required if BL50 is selected)	PCB^{10,11} Photocontrol button connected to 0-10V driver	DG Dark Gray
The following options include SR/DALI Driver	WIAP sensor options	TR5 5-pin twist lock receptacle connected to 0-10V driver	MG Medium Gray
WIAP^{5,8} Wireless Interact (includes SR driver and SR receptacle)	LB Low (7'-15' mounting height) sensor, black color housing, wireless interact, integral	TR7 7-pin twist lock receptacle connected to D4i compliant driver	GC TO REFERENCE PLANS FOR COLOR DESIGNATION
SRDR^{5,8} SR driver connected to Zhaga socket (D4i)	LW Low (7'-15' mounting height) sensor, white color housing	TLP¹¹ 7-pin twist lock receptacle connected to D4i compliant driver w/ 3-pin Photocell	Customer specified
DynaDimmer: Automatic Profile Dimming	HB High (15'-40' mounting height) sensor, black color housing	BAC^{1,14} Meets the requirements of the Buy American Act of 1933 (BAA)	OC Special optional color or RAL, consult factory
CS50⁵ Security 50% dimming, 7 hours	HW High (15'-40' mounting height) sensor, white color housing		SC Special color (must supply color chip, requires factory quote)
CM50⁵ Median 50% dimming, 8 hours			
CS30⁵ Security 30% dimming, 7 hours			
CM30⁵ Median 30% dimming, 8 hours			

- Extended lead time applies. Consult factory for details.
- Mounts to a square pole with knockout for 4-5" OD round pole.
- Mounts to a horizontal 2-3/8" OD x 5" Long tenon.
- Must be ordered with mounting accessory. Photocell option (TR7) must be selected with mounting accessory. See Page 2 for options.
- Not available with other dimming control options (mutually exclusive).
- Not available with motion sensor (physical restriction).
- Must be specified with a motion sensor lens (L2 or L3).
- Not available with PCB, TR5.
- Must be specified with a motion sensor LW, LB, HW, HB.
- Not available in 347, 480, or HVU.
- Must specify input voltage.
- Not available with TR7, TLP.
- OPF-RMB accessory recommended for retrofit applications.
- Failure to properly select the "BAC" suffix could result in you receiving product that is not BAA compliant product with no recourse for an RMA or refund. This BAC designation hereunder does not address (i) the applicability of, or availability of a waiver under, the Trade Agreements Act, or (ii) the "Buy America" domestic content requirements imposed on states, localities, and other non-federal entities as a condition of receiving funds administered by the Department of Transportation or other federal agencies.



OPF-M OptiForm medium

Site & area luminaire

Shielding Accessory Kits (order separately)

OPF-M-HIS-2* Internal house side shields. For optic Types T2M, T3M, and T5N. qty 2

OPF-M-HIS-T4-2* Internal house side shield for optic types T4M and T4W. qty 2

OPF-M-HIS-5M/5W-2* Internal house side shield for optic types T5M and T5W. qty 2

* Standard internal house shields (HIS) can be used for rotated optics

Luminaire Accessories (order separately)

Pole Mount Fusing

FP1¹¹ Pole mount single fuse (120V, 277V, or 347V)

FP2¹¹ Pole mount double fuse (208V, 240V, or 480V)

FP3¹¹ Pole mount double fuse canadian double pull (208V, 240V, or 480V)

Photocell Accessories

P400S Shorting cap

Mountings (boxed and shipped separately)

Must choose Mounting Ordered Separately (MOS) selection for mounting option of luminaire. Useful for attachment of arm to pole prior to luminaire installation.

(F) Must specify finish

Standard Arm

OPF-AR1-(F)^{2,13} Standard arm mount

OPF-AR1-TR7-(F)^{2,13} Standard arm mount with 7-pin (TR7) receptacle

Wall Mount

OPF-WAL-(F) Wall mount bracket

OPF-WAL-TR7-(F) Wall mount with 7-pin (TR7) receptacle

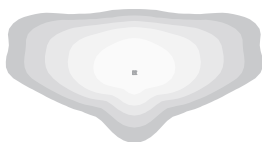
Mast Arm

OPF-MAR-(F)³ Mast arm mount

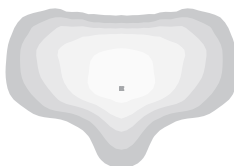
OPF-MAR-TR7-(F)³ Mast arm mount with 7-pin (TR7) receptacle

Optical Distributions

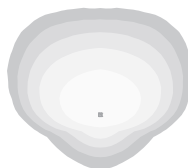
Type 2 Medium



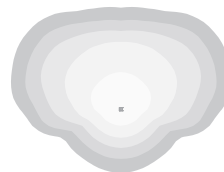
Type 3 Medium



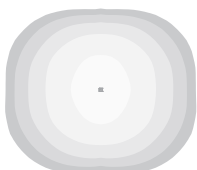
Type 4 Medium



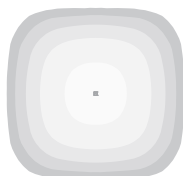
Type 4 Wide



Type 5 Narrow



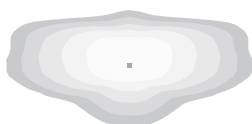
Type 5 Medium



Type 5 Wide



Autofront Row



Back Light Control



LCL



LCR



Mounting Accessories

OPF-RMB Retrofit Mounting Bolster Plate for attaching OptiForm to existing poles. Recommended for retrofit applications.

OPF-RPA Round Pole Adapter. Fits to 3"- 3.9" O.D. pole. Painted black.

Pole Top Fitters

(F) Must specify finish

PTF2 - Pole top fitter fits 2 3/8 - 2 1/2" OD x 4" depth tenon

PTF2-1-90-(F) 1 luminaire at 90°

PTF2-2-90-(F) 2 luminaires at 90°

PTF2-3-90-(F) 3 luminaires at 90°

PTF2-4-90-(F) 4 luminaires at 90°

PTF2-2-180-(F) 2 luminaires at 180°

PTF2-3-120-(F) 3 luminaires at 120°

PTF3 - Pole top fitter fits 3-3 1/2" OD x 6" depth tenon

PTF3-1-90-(F) 1 luminaire at 90°

PTF3-2-90-(F) 2 luminaires at 90°

PTF3-3-90-(F) 3 luminaires at 90°

PTF3-4-90-(F) 4 luminaires at 90°

PTF3-2-180-(F) 2 luminaires at 180°

PTF3-3-120-(F) 3 luminaires at 120°

OPF-M OptiForm medium

Site & area luminaire

OPF-M Area Optic Lumen values

Performance Package	System Watts	Distribution Type	70 CRI			70 CRI			70 CRI		
			3000K			4000K			5000K		
			Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)
A08	74	T2M	12994	B3-U0-G3	175	13738	B3-U0-G3	185	13738	B3-U0-G3	185
		T3M	12890	B3-U0-G3	173	13628	B3-U0-G3	183	13628	B3-U0-G3	183
		T4M	13064	B2-U0-G2	176	13811	B2-U0-G2	186	13811	B2-U0-G2	186
		T5M	13465	B4-U0-G2	181	14236	B4-U0-G2	191	14236	B4-U0-G2	191
		AFR	13458	B3-U0-G3	181	14228	B3-U0-G3	191	14228	B3-U0-G3	191
		T4W	12438	B2-U0-G3	167	13150	B2-U0-G3	177	13150	B2-U0-G3	177
		T5N	13370	B4-U0-G2	180	14136	B4-U0-G2	190	14136	B4-U0-G2	190
		T5W	12873	B4-U0-G2	173	13610	B4-U0-G2	183	13610	B4-U0-G2	183
		LCL	7070	B1-U0-G2	95	7474	B1-U0-G2	100	7474	B1-U0-G2	100
		LCR	7070	B1-U0-G2	95	7474	B1-U0-G2	100	7474	B1-U0-G2	100
BLC	9060	B1-U0-G2	122	9579	B1-U0-G2	129	9579	B1-U0-G2	129		
A09	93	T2M	16158	B3-U0-G3	174	17083	B3-U0-G3	184	17083	B3-U0-G3	184
		T3M	16029	B3-U0-G3	173	16947	B3-U0-G3	183	16947	B3-U0-G3	183
		T4M	16245	B2-U0-G3	175	17175	B2-U0-G3	185	17175	B2-U0-G3	185
		T5M	16744	B4-U0-G2	180	17703	B4-U0-G2	191	17703	B4-U0-G2	191
		AFR	16736	B3-U0-G3	180	17693	B3-U0-G3	191	17693	B3-U0-G3	191
		T4W	15467	B2-U0-G3	167	16352	B2-U0-G3	176	16352	B2-U0-G3	176
		T5N	16626	B4-U0-G2	179	17578	B4-U0-G2	189	17578	B4-U0-G2	189
		T5W	16008	B4-U0-G3	172	16924	B4-U0-G3	182	16924	B4-U0-G3	182
		LCL	8791	B1-U0-G2	95	9295	B1-U0-G2	100	9295	B1-U0-G2	100
		LCR	8791	B1-U0-G2	95	9295	B1-U0-G2	100	9295	B1-U0-G2	100
BLC	11266	B1-U0-G2	121	11911	B1-U0-G2	128	11911	B1-U0-G2	128		
A10	112	T2M	19256	B3-U0-G3	173	20357	B3-U0-G3	183	20357	B3-U0-G3	183
		T3M	19102	B3-U0-G3	171	20195	B3-U0-G3	181	20195	B3-U0-G3	181
		T4M	19359	B2-U0-G3	174	20467	B3-U0-G3	184	20467	B3-U0-G3	184
		T5M	19954	B4-U0-G2	179	21096	B4-U0-G2	189	21096	B4-U0-G2	189
		AFR	19944	B3-U0-G3	179	21085	B3-U0-G3	189	21085	B3-U0-G3	189
		T4W	18432	B3-U0-G3	165	19487	B3-U0-G3	175	19487	B3-U0-G3	175
		T5N	19813	B4-U0-G2	178	20947	B4-U0-G2	188	20947	B4-U0-G2	188
		T5W	19077	B4-U0-G3	171	20169	B5-U0-G3	181	20169	B5-U0-G3	181
		LCL	10477	B1-U0-G2	94	11076	B2-U0-G2	99	11076	B2-U0-G2	99
		LCR	10477	B1-U0-G2	94	11076	B1-U0-G2	99	11076	B1-U0-G2	99
BLC	13426	B1-U0-G2	120	14194	B1-U0-G2	127	14194	B1-U0-G2	127		
A11	131	T2M	22348	B3-U0-G3	171	23626	B3-U0-G3	180	23626	B3-U0-G3	180
		T3M	22169	B3-U0-G3	169	23438	B3-U0-G3	179	23438	B3-U0-G3	179
		T4M	22468	B3-U0-G3	172	23753	B3-U0-G3	181	23753	B3-U0-G3	181
		T5M	23158	B4-U0-G2	177	24483	B4-U0-G2	187	24483	B4-U0-G2	187
		AFR	23146	B3-U0-G3	177	24471	B3-U0-G3	187	24471	B3-U0-G3	187
		T4W	21392	B3-U0-G4	163	22616	B3-U0-G4	173	22616	B3-U0-G4	173
		T5N	22995	B4-U0-G2	176	24311	B4-U0-G2	186	24311	B4-U0-G2	186
		T5W	22140	B5-U0-G3	169	23407	B5-U0-G3	179	23407	B5-U0-G3	179
		LCL	12159	B2-U0-G2	93	12855	B2-U0-G2	98	12855	B2-U0-G2	98
		LCR	12159	B1-U0-G2	93	12855	B1-U0-G2	98	12855	B1-U0-G2	98
BLC	15582	B1-U0-G2	119	16474	B1-U0-G3	126	16474	B1-U0-G3	126		

OPF-M OptiForm medium

Site & area luminaire

OPF-M Area Optic Lumen values (cont'd)

Performance Package	System Watts	Distribution Type	70 CRI			70 CRI			70 CRI		
			3000K			4000K			5000K		
			Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)
A12	150	T2M	25049	B3-U0-G3	167	26482	B3-U0-G3	176	26482	B3-U0-G3	176
		T3M	24849	B3-U0-G3	165	26271	B3-U0-G3	175	26271	B3-U0-G3	175
		T4M	25183	B3-U0-G4	168	26625	B3-U0-G4	177	26625	B3-U0-G4	177
		T5M	25957	B5-U0-G3	173	27443	B5-U0-G3	183	27443	B5-U0-G3	183
		AFR	25944	B3-U0-G3	173	27429	B3-U0-G3	183	27429	B3-U0-G3	183
		T4W	23978	B3-U0-G4	160	25350	B3-U0-G4	169	25350	B3-U0-G4	169
		T5N	25775	B4-U0-G2	172	27250	B4-U0-G2	181	27250	B4-U0-G2	181
		T5W	24816	B5-U0-G3	165	26237	B5-U0-G3	175	26237	B5-U0-G3	175
		LCL	13629	B2-U0-G2	91	14409	B2-U0-G2	96	14409	B2-U0-G2	96
		LCR	13629	B2-U0-G2	91	14409	B2-U0-G2	96	14409	B2-U0-G2	96
BLC	17465	B1-U0-G3	116	18465	B1-U0-G3	123	18465	B1-U0-G3	123		
A13	176	T2M	28766	B3-U0-G3	163	30412	B3-U0-G3	173	30412	B3-U0-G3	173
		T3M	28536	B3-U0-G4	162	30169	B3-U0-G4	171	30169	B3-U0-G4	171
		T4M	28920	B3-U0-G4	164	30575	B3-U0-G4	173	30575	B3-U0-G4	173
		T5M	29809	B5-U0-G3	169	31515	B5-U0-G3	179	31515	B5-U0-G3	179
		AFR	29794	B4-U0-G4	169	31499	B4-U0-G4	179	31499	B4-U0-G4	179
		T4W	27536	B3-U0-G4	156	29111	B3-U0-G4	165	29111	B3-U0-G4	165
		T5N	29599	B5-U0-G3	168	31293	B5-U0-G3	177	31293	B5-U0-G3	177
		T5W	28499	B5-U0-G3	162	30130	B5-U0-G3	171	30130	B5-U0-G3	171
		LCL	15651	B2-U0-G2	89	16547	B2-U0-G2	94	16547	B2-U0-G2	94
		LCR	15651	B2-U0-G2	89	16547	B2-U0-G2	94	16547	B2-U0-G2	94
BLC	20057	B1-U0-G3	114	21205	B1-U0-G3	120	21205	B1-U0-G3	120		
A14	190	T2M	30449	B4-U0-G4	161	32191	B4-U0-G4	170	32191	B4-U0-G4	170
		T3M	30206	B3-U0-G4	159	31934	B3-U0-G4	168	31934	B3-U0-G4	168
		T4M	30612	B3-U0-G4	161	32364	B3-U0-G4	171	32364	B3-U0-G4	171
		T5M	31553	B5-U0-G3	166	33359	B5-U0-G3	176	33359	B5-U0-G3	176
		AFR	31537	B4-U0-G4	166	33342	B4-U0-G4	176	33342	B4-U0-G4	176
		T4W	29147	B3-U0-G4	154	30815	B3-U0-G4	163	30815	B3-U0-G4	163
		T5N	31331	B5-U0-G3	165	33124	B5-U0-G3	175	33124	B5-U0-G3	175
		T5W	30166	B5-U0-G4	159	31892	B5-U0-G4	168	31892	B5-U0-G4	168
		LCL	16567	B2-U0-G2	87	17515	B2-U0-G2	92	17515	B2-U0-G2	92
		LCR	16567	B2-U0-G2	87	17515	B2-U0-G2	92	17515	B2-U0-G2	92
BLC	21230	B1-U0-G3	112	22445	B1-U0-G3	118	22445	B1-U0-G3	118		
A15	202	T2M	31896	B4-U0-G4	158	33721	B4-U0-G4	167	33721	B4-U0-G4	167
		T3M	31641	B3-U0-G4	157	33452	B4-U0-G4	166	33452	B4-U0-G4	166
		T4M	32067	B3-U0-G4	159	33902	B3-U0-G4	168	33902	B3-U0-G4	168
		T5M	33052	B5-U0-G3	164	34944	B5-U0-G3	173	34944	B5-U0-G3	173
		AFR	33035	B4-U0-G4	164	34926	B4-U0-G4	173	34926	B4-U0-G4	173
		T4W	30532	B3-U0-G4	151	32279	B3-U0-G5	160	32279	B3-U0-G5	160
		T5N	32820	B5-U0-G3	163	34698	B5-U0-G3	172	34698	B5-U0-G3	172
		T5W	31600	B5-U0-G4	157	33408	B5-U0-G4	166	33408	B5-U0-G4	166
		LCL	17354	B2-U0-G3	86	18347	B2-U0-G3	91	18347	B2-U0-G3	91
		LCR	17354	B2-U0-G3	86	18347	B2-U0-G3	91	18347	B2-U0-G3	91
BLC	22239	B1-U0-G3	110	23512	B1-U0-G3	117	23512	B1-U0-G3	117		

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Site & area luminaire

Predicted Lumen Depreciation Data

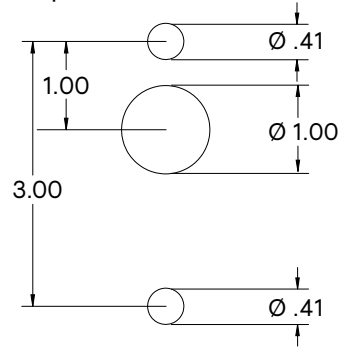
Predicted performance derived from LED manufacturer's data and engineering design estimates, based on IESNA LM-80 methodology. Actual experience may vary due to field application conditions. L70 is the predicted time when LED performance depreciates to 70% of initial lumen output. Calculated per IESNA TM21-11. Published L70 hours limited to 6 times actual LED test hours

Ambient Temp °C	Calculated L70 Hours	L70 per TM-21	Lumen Maintenance % at 60,000 hrs
25°C	>100,000 hours	>102,000 hours	96%

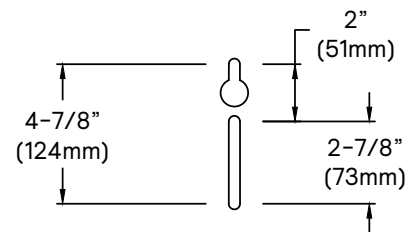
Dimensions

Standard Drill Pattern

Drill Template #5



Standard Arm Mounting Hole Pattern



OPF-M OptiForm medium

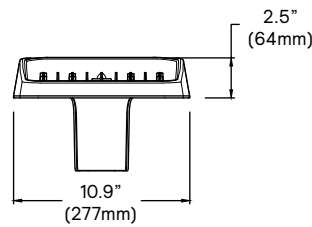
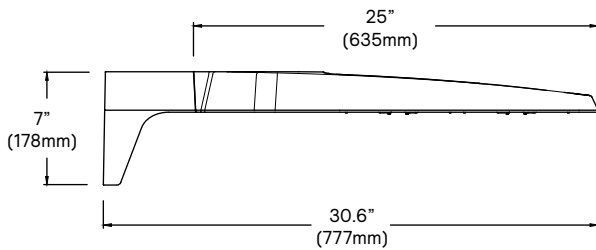
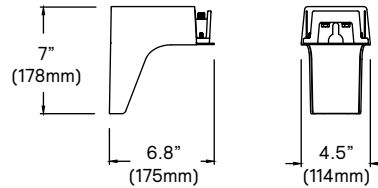
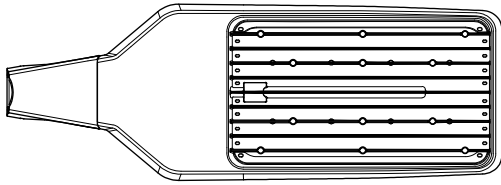
Site & area luminaire

Dimensions

OptiForm Standard Arm

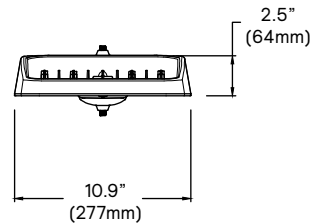
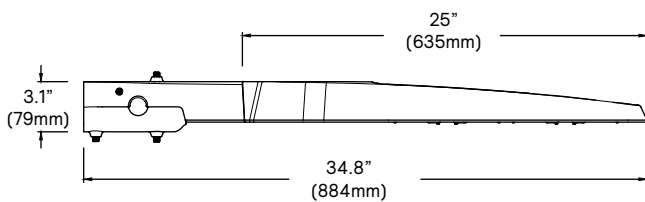
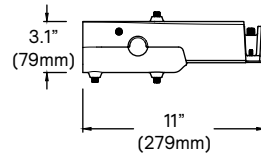
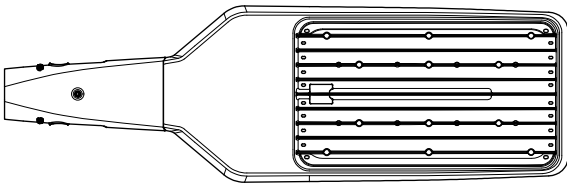
Weight: 13 lb (5.9 kg)

EPA: 0.15 ft² (0.014 m²)



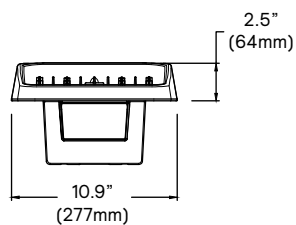
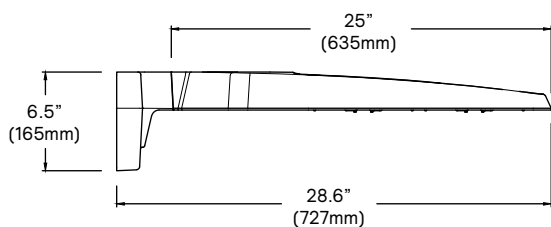
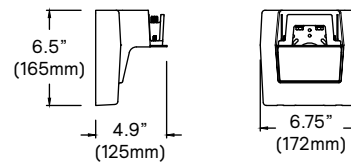
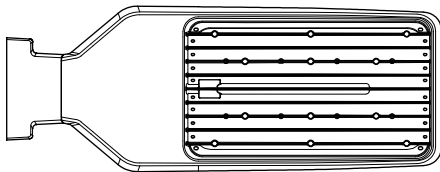
OptiForm Mast Arm

Weight: 14.6 lb (6.6 kg)



OptiForm Wall Mount

Weight: 13.5lb (6.1 kg)



OPF-M OptiForm medium

Site & area luminaire

Specifications

Housing

Housing and door constructed of low copper die cast Aluminum alloy (A360) with detachable arms for quick mounting. Heatsink is integral to the housing providing passive cooling of LEDs to maintain long LED life. Luminaire housing rated to IP65, LED Modules rated IP66, tested in accordance to Section 9 of IEC 60598-1. OptiForm carries and impact rating of IK08.

Vibration resistance

OptiForm is tested and rated to standards set forth in ANSI C136.31-2018 Level 2 for Bridge and Overpass applications.

Light engine

Light engine comprises of a module of 40-LED aluminum metal clad board fully sealed with optics: Medium = 2 Modules with 80 LEDs, Large = 4 modules with 160 LEDs. Module is RoHS compliant. Color temperature as per ANSI/NEMA bin 2700 Kelvin nominal (2725 ±145K), 3000 Kelvin nominal (3045K +/- 175K) or 4000 Kelvin nominal (3985K +/- 275K), CRI 70 Min. 75 Typical. Other CCT/CRI also available, consult factory. LED light engine is rated IP66 in accordance to Section 9 of IEC 60598-1.

Energy saving benefits

System efficacy up to 191 lms/W with significant energy savings over Pulse Start Metal Halide luminaires. Optional control options provide added energy savings during unoccupied periods.

Optical systems

Type 2M, 3M, 4M, 4W, 5, 5M, 5W, AFR, LCL, LCR, and BLC distributions available. Internal shield option mounts to LED optics and is available with Type 2M, 3M, and 4M distributions, including a dedicated BLC and L/R Corner optics to provide the best backlight control possible for stringent requirements around property lines. Types 2M, 3M and 4M when specified and used as rotated, are factory set only. Performance tested per LM-79 and TM-15 (IESNA) certifying its photometric performance. Luminaire designed with 0% uplight (UO per IESNA TM-15).

Mounting

Standard luminaire arm mounts to square poles with knock-out on the arm to allow for mounting to 4" O.D. round poles. Standard arm casting can accommodate existing bolt spacing from 2" to 4-7/8". It is recommended to use the bolster plate kit OPF RMB when it's not a new installation or if the mounting holes are larger than 0.41" (10mm).

OptiForm features a Mast Arm for Mounting to 2-3/8x4" tenon as well as wall mount casting for exterior building mount applications.

Control options

Dimming Leads Externally Accessible (DLEA): Access to 0-10V dimming leads supplied through back of luminaire (for secondary dimming controls by others). Cannot be specified with other control options.

Sensor Ready Zhaga Socket Connector (SRDR): Product is D4i Certified and equipped with Sensor Ready drivers connected to 4-pin Zhaga Book 18 compliant receptacle designed for sensor and other control system applications. Receptacle is rated IP66 assembly in a compact design that provides a sealed electrical interface and rated UV resistance, mounted on underside of the luminaire, protective dust cap included. When a controller not provided by Signify is used with Sensor Ready Zhaga socket connector, the controller must be certified to work with the Xitanium SR LED drivers as part of the SR certified program. SRDR can be used with NEMA 7-pin twist lock receptacle, which is mounted on top of the luminaire.

Automatic Profile Dimming (CS/CM/CE/CA): Standard dimming profiles provide flexibility towards energy savings goals while optimizing light levels during specific dark hours. Dimming profiles include two dimming settings including dim to 30% or 50% of the total lumen output. When used in combination with motion response it overrides the controller's schedule when motion is detected. After 5 minutes with no motion, it will return to the automatic dimming profile schedule. Automatic dimming profile scheduled with the following settings:

- **CS50/CS30:** Security for 7 hours night duration (Ex., 11 PM – 6 AM)
- **CM50/CM30:** Median for 8 hours night duration (Ex., 10 PM – 6 AM)

All above profiles are calculated from mid point of the night. Dimming is set for 6 hours after the mid point and 1 or 2 hours before depending of the duration of dimming. Cannot be used with other dimming control options

Field Adjustable Wattage Selector (FAWS): Luminaire equipped with the ability to manually adjust the wattage in the field to reduce total luminaire lumen output and light levels. Comes pre-set to the highest position lumen output selected. Use chart below to estimate reduction in lumen output desired. Cannot be used with other control options or motion response.

FAWS Position	Percent of Typical Lumen Output	FAWS Position	Percent of Typical Lumen Output
1	25%	6	80%
2	50%	7	85%
3	55%	8	90%
4	65%	9	95%
5	75%	10	100%

Note: Typical value accuracy +/- 5%

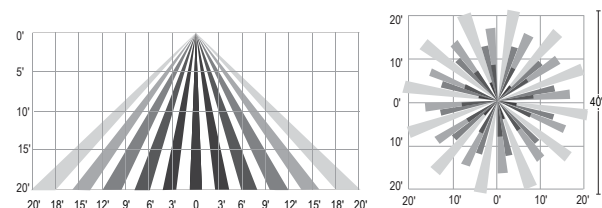
Motion response options

Bi-Level Infrared Motion Response (BL50): Motion Response module is mounted integral to luminaire factory pre-programmed to 50% dimming when not ordered with other control options. BL50 is set/operates in the following fashion: The motion sensor is set to a constant 50%. When motion is detected by the PIR sensor, the luminaire returns to full power/light output. Dimming on low is factory set to 50% with 5 minutes default in "full power" prior to dimming back to low. When no motion is detected for 5 minutes, the motion response system reduces the wattage by 50%, to 50% of the normal constant wattage reducing the light level. Other dimming settings can be provided if different dimming levels are required (contact Technical Support for details).

Infrared Motion Response with Other Controls: When used in combination with other controls (Automatic Dimming Profile), motion response device will simply override controller's schedule with the added benefits of a combined dimming profile and sensor detection. In this configuration, the motion response device cannot be re-programmed with FSIR-100 Wireless Remote Programming Tool. The profile can only be re-programmed via the controller.

Infrared Motion Response Lenses (L3): Infrared Motion Response Integral module is available with two different sensor lens types to accommodate various mounting heights and occupancy detection ranges. Lens #2 is designed for mounting heights 8' to 15'. Lens #3 is designed for higher mounting heights up to 20' with a 40' diameter coverage area. See charts for approximate detection patterns:

MR3 Luminaire or remote mount controller with #3 lens



Outdoor Interact (WIAP): Connected sensor with integral occupancy and daylight sensing, supports wireless mesh connectivity. Sensor works in the standalone mode when configured without a gateway. When used with a gateway you are able to access additional functionalities such as energy monitoring, scheduling and BMS integration. Interact offers an App, a portal and a broad portfolio of Interact-ready Indoor and Outdoor luminaires, lamps and retrofit kits all working on the same system. The App provides flexibility to choose between a standalone or gateway mode. Setup with the gateway requires wired Internet access to the gateway. WIAP includes SR driver and SR receptacle. Daylight harvesting supported through dimming - activated via the Interact App. Sensors IP66 rated.

For more information on Interact Pro visit:

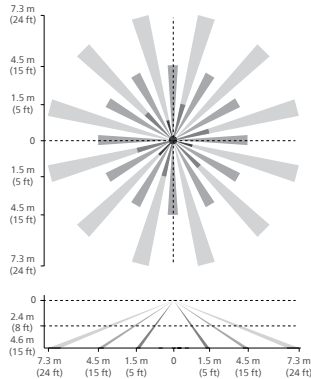
www.interact-lighting.com/interactproscalablesystem

OPF-M OptiForm medium

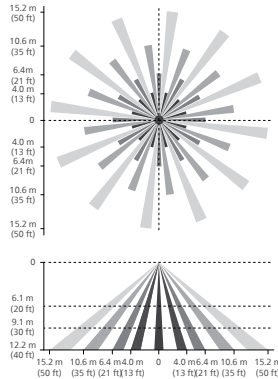
Site & area luminaire

Specifications (cont'd)

LB or LW low sensor



HB or HW high sensor



Note: The beam patterns shown are intended solely as a general guide and are not to scale. Sensing capabilities and coverage area depend on many factors including the size, speed and direction of travel of persons and vehicles; sensor mounting height; environmental and site conditions; etc.

Electrical

Twist-Lock Receptacle (TR7/TLP): Twist-Lock Receptacle with 7 pins enabling dimming with additional functionality (by others) can be used with a twist-lock photoelectric cell or a shorting cap. Dimming Receptacle Type D-24 (7-pin) in accordance to ANSI C136.41. Can be used with third-party control system. Receptacle located on top of luminaire arm. When specifying receptacle with twist-lock photoelectric cell, voltage must be specified. When ordering 7-pin Twist-lock receptacle (TR7), all 7 pins are wired to respective pins with the Sensor Ready (SR) driver, and photocell or shorting cap is not included. When ordering a twist-lock receptacle with a photocell (TLP), the receptacle used is a 7-pin receptacle, with pins 6 and 7 connected to SR DALI driver. 0-10V dimming leads (pins 4 and 5) are connected if not ordered with any other dimming option.

Twist-Lock Receptacle (TR5/TR7): Twist Lock Receptacle with 5 pins enabling dimming or with 7 pins with additional functionality (by others) can be used with a twistlock photoelectric cell or a shorting cap. Dimming Receptacle Type B (5-pin) and Type D-24 (7-pin) in accordance to ANSI C136.41. Can be used with third-party control system. Receptacle located on top of luminaire housing. When specifying receptacle with twistlock photoelectric cell, voltage must be specified. When ordering 7-pin Twist-lock receptacle (TR7), all 7 pins are wired to respective pins with the Sensor Ready (SR) driver, and photocell or shorting cap is not included. When ordering a twist-lock receptacle with a photocell (TLP), the receptacle used is a 7-pin receptacle, with pins 6 and 7 connected to SR DALI driver. 0-10V dimming leads (pins 4 and 5) are connected if not ordered

with any other dimming option.

Driver: Driver efficiency (>90% standard). 120-480V available (restrictions apply). Open/short circuit protection. All drivers are 0-10V dimming to 10% power standard, except when using Sensor Ready (SR) drivers, which uses DALI protocol (options CS50/CM50/CS30/CM30, SRDR, and TR7). Drivers are RoHS and FCC Title 47 CFR Part 15 compliant.

Button Photocontrol (PCB): Button style design for internal luminaires mounting applications. The photocontrol is constructed of a high impact UV stabilized polycarbonate housing. Rated voltage of 120V or 208-277V with a load rating of 1000 VA. The photocell will turn on with 1-4Fc of ambient light.

Surge protection (SP1/SP2): Surge protection device tested in accordance with ANSI/IEEE C62.45 per ANSI/IEEE C62.41.2 Scenario I Category C High Exposure 10kV/10kA waveforms for Line-Ground, Line-Neutral and Neutral-Ground, and in accordance with DOE MSSLC Model Specification for LED Roadway Luminaires Appendix D Electrical Immunity High test level 10kV/10kA. 20kV / 10kA surge protection device that provides extra protection beyond the SP1 10kV/10kA level.

Listings

UL/cUL wet location listed to the UL 1598 standard, suitable for use in ambient temperatures from -40° to 40°C (-40° to 104°F). All Optiform configurations are qualified under Design Lights Consortium Premium classification. Consult DLC Qualified Products list to confirm your specific luminaire selection is approved. CCTs 3000K and warmer are Dark Sky Compliant.

Finish

Each standard color luminaire receives a fade and abrasion resistant, electrostatically applied, thermally cured, triglycidyl isocyanurate (TGIC) textured polyester powdercoat finish. Standard colors include bronze (BZ), black (BK), white (WH), dark gray (DGY), and medium gray (MGY). Consult Factory for specs on optional, custom colors, and marine grade paint.

Service Tag

Each individual luminaire is uniquely identifiable, thanks to the Service tag application. With a simple scan of a QR code, placed on the inside of the mast door, you gain instant access to the luminaire configuration, making installation and maintenance operations faster and easier, no matter what stage of the luminaire's lifetime. Just download the APP and register your product right away. For more details visit: signify.com

Warranty

OptiForm luminaires feature a 5-year limited warranty
See signify.com/warranties for complete details and exclusions.



Site and Area

TYPE SOJ1



OptiForm

OPF-S Small



OPF-S-A04-740-T4M-AR1-UNV-XX

Gardco OptiForm site and area luminaires are available in three sizes: small, medium and large. Featuring the latest in LED technology, OptiForm achieves up to 192 lumens per watt. Eleven optical distributions are available, suitable for a range of outdoor lighting applications. OptForm features a unique mounting system with a two-piece housing for hassle-free installation. Mounting options include a standard arm, mast arm, and wall mount bracket. Service Tag is a standard feature with every OptiForm luminaire, providing maintenance or upgrade assistance throughout the life of the product.

Project: _____
 Location: _____
 Cat.No: _____
 Type: _____
 Lamps: _____ Qty: _____
 Notes: _____

GC TO VERIFY THAT FIXTURES CAN BE MOUNTED PER PLAN AND ALL NECESSARY HARDWARE IS SPECIFIED FOR INSTALLATION PRIOR TO PURCHASING

GC TO SEE NOTES

Ordering guide

example: OPF-S-A01-840-T4M-AR1-120-BL50-L3-BZ

Luminaire	Configuration (nom. lumens)		Color Temperature	Distribution		Mounting	Voltage
OPF-S							
OPF-S OptiForm Small Area	Site and Area	Precision Plus¹⁶ (T2M, T3M, T4M, T5M only)	827¹ 80CRI 2700K 830 80CRI 3000K 840 80CRI 4000K 727¹ 70CRI 2700K 730 70CRI 3000K 740 70CRI 4000K 750 70CRI 5000K	AFR Autofront row T2M Type 2 medium T3M Type 3 medium T4M Type 4 medium T4W Type 4 wide T5N Type 5 narrow T5M Type 5 medium T5W Type 5 wide	LCL LEED corner optic left LCR LEED corner optic right BLC Back light control 2RL Type 2 rotated left 90° 2RR Type 2 rotated right 270° 3RL Type 3 rotated left 90° 3RR Type 3 rotated right 270° 4RL¹ Type 4 rotated left 90° 4RR¹ Type 4 rotated right 270°	AR^{12,17} Arm mount (standard) MAR³ Mast arm WAL Wall mount MOS⁴ Mounting ordered separately	120 120V 208 208V 240 240V 277 277V 347 347V 480 480V UNV 120-277V HVU¹⁶ 347-480V
	A01 7,000 lumens A02 9,000 lumens A03 11,000 lumens A04 15,000 lumens A05 17,000 lumens A06 19,000 lumens A07 20,000 lumens	P01 2,500 lumens P02 4,000 lumens P03 6,500 lumens P04 9,000 lumens P05 11,500 lumens P06 14,000 lumens P07 16,500 lumens P08 19,000 lumens P09 22,000 lumens				GC TO VERIFY AND SPECIFY IF NOT UNV	

Dimming Controls	Sensing	Options (electrical, mechanical, etc)	Emergency	Finish
The following options include 0-10V Driver		None Surge protector 10kV/10kA standard SP2 Surge protector 20kV/10kA (option) FS1¹¹ Single fuse (120, 277, or 347VAC) FS2¹¹ Double fuse (208, 240, or 480V) PCB^{11,12} Photocontrol button connected to 0-10V driver TR5 NEMA Twist-lock 5-pin receptacle connected to 0-10V driver TR7¹³ 7-pin twist lock receptacle connected to D4i compliant driver TLP^{11,13} 7-pin twist lock receptacle connected to D4i compliant driver w/ 3-pin photocell EHS Housing machined to accept external house side shield for field install. Must be combined with OPF-S-EHS-1 accessory. BAC¹¹⁸ Meets the requirements of the Buy American Act of 1933 (BAA)	EM^{12,14,15} Emergency Battery Pack (0-40 °C) Available with precision plus optics P01-P03 only	Standard textured finish BK Black WH White BZ Bronze DG Dark Gray MG Medium Gray GC TO REFERENCE PLANS FOR COLOR DESIGNATION Customer specified OC Special optional color or RAL, consult factory SC Special color (must supply color chip, requires factory quote)
none 0-10V dimming driver DLEA^{5,10} Dimming leads externally accessible (controls by others) FAWS^{5,6,10} Field adjustable wattage selector	L2 PIR sensor, #2 lens (Required if BL50 is selected) L3 PIR sensor, #3 lens (Required if BL50 is selected)			
BL50^{5,7} Bi-level with motion sensor	WIAP sensor options			
The following options include SR/DALI Driver	LB Low (7'-15' mounting height) sensor, black color housing, wireless Interact, integral LW Low (7'-15' mounting height) sensor, white color housing HB¹ High (15'-40' mounting height) sensor, black color housing HW¹ High (15'-40' mounting height) sensor, white color housing			
WIAP^{5,8,13} Wireless Interact (includes SR drive and SR receptacle) SRDR^{5,8,13} SR driver connected to Zhaga socket (D4i) DynaDimmer: Automatic Profile Dimming CS50^{5,13} Security 50% dimming, 7 hours CM50^{5,13} Median 50% dimming, 8 hours CS30^{5,13} Security 30% dimming, 7 hours CM30^{5,13} Median 30% dimming, 8 hours				

- Extended leadtime applies. Consult factory for details.
- Mounts to a square pole with knockout for 4-5" OD round pole.
- Mounts to a horizontal 2-3/8" OD x 5" Long tenon.
- Must be ordered with mounting accessory. Photocell option (TR7) must be selected with mounting accessory. See Page 2 for options.
- Not available with other dimming control options (mutually exclusive).
- Not available with motion sensor (physical restriction).
- Must be specified with a motion sensor lens (L2).
- Not available with PCB, TR5.
- Must be specified with a motion sensor LW, LB.
- Not available with TR7, TLP.
- Must specify input voltage.
- Not available in HVU [347-480V].
- Not available with lumen packages P01, P02 in UNV [120-277] and with lumen packages A01-A03, P01-P05 in HVU [347-480].
- Not available for lumen packages P04-P09.
- Not available with Dynadimmer, SRDR, FAWS, FS1, FS2, DLEA, BL50 (physical restriction).
- Precision Plus Optics (P01-P09) available only with T2M, T3M, T4M, and T5M optical distributions and are non-rotatable.
- OPF-RMB accessory recommended for retrofit applications.
- Failure to properly select the "BAC" suffix could result in you receiving product that is not BAA compliant product with no recourse for an RMA or refund. This BAC designation hereunder does not address (i) the applicability of, or availability of a waiver under, the Trade Agreements Act, or (ii) the "Buy America" domestic content requirements imposed on states, localities, and other non-federal entities as a condition of receiving funds administered by the Department of Transportation or other federal agencies.



OPF-S OptiForm small

Site & area luminaire

Shielding Accessory Kits (order separately)

One shield kit per luminaire

- OPF-S-EHS-1*** External house side shield (field installed)
- OPF-S-HIS-1***** Internal house side shields. For Area optic types T2M, T3M, and T5N.
- OPF-S-HIS-T4-1***** Internal house side shield for Area optic types T4M and T4W, qty 1.
- OPF-S-HIS-5M/5W-1***** Internal house side shield for Area optic types T5M and T5W, qty 1

*Must select EHS option on luminaire options section

**Not available for Precision Plus (P01-P09)

*** Standard internal house shields (HIS) can be used for rotated optics

Luminaire Accessories (order separately)

Pole Mount Fusing

- FP1** Pole mount single fuse (120V, 277V, or 347V)
- FP2** Pole mount double fuse (208V, 240V, or 480V)
- FP3** Pole mount double fuse canadian double pull (208V, 240V, or 480V)

Photocell Accessories

- P400S** Shorting cap

Mountings (boxed and shipped separately)

Must choose Mounting Ordered Separately (MOS) selection for mounting option of luminaire. Useful for attachment of arm to pole prior to luminaire installation.

Standard Arm

- OPF-AR1-(F)^{2,17}** Standard arm mount
- OPF-AR1-TR7-(F)^{2,13,17}** Mast arm mount with 7-pin (TR7) receptacle

Wall Mount

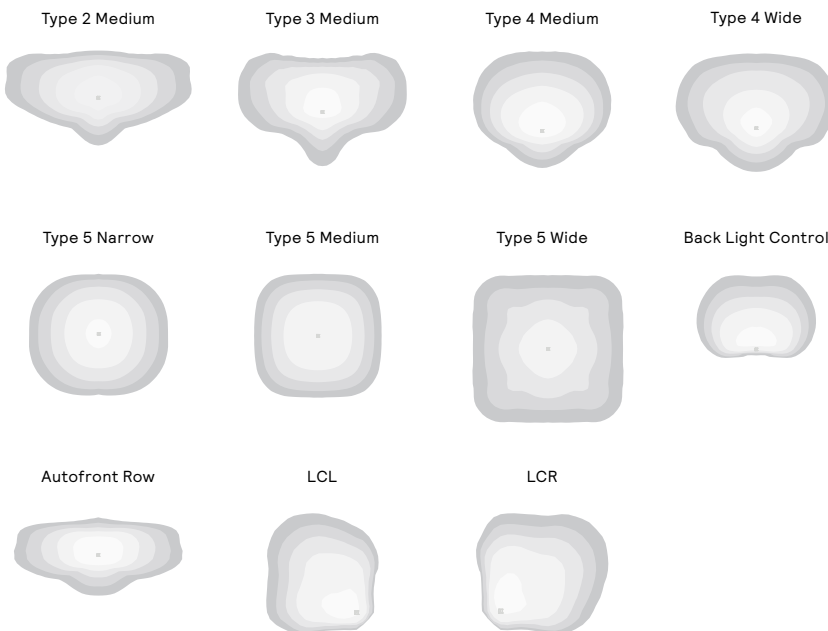
- OPF-WAL-(F)** Wall mount bracket
- OPF-WAL-TR7-(F)¹³** Wall mount with 7-pin (TR7) receptacle

Mast Arm

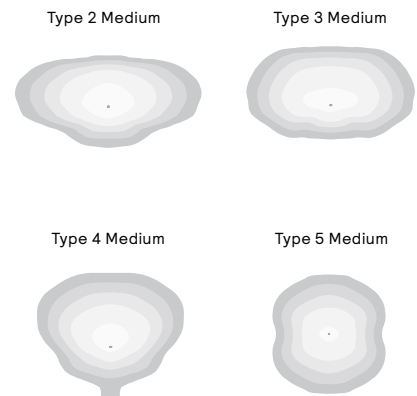
- OPF-MAR-(F)³** Mast arm mount
- OPF-MAR-TR7-(F)^{3,13}** Mast arm mount with 7-pin (TR7) receptacle

Optical Distributions

Site and Area Optics



Precision Plus Optics



Mounting Accessories

- OPF-RMB** Retrofit Mounting Bolster Plate for attaching OptiForm to existing poles. Recommended for retrofit applications.
- OPF-RPA** Round Pole Adapter. Fits to 3"- 3.9" O.D. pole. Painted black.

Pole Top Fitters

PTF2 - Pole top fitter fits 2 3/8 - 2 1/2" OD x 4" depth tenon

- PTF2-1-90-(F)** 1 luminaire at 90°
- PTF2-2-90-(F)** 2 luminaires at 90°
- PTF2-3-90-(F)** 3 luminaires at 90°
- PTF2-4-90-(F)** 4 luminaires at 90°
- PTF2-2-180-(F)** 2 luminaires at 180°
- PTF2-3-120-(F)** 3 luminaires at 120°

PTF3 - Pole top fitter fits 3-3 1/2" OD x 6" depth tenon

- PTF3-1-90-(F)** 1 luminaire at 90°
- PTF3-2-90-(F)** 2 luminaires at 90°
- PTF3-3-90-(F)** 3 luminaires at 90°
- PTF3-4-90-(F)** 4 luminaires at 90°
- PTF3-2-180-(F)** 2 luminaires at 180°
- PTF3-3-120-(F)** 3 luminaires at 120°

OPF-S OptiForm small

Site & area luminaire

OPF-S Area Optic Lumen values

Performance Package	System Watts	Distribution Type	70 CRI			70 CRI			70 CRI		
			3000K			4000K			5000K		
			Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)
A01	42	T2M	6991	B2-U0-G2	167	7391	B2-U0-G2	176	7391	B2-U0-G2	176
		T3M	6935	B2-U0-G2	166	7332	B2-U0-G2	175	7332	B2-U0-G2	175
		T4M	7028	B1-U0-G2	168	7431	B1-U0-G2	177	7431	B1-U0-G2	177
		T5M	7244	B3-U0-G1	173	7659	B3-U0-G1	183	7659	B3-U0-G1	183
		AFR	7241	B2-U0-G2	173	7655	B2-U0-G2	183	7655	B2-U0-G2	183
		T4W	6692	B1-U0-G2	160	7075	B1-U0-G2	169	7075	B1-U0-G2	169
		T5N	7193	B3-U0-G1	172	7605	B3-U0-G1	182	7605	B3-U0-G1	182
		T5W	6926	B3-U0-G2	165	7322	B3-U0-G2	175	7322	B3-U0-G2	175
		LCL	3804	B1-U0-G1	91	4021	B1-U0-G1	96	4021	B1-U0-G1	96
		LCR	3804	B1-U0-G1	91	4021	B1-U0-G1	96	4021	B1-U0-G1	96
BLC	4874	B0-U0-G1	116	5153	B0-U0-G1	123	5153	B0-U0-G1	123		
A02	54	T2M	8941	B2-U0-G2	165	9452	B2-U0-G2	175	9452	B2-U0-G2	175
		T3M	8869	B2-U0-G2	164	9377	B2-U0-G2	173	9377	B2-U0-G2	173
		T4M	8989	B1-U0-G2	166	9503	B1-U0-G2	176	9503	B1-U0-G2	176
		T5M	9265	B3-U0-G2	171	9795	B3-U0-G2	181	9795	B3-U0-G2	181
		AFR	9260	B2-U0-G2	171	9790	B2-U0-G2	181	9790	B2-U0-G2	181
		T4W	8558	B2-U0-G2	158	9048	B2-U0-G2	167	9048	B2-U0-G2	167
		T5N	9200	B3-U0-G1	170	9726	B3-U0-G1	180	9726	B3-U0-G1	180
		T5W	8858	B3-U0-G2	164	9365	B3-U0-G2	173	9365	B3-U0-G2	173
		LCL	4864	B1-U0-G1	90	5143	B1-U0-G1	95	5143	B1-U0-G1	95
		LCR	4864	B1-U0-G1	90	5143	B1-U0-G1	95	5143	B1-U0-G1	95
BLC	6234	B0-U0-G2	115	6591	B0-U0-G2	122	6591	B0-U0-G2	122		
A03	64	T2M	10438	B2-U0-G2	164	11035	B2-U0-G2	174	11035	B3-U0-G3	174
		T3M	10354	B2-U0-G2	163	10947	B2-U0-G2	172	10947	B2-U0-G2	172
		T4M	10494	B2-U0-G2	165	11094	B1-U0-G2	174	11094	B2-U0-G2	174
		T5M	10816	B3-U0-G2	170	11435	B3-U0-G2	180	11435	B3-U0-G2	180
		AFR	10811	B3-U0-G3	170	11429	B2-U0-G2	180	11429	B3-U0-G3	180
		T4W	9991	B2-U0-G3	157	10563	B2-U0-G2	166	10563	B2-U0-G3	166
		T5N	10740	B3-U0-G2	169	11355	B3-U0-G1	179	11355	B3-U0-G2	179
		T5W	10341	B4-U0-G2	163	10933	B3-U0-G2	172	10933	B4-U0-G2	172
		LCL	5679	B1-U0-G1	89	6004	B1-U0-G1	94	6004	B1-U0-G1	94
		LCR	5679	B1-U0-G1	89	6004	B1-U0-G1	94	6004	B1-U0-G1	94
BLC	7278	B1-U0-G2	114	7694	B0-U0-G2	121	7694	B1-U0-G2	121		
A04	91	T2M	14465	B3-U0-G3	160	15293	B3-U0-G3	169	15293	B3-U0-G3	169
		T3M	14350	B3-U0-G3	158	15171	B3-U0-G3	167	15171	B3-U0-G3	167
		T4M	14543	B2-U0-G2	160	15375	B2-U0-G2	170	15375	B2-U0-G2	170
		T5M	14990	B4-U0-G2	165	15848	B4-U0-G2	175	15848	B4-U0-G2	175
		AFR	14982	B3-U0-G3	165	15840	B3-U0-G3	175	15840	B3-U0-G3	175
		T4W	13847	B2-U0-G3	153	14639	B2-U0-G3	161	14639	B2-U0-G3	161
		T5N	14884	B4-U0-G2	164	15736	B4-U0-G2	174	15736	B4-U0-G2	174
		T5W	14331	B4-U0-G3	158	15151	B4-U0-G3	167	15151	B4-U0-G3	167
		LCL	7870	B1-U0-G2	87	8321	B1-U0-G2	92	8321	B1-U0-G2	92
		LCR	7870	B1-U0-G2	87	8321	B1-U0-G2	92	8321	B1-U0-G2	92
BLC	10086	B1-U0-G2	111	10663	B1-U0-G2	118	10663	B1-U0-G2	118		

OPF-S OptiForm small

Site & area luminaire

OPF-S Area Optic Lumen values (cont'd)

Performance Package	System Watts	Distribution Type	70 CRI			70 CRI			70 CRI		
			3000K			4000K			5000K		
			Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)
A05	104	T2M	16226	B3-U0-G3	156	17155	B3-U0-G3	164	17155	B3-U0-G3	164
		T3M	16096	B3-U0-G3	154	17018	B3-U0-G3	163	17018	B3-U0-G3	163
		T4M	16313	B2-U0-G3	156	17247	B2-U0-G3	165	17247	B2-U0-G3	165
		T5M	16814	B4-U0-G2	161	17777	B4-U0-G2	170	17777	B4-U0-G2	170
		AFR	16806	B3-U0-G3	161	17768	B3-U0-G3	170	17768	B3-U0-G3	170
		T4W	15532	B3-U0-G3	149	16421	B3-U0-G3	157	16421	B3-U0-G3	157
		T5N	16696	B4-U0-G2	160	17652	B4-U0-G2	169	17652	B4-U0-G2	169
		T5W	16075	B4-U0-G3	154	16995	B4-U0-G3	163	16995	B4-U0-G3	163
		LCL	8828	B1-U0-G2	85	9333	B1-U0-G2	89	9333	B1-U0-G2	89
		LCR	8828	B1-U0-G2	85	9333	B1-U0-G2	89	9333	B1-U0-G2	89
BLC	11314	B1-U0-G2	108	11961	B1-U0-G2	115	11961	B1-U0-G2	115		
A06	122	T2M	18441	B3-U0-G3	151	19496	B3-U0-G3	160	19496	B3-U0-G3	160
		T3M	18294	B3-U0-G3	150	19341	B3-U0-G3	158	19341	B3-U0-G3	158
		T4M	18540	B3-U0-G3	152	19601	B3-U0-G3	160	19601	B3-U0-G3	160
		T5M	19110	B4-U0-G2	156	20203	B4-U0-G2	165	20203	B4-U0-G2	165
		AFR	19100	B3-U0-G3	156	20193	B3-U0-G3	165	20193	B3-U0-G3	165
		T4W	17652	B3-U0-G3	144	18662	B3-U0-G3	153	18662	B3-U0-G3	153
		T5N	18975	B4-U0-G2	155	20061	B4-U0-G2	164	20061	B4-U0-G2	164
		T5W	18270	B5-U0-G3	150	19315	B5-U0-G3	158	19315	B5-U0-G3	158
		LCL	10033	B2-U0-G2	82	10607	B2-U0-G2	87	10607	B2-U0-G2	87
		LCR	10033	B2-U0-G2	82	10607	B2-U0-G2	87	10607	B2-U0-G2	87
BLC	12858	B1-U0-G2	105	13594	B1-U0-G2	111	13594	B1-U0-G2	111		
A07	136	T2M	16776	B3-U0-G3	123	20034	B3-U0-G3	147	21181	B3-U0-G3	156
		T3M	16642	B3-U0-G3	122	19874	B3-U0-G3	146	21012	B3-U0-G3	154
		T4M	16866	B2-U0-G3	124	20142	B3-U0-G3	148	21294	B3-U0-G3	156
		T5M	17384	B4-U0-G2	128	20761	B4-U0-G2	152	21949	B4-U0-G2	161
		AFR	17375	B3-U0-G3	128	20750	B3-U0-G3	152	21938	B3-U0-G3	161
		T4W	16058	B3-U0-G3	118	19178	B3-U0-G3	141	20275	B3-U0-G3	149
		T5N	17262	B4-U0-G2	127	20615	B4-U0-G2	151	21794	B4-U0-G2	160
		T5W	16620	B4-U0-G3	122	19848	B5-U0-G3	146	20984	B5-U0-G3	154
		LCL	9127	B1-U0-G2	67	10900	B2-U0-G2	80	11524	B2-U0-G2	85
		LCR	9127	B1-U0-G2	67	10900	B2-U0-G2	80	11524	B2-U0-G2	85
BLC	11697	B1-U0-G2	86	13969	B1-U0-G2	103	14768	B1-U0-G2	108		

OPF-S OptiForm small

Site & area luminaire

OPF-S Precision Plus Optic Lumen values

Performance Package	System Watts	Distribution Type	70 CRI			70 CRI			70 CRI		
			3000K			4000K			5000K		
			Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)
P01	15	T2M	2691	B1-U0-G1	182	2845	B1-U0-G1	192	2845	B1-U0-G1	192
		T3M	2718	B1-U0-G1	184	2874	B1-U0-G1	194	2874	B1-U0-G1	194
		T4M	2665	B1-U0-G1	180	2817	B1-U0-G1	190	2817	B1-U0-G1	190
		T5M	2610	B2-U0-G1	176	2759	B2-U0-G1	186	2759	B2-U0-G1	186
P02	23	T2M	4022	B1-U0-G1	178	4252	B1-U0-G1	189	4252	B1-U0-G1	189
		T3M	4062	B1-U0-G1	180	4295	B1-U0-G1	191	4295	B1-U0-G1	191
		T4M	3983	B1-U0-G1	177	4211	B1-U0-G1	187	4211	B1-U0-G1	187
		T5M	3900	B2-U0-G1	173	4124	B2-U0-G1	183	4124	B2-U0-G1	183
P03	38	T2M	6465	B2-U0-G2	169	6835	B2-U0-G2	179	6835	B2-U0-G2	179
		T3M	6530	B2-U0-G2	171	6904	B2-U0-G2	181	6904	B2-U0-G2	181
		T4M	6402	B1-U0-G2	168	6768	B1-U0-G2	177	6768	B1-U0-G2	177
		T5M	6269	B3-U0-G2	164	6629	B3-U0-G2	174	6629	B3-U0-G2	174
P04	53	T2M	8759	B2-U0-G2	165	9261	B2-U0-G2	174	9261	B2-U0-G2	174
		T3M	8848	B2-U0-G2	166	9355	B2-U0-G2	176	9355	B2-U0-G2	176
		T4M	8674	B2-U0-G2	163	9171	B2-U0-G2	172	9171	B2-U0-G2	172
		T5M	8495	B3-U0-G2	160	8982	B3-U0-G2	169	8982	B3-U0-G2	169
P05	66	T2M	11253	B2-U0-G2	172	11898	B2-U0-G2	182	11898	B2-U0-G2	182
		T3M	11366	B3-U0-G3	173	12018	B3-U0-G3	183	12018	B3-U0-G3	183
		T4M	11143	B2-U0-G3	170	11782	B2-U0-G3	180	11782	B2-U0-G3	180
		T5M	10913	B3-U0-G2	167	11539	B3-U0-G2	176	11539	B3-U0-G2	176
P06	76	T2M	13987	B3-U0-G3	183	14788	B3-U0-G3	194	14788	B3-U0-G3	194
		T3M	14128	B3-U0-G3	185	14937	B3-U0-G3	196	14937	B3-U0-G3	196
		T4M	13850	B2-U0-G3	182	14644	B2-U0-G3	192	14644	B2-U0-G3	192
		T5M	13564	B4-U0-G3	178	14342	B4-U0-G3	188	14342	B4-U0-G3	188
P07	94	T2M	15850	B3-U0-G3	168	16758	B3-U0-G3	178	16758	B3-U0-G3	178
		T3M	16010	B3-U0-G3	170	16927	B3-U0-G3	180	16927	B3-U0-G3	180
		T4M	15696	B3-U0-G3	167	16595	B3-U0-G3	176	16595	B3-U0-G3	176
		T5M	15372	B4-U0-G3	163	16253	B4-U0-G3	172	16253	B4-U0-G3	172
P08	113	T2M	19800	B3-U0-G3	176	20934	B3-U0-G3	186	20934	B3-U0-G3	186
		T3M	19999	B3-U0-G3	178	21145	B3-U0-G3	188	21145	B3-U0-G3	188
		T4M	19607	B3-U0-G3	174	20730	B3-U0-G3	184	20730	B3-U0-G3	184
		T5M	19202	B4-U0-G3	171	20302	B4-U0-G3	180	20302	B4-U0-G3	180
P09	133	T2M	21655	B3-U0-G3	163	22896	B3-U0-G3	172	22896	B3-U0-G3	172
		T3M	21874	B3-U0-G3	164	23127	B3-U0-G3	174	23127	B3-U0-G3	174
		T4M	21444	B3-U0-G4	161	22673	B3-U0-G4	171	22673	B3-U0-G4	171
		T5M	21002	B4-U0-G3	158	22205	B4-U0-G3	167	22205	B4-U0-G3	167

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LED Wattage and Lumen Values (Emergency Mode)

Ordering Code	CCT	CRI	Avg. System Wattage (W)	Type 2M		Type 3M		Type 4M	
				Lumen Output	BUG Rating	Lumen Output	BUG Rating	Lumen Output	BUG Rating
OPF-S-PXX-740-X-EM	4000	70	6	1000	B0-U0-G0	1014	B0-U0-G1	838	B0-U0-G0
OPF-S-PXX-750-X-EM	5000	70	6	960	B0-U0-G0	973	B0-U0-G1	804	B0-U0-G0
OPF-S-PXX-830-X-EM	3000	80	6	856	B0-U0-G0	868	B0-U0-G1	717	B0-U0-G0
OPF-S-PXX-840-X-EM	4000	80	6	887	B0-U0-G0	899	B0-U0-G1	743	B0-U0-G0

Predicted Lumen Depreciation Data

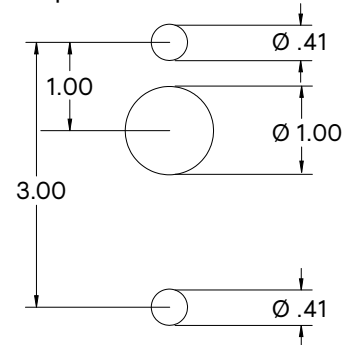
Predicted performance derived from LED manufacturer's data and engineering design estimates, based on IESNA LM-80 methodology. Actual experience may vary due to field application conditions. L70 is the predicted time when LED performance depreciates to 70% of initial lumen output. Calculated per IESNA TM21-11. Published L70 hours limited to 6 times actual LED test hours

Ambient Temp°C	Lumen Package	Calculated L70 Hours	L70 per TM-21	Lumen Maintenance % at 60,000 hrs
25°C	A06-A07	>77,000 hours	>77,000 hours	90%
25°C	All others	>100,000 hours	>100,000 hours	96%

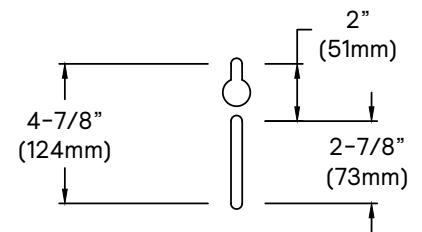
Dimensions

Standard Drill Pattern

Drill Template #5



Standard Arm Mounting Hole Pattern



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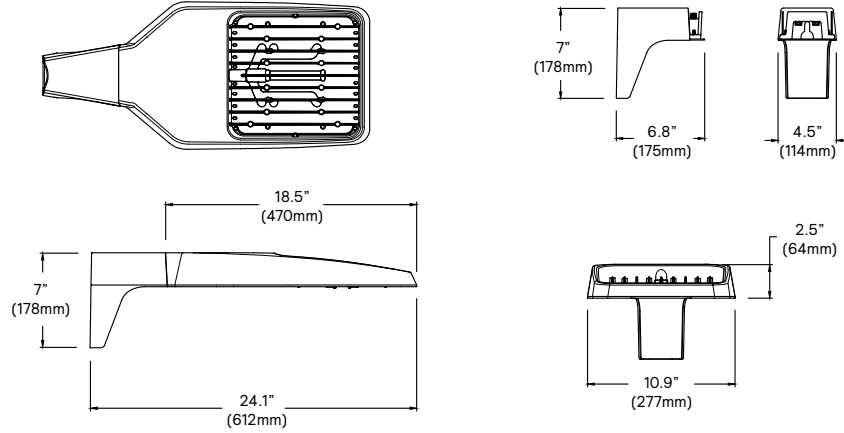
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Dimensions

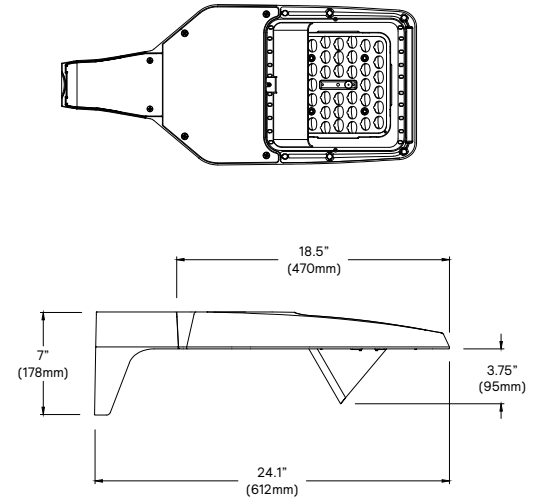
OptiForm Standard Arm

Weight: 11 lb (5.0 kg)

EPA: 0.2 ft² (0.018 m²)

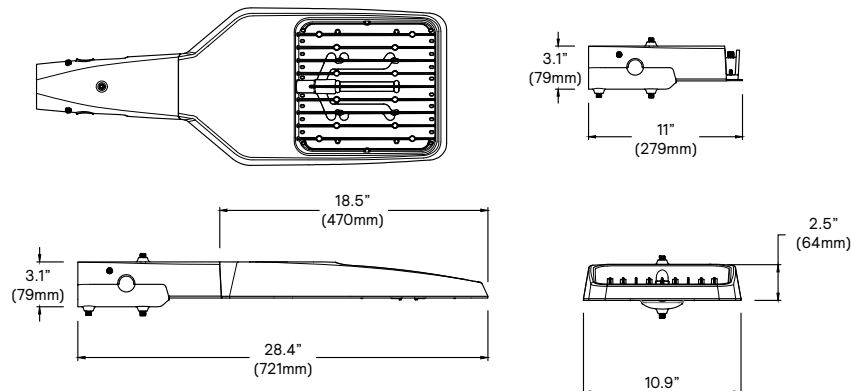


OptiForm External Housing Shield



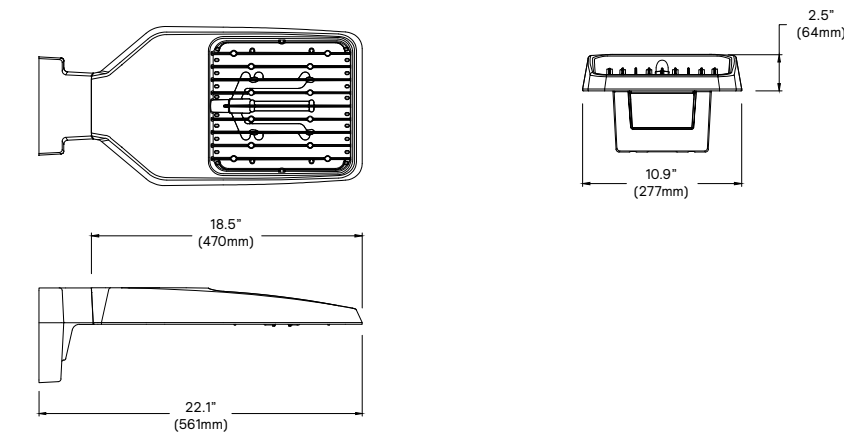
OptiForm Mast Arm

Weight: 12.6 lb (5.7 kg)



OptiForm Wall Mount

Weight: 11.5 lb (5.2 kg)



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Site & area luminaire

Specifications

Housing

Housing and door constructed of low copper die cast Aluminum alloy (A360) with detachable arms for quick mounting. Heatsink is integral to the housing providing passive cooling of LEDs to maintain long LED life. Luminaire housing rated to IP65, LED Modules rated IP66 tested in accordance to Section 9 of IEC 60598-1. OptiForm carries and impact rating of IK08.

Vibration resistance

OptiForm is tested and rated to standards set forth in ANSI C136.31-2018 Level 2 for Bridge and Overpass applications.

Light engine

Light engine comprises of a module of 40-LED aluminum metal clad board fully sealed with optics: Medium = 2 Modules with 80 LEDs, Large = 4 modules with 160 LEDs. Module is RoHS compliant. Color temperature as per ANSI/NEMA bin 2700 Kelvin nominal (2725 ±145K), 3000 Kelvin nominal (3045K +/- 175K) or 4000 Kelvin nominal (3985K +/- 275K), CRI 70 Min. 75 Typical. Other CCT/CRI also available, consult factory. LED light engine is rated IP66 in accordance to Section 9 of IEC 60598-1.

Energy saving benefits

System efficacy up to 182 lms/W with significant energy savings over Pulse Start Metal Halide luminaires. Optional control options provide added energy savings during unoccupied periods.

Optical systems

Site and Area optical distributions include Types 2 Medium, 3 Medium, 4 Medium, 4 Wide, 5 Narrow, 5 Medium, 5 Wide, and Auto Front Row. LEED Corner Left, LEED Corner Right, and Backlight Control distributions also available to provide excellent cutoff to meet the most stringent requirements at property lines. Optional internal shields mount to LED optics and are available with Type 2M, 3M, and 4M distributions. Types 2M and 3M can be rotated at 90° or 270° when specified, and are factory set only. Site and Area optics shall be performance tested per LM-79 and TM-15 (IESNA) certifying their photometric performance. Luminaire designed with 0% uplight (U0 per IESNA TM-15).

Precision Plus optical distributions include Types 2, 3, 4 and 5 and are designed to illuminate pedestrian scale applications by providing lower glare, while still achieving desired distribution, optimized spacing, and excellent uniformity. Optics are made of optical grade polymer refractor lenses and shall be performance tested per LM-63, LM-79 and TM-15 (IESNA) certifying their photometric performance. Luminaire designed with 0% uplight (U0 per IESNA TM-15).

Mounting

Standard luminaire arm mounts to square poles with knock-out on the arm to allow for mounting to 4" O.D. round poles. Standard arm casting can accommodate existing bolt spacing from 2" to 4-7/8". It is recommended to use the bolster plate kit OPF RMB when it's not a new installation or if the mounting holes are larger than 0.41" (10mm).

OptiForm features a Mast Arm for Mounting to 2-3/8x4" tenon as well as wall mount casting for exterior building mount applications.

Control options

Dimming Leads Externally Accessible (DLEA): Access to 0-10V dimming leads supplied through back of luminaire (for secondary dimming controls by others). Cannot be used with other control options.

Sensor Ready Zhaga Socket Connector (SRDR): Product is D4i Certified and equipped with Sensor Ready drivers connected to 4-pin Zhaga Book 18 compliant receptacle designed for sensor and other control system applications. Receptacle is rated IP66 assembly in a compact design that provides a sealed electrical interface and rated UV resistance, mounted on underside of the luminaire, protective dust cap included. When a controller not provided by Signify is used with Sensor Ready Zhaga socket connector, the controller must be certified to work with the Xitanium SR LED drivers as part of the SR certified program. SRDR can be used with NEMA 7-pin twist lock receptacle, which is mounted on top of the luminaire.

Automatic Profile Dimming (CS/CM/CE/CA): Standard dimming profiles provide flexibility towards energy savings goals while optimizing light levels during specific dark hours. Dimming profiles include two dimming settings including dim to 30% or 50% of the total lumen output. After 5 minutes with no motion, it will return to the automatic dimming profile schedule. Automatic dimming profile scheduled with the following settings:

- **CS50/CS30:** Security for 7 hours night duration (Ex., 11 PM – 6 AM)
- **CM50/CM30:** Median for 8 hours night duration (Ex., 10 PM – 6 AM)

All above profiles are calculated from mid point of the night. Dimming is set for 6 hours after the mid point and 1 or 2 hours before depending of the duration of dimming. Cannot be used with other dimming control options

Field Adjustable Wattage Selector (FAWS): Luminaire equipped with the ability to manually adjust the wattage in the field to reduce total luminaire lumen output and light levels. Comes pre-set to the highest position lumen output selected. Use chart below to estimate reduction in lumen output desired. Cannot be used with other control options or motion response.

FAWS Position	Percent of Typical Lumen Output	FAWS Position	Percent of Typical Lumen Output
1	25%	6	80%
2	50%	7	85%
3	55%	8	90%
4	65%	9	95%
5	75%	10	100%

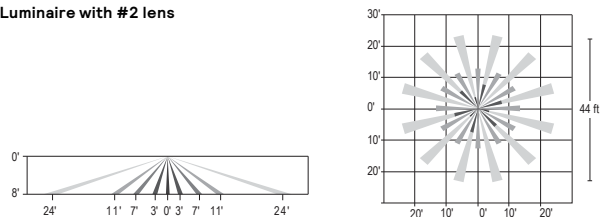
Note: Typical value accuracy +/- 5%

Motion response options

Bi-Level Infrared Motion Response (BL50): Motion Response module is mounted integral to luminaire factory pre-programmed to 50% dimming when not ordered with other control options. BL-IMRI is set/operates in the following fashion: The motion sensor is set to a constant 50%. When motion is detected by the PIR sensor, the luminaire returns to full power/light output. Dimming on low is factory set to 50% with 5 minutes default in "full power" prior to dimming back to low. When no motion is detected for 5 minutes, the motion response system reduces the wattage by 50%, to 50% of the normal constant wattage reducing the light level. Other dimming settings can be provided if different dimming levels are required (contact Technical Support for details).

Infrared Motion Response Lenses (L2): Infrared Motion Response Integral module is available with two different sensor lens types to accommodate various mounting heights and occupancy detection ranges. Lens #2 is designed for mounting heights 8' to 15'. Lens #3 is designed for higher mounting heights up to 20' with a 40' diameter coverage area. See charts for approximate detection patterns:

Luminaire with #2 lens



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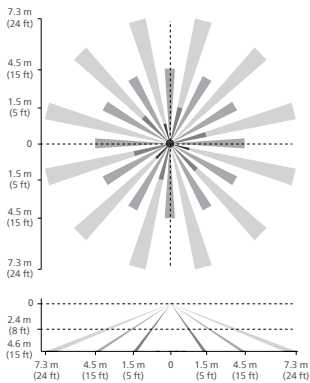
Specifications (cont'd)

Outdoor Interact (WIAP): Connected sensor with integral occupancy and daylight sensing, supports wireless mesh connectivity. Sensor works in the standalone mode when configured without a gateway. When used with a gateway you are able to access additional functionalities such as energy monitoring, scheduling and BMS integration. Interact offers an App, a portal and a broad portfolio of Interact-ready Indoor and Outdoor luminaires, lamps and retrofit kits all working on the same system. The App provides flexibility to choose between a standalone or gateway mode. Setup with the gateway requires wired Internet access to the gateway. WIAP includes SR driver and SR receptacle. Daylight harvesting supported through dimming - activated via the Interact App. Sensors IP66 rated.

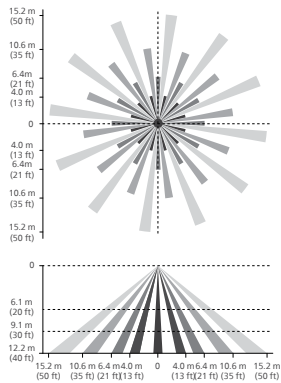
For more information on Interact Pro visit:

www.interact-lighting.com/interactproscalablesystem

LB or LW low sensor



HB or HW high sensor



Note: The beam patterns shown are intended solely as a general guide and are not to scale. Sensing capabilities and coverage area depend on many factors including the size, speed and direction of travel of persons and vehicles; sensor mounting height; environmental and site conditions; etc.

Electrical

Twist-Lock Receptacle (TR5/TR7): Twist Lock Receptacle with 5 pins enabling dimming or with 7 pins with additional functionality (by others) can be used with a twistlock photoelectric cell or a shorting cap. Dimming Receptacle Type B (5-pin) and Type D-24 (7-pin) in accordance to ANSI C136.41. Can be used with third-party control system. Receptacle located on top of luminaire housing. When specifying receptacle with twistlock photoelectric cell, voltage must be specified. When ordering 7-pin Twist-lock receptacle (TR7), all 7 pins are wired to respective pins with the Sensor Ready (SR) driver, and photocell or shorting cap is not included. When ordering a twist-lock receptacle with a photocell (TLP), the receptacle used is a 7-pin receptacle, with pins 6 and 7 connected to SR DALI driver. 0-10V dimming leads (pins 4 and 5) are connected if not ordered with any other dimming option.

Driver: Driver efficiency (>90% standard). 120-480V available (restrictions apply). Open/short circuit protection. All drivers are 0-10V dimming to 10% power standard, except when using Sensor Ready (SR) drivers, which uses DALI protocol (options CS50/CM50/CS30/CM30, SRDR, and TR7). Drivers are RoHS and FCC Title 47 CFR Part 15 compliant.

Button Photocontrol (PCB): Button style design for internal luminaires mounting applications. The photocontrol is constructed of a high impact UV stabilized polycarbonate housing. Rated voltage of 120V or 208-277V with a load rating of 1000 VA. The photocell will turn on with 1-4Fc of ambient light.

Surge protection (SP1/SP2): Surge protection device tested in accordance with ANSI/IEEE C62.45 per ANSI/IEEE C62.41.2 Scenario I Category C High Exposure 10kV/10kA waveforms for Line-Ground, Line-Neutral and Neutral-Ground, and in accordance with DOE MSSLC Model Specification for LED Roadway Luminaires Appendix D Electrical Immunity High test level 10kV/10kA. 20kV / 10kA surge protection device that provides extra protection beyond the SP1 10kV/10kA level.

Listings

UL/cUL wet location listed to the UL 1598 standard, suitable for use in ambient temperatures from -40° to 40°C (-40° to 104°F). All Optiform configurations are qualified under Design Lights Consortium Premium classification. Consult DLC Qualified Products list to confirm your specific luminaire selection is approved. CCTs 3000K and warmer are Dark Sky Approved.

Finish

Each standard color luminaire receives a fade and abrasion resistant, electrostatically applied, thermally cured, triglycidyl isocyanurate (TGIC) textured polyester powdercoat finish. Standard colors include bronze (BZ), black (BK), white (WH), dark gray (DGY), and medium gray (MGY). Consult Factory for specs on optional, custom colors, and marine grade paint.

Service Tag

Each individual luminaire is uniquely identifiable, thanks to the Service tag application. With a simple scan of a QR code, placed on the inside of the mast door, you gain instant access to the luminaire configuration, making installation and maintenance operations faster and easier, no matter what stage of the luminaire's lifetime. Just download the APP and register your product right away. For more details visit: signify.com

Warranty

OptiForm luminaires feature a 5-year limited warranty. See signify.com/warranties for complete details and exclusions.