DOCKETED	
Docket Number:	16-AFC-01C
Project Title:	Stanton Energy Reliability Center - Compliance
TN #:	226412
Document Title:	VIS-4, Lighting Management Plan
Description:	N/A
Filer:	Marichka Haws
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	1/31/2019 10:49:38 AM
Docketed Date:	1/31/2019

CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814-5512
www.energy.ca.gov

November 27, 2018

Greg Lamberg
Compliance Manager
W Power
650 Bercut Drive, Suite A
Sacramento, CA 95811

SUBJECT: Stanton Energy Reliability Center (16-AFC-01C), VIS-4, Lighting Management Plan

Dear Mr. Lamberg,

In accordance with VIS-4, the CPM has reviewed and approved the Lighting Management Plan. If you have any questions or concerns, please contact John Heiser, Compliance Project Manager, at (916) 653-8236, or by fax to (916) 654-3882, or via e-mail at John.Heiser@energy.ca.gov.

Sincerely,

John Heiser
Compliance Office Manager
Siting, Transmission, & Environmental Protection Division

REVISION RECORD

Revision	Status	Description of Revision	Preparer print/sign/date	Checker Print/sign/date	Approver print/sign/date
0	For Approval	Original Issue	C. Scapillato 11/20/2018	T. Domann 11/16/2018	J. Bondank 11/16/2018

Joseph K. Bondank

Joseph K Bondank
11/20/2018

CALIFORNIA
PE NO. E18316

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PURPOSE:

The purpose of this Lighting Management Plan (LMP) is to define the design criteria used for the area lighting at the Stanton Energy Reliability Center (SERC) and to satisfy the California Energy Commission's Final Commission Decision requirements (VIS-4) to submit for approval to the City of Stanton and to the California Energy Commission.

The LMP is intended to guide the selection, placement, installation and operation of all new exterior lighting at the SERC. The LMP's function is to regulate the use of artificial light at night in a way that prioritizes the safety of staff while minimizing the impact of such light on protected outdoor spaces and common properties lines. This LMP shall meet or exceed all applicable agency and/or departmental policies regarding outdoor lighting and conforms to all local, regional and national laws.

REFERENCES:

1. Final Commission Decision – Stanton Energy Reliability Center.
2. California Building Standard Commission Title 24 – Part 6: California Energy Code.
3. Stanton Municipal Code – Chapter 20.300.080 Outdoor Light and Glare.
4. The IESNA Lighting Handbook (Tenth Edition) 2011.
5. NFPA 70 National Electrical Code – 2017.
6. NESC (2017): National Electric Safety Code (Handbook).
7. Holophane, Lithonia Lighting, Crouse-Hinds Lighting and Electric Time Company catalogs.
8. POWER Engineers, Inc. Drawings:
    a. EL01-100 (Rev. 0): Electrical Lighting & Receptacle Legend and General Notes.
    b. EL01-100-1 (Rev. 0): Electrical Lighting & Receptacle Details.
    c. EL01-101(Rev. 0): Electrical Lighting Plan.
    d. EL01-102 (Rev 0): Electrical Receptacle Plan.
    e. EL01-200 (Rev. 0): Electrical Lighting Schematic/Wiring Diagram.
    f. EL01-201 (Rev. 0): Electrical Lighting Schematic/Wiring Diagram.
    g. EL01-202 (Rev. 0): Electrical Lighting Schematic/Wiring Diagram.
    h. SP05-100 (Rev. D): 66kV Electrical Arrangement.
    i. SP05-100-4 (Rev. C): 66/13.8kV Bill of Material.

DESIGN REQUIREMENTS:

1. Plant area lighting levels shall be designed in accordance with the Illuminating Engineering Society (IESNA) of North America. The following are the recommended maintained illuminance target levels for the SERC per IESNA.

Location	Minimum Average Lux(foot-candles)
Electric Generating Station -Turbine Areas	50 lux (5fc)
Electric Generating Station -Entrances, Stairs, Platforms	50 lux (5fc)
Electric Generating Station -Fuel Handling - Unloading	50 lux (5fc)
Electric Generating Station -Substations	20 lux (2fc)

2. The recommended illuminance (foot-candles) target level is an average spread of light.
3. Power plant area lighting is designed to provide a minimum illuminance of area lighting for operator safety. Additional temporary task lighting may be required during times of nighttime maintenance to supplement permanent lighting.
4. Lighting fixtures shall be powered from 120/208V lighting panels.
5. Energy efficient lighting products and systems shall be used for all permanent new lighting systems. Exterior lighting shall use high efficiency directional LED fixtures. The lighting system shall work in conjunction with occupancy sensors, photo sensors, and bi-level control technology to provide adequate light for security and maximize energy savings.
6. Exterior light fixtures shall be hooded, with light directed downward or toward the area to be illuminated to prevent obtrusive spill light (i.e. light trespass) beyond the project site.
7. Exterior lighting shall be designed to minimize backscatter to the night sky to the maximum extent feasible.
8. Exterior lighting shall utilize fully-shielded luminaires, and conform generally to International Dark-Sky Association recommendations for lighting zone LZ1.
9. Lighting shall be consistent with all applicable laws, ordinances, regulations, and standards.
10. Specific areas requiring lighting for maintenance, but not needed for area lighting shall be manually controlled.

DESIGN PROCEDURES:

LIGHTING ANALYSIS SOFTWARE: Visual 2017 VERSION: 2.09.0105

1. The Light Loss Factor (LLF) in process areas is selected at 0.80.
2. The working plane shall be at grade and/or floor/platform level in outdoor spaces.
3. Photometric files for the fixtures used were downloaded from vendor websites.
4. Visual output files show average foot-candles throughout the site and provides average foot-candles by areas indicated. Model output shows only light sources operating under normal conditions. Manually operated light fixtures utilized for maintenance tasks are shown off.
5. The gas metering set assembly (MSA) area of the plant, including the area lighting, is designed by the gas company – Southern California Gas (SCG). Lighting within MSA area will be controlled by a manual switch. Fixtures will not be utilized under normal operation and are provided for SCG personnel for maintenance task if required during nighttime hours.
6. A light fixture layout is created using Visual 2017 and the software calculates the average foot-candle (fc) level of that layout. The average foot-candle level is then verified against the lighting design requirements to ensure the optimal level is achieved.

CONCLUSIONS:

1. The calculated illumination levels and the uniformity ratios for the lighting in areas as indicated in Appendix B are in conformance with the design requirements and are considered to be in accordance with applicable codes and standards.

APPENDIX A

POWER ENGINEERS ELECTRICAL LIGHTING DRAWINGS

- EL01-100 (Rev. 0): Electrical Lighting & Receptacle Legend and General Notes
- EL01-100-1 (Rev. 0): Electrical Lighting & Receptacle Details
- EL01-101 (Rev. 0): Electrical Lighting Plan
- EL01-102 (Rev 0): Electrical Receptacle Plan
- EL01-200 (Rev. 0): Electrical Lighting Schematic
- EL01-201 (Rev. 0): Electrical Lighting Schematic
- EL01-202 (Rev. 0): Electrical Lighting Schematic
- SP05-100 (Rev. D): 66kV Electrical Arrangement
- SP05-100-4 (Rev. C): 66/13.8kV Bill of Material

BILL OF MATERIALS

SYMBOL	MANUFACTURER	PART NUMBER	DESCRIPTION	LAMP	VOLTAGE (AC)	INPUT WATTS	LUMEN OUTPUT @25 DEG C	MOUNTING HEIGHT	MOUNTING CONFIGURATION	SENSOR/CONTROL	SENSOR/CONTROLLER PART NUMBER	COMMENTS
L1	HOLOPHANE	PLED2_10L_4K_AS_UN_NA_G_L5 WITH P3US-GR_SH	PETROLUX LED GEN2 WET LOCATIONS (PLED2): PLED2, 12,000 LUMENS, 4,000K CCT (+/- 250), AUTO-SENSING (120-277V), UNIVERSAL MOUNT, NO CORD, GRAY, TYPE 5, LOW ANGLE, GLASS, UPLIGHT SHIELD, GRAY UNIVERSAL MOUNT ARM	LED	208V	98W	11,245	10 FT AFG	WALL/STANCHION MOUNT	OUTDOOR SENSOR; LINEVOLTAGE, HIGH MOUNT, OUTDOOR PIR WITH ON/OFF/DIM PHOTOCELL, AUTOSENSING 120-277VAC, SHORT EXTENSION, LOW BACK, DARK BRONZE, MIN DIME LEVEL 4VDC	SBOR_10_ODP_EB2_BZ_4V	CN300 TO FURNISH & INSTALL
L2	HOLOPHANE	PLED2_15L_4K_AS_UN_NA_G_L5 WITH P3US-GR_SH	PETROLUX LED GEN2 WET LOCATIONS (PLED2): PLED2, 15,000 LUMENS, 4,000K CCT (+/- 250), AUTO-SENSING (120-277V), UNIVERSAL MOUNT, NO CORD, GRAY, TYPE 5, LOW ANGLE, GLASS, UPLIGHT SHIELD, GRAY UNIVERSAL MOUNT ARM	LED	208V	165W	18,195	15 FT AFG	WALL/STANCHION MOUNT	OUTDOOR SENSOR; LINEVOLTAGE, HIGH MOUNT, OUTDOOR PIR WITH ON/OFF/DIM PHOTOCELL, AUTOSENSING 120-277VAC, SHORT EXTENSION, LOW BACK, DARK BRONZE, MIN DIME LEVEL 4VDC	SBOR_10_ODP_EB2_BZ_4V	CN300 TO FURNISH & INSTALL
L2B	HOLOPHANE	PLED2_15L_4K_AS_UN_NA_G_L5 WITH P3US-GR_SH	PETROLUX LED GEN2 WET LOCATIONS (PLED2): PLED2, 15,000 LUMENS, 4,000K CCT (+/- 250), AUTO-SENSING (120-277V), UNIVERSAL MOUNT, NO CORD, GRAY, TYPE 5, LOW ANGLE, GLASS, UPLIGHT SHIELD, GRAY UNIVERSAL MOUNT ARM	LED	208V	165W	18,195	15 FT AFG	WALL/STANCHION MOUNT	N/A	N/A	CN300 TO FURNISH & INSTALL
L3	HOLOPHANE	PMLED_4_4K_10A_AS_66_3_K_BP_30_23_DM	PREDATOR MEDIUM LED WET LOCATIONS (PMLED): 4 MODULE, 4,000K CCT, DIMMABLE, AUTOSENSING (120-277), YOKE MOUNT, 30FT #12AWG CORD, BLACK, PRIMATIC GLASS	LED	208V	177W	21,000	10 FT AFG	CEILING MOUNT	N/A	N/A	CN300 TO FURNISH & INSTALL
L4	ELECTRIC TIME COMPANY	SP-6696-LED-FA	OUTDOOR CANISTER CLOCK - ILLUMINATED FACE	LED	115V	15W	2,000	51 FT TOC	WALL MOUNT	CLOCK CONTROLLER; 120VAC INPUT POWER, RS-485 COMMUNICATIONS, 24VDC CLOCK OUTPUTS	DS-483 (99B-M1)	OWNER FURNISHED CN300 TO INSTALL
L5	LITHONIA	WST_LED_P1_30K_VF_120_PIR	WALL SCONCE WST LED: 1,500 LUMENS, 3000K, FORWARD THROW, 120VAC, WALL MOUNT, MOTION/AMBIENT LIGHT SENSOR	LED	120V	12W	1,529	ABOVE DOOR	WALL MOUNT	MOTION/AMBIENT LIGHT SENSOR INTEGRAL TO FIXTURE	N/A	SPECIFIED, FURNISHED & INSTALLED BY OTHERS
L6	CROUSE HINDS	VMV7LJDM1/UNV	CHAMP VMV: HAZARDOUS AREA LED, STANCION MOUNT	LED	120-277V	62W	7,195	14 FT AFG	STANCION MOUNT	N/A	N/A	SPECIFIED, FURNISHED & INSTALLED BY OTHERS
L7	CROUSE HINDS	PFM11LCY/UNV1_76	CHAMP PFM LED FLOODLIGHTS 11,107 LUMENS, 5000K, 70CRI (COOL WHITE)	LED	120-277V	99W	11,107	20 FT AFG	YOKE MOUNT	N/A	N/A	SPECIFIED, FURNISHED & INSTALLED BY OTHERS
S	HUBBELL-BELL	5137-0	DOUBLE POLE 120-277V, 20A "ON-OFF" SWITCH IN A SINGLE GANG IRON BOX W/ THREADED HUB.	N/A	120-277V (L-N) 60HZ	N/A	N/A	4 FT AFG	SURFACE	N/A	N/A	CN300 TO FURNISH & INSTALL
GFCI	HUBBELL	N/A	GFCI NEMA 5-20R, 125V, GRAY, INDUSTRIAL DUPLEX RECEPTACLE IN A SINGLE GANG MALLEABLE IRON BOX WITH THREADED HUB. OUTDOOR COVERS TO BE WEATHER PROOF, POLYCARBONATE IN-USE STYLE WITH MOUNTING INSERTS	N/A	120V (L-N) 60HZ	N/A	N/A	2 FT AFG	SURFACE	N/A	N/A	CN300 TO FURNISH & INSTALL
GFCI	HUBBELL	N/A	GFCI NEMA 5-20R, 125V, GRAY, INDUSTRIAL QUADPLEX RECEPTACLE IN A DOUBLE GANG MALLEABLE IRON BOX WITH THREADED HUB. OUTDOOR COVERS TO BE WEATHER PROOF, POLYCARBONATE IN-USE STYLE WITH MOUNTING INSERTS	N/A	120V (L-N) 60HZ	N/A	N/A	2 FT AFG	SURFACE	N/A	N/A	CN300 TO FURNISH & INSTALL
▲	APPLETON	WSRD	INTERLOCKED WELDING RECEPTACLE W/ ENCLOSED DISCONNECT SWITCH: NEMA 4X, 480V, 60A, 3W4P	N/A	480V	N/A	N/A	3 FT AFG	SURFACE	N/A	N/A	CN300 TO FURNISH & INSTALL
LC	GE	CR463M4OCJA14B1	LIGHTING CONTACTOR, NEMA 1 ENCLOSURE, 4 NO CONTACTS, 120VAC COIL, HOA SELECTOR SWITCH (MAINTAINED), STANDARD PILOT LIGHT ON	N/A	120V	N/A	N/A	GRADE	SURFACE	N/A	N/A	CN300 TO FURNISH & INSTALL
PC	INTERMATIC	K4121M	PHOTOCELL, 120VAC, 2000W, SPST CONTACT, REMOVE MOUNTED	N/A	120V	N/A	N/A	NOTE 10	NOTE 10	N/A	N/A	CN300 TO FURNISH & INSTALL
X	HUBBELL LIGHTING COMPASS	CU2WG	CU2W SERIES EMERGENCY UNIT, GREY, WET LOCATION, 2 LED LAMP HEADS, NICKEL CADMIUM BATTERIES FOR 90MIN OPERATION	LED	120V	2.7W		1' ABOVE DOORWAY	WALL	N/A	N/A	CN300 TO FURNISH AND INSTALL

GENERAL NOTES:

1. ALL LIGHT FIXTURES AND LIGHT CONTROLS SHALL COMPLY WITH THE CALIFORNIA BUILDING CODE (CBC).
   - A. CALIFORNIA BUILDING CODE (CBC):
     1. TITLE 24, PART 6 – BUILDING ENERGY EFFICIENCY STANDARD
        - a. 110.9 – MANDATORY REQUIREMENTS FOR LIGHTING CONTROL DEVICES AND SYSTEMS, BALLAST, AND LUMINAIRES.
        - b. 130.0 – LIGHTING CONTROLS AND EQUIPMENT – GENERAL.
        - c. 130.2 – OUTDOOR LIGHTING CONTROLS & EQUIPMENT.
     2. TITLE 20 – APPLIANCE EFFICIENCY REGULATION AND CALIFORNIA CODE OF REGULATIONS
2. LIGHTING DESIGN SHALL COMPLY WITH THE ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA (IESNA). EXTERIOR ILLUMINATION OF EQUIPMENT AREAS HAVE BEEN DESIGNED TO MEET AN AVERAGE MINIMUM ILLUMINATION OF 2-5 FOOTCANDLES PER IES.
3. LIGHTING INSTALLATION SHALL COMPLY WITH NPFA 70 - 2017 NATIONAL ELECTRIC CODE (NEC).
4. ALL FIXTURES SHALL BE COMPLIANT WITH INTERNATIONAL DARK-SKY ASSOCIATION RECOMMENDATIONS FOR LIGHTING ZONE LZ1.
5. CONTRACTOR SHALL FURNISH AND INSTALL ALL LIGHT FIXTURES, MOTION SENSORS, LIGHTING CONTACTORS, MOUNTING HARDWARE, AND ASSOCIATED CABLE AND CONDUIT NECESSARY TO MAKE A COMPLETE SYSTEM.
6. ALL LIGHT FIXTURES SHALL UTILIZE EXISTING STRUCTURAL STEEL OR BUILDING STRUCTURES FOR MOUNTING AND SHALL BE STANCHION OR WALL MOUNTED UNLESS OTHERWISE NOTED.
7. FIXTURES SHALL BE MOUNTED PER BILL OF MATERIALS (BOM) UNLESS OTHERWISE NOTED.
8. EACH FIXTURE SHALL HAVE AN INDIVIDUAL PHOTOCELL/MOTION SENSOR AS CALLED OUT IN THE BOM. PHOTOCELL/MOTION SENSOR SHALL BE MOUNTED 12" BELOW LUMINAIRE AND DIRECTLY BELOW EACH FIXTURE. CONTRACTOR TO FURNISH AND INSTALL CONDUIT "T" BODY BETWEEN FIXTURE AND SENSOR TO PROVIDE AN ACCESS POINT TO WIRE LEADS.
9. LIGHTS SHALL BE 208V AND BE FED FROM OWNER PROVIDED 120/208V POWER PANELS WITH 20A, 2P BREAKERS. SEE PANELBOARD SCHEDULES FOR CIRCUITING. EACH LIGHTING CIRCUIT SHALL NOT HAVE MORE THAN 10 FIXTURES ON ONE SINGLE 208V, 20A BREAKER. SEE EL01-101 FOR RECOMMENDED CIRCUITING AND ALLOTTED POWER PANEL BREAKERS.
10. PHOTO CELL SHALL BE MOUNTED EXTERNAL TO UNIT 1 CONTROL MODULE, ON NORTH SIDE OF ENCLOSURE WITHIN 12" OF ENCLOSURE ROOF.
11. CONTRACTOR TO FURNISH AND INSTALL PHENOLIC NAMEPLATE AS SHOWN ON EL01-100-1 ON EXTERIOR OF LIGHTING CONTACTOR ENCLOSURE.

REFERENCE DRAWINGS:

EL01-100-1 ELECTRICAL LIGHTING AND RECEPTACLE DETAILS
EL01-101 ELECTRICAL LIGHTING PLAN
EL01-102 ELECTRICAL RECEPTACLE PLAN

REGISTERED PROFESSIONAL ENGINEER — JOSEPH K. BONDANK — NO. E18316 — ELECTRICAL — STATE OF CALIFORNIA

11 / 19 / 2018

JOSEPH K. BONDANK, ELECTRICAL, PE # E18316

PROJECT LOCATION
10711 DALE AVE
STANTON, ORANGE CO., CA 90680

INTER-DISCIPLINE REVIEW

DISC	ARCH	CIVIL	ELECT	I&C	MECH	STRUCT
DATE	*	10-29-2018	10-29-2018	*	10-29-2018	10-29-2018
INIT	*	WHR	CMS	*	BSC	SPC

REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
0	ISSUED FOR LIGHTING MANAGEMENT PLAN APPROVAL	11-19-2018	DMS	BMS	TAD	JKB

DSGN	BMS	01-31-2018
DRN	DMS	01-31-2018
CKD	TAD	11-19-2018

SCALE: AS NOTED
FOR 22x34 DWG ONLY

Stanton Energy Reliability Center, LLC
650 Bercut Dr, Suite A - Sacramento, CA 95811
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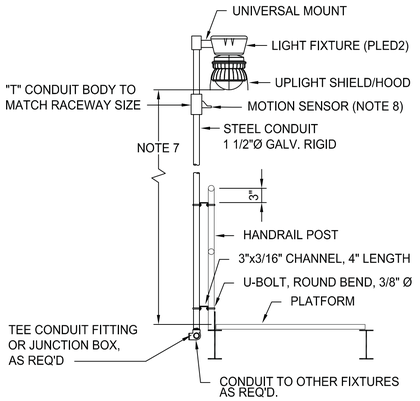
STANTON ENERGY RELIABILITY CENTER
OVERALL SITE
ELECTRICAL LIGHTING AND RECEPTACLE LEGEND AND GENERAL NOTES

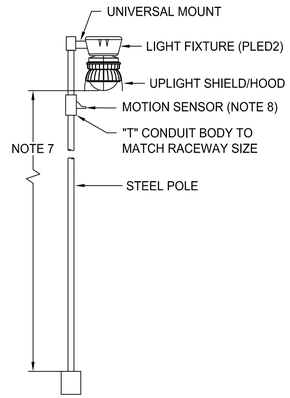
JOB NUMBER 149368
REV 0
DRAWING NUMBER EL01-100

EL01-100.DWG

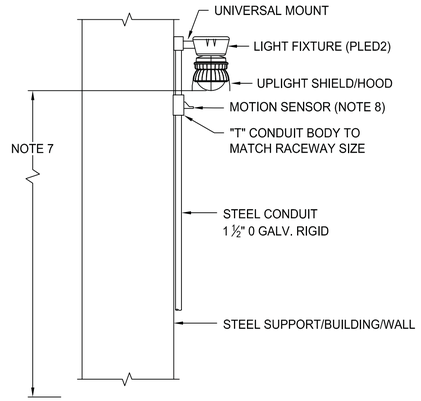
NOTE:
1. SEE EL01-100 FOR NOTES.



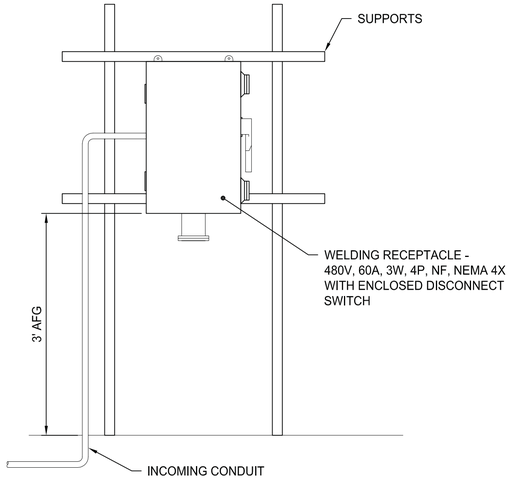
STANCHION MOUNT LIGHTING FIXTURE
TYPICAL MOUNTING DETAIL



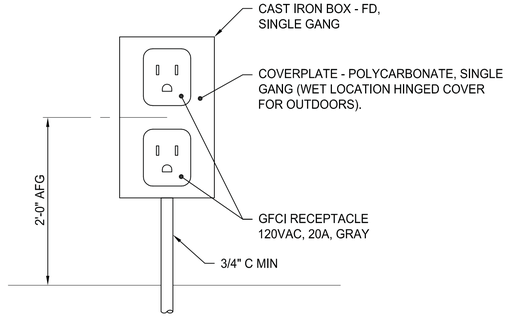
POLE MOUNT LIGHTING FIXTURE
TYPICAL MOUNTING DETAIL



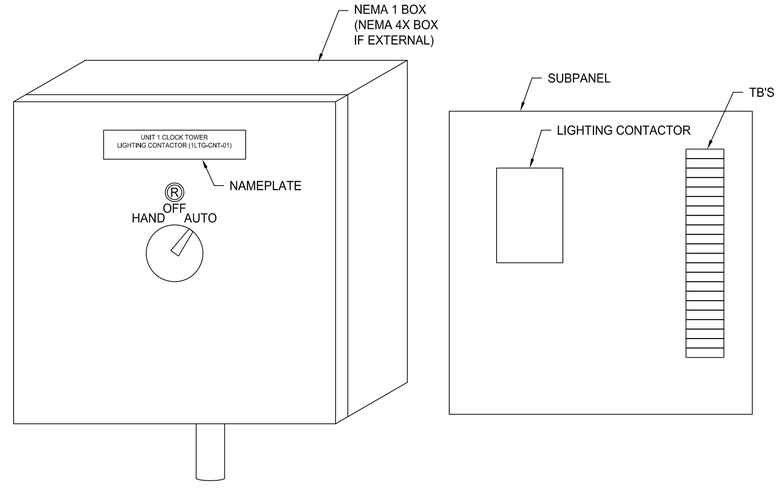
WALL MOUNT LIGHTING FIXTURE
TYPICAL MOUNTING DETAIL



WELDING RECEPTACLE DETAIL



CONVENIENCE OUTLET DETAIL



LIGHTING CONTACTOR TYPICAL DETAIL

REGISTERED PROFESSIONAL ENGINEER JOSEPH K. BONDANK NO. E18316 ELECTRICAL STATE OF CALIFORNIA

11 / 19 / 2018

JOSEPH K. BONDANK, ELECTRICAL, PE # E18316

PROJECT LOCATION:
10711 DALE AVE
STANTON, ORANGE CO., CA 90680

EL01-100-1.DWG

INTER-DISCIPLINE REVIEW						
DISC	ARCH	CIVIL	ELECT	I&C	MECH	STRUCT
DATE	*	10-29-2018	10-29-2018	*	10-29-2018	10-29-2018
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0	ISSUED FOR LIGHTING MANAGEMENT PLAN APPROVAL	11-19-2018	DMS	CMS	TAD	JKB

DSGN	BMS	01-31-2018
DRN	DMS	01-31-2018
CKD	TAD	11-19-2018

SCALE: AS NOTED

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STANTON ENERGY RELIABILITY CENTER

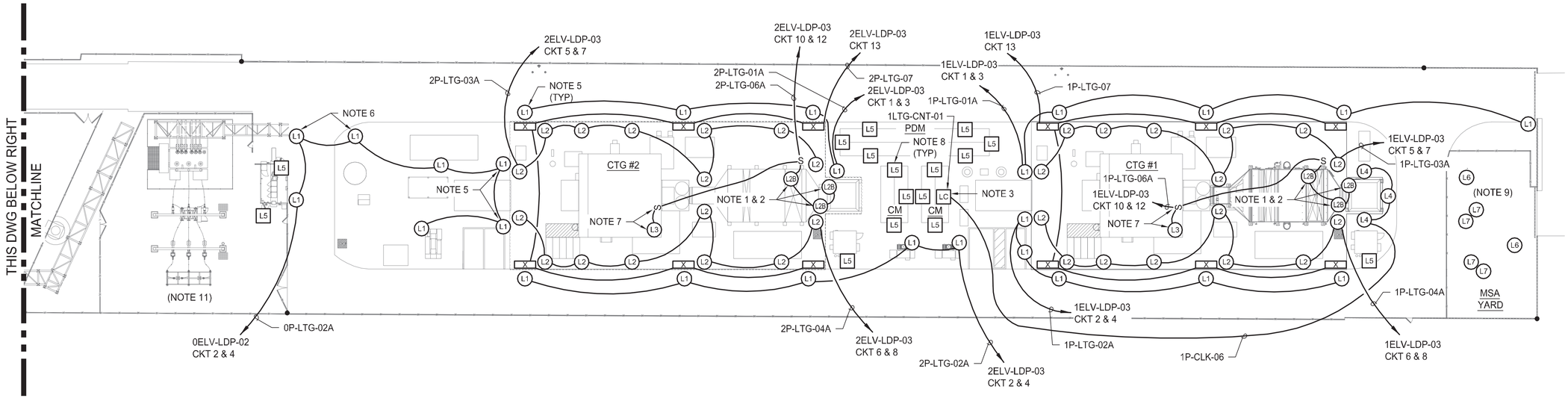
OVERALL SITE

ELECTRICAL LIGHTING AND RECEPTACLE DETAILS

JOB NUMBER 149368

REV 0

DRAWING NUMBER EL01-100-1



NOTES:

1. MOUNT TWO "L2B" FIXTURES ON STACK PLATFORMS (APPROX 49' AND 69' AFG) AND (1) FOR ERU ROOF ACCESS PLATFORM (APPROX 35' AFG). PROVIDE MANUAL SWITCH AT BASE OF ERU ROOF ACCESS LADDER TO CONTROL "L2B" FIXTURES.
2. FIXTURE TYPE "LB2" CONTROLLED BY MANUAL SWITCH. FIXTURES NOT UTILIZED UNDER NORMAL OPERATION AND PROVIDED FOR MAINTENANCE TASKS ONLY.
3. LIGHTING CONTACTOR TO BE MOUNTED WITHIN UNIT 1 CONTROL MODULE.
4. STANCHION MOUNT FIXTURES @ 15' AFG UTILIZING STRUCTURAL COLUMNS (FIXTURES WILL BE ABOVE TOP OF CANOPY).
5. WALL MOUNT FIXTURES @ 15' AFG UTILIZING ENCLOSURE WALL.
6. STANCHION MOUNT FIXTURE @ 15' AFG UTILIZING TRAY SUPPORT RACK STRUCTURAL STEEL.
7. FIXTURE TO BE MOUNTED BENEATH AIR INLET STRUCTURE AND WIRED TO OUTDOOR RATED LIGHT SWITCH. FIXTURES NOT UTILIZED UNDER NORMAL OPERATION AND PROVIDED FOR MAINTENANCE TASKS ONLY.
8. FIXTURE TYPE "L5" SPECIFIED, FURNISHED, AND INSTALLED BY OTHERS.
9. FIXTURE TYPES "L6" & "L7" SPECIFIED, FURNISHED AND INSTALLED BY SOCAL GAS FOR LIGHTING WITHIN MSA YARD. LIGHTING WITHIN MSA YARD SHALL BE CONTROLLED BY MANUAL SWITCH. FIXTURES NOT UTILIZED UNDER NORMAL OPERATION AND PROVIDED FOR MAINTENANCE TASKS ONLY.
10. ONLY HOME RUN POWER CIRCUITS FOR LIGHTING FIXTURES ARE SHOWN IN CABLE SCHEDULE. CONTRACTOR TO FIELD ROUTE WIRING BETWEEN FIXTURES AS SHOWN.
11. SEE DRAWING SP05-100 & SP05-100-4 FOR SWITCHYARD LIGHTING PLAN AND BILL OF MATERIALS.

REFERENCE DRAWINGS:

EL01-100	ELECTRICAL LIGHTING AND RECEPTACLE LEGEND AND GENERAL NOTES
EO00-403	COMMON 208Y/120VAC DISTRIBUTION PANELBOARD SCHEDULES
EO00-404	UNIT 1 208Y/120VAC DISTRIBUTION PANELBOARD SCHEDULES
EO00-405	UNIT 2 208Y/120VAC DISTRIBUTION PANELBOARD SCHEDULES

ELECTRICAL LIGHTING PLAN

SCALE: 1"=30'

0 15 30 60 90 FEET
1" = 30'

REGISTERED PROFESSIONAL ENGINEER — JOSEPH K. BONDANK — NO. E18316 — ELECTRICAL — STATE OF CALIFORNIA

11 / 19 / 2018

JOSEPH K. BONDANK, ELECTRICAL, PE # E18316

PROJECT LOCATION:
10711 DALE AVE
STANTON, ORANGE CO., CA 90680

EL01-101.DWG

REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
0	ISSUED FOR LIGHTING MANAGEMENT PLAN APPROVAL	11-19-2018	DMS	CMS	TAD	JKB

DSGN	CMS	01-24-2018
DRN	DMS	01-24-2018
CKD	TAD	11-19-2018
SCALE:	AS NOTED	

FOR 22x34 DWG ONLY

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STANTON ENERGY RELIABILITY CENTER

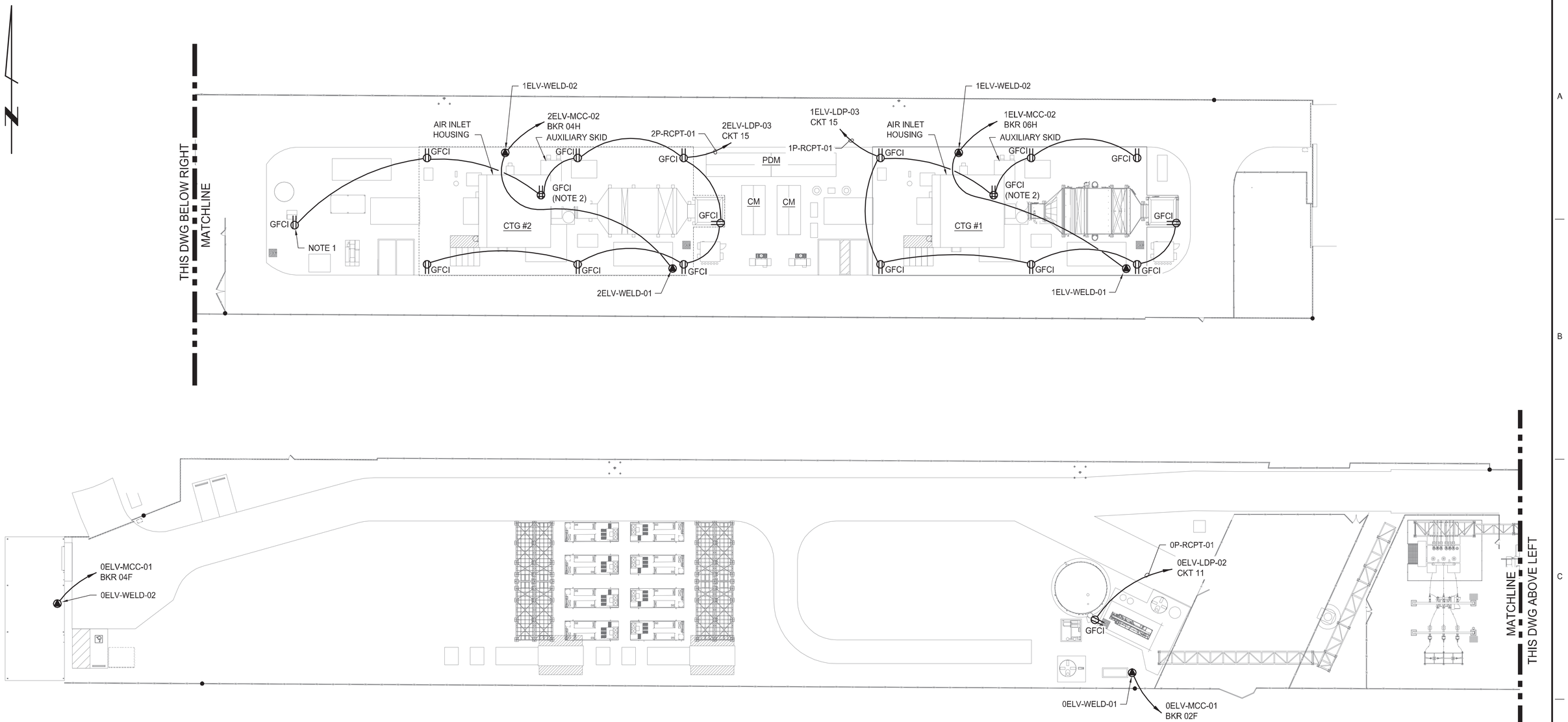
OVERALL SITE

ELECTRICAL LIGHTING PLAN

JOB NUMBER 149368

REV 0

DRAWING NUMBER EL01-101



ELECTRICAL RECEPTACLE PLAN

SCALE: 1"=30'

0 15 30 60 90 FEET

1" = 30'

NOTES:

1. MOUNT RECEPTACLE TO AMMONIA FORWARD PUMP CONTAINMENT WALL FOR PORTABLE SUMP PUMP.
2. CONTRACTOR TO FURNISH AND INSTALL QUADPLEX OUTLET BENEATH AIR INLET HOUSING AND NEAR AUXILIARY SKID APPROX. 30" AFG.
3. HOME RUN POWER CIRCUITS FOR RECEPTACLES ONLY ARE SHOWN IN CABLE SCHEDULE. CONTRACTOR TO FIELD ROUTE WIRING BETWEEN RECEPTACLES AS SHOWN.

REFERENCE DRAWINGS:

EL01-100	ELECTRICAL LIGHTING AND RECEPTACLE LEGEND AND GENERAL NOTES
EO00-301-1	UNIT 1 480V BOP MCC - 1ELV-MCC-02 ONE-LINE DIAGRAM - SH. 1 OF 2
EO00-3031	UNIT 2 480V BOP MCC - 2ELV-MCC-02 ONE-LINE DIAGRAM - SH. 1 OF 2
EO00-304	480V WATER TREATMENT MCC - 0ELV-MCC-01 ONE-LINE DIAGRAM
EO00-403	COMMON 208Y/120VAC DISTRIBUTION PANELBOARD SCHEDULES
EO00-404	UNIT 1 208Y/120VAC DISTRIBUTION PANELBOARD SCHEDULES
EO00-405	UNIT 2 208Y/120VAC DISTRIBUTION PANELBOARD SCHEDULES

REGISTERED PROFESSIONAL ENGINEER JOSEPH K. BONDANK NO. E18316 ELECTRICAL STATE OF CALIFORNIA

11/19/2018

JOSEPH K. BONDANK, ELECTRICAL, PE # E18316

PROJECT LOCATION:
10711 DALE AVE
STANTON, ORANGE CO., CA 90680

INTER-DISCIPLINE REVIEW						
DISC	ARCH	CIVIL	ELECT	I&C	MECH	STRUCT
DATE	*	10-29-2018	10-29-2018	*	10-29-2018	10-29-2018
INIT	*	WHR	CMS	*	BSC	SPC

REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
0	ISSUED FOR LIGHTING MANAGEMENT PLAN APPROVAL	11-19-2018	DMS	CMS	TAD	JKB

DSGN	CMS	01-24-2018
DRN	DMS	01-24-2018
CKD	TAD	11-19-2018
SCALE:	AS NOTED	

FOR 22x34 DWG ONLY

Stanton Energy Reliability Center, LLC
650 Bercut Dr, Suite A - Sacramento, CA 95811
Phone: 916-492-9486 Fax: 916-880-5318

POWER ENGINEERS
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OVERLAND PARK, KANSAS 66085-1000
(913) 681-2881 www.powereng.com

STANTON ENERGY RELIABILITY CENTER

OVERALL SITE

ELECTRICAL RECEPTACLE PLAN

JOB NUMBER 149368

REV 0

DRAWING NUMBER EL01-102

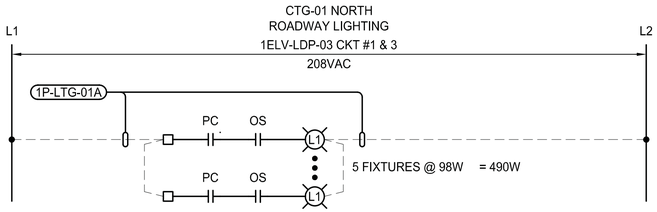
EL01-102.DWG

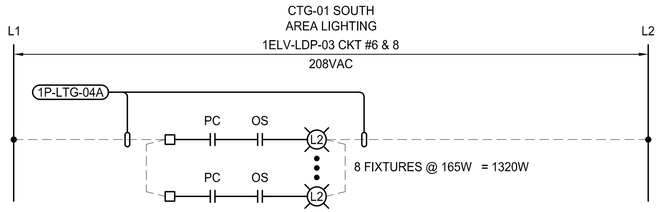
LEGEND

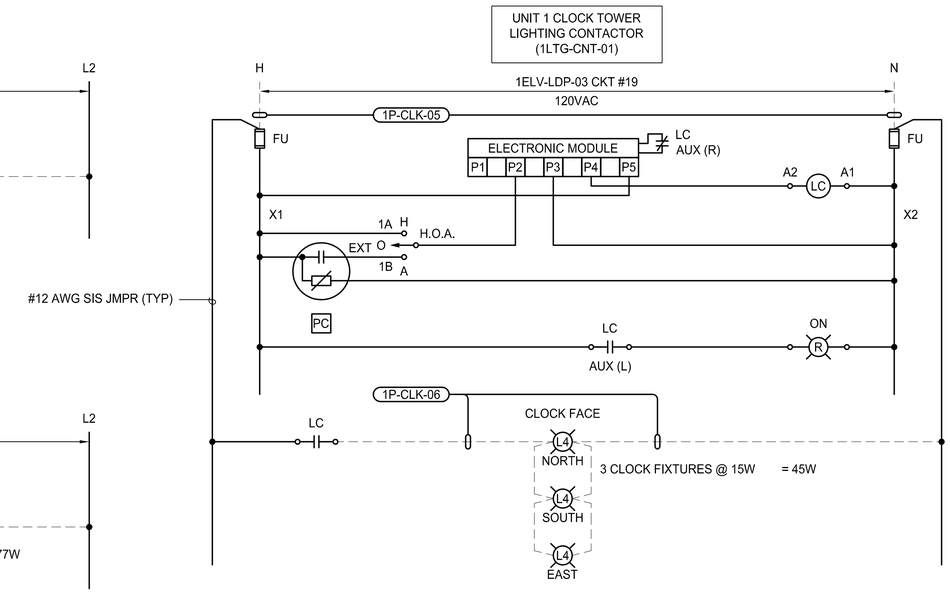
PC	PHOTOCELL
OS	OCCUPANCY SENSOR
LC	LIGHTING CONTACTOR
S	LIGHT SWITCH (2-POLE, 208VAC)

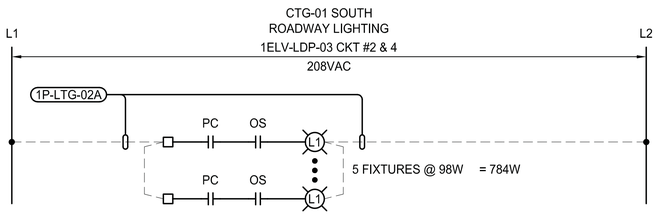
REFERENCE DRAWINGS:

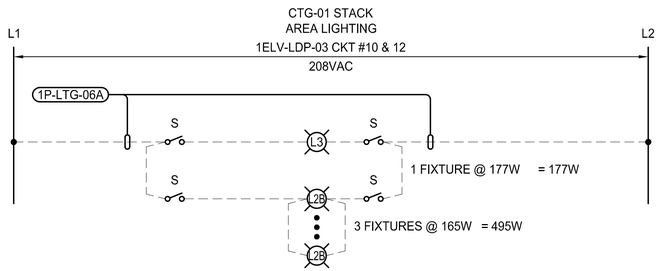
EO00-404 UNIT 1 208Y/120VAC DISTRIBUTION PANELBOARD SCHEDULES

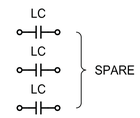


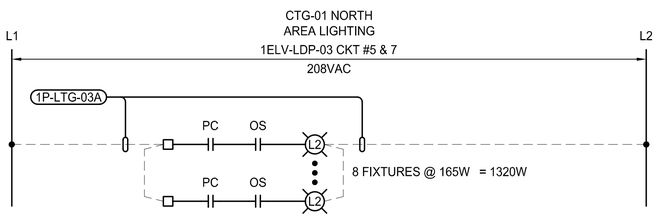


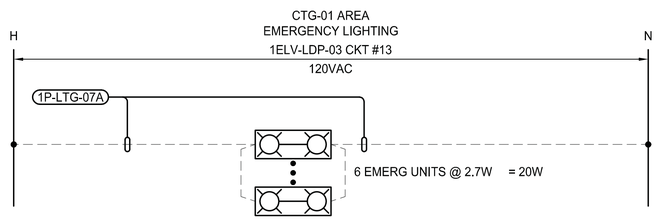












SELECTOR SWITCH

H.O.A.	HAND	OFF	AUTO	
1A	X			THIS DWG
1B			X	THIS DWG

MAINTAINED SWITCH.
SWITCH SHOWN IN OFF POSITION.

REGISTERED PROFESSIONAL ENGINEER
JOSEPH K. BONDANK
NO. E18316
ELECTRICAL
STATE OF CALIFORNIA

11 / 19 / 2018

JOSEPH K. BONDANK, ELECTRICAL, PE # E18316

PROJECT LOCATION:
10711 DALE AVE
STANTON, ORANGE CO., CA 90680

INTER-DISCIPLINE REVIEW						
DISC	ARCH	CIVIL	ELECT	I&C	MECH	STRUCT
DATE	*	*	*	*	*	*
INIT	*	*	*	*	*	*

REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
0	ISSUED FOR LIGHTING MANAGEMENT PLAN APPROVAL	11-19-2018	MJH	KRG	TAD	JKB

DSGN	KRG	10-24-2018
DRN	MJH	11-13-2018
CKD	TAD	11-19-2018

SCALE: AS NOTED

FOR 22x34 DWG ONLY

Stanton Energy Reliability Center, LLC
650 Bercut Dr, Suite A - Sacramento, CA 95811
Phone: 916-492-9486 Fax: 916-880-5318

POWER ENGINEERS
16041 FOSTER, P.O. BOX 1000
OVERLAND PARK, KANSAS 66085-1000
(913) 681-2881 www.powereng.com

STANTON ENERGY RELIABILITY CENTER

CTG-01 AREA

ELECTRICAL LIGHTING SCHEMATIC

JOB NUMBER 149368

REV 0

DRAWING NUMBER EL01-200

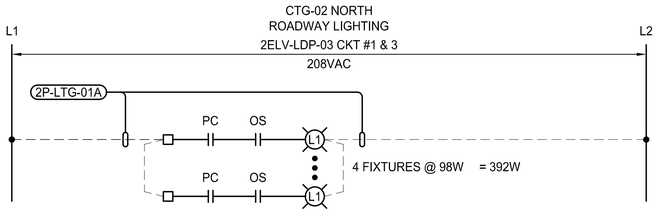
EL01-200.DWG

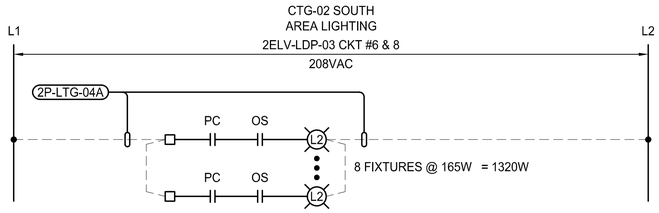
LEGEND

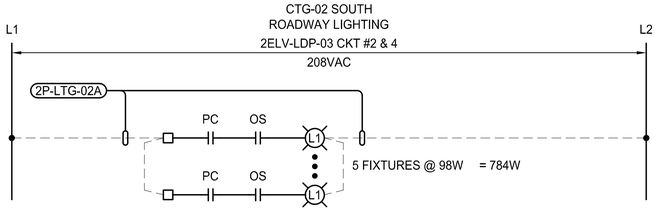
PC	PHOTOCELL
OS	OCCUPANCY SENSOR
LC	LIGHTING CONTACTOR
S	LIGHT SWITCH (2-POLE, 208VAC)

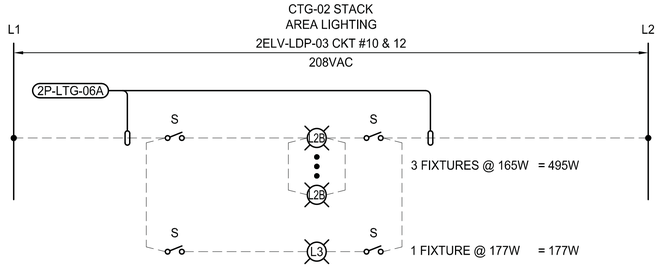
REFERENCE DRAWINGS:

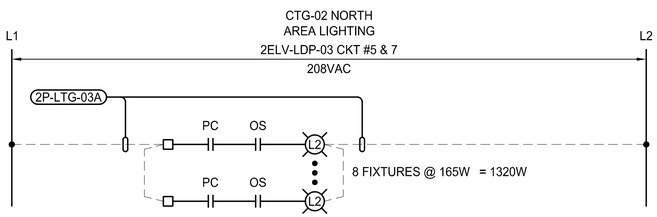
EO00-405 UNIT 2 208Y/120VAC DISTRIBUTION PANELBOARD SCHEDULES

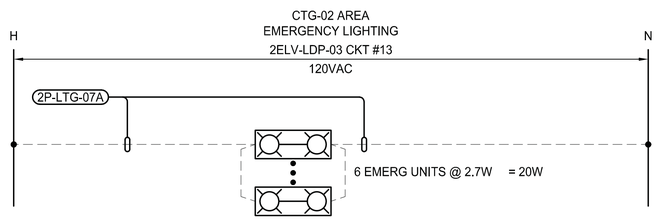












REGISTERED PROFESSIONAL ENGINEER
JOSEPH K. BONDANK
NO. E18316
ELECTRICAL
STATE OF CALIFORNIA

Joseph K. Bondank
11 / 19 / 2018

JOSEPH K. BONDANK, ELECTRICAL, PE # E18316

PROJECT LOCATION:
10711 DALE AVE
STANTON, ORANGE CO., CA 90680

INTER-DISCIPLINE REVIEW

DISC	ARCH	CIVIL	ELECT	I&C	MECH	STRUCT
DATE	*	*	*	*	*	*
INIT	*	*	*	*	*	*

REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
0	ISSUED FOR LIGHTING MANAGEMENT PLAN APPROVAL	11-19-2018	MJH	KRG	TAD	JKB

DSGN	KRG	10-24-2018
DRN	MJH	11-13-2018
CKD	TAD	11-19-2018

SCALE: AS NOTED

FOR 22x34 DWG ONLY

Stanton Energy Reliability Center, LLC
650 Bercut Dr, Suite A - Sacramento, CA 95811
Phone: 916-492-9486 Fax: 916-880-5318

POWER ENGINEERS
16041 FOSTER, P.O. BOX 1000
OVERLAND PARK, KANSAS 66085-1000
(913) 681-2881 www.powereng.com

STANTON ENERGY RELIABILITY CENTER

CTG-02 AREA

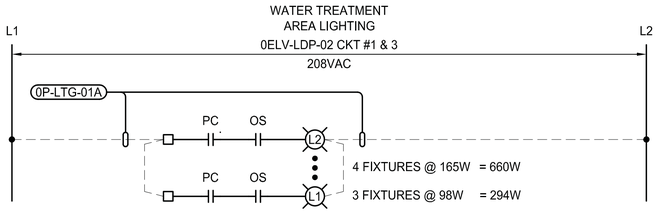
ELECTRICAL LIGHTING SCHEMATIC

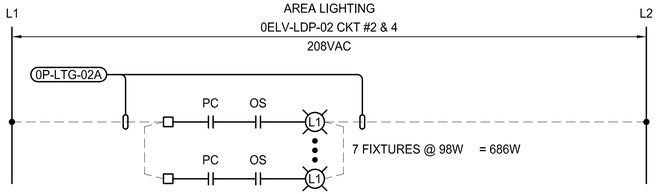
JOB NUMBER 149368

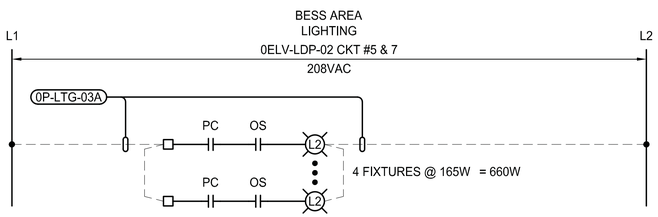
REV 0

DRAWING NUMBER EL01-201

EL01-201.DWG







REGISTERED PROFESSIONAL ENGINEER
JOSEPH K. BONDANK
NO. E18316
ELECTRICAL
STATE OF CALIFORNIA

Joseph K. Bondank
11 / 19 / 2018

JOSEPH K. BONDANK, ELECTRICAL, PE # E18316

PROJECT LOCATION:
10711 DALE AVE
STANTON, ORANGE CO., CA 90680

EL01-202.DWG

INTER-DISCIPLINE REVIEW						
DISC	ARCH	CIVIL	ELECT	I&C	MECH	STRUCT
DATE	*	*	*	*	*	*
INIT	*	*	*	*	*	*

REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
0	ISSUED FOR LIGHTING MANAGEMENT PLAN APPROVAL	11-19-2018	MJH	KRG	TAD	JKB

DSGN	KRG	10-24-2018
DRN	MJH	11-13-2018
CKD	TAD	11-19-2018

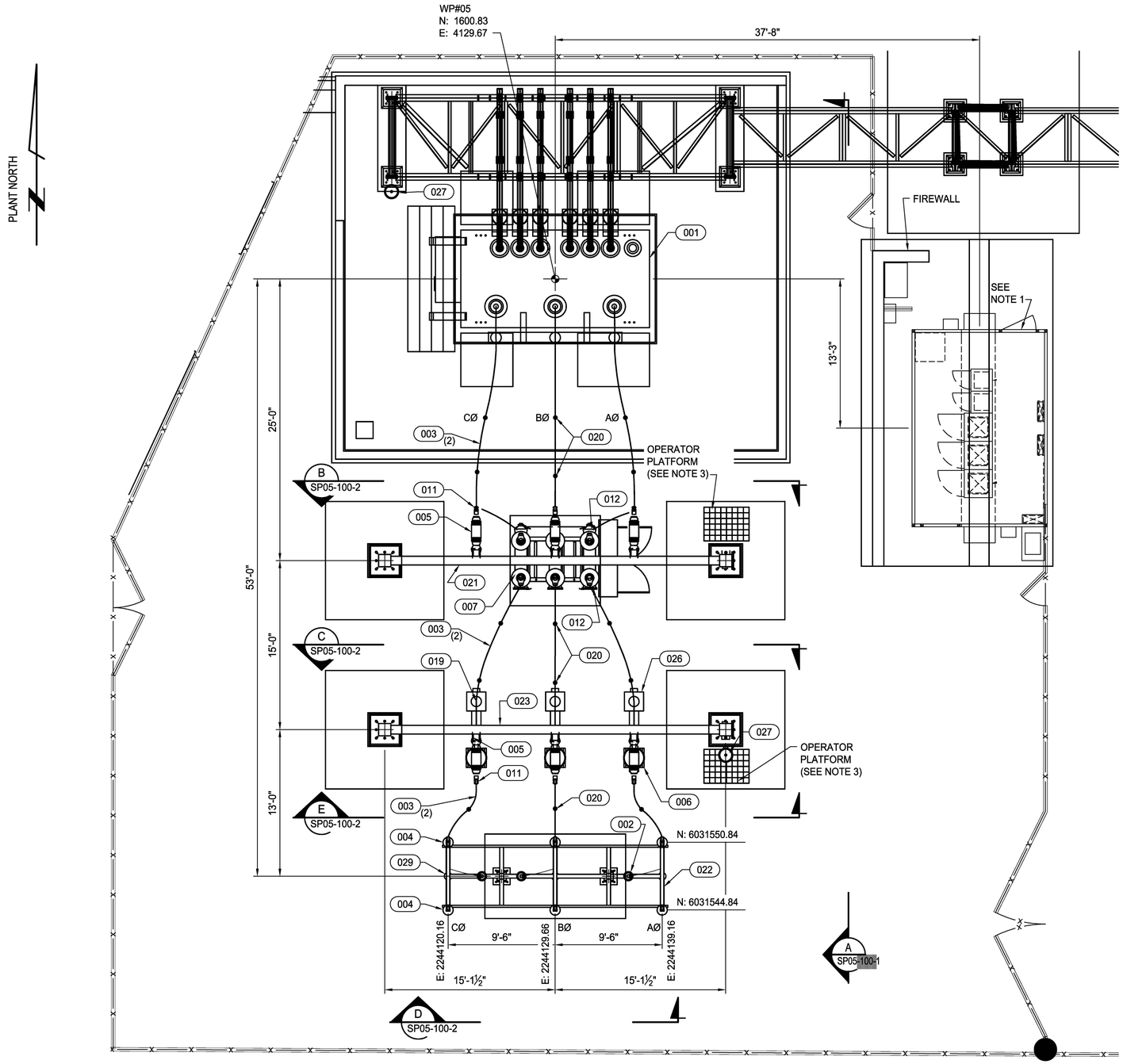
SCALE: AS NOTED

FOR 22x34 DWG ONLY

Stanton Energy Reliability Center, LLC
650 Bercut Dr, Suite A - Sacramento, CA 95811
Phone: 916-492-9486 Fax: 916-880-5318

POWER ENGINEERS
16041 FOSTER, P.O. BOX 1000
OVERLAND PARK, KANSAS 66085-1000
(913) 681-2881 www.powereng.com

STANTON ENERGY RELIABILITY CENTER	JOB NUMBER 149368	REV 0
OVERALL SITE		
ELECTRICAL LIGHTING SCHEMATIC	DRAWING NUMBER EL01-202	



ELECTRICAL ARRANGEMENT

SCALE 3/16"=1'-0"

NOTES:

1. SUBSTATION PROTECTION MODULE PROVIDED BY OSE.
2. SUBSTATION PROTECTION PANELS. COMM'S & SCE INTERFACE BY OTHERS.
3. OPERATOR GROUNDING PLATFORMS PROVIDED UNDER CONTRACT CN260.
4. 66KV CONDUIT STUB-UP COORDINATES SHOWN IN NAD83 CALIFORNIA STATE PLANE ZONE VI.

REFERENCE DRAWINGS:

66KV ELECTRICAL ELEVATION A	SP05-100-1
66KV ELECTRICAL ELEVATIONS B,C & D	SP05-100-2
13.8KV GSU CONNECTIONS TO PIPE RACK	SP05-100-3
66/13.8KV BILL OF MATERIAL	SP05-100-4
66KV GROUNDING PLAN	SG05-000
66KV GROUNDING DETAILS	SG05-000-1
66KV RACEWAY PLAN	SR05-000
66KV RACEWAY DETAILS	SR05-000-1
UTILITY RACK 1 STEEL FRAMING PLAN	SS01-101

LEGEND:

OSE	OWNER SUPPLIED EQUIPMENT
SCE	SOUTHERN CALIFORNIA EDISON

0 2 4 8 12 FEET

3/16" = 1'- 0"

PRELIMINARY, NOT FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION

B.A. CULTON, ELECTRICAL, PE # 17442

PROJECT LOCATION:
10711 DALE AVE
STANTON, ORANGE CO., CA 90680

SP05-100.DWG

INTER-DISCIPLINE REVIEW						
DISC	ARCH	CIVIL	ELECT	I&C	MECH	STRUCT
DATE	*	10-29-2018	10-29-2018	*	10-29-2018	10-29-2018
INIT	*	WHR	BMS	*	BSC	SPC

REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
D	ISSUED FOR BID	10-31-2018	DMS	MCG	JNS	JKB
C	ISSUED FOR BID	07-06-2018	MCG	MCG	JNS	JKB
B	ISSUED FOR BID	06-14-2018	MCG	MCG	JNS	JKB
A	ISSUED FOR REVIEW	02-02-2018	MCG	MCG	JNS	JKB

DSGN	MCG	01-08-2018
DRN	MCG	01-08-2018
CKD	JNS	10-31-2018

SCALE: AS NOTED

FOR 22x34 DWG ONLY

Stanton Energy Reliability Center, LLC
650 Bercut Dr, Suite A - Sacramento, CA 95811
Phone: 916-492-9486 Fax: 916-880-5318

POWER ENGINEERS
16041 FOSTER, P.O. BOX 1000
OVERLAND PARK, KANSAS 66085-1000
(913) 681-2881 www.powereng.com

STANTON ENERGY RELIABILITY CENTER

SWITCHYARD AREA

66KV ELECTRICAL ARRANGEMENT

JOB NUMBER 149368

REV D

DRAWING NUMBER SP05-100

MATERIAL LIST

ITEM	QTY	DESCRIPTION	MANUFACTURER OR EQUAL	PART NUMBER	PROVIDED BY
001	1	TRANSFORMER 3PH, 60Hz - 66-13.8-13.8KV-100/130/170MVA	GE-PROLEC	-	OSE
002	3	72KV SURGE ARRESTER, STATION CLASS, ANSI C62.11	ABB	XPS #Q072SA057A	CN260
003	370 FT	795 ACSR 26/7 CONDUCTOR, CODE "DRAKE"	SOUTHWIRE	-	CN260
004	6	69KV TERMINATOR, FOR USE WITH ITEM #013	3M	-	SCE
005	2	69KV, 2000A, DISCONNECT SWITCH, SIDE BREAK, GROUP OPERATED	ROYAL SWITCHGEAR	B-10583-ER	OSE
006	3	69KV, COMBINATION METERING UNIT	ABB/KUHLMAN-CT/PT COMBO'S-69KV	MODEL KXM-350	OSE
007	1	69KV CIRCUIT BREAKER, 40KA, 2000A	GE ALSTOM	TYPE DT1-72.5FK F1	OSE
008	70 FT	4/0 AWG AAC, CLASS A, CONDUCTOR, CODE "OXLIP"	SOUTHWIRE	-	CN260
009	9	TERMINAL CONNECTOR, ALUM., 4/0 AWG AAC TO 3" WIDE 4-HOLE PAD, BOLTED	TRAVIS	11-126	CN260
010	9	TERMINAL CONNECTOR, ALUM., (2) 795 ACSR TO 4" WIDE 4-HOLE, BOLTED	TRAVIS	11-253	CN260
011	9	TERMINAL CONNECTOR, ALUM., 90 DEGREE, (2) 795 ACSR TO 4" WIDE 4-HOLE PAD, BOLTED	TRAVIS	11-253-90	CN260
012	9	TERMINAL CONNECTOR, ALUM., 45 DEGREE, (2) 795 ACSR TO 4" WIDE 4-HOLE PAD, BOLTED	TRAVIS	11-253-45	CN260
013	-	69KV ALUMINUM 3000 KCMIL, 5 SEGMENT CONDUCTOR	SOUTHWIRE	-	SCE
014	12	HV CABLE MOUNTING BRACKET FOR 3000 KCMIL AL.	TYCO ELECTRONICS	EHVT-BRKT-6	CN260
015	6	BASE PLATE FOR CABLE MOUNTING BRACKET	TYCO ELECTRONICS	EHVT-BP	CN260
016	6	STAINLESS STEEL U-BOLT, 5" NOMINAL, 1/2-13 BOLT, TYPE 316 SS (NON-MAGNETIC)	Mc MASTER-CARR	29605T12	CN260
017	-	5" PVC SCH. 40 CONDUIT RISER	-	-	CN260
018	40 FT	3" AL. SCH. 40 TUBE	-	-	CN260
019	6	CABLE SPACER TEE, ALUM., (2) 795 ACSR TO 3" WIDE 4-HOLE PAD, BOLTED	TRAVIS	110-119-4-90	CN260
020	21	CABLE SPACER ALUM., 795 ACSR AT 4" SPACING, BOLTED	TRAVIS	110-119-CS-4	CN260
021	1	69KV H-FRAME 21'-0" HEIGHT	DESIGNED POWER	-	OSE
022	1	69KV TERMINATION STRUCTURE	DESIGNED POWER	-	OSE
023	1	69KV H-FRAME 23'-0" HEIGHT	DESIGNED POWER	-	OSE
024	2	3-PHASE PT/CT JUNCTION BOX, ALUM., NEMA 4X, 24x24x8	HOFFMAN	A24H2408ALLP	CN260
025	2	PANEL, ALUM., FOR USE WITH ITEM 024	HOFFMAN	A24P24AL	CN260
026	3	69KV VOLTAGE TRANSFORMER 600/350:1 RATIO	TRENCH	UT5-350-69	OSE
027	2	LED DOWNLIGHT, 12,000 LUMENS, WITH UNIVERSAL MOUNT ARM	HOLOPHANE	PLED2_12L_4K_AS_UN_NA_G_L5 WITH P3US_GR_SH	CN260
028	3	STUD CONNECTOR, ALUM. 1 1/2-12 STUD TO 4" WIDE 4-HOLE PAD	TRAVIS	14-424	CN260
029	3	69KV STANDARD STRENGTH INSULATOR, 3" BOLT CIRCLE TOP & BOTTOM. TR-216	LAPP	315216-70	CN260
030	3	BUS SUPPORT, ALUM., 3" AL. BUS TO 3" BOLT CIRCLE, BOLTED	TRAVIS	19-1261	CN260
031	3	TEE CONNECTOR, ALUM., 3" MAIN TO 3" TAP, BOLTED	TRAVIS	12-227	CN260
032	6	TEE CONNECTOR, ALUM., 3" AL. BUS TO 4" WIDE 4-HOLE PAD, BOLTED	TRAVIS	12-854	CN260
033	3	END PLUG, ALUM., 3" DRIVE FIT	TRAVIS	111-141	CN260
034	3	TERMINAL CONNECTOR, ALUM., 3" AL. BUS TO 4" WIDE 4-HOLE PAD, CENTERFORMED, BOLTED	TRAVIS	11-202-CF	CN260
035	3	TEE CONNECTOR, ALUM., 3" AL. MAIN TO 4/0 AAC CABLE TAP	TRAVIS	12-728	CN260

MATERIAL LIST

ITEM	QTY	DESCRIPTION	MANUFACTURER OR EQUAL	PART NUMBER	PROVIDED BY
036	160 FT	5" ALUM. SCH. 80 TUBULAR BUS (40 FT LENGTHS)	-	-	CN260
037	6	BUS COUPLER, ALUM., 90 DEGREE, 5" AL TO 5" AL, BOLTED	TRAVIS	13-455-90	CN260
038	6	EXPANSION TERMINAL, ALUM., 5" AL SCH. 80 BUS TO 6-HOLE PAD, BOLTED	TRAVIS	15-305H-6HP	CN260
039	12	15KV STANDARD STRENGTH INSULATOR, 3" BOLT CIRCLE TOP & BOTTOM, TR-205	LAPP	315205-70	CN260
040	12	BUS SUPPORT, ALUM., 5" AL SCH. 80 TO 3" BOLT CIRCLE	TRAVIS	19-201	CN260
041	12	TEE CONNECTOR, ALUM., 5" SCH. 80 BUS TO 4" WIDE 4-HOLE PAD, BOLTED	SEFCOR	ATF-67-4B-TP	CN260
042	12	BI-METALLIC TRANSITION PLATE. FOR USE WITH ITEM #041	SEFCOR	ATP-D	CN260
043	6	RECTANGULAR COPPER BUS BAR, 3/4" X 8" X 4'-6"	-	-	CN260
044	6	TEE CONNECTOR, ALUM., 5" SCH. 80 BUS TO 4/0 AAC	TRAVIS	12-747	CN260
045	6	END CAP, ALUM. 5" SCH. 80 BUS. DRIVE FIT	TRAVIS	111-150	CN260
046	3	RECTANGULAR ALUMINUM BUS BAR, 1/2" X 5" X 3'-0". DRILLED FOR NEMA 4-HOLE PAD.	-	-	CN260
047	3	TERMINAL CONNECTOR, ALUM. (2) 795 ACSR TO 3" WIDE 4-HOLE PAD	TRAVIS	11-252	CN260

REFERENCE DRAWINGS:

66KV ELECTRICAL ELEVATION A	SP05-100-1
66KV ELECTRICAL ELEVATIONS B,C & D	SP05-100-2
13.8KV GSU CONNECTIONS TO PIPE RACK	SP05-100-3
66KV GROUNDING PLAN	SG05-000
66KV GROUNDING DETAILS	SG05-000-1
66KV RACEWAY PLAN	SR05-000
66KV RACEWAY DETAILS	SR05-000-1

LEGEND:

CN###	CONTRACT OF SUPPLY
OSE	OWNER SUPPLIED EQUIPMENT
SCE	SOUTHERN CALIFORNIA EDISON

PRELIMINARY,
NOT FOR CONSTRUCTION,
RECORDING PURPOSES,
OR IMPLEMENTATION

B.A. CULTON, ELECTRICAL, PE # 17442

PROJECT LOCATION:
10711 DALE AVE
STANTON, ORANGE CO., CA 90680

INTER-DISCIPLINE REVIEW						
DISC	ARCH	CIVIL	ELECT	I&C	MECH	STRUCT
DATE	*	10-29-2018	10-29-2018	*	10-29-2018	10-29-2018
INIT	*	WHR	BMS	*	BSC	SPC

REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD
C	ISSUED FOR BID	10-31-2018	DMS	MCG	JNS	JKB
B	ISSUED FOR BID	07-06-2018	MCG	MCG	JNS	JKB
A	ISSUED FOR BID	06-14-2018	MCG	MCG	JNS	JKB

DSGN	MCG	01-08-2018
DRN	MCG	01-08-2018
CKD	JNS	10-31-2018

SCALE: AS NOTED
FOR 22x34 DWG ONLY

Stanton Energy Reliability Center, LLC
650 Bercut Dr, Suite A - Sacramento, CA 95811
Phone: 916-492-9486 Fax: 916-880-5318

POWER ENGINEERS
16041 FOSTER, P.O. BOX 1000
OVERLAND PARK, KANSAS 66085-1000
(913) 681-2881 www.powereng.com

STANTON ENERGY RELIABILITY CENTER

SWITCHYARD AREA

66/13.8KV BILL OF MATERIAL

JOB NUMBER 149368

REV C

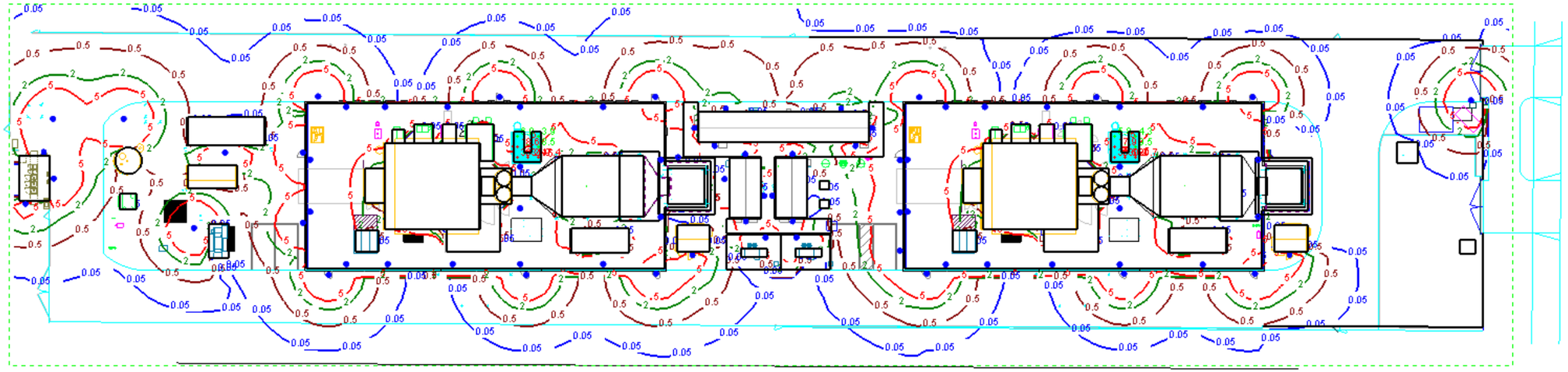
DRAWING NUMBER SP05-100-4

SP05-100-4.DWG

APPENDIX B

LIGHT FIXTURE LOCATIONS AND STATISTICS (VISUAL)

- LTG-1; East Parcel Lighting
- LTG-2; West Parcel Lighting

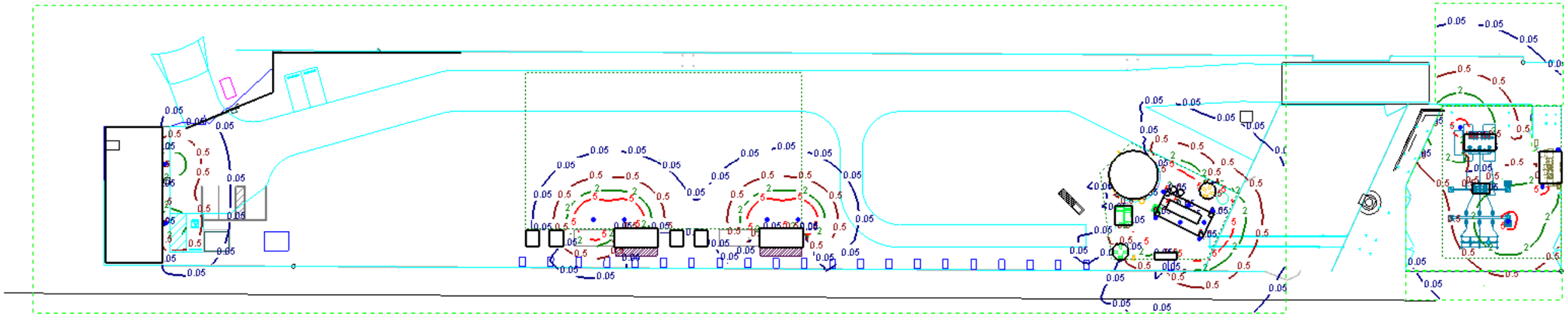


East Parcel

VISUAL

STANTON ENERGY RELIABILITY CENTER
OVERALL SITE
ELECTRICAL LIGHTING PLAN

Designer
CHRISTINA SCAPILLATO
Date
11/16/2018
Scale
Not to Scale
Drawing No.
LTG-1
Summary
PLAN DRAWING



West Parcel

VISUAL

STANTON ENERGY RELIABILITY CENTER
OVERALL SITE
ELECTRICAL LIGHTING PLAN

Designer
CHRISTINA SCAPILLATO
Date
11/20/2018
Scale
Not to Scale
Drawing No.
LTG-2
Summary
PLAN DRAWING

APPENDIX C

LIGHT FIXTURE DATA SHEETS

- Fixture Type L1: Site LED Fixtures (Holophane Lighting)
- Fixture Type L2 & L2B: Site LED Fixtures (Holophane Lighting)
- Fixture Type L3: LED Fixtures (Holophane Lighting)
- Fixture Type L4: LED Fixtures (Electric Time Company)
- Fixture Type L5: LED Fixtures (Lithonia Lighting)
- Fixture Type L6: LED Fixtures (Crouse Hinds Lighting)
- Fixture Type L7: LED Fixtures (Crouse Hinds Lighting)
- Fixture Type X: LED Emergency Fixtures (Hubbell Lighting)
- Sensor/Control Type SBOR: Occupancy/photocell Control (Holophane Lighting)

Fixture Type L1

HOLOPHANE
LEADER IN LIGHTING SOLUTIONS

Catalog Number	
Notes	Type

Petrolux® LED

Wet Location for Demanding Environments

Description

For demanding environments where dust, dirt and moisture are a concern.

Optics

- Prismatic borosilicate glass directs light where needed and reduces harsh glare.
- Polycarbonate lens available for those applications requiring non-glass options.
- Three distributions (Type 5 low angle, Type 5 high angle, and Type 1 long and narrow) available to maximize versatility.
- Highly engineered LED system ensures superior uniformity and maximizes spacing.

Electrical

- 10kV/10kA surge protection is standard.
- 0-10V dimming driver is standard.
- CRI > 70 (nominal) is standard.
- 3000K, 4000K or 5000K CCT available.
- Fault-tolerant LED light engine continues to provide light even in the failure of one LED.

Mechanical

- Robust cast aluminum housing with low copper content (0.6% CU content) withstands harsh or hostile environments.
- Universal mount top cover (ceiling/pendant) is standard. Optional universal arm available for wall/stanchion. Other mountings include gasketed hook and yoke mount.
- Precise number of fins dissipate maximium amount of heat and achieve up to 131°F (55°C) ambient rating.

Listings

- UL 1598 Listed for use in wet locations
- IP66 rated

Warranty

5-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/CustomerResources/Terms_and_Conditions.aspx

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

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

DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org to confirm which versions are qualified.

Typical Applications

- Petroleum refineries
- Ethanol facilities
- Chemical plants
- Power plants
- Textile mills
- Water and wastewater treatment facilities
- Parking garages
- Tunnels

Dimensions: *Inches (millimeters) unless otherwise noted.*

Diameter: 14.76 (375)
Depth: 13.57 (345)
Weight (5,000 -10,000 lumens): 31-38 lbs. (14-17 kg)
Weight (12,000 -18,000 lumens): 38-45 lbs. (17-20 kg)
EPA: 1.21 sq.ft. 45lbs.

ORDERING INFORMATION

Example: PLED2 05L 5K AS UN NA G L5H

Series	Lumens[1]	Color temperature	Voltage		Mounting	Cord length
PLED2	05L 5000 lumens	3K 3000K CCT	AS Auto sensing (120-277)	AH Auto sensing (347/480)	UN Universal[2]	NA No cord
	08L 8000 lumens	4K 4000K CCT	12 120V	34 347V	GH Gasketed hook	03 3 ft cord with watertight plug[4]
	10L 10,000 lumens	5K 5000K CCT	20 208V	48 480V	YK-0 0° yoke mount bracket[3]	06 6 ft cord with watertight plug[4]
	12L 12,000 lumens		24 240V		YK-45 45° yoke mount bracket[3]	10 10 ft cord with watertight plug[4]
	15L 15,000 lumens		27 277V			
	18L 18,000 lumens					

Finish	Optics	Options	
W White	L5 Type 5, low angle, glass	BP Button style photocontrol[6,7,8]	DE ROAM® concierge dimming control[22]
G Gray	L5FR Type 5, low angle, glass frosted	EG Ingress/egress marker decal	VE ROAMVIEW™ dimming control[22]
CRW Corrosion-resistant white	L5H Type 5, high angle, glass	F1 Single fusing[9]	AXA10 XPoint Wireless enabled[23]
CRG Corrosion-resistant gray	L5HFR Type 5, high angle, glass frosted	F2 Double fusing[10]	MSI6NWL Occupancy sensor on/off[24]
	L1 Type 1, long and narrow, glass[5]	GD Optic guard	MSI62L0VWL On/off/dimming - no photocell occupancy sensor[25]
	L1FR Type 1, long and narrow, glass frosted[5]	SH Uplight shield[11]	MSI62L0VWL DSCNWL On/off/dimming - with photocell occupancy sensor[26]
	P5 Type 5, low angle, polycarbonate	SP Sample pack for ground transport	MSI62XAWL DSCXAWL XPoint Wireless enabled with photocell and occupancy sensor[27]
	P5H Type 5, high angle, polycarbonate	PER NEMA twistlock receptacle 45° mounting[12,13,14,15]	
	P1 Type 1, long and narrow, polycarbonate[5]	PER45 NEMA twistlock receptacle 45° mounting[12,13,16,17]	
		PCS DTL solid state photo control. AS, 120-277V[18]	
		P34 DTL solid state photo control, 347V[19]	
		P48 DTL solid state photo control, 480V[20]	
		PSC Shorting cap[21]	

For footnotes, see page 2.

ORDERING INFORMATION (cont.)

Accessories: *Order as separate catalog number.*

09189-* SUB	Safety chain kit (*= 2, 3 feet of chain)
PLEDMI3502	Thread sealant (order quantity 1 per luminaire)
PLEDGD	Optic guard

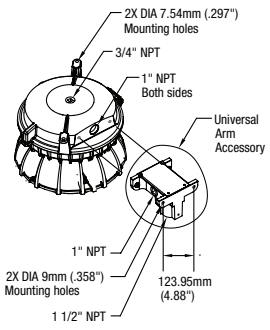
P3US-WH	Universal mount arm, white
P3US-GR	Universal mount arm, gray
P3US-CRW	Universal mount arm, corrosion-resistant white
P3US-CRG	Universal mount arm, corrosion-resistant gray

07233-1-XX	Single luminaire arm for one universal mount unit. (Single Substation Arm)[28]
07233-1-CTL-XX	Single luminaire arm for one universal mount unit. (Single Substation Arm)[29]
07233-2-XX	Double luminaire arm for two universal mount units. (Double Substation Arm)[28]
07233-2-CTL-XX	Double luminaire arm for two universal mount units. Top unit will be controlled by the bottom unit. (Double Substation Arm)[30]

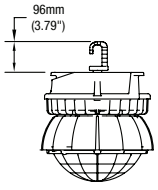
Notes

1 Nominal lumens.
2 Ceiling/pendant, order P3US arm for wall/stanchion.
3 Includes all necessary brackets and mounting accessories; does not include installation mounting hardware.
4 Available with GH mounting only. Must specify 12, 20, 24 or 27 voltage.
5 N/A with 18L.
6 Available 12, 20, 24, 27 voltage codes with 40C maximum ambient for 5L, 8L, 10L, 12L, 15L AND 18L lumen packages.
7 Available 34 voltage code with 40C maximum ambient for 5L, 8L and 10L lumen packages and with 35C maximum ambient for 12L, 15L and 18L lumen packages.
8 When ordering with UN mounting, customer cannot mount to ceiling. Not available with PER, PER45, DE, VE, MSI6NDL, MSI62L0VDL DSCNDL, AXA10, MSI6XAWL , OS option.
9 Specify voltage 12, 24, 27 or 34.
10 Specify voltage 20, 24 or 48.
11 Available L5, L5FR, P5 optics only. Not available with MSI6NWL, MSI62L0VWL, MSI62L0VWL DSCNWL, MSI6XAWL DSCXAWL options.
12 Available 12, 20, 24, 27 voltage codes with 40C maximum ambient for 5L, 8L, 10L, 12L, 15L and 18L lumen packages.
13 Available 34 voltage code with 40C maximum ambient for 5L, 8L and 10L lumen packages and with 35C maximum ambient for 12L, 15L and 18L lumen packages
14 Not available with BP, AXA10 or Occ sensors. Not available with YK-45. When ordering with UN mounting, customer cannot mount to ceiling.
15 PER and PER45 ship unattached, wired in field. PER or PER45 can be ordered with or without ROAM DE, ROAM VE, PCS, P34, P48 and PSC options. ROAM, Photocontrol and Shorting Cap available below.
16 Available AS, 12, 20, 24, 27, 34, 48 voltage codes only. Not available with BP, AXA10 or Occ sensors. Must specify YK-45. PER and PER45 ship unattached, wired in field.
17 PER or PER45 can be ordered with or without ROAM DE, ROAM VE, PCS, P34, P48 and PSC options. ROAM, Photocontrol and Shorting Cap available below.
18 Available AS, 12, 20, 24, 27 voltages. Available with PER and PER45 options only. Shipped in carton with unit.
19 Available 34 volt only. Available with PER and PER45 options only. Shipped in carton with unit.
20 Available 48 volt only. Available with PER and PER45 options only. Shipped in carton with unit.
21 Available with PER and PER45 options only. Shipped in carton with unit.
22 N/A with BP, AXA10 or Occ sensors. Specifies a ROAM® dimming enabled fixture with a dimming control module factory installed PER or PER45 option required. Additional hardware and services required for ROAM® deployment must be purchased separately. N/A with 15L and 18L. N/A with AH, 34 and 48 voltages. Available 40C maximum ambient only.
23 Available AS, 12, 20, 24, 27 voltage codes. Not available with BP, PER, PER45, DE, VE, MSI6NWL, MSI62L0VWL, MSI62L0VWL DSCNWL, MSI6XAWL DSCXAWL, OS options. Wet Location Listed, 35C maximum ambient.
24 Available AS, 12, 20, 24, 27 voltage codes. Not available with SH, BP, PER, PER45, DE, VE, MSI62L0VWL, MSI62L0VWL DSCNWL, AXA10, MSI6XAWL DSCXAWL. Wet Location Listed, 40C maximum ambient. SensorSwitch Brand sensor. Not available with YK-0 and YK-45 mountings.
25 Available AS, 12, 20, 24, 27 voltage codes. Not available with SH, BP, PER, PER45, DE, VE, MSI6NWL, MSI62L0VWL DSCNWL, AXA10, MSI6XAWL DSCXAWL, OS options. Wet Location Listed, 40C maximum ambient. SensorSwitch Brand sensor. Not available with YK-0 and YK-45 mountings.
26 Available AS, 12, 20, 24, 27 voltage codes. Not available with SH, BP, PER, PER45, DE, VE, MSI6NWL, MSI62L0VWL, AXA10, MSI6XAWL DSCXAWL, OS options. Wet Location Listed, 40C maximum ambient. SensorSwitch Brand sensor. Not available with YK-0 and YK-45 mountings.
27 Available AS, 12, 20, 24, 27 voltage codes. Not available with SH, BP, PER, PER45, DE, VE, MSI6NWL, MSI62L0VWL, MSI62L0VWL DSCNWL, AXA10, OS options. Wet Location Listed, 40C maximum ambient. Xpoint Brand sensor. Not available with YK-0 and YK-45 mountings.
28 UN mounting ONLY. 0-10 volt dimming leads in arm. Not available with MSI6NWL, MSI62L0VWL, MSI62L0VWL DSCNWL, AXA10, MSI6XAWL DSCXAWL.
29 UN mounting ONLY. Available with MSI6NWL, MSI62L0VWL DSCNWL, AXA10, MSI6XAWL DSCXAWL ONLY.
30 UN mounting ONLY, Order a bottom unit with MSI6NWL, MSI62L0VWL DSCNWL, AXA10, MSI6XAWL DSCXAWL only and a top unit with no MSI6NWL, MSI62L0VWL DSCNWL, AXA10, MSI6XAWL DSCXAWL.

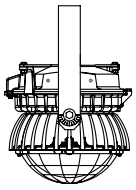
DIMENSIONAL DATA

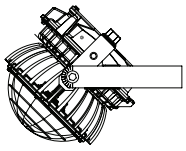


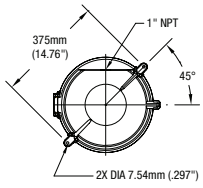
UNIVERSAL MOUNTING (UN)



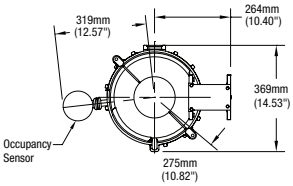
GASKETED HOOK MOUNTING (GH)


YOKE MOUNTING, 0° (YK-0)

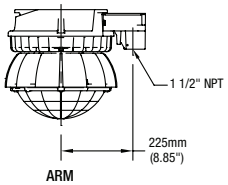

YOKE MOUNTING, 45° (YK-45)



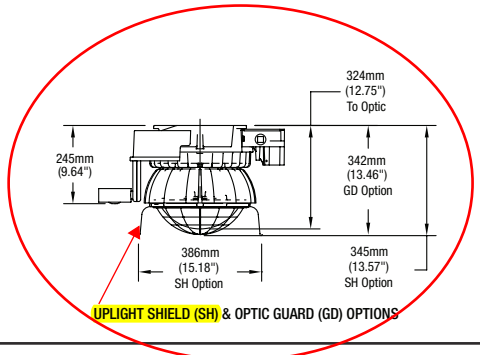
MOUNTING HOLES



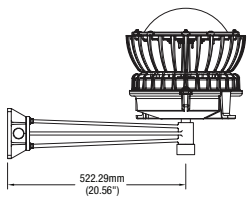
OCCUPANCY SENSOR OPTION



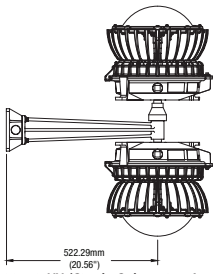
ARM



UPLIGHT SHIELD (SH) & OPTIC GUARD (GD) OPTIONS



07233-1-XX (Single Substation Arm)
07233-1-CTL-XX (Single Substation Arm)



07233-2-XX (Single Substation Arm)
07233-2-CTL-XX (Single Substation Arm)

OPERATIONAL DATA

Operating Characteristics[1]

Package	Ambient Rating (120V - 277V)	Ambient Rating (347V / 480V)	Distribution	Delivered Lumens 5000K CCT @25°C[2]	Delivered Lumens 4000K CCT @25°C[2]	Wattage	LPW @ 5000K
PLED2 05L	-40°F to 131°F (-40°C to 55°C)	-40°F to 104°F (-40°C to 40°C)	L5 L5H L1 P5 P5H P1	6,189 5,234 5,066 4,493 3,852 3,772	6,150 5,201 5,035 4,493 3,852 3,772	50 50 50 50 50 50	124 105 101 90 77 75
PLED2 08L	-40°F to 131°F (-40°C to 55°C)	-40°F to 104°F (-40°C to 40°C)	L5 L5H L1 P5 P5H P1	8,927 7,550 7,308 6,522 5,592 5,476	8,872 7,503 7,263 6,481 5,557 5,442	74 74 74 74 74 74	121 102 99 88 75 74
PLED2 10L	-40°F to 131°F (-40°C to 55°C)	-40°F to 104°F (-40°C to 40°C)	L5 L5H L1 P5 P5H P1	11,315 9,569 9,263 8,266 7,087 6,940	11,245 9,510 9,205 N/A N/A N/A	98 98 98 98 98 98	115 97 94 84 72 71
PLED2 12L	-40°F to 122°F (-40°C to 45°C)	-40°F to 95°F (-40°C to 35°C)	L5 L5H L1 P5 P5H P1	14,822 12,586 12,183 10,872 9,321 9,128	14,790 12,508 12,107 10,804 9,263 9,071	129 129 129 129 129 129	115 97 94 84 72 71
PLED2 15L	-40°F to 113°F (-40°C to 45°C)	-40°F to 95°F (-40°C to 35°C)	L5 L5H L1 P5 P5H P1	18,309 15,484 14,988 13,375 11,468 11,230	18,195 15,837 14,895 13,292 11,396 11,160	165 165 165 165 165 165	111 94 91 81 69 68
PLED2 18L	-40°F to 104°F (-40°C to 40°C)	-40°F to 86°F (-40°C to 35°C)	L5 L5H P5 P5H	21,575 18,246 13,375 13,513	21,441 18,133 15,663 13,429	195 195 195 195	110 93 68 69

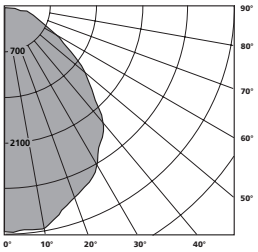
Projected Lumen Maintenance (TM-21)[3]

Package[4]	0 Hours	15,000 Hours	30,000 Hours	45,000 Hours	60,000 Hours	100,000 Hours
PLED2 05L	1.0	0.96	0.94	0.93	0.91	0.88
PLED2 08L	1.0	0.96	0.94	0.93	0.91	0.88
PLED2 10L	1.0	0.96	0.94	0.93	0.91	0.88
PLED2 12L	1.0	0.95	0.93	0.91	0.90	0.85
PLED2 15L	1.0	0.95	0.93	0.91	0.90	0.85
PLED2 18L	1.0	0.95	0.93	0.91	0.90	0.85

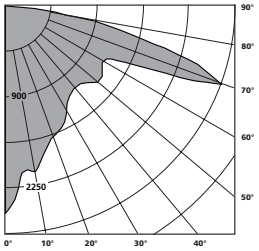
Notes
1 Adding BP, PER, PER45, DE and VE options results in a max. ambient of 40°C.
2 Absolute photometry calculated in accordance with IESNA LM-79-08.
3 Calculated using data collected according to LM-80 and represents lumen maintenance of the LED package.
4 Project lumen maintenance factors at max. ambient temperature per lumen package.

DISTRIBUTION DATA

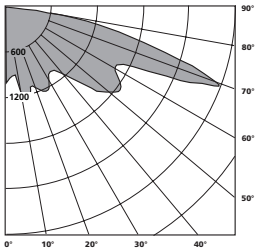
Petrolux LED Type 5 Low Angle



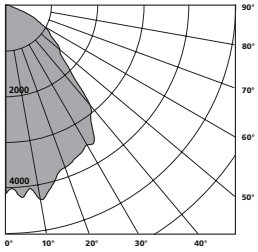
Petrolux LED Type 5 High Angle



Petrolux LED Type 1



Petrolux LED Type 5-0% Uplight



CONTROLS

MSI6NDL, MSI62L0VDL, MSI62L0VDL DSCNDL. AXA10 X Point wireless enabled. "PRELIMINARY"

Fixture Type L1 & L2

Catalog Number	
Notes	Type

SBOR FAMILY

OUTDOOR POLE/FIXTURE MOUNT MOTION SENSOR: 360° COVERAGE, LINE VOLTAGE, IP66 RATED

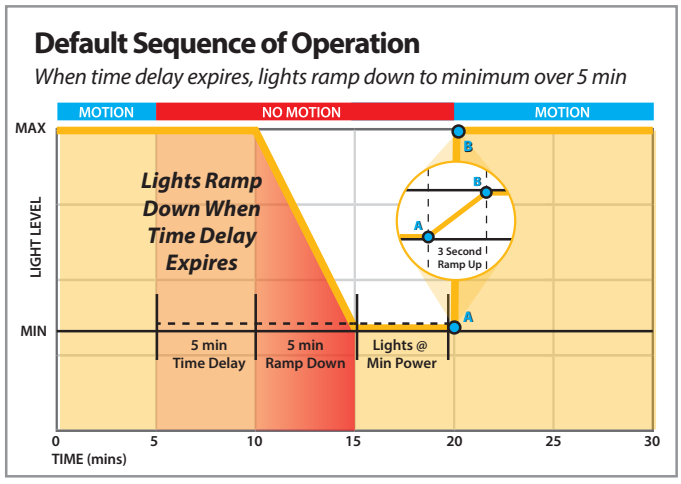
PRODUCT OVERVIEW

The **SBOR** Series outdoor rated motion sensor utilizes Passive Infrared (PIR) detection technology into a line voltage motion sensor. Designed to mount directly through a 1/2" knockout (7/8" hole) in a light fixture or pole, the **SBOR** utilizes 100% Digital Passive Infrared (PIR) technology that is tuned for walking size motion while preventing false tripping from the environment.

SBOR OPERATION —The sensor detects changes in the infrared energy given off by occupants as they move within the field-of-view. When motion is detected, a self-contained relay switches the connected lighting load on. The sensor is line powered, switches line voltage, and requires no field calibration or sensitivity adjustments. The sensor has special outdoor PIR detection settings **(OEX)**. These settings ensure that environmental factors, such as wind, do not cause false ons. The **ODP** option also utilizes outdoor PIR detection settings, in addition to providing daylight-based control of a 0-10 VDC dimmable outdoor or wet location luminaire.

SBOR xx ODP SERIES OF OPERATION - MOTION

For outdoor applications, where occupant safety is of primary concern, the **SBOR xx ODP** Series sensors are factory set to start dimming the lights once the motion time delay expires. Set to 5 min by default, this time delay is followed by a 5 min ramp down period where the lights slowly drop to the minimum dim level. Utilizing a long ramp down rate eliminates noticeable drops in light level. If motion is detected at any time during the ramp down period or when at the minimum dim level, the sensor will quickly ramp the lights back up to maximum level (default 100%) over a 3 sec (default) period. This ramp up period is intended to quickly return the lighting to full bright without distracting occupants with a sudden jump in the space's light level. The time delays, ramp rates, and max/min dim levels are user adjustable via the accessible push-button. See luminaire specifications for corresponding power level at minimum dim level.



SBOR xx ODP SERIES OF OPERATION - DAYLIGHT

To prevent lights from day-burning, the **SBOR xx ODP** Series sensor will switch lighting completely off during periods of sufficient daylight. Providing on/off photocell control eliminates the need for astronomical or time clocks. Additionally, the sensor's closed loop photocell adjusts its calibration after every cycle to accommodate visual changes to the space in which they are installed (for example different color cars in a parking garage reflecting light differently). The photocell operation can also be set to dim lights to the minimum level instead of turning them off.

KEY OPTIONS

Occupancy Controlled Dimming (D)
- Provides dimming output to control 0-10 VDC dimmable ballasts
- Provides a second occupancy time-out period that enables the lights to go to dim setting before turning off (unless minimum dim setting ordered)
- Adjustable max/min dim setting
- Adds two 20 AWG wires

PHOTOCELL (P)
- Auto set-point calibration
- Two selectable modes of operation
- On/Off mode: Photocell has full control during periods of occupancy
- Inhibit mode: Photocell can prevent lights from turning on if adequate daylight is available, but cannot turn lights off

HVOLT (347- 480 VAC)
- Allows sensor to be powered by and switch 347-480 VAC*

*Safety Note: only one line phase is being switched

FEATURES

- 100% digital PIR detection - Excellent RF immunity
- 360° Coverage Pattern
- IP66 Rated for Outdoor Applications
- Self-Contained Relay, No Power Pack Needed
- No Minimum Load Requirements
- Compatible w/ LEDs, Electronic & Magnetic Ballasts, CFLs, & Incandescents
- Interchangeable Hot & Load Wires- Impossible to Wire Backwards
- Adjustable Time Delays, Max/Min Dim Levels, & Ramp Rates
- Programming Button Accessible without Opening Sensor or Removing Gaskets
- No Field Calibration or Sensitivity Adjustments Required
- Non-Volatile Settings Memory
- Convenient Test Mode
- Green LED Indicator

SPECIFICATIONS

SIZE: Bracket Dependent
WEIGHT: 9.6 oz
MOUNTING: 1/2" knockout (7/8" hole)
MOUNTING HEIGHT:
SBOR 10: 8 -15 ft (2.44-4.57 m)
SBOR 6: 15-30 ft (4.57-9.14 m)

ELECTRICAL SPECS
MAXIMUM LOAD:
800 W @ 120 VAC
1000 W @ 208 VAC
1200 W @ 240 VAC
1200 W @ 277 VAC
1500 W @ 347 VAC
2160 W @ 480 VAC

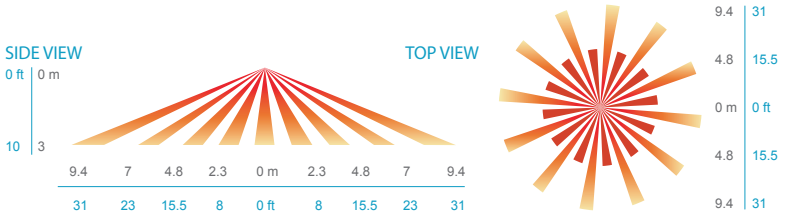
MINIMUM LOAD: None
MOTOR LOAD: 1/4 HP
FREQUENCY: 50/60 Hz
DIMMING LOAD: Sinks: < 20mA
(0-10 VDC LED Drivers / Ballasts)

ENVIRONMENTAL SPECS
OPERATING TEMP:
-40º to 160º F (-40º to 71º C)
IP66 RATED
SILICONE FREE/ROHS COMPLIANT

COVERAGE PATTERNS

PARKING GARAGE / LOW MOUNT APPLICATIONS

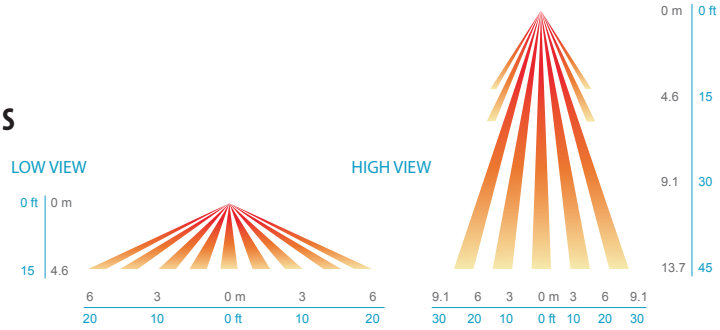
In general, the SBOR 10 is recommended for 8-15 ft (2.44-4.57 m) mounting and provides a coverage area radius for walking motion of greater than 2x the mounting height. The SBOR 10 ODP is ideal for parking garage and low pole mount applications. When mounted 10 ft high, for example, on a luminaire in a parking garage, the sensor's coverage for walking motion extends out 30 ft in a 360º pattern. This closely matches the lighting distribution of a typical parking garage luminaire. When mounted to a light pole, for example, in a parking lot or along a path, the sensor provides 270º of coverage (90º is blocked by the pole). Note, walking askew to sensor typically results in earlier detection than walking directly at sensor.



Coverage Pattern of Low Mount Lens Option (SBOR 10)

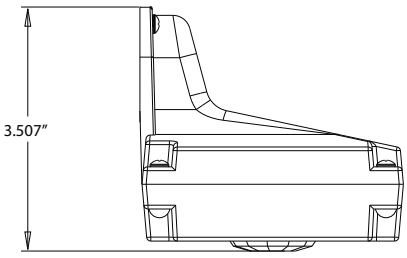
SITE & AREA LIGHTING / HIGH MOUNT APPLICATIONS

The SBOR 6 is intended for higher pole mount applications, between 15-30 ft (4.57-9.14 m), and provides a coverage area radius for walking motion of 15-20 ft (4.57-6.10 m). When mounted to a pole the sensor provides 270º of coverage (90º is blocked by the pole).

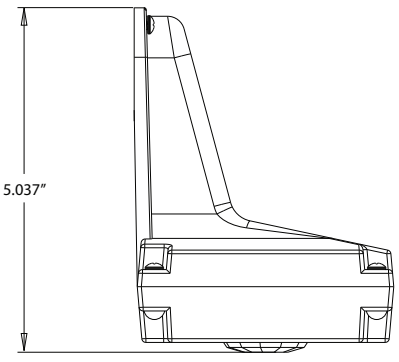


Coverage Pattern of High Mount Lens Option (SBOR 6)

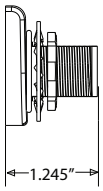
BODY/BRACKET OPTIONS



Low Back

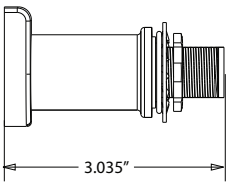


High Back



Short Extension

Long Extension



INSTALLATION INSTRUCTIONS

- Sensor has a 1/2" chase nipple that enables mounting through a knockout/hole in a junction box, fixture, or pole.
- When mounting to a pole, a 7/8" unthreaded hole should be located 12" below luminaire and should be accessible via an adjacent or opposite side hand hole.
- If the sensor loses power, the internal relay will latch closed and the dimming output will allow lights to return to full bright.

SBOR xx OEX

PROGRAMMING INSTRUCTIONS

Please read all 3 steps before programming

1. Enter a programming function by pressing button the number of times as the desired function number from the tables below (e.g., press twice for function 2, occupancy time delay).
2. LED will flash back the selected function's current setting (e.g., 5 flashes for 10 minute time delay). To change, proceed to step 3 before flash back sequence repeats 3 times. To exit or to change to a different function, wait for sequence to repeat 3 times then return to step 1.
3. Press button the number of times indicated in the particular function's detailed table for the NEW desired setting (e.g., press 3 times for 5 min). As confirmation of setting change, LED flashes back the NEW setting 3 times before exiting.

PROGRAMMING FUNCTIONS		STD. UNIT	OPTIONS D	OPTIONS P
2	Occupancy Time Delay	•	•	•
3	Dim to Off Time Delay		•	
4	Test Mode & 100 hr Burn-In	•	•	•
4	Auto Set-Point			•
5	Ten's Digit of Set-Point			•
6	One's Digit of Set-Point			•
7	Sunlight Discount Factor			•
8	Incremental Set-Point Adjust.			•
10	Minimum On Time	•	•	•
11	Photocell Mode			•
14	Lamp Information	•	•	•
15	Dimming Range (High Trim)		•	
16	Dimming Range (Low Trim)		•	

*** DEFAULT SETTING**
**** SPECIAL DEFAULT SETTING FOR -D UNITS**
***** SPECIAL DEFAULT SETTING FOR SBOR 6 OEX UNITS**

DETAILED FUNCTION TABLES

2 = Occupancy Time Delay

The length of time an occupancy sensor will keep the lights on and at full bright after it last detects occupancy (assuming min. on time has been met)

1 - 30 sec	**4** - 7.5 min**	**7** - 15.0 min
2 - 2.5 min	**5** - 10.0 min*	**8** - 7.5 min
3 - 5.0 min	**6** - 12.5 min	**9** - 20.0 min

3 = Dim to Off Time Delay

An extended length of time after the occupancy time delay has expiredthat a sensor will first reduce lighting to the low dimming range setting before turning completely off

1 - 30 sec	**4** - 7.5 min	**7** - 15.0 min	**10** - 0 sec
2 - 2.5 min**	**5** - 10.0 min	**8** - 7.5 min	**11** - Infinite
3 - 5.0 min	**6** - 12.5 min	**9** - 20.0 min	

4 = Test Mode / 100hr Burn-In / Auto Set-Point

1 - Normal*	**4** - Run Auto Set-Point
2 - Run 100 hr Burn-In	**5** - Blink back Set-Point [2]
3 - Run 100 hr then Auto-Setpoint	**6** - Test Mode [3]

[2] The LED will blink back the ten's digit, then pause, then blink back the one's digit. For a "0" the LED will blink very rapidly. The sequence is repeated 3 times.

[3] Test Mode will disable Minimum On Time, set Occupancy Time Delay to 30 sec, and shorten all photocell transitions and dimming rates. Mode will expire after 10 min or if function 4 is set back to Normal.

5 = Ten's Digit of Set-Point

The ten's digit of the target light level that is to be maintained by the device

1 - 10 fc	**4** - 40 fc	**7** - 200 fc
2 - 20 fc	**5** - 50 fc	**8** - Disable
3 - 30 fc	**6** - 100 fc	**10** - 0 fc*

6 = One's Digit of Set-Point

The one's digit of the target light level that is to be maintained by the device

1 - 1 fc	**4** - 4 fc	**7** - 7 fc	**10** - 0 fc
2 - 2 fc	**5** - 5 fc*	**8** - 8 fc	
3 - 3 fc	**6** - 6 fc	**9** - 9 fc	

7 = Sunlight Discount Factor

Value used to improve the tracking accuracy of a photocell during periods of high daylight. Decreasing the value will lower the controlled level of the lights

1 - x/1***	**4** - x/4*	**7** - x/7	**10** - x/10
2 - x/2	**5** - x/5	**8** - x/8	
3 - x/3	**6** - x/6	**9** - x/9	

8 = Incremental Set-Point Adjustment

Alters the target light level that is to be maintained by the device

1 - Decrease 1 fc	**2** - Increase 1 fc

10 = Minimum On Time

The length of time required for lamps to be on in order to prevent all short cycling that shortens lamp life. If occupancy time delay expires prior to minimum on time being satisfied, the lamps will remain on until time has been met.

1 - 0 min	**3** - 30 min	**5** - 60 min
2 - 15 min*	**4** - 45 min	

11 = Photocell Mode

Indicates a photocell sensor's method of operation. One mode enables the sensor to turn the lights both on and off, while the other mode can only inhibit the lights from turning on. For dimming sensors, this mode determines whether lighting will switch completely off or stop at the full dim level.

1 - Full On/Off Ctrl*	**2** - Inhibit Only Ctrl

14 = Lamp Information

1 - Enable LampMaximizer+ } *Adjustments are automatically made every two weeks according to an algorithm that maximizes both lamp life and energy savings*

2 - Disable LampMaximizer+* }

3 - Total Switches / 1000 [4]: *Current count (in 1000's) of the number of off to on cycles since sensor installation (or since count was manually reset)*

4 - Total Time On (khrs) [4]: *Current elapsed time a controlled lamp has been on since sensor was installed (or since count was manually reset)*

5 - Reset Total Switch and Total Time On Statistics

6 - Reset LampMaximizer+ Value: *Method of clearing the sensor's historical occupancy information such that if a sensor is phycially moved, only new occupancy information will influence LampMaximizer+ results*

[4] The LED will blink back a two digit value; the first digit, then pause, then blink back the second digit. For a "0" the LED will blink rapidly.

15 = Dimming Range (High Trim)

The maximum output level (0-10 VDC) of a sensor with a dim output

1 - Off	**4** - 3 Volt	**7** - 6 Volts	**10** - 9 Volts
2 - 1 Volt	**5** - 4 Volts	**8** - 7 Volts	**11** - 10 Volts*
3 - Volts	**6** - 5 Volts	**9** - 8 Volts	

16 = Dimming Range (Low Trim)

The minimum output level (0-10 VDC) of a sensor with a dim output

1 - Off	**4** - 3 Volt	**7** - 6 Volts	**10** - 9 Volts
2 - 1 Volt*	**5** - 4 Volts	**8** - 7 Volts	**11** - 10 Volts
3 - Volts	**6** - 5 Volts	**9** - 8 Volts	

SBOR xx ODP

PROGRAMMING INSTRUCTIONS

Please read all 3 steps before programming

1. Enter a programming function by pressing button the number of times as the desired function number from the tables below (e.g., press twice for function 2, occupancy time delay).
2. LED will flash back the selected function's current setting (e.g., 5 flashes for 10 minute time delay). To change setting, proceed to step 3 before flash back sequence repeats 3 times. To exit the current function or to change to a different function, wait for sequence to repeat 3 times then return to step 1.
3. Press button the number of times indicated in the particular function's detailed table for the NEW desired setting (e.g., press 3 times for 5 min). As confirmation of setting change, LED flashes back the NEW setting 3 times before exiting.

DETAILED FUNCTION TABLES

2 = Motion Time Delay

The length of time the motion sensor will keep the lights on and at maximum level after it last detects motion

1 - 30 sec	**4** - .5 min	**7** - 15.0 min
2 - 2.5 min	**5** - 10.0 min	**8** - 17.5 min
3 - 5.0 min*	**6** - 12.5 min	**9** - 20.0 min

4 = Test & Blink-Back Mode

1 - Blink Light & LED*	**5** - Blink Set-Point [1]
2 - Blink LED only	**6** - Test Mode [2]
4 - Auto-Setpoint	

[1] The LED will blink back the ten's digit, then pause, then blink back the one's digit. For a "0" the LED will blink very rapidly. The sequence is repeated 3 times.

[2] Test Mode will set Occupancy Time Delay to 30 sec, and shorten all photocell transitions and dimming rates. Mode will expire after 10 min or if function 4 is set back to previous setting.

5 = Ten's Digit of Set-Point

The ten's digit of the target light level that is to be maintained by the device (in foot-candles)

1 - 10 fc	**4** - 40 fc	**7** - 200 fc
2 - 20 fc	**5** - 50 fc	**10** - 0 fc*
3 - 30 fc	**6** - 100 fc	

6 = One's Digit of Set-Point

The one's digit of the target light level that is to be maintained by the device (in foot-candles)

1 - 1 fc	**4** - 4 fc	**7** - 7 fc	**10** - 0 fc
2 - 2 fc	**5** - 5 fc*	**8** - 8 fc	
3 - 3 fc	**6** - 6 fc	**9** - 9 fc	

7 = Sunlight Discount Factor

Value used to improve the tracking accuracy of a photocell during periods of high daylight. Decreasing the value will lower the controlled level of the lights.

1 - x/1*	**4** - x/4	**7** - x/7	**10** - x/10
2 - x/2	**5** - x/5	**8** - x/8	
3 - x/3	**6** - x/6	**9** - x/9	

8 = Incremental Set-Point Adjustment

Alters the target light level that is to be maintained by the device (in foot-candles)

1 - Decrease 1 fc	**2** - Increase 1 fc

9 = Restore Factory Defaults

Returns the sensor to its default settings

1 - Keep Current*	**2** - Restore Factory Defaults

11 = Photocell Operation

Indicates what mode of photocell operation, if any, is enabled

1 - High/Off*	**2** - High/Low	**3** - Disabled

12 = Ramp Up Rate

Time period from when motion is detected to when lights are at high trim level

1 - Instant	**4** - 3 sec*	**7** - 15 sec	**10** - 1 min
2 - 1 sec	**5** - 5 sec	**8** - 20 sec	
3 - 2 sec	**6** - 10 sec	**9** - 30 sec	

13 = Fade Down Rate

Time period from when motion time delay expires to when lights are at low trim level

1 - Instant	**4** - 5 min*	**7** - 15 min	**10** - 1 hr
2 - 30 sec	**5** - 7.5 min	**8** - 20 min	
3 - 2.5 min	**6** - 10 min	**9** - 30 min	

15 = Maximum Level (High Trim)

The output level (0-10 VDC) of the sensor after motion is detected

1 - Off	**4** - 3 Volts	**7** - 6 Volts	**10** - 9 Volts
2 - 1 Volt	**5** - 4 Volts	**8** - 7 Volts	**11** - 10 Volts*
3 - 2 Volts	**6** - 5 Volts	**9** - 8 Volts	

16 = Minimum Level (Low Trim)[3]

The output level (0-10 VDC) of the sensor after the fade down time has elapsed

1 - Off	**4** - 3 Volts	**7** - 6 Volts	**10** - 9 Volts
2 - 1 Volt	**5** - 4 Volts	**8** - 7 Volts	**11** - 10 Volts
3 - 2 Volts	**6** - 5 Volts	**9** - 8 Volts	

[3] Default Setting is determined by last digits in unit model number eg. SBOR 10 ODP WH 3V = 3 Volts

21 = Photocell Transition Off Time

The time period after the photocell measures a light level above the set-point (plus the deadband) that it will turn lights off (or dim them to min level)

1 - 45 sec	**3** - 5 min*	**5** - 15 min	**7** - 25 min
2 - 2 min	**4** - 10 min	**6** - 20 min	

22 = Photocell Transition On Time

The time period after the photocell measures a light level below the set-point that it will turn lights on

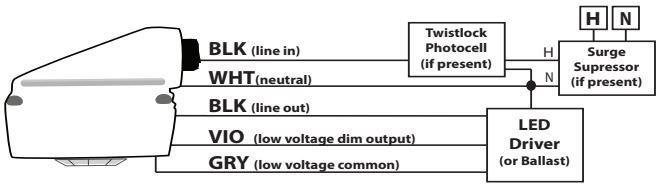
1 - 45 sec*	**3** - 5 min	**5** - 15 min	**7** - 25 min
2 - 2 min	**4** - 10 min	**6** - 20 min	

*** DEFAULT SETTING**

WIRING

WIRING TO SINGLE PHASE POWER (120/277/347 VAC)

BLACK* - 120/277 VAC Input
(**RED** wire for 347 VAC - requires HVOLT option)
BLACK* - Switched Line Voltage Output to Luminaire
(**RED** wire for 347 VAC - requires HVOLT option)
WHITE - Neutral
VIOLET (w/ D option) - Low Voltage Dim Output (0-10 VDC)
GRAY (w/ D option) - Low Voltage Common

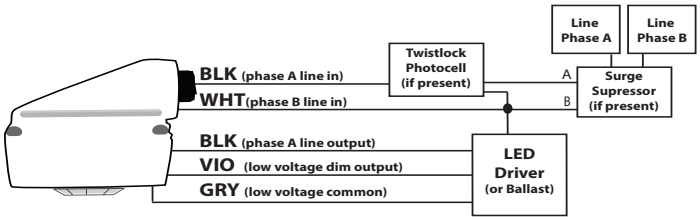


***BLACK wires can be reversed**

WIRING TO 2-PHASE POWER (208/240/480 VAC)*

BLACK* - 208/240 VAC Phase A Input
(**RED** wire for 480 VAC - requires HVOLT option)
BLACK* - Switched Line Voltage Output to Luminaire
(**RED** wire for 480 VAC - requires HVOLT option)
WHITE - Phase B of 208/240/480 VAC Input
VIOLET (w/ D option) - Low Voltage Dim Output (0-10 VDC)
GRAY (w/ D option) - Low Voltage Common

***Safety Note: only one line phase is being switched**



***BLACK wires can be reversed**

ORDERING INFORMATION

(example: SBOR 6 OEX D HVOLT BZ 2V)

SBOR	10	ODP		
Series	**Mounting Height**	**PIR Detection Type**	**Dimming[1]**	**Photocell[1]**
SBOR Outdoor Pole/ Fixture Mount Sensor; Line Voltage	**6** High Mount (15-30 ft) **10** Low Mount (8-15 ft)	**OEX** Outdoor PIR **ODP** Outdoor PIR w/ On/Off/Dim Photocell	**(blank)** None **D** Occupancy Controlled Dimming	**(blank)** None **P** Photocell

ADDL. ORDERING OPTIONS	EB2	BZ	4V	
Voltage	**Body/Bracket**	**Color**	**Min Dim Level[2]**	**Pack Qty**
(blank) 120-277 VAC (MVOLT) **HVOLT** 347-480 VAC	**(blank)** Short extension, low back **EB1** Short extension, high back **EB2** Long extension, low back **EB3** Long extension, high back	**WH** White **BK** Black **BZ** Dark Bronze	**0V** OFF **1V** 1 VDC **2V** 2 VDC **3V** 3 VDC **4V** 4 VDC **5V** 5 VDC	**(blank)** Single **J40** 40-Pack

Notes:
1 Only available if OEX detection selected
2 Required if ODP or D options selected

AcuityBrands.
Expanding the boundaries of lighting™

c UL US LISTED
TITLE 20/24
ASSEMBLED in U.S.A.

WARRANTY
5-year limited warranty. Complete warranty terms located at
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

READ AND FOLLOW ALL SAFETY INSTRUCTIONS!
SAVE THESE INSTRUCTIONS AND DELIVER TO OWNER AFTER INSTALLATION

- To reduce the risk of death, personal injury or property damage from fire, electric shock, falling parts, cuts/abrasions, and other hazards please read all warnings and instructions included with and on the fixture box and all fixture labels.
- Before installing, servicing, or performing routine maintenance upon this equipment, follow these general precautions.
- Installation and service should be performed by a qualified licensed electrician.
- Maintenance should be performed by qualified person(s) familiar with the products' construction & operation & any hazards involved. Regular maintenance programs recommended.
- **DO NOT INSTALL DAMAGED PRODUCT!** This product has been properly packed so that no parts should have been damaged during transit. Inspect to confirm. Any part damaged or broken during or after assembly should be replaced.

⚠ CAUTION: RISK OF PRODUCT DAMAGE
- √ Electrostatic Discharge (ESD): ESD can damage product(s). Personal grounding equipment should be worn during all installation or servicing of the unit.
- √ Do not touch individual electrical components, as this can cause ESD and affect product performance.
- √ Do not stretch or use cable sets that are too short or are of insufficient length.
- √ Do not tamper with contacts.
- √ Do not modify the product.
- √ Do not change or alter internal wiring or installation circuitry.
- √ Do not use product for anything other than its intended use.

WARNING - RISK OF ELECTRIC SHOCK
- √ Disconnect or turn off power before installation or servicing.
- √ Verify that supply voltage is correct by comparing it with the product information.
- √ Make all electrical and grounded connections in accordance with the National Electrical Code (NEC) and any applicable local code requirements.
- √ All wiring connections should be capped with UL approved recognized wire connectors.
- √ All unused connector openings must be capped.

WARNING - RISK OF BURN OR FIRE
- √ Do not exceed maximum wattage, ratings, or published operation conditions of product.
- √ Do not overload.
- √ Follow all manufacturer's warnings, recommendations and restrictions to ensure proper operation of product.

CAUTION - RISK OF INJURY
- √ Wear gloves and safety glasses at all times when installing, servicing or performing maintenance.

Zero-Uplight Shield

- Eliminates artificial sky glow
- Zone 0 Model Ordinance
  - 0% uplight low
  - 0% uplight high

Fixture Type L2 & L2B

HOLOPHANE
LEADER IN LIGHTING SOLUTIONS

Catalog Number	
Notes	Type

Petrolux® LED

Wet Location for Demanding Environments

Description

For demanding environments where dust, dirt and moisture are a concern.

Optics

- Prismatic borosilicate glass directs light where needed and reduces harsh glare.
- Polycarbonate lens available for those applications requiring non-glass options.
- Three distributions (Type 5 low angle, Type 5 high angle, and Type 1 long and narrow) available to maximize versatility.
- Highly engineered LED system ensures superior uniformity and maximizes spacing.

Electrical

- 10kV/10kA surge protection is standard.
- 0-10V dimming driver is standard.
- CRI > 70 (nominal) is standard.
- 3000K, 4000K or 5000K CCT available.
- Fault-tolerant LED light engine continues to provide light even in the failure of one LED.

Mechanical

- Robust cast aluminum housing with low copper content (0.6% CU content) withstands harsh or hostile environments.
- Universal mount top cover (ceiling/pendant) is standard. Optional universal arm available for wall/stanchion. Other mountings include gasketed hook and yoke mount.
- Precise number of fins dissipate maximium amount of heat and achieve up to 131°F (55°C) ambient rating.

Listings

- UL 1598 Listed for use in wet locations
- IP66 rated

Warranty

5-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/CustomerResources/Terms_and_Conditions.aspx

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

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

DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org to confirm which versions are qualified.

Typical Applications

- Petroleum refineries
- Ethanol facilities
- Chemical plants
- Power plants
- Textile mills
- Water and wastewater treatment facilities
- Parking garages
- Tunnels

Dimensions: *Inches (millimeters) unless otherwise noted.*

Diameter: 14.76 (375)
Depth: 13.57 (345)
Weight (5,000 -10,000 lumens): 31-38 lbs. (14-17 kg)
Weight (12,000 -18,000 lumens): 38-45 lbs. (17-20 kg)
EPA: 1.21 sq.ft. 45lbs.

ORDERING INFORMATION

Example: PLED2 05L 5K AS UN NA G L5H

Series	Lumens[1]	Color temperature	Voltage		Mounting	Cord length
PLED2	05L 5000 lumens	3K 3000K CCT	AS Auto sensing (120-277)	AH Auto sensing (347/480)	UN Universal[2]	NA No cord
	08L 8000 lumens	4K 4000K CCT	12 120V	34 347V	GH Gasketed hook	03 3 ft cord with watertight plug[4]
	10L 10,000 lumens	5K 5000K CCT	20 208V	48 480V	YK-0 0° yoke mount bracket[3]	06 6 ft cord with watertight plug[4]
	12L 12,000 lumens		24 240V		YK-45 45° yoke mount bracket[3]	10 10 ft cord with watertight plug[4]
	15L 15,000 lumens		27 277V			
	18L 18,000 lumens					

Finish	Optics	Options	
W White	L5 Type 5, low angle, glass	BP Button style photocontrol[6,7,8]	DE ROAM® concierge dimming control[22]
G Gray	L5FR Type 5, low angle, glass frosted	EG Ingress/egress marker decal	VE ROAMVIEW™ dimming control[22]
CRW Corrosion-resistant white	L5H Type 5, high angle, glass	F1 Single fusing[9]	AXA10 XPoint Wireless enabled[23]
CRG Corrosion-resistant gray	L5HFR Type 5, high angle, glass frosted	F2 Double fusing[10]	MSI6NWL Occupancy sensor on/off[24]
	L1 Type 1, long and narrow, glass[5]	GD Optic guard	MSI62L0VWL On/off/dimming - no photocell occupancy sensor[25]
	L1FR Type 1, long and narrow, glass frosted[5]	SH Uplight shield[11]	MSI62L0VWL DSCNWL On/off/dimming - with photocell occupancy sensor[26]
	P5 Type 5, low angle, polycarbonate	SP Sample pack for ground transport	MSI62XAWL DSCXAWL XPoint Wireless enabled with photocell and occupancy sensor[27]
	P5H Type 5, high angle, polycarbonate	PER NEMA twistlock receptacle 45° mounting[12,13,14,15]	
	P1 Type 1, long and narrow, polycarbonate[5]	PER45 NEMA twistlock receptacle 45° mounting[12,13,16,17]	
		PCS DTL solid state photo control. AS, 120-277V[18]	
		P34 DTL solid state photo control, 347V[19]	
		P48 DTL solid state photo control, 480V[20]	
		PSC Shorting cap[21]	

For footnotes, see page 2.

ORDERING INFORMATION (cont.)

Accessories: *Order as separate catalog number.*

09189-* SUB	Safety chain kit (*= 2, 3 feet of chain)
PLEDMI3502	Thread sealant (order quantity 1 per luminaire)
PLEDGD	Optic guard

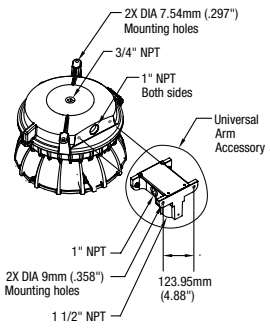
P3US-WH	Universal mount arm, white
P3US-GR	Universal mount arm, gray
P3US-CRW	Universal mount arm, corrosion-resistant white
P3US-CRG	Universal mount arm, corrosion-resistant gray

07233-1-XX	Single luminaire arm for one universal mount unit. (Single Substation Arm)[28]
07233-1-CTL-XX	Single luminaire arm for one universal mount unit. (Single Substation Arm)[29]
07233-2-XX	Double luminaire arm for two universal mount units. (Double Substation Arm)[28]
07233-2-CTL-XX	Double luminaire arm for two universal mount units. Top unit will be controlled by the bottom unit. (Double Substation Arm)[30]

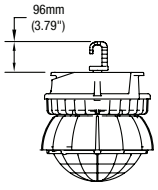
Notes

1 Nominal lumens.
2 Ceiling/pendant, order P3US arm for wall/stanchion.
3 Includes all necessary brackets and mounting accessories; does not include installation mounting hardware.
4 Available with GH mounting only. Must specify 12, 20, 24 or 27 voltage.
5 N/A with 18L.
6 Available 12, 20, 24, 27 voltage codes with 40C maximum ambient for 5L, 8L, 10L, 12L, 15L AND 18L lumen packages.
7 Available 34 voltage code with 40C maximum ambient for 5L, 8L and 10L lumen packages and with 35C maximum ambient for 12L, 15L and 18L lumen packages.
8 When ordering with UN mounting, customer cannot mount to ceiling. Not available with PER, PER45, DE, VE, MSI6NDL, MSI62L0VDL DSCNDL, AXA10, MSI6XAWL , OS option.
9 Specify voltage 12, 24, 27 or 34.
10 Specify voltage 20, 24 or 48.
11 Available L5, L5FR, P5 optics only. Not available with MSI6NWL, MSI62L0VWL, MSI62L0VWL DSCNWL, MSI6XAWL DSCXAWL options.
12 Available 12, 20, 24, 27 voltage codes with 40C maximum ambient for 5L, 8L, 10L, 12L, 15L and 18L lumen packages.
13 Available 34 voltage code with 40C maximum ambient for 5L, 8L and 10L lumen packages and with 35C maximum ambient for 12L, 15L and 18L lumen packages
14 Not available with BP, AXA10 or Occ sensors. Not available with YK-45. When ordering with UN mounting, customer cannot mount to ceiling.
15 PER and PER45 ship unattached, wired in field. PER or PER45 can be ordered with or without ROAM DE, ROAM VE, PCS, P34, P48 and PSC options. ROAM, Photocontrol and Shorting Cap available below.
16 Available AS, 12, 20, 24, 27, 34, 48 voltage codes only. Not available with BP, AXA10 or Occ sensors. Must specify YK-45. PER and PER45 ship unattached, wired in field.
17 PER or PER45 can be ordered with or without ROAM DE, ROAM VE, PCS, P34, P48 and PSC options. ROAM, Photocontrol and Shorting Cap available below.
18 Available AS, 12, 20, 24, 27 voltages. Available with PER and PER45 options only. Shipped in carton with unit.
19 Available 34 volt only. Available with PER and PER45 options only. Shipped in carton with unit.
20 Available 48 volt only. Available with PER and PER45 options only. Shipped in carton with unit.
21 Available with PER and PER45 options only. Shipped in carton with unit.
22 N/A with BP, AXA10 or Occ sensors. Specifies a ROAM® dimming enabled fixture with a dimming control module factory installed PER or PER45 option required. Additional hardware and services required for ROAM® deployment must be purchased separately. N/A with 15L and 18L. N/A with AH, 34 and 48 voltages. Available 40C maximum ambient only.
23 Available AS, 12, 20, 24, 27 voltage codes. Not available with BP, PER, PER45, DE, VE, MSI6NWL, MSI62L0VWL, MSI62L0VWL DSCNWL, MSI6XAWL DSCXAWL, OS options. Wet Location Listed, 35C maximum ambient.
24 Available AS, 12, 20, 24, 27 voltage codes. Not available with SH, BP, PER, PER45, DE, VE, MSI62L0VWL, MSI62L0VWL DSCNWL, AXA10, MSI6XAWL DSCXAWL. Wet Location Listed, 40C maximum ambient. SensorSwitch Brand sensor. Not available with YK-0 and YK-45 mountings.
25 Available AS, 12, 20, 24, 27 voltage codes. Not available with SH, BP, PER, PER45, DE, VE, MSI6NWL, MSI62L0VWL DSCNWL, AXA10, MSI6XAWL DSCXAWL, OS options. Wet Location Listed, 40C maximum ambient. SensorSwitch Brand sensor. Not available with YK-0 and YK-45 mountings.
26 Available AS, 12, 20, 24, 27 voltage codes. Not available with SH, BP, PER, PER45, DE, VE, MSI6NWL, MSI62L0VWL, AXA10, MSI6XAWL DSCXAWL, OS options. Wet Location Listed, 40C maximum ambient. SensorSwitch Brand sensor. Not available with YK-0 and YK-45 mountings.
27 Available AS, 12, 20, 24, 27 voltage codes. Not available with SH, BP, PER, PER45, DE, VE, MSI6NWL, MSI62L0VWL, MSI62L0VWL DSCNWL, AXA10, OS options. Wet Location Listed, 40C maximum ambient. Xpoint Brand sensor. Not available with YK-0 and YK-45 mountings.
28 UN mounting ONLY. 0-10 volt dimming leads in arm. Not available with MSI6NWL, MSI62L0VWL, MSI62L0VWL DSCNWL, AXA10, MSI6XAWL DSCXAWL.
29 UN mounting ONLY. Available with MSI6NWL, MSI62L0VWL DSCNWL, AXA10, MSI6XAWL DSCXAWL ONLY.
30 UN mounting ONLY, Order a bottom unit with MSI6NWL, MSI62L0VWL DSCNWL, AXA10, MSI6XAWL DSCXAWL only and a top unit with no MSI6NWL, MSI62L0VWL DSCNWL, AXA10, MSI6XAWL DSCXAWL.

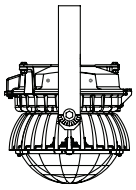
DIMENSIONAL DATA

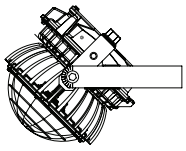


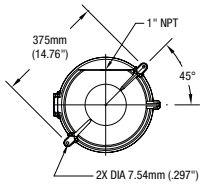
UNIVERSAL MOUNTING (UN)



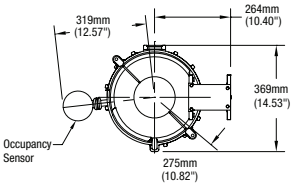
GASKETED HOOK MOUNTING (GH)


YOKE MOUNTING, 0° (YK-0)

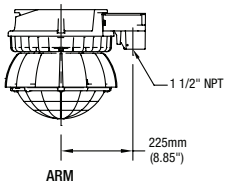

YOKE MOUNTING, 45° (YK-45)



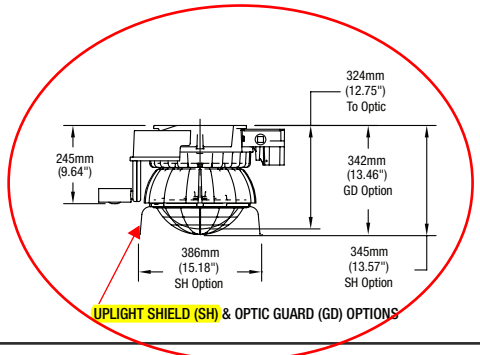
MOUNTING HOLES



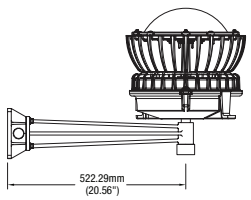
OCCUPANCY SENSOR OPTION



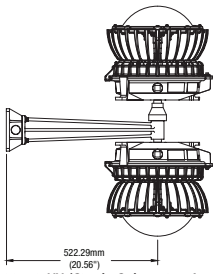
ARM



UPLIGHT SHIELD (SH) & OPTIC GUARD (GD) OPTIONS



07233-1-XX (Single Substation Arm)
07233-1-CTL-XX (Single Substation Arm)



07233-2-XX (Single Substation Arm)
07233-2-CTL-XX (Single Substation Arm)

OPERATIONAL DATA

Operating Characteristics[1]

Package	Ambient Rating (120V - 277V)	Ambient Rating (347V / 480V)	Distribution	Delivered Lumens 5000K CCT @25°C[2]	Delivered Lumens 4000K CCT @25°C[2]	Wattage	LPW @ 5000K
PLED2 05L	-40°F to 131°F (-40°C to 55°C)	-40°F to 104°F (-40°C to 40°C)	L5 L5H L1 P5 P5H P1	6,189 5,234 5,066 4,493 3,852 3,772	6,150 5,201 5,035 4,493 3,852 3,772	50 50 50 50 50 50	124 105 101 90 77 75
PLED2 08L	-40°F to 131°F (-40°C to 55°C)	-40°F to 104°F (-40°C to 40°C)	L5 L5H L1 P5 P5H P1	8,927 7,550 7,308 6,522 5,592 5,476	8,872 7,503 7,263 6,481 5,557 5,442	74 74 74 74 74 74	121 102 99 88 75 74
PLED2 10L	-40°F to 131°F (-40°C to 55°C)	-40°F to 104°F (-40°C to 40°C)	L5 L5H L1 P5 P5H P1	11,315 9,569 9,263 8,266 7,087 6,940	11,245 9,510 9,205 N/A N/A N/A	98 98 98 98 98 98	115 97 94 84 72 71
PLED2 12L	-40°F to 122°F (-40°C to 45°C)	-40°F to 95°F (-40°C to 35°C)	L5 L5H L1 P5 P5H P1	14,822 12,586 12,183 10,872 9,321 9,128	14,790 12,508 12,107 10,804 9,263 9,071	129 129 129 129 129 129	115 97 94 84 72 71
PLED2 15L	-40°F to 113°F (-40°C to 45°C)	-40°F to 95°F (-40°C to 35°C)	L5 L5H L1 P5 P5H P1	18,309 15,484 14,988 13,375 11,468 11,230	18,195 15,837 14,895 13,292 11,396 11,160	165 165 165 165 165 165	111 94 91 81 69 68
PLED2 18L	-40°F to 104°F (-40°C to 40°C)	-40°F to 86°F (-40°C to 35°C)	L5 L5H P5 P5H	21,575 18,246 13,375 13,513	21,441 18,133 15,663 13,429	195 195 195 195	110 93 68 69

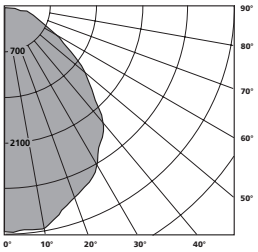
Projected Lumen Maintenance (TM-21)[3]

Package[4]	0 Hours	15,000 Hours	30,000 Hours	45,000 Hours	60,000 Hours	100,000 Hours
PLED2 05L	1.0	0.96	0.94	0.93	0.91	0.88
PLED2 08L	1.0	0.96	0.94	0.93	0.91	0.88
PLED2 10L	1.0	0.96	0.94	0.93	0.91	0.88
PLED2 12L	1.0	0.95	0.93	0.91	0.90	0.85
PLED2 15L	1.0	0.95	0.93	0.91	0.90	0.85
PLED2 18L	1.0	0.95	0.93	0.91	0.90	0.85

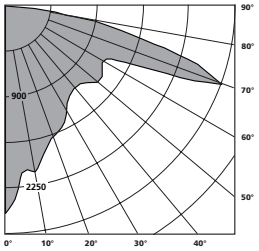
Notes
1 Adding BP, PER, PER45, DE and VE options results in a max. ambient of 40°C.
2 Absolute photometry calculated in accordance with IESNA LM-79-08.
3 Calculated using data collected according to LM-80 and represents lumen maintenance of the LED package.
4 Project lumen maintenance factors at max. ambient temperature per lumen package.

DISTRIBUTION DATA

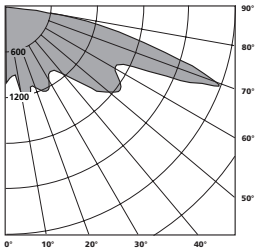
Petrolux LED Type 5 Low Angle



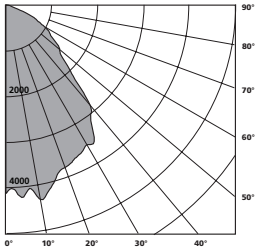
Petrolux LED Type 5 High Angle



Petrolux LED Type 1



Petrolux LED Type 5-0% Uplight

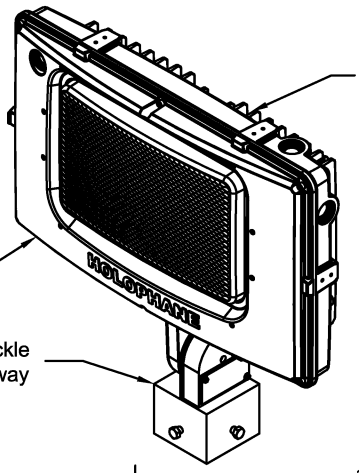


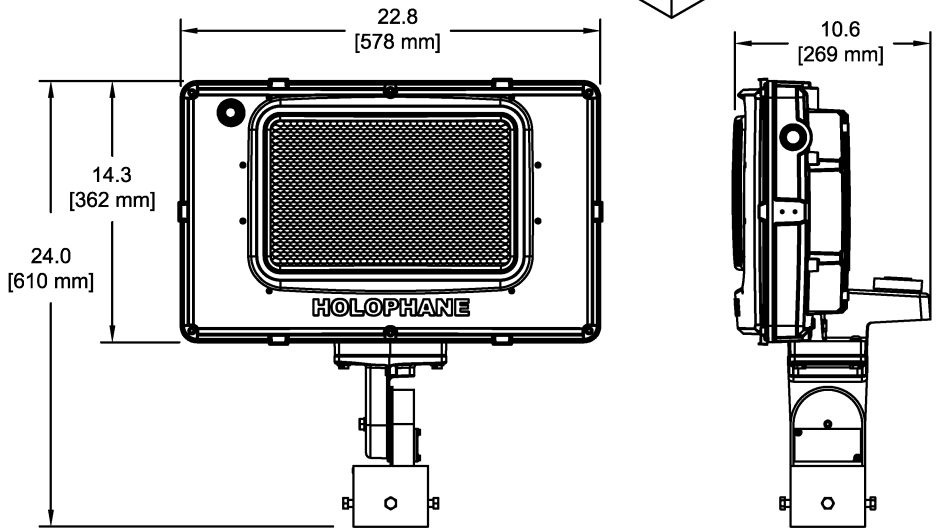
CONTROLS

MSI6NDL, MSI62L0VDL, MSI62L0VDL DSCNDL. AXA10 X Point wireless enabled. "PRELIMINARY"

Fixture Type L3

Max Weight = 47 lbs (21.32 kg)
Max EPA = 3.0 ft² (0.28 m²)
UL Listed
Wet Location
ANSI C136.31: 3G rated





KNUCKLE MOUNT

Customer Preferred: (Most Frequently Ordered Catalog Numbers)
PMLED 6 4K 10A AS 66 1 K HP

PMLED — Series
Predator Medium LED

4 — Number of LED'S
4 = 4 Module
5 = 5 Modules
6 = 6 Modules

4K — Color Temperature
3K = 3,000K CCT
4K = 4,000K CCT
5K = 5,000K CCT

10A — Drive Current
10A = 1050 mA Driver

AS — Voltage
AS = Auto-sensing Voltage (120 thru 277)
AH = Auto-sensing Voltage (347thru 480)

ORDERING INFORMATION:

66 — Beam pattern
44 = 4x4 (prismatic glass)
45 = 4x5 (prismatic glass)
55 = 5x5 (prismatic glass)
65 = 6x5 (prismatic glass)
66 = 6x6 (prismatic glass)

3 — Mounting
1 = Tenon Slipfitter Knuckle
3 = Yoke Stainless Steel
4 = Yoke Galvanized

K — UL Category
K = Wet Locations
[1]L = Marine Outside

BP — Color
BP = Black Superdurable with Epoxy Primer
GP = Grey Superdurable with Epoxy Primer
HP = Graphite Superdurable with Epoxy Primer
WP = White Superdurable with Epoxy Primer
ZP = Bonze Superdurable with Epoxy Primer

30 — [3]Cord Length Option
04 = 4 ft Cord Length
05 = 5 ft Cord Length
06 = 6 ft Cord Length
08 = 8 ft Cord Length
10 = 10 ft Cord Length
12 = 12 ft Cord Length
15 = 15 ft Cord Length
20 = 20 ft Cord Length
25 = 25 ft Cord Length
30 = 30 ft Cord Length

23 — [3]Cord Type
63 = 16 Gage, 3 Conductor
43 = 14 Gage, 3 Conductor
23 = 12 Gage, 3 Conductor

DM — Options
See Sheet 2

Accessories
See Sheet 2

Predator® Medium LED

Infrastructure Specialty

HOLOPHANE® LEADER IN LIGHTING SOLUTIONS
An AcuityBrandsCompany

ORDER #:
TYPE:
DRAWN: BGW
DATE: 10/12/17
DWG #: LUM_PMLED

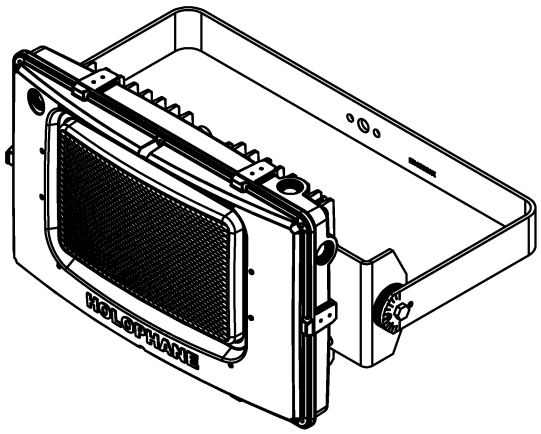
Options

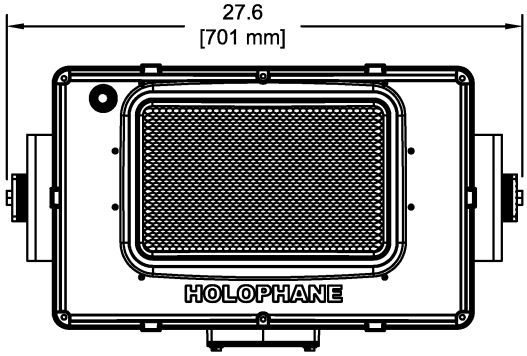
[2]P3 = Photocontrol Receptacle
[2]P5 = 5-Pin Receptacle
[2]P7 = 7-Pin Receptacle
PCL1 = Photocontrol 120V
PCL3 = Photocontrol 347V
PCL4 = Photocontrol 480V
PCSS = DSS 120-277V PC
DM = 0-10V Dimmable Driver
NL = NEMA Label
TL = Tool-less Entry with latches
F1 = Single Fusing
F2 = Double Fusing
SH = Shorting Cap

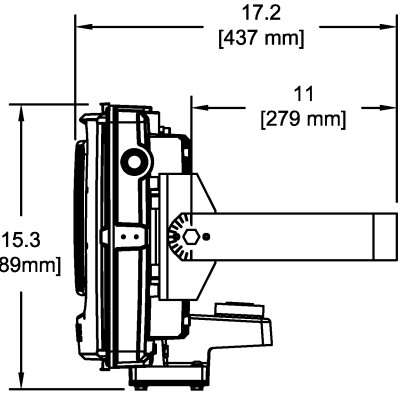
Accessories

PMLED FV-BP = Full Visor, Black
PMLED FV-GP = Full Visor, Gray
PMLED FV-HP = Full Visor, Graphite
PMLED FV-WP = Full Visor, White
PMLED FV-ZP = Full Visor, Bronze
SH = Shorting Cap
PMLED UBV-BP = Upper/Bottom Visor, Black
PMLED UBV-GP = Upper/Bottom Visor, Gray
PMLED UBV-HP = Upper/Bottom Visor, Graphite
PMLED UBV-WP = Upper/Bottom Visor, White
PMLED UBV-ZP = Upper/Bottom Visor, Bronze
PMLED VG = Vandal Guard
PMLED WG = Wire Guard
08657-BP = Yoke to 2.375" OD Tenon Adaptor, Black
08657-GP = Yoke to 2.375" OD Tenon Adaptor, Gray
08657-HP = Yoke to 2.375" OD Tenon Adaptor, Graphite
08657-WP = Yoke to 2.375" OD Tenon Adaptor, White
08657-ZP = Yoke to 2.375" OD Tenon Adaptor, Bronze
08775-BP = Yoke to 2.375" OD Tenon Adaptor with Photocontrol Receptacle, Black
08775-GP = Yoke to 2.375" OD Tenon Adaptor with Photocontrol Receptacle, Gray
08775-HP = Yoke to 2.375" OD Tenon Adaptor with Photocontrol Receptacle, Graphite
08775-WP = Yoke to 2.375" OD Tenon Adaptor with Photocontrol Receptacle, White
08775-ZP = Yoke to 2.375" OD Tenon Adaptor with Photocontrol Receptacle, Bronze

Notes:
1. Only available with SS Yoke (3).
2. Not available with Marine (L).
3. Not available with tenon slipfitter mounting option







YOKE MOUNT

Predator® Medium LED

Infrastructure Specialty

HOLOPHANE®
LEADER IN LIGHTING SOLUTIONS
An AcuityBrandsCompany

ORDER #:
TYPE:
DRAWN: BGW
DATE: 10/12/17
DWG #: LUM_PMLED

Performance specification

Optical

Performance of the PMLED is to replace 400-1000 watt HID luminaires. The optical system utilizes state of the art chip on board technology with 3000K, 4000K and 5000K color temperature choices with a 70 CRI minimum. The luminaire uses a highly specular internal reflector designed for superior field to beam ratios, uniformity and spacing. NEMA beam pattern choices of 4X4, 4X5, 5X5, 6X5, and 6X6 are available. Optional shielding is available to control uplight and light trespass. The optical enclosure is a borosilicate prismatic glass lens.

Electrical

Long Life: LED light engines are rated > 100,000 hours at 25C, L70. Electronic driver has a rated life of 100,000 hour at a 25C ambient.

Surge protection device provides ANSI c136.2 (10kV/5kA) Level of protection.

Mechanical

Rugged low copper A360 alloy die cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convection cooling. The die cast aluminum housings are painted with a super durable polyester paint finish over an epoxy primer pretreat yields a finish that achieves a scribe creepage of 8 after 5,000 hours exposure to salt spray providing durability and corrosion resistance.

The luminaire is available in either knuckle mount or yoke mount. The knuckle mount is adjustable and is designed to fit 2.375 inch to 2.875 inch tenons. The yoke mount is available in either galvanized steel or stainless steel. The luminaire comes standard prewired eliminating the lineman from opening the unit during installation. The knuckle version is pre-wired to the wiring chamber at the fitter. The yoke mount has provision for a pre-wired cord drop to specified length in the ordering information.

The luminaire comes standard with the door frame bolted to the housing. Optional tool less stainless steel latches are available to allow easy access to LED drivers, surge protection, and optional terminal block.

The optical enclosure is sealed and gasketed to an IP66 rating. All luminaire mountings are 3G vibration rated per ANSI C136.

Controls

The NEMA three pin, five pin & seven pin locking-style photocontrol receptacles are available.

Dimming version uses proprietary Acuity Brands components to enable continuous 0-10V dimming down to 10% output via the ROAM smart controls system. (sold separately)

Photocontrol for solid-state lighting meets ANSI C136.10 criteria

Warranty & Standards

Suitable for ambient temperatures -40C to 40C.

UL 1598 A wet location, UL 1598A Marine Outside Type(Salt Water)

DesignLights Consortium• (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

Predator® Medium LED

Infrastructure Specialty

HOLOPHANE® LEADER IN LIGHTING SOLUTIONS

An AcuityBrandsCompany

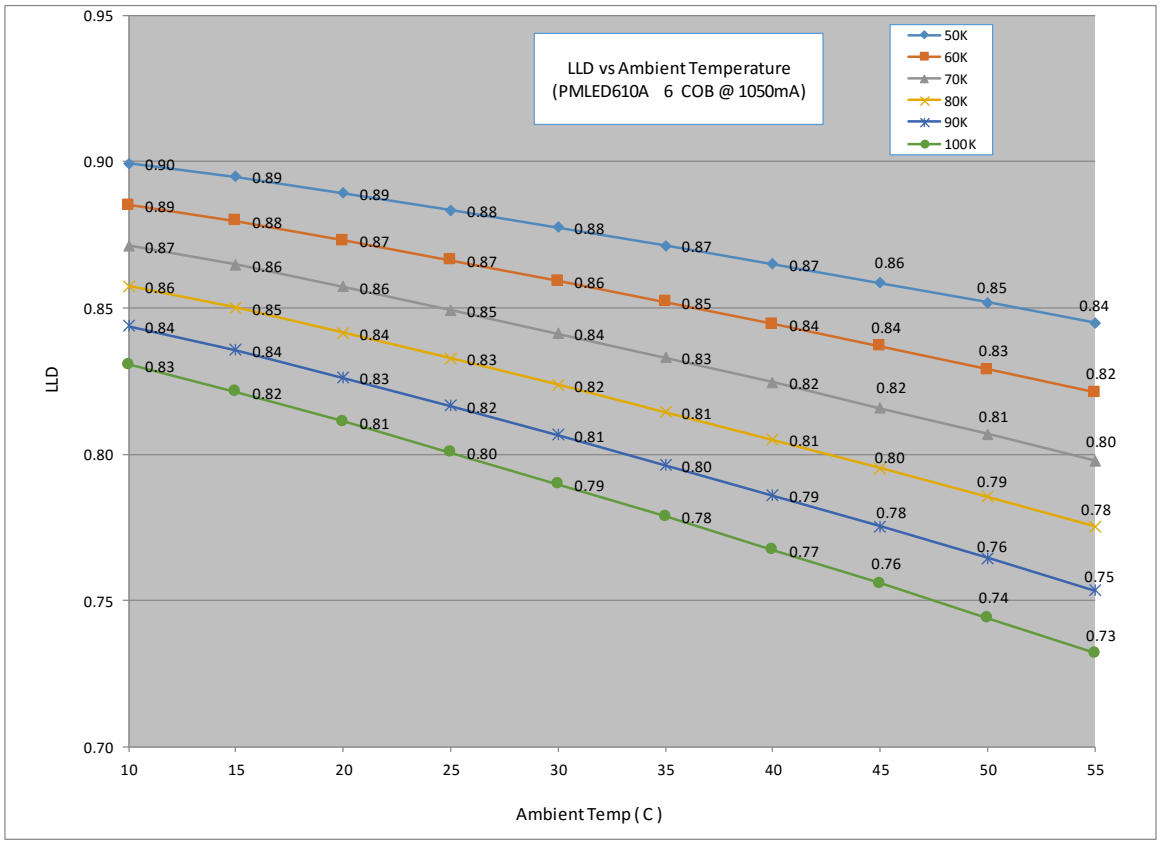
ORDER #:
TYPE:
DRAWN: BGW
DATE: 10/12/17
DWG #: LUM_PMLED

Operating Characteristics

PMLED	Distribution	Lumens 4K	Input operating Amps 120V	208V	240V	277V	347V	480V	Input Watts	LPW
04 10A			1.48	0.86	0.76	0.67	0.52	0.40		
	44	20,083							177	113
	45	20,424							177	115
	55	21,789							177	123
	65	21,962							177	124
	66	21,524							177	122

PMLED	Distribution	Lumens 4K	Input operating Amps 120V	208V	240V	277V	347V	480V	Input Watts	LPW
05 10A			1.83	1.07	0.93	0.82	0.64	0.48		
	44	24,794							219	113
	45	25,215							219	115
	55	26,899							219	123
	65	27,114							219	124
	66	26,573							219	121

PMLED	Distribution	Lumens 4K	Input operating Amps 120V	208V	240V	277V	347V	480V	Input Watts	LPW
06 10A			2.18	1.27	1.11	0.97	0.76	0.56		
	44	29,257							261	112
	45	29,754							261	114
	55	31,740							261	122
	65	31,994							261	123
	66	31,357							261	120



WARRANTY
Limited warranty located at
www.acuitybrands.com/CustomerResources/Terms and conditions.aspx
NOTE
Specifications subject to change without notice.
Actual performance may differ as a result of end-user environment and application.
Actual wattage may differ by +/- 8% when operating at nominal input voltage +/- 10%.

Predator® Medium LED

Infrastructure Specialty

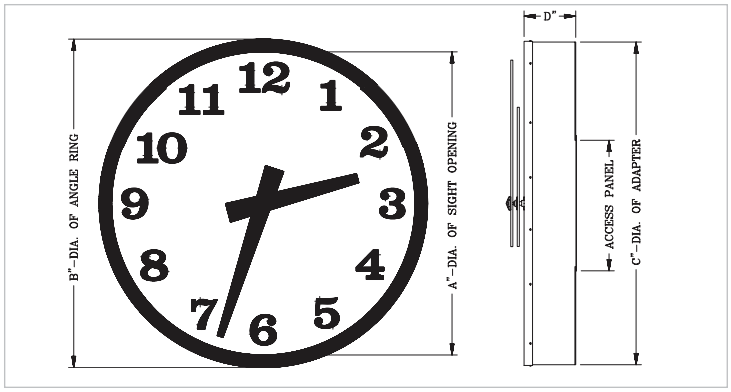
HOLOPHANE® LEADER IN LIGHTING SOLUTIONS
An AcuityBrandsCompany

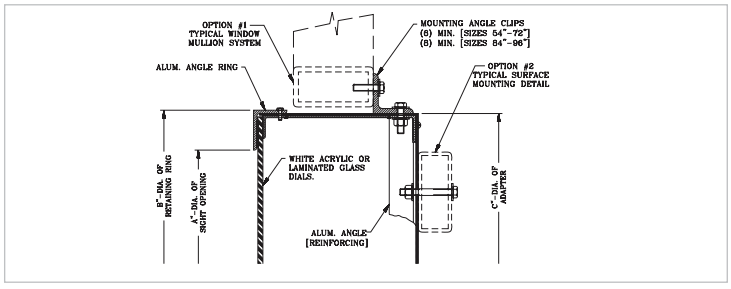
ORDER #:
TYPE:
DRAWN: BGW
DATE: 10/12/17
DWG #: LUM_PMLED

CANISTER CLOCKS CONTINUED

PHOTO ABOVE: Robinson Town Centre - Pittsburgh, PA Architect - Wah Yee Associates - Farmington Hills, MI. (2) 7' Diameter Style 6684 Illuminated Canister Clocks with Type "A" Dial Markings and Type "WS" hands.

6600 (54" and above) - Surface or semi-flush mounted - furnished standard with LED illumination. Clock is weather tight and suitable for mounting into a wall or window opening.





6600 SERIES- CANISTER CLOCK DETAILS

Style #	A"	B"	C"	D"
6654	54"	59"	58 5/8"	12 1/2"
6660	59"	64"	63 5/8"	12 1/2"
6672	72"	77"	76 5/8"	12 1/2"
6684	84"	90"	89 1/2"	12 3/8"
6696	92 3/4"	98 3/4"	98 1/4"	12 3/8"

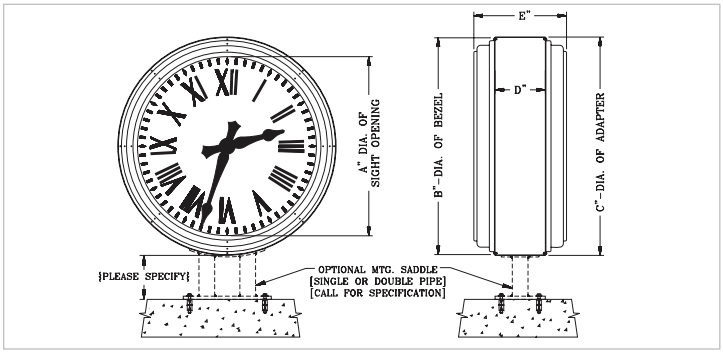
***CUSTOM SIZES AVAILABLE ***
PLEASE CALL FACTORY FOR SPECIFICATIONS

DOUBLE DIAL CLOCKS

PHOTO ABOVE: John Gasser & Son Jewelers - Canton, OH. Special Two-Dial Illuminated Howard Reproduction

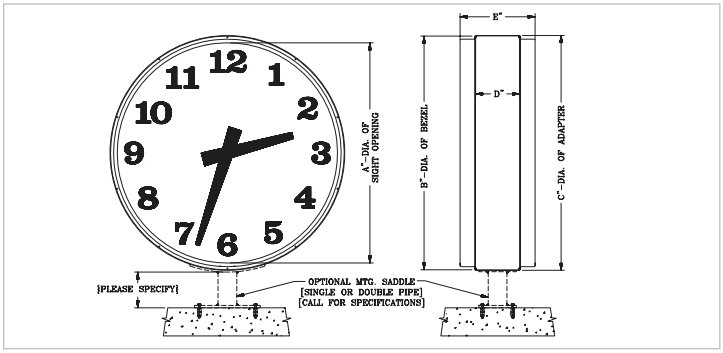
SEMI-FLUSH CLOCKS WITH DOUBLE FACED ADAPTOR

Style 6700/3700/63A00 consists of (2) Semi-flush clocks mounted to a double faced adaptor. This complete unit is suitable for: sidewall, ceiling or pedestal mounting to a saddle, or post or pipe mounting by means of a rolled plate (contact factory for details).



63A00 SERIES - DOUBLE FACED CLOCKS

Style	A"	B"	C"	D"	E"
63A18	18"	23 1/8"	23 3/8"	8"	13 1/4"
63A24	24"	29 1/4"	29 1/2"	10"	15 1/4"
63A30	28 1/2"	34 1/2"	34 3/4"	10"	16 3/4"
63A36	34 1/2"	40 1/4"	40 1/2"	9"	15 3/4"
63A42	41"	46 7/8"	47 1/8"	9"	15 3/4"
63A54	54"	65"	65 1/2"	9"	18 3/8"



3700 & 6700 SERIES - DOUBLE FACED CLOCKS

Style # Square	Style # Round	A"	B"	C"	D"	E"
3715	6715	15"	17 3/8"	17 5/8"	8"	12 3/8"
3724	6724	24"	26 3/8"	26 5/8"	10"	14 3/8"
3730	6730	30"	32 3/8"	32 5/8"	10"	14 7/8"
3736	6736	36"	38 3/8"	38 5/8"	9"	15 5/8"
3742	6742	41"	43 7/8"	44 1/8"	9"	15 5/8"
3748	6748	47"	49 7/8"	50 1/8"	9"	15 5/8"

Fixture Type L5

WST LED

Architectural Wall Sconce

Catalog Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

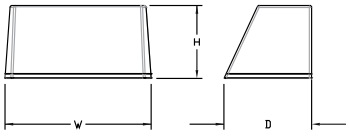
Luminaire

Height: 8-1/2″ *(21.59 cm)*

Width: 17″ *(43.18 cm)*

Depth: 10-3/16″ *(25.9 cm)*

Weight: 20 lbs *(9.1 kg)*

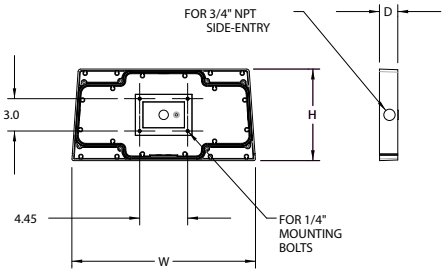


Optional Back Box (PBBW)

Height: 8.49″ *(21.56 cm)*

Width: 17.01″ *(43.21 cm)*

Depth: 1.70″ *(4.32 cm)*

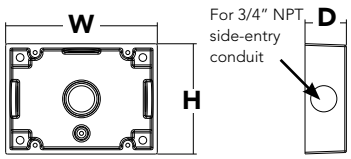


Optional Back Box (BBW)

Height: 4″ *(10.2 cm)*

Width: 5-1/2″ *(14.0 cm)*

Depth: 1-1/2″ *(3.8 cm)*



A+ Capable Luminaire

This item is an A+ capable luminaire, which has been designed and tested to provide consistent color appearance and system-level interoperability.

- All configurations of this luminaire meet the Acuity Brands' specification for chromatic consistency
- This luminaire is A+ Certified when ordered with DTL® controls marked by a shaded background. DTL DLL equipped luminaires meet the A+ specification for luminaire to photocontrol interoperability1
- This luminaire is part of an A+ Certified solution for ROAM® or XPoint™ Wireless control networks, providing out-of-the-box control compatibility with simple commissioning, when ordered with drivers and control options marked by a shaded background[1]

To learn more about A+, visit www.acuitybrands.com/aplus.

See ordering tree for details.

A+ Certified Solutions for ROAM require the order of one ROAM node per luminaire. Sold Separately: Link to Roam; Link to DTL DLL

A+ Capable options indicated by this color background.

Ordering Information

EXAMPLE: WST LED P1 40K VF MVOLT DDBTXD

WST LED

Series	Performance Package	Color temperature	Distribution	Voltage	Mounting
WST LED	P1 1,500 Lumen package P2 3,000 Lumen package P3 6,000 Lumen package	27K 2700 K 30K 3000 K 40K 4000 K 50K 5000 K	VF Visual comfort forward throw VW Visual comfort wide	MVOLT[1] 120[2] 208[2] 240[2] 277[2] 347[2] 480[2]	**Shipped included** (blank) Surface mounting bracket **Shipped separately** BBW Surface-mounted back box[3] PBBW Premium surface-mounted back box[3,4]

Options

PE	Photoelectric cell, button type [5]
PER	NEMA twist-lock receptacle only (controls ordered separate) [6]
PER5	Five-wire receptacle only (controls ordered separate) [6]
PER7	Seven-wire receptacle only (controls ordered separate) [6]
PIR	Motion/Ambient Light Sensor, 8-15' mounting height[7,8]
PIR1FC3V	Motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 1fc[7,8]
PIRH	180° motion/ambient light sensor, 15-30' mounting height[7,8]
PIRH1FC3V	Motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 1fc[7,8]
SF	Single fuse (120, 277, 347V)[2]
DF	Double fuse (208, 240, 480V)[2]
DS	Dual switching[9]
E7WH	Emergency battery backup, Non CEC compliant (7W)[10]
E7WC	Emergency battery backup, Non CEC compliant (cold, 7W)[10,11]
E7WHR	Remote emergency battery backup, Non CEC compliant (remote 7W)[10,12]
E20WH	Emergency battery pack 18W constant power, CEC compliant[10]
E20WC	Emergency battery pack -20°C 18W constant power, CEC compliant[10,11]
E23WHR	Remote emergency battery backup, Non CEC compliant (remote 20W)[10,11,13]
LCE	Left side conduit entry[14]
RCE	Right side conduit entry[14]

Shipped separately

RBPW	Retrofit back plate[3]
VG	Vandal guard[15]
WG	Wire guard[15]

Finish *(required)*

DDBXD	Dark bronze
DBLXD	Black
DNAXD	Natural aluminum
DWHXD	White
DSSXD	Sandstone
DDBTXD	Textured dark bronze
DBLBXD	Textured black
DNATXD	Textured natural aluminum
DWHGXD	Textured white
DSSTXD	Textured sandstone

Accessories

Ordered and shipped separately.

WSTVCPBBW DDBXD U	Premium Surface - mounted back box
WSBBW DDBTX U	Surface - mounted back box
RBPW DDBXD U	Retrofit back plate

NOTES

1 MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
2 Single fuse (SF) requires 120V, 277V or 347V. Double fuse (DF) requires 208V, 240V or 480V.
3 Also available as a separate accessory; see accessories information.
4 Top conduit entry standard.
5 Need to specify 120, 208, 240 or 277 voltage.
6 Photocell ordered and shipped as a separate line item from Acuity Brands Controls. Shorting Cap included.
7 Not available with VG or WG. See PER Table.
8 Reference Motion Sensor table.
9 Not available with Emergency options, PE or PER options.
10 Not available with 347/480V.
11 Battery pack rated for -20° to 40°C.
12 Comes with PBBW.
13 Warranty period is 3-years.
14 Not available with BBW.
15 Must order with fixture; not an accessory.

Emergency Battery Operation

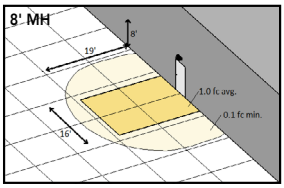
The emergency battery backup is integral to the luminaire — no external housing required! This design provides reliable emergency operation while maintaining the aesthetics of the product.

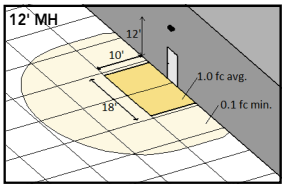
All emergency backup configurations include an independent secondary driver with an integral relay to immediately detect AC power loss, meeting interpretations of NFPA 70/NEC 2008 - 700.16

The emergency battery will power the luminaire for a minimum duration of 90 minutes (maximum duration of three hours) from the time supply power is lost, per International Building Code Section 1006 and NFPA 101 Life Safety Code Section 7.9, provided luminaires are mounted at an appropriate height and illuminate an open space with no major obstructions.

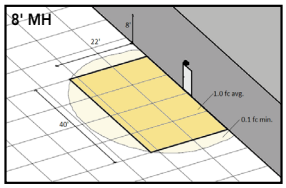
The examples below show illuminance of 1 fc average and 0.1 fc minimum of the P1 power package and VF distribution product in emergency mode.

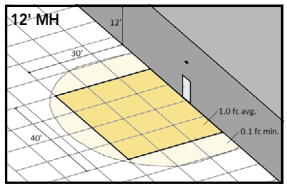
10' x 10' Gridlines
8' and 12' Mounting Height





WST LED P1 27K VF MVOLT E7WH





WST LED P2 40K VF MVOLT E20WH

Performance Data

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.03
10°C	50°F	1.02
20°C	68°F	1.01
25°C	**77°F**	**1.00**
30°C	86°F	0.99
40°C	104°F	0.98

Projected LED Lumen Maintenance

Values calculated according to IESNA TM-21-11 methodology and valid up to 40°C.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	>0.95	>0.92	>0.87

Electrical Load

Performance package	System Watts	Current (A)					
		120	208	240	277	347	480
P1	11	0.1	0.06	0.05	0.04	---	---
	14	---	---	---	---	0.04	0.03
P1 DS	14	0.12	0.07	0.06	0.06	---	---
P2	25	0.21	0.13	0.11	0.1	---	---
	30	---	---	---	---	0.09	0.06
P2 DS	25	0.21	0.13	0.11	0.1	---	---
P3	50	0.42	0.24	0.21	0.19	---	---
	56	---	---	---	---	0.16	0.12
P3 DS	52	0.43	0.26	0.23	0.21	---	---

Motion Sensor Default Settings

Option	Dimmed State	High Level (when triggered)	Photocell Operation	Ramp-up Time	Dwell Time	Ramp-down Time
*PIR or PIRH	3V (37%) Output	10V (100%) Output	Enabled @ 5FC	3 sec	5 min	5 min
PIR1FC3V or PIRH1FC3V	3V (37%) Output	10V (100%) Output	Enabled @ 1FC	3 sec	5 min	5 min

*for use with centrilize Dusk to Dawn

PER Table

Control	PER (3 wire)	PER5 (5 wire)		PER7 (7 wire)		
			Wire 4/Wire5		Wire 4/Wire5	Wire 6/Wire7
Photocontrol Only (On/Off)	✓	⚠	Wired to dimming leads on driver	⚠	Wired to dimming leads on driver	Wires Capped inside fixture
ROAM	⊘	✓	Wired to dimming leads on driver	⚠	Wired to dimming leads on driver	Wires Capped inside fixture
ROAM with Motion	⊘	⚠	Wired to dimming leads on driver	⚠	Wired to dimming leads on driver	Wires Capped inside fixture
Futureproof*	⊘	⚠	Wired to dimming leads on driver	✓	Wired to dimming leads on driver	Wires Capped inside fixture
Futureproof* with Motion	⊘	⚠	Wired to dimming leads on driver	✓	Wired to dimming leads on driver	Wires Capped inside fixture

✓ Recommended

⊘ Will not work

⚠ Alternate

*Futureproof means: Ability to change controls in the future.

Lumen Output

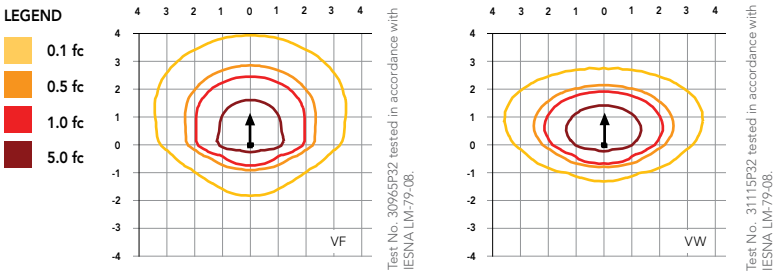
Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts.

Performance Package	System Watts (MVOLT[1])	Dist. Type	27K (2700K, 70 CRI)					30K (3000K, 70 CRI)					40K (4000K, 70 CRI)					50K (5000K, 70 CRI)				
			Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P1	12W	VF	1,494	0	0	0	125	1,529	0	0	0	127	1,639	0	0	0	137	1,639	0	0	0	137
		VW	1,513	0	0	0	126	1,548	0	0	0	129	1,659	0	0	0	138	1,660	0	0	0	138
P2	25W	VF	3,163	1	0	1	127	3,237	1	0	1	129	3,469	1	0	1	139	3,468	1	0	1	139
		VW	3,201	1	0	0	128	3,276	1	0	0	131	3,512	1	0	0	140	3,512	1	0	0	140
P3	50W	VF	6,025	1	0	1	121	6,165	1	0	1	123	6,609	1	0	1	132	6,607	1	0	1	132
		VW	6,098	1	0	1	122	6,240	1	0	1	125	6,689	1	0	1	134	6,691	1	0	1	134

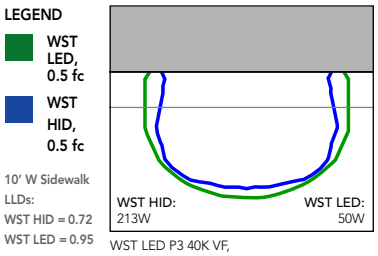
Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's WST LED homepage.

Isofootcandle plots for the WST LED P3 40K VF and VW. Distances are in units of mounting height (10').



Distribution overlay comparison to 175W metal halide.



WST LED P3 40K VF,
WST 175M FT Probe, 12' Mounting Ht

FEATURES & SPECIFICATIONS

INTENDED USE
The classic architectural shape of the WST LED was designed for applications such as hospitals, schools, malls, restaurants, and commercial buildings. The long life LEDs and driver make this luminaire nearly maintenance-free.

CONSTRUCTION
The single-piece die-cast aluminum housing integrates secondary heat sinks to optimize thermal transfer from the internal light engine heat sinks and promote long life. The driver is mounted in direct contact with the casting for a low operating temperature and long life. The die-cast door frame is fully gasketed with a one-piece solid silicone gasket to keep out moisture and dust, providing an IP65 rating for the luminaire.

FINISH
Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Standard Super Durable colors include dark bronze, black, natural aluminum, sandstone and white. Available in textured and non-textured finishes.

OPTICS
Well crafted reflector optics allow the light engine to be recessed within the luminaire, providing visual comfort, superior distribution, uniformity, and spacing in wall-mount applications. The WST LED has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL
Light engine(s) consist of 98 high-efficacy LEDs mounted to a metal core circuit board and integral aluminum heat sinks to maximize heat dissipation and promote long life (100,000 hrs at 40°C, L87). Class 2 electronic driver has a power factor >90%, THD <20%. Easily-serviceable surge protection device meets a minimum Category B (per ANSI/IEEE C62.41.2).

INSTALLATION
A universal mounting plate with integral mounting support arms allows the fixture to hinge down for easy access while making wiring connections.

LISTINGS
CSA certified to U.S. and Canadian standards. Luminaire is IP65 rated. PIR and back box options are rated for wet location. Rated for -30°C to 40°C ambient.

DesignLights Consortium® (DLC) Premium qualified product. Not all versions of this product may be DLC Premium qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

WARRANTY
5-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx.

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

Champ VMV LED luminaires

Cl. I, Div. 2, Groups A, B, C, D
Cl. I, Zone 2, nA nR
Cl. II, Groups E, F, G
Cl. III & Simultaneous Presence

UL/cUL Listed
IECEx/ATEX/CE
Wet Locations
Type 4X; IP66

The Champ VMV LED family:

Champ® VMV LED luminaires are designed to provide full-spectrum, crisp, white light with custom IES Type I, III and V distribution. Nine versions of the VMV LED are available, providing ideal solutions for a wide range of applications.

Model	Typical lumens (Type V)[A]	Watts	Lumens per watt	Equivalent HID luminaire	Typical energy savings / lifetime
VMV3L	3,531	29	122	70W-100W	Up to 77%
VMV5L	5,335	43	124	100W-150W	Up to 67%
VMV7L	7,195	62	116	150W-175W	Up to 67%
VMV9L	9,266	85	109	250W-320W	Up to 74%
VMV11L	11,440	113	101	320W-400W	Up to 74%
VMV13L	13,226	130	102	400W	Up to 68%
VMV17L	18,793	168	112	400W-600W	Up to 72%
VMV21L	22,110	196	113	600W-750W	Up to 74%
VMV25L	26,531	232	114	750W-1000W	Up to 77%

Applications:

- For areas with mounting heights of 8-60 feet
- Oil and gas refineries, drilling rigs, petrochemical facilities, food and beverage facilities, platforms, loading docks, tunnels, indoor/outdoor spotlighting, outdoor wall and stanchion mounted general area lighting, and where flammable vapors, gases, ignitable dusts, fibers or flyings are present
- Locations requiring continuous and consistent light levels in extreme ambient temperatures
- Where extremely corrosive, wet, dusty, hot and/or cold conditions exist
- Classified and hazardous locations

Features:

- Instant illumination and restrike
- Cold temperature operation/no warm-up required
- Option for redundancy in drivers with multiple series circuits connected to each driver to avoid complete loss of illumination
- Easy installation – compact modular fixture attaches onto existing Champ mounting module
- Energy-efficient technology – up to 64% energy savings over HID fixtures
- Contains no mercury or other hazardous substances
- Shock- and vibration-resistant solid-state luminaires have no filaments or glass components that could break – greatly reduces the risk of premature failure
- Operating ambient: -40°C to 65°C (VMV3L-VMV11L models); -40°C to 55°C (VMV13L-VMV25L models)
- 5 year fixture warranty[B]

Certifications and compliances:

- DesignLights Consortium® Qualified (some models are not DLC qualified)[C]

NEC/CEC:

- Class I, Division 2, Groups A, B, C, D; Class I, Zone 2, nA nR; Class II, Groups E, F, G; Class III
- Zone 21 tb
- Simultaneous Presence
- Wet locations, Type 4X, IP66

UL standards:

- UL844; UL1598 – Luminaires; UL1598A – Marine; UL8750; UL50; UL50E

CSA standard:

- cUL Listed to CSA standard CSA C22.2 No. 137

IEC: [D]

- IEC 60079-0:2011; IEC 60079-15:2010; IEC 60079-31:2008; IEC 60598-2-1:1979; IEC 60529:2001
- Ex nA nR IIC T* Gc -40 to +40
- Ex nA nR IIC T* Gc -40 to +55
- Ex nA nR IIC T* Gc -40 to +65
- Ex tb IIIC T*°C Db -40 to +40
- Ex tb IIIC T*°C Db -40 to +55
- Ex tb IIIC T*°C Db -40 to +65

VMV3L-VMV11L only

- IECEx UL 13.0052X

VMV13L-VMV25L only

- IECEx UL 14.0031X

Certifications and compliances (continued):

ATEX/CE: [D]

- EN 60079-0:2012; EN 60079-15:2010; EN 60079-31:2009; EN 60598-2-1:1989; EN 60929:1991 +A1:2001
- Ex II 3 G Ex nA nR IIC T* Gc -40 to +40
- Ex II 3 G Ex nA nR IIC T* Gc -40 to +55
- Ex II 3 G Ex nA nR IIC T* Gc -40 to +65
- Ex II 2 D Ex tb IIIC T*°C Db IP66 -40 to +40
- Ex II 2 D Ex tb IIIC T*°C Db IP66 -40 to +55
- Ex II 2 D Ex tb IIIC T*°C Db IP66 -40 to +65

VMV3L-VMV11L only

- DEMKO 13 ATEX 1475031X; DEMKO 13 ATEX 1305741X

VMV13L-VMV25L only

- DEMKO 14 ATEX 1324722X; DEMKO 14 ATEX 2274231X

Standard materials:

- Lamp housing and adapter – die cast aluminum with Corro-free epoxy powder coat
- Lens – heat- and impact-resistant glass
- Gaskets – silicone
- External hardware – stainless steel
- Factory sealed, no external seals required

Photometrics:

- Complete photometrics can be found at www.crouse-hinds.com/photometrics

[A] Tolerance +/- 10%.

[B] Refer to page 2 of the current authorized distributor price book for Eaton's standard Terms and Conditions.

[C] Approved models include: VMV3L/UNV1; VMV5L/UNV1; VMV7L/UNV1; VMV9L/UNV1; VMV11L/UNV1; VMV13L/UNV1; VMV17L/UNV1; VMV21L/UNV1; VMV25L/UNV1; VMV3L/UNV34; VMV5L/UNV34; VMV7L/UNV34; VMV9L/UNV34; VMV11L/UNV34. Refer to www.designlights.org Qualified Products List under family models for full listing details. Not all models are approved for all application categories.

[D] VMV3L-VMV11L/UNV1 rated to +65°C; VMV13L-VMV25L and VMV3L-VMV11L/UNV34 rated to +55°C.

*See temperature code table on following page.

Champ VMV LED luminaires

Cl. I, Div. 2, Groups A, B, C, D
Cl. I, Zone 2, nA nR
Cl. II, Groups E, F, G
Cl. III & Simultaneous Presence

UL/cUL Listed
IECEx/ATEX/CE
Wet Locations
Type 4X; IP66

LED system:

- High intensity discrete power emitters
- Cool white (5000K, 70 CRI) (standard); warm white (3000K, 80 CRI) or neutral white (4000K, 70 CRI) (optional)
- Custom Type I, III and V optics available
- Optics clocking in field to align Type I and Type III light patterns to illumination path for VMV13L-VMV25L

Drivers:

Option	Voltage
/UNV1	120-277 VAC, 50/60 Hz; 108-250 VDC, 50/60 Hz
/UNV34	347-480 VAC, 50/60 Hz

Custom optics:

Three optical options to maximize light distribution and intensity:

TYPE I

Long and rectangular for hallways, walkways, loading docks, catwalks.

Ideal for:

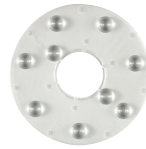
- Mining conveyor belts
- Aisleways and hallways
- Catwalks and walkways
- Ramps and loading docks
- Tunnels with overhead mounts

TYPE III

Wall mount light distribution, minimizing spillover on the wall.

Ideal for:

- Narrow crosswalks or passages with wall mounted fixtures
- Tunnels with wall mount
- Wall or stanchion mount requiring 180° forward throw beam patterns



TYPE V

Regular circular distribution pattern for high/low bay indoor and outdoor ceiling or pendant mount lighting.

Ideal for:

- Pendant, ceiling or stanchion mount overhead building mounts
- Processing mills, industrial plants, large buildings, warehouses, etc.

Colored LED options:

- Available in green and amber[E]
- Reduction in light pollution for night space observation and sky glow due to isolating blue wavelength in red and amber colors
- Wildlife-friendly
- Improves visibility for telescopes in observatories during night sky space exploration

Electrical ratings:

	VMV3L	VMV5L	VMV7L	VMV9L	VMV11L	VMV13L	VMV17L	VMV21L	VMV25L
Voltage range, VAC	120-277	120-277	120-277	120-277	120-277	120-277	120-277	120-277	120-277
Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Input power (watts)	29	43	62	85	113	131	168	196	232
Input amps at 120-277 VAC	0.24 - 0.11	0.35 - 0.16	0.52 - 0.23	0.71 - 0.31	0.95 - 0.41	1.08 - 0.48	1.40 - 0.62	1.64 - 0.73	1.94 - 0.87
Voltage range, VDC	108-250	108-250	108-250	108-250	108-250	108-250	108-250	108-250	108-250
Power factor	>0.90	>0.90	>0.90	>0.90	>0.90	>0.90	>0.90	>0.90	>0.90
Total harmonic distortion (THD)	<20%	<20%	<20%	<20%	<20%	<20%	<20%	<20%	<20%
Nominal lumens (Type V)[F]	3,531	5,335	7,195	9,266	11,440	13,226	18,793	22,110	26,531

Temperature performance data:

					Simultaneous rating	Class I, Zone 2	Class III, Div. 1 Class II, Div. 1, Groups E, F, G
Lamp / lumen output	Driver type	Ambient temp. °C	Class I, Div. 2	Class II, Div. 1	Class I, Div. 2; Div. 1	AEx nA nR; Ex nA nR	Zone 21, AEx tb IIIC
3L, 5L, 7L, 9L, 11L	/UNV1	40	T5	T5	T3C	T6	T66°C
3L, 5L, 7L, 9L, 11L	/UNV1	55	T5	T4A	T3A	T5	T83°C
3L, 5L, 7L, 9L, 11L	/UNV1	65	T4A	T4A	T3A	T4	T92°C
3L, 5L, 7L, 9L, 11L	/UNV34	40	T3C	T5	T3C	T4	T70°C
3L, 5L, 7L, 9L, 11L	/UNV34	55	T3A	T4A	T3A	T4	T85°C
3L, 5L, 7L, 9L, 11L	/UNV34	65	T3A	T4A	T3A	T4	T92°C
13L, 17L	/UNV1; UNV34	40	T4A	T5	T4A	T6	T66°C
13L, 17L	/UNV1; UNV34	55	T4	T4A	T4	T5	T81°C
21L, 25L	/UNV1; UNV34	40	T4A	T5	T4A	T6	T71°C
21L, 25L	/UNV1; UNV34	55	T4	T4A	T4	T5	T86°C

[E] Custom optics not available with colored LEDs. One model per color; see catalog numbering system on following page.

[F] Tolerance +/- 10%.

Champ VMV LED luminaires

Cl. I, Div. 2, Groups A, B, C, D
Cl. I, Zone 2, nA nR
Cl. II, Groups E, F, G
Cl. III & Simultaneous Presence

UL/cUL Listed
IECEx/ATEX/CE
Wet Locations
Type 4X; IP66

Ordering information:

Part number example
VMV17LW2AR1G/UNV1 S890

VMV 17L W 2A R1 G /UNV1 S890

Lamp / function

3L	3,531 lumen LED
5L	5,335 lumen LED
7L	7,195 lumen LED
9L	9,226 lumen LED
11L	11,440 lumen LED
13L	13,226 lumen LED
17L	18,793 lumen LED
21L	22,110 lumen LED
25L	26,531 lumen LED
GLG	Green (4,300 lumen LED)
ALG	Amber (5,000 lumen LED)

Color temperature

BLANK	Cool (5000K)
N	Neutral (4000K)
W	Warm (3000K)

Consult factory for additional color temperature options.

Mounting style

BLANK	No cover	**2C**	¾" ceiling
JH	1-½" stanchion, 25° angled	**3C**	1" ceiling
P	1-½" stanchion, straight	**20C**	20mm ceiling
2A	¾" pendant	**25C**	25mm ceiling
3A	1" pendant	**2HA**	¾" flexible pendant
20A	20mm pendant	**2TW**	¾" wall
25A	25mm pendant	**3TW**	1" wall
2B	¾" cone pendant	**20TW**	20mm wall
3B	1" cone pendant	**25TW**	25mm wall

Optics

BLANK	Type V optic standard *(all mounts)*
R1	Type I optic *(all mounts minus ceiling for 3L-11L, available with mounts for 13L-25L models)*
R1AH	Type I optic *(ceiling with conduit 45° counterclockwise or 135° clockwise from hinge)*
R1BH	Type I optic *(ceiling with conduit 45° clockwise or 135° counterclockwise from hinge)*
R3	Type III optic *(all mounts minus ceiling)*
R3APH	Type III optic *(select when using Appleton® top hat adapter with Champ fixture)*
R3A1H	Type III optic *(ceiling with conduit 45° counterclockwise from top hat hinge)*
R3A2H	Type III optic *(ceiling with conduit 135° clockwise from top hat hinge)*
R3B1H	Type III optic *(ceiling with conduit 45° clockwise from top hat hinge)*
R3B2H	Type III optic *(ceiling with conduit 135° counterclockwise from top hat hinge)*

Guard

BLANK	No guard
G	P3001 wire guard

Voltage

/UNV1	120-277 VAC, 50/60 Hz; 108-250 VDC, 50/60 Hz
/UNV34	347-480 VAC, 50/60 Hz

Options

S812I	Trunnion mount kit with pin
S831J	Safety cable
S890	Quick clip
S891J	Diffused lens
S892K	Redundant driver
S896J	Teflon coated lens
S903	Polycarbonate lens
TB6	Six-pole terminal block

Accessories (ordered separately):

Description	Cat. #
• Photocell, 120V, 50/60 Hz	**D2S20**
• Photocell, 208-277V	**D2S208 277**
• Trunnion mount kit with pin	**VMVL S812 K1**I
• Wire guard with captive mounting hardware	**P3001**
• Top hat adapter	**CHMM1**

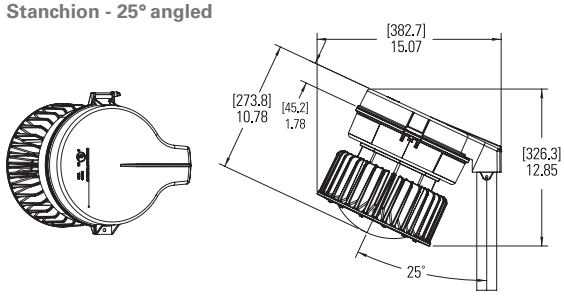
For retrofitting Appleton MercMaster III top hats to Champ VMV luminaires

CHMM1

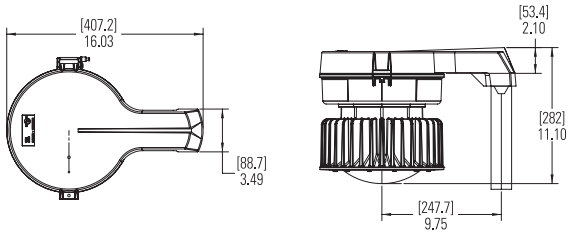
G Custom optics not available with colored LEDs.
H For VMV3L-VMV11L only.
I Order with ceiling mount only.
J Not available for IEC.
K Available for VMV5L and VMV7L only. Redundant driver standard on VMV9L-VMV25L models. 7L = 6,616 lumens with S892 suffix.

Dimensions:

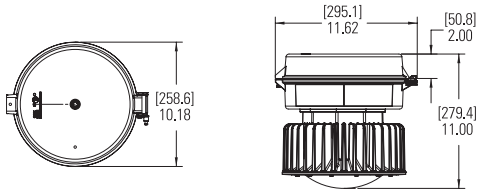
Stanchion - 25° angled



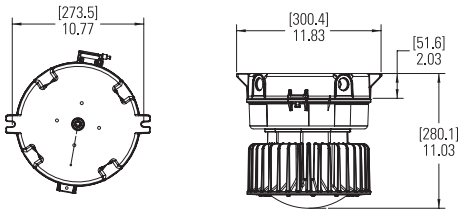
Stanchion - straight



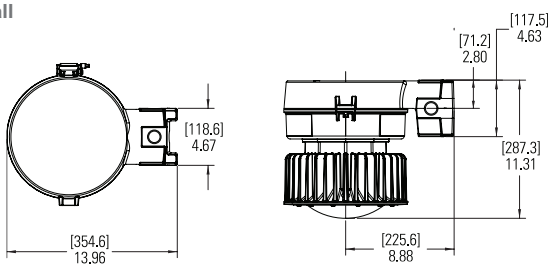
Pendant



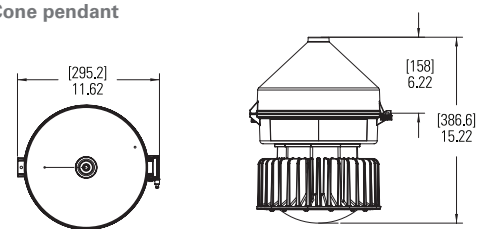
Ceiling



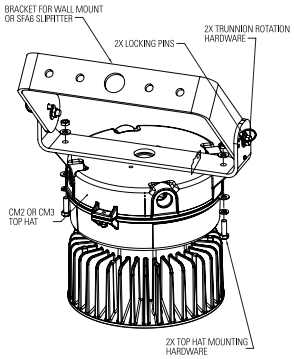
Wall



Cone pendant



Trunnion



Net luminaire weights:

Model	Lbs.	Kg.
VMV3L-VMV11L	21.80	8.07
VMV13L & VMV17L	36.00	16.32
VMV21L & VMV25L	44.00	19.95
Add mounting modules:		
Pendant	1.25	0.57
Cone pendant	4.00	1.81
Flexible pendant	1.50	0.68
Ceiling	2.75	1.25
Wall	4.50	2.04
Angled stanchion[L]	3.50	1.59
Straight stanchion	4.50	2.04

[L] Angled stanchion for VMV3L-VMV11L models only.

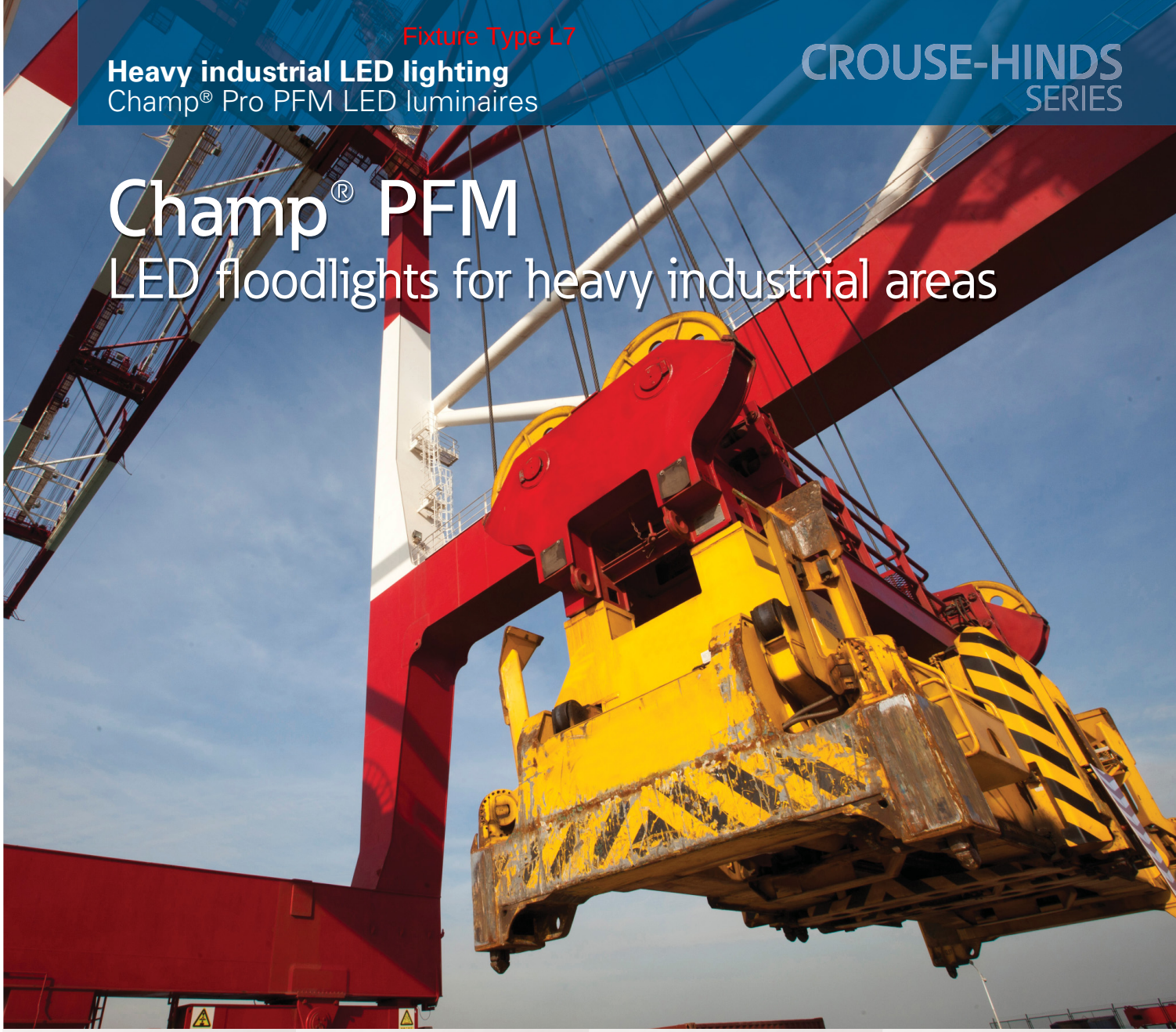
Fixture Type L7

Heavy industrial LED lighting
Champ® Pro PFM LED luminaires

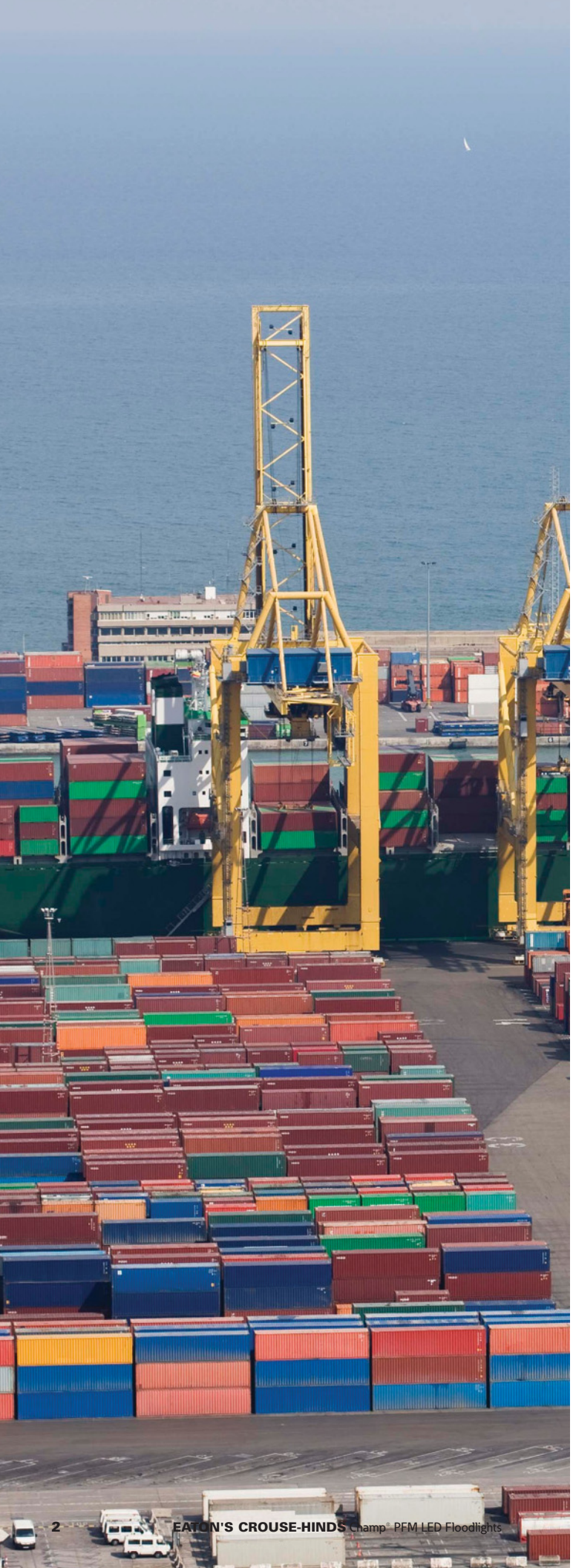
CROUSE-HINDS SERIES

Champ® PFM

LED floodlights for heavy industrial areas



EATON
Powering Business Worldwide



Safe. Reliable. Efficient.

Featuring the industry's broadest range of LED luminaires for harsh and heavy industrial environments, Eaton's Crouse-Hinds can deliver a lighting solution that performs reliably in even the worst operating conditions. All the while reducing your energy, maintenance and manpower costs.

Why LED?

Energy efficiency
LED average energy consumption is significantly less than traditional fluorescent and HID fixtures

Start/restart time
Instant illumination vs. 10 minute restrike time for HID

Light quality
Higher color rendering compared to fluorescent and HID

Environmental benefits
Mercury-free LED eliminates disposal costs and lower energy consumption for a smaller carbon footprint

Why Crouse-Hinds?

Industry-best reliability
Built to withstand a wide array of applications

Thermal management
Effective heat sinking ensures longer life

Quality of light
Custom optics designed to maximize light distribution and intensity

Globally certified
Designed to global specifications for IEC and NEC applications

Serviceable drivers
Easy access to drivers for service or replacement

Why PFM LED?

Reliable floodlights. PFM LED luminaires are engineered to deliver high lumen output and maintenance-free long life in the toughest conditions.

Versatile design

- Can be used for outdoor or indoor applications, and for a wide range of mounting heights depending on model and light level requirement

Smaller and lighter

- 25% smaller footprint than previous model
- 10 lbs. (4.5 kg) less weight than previous model

Full frame yoke

- Designed to utilize the SFA6 slipfitter and SWB6 wall mount bracket, making it ideal for retrofit or new installations

High lumen output:

- Up to 117 lumens per watt
- Up to 72% energy savings over traditional HID fixtures (compared to 400W MH)

Multiple lens options:

- Tempered clear glass lens standard
- Polycarbonate and diffused glass lens options available

Rugged heat sink

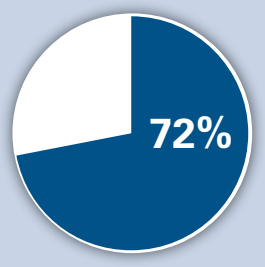
- Heat sink designed to perform and provide maximum light levels in high ambient temperatures up to +65°C and as low as -40°C
- Thick walled castings make for a tough, rugged housing that keeps the internal driver and LED temperature down

LED vs. HID savings at a glance

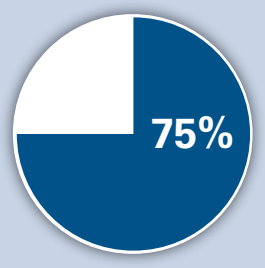
Why are so many facilities making the switch from HID to LED?

The numbers say it all.

PFM13L/UNV1 vs. 400 watt HID



72% REDUCTION IN ENERGY COSTS



75% LOWER TOTAL COST OF OWNERSHIP

100% MAINTENANCE REDUCTION

Assumptions: Calculations based on overall life of the LED system. Energy cost of $.09 per kilowatt; 24 hour per day operation; labor rate of $75 each for 2 workers; average time for fixture maintenance of 1 hour.

Features & specifications

Champ Pro PFM series LED floodlights

Champ PFM LED floodlights are designed to provide full-spectrum, crisp, white light. Seven versions of the Champ PFM are available, from 3,000 to 13,000 lumens, providing ideal solutions for a wide range of harsh and heavy industrial applications.

Up to 75% reduction in energy costs and 150,000 hours of continuous operation.

Model number	Nominal lumens*	Wattage	Lumens per watt	Equivalent HID luminaire
PFM3L	3,189	28	114	70W-100W
PFM5L	5,183	45	115	100W-150W
PFM7L	7,095	62	114	150W-175W
PFM9L	9,132	79	116	175W-250W
PFM11L	11,107	99	112	250W-400W
PFM13L	13,100	112	117	400W
PFM15L	15,181	131	116	450W+

*Tolerance +/- 10%; @120 VAC, 25°C ambient, 7x6 optics.

Applications:

- Locations requiring continuous and consistent light levels in extreme ambient temperatures
- Areas requiring frequent on-and-off of lights
- Where extremely corrosive, wet, dusty, hot and/or cold conditions exist
- Manufacturing plants; heavy industrial, chemical, food and beverage facilities; mining; platforms; loading docks; tunnels; outdoor wall and pole mounted areas

LED system:

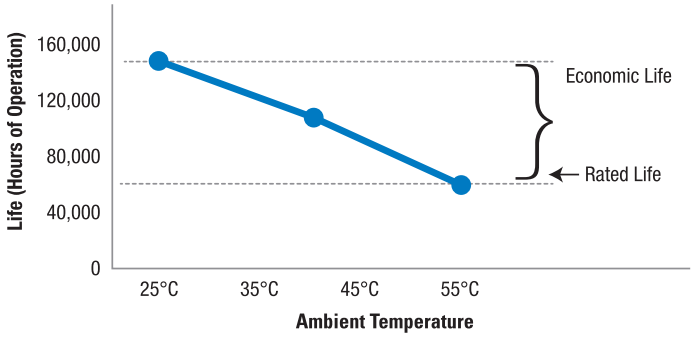
- Cool white (5000K, 70 CRI) and warm white (3000K, 80 CRI)
- Custom designed optics – 7x6 standard, 3x3 optional (3L-11L)

Champ PFM LED benefits:

- Instant illumination and restrike
- Better visibility with crisp, white light
- Cold temperature operation / no warm-up required
- Serviceable drivers
- Easy installation – yoke design to mount to SFA6
- Energy-efficient technology – up to 72% energy savings over HID fixtures
- 60,000 hours of rated life at 55°C – eliminates need for frequent lamp replacement
- Contains no mercury or other hazardous substances
- Shock- and vibration-resistant solid-state luminaires have no filaments or glass components that could break – greatly reduces the risk of premature failure
- Operating ambient -40°C to 65°C
- 5 year fixture warranty‡

‡Extension of standard terms and conditions to five years. Refer to page 2 of the D-0914 authorized distributor price book for Crouse-Hinds standard Terms and Conditions.

LED system lifetime rated versus economic life:



Economic life can range anywhere between 50,000 to 150,000 hours, or 5 to 20 years of maintenance-free operation.

Fixture life and years of maintenance-free operation

Ambient temperature	Fixture life (hours)	No. of years at 24 hours usage	No. of years at 12 hours usage
25°C	150,000	17	34
40°C	90,000	10	20
55°C	60,000	7	14

*50,000 hours of life at 65°C ambient.

Fixture life:

- Rated life of 60,000 hours @ 55°C operating ambient and 24/7 continuous operation for 365 days
- Economic life of 150,000 hours @ 25°C ambient
- L70 LED life >300,000 hours @ 55°C

Electrical ratings:

Model number	Input power (watts)	Input amps at 120-277 VAC
PFM3L	28.0 - 29.1	0.24 - 0.11
PFM5L	45.4 - 45.8	0.38 - 0.18
PFM7L	61.8 - 62.5	0.52 - 0.24
PFM9L	78.8 - 80.3	0.66 - 0.31
PFM11L	98.8 - 99.9	0.83 - 0.37
PFM13L	111.8 - 112.4	0.94 - 0.42
PFM15L	131.4 - 131.5	1.10 - 0.48

PFM3L - PFM15L	
UNV1 driver	100-277 VAC @ 50/60 Hz; 108-250 VDC @ 50/60 Hz
UNV34 driver	347-480 VAC @ 50/60 Hz,
Power factor	>0.9

Standard materials:

- Lamp housing and adapter – die cast aluminum with Corro-free™ epoxy powder coat
- Lens – heat- and impact-resistant glass (standard)
- Gaskets – silicone and neoprene
- External hardware – stainless steel

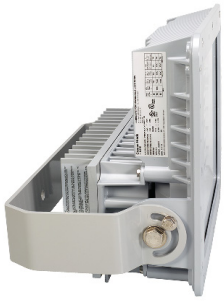
Qualifications and compliances:

- DesignLights Consortium® Qualified (some models are not DLC qualified)*

* Approved models include: PFM3L/UNV1; PFM5L/UNV1; PFM7L/UNV1; PFM9L/UNV1; PFM11L/UNV1; PFM13L/UNV1; PFM3L/UNV34; PFM5L/UNV34; PFM7L/UNV34; PFM9L/UNV34; PFM11L/UNV34; PFM13L/UNV34

7x6 optics on all approved models; 3x3 optics not DLC approved.

Refer to www.designlights.org Qualified Products List under family models for full listing details. Not all models are approved for all application categories.



Certifications and compliances:

NEC and CEC
- Wet Locations, Type 4X, IP66

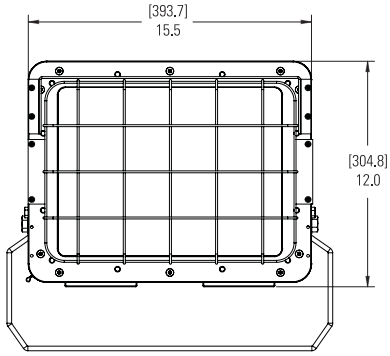
UL Standards
- UL1598 Luminaires, UL1598A Marine, UL8750

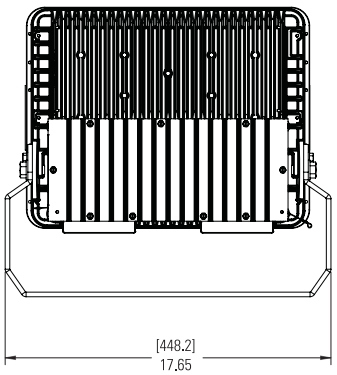
CSA Standard
- cUL Listed to CSA Standard CSA C22.2 No. 250

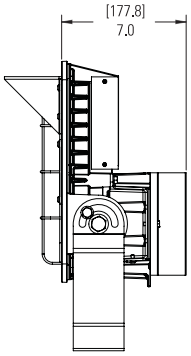
IEC Standard
- IEC 60598
- CE

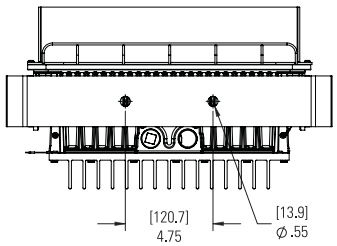
Weights and dimensions:

			Width		Height		Depth	
Model number	**Lbs.**	**Kg.**	**in.**	**mm.**	**in.**	**mm.**	**in.**	**mm.**
PFM3L-PFM7L	30.7	13.9	15.5	393.7	12.0	304.8	7.0	177.8
PFM9L-PFM15L	31.8	14.4	15.5	393.7	12.0	304.8	7.0	177.8









Ordering information

Part number example

PFM5LCY/UNV1D 76 S903

PFM 5L C Y /UNV1 D 76 S903

Model

PFM	NEC model

Light source/intensity

3L	3,189 nominal lumens*
5L	5,183 nominal lumens*
7L	7,095 nominal lumens*
9L	9,132 nominal lumens*
11L	11,107 nominal lumens*
13L	13,100 nominal lumens*
15L	15,181 nominal lumens*

*7x6 model.

Color temperature

C	5000K, 70 CRI (cool white)
W	3000K, 80 CRI (warm white)

Voltage

/UNV1	100-277 VAC, 50/60 Hz; 108-250 VDC
/UNV34	347-480 VAC 50/60 Hz

Mount

Y	Yoke

Options

S891	Diffused glass lens
S903	Polycarbonate lens

Entries

BLANK	¾" NPT
M20	20mm entry
M25	25mm entry

Optical distribution

76	7x6 floodlight pattern optics
33*	3x3 floodlight pattern optics

*3L - 11L only.

Dimming

D	Dimmable driver
BLANK	Non-dimmable

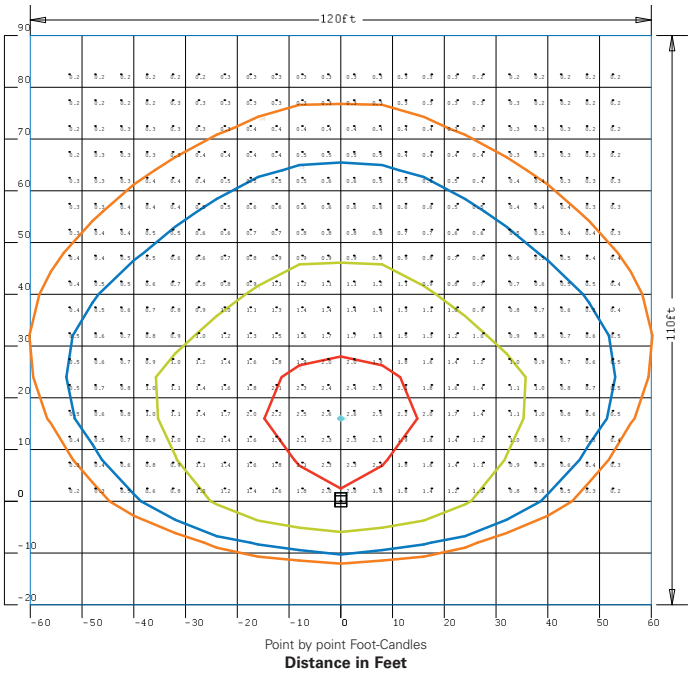
Accessories (ordered separately)

DSV2	Bolt-on visor
P62	Bolt-on wire guard
SC831	Safety cable
SFA6	Floodlight slipfitter
SWB6	Slipfitter wall mount adapter

Photometric data

7x6 optics

PFM13L Height: 40 ft.; Tilt angle: 45°



0.35 Fc 0.50 Fc 1.00 Fc 2.00 Fc 2.50 Fc

Effective projected area (ft.-sq.):

Position	PFM3L - PFM15L
@ 0° Tilt	1.5
@ 45° Backwards tilt	1.1
@ 60° Forward tilt	0.8

Lumen output for glass lens models

Optic	PFM3L	PFM5L	PFM7L	PFM9L	PFM11L	PFM13L	PFM15L
7x6	3,189	5,183	7,095	9,132	11,107	13,100	15,181
3x3	3,064	5,038	7,000	8,962	10,917	–	–

Lumen output for diffused glass lens (S891) models

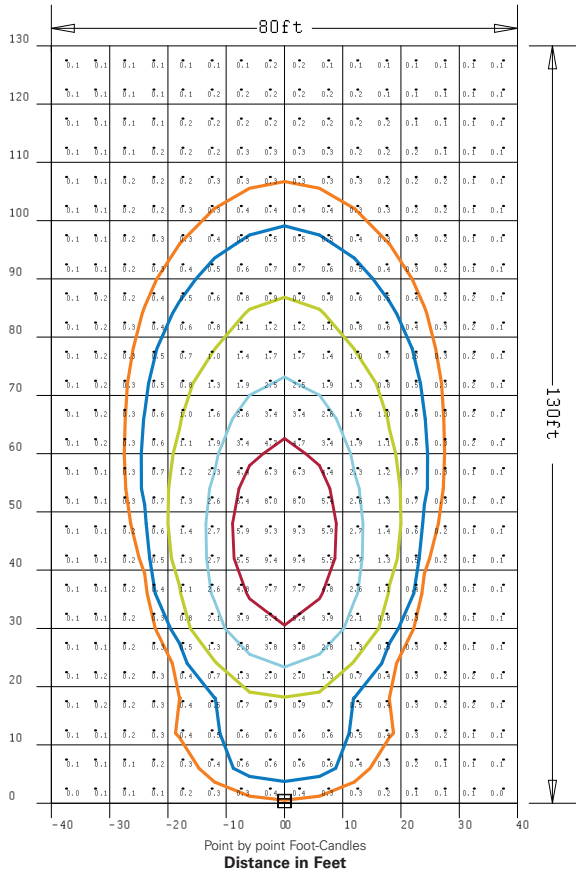
Optic	PFM3L	PFM5L	PFM7L	PFM9L	PFM11L	PFM13L	PFM15L
7x6	2,637	4,287	5,878	7,459	8,994	10,613	12,445
3x3	2,546	4,179	5,806	7,433	9,055	–	–

Lumen output for polycarbonate lens (S903) models

Optic	PFM3L	PFM5L	PFM7L	PFM9L	PFM11L	PFM13L	PFM15L
7x6	3,017	4,903	6,712	8,639	10,507	12,393	14,361
3x3	2,924	4,808	6,680	8,552	10,418	–	–

3x3 optics

PFM11L Height: 30 ft.; Tilt angle: 45°



0.35 Fc 0.50 Fc 1.00 Fc 2.50 Fc 5.00 Fc

Higher average footcandles/lux, uniformity and distribution coverage with 72% less energy consumption compared to 400W metal halide.

U.S. (global headquarters): Eaton's Crouse-Hinds business

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Printed in USA
Publication No. 5243-1215
December 2015

Powering Business Worldwide

Fixture Type X

COMPASS® Life Safety Products by Hubbell Lighting, Inc.

CU2W Series

Wet Location LED Emergency Unit

DESCRIPTION

The CU2W Series offers LED performance and value with a compact and attractive wet location LED based emergency light. The grey housing is made of corrosion resistant UV stabilized polycarbonate. Lamp-heads are fully adjustable, sealed and gasketed. Lamp-head consists of metallized high-performance reflector and 15 ultra-bright LED's with tempered glass lens. Includes external mounting brackets for ease of installation.

The CU2W has adequate capacity to run 1 CWRD double-head remote or 2 CWRS single-head remotes at 9.6VDC for 90 minutes.

tradeSELECT®

APPLICATION

The CU2W Series can be applied in areas that are susceptible to rain and severe moisture like pool areas, parking decks, and other commercial applications.

FEATURES

- LED life-cycle of more than 10 years
- Quick installation
- Dual-voltage 120 or 277V AC input
- Includes long-life 9.6VDC Nickel Cadmium battery for UL recognized 90 minute operation
- Remote capacity or extended runtime option
- Wet Location Listed (0°C to 50°C)
- Fully adjustable lamp-heads
- Provided with water-proof test switch and AC-On indicator

INPUT POWER REQUIREMENTS

Catalog Number	Input Watts (W)		Input Amps (A)	
	120 V	277 V	120 V	277 VAC
CU2W	2.7	2.7	0.03	0.013

STANDARDS, CERTIFICATION, AND COMPLIANCE

UL924 Listed for Wet Location
NFPA 101 and NFPA 70
OSHA

WARRANTY

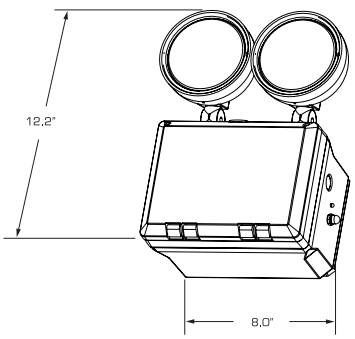
2 year full unit warranty

ORDERING GUIDE

Catalog Number	Description	Lamp Watts (Each)
CU2WG	Dual-Head Fully Adjustable, Grey Finish	1.875 watt
CU2WB	Dual-Head Fully Adjustable, Black Finish	1.875 watt

DIMENSIONS

CU2W



Single Carton Weight: 7.5 lbs.
Master Carton Quantity: 4 each

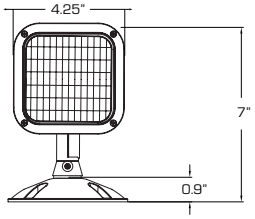
ACCESSORIES

CWRS- Die-Cast Outdoor Single-head LED Remote for CU2W Only, Grey Finish
CWRD- Die-Cast Outdoor Double-head LED Remote for CU2W Only, Grey Finish

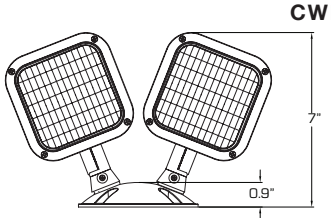
CWRS

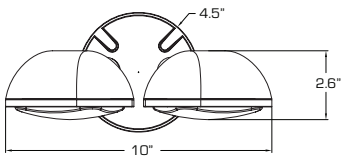
DIMENSIONS

CWRS



CWRD





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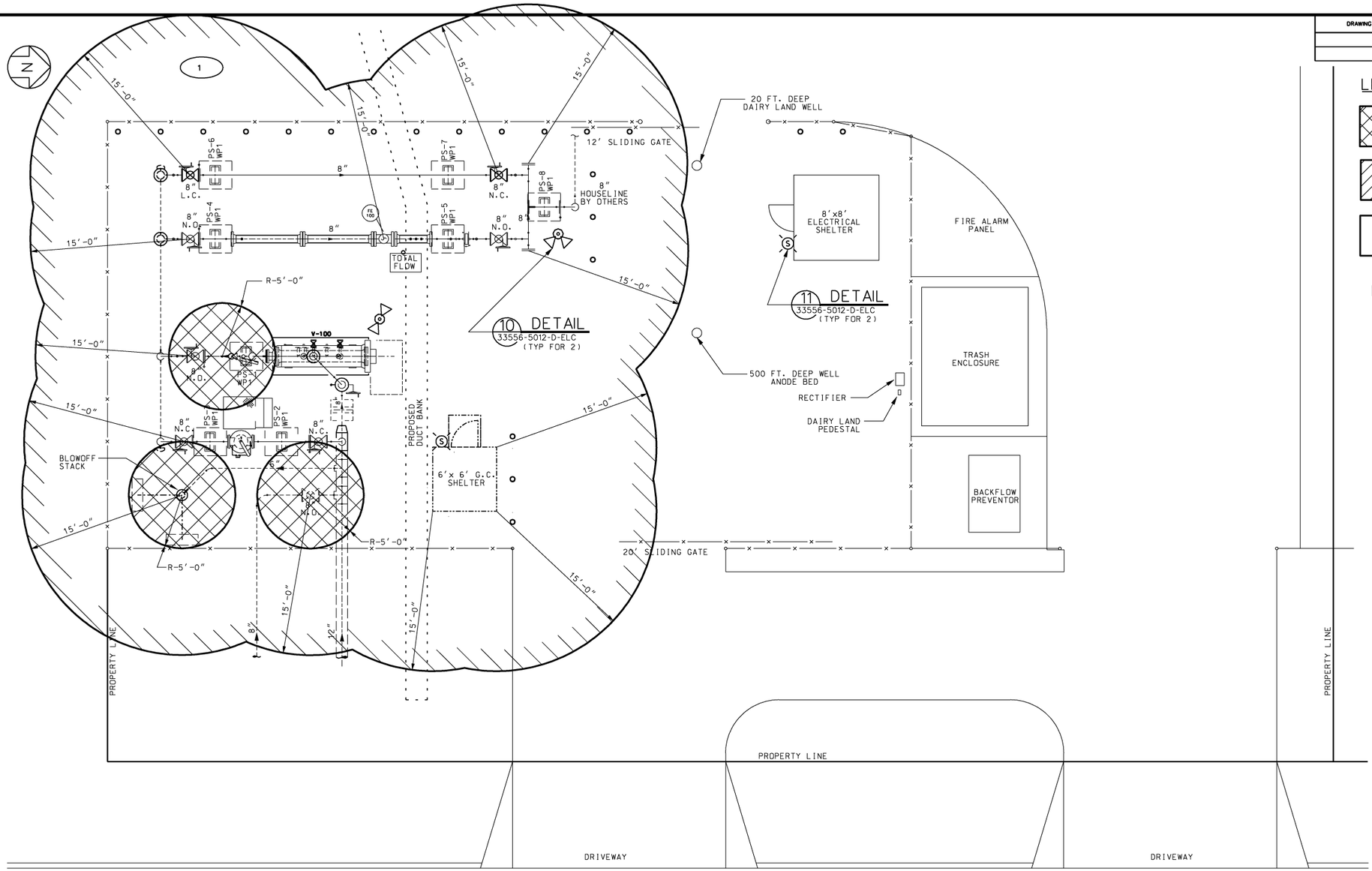
HUBBELL® Lighting

APPENDIX D

SOUTHERN CALIFORNIA GAS LIGHTING DRAWINGS

- 33556-5001-D-ELC: Area Classification & Electrical Plan
- 33556-5012-D-ELC: Electrical Details

DRAWING NO.	REFERENCE DRAWING DESCRIPTION



LEGEND:

CLASS I, DIVISION I, HAZARDOUS AREA.

CLASS I, DIVISION II, HAZARDOUS AREA.

NON-HAZARDOUS AREA

NOTES

1. HAZARDOUS AREA CLASSIFICATION EXTENDS OUTSIDE THE FENCE MSA AREA. CUSTOMER TO VERIFY THAT ANY EQUIPMENT INSTALLED IN THIS AREA IS SUITABLE FOR THE AREA CLASS.

℄ D A L E S T R E E T

PRELIMINARY

REV. NO.	DRAWN / CHECKED	PROJECT APPROVED	SO CAL APPROVED	JOB FILE NO.	DATE	DESCRIPTION
A	JF				09-24-18	ISSUED FOR REVIEW

CONTRACTOR NAME & PROJECT NUMBER

	BY	DATE
DESIGNED	J. FERRO	09-24-18
DRAWN	J. FERRO	09-24-18
CHK'D.		
APPR'D.	Y. CASATE	

JOB FILE NO.

W.O.A.	92307
DIST.	302
CLASS	21

The Gas Company

Southern California Gas Company
GAS ENGINEERING LOS ANGELES

MSA FOR STANTON ERC PEAKER PLANT AREA CLASSIFICATION & ELECTRICAL PLAN

DALE ST & STANDUSTRIAL ST
STANTON

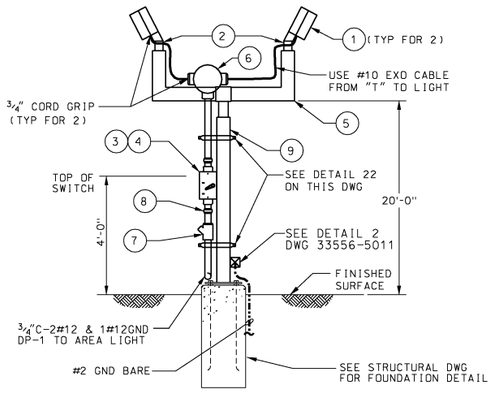
SCALE 3/16"=1'-0"

DRAWING NO. 33556-5001-D-ELC REV. A

$$$$$$$$$$dgnspec$$$$$$$$$$$$$$ $$$$$$$$$$$$sytime$$$$$$

BILL OF MATERIALS

ITEM	QTY	DESCRIPTION
1	2	PFM LED FLOODLIGHT, 250-400 WATTS - CROUSE HINDS CAT #PFM11LCY/UNV1 76
2	2	SLIPFITTER ADAPTER, CROUSE-HINDS CAT #SFA6
3	1	SINGLE GANG DEVICE BODY, FEED THRU, 3/4" HUBS - CROUSE-HINDS CAT #EDSC271
4	1	GENERAL USE SNAP SWITCH, 1-POLE, 120V AC, 20AMP, FACTORY SEALED - CROUSE-HINDS CAT #DSD933
5	1	MOUNTING BRACKET (2) FLOODLIGHTS - APPLETON CAT #G-PB-2
6	1	3/4" "T" FITTING, CONDUIT, WITH COVER & GASKET CROUSE-HINDS CAT #GUAT 24
7	1	3/4" CONDUIT SEAL - CROUSE-HINDS #EYS21
8	2	3/4" CONDUIT UNION - CROUSE-HIND CAT #UNY205
9	1	ROUND TAPERED STEEL POLE, APPLETON, CAT #G-PRTH-20-GAL
10		

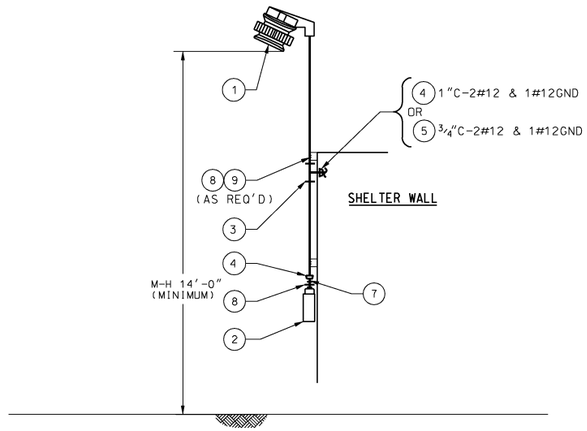


AREA LIGHTING

DETAIL 19

BILL OF MATERIAL

ITEM	QTY	DESCRIPTION
1	1	VMV LED STANCHION MOUNT, 98 WATTS, 1 1/2" HUB LIGHT FIXTURE - CROUSE HINDS VMV7LJDM1/UNV
2	1	GENERAL USE SNAP SWITCH, 1" HUB, 1P,120V,FACTORY SEALED - CROUSE-HINDS CAT #EDS3129
3	1	1 1/2" CONDUIT "+" FITTING - CROUSE-HINDS CAT #L57
4	2	1 1/2"- 1" REDUCER - CROUSE-HINDS CAT REC53
5	1	1 1/2"-3/4" REDUCER - CROUSE-HINDS CAT REC52
6	1	1" CONDUIT UNION - CROUSE-HINDS CAT #UNY305
7	1	1" SHORT NIPPLE
8	AS REQ'D	METAL FRAMING CHANNEL - UNISTRUT CAT# P1000
9	2	PIPE/CONDUIT CLAMP - UNISTRUT CAT #P1115
10		



WALL MOUNT OUTDOOR LIGHTING

DETAIL 20

DETAIL 21

DRAWING NO.	REFERENCE DRAWING DESCRIPTION
33556-1001-D-PIP	DRAWING LIST

BILL OF MATERIALS

ITEM	QTY.	DESCRIPTION
1	AS REQ'D	METAL FRAMING CHANNEL - UNISTRUT CAT# P1001
2	AS REQ'D	PIPE/CONDUIT CLAMP UNISTRUT SEE TABLE 1
3		
4		
5		

NOTES:

1. FOR CONDUIT SIZE & QUANTITY SEE PLAN DRAWING. (SUPPORT CONDUIT EVERY 10')

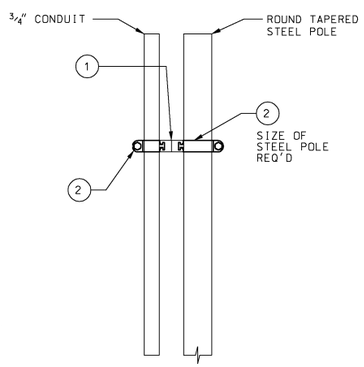


TABLE 1

CONDUIT SIZE	CLAMP UNISTRUT CAT #
3/4"	P1112
4"	P1121
5"	P1123
6"	P1124

CONDUIT SUPPORT

DETAIL 22

DETAIL 23

DETAIL 24

PRELIMINARY

REV. NO.	DRAWN / CHECKED	PROJECT APPROVED	SO CAL APPROVED	JOB FILE NO.	DATE	DESCRIPTION
A	JF / YC				09-24-18	ISSUED FOR REVIEW

CONTRACTOR NAME & PROJECT NUMBER

	BY	DATE
DESIGNED	J FERRO	09-24-18
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CHK'D.		
APPR'D.	Y. CASATE	
JOB FILE NO.		
G.W.O.	92307	
DIST.	302	
CLASS	21	

The Gas Company

Southern California Gas Company
ENGINEERING & FIELD SUPPORT LOS ANGELES

MSA FOR
STANTON ERC PEAKER PLANT
ELECTRICAL DETAILS

DALE ST & STANDUSTRIAL ST
STANTON

SCALE: NONE

DRAWING NO.: 33556-5012-D-ELC REV. A

$$$$$$$$$$dgnspec$$$$$$$$$$$$$$ $$$$$$$$$$$$sytime$$$$$$