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RULE 304.e. SUBSTANTIALLY EQUIVALENT INFORMATION COVER SHEET

Sandy Bay Oil and Gas Development Plan

Barracuda Pad: SWSW Section 33, Township 7 North, Range 62 West

Form 2A Doc #403550437

Weld County, Colorado

The attached 1041 WOGLA Application document is being submitted as a substantially equivalent document to the Light Mitigation Plan required by ECMC Rule 304.c.(3).

This document was developed for the Weld County 1041 WOGLA.

This document does not conform to ECMC rules or guidance in the following ways:

None.

This document should be accepted as substantially equivalent:

The attached Lighting Plan (Page 56) within the 1041 WOGLA Application 1041WOGLA23-0049 contains all of the substantially equivalent information required as an equivalent lighting plan document pursuant to Rule 304.c.(3) and Rule 424.a.



BISON IV OPERATING, LLC

SANDY BAY OGD

**SITE-SPECIFIC
BARRACUDA PAD**

LIGHTING PLAN



Bison IV Operating, LLC
BARRACUDA PAD LIGHTING PLAN

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Article I. Introduction

Location Information

This document provides site-specific information for the Barracuda Pad within the Sandy Bay OGD, as proposed by Bison IV Operating, LLC (Bison). The information in this document relates specifically to the time during the construction, drilling, completion, and production of the fifteen (15) proposed horizontal wells on this location.

The proposed location is rangeland approximately 1.0 miles west of the intersection of County Road 74 and County Road 79. The Pad will be in the SWSW of Section 33, Township 7 North, Range 62 West, zoned Agricultural within Weld County’s Ag-Rural planning area. A 1041WOGLA is being filed concurrently with the OGD application as 1041WOGLA23-0049. The Barracuda Pad is located on Parcel 071533000002 owned by Jerry W Cass. The location is currently used for grazing.

Construction of the proposed Location, with associated cut and fill slopes, would initially disturb approximately 20.0 acres. The working pad surface (WPS) during the construction phase will be 10.1 acres. Following the interim reclamation of 9.8 acres, the total Barracuda Location residual surface disturbance will be reduced to approximately 10.2 acres. Total residual surface disturbance of 10.2 acres includes the production pad working surface, seeded topsoil pile, and seeded detention pond area.

The proposed production facility equipment for the Barracuda Pad will be located within the WPS adjacent to the wells and will consist of oil tanks, produced water tanks, separators, vapor recovery towers (VRT), oil polishers, surge vessels, gas lift compressors, vapor recovery units (VRU), oil and water LACTs, scrubbers, knockouts, blower/oxygen destructors, instrument air skids, gas lift meters, sales gas meters, electrical skids, and emission control devices (ECD).

Pending approval from Weld County and the ECMC, the project schedule is as follows:

Phase	Duration (days)	Estimated Start Date
Construction	+/- 30 days	2 nd Quarter 2024
Drilling	+/- 105 days	2 nd Quarter (June) 2024
Completion	+/- 67 days	4 th Quarter (November) 2024
Flowback	+/- 10 days	1 st Quarter (January) 2025
Production	Ongoing +/- 30 years	1 st Quarter (January) 2025
Interim Reclamation	+/- 30 days	1 st Quarter (February) 2025*

**or the first favorable weather/growing season.*

Article II. Plan Narrative

Jurisdictional Agency

The Relevant Local Government has lighting plan requirements under applicable Weld County code.

The Land Use designation of the proposed Location is agricultural within the Near Urban Planning Area. Bison, OGED, CPW, and ECMC OGLA staff confirmed in the pre-application meeting that a lighting plan for the Construction Phase is required to provide confirmation of the ability to comply within 12.0 lumens per square foot (SF) of hardscape, and a Lighting Plan for the Production Phase is required if permanent lighting is planned.



Bison is submitting a Photometric Plan with the 1041 WOGLA Application submittal adhering to Lighting Zone 0 of the Weld County Code Development Standards, Section 21-5-405.A.1, which allows up to 12.0 lumens per SF of hardscape during construction and up to 0.5 lumens per SF of hardscape during production. There will be permanent lighting onsite during the production phase emitting 0.37 lumens per SF.

The ECMC's Maximum Permissible Light Levels (Rule 424) are as follows:

Land Use	Lumens per SF of WPS
Residential/Rural/State Parks/State Wildlife Areas/High Priority Habitat/Wilderness Areas/National Park/National Monument	1.25
Commercial/Agricultural	2.5
Light Industrial	5.0
Industrial	7.5

The standards within ECMC Rule 424 are less protective than WOGLA standards. Bison will comply with the stricter agency's (Weld County) standards.

Article III. Mitigation Measures and Best Management Practices

- Bison will direct site lighting downward and inward, such that no light shines above a horizontal plane passing through the center point light source.
- Bison will use appropriate technology within fixtures that obscures, blocks, or diffuses the light to reduce light intensity outside the boundaries of the Barracuda Location.
- Bison will minimize lighting when not needed to minimize light pollution and obtrusive lighting.
- Bison will use full cut-off lighting to minimize light pollution and obtrusive lighting.
- Bison will use lighting colors that reduce light intensity to minimize light pollution and obtrusive lighting.
- Bison will use low-glare or no-glare lighting to minimize light pollution and obtrusive lighting.
- When Bison has active operations involving personnel ongoing the Location, Bison will provide sufficient on-site pre-production lighting to ensure the safety of all persons on or near the site.
- Bison will take all necessary and reasonable precautions to ensure that lighting from the Barracuda Oil and Gas Facilities does not unnecessarily impact the health, safety, and welfare of motorists on nearby roads.

Article IV. Exhibits/References/Appendices

Please see attached signed Lighting Layout sheets and manufacturer's cut sheets.

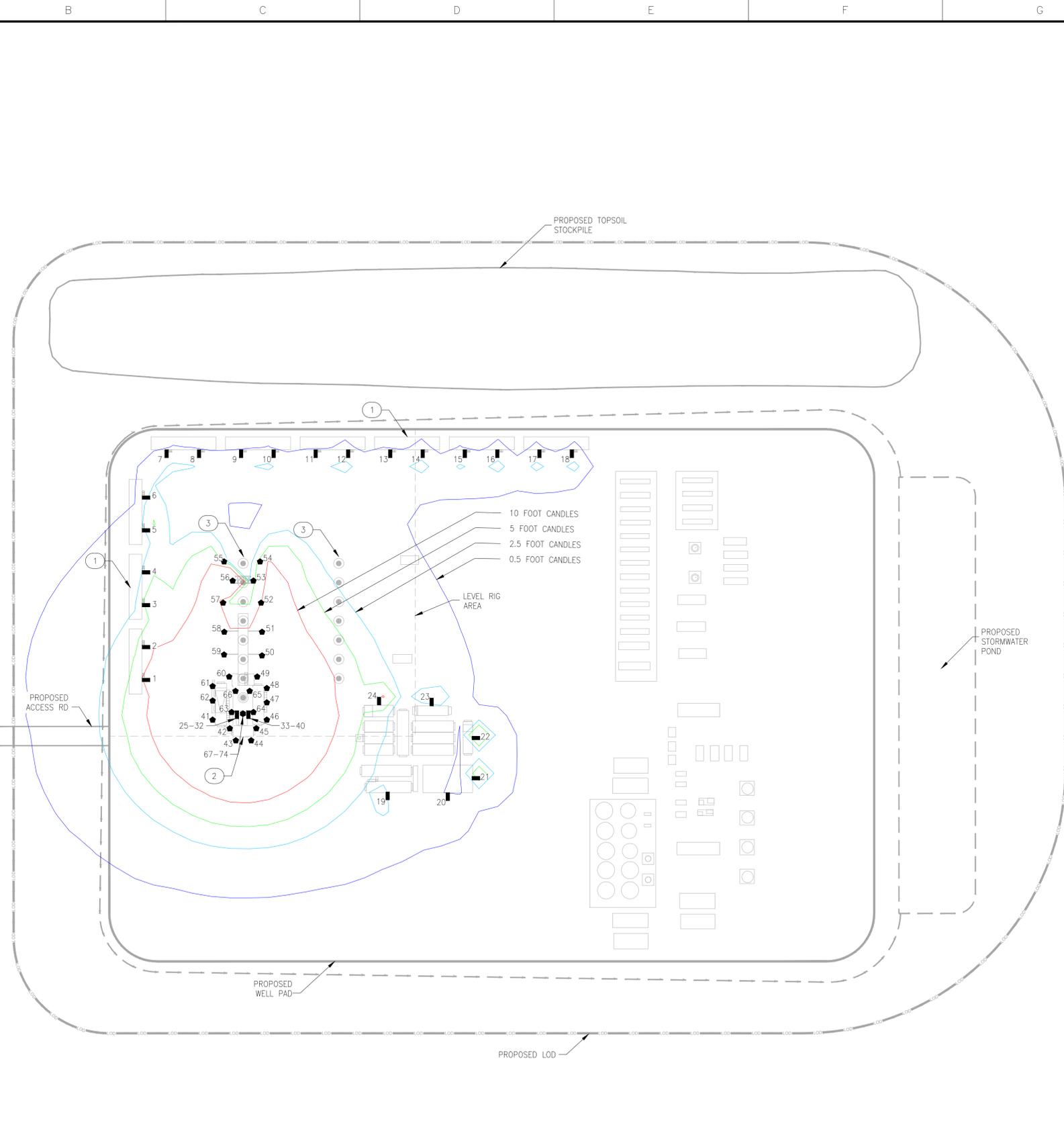
FILE PATH: P:\BISON_OIL & GAS\23066-01_SANDY_BAY_BARRACUDA_PAD\3-0_DESIGN\3-6_EI&C\FOR REVIEW\23066-01-73001-SANDY_BAY_BARRACUDA_PAD DRILLING RIG.DWG BY:LUSALBERDAS DATE:Oct 13, 2023 8:55am





FACILITY EQUIPMENT LIST

1	LIVING TRAILERS
2	PD 460 DRILL RIG
3	WELL HEADS



LIGHTING FIXTURE SCHEDULE					
TYPE	SYMBOL	DESCRIPTION	LUMENS PER FIXTURE	FIXTURE COUNT	FIXTURE SUBTOTAL
1	■	4' LINEAR LED, EATON DLL4/JNV1S903D LOCATION 1: WALL MOUNTED ALONG BACK YARD STRUCTURES, APPROX. MOUNT. HEIGHT 9' LOCATION 2: WALL MOUNTED UNDER V-DOOR APPROX. HEIGHT 18'. LOCATION 3: WALL MOUNTED IN DERRICKS APPROX. HEIGHT 53', 68', 83', 98', 113', 128', 143', 158'.	7,900	40	316,000
2	●	FLOODLIGHT EATON DFLMY400/TI 76 LOCATION 1: WALL MOUNTED ALONG BACK YARD STRUCTURES APPROX. HEIGHT 9'. LOCATION 2: ON DOGHOUSE APPROX. HEIGHT 36'. LOCATION 3: ON TRANSFER TANK ROOF APPROX. HEIGHT 20'. LOCATION 4: AT END OF CATWALK APPROX. HEIGHT 10'. LOCATION 5: UNDER DOGHOUSE AND BETWEEN SUB AND TRANSFER TANK APPROX. HEIGHT 18'. LOCATION 6: IN DERRICKS APPROX. HEIGHT 41'. LOCATION 7: ABOVE DRAWWORKS APPROX. HEIGHT 36'.	40,000	26	1,040,000
3	●	AEON HL-AF-750WD-50K-N6-277V-WH, FLOODLIGHT MOUNTED ON THE CROWN APPROX. HEIGHT 167'.	105,000	8	840,000

SITE TOTALS	
TOTAL LUMENS	2,196,000 LUMENS
SITE SQUARE FOOTAGE	871,200 SQ. FT
LUMENS/SQ. FT	2.52 LUMENS/SQ. FT
WELD COUNTY PRE-PRODUCTION LIMITS	12 LUMENS/SQ. FT
ILLUMINATION AT 2000'	<0.1 LUX
ILLUMINATION AT 1-MILE	<0.1 LUX
LUMINATION MAXIMUM PER COGCC RULE 424.F	4 LUX

PRE-PRODUCTION LIGHTING LEVELS ARE BASED ON PRECISION DRILLING RIG AND ARE SUBJECT TO FINAL EQUIPMENT SELECTION. CURRENT LAYOUT SHOWS THAT MINIMAL LIGHT BREACHES DISTURBANCE AREA AND LESS THAN 0.5 FOOTCANDLES OF LIGHT WOULD BREACH SITE BOUNDARIES.



R. Jeremy Montoya is a registered professional engineer with an electrical specialty in 10 states and brings with him over 13 years of experience in a variety of industries and applications. Having been involved with lighting studies his entire career, Jeremy was able to get involved very early in the COGCC/ECMC regulatory process and develop lighting packages for clients that satisfied the state and county requirements with efficient displays of information. Care has been taken to ensure that client needs were met while also satisfying the intent of applicable state and county requirements.

NOTES:

- THIS DRAWING IS BASED ON PRECISION DRILLING RIG AND IS SUBJECT TO VARIATIONS IN DESIGN AND LAYOUT. EACH LAYOUT IS DESIGNED BY OTHERS BUT SHALL NOT EXCEED THE FIXTURE COUNTS LISTED ON THIS DRAWING.
- ALL LIGHT FIXTURES AND INSTALLATION MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST ISSUE OF LOCAL AND NATIONAL ELECTRICAL CODES, ELECTRICAL SPECIFICATIONS AND DRAWINGS.
- ALL LIGHT FIXTURES AND THE INSTALLATION OF THESE LIGHT FIXTURES SHALL COMPLY WITH COGCC SECTION 424 AND DARK SKY COMPLIANT REQUIREMENTS.
- RIG LIGHTING WILL VARY DEPENDING ON PARTICULAR WELL BEING DRILLED. AREA SHOWN REPRESENTS THE RANGE OF LIGHT DISTRIBUTION WHEN AT THE WELL FURTHEST SOUTH.
- LIGHT FIXTURES 25-32 AND 33-40 ARE MOUNTED IN PAIRS VERTICALLY ON THE MAST.
- LIGHT FIXTURES 67-74 ARE HALO LIGHTS MOUNTED ON THE CROWN. MODELED AS COMPARABLE FIXTURE TO DRILLING RIG SPECIFIED LIGHT DUE TO IES AVAILABILITY.

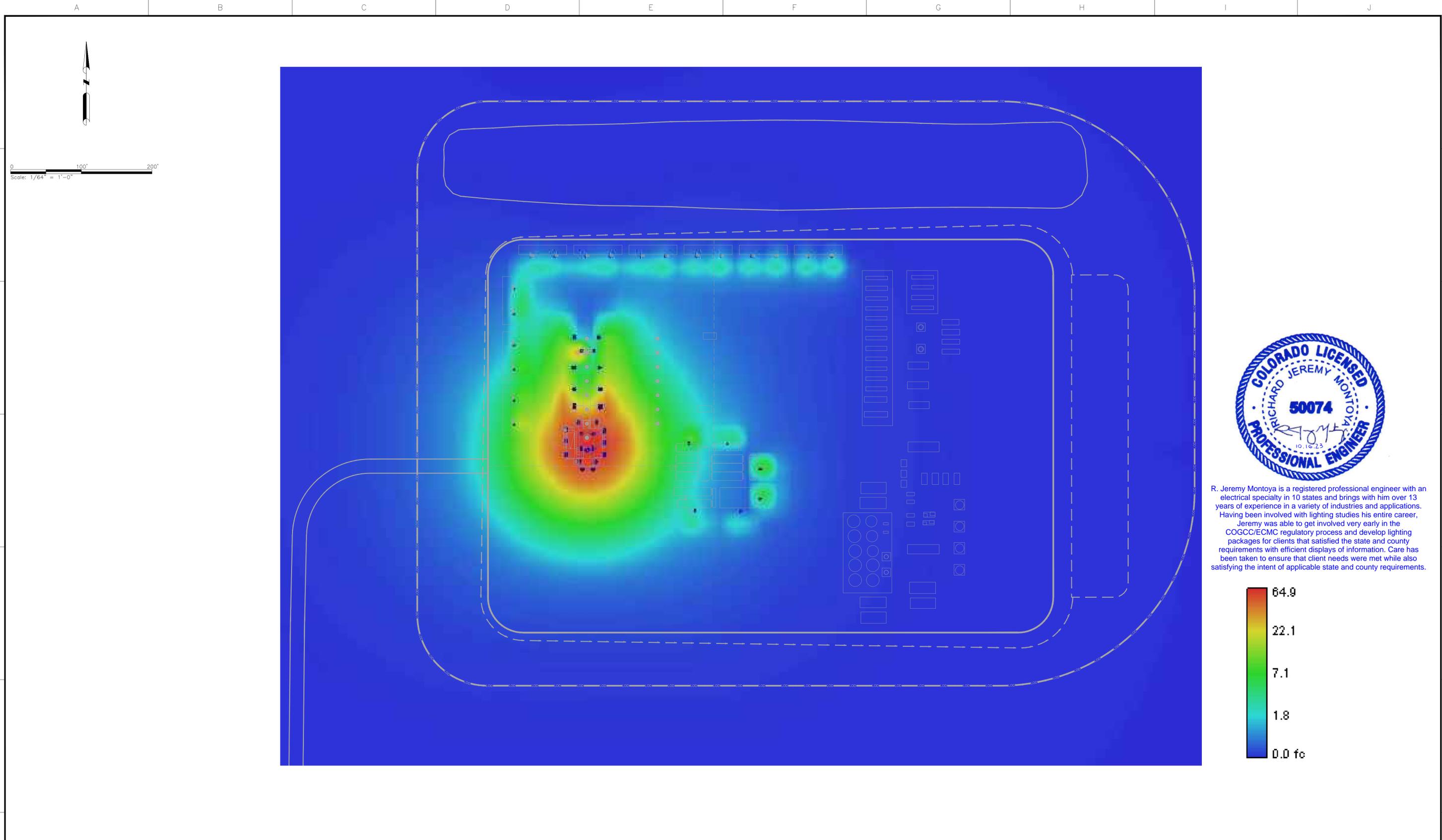
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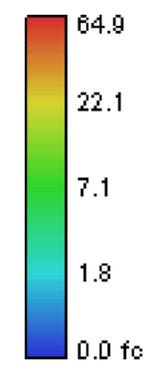

BISON IV OPERATION
SANDY BAY BARRACUDA PAD
DRILLING RIG
LIGHTING LAYOUT

SCALE: (FORMATTED 22X34) 1/64"=1'-0"	DRAWING NO. 23066-01-73001
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NOTES:
 A. HEAT MAP INTENDED TO SHOW VISUAL REPRESENTATION OF CONTENT SHOWN ON OTHER DRAWINGS ASSOCIATED WITH THIS PHASE OF SITE DEVELOPMENT. REFER TO DRAWING-73001 FOR ADDITIONAL DETAILS ON LIGHT FIXTURE LOCATIONS, FIXTURE TYPES, AND EQUIPMENT CALLOUTS.

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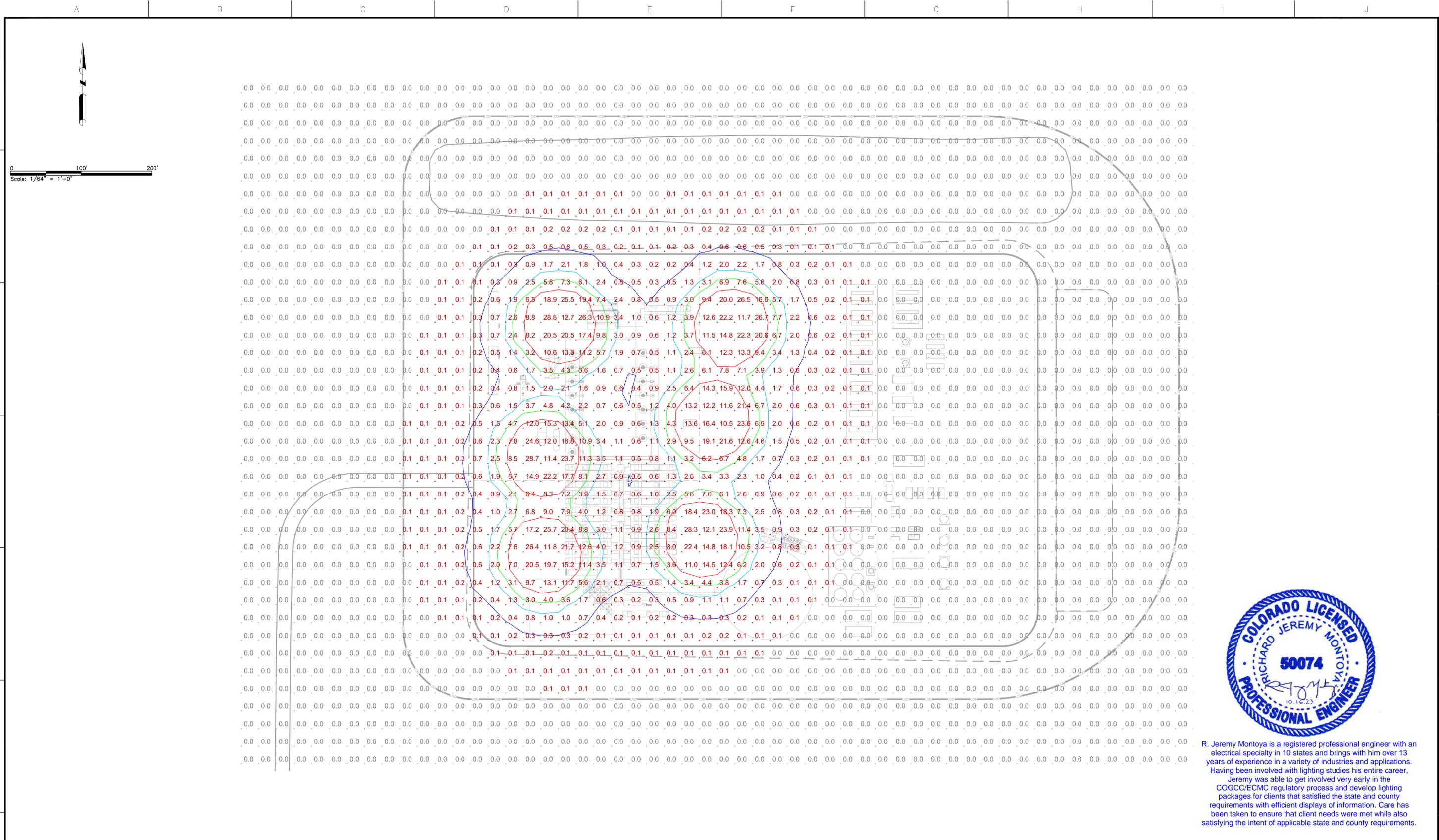
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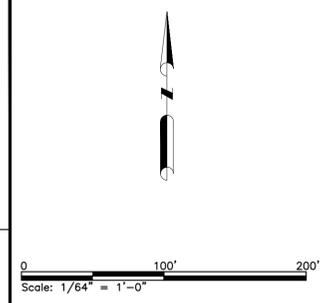
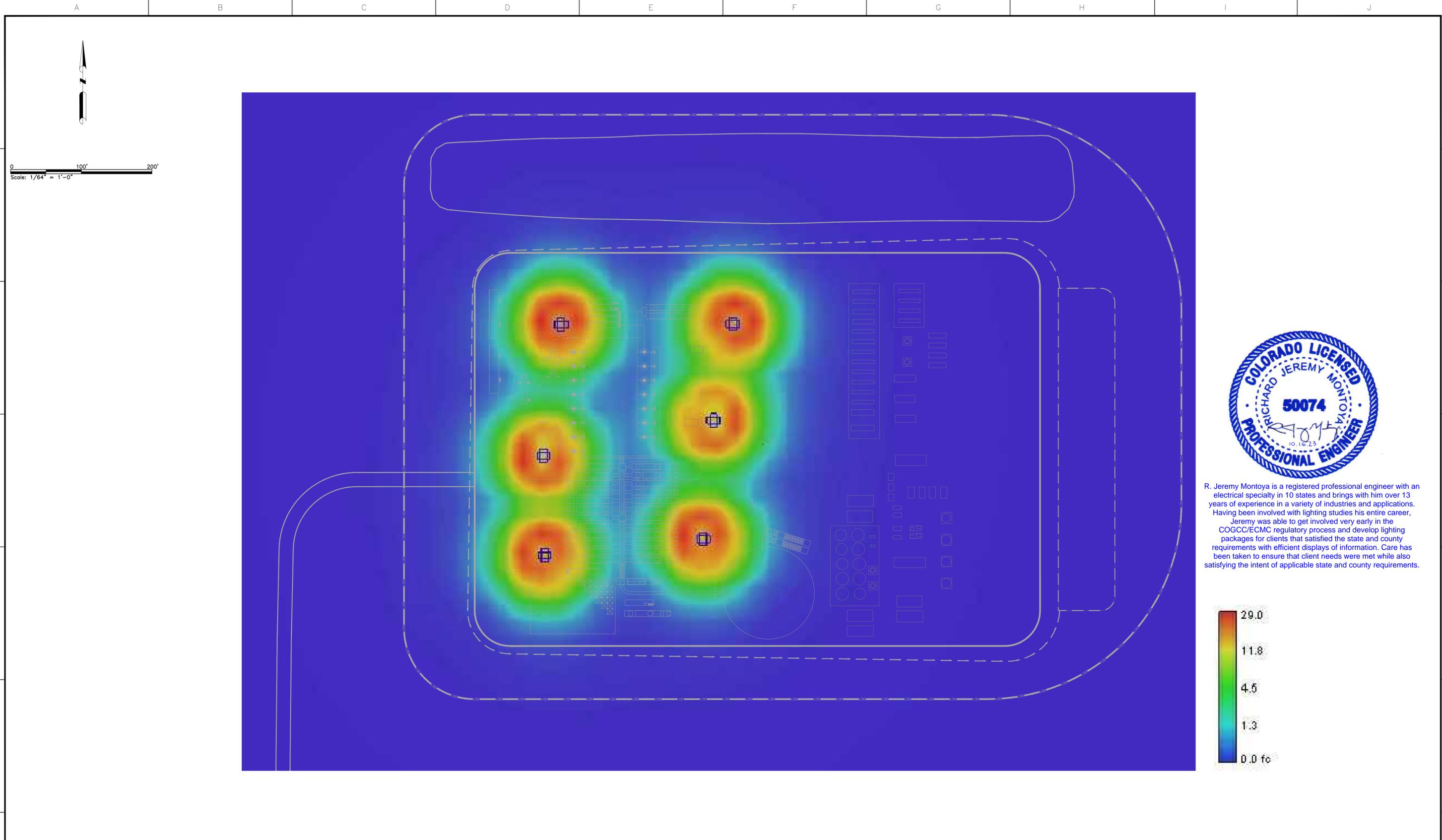
NOTES:
 A. THIS DRAWING IS INTENDED TO SHOW FOOTCANDLE POINT CALCULATING FOR THIS PHASE OF SITE DEVELOPMENT. REFER TO DRAWING -73011 FOR FURTHER LIGHTING DETAILS

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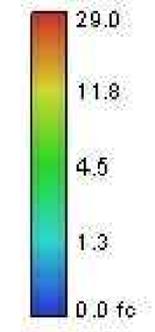
BISON IV OPERATION SANDY BAY BARRACUDA PAD COMPLETIONS LIGHTING POINT CALCULATION			
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BISON IV OPERATION
 SANDY BAY BARRACUDA PAD
 COMPLETIONS
 LIGHTING - HEATMAP

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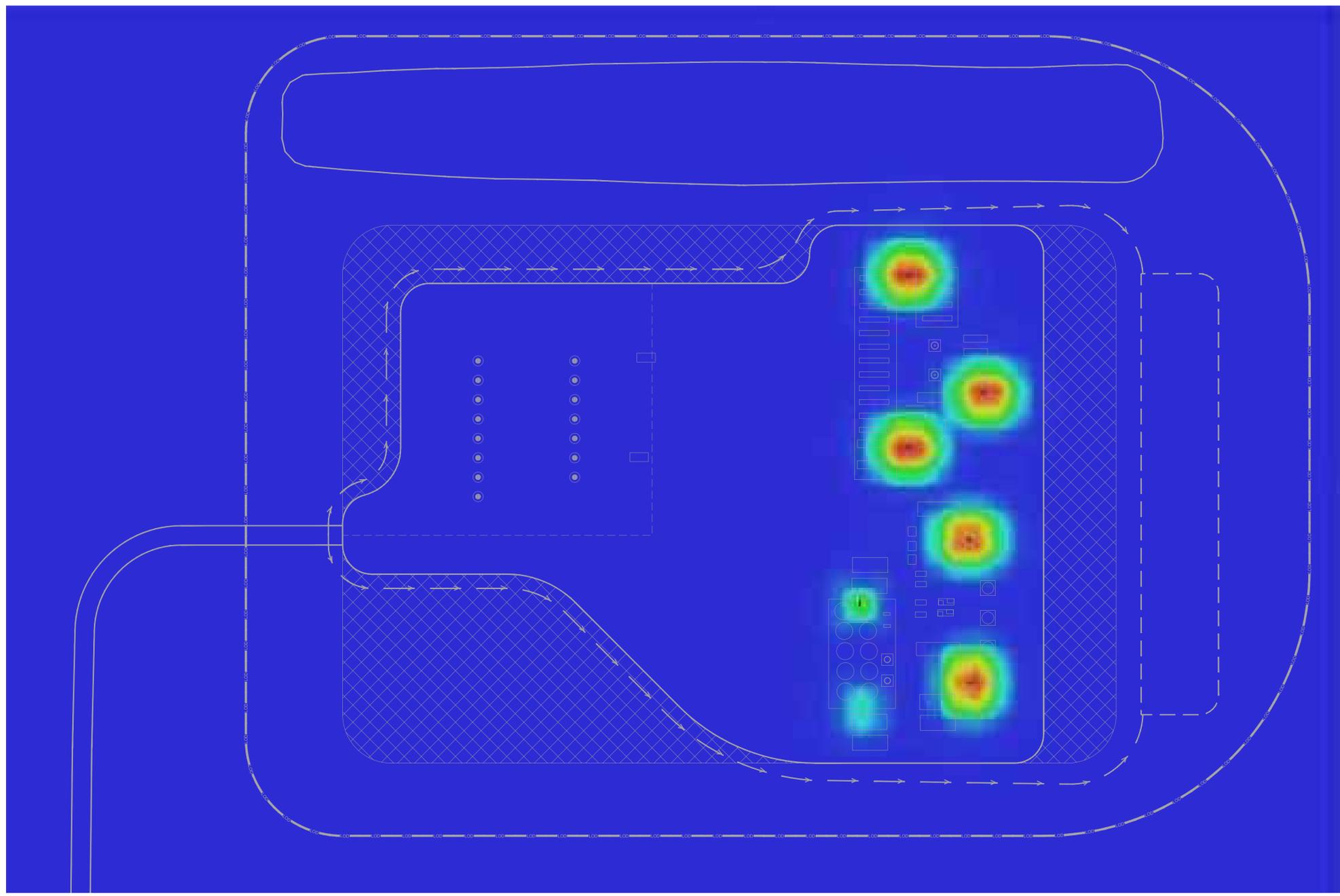


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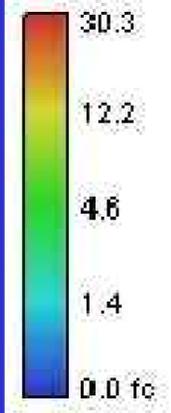
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BISON IV OPERATION
SANDY BAY BARRACUDA PAD
PRODUCTION
LIGHTING - HEATMAP

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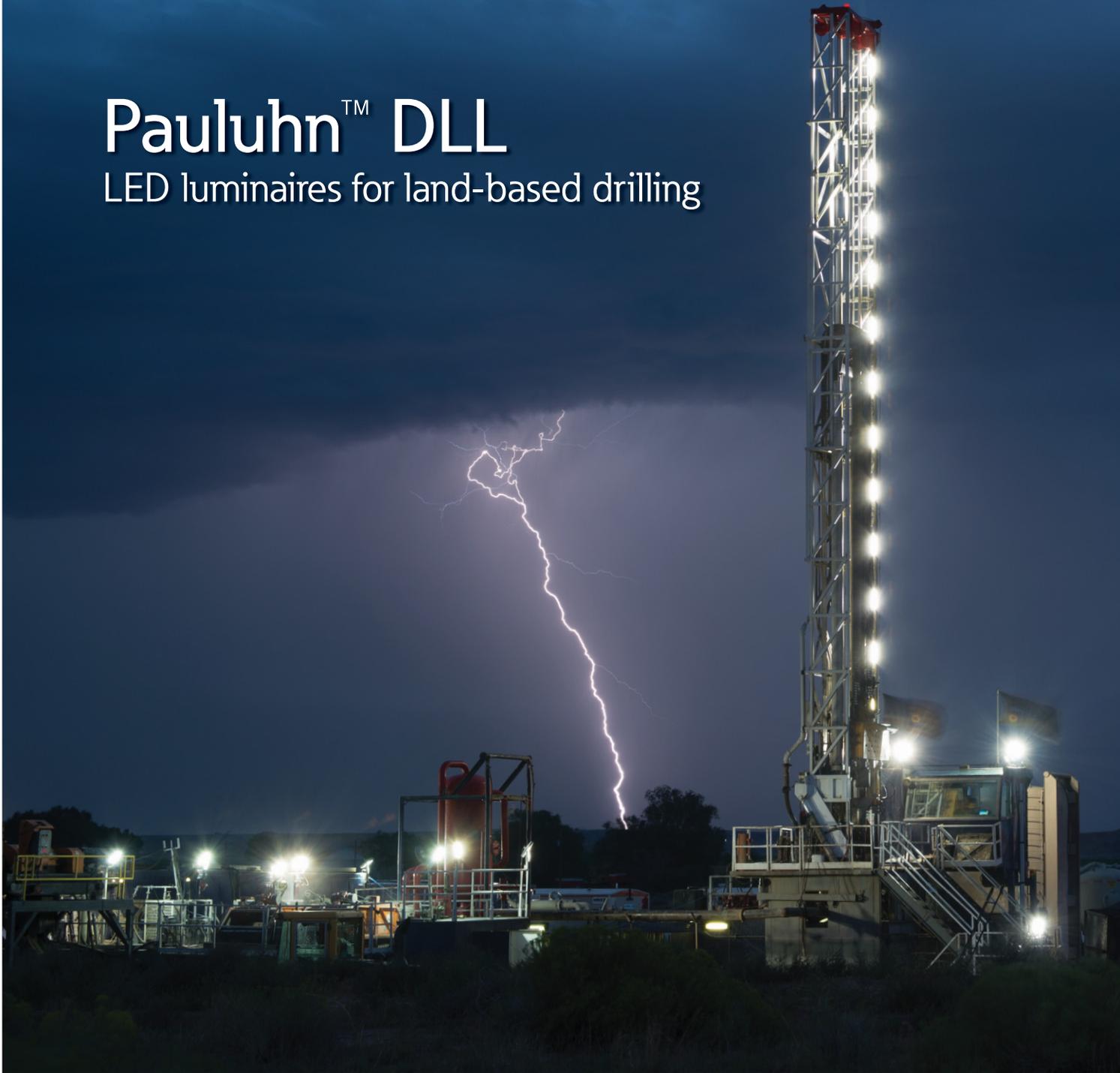


LED lighting for land-based rigs
Pauluhn™ DLL LED Luminaires

CROUSE-HINDS
SERIES

Pauluhn™ DLL

LED luminaires for land-based drilling



EATON

Powering Business Worldwide



Pauluhn™ DLL Series LEDs

Safe. Reliable. Efficient.

Featuring the industry's broadest range of LED luminaires for harsh and hazardous 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?

Useful life

Rated life is up to 60,000 hours of maintenance-free and safe operation

Energy efficiency

LED average energy consumption is 65% less than T12, T8 and T5HO fluorescent fixtures

Start/restart time

Instant illumination vs. 10 minute restrike time for fluorescent

Light quality

Higher color rendering and color temperature compared to fluorescent

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 extreme temperatures, vibration, water and dust

Thermal management

Effective heat sinking ensures longer life

Quality of light

Custom optics designed to maximize light distribution and intensity

Retrofit compatibility

LED fixtures are compatible with Pauluhn DuraPro, MagnaPro, Rig-A-Lite™ and Snelson® fluorescent fixtures

Ensign Rig 89

LOCATION: Gillette, Wyoming

DETAILS: Rig retrofit with Pauluhn DLL4 LEDs

Why Pauluhn™ DLL LED?

Designed for drilling. Pauluhn DLL linear LED luminaires are engineered to stand up to the demanding conditions faced on land-based drilling rigs. The DLL stands up to high vibration, hose down, shock and impact, while delivering long life and high lumen performance for up to 20 years.

Custom optics:

- Standard wide (120°) beam spread for control room and indoor application maximizes illumination on wall panels
- Narrow (80°) beam spread option for high mast/derrick application avoids spillage and light loss

Comprehensive certification:

- Single model certified for use in Class I, Division 2 and Class II, Division 2 harsh and hazardous applications

Quick & easy installation:

- Easy access to drivers and wiring
- No custom brackets or hardware needed
- Seven mounting options available
- Easily retrofit to Pauluhn DuraPro and MagnaPro, Rig-A-Lite and Snelson



Slim profile:

- 2.7" fixture height (excluding mounting brackets)
- Perfect for mounting in confined or low height areas

Built to last:

- Ingress protection from hose down water or diesel fuel in harsh operational conditions – passed 2,000 psi high pressure test
- Vibration-, impact- and shock-resistant – passed 5G, 3-axis vibration test
- 60,000 hour lifetime @ 55°C ambient



Case study: land-rig retrofit

Location:

Ensign Rig 122, Vernal, Utah

Challenge:

Ensign was looking for a rugged, low maintenance solution to replace existing Pauluhn DuraPro fluorescent fixtures on a drilling rig.

Solution:

Install Pauluhn DLL 2 foot linear LED luminaires

Results:

Ensign was easily able to replace 21 DuraPro fixtures with 14 DLLs in only about an hour by using the existing DuraPro brackets. Ensign saw better light quality on the mast and deck, while reducing amperage load and eliminating lamp maintenance.



Pauluhn™ DLL Series LED Luminaires

The Pauluhn DLL Linear LED by Eaton's Crouse-Hinds is specifically designed to replace fluorescent T12, T8 and T5HO lighting on land-based and offshore drilling platforms. The rugged and durable design features the industry's most versatile and flexible mounting options. The Pauluhn DLL is the ideal solution for high vibration, impact and hose down in drilling applications.

Applications:

Land-based and offshore rigs; areas include: derrick, mast, SCR house, top drive, operator's house, power and pump stations.

Key features & benefits:

- High efficacy: up to 120 LPW
- -40°C to +65°C ambient operating temperature (standard model)
- Low profile fixture (<3" height)
- Versatile ceiling/swivel, wall, flush, pole and pendant mounting options
- Wide and narrow optics for uniform illumination in control room and drill mast
- Four points of secondary retention
- 2,000 psi high pressure hose rated
- High vibration resistance
- Emergency battery back-up (90 minutes) and surge protection options (up to 10kV)‡
- DesignLights Consortium® Qualified (some models are not DLC qualified)*
- 5 year fixture warranty†



‡ One year warranty

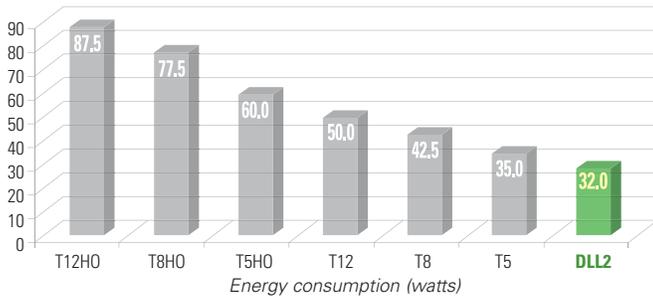
* Refer to www.designlights.org Qualified Products List under Family Models for full listing details. Not all models are approved for all application categories.

† Refer to page 2 of the D-0716 authorized distributor price book for Crouse-Hinds standard Terms and Conditions.

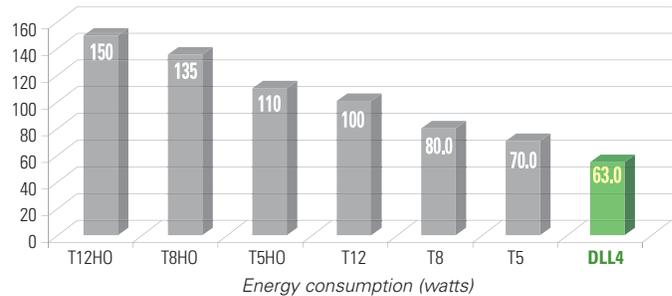


Energy consumption comparison

2 foot DLL linear LED vs. fluorescent



4 foot DLL linear LED vs. fluorescent



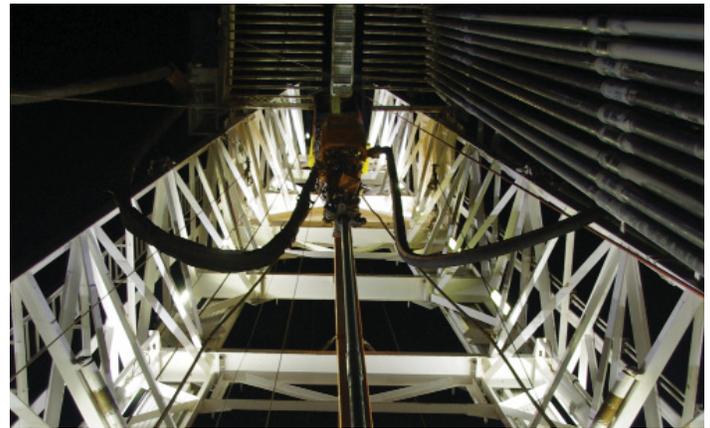
Model	Typical lumens	Wattage	Lumens per watt	Equivalent HID luminaire	Typical energy savings / lifetime
DLL2	3,958	32	124	T12HO	Up to 63%
				T8HO	Up to 59%
				T5HO	Up to 47%
				T12	Up to 36%
				T8	Up to 25%
				T5	Up to 9%

All luminaires in the comparison are 2 lamp, 2 foot

Model	Typical lumens	Wattage	Lumens per watt	Equivalent HID luminaire	Typical energy savings / lifetime
DLL4	7,900	63	130	T12HO	Up to 58%
				T8HO	Up to 54%
				T5HO	Up to 43%
				T12	Up to 37%
				T8	Up to 22%
				T5	Up to 10%

All luminaires in the comparison are 2 lamp, 4 foot

Specifications



Certifications:

NEC standards:

- Class I, Division 2, Groups A, B, C, D
- Class II, Division 2, Groups F, G
- Class I, Zone 2
- Class III
- NEMA 4X; IP66
- Marine and wet locations

UL standards:

- UL844 Electrical Fixture Hangers for Hazardous Locations
- UL1598 Luminaire
- UL1598A Luminaire for Installation on Marine Vessels
- UL924 for Emergency Lighting

CSA standard:

- C22.2 No. 137

Additional certifications:

- ABS design assessed

Materials:

Housing:

- Copper-free aluminum
- Optional Corro-free™ epoxy powder coat

Lens:

- Clear or diffused or polycarbonate

Mounting:

Versatile mounting options:

- Flush back mount
- Swivel/ceiling back mount
- Offset ceiling mount
- Offset wall mount
- Pole mount
- Pendant mount

Easily retrofit to:

- Existing Pauluhn DuraPro and MagnaPro fluorescent light fixtures
- Rig-A-Lite and Snelson C1D2 fluorescent lighting fixtures

Electrical ratings:

	DLL2	DLL4
Lumen output	3,958	7,900
Frequency	50/60 Hz	50/60 Hz
Voltage	100-277 VAC/108-250 VDC; 347-480 VAC	

Model	Voltage	Current (A)	Wattage (W)	Power factor	THD
DLL2/UNV1	100	0.33	32.5	0.92	<20%
DLL2/UNV1	277	0.13	34.3	0.92	<20%
DLL2/UNV34	347	0.10	32.2	0.92	<20%
DLL2/UNV34	480	0.07	34.5	0.92	<20%
DLL4/UNV1	100	0.63	63.4	0.92	<20%
DLL4/UNV1	277	0.23	62.5	0.92	<20%
DLL4/UNV34	347	0.18	61.4	0.92	<20%
DLL4/UNV34	480	0.13	63.9	0.92	<20%

Temperature codes:

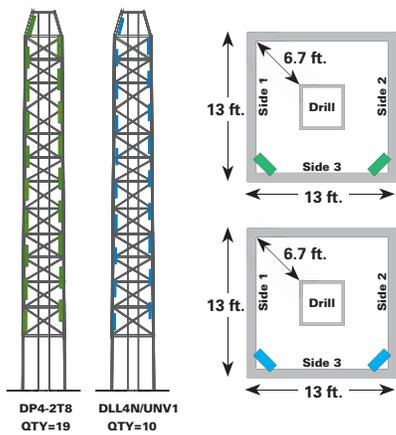
Ambient temperature	Min. temp. wire supply	Class I, Div. 2	Class II, Div. 2	Simultaneous rating
				Class I, Div. 2, Class II, Div. 2
40°C	60°C	T6	T6	T6
55°C	75°C	T5	T5	T5
65°C	90°C	T5	T5	T5

Weights:

Luminaire	lbs.	kg.
DLL2	12.5	5.7
DLL4	22.5	10.2

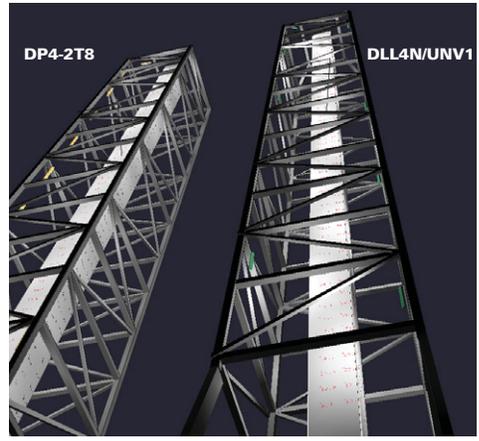
Photometrics: high mast derrick

4 foot DLL LED with 80° optics vs. 4 foot 2 lamp T8 DuraPro

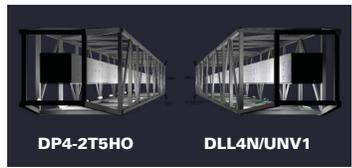
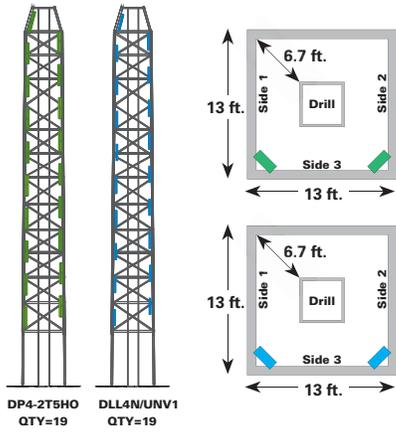


Model	Average footcandles	
	DLL4N/UNV1	DP4-2T8
Side 1	12.37	9.18
Side 2	10.80	9.56
Side 3	21.66	16.19

47% lower fixture count (19 vs.10) and higher average illumination on the drill.

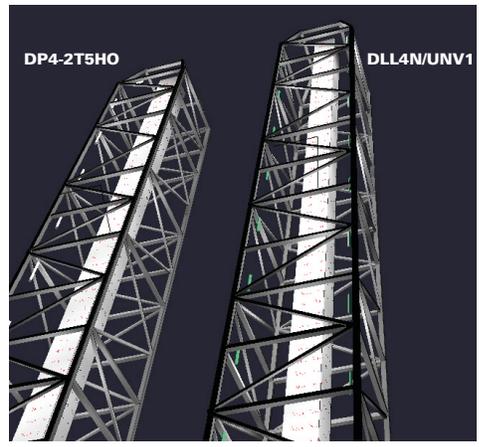


4 foot DLL LED with 80° optics vs. 4 foot. 2 lamp T5HO DuraPro



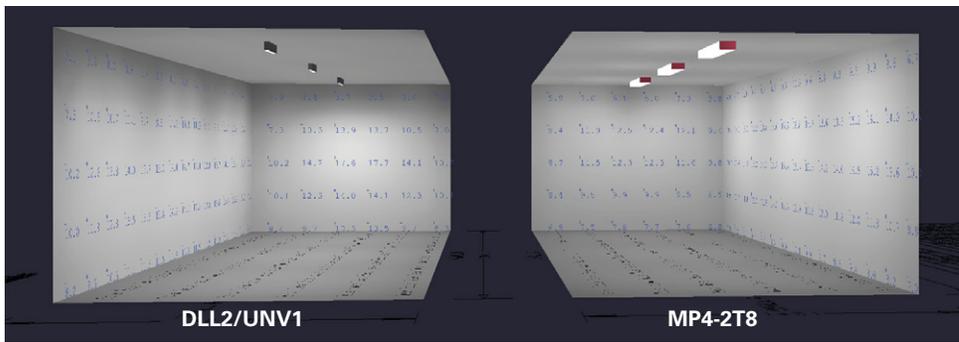
Model	Average footcandles	
	DLL4N/UNV1	DP4-2T5HO
Side 1	25.68	20.33
Side 2	18.88	20.52
Side 3	42.00	35.79

57% lower energy consumption and higher average illumination on the drill.



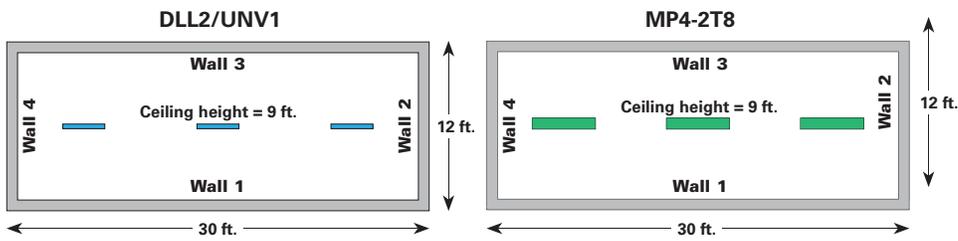
Photometrics: control room/pump shed

2 foot DLL LED with 120° optics vs. 4 foot 2 lamp T8 MagnaPro



Model	Average footcandles	
	DLL2/UNV1	MP4-2T8
Wall 1	10.11	11.55
Wall 2	9.90	9.10
Wall 3	10.16	11.56
Wall 4	9.66	9.10
Floor	17.85	13.86

64% lower energy consumption and higher average illumination on floor

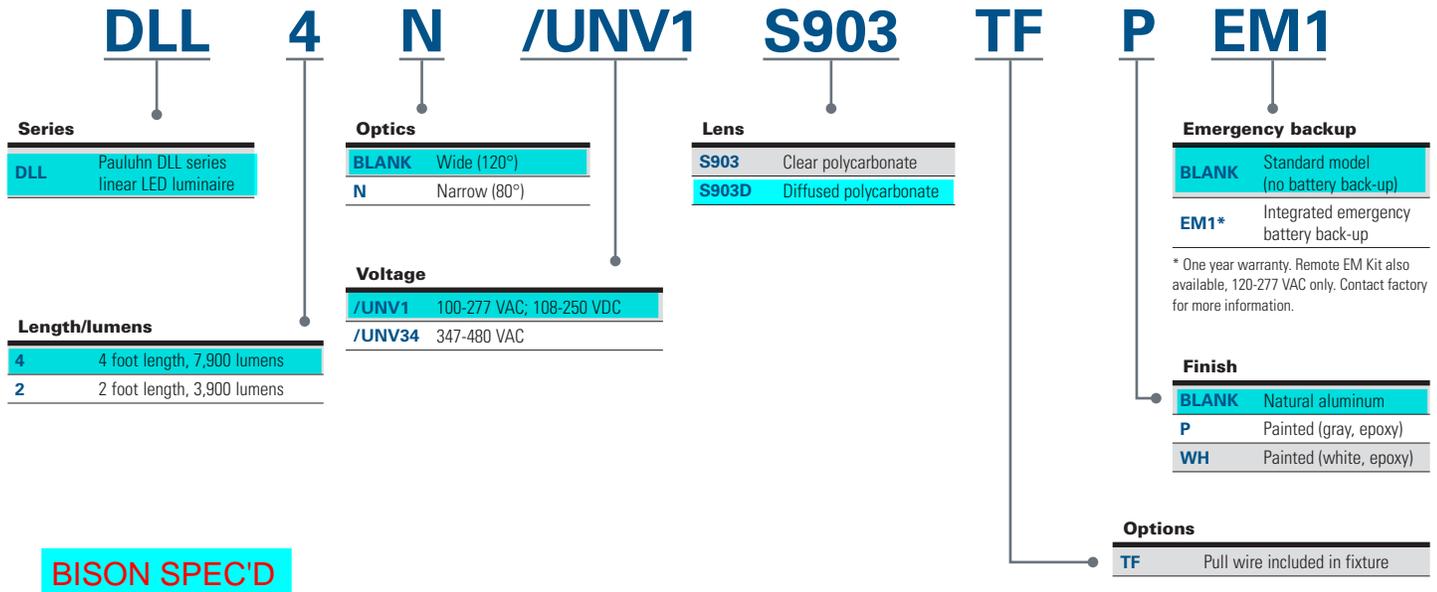


Ordering information

Part number example

DLL4N/UNV1 S903 TF P EM1

DLL series linear LED, cool white, 4 foot, ½" hubs, 80° narrow light pattern, 100-277 VAC driver, polycarbonate lens, through feed hubs, painted, battery back-up



BISON SPEC'D

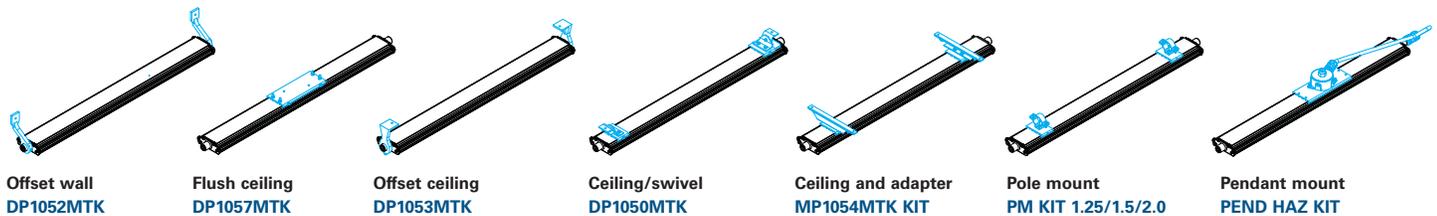
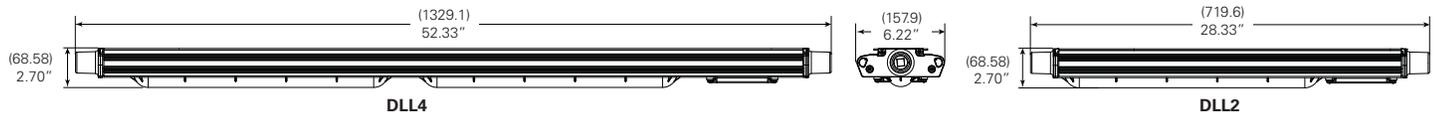
Accessories (ordered separately)

DP1057MTK	Flush/back mount back plate (compatible with DuraPro)
DP1050MTK	Ceiling/swivel mount (compatible with DuraPro)
DP1053MTK	Ceiling/wall mount offset (compatible with DuraPro)
MP1054MTK KIT	Ceiling mount bracket and adapter kit (compatible with MagnaPro)
DP1052MTK	Offset wall mount (compatible with DuraPro)
PM KIT 1.25	Pole mount kit, 1.25" conduit
PM KIT 1.5	Pole mount kit, 1.50" conduit
PM KIT 2.0	Pole mount kit, 2.00" conduit

Accessories (ordered separately)

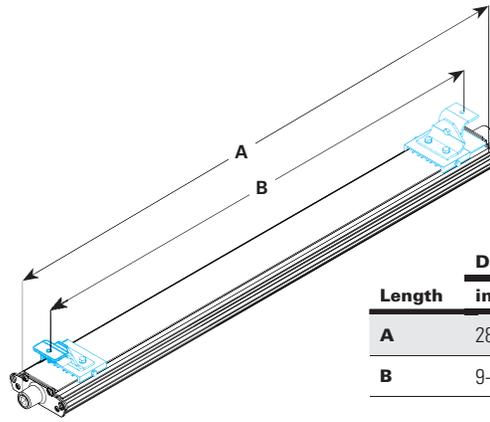
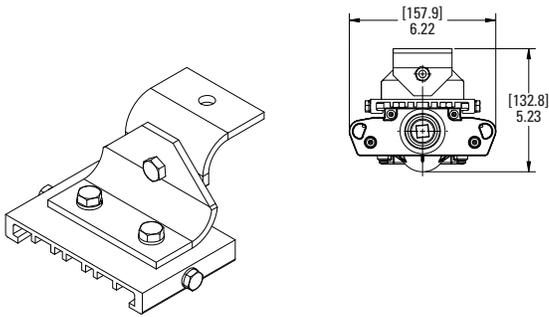
PEND HAZ KIT	Pendant mount kit
SS KIT	Safety chain kit
VMVL/UNV1 80W 1A KIT	1 amp driver replacement kit 100-277 VAC for 4 ft. linear
VMVL/UNV34 80W 1A KIT	1 amp driver replacement kit 347-480 VAC for 4 ft. linear
VMVL/UNV1 80W 0.5A KIT	0.5 amp driver replacement kit 100-277 VAC for 2 ft. linear
VMVL/UNV34 80W 0.5A KIT	0.5 amp driver replacement kit 347-480 VAC for 2 ft. linear

Dimensions & mounting options:



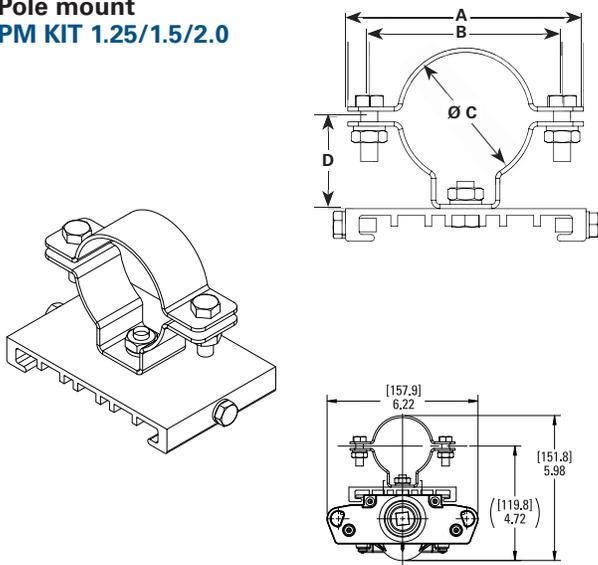
Mounting options

Ceiling/swivel mount DP1050MTK

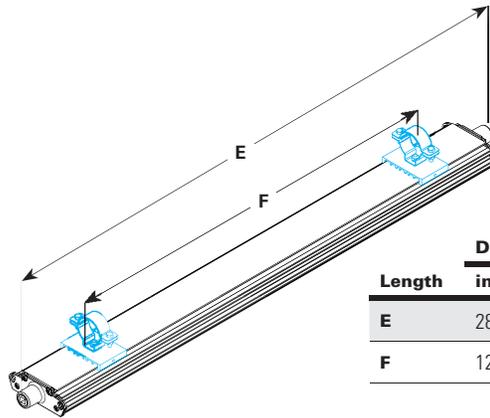


Length	DLL2		DLL4	
	in.	mm.	in.	mm.
A	28.3	720	52.3	1329
B	9-27	222-681	9-51	222-1289

Pole mount PM KIT 1.25/1.5/2.0

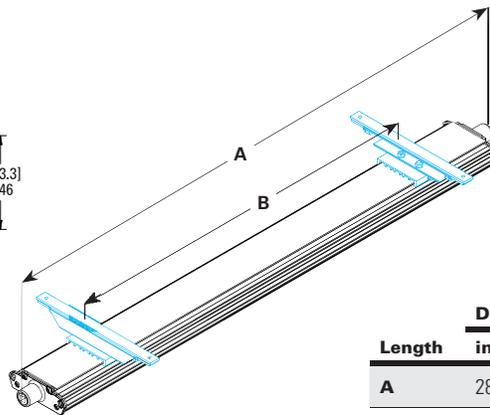
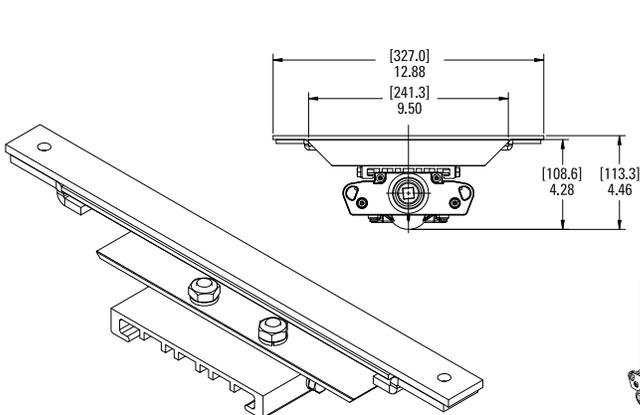


Configuration	ALL MEASUREMENTS IN INCHES			
	A	B	C	D
PM KIT 1.25	4.331	3.543	1.680	1.693
PM KIT 1.5	3.740	2.953	2.000	1.535
PM KIT 2.0	3.386	2.598	2.360	1.378



Length	DLL2		DLL4	
	in.	mm.	in.	mm.
E	28.3	720	52.3	1329
F	12-21	305-533	24-45	610-1143

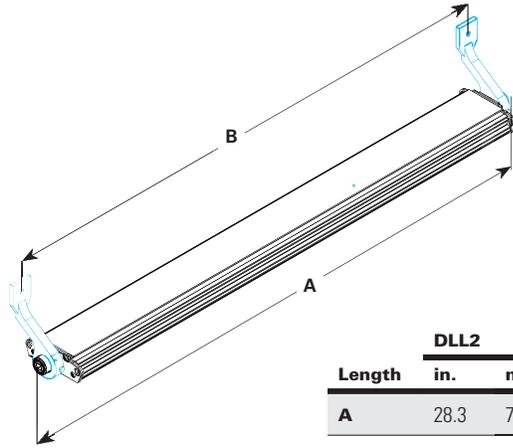
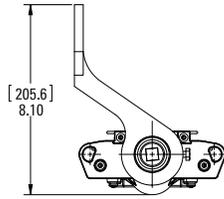
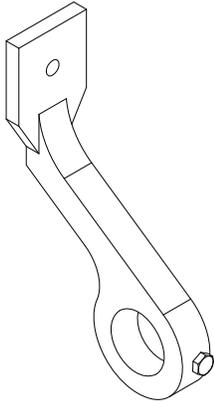
MagnaPro mount MP1054MTK KIT



Length	DLL2		DLL4	
	in.	mm.	in.	mm.
A	28.3	720	52.3	1329
B	12-22	305-559	24-46	610-1168

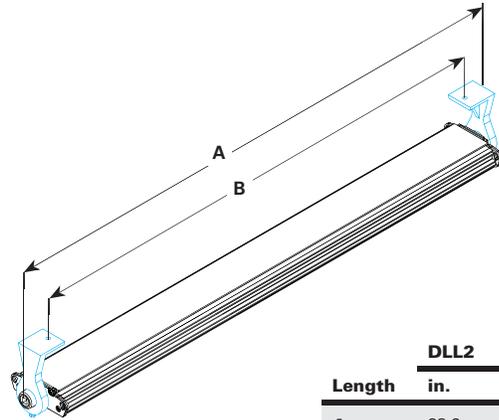
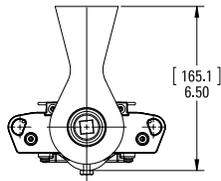
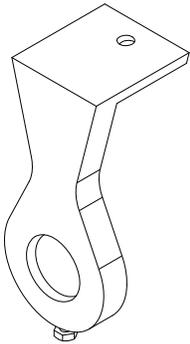
Mounting options

Offset wall DP1052MTK



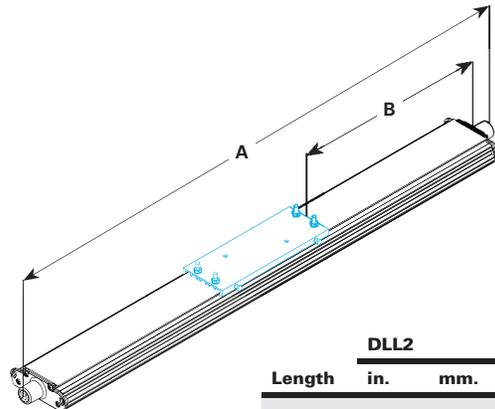
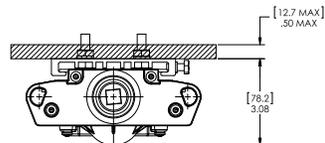
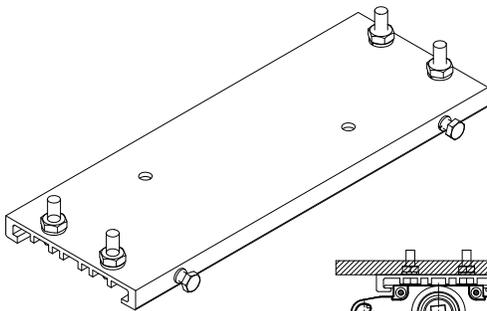
Length	DLL2		DLL4	
	in.	mm.	in.	mm.
A	28.3	720	52.3	1329
B	26.3	669	50.3	1278

Offset ceiling/wall mount DP1053MTK



Length	DLL2		DLL4	
	in.	mm.	in.	mm.
A	28.3	720	52.3	1329
B	26.3	584	47.0	1194

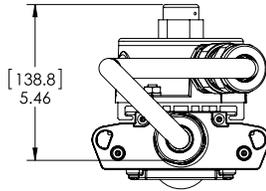
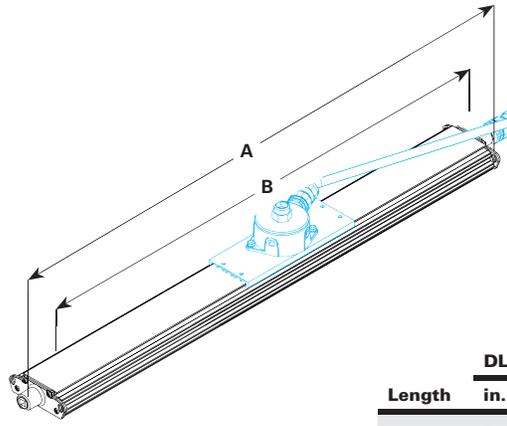
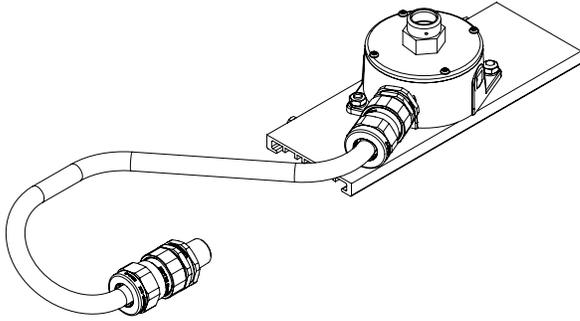
Flush ceiling DP1057MTK



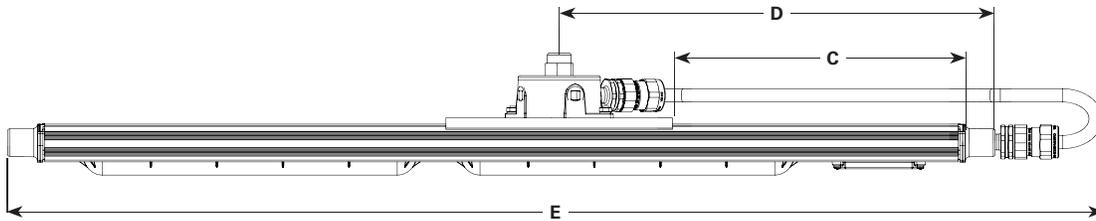
Length	DLL2		DLL4	
	in.	mm.	in.	mm.
A	28.3	720	52.3	1329
B	6.2	157.5	18.2	462

Mounting options

Pendant mount - Class I, Div. 2 only
PEND HAZ KIT



Length	DLL2		DLL4	
	in.	mm.	in.	mm.
A	31.7	805	55.8	1418
B	28.3	720	52.3	1329
C	4.2	108	16.0	406
D	12.2	310	24.0	610
E	34.9	886	58.9	1495



Battery back-up

Champ DLL linear LED luminaires are now available with an integral battery back-up module. Virtually the same size as the standard 4 foot model and up to 90 minutes of emergency lighting to keep your facility and people safe.



Model	EM output	Normal output
DLL4/UNV1 S903 EM1	1,400 lumens (100-277V)	6,720 lumens (100-277V)

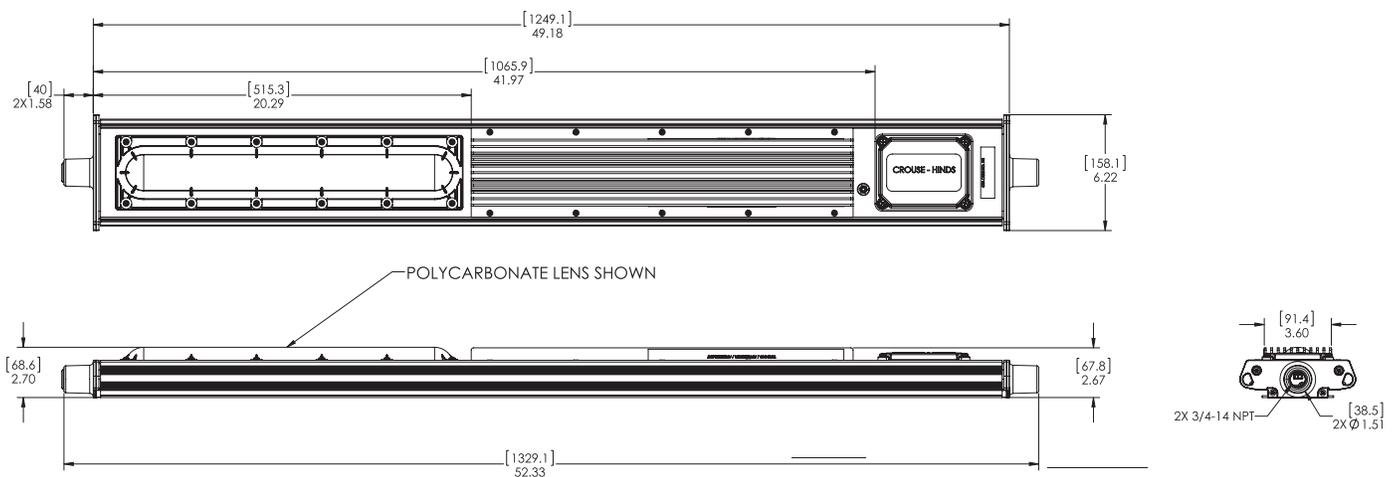
Applications:

- Egress and emergency lighting for areas requiring uninterrupted lighting during power failure
- Hazardous rated indoor and outdoor emergency lighting in manufacturing plants, heavy industrial, chemical and petrochemical facilities, platforms, loading docks and parking areas.

Key features:

- Operating ambient: 0°C to +40°C
- 90 minute runtime in emergency mode
- 6,720 lumen output for normal operation
- 1,400 in emergency mode
- 50,000 hours rated life @ 40°C
- IP66 rated enclosure
- LED indicator to check battery operation
- Nickel-cadmium battery
- 1 year warranty

Dimensions:



Certifications and compliances:

NEC/CEC

- Class I, Division 2, Groups A, B, C, D
- Class II, Division 2, Groups F, G
- Wet Location, IP66, Type 4X

UL Standards

- UL844 Hazardous (Classified)
- UL1598 Luminaires, UL1598A Marine
- UL924 Emergency Lighting

CSA Standard

- CSA C22.2 Nos. 137, 141

Electrical ratings:

Voltage	120	277
Amperage @ 120VAC	.48	.212
Wattage @ 120VAC	57.8	57.7
Lumen output	6,720	6,720
Frequency	50/60Hz	50/60Hz
Power factor @ 100 VAC	> .90	> .90
THD	6.58	11.70

Temperature codes:

Ambient temperature	Min. temp. wire supply	Class I, Div. 2	Class II, Div. I	Simultaneous rating Class I, Div. 2, Class II, Div. 1
40°C	60°C	T5	T6	T5

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

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Syracuse, NY 13208

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FAX: (315) 477-5179
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Pauluhn DFL HID hazardous area floodlights

Cl. I, Div. 2, Groups A, B, C, D
 Cl. I, Zone 2, AEx nR II
 Cl. II, Div. 1, Groups F, G (250W max.)
 Ex nR II

Marine & Wet Locations
 NEMA 4X
 IP66

5L

Applications:

- Onshore drilling and exploration
- Pipeline compressor and storage
- Corrosive environments
- Façade security lighting

Features:

- 150-400W high pressure sodium or 175-400W metal halide
- AEx nR, Ex nR restricted breathing rating is standard – restricted breathing offers cooler T-numbers for increased hazardous locations suitability
- NEMA 7x6 butterfly beam floodlight pattern – wide, uniform and far reaching to provide excellent efficiency and more light where you need it
- NEMA Type 4X and IP66 heavy duty, die cast copper-free aluminum construction is designed for use indoors and outdoors in marine and wet locations with stainless steel external hardware suitable for saltwater and corrosive applications
- 40°C, 55°C and 65°C ambient suitability – addresses high ambient common at industrial facilities
- Low ambient capability to -40°C – perfect for colder climates
- Hinged door frame assembly – has captive cover screws for ease of relamping
- Yoke mount design – standard construction provides the greatest mounting flexibility; can be mounted vertically (wall), horizontally (rooftop or floor) or any angle in between
- 3-axis resonance withstand and UL844 vibration compliant – can stand up to the tough jobs
- Precision formed aluminum reflector – superior beam control, distribution and efficiency
- High light output with a low cost of operation – cost-effectiveness in a high wattage floodlight
- Slipfitter adapter for pole mounting and wall mounting bracket available

Certifications and compliances:

- Class I, Division 2, Groups A, B, C, D
- Class I, Zone 2, AEx nR II
- Class II, Division 1, Groups F, G (250W maximum)
- Ex nR II
- UL/cUL844 – Hazardous Locations
- UL/cUL1598 – Luminaires
- UL/cUL1598A – Supplemental Requirements for Luminaires for Installation on Marine Vessels
- 60079-15
- NEMA Type 4X
- IP66
- Marine and wet locations
- ABS



Standard materials and finishes:

- Housing and lens frame – heavy duty die cast copper-free aluminum with Corro-free epoxy powder coat finish
- Lens – heat- and impact-resistant tempered glass
- Gasket – one-piece silicone
- Mounting brackets – aluminum with Corro-free epoxy powder coat finish
- Reflector – precision formed aluminum
- Lamp holder – porcelain
- Hardware – stainless steel

Technical specifications:

- Entries – one 3/4" AEx/Ex gland
- Wind rating – EPA: 2.90 at vertical
- Lamp type – high pressure sodium; probe start metal halide^A; pulse start metal halide (lamps not provided)
- Lamp holder – mogul base
- Ballast – multi-tap 120/208/240/277V, 60 Hz (standard); 220-240V, 50 Hz (optional); tri-tap 120/277/347V (optional); 480V (optional)

Mounting option:

- Yoke mount

Photometrics:

- Refer to www.eaton.com (under the Resources tab of each product family) for specific photometric IES files

<https://www.eaton.com/us/en-us/catalog/lighting-and-controls/pauluhn-dfl-hazardous-area-hid-floodlights.resources.html>

**IES FILE
 CONTAINS THE
 FOLLOWING**

IES photometric files

↓ [Crouse-Hinds Pauluhn DFL HID Floodlight ies photometric files](#)

(ZIP 19 KB, 09/08/2021)

Manufacturer	Catalog Number	Description	Lamp	Filename	Number Lamps	Lumens Per Lamp
COOPER CROUSE-HINDS	DFLMYM400	CAST ALUMINUM HOUSING, FORMED SPECULAR HAMMERTONE REFLECTOR, CLEAR GLASS ENCLASURE.	ONE CLEAR VBD M59 400 WATT PS METAL HALIDE LAMP RATED AT 40,000 LUMENS.	dfmym400.ies	1	40000

^ANot available in the U.S.

Pauluhn DFL HID hazardous area floodlights

Cl. I, Div. 2, Groups A, B, C, D
Cl. I, Zone 2, AEx nR II
Cl. II, Div. 1, Groups F, G (250W max.)
Ex nR II

Marine & Wet Locations
NEMA 4X
IP66

5L

Options:

Description	Suffix
• Lamps included	L^B
• 480V.....	480
<i>Replace /MT in catalog number with /480</i>	
• 230V.....	230
<i>Replace /220 ONLY in catalog number with /230</i>	

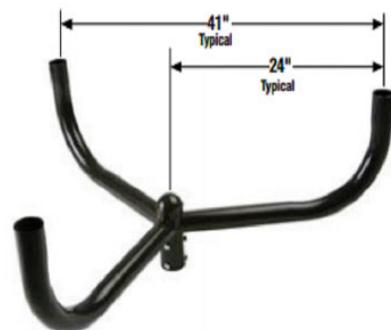
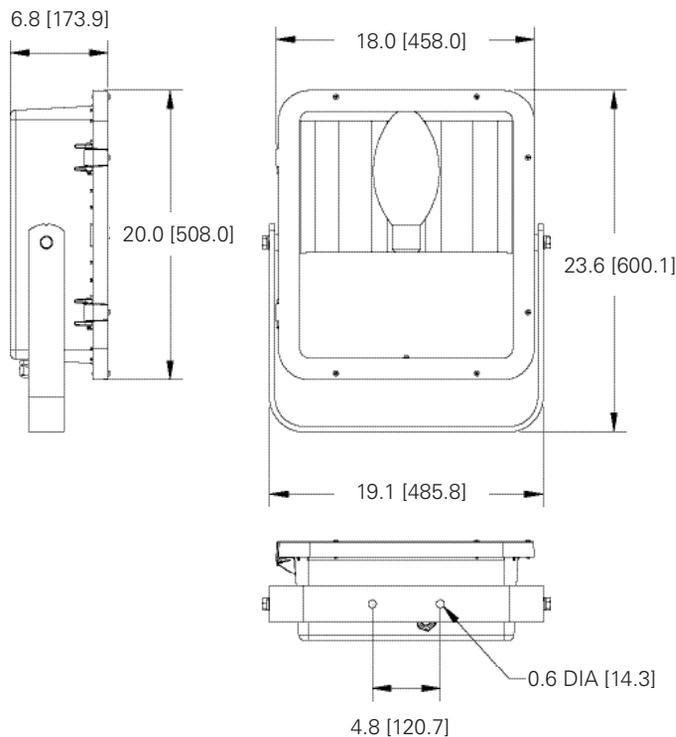
Accessories (ordered separately):

Description	Cat. #
• Pole mount slipfitter adapter	SFA6
• Wall mount bracket adapter	SWB6
• Bull horn, 2 tenon, gray	BLHN2
• Bull horn, 3 tenon, gray	BLHN3

Ordering information:

Cat. #	Lamp type	Watts	Weight (lbs.)	ANSI lamp type	Zone T-code	Division T-code	Ambient temperature °C	Supply wire °C
DFLMY250/MT 76 S828	Pulse start metal halide	250	42.0	M153	T3	T1	40/55/65	90/90/105
DFLMY400/MT 76 S828	Pulse start metal halide	400	44.0	M155	T3	T1	40/55	105/105
DFLMY320/MT 76 S828	Pulse start metal halide	320	44.0	M154	T3	T1	40/55	105/105
DFLMY250/TT 76 ^C	Probe start metal halide	250	42.0	M58 ^C	T3	T1	40/55/65	90/90/105
DFLMY400/TT 76 ^C	Probe start metal halide	400	44.0	M59 ^C	T3	T1	40/55	90/105
DFLMY250/220 50 76 ^C	Probe start metal halide	250	42.0	M58 ^C	T3	T1	40/55/65	90/90/105
DFLMY400/220 50 76 ^C	Probe start metal halide	400	44.0	M59 ^C	T3	T1	40/55	90/105
DFLSY250/MT 76	High pressure sodium	250	40.0	S50	T3	T1	40/55/65	90/90/105
DFLSY400/MT 76	High pressure sodium	400	44.0	S51	T3	T1	40/55	90/105
DFLSY250/TT 76	High pressure sodium	250	40.0	S50	T3	T1	40/55/65	90/90/105
DFLSY400/TT 76	High pressure sodium	400	44.0	S51	T3	T1	40/55	90/105
DFLSY250/220 50 76	High pressure sodium	250	40.0	S50	T3	T1	40/55/65	90/90/105
DFLSY400/220 50 76	High pressure sodium	400	44.0	S51	T3	T1	40/55	90/105

Dimensions (in inches):



Bull horns – provided with 2 3/8" pole tenon

^B Lamp is not included unless option 'L' is selected.
^C Not available in the U.S.

HYLITE™

LED Lighting

Available in Five Popular Lumen Packages and in NEMA 2, 3, 4, 5 and 6 Beam Spreads to suit a Variety of Flood Lighting Applications

140 LpW

IP67

Glare-Free, UGR <19

AEON™

Flood Light

With Enhanced Glare-Free Illumination and various Beam Spreads, AEON Provides Crisp Illumination, avoiding any Visual Discomfort. AEON's Proprietary Optics produce the Ideal Light Distribution and Beam Angles for Variety of Flood Lighting applications, while saving you up to 83% in Energy use compared to Traditional Lighting.

Engineered with State-of-the-Art technology for Efficiency, Glare Control, and Uniformity, the AEON features Instant On/Off, Dimming, Full Controllability, High Energy Efficiency, Flicker-Free Lighting and Complete Flexibility.

The AEON delivers Simple, Smart and Easy-to-use Flood Lighting Solutions that provide Advanced Functionality, Versatility and Operational Efficiency.

5 Popular Delivered Lumen Packages:

230W: 33,100lm (~1000W HID)

310W: 44,100lm (~1500W HID)

440W: 62,100lm (~2000W HID)

520W: 73,500lm (~3000W HID)

750W: 105,000lm (~4000W HID)

The Most Efficient and the Most Powerful LED Flood Light in the Industry!

Additional Options available for all Models:

- Full RGB Colors and DMX Controls
- With Remote Drivers
- Extended Warranty
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100% Project Financing Available

SAVE UP TO
83%
ON YOUR ENERGY COSTS



Proprietary & Patented Designs!



98% RECYCLABLE



NO

LEAD, MERCURY, TOXIC GASES OR HEAVY METALS

Illuminating facts about High Performance AEON™ LED Flood Light Better for your Eyes, Better for the Planet.

What makes the AEON™ LED Flood Light your Lighting Solution of Choice?

- The most powerful Flood Light Luminaire with the Highest Reliability Level: Incredibly High 95% Total Efficiency and with the Highest Efficacy in its own Class: Up to 140 Delivered LpW. More Light with Fewer Fixtures.
- Heavy-duty, Lightweight and Durable Die-Cast Design for High Wear Resistance: Withstands Harsh, Extreme Outdoor Conditions and Corrosive Environments.
- Proprietary Thermal Efficient Design with Passive Cooling Maximizes Heat Dissipation for Longer Life of the Luminaire. Designed for Greater Life Expectancy in Warmer Climates.
- Patented Revolutionary Aerodynamic Design for Minimal Wind Resistance.
- State-of-the-Art, Aesthetically Pleasant Compact Design with No Exposed Electronics or Wiring. Rugged, Weather-tight Design, IP67 Rated for Wet location.
- Patented Cross-Vent Convection Design for Longer Life of LED Package and Electronics.
- Adjustable in 15° Increments: 0-90° Orient and 270° Tilt Angle.
- Scalable LED Modules in NEMA 2, 3, 4, 5 and 6 Beam Spreads allows for Optimized Configuration for different applications.
- Proprietary Glare-Free Illumination: No Visual Discomfort. UGR <19.
- Precise, Custom-engineered Optics with Controlled Intensity and Uniformity: Maintains Consistent Delivered Foot Candles over the Luminaires life.
- High Color Rendition showing True Colors: CRI >85.
- Proprietary Design offers Uniform and Constant Light Levels throughout the life of the Luminaire with Minimal Lumen Depreciation.
- Avoids Light Pollution and Trespass: Optical Accuracy. Directs Light precisely where needed without any Spillage.
- Advance Technology for Luminaire Longevity: Integrated Power Supply Operates at Lower Temperature and at incredible 95% Efficiency.
- Technology within the Fixture: No Outside Exposure to any Sensitive Electronic Components.
- Operational Flexibility: Adaptable to Various Intelligent Lighting Controls: Wired or Wireless, Wi-Fi, Bluetooth, Zigbee, Dali, AirMesh Networks, Hybrid Networked Lighting Controls, etc.
- Ultra-Low EMI eliminates Electrical Interference with surrounding Electronic Systems.
- Excellent for 4K, Ultra-HD and HDTV Broadcasting, Digital Photography and Flicker-free Slow-Motion Recording for Optimal Television and Security Viewing.
- IP67 - Complete Protection against Dust, Debris and Water Infiltration.

Designed, Engineered &



Assembled in the USA



Contract
47QSWA20D0040

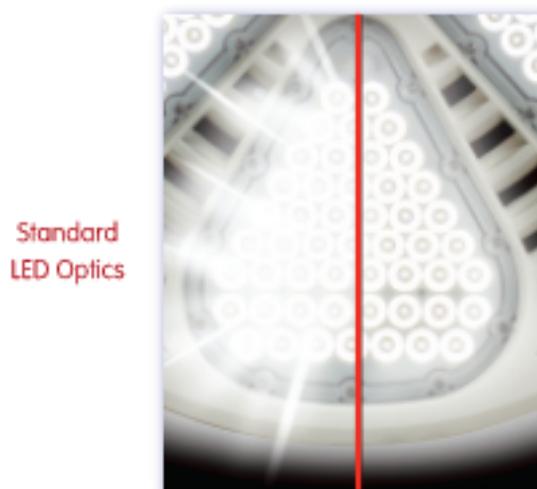
AEON™ Flood Light

Enjoy a Drastic Reduction in your Monthly Utility Bill and Eliminate Costly Maintenance Expenses. AEON™...a Favorable Impact on your Bottom-line.

AEON Model	Watts	Delivered Lumens	HID Equivalent	Energy Savings*	Input Line Current (A)				Net Weight	EPA (Sq. Ft.)
					120V	277V	347V	480V		
HL-AF-230WD	230W	33,100	1000W	77%	2.1A	0.9A	0.7A	0.5A	29 lbs.	1.6
HL-AF-310WD	310W	44,100	1500W	79%	2.8A	1.2A	1.0A	0.7A	34 lbs.	1.6
HL-AF-440WD	440W	62,100	2000W	78%	3.9A	1.7A	1.4A	1.0A	44 lbs.	2.2
HL-AF-520WD	520W	73,500	3000W	83%	4.6A	2.0A	1.6A	1.2A	48 lbs.	2.2
HL-AF-750WD	750W	105,000	4000W	81%	6.7A	2.9A	2.3A	1.7A	66 lbs.	3.0

* Does not include Ballast Loss, Maintenance, Replacement Lamp Savings and Disposal Costs which amount to an additional Savings of 30-50%!

- Rugged, Durable and Compact Luminaire stands up to the most demanding Elements and is Excellent for use in Hot & Humid Climates and Suitable for use in Corrosive Environments.
- UV Stabilized Electrostatic Finish and Stainless Steel Hardware to withstand Extreme Outdoor Conditions.
- Incredibly Long-Life Span of over 100,000 Hours.
- Simple, Reliable, and Affordable, Maintenance-free Design.
- Advanced Functionality and User Friendly with Quick Connect System: Lenses, Modules and Drivers are Field-Changeable.
- Solid-State: No Moving Parts. Ideal for High Vibration Areas (ANSI C136.31, 3G Rated).
- Standard Included: Instant On/Off, Continuous Dimming, 10 ft. Prewired Sheathed Cord, Hoist Hook and 3.3 ft (1m) Stainless Steel Safety Cable.
- Several Mounting Options: Yoke, Pendant, Wire Loop or Hook.
- 10kA / 20kV In-line Surge Protection against Over Voltage, Short Circuit, and Over Temperature.
- Suitable for Ambient Temperatures: -40°F--122°F (-40°C--50°C).
- RoHS Compliant: No Lead, Mercury, Toxic Gases or any Hazardous Materials. Facilitates LEED® points.
- Environmentally Friendly: 98% Recyclable.
- Neighborhood-Friendly: No Spillage or Sky Glow.
- Save Labor Cost Significantly: Quick & Easy Installation Process.
- Lowest Total Cost of Ownership. Shortest Payback Period and a High ROI.
- Meets/Exceeds National and International Standards



Standard LED Optics

AEON™
Proprietary
Glare-Free
LED Optics

Multi-Voltage
Options

120-277VAC / 347-480VAC



2-for-1
Replacement.
More Light
Less
Luminaires

SAVE UP TO

83%

ON YOUR
ENERGY COSTS

US Patents: D866,832, D866,833, D866,834, D866,835

5 Popular Delivered Lumen Packages

- Scalable LED Modules in NEMA 2, 3, 4, 5 and 6 Beam Spreads allows for Optimized Configuration for different Applications
- Various Delivered Lumen Packages to suit a Variety of Indoor and Outdoor Applications



98%
RECYCLABLE

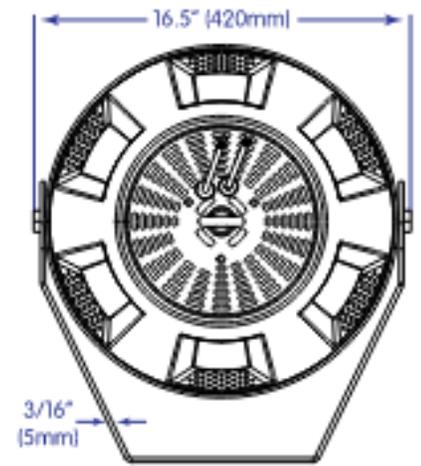
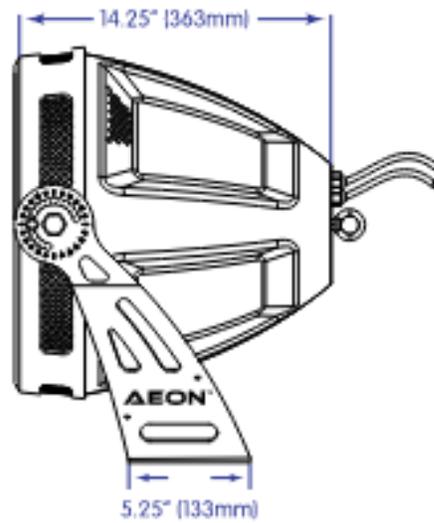
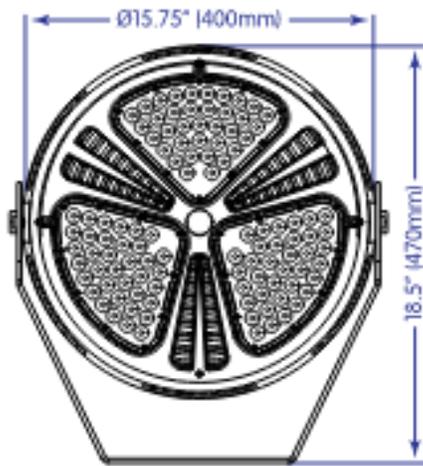


NO
LEAD, MERCURY, TOXIC GASES
OR HEAVY METALS

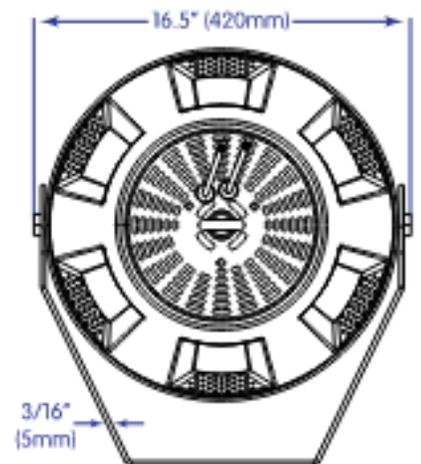
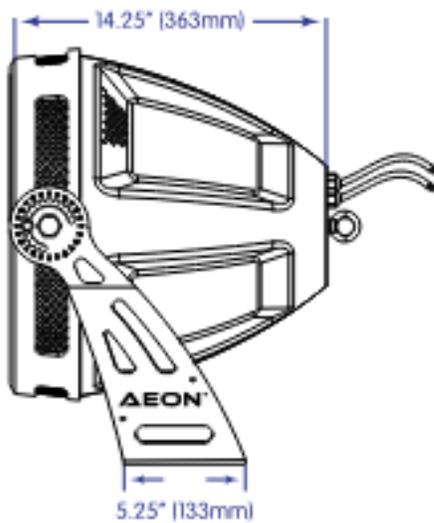
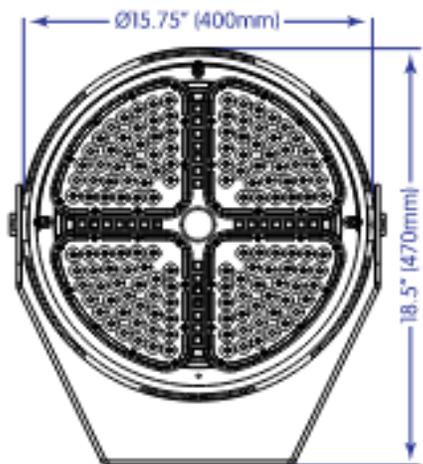
230WD - NEMA 2			230WD - NEMA 3			230WD - NEMA 4			230WD - NEMA 5			230WD - NEMA 6		
Distance	Max FC	Beam Diameter	Distance	Max FC	Beam Diameter									
50 ft.	99	11.8 ft.	50 ft.	53	20.2 ft.	50 ft.	34	27.0 ft.	50 ft.	25	30.9 ft.	50 ft.	13	40.9 ft.
75 ft.	44	17.7 ft.	75 ft.	23	30.3 ft.	75 ft.	15	40.5 ft.	75 ft.	11	46.2 ft.	75 ft.	6	61.2 ft.
100 ft.	25	23.5 ft.	100 ft.	13	40.4 ft.	100 ft.	8	54.0 ft.	100 ft.	6	61.6 ft.	100 ft.	3	81.7 ft.
150 ft.	11	35.3 ft.	150 ft.	6	60.7 ft.	150 ft.	4	81.0 ft.	150 ft.	3	92.5 ft.	150 ft.	2	122.4 ft.
200 ft.	6	47.1 ft.	200 ft.	3	80.9 ft.	200 ft.	2	108.0 ft.	200 ft.	2	123.3 ft.	200 ft.	1	163.3 ft.
Beam Angle: 14° Field Angle: 25°			Beam Angle: 23° Field Angle: 43°			Beam Angle: 30° Field Angle: 64°			Beam Angle: 35° Field Angle: 80°			Beam Angle: 45° Field Angle: 114°		
310WD - NEMA 2			310WD - NEMA 3			310WD - NEMA 4			310WD - NEMA 5			310WD - NEMA 6		
Distance	Max FC	Beam Diameter	Distance	Max FC	Beam Diameter									
50 ft.	135	11.3 ft.	50 ft.	71	19.4 ft.	50 ft.	45	26.6 ft.	50 ft.	33	30.5 ft.	50 ft.	18	41.0 ft.
75 ft.	60	17.0 ft.	75 ft.	32	29.0 ft.	75 ft.	20	40.0 ft.	75 ft.	15	46.0 ft.	75 ft.	8	61.3 ft.
100 ft.	34	22.6 ft.	100 ft.	18	38.7 ft.	100 ft.	11	53.1 ft.	100 ft.	8	61.0 ft.	100 ft.	5	81.7 ft.
150 ft.	15	34.0 ft.	150 ft.	8	58.0 ft.	150 ft.	5	80.0 ft.	150 ft.	4	91.5 ft.	150 ft.	2	122.5 ft.
200 ft.	8	45.1 ft.	200 ft.	5	77.4 ft.	200 ft.	3	106.3 ft.	200 ft.	2	122.0 ft.	200 ft.	1	163.3 ft.
Beam Angle: 14° Field Angle: 24°			Beam Angle: 22° Field Angle: 42°			Beam Angle: 30° Field Angle: 64°			Beam Angle: 34° Field Angle: 80°			Beam Angle: 45° Field Angle: 114°		
440WD - NEMA 2			440WD - NEMA 3			440WD - NEMA 4			440WD - NEMA 5			440WD - NEMA 6		
Distance	Max FC	Beam Diameter	Distance	Max FC	Beam Diameter									
33 ft.	375	7.4 ft.	33 ft.	187	12.5 ft.	33 ft.	180	14.9 ft.	33 ft.	93	22.8 ft.	33 ft.	55	27.3 ft.
66 ft.	94	14.7 ft.	66 ft.	47	25.0 ft.	66 ft.	45	29.8 ft.	66 ft.	23	45.6 ft.	66 ft.	14	54.5 ft.
99 ft.	42	22.1 ft.	99 ft.	21	37.4 ft.	99 ft.	20	44.6 ft.	99 ft.	10	68.4 ft.	99 ft.	6	81.8 ft.
133 ft.	23	29.4 ft.	133 ft.	12	49.9 ft.	133 ft.	11	59.5 ft.	133 ft.	6	91.2 ft.	133 ft.	3	109.1 ft.
200 ft.	10	44.2 ft.	200 ft.	5	74.8 ft.	200 ft.	5	89.3 ft.	200 ft.	3	136.9 ft.	200 ft.	2	163.6 ft.
Beam Angle: 13° Field Angle: 24°			Beam Angle: 22° Field Angle: 45°			Beam Angle: 26° Field Angle: 58°			Beam Angle: 39° Field Angle: 80°			Beam Angle: 45° Field Angle: 115°		
520WD - NEMA 2			520WD - NEMA 3			520WD - NEMA 4			520WD - NEMA 5			520WD - NEMA 6		
Distance	Max FC	Beam Diameter	Distance	Max FC	Beam Diameter									
33 ft.	416	7.3 ft.	33 ft.	221	12.8 ft.	33 ft.	213	15.1 ft.	33 ft.	110	22.7 ft.	33 ft.	66	27.3 ft.
66 ft.	104	14.6 ft.	66 ft.	55	25.6 ft.	66 ft.	53	30.2 ft.	66 ft.	28	45.4 ft.	66 ft.	17	54.5 ft.
99 ft.	46	21.9 ft.	99 ft.	25	38.4 ft.	99 ft.	24	45.3 ft.	99 ft.	12	68.1 ft.	99 ft.	7	81.8 ft.
133 ft.	26	29.2 ft.	133 ft.	14	51.2 ft.	133 ft.	13	60.4 ft.	133 ft.	7	90.9 ft.	133 ft.	4	109.0 ft.
200 ft.	12	43.8 ft.	200 ft.	6	76.7 ft.	200 ft.	6	90.6 ft.	200 ft.	3	136.3 ft.	200 ft.	2	163.5 ft.
Beam Angle: 13° Field Angle: 24°			Beam Angle: 22° Field Angle: 45°			Beam Angle: 26° Field Angle: 58°			Beam Angle: 38° Field Angle: 80°			Beam Angle: 45° Field Angle: 114°		
750WD - NEMA 2			750WD - NEMA 3			750WD - NEMA 4			750WD - NEMA 5			750WD - NEMA 6		
Distance	Max FC	Beam Diameter	Distance	Max FC	Beam Diameter									
33 ft.	501	8.2 ft.	33 ft.	278	12.7 ft.	33 ft.	305	15.1 ft.	33 ft.	158	22.5 ft.	33 ft.	90	27.6 ft.
66 ft.	125	16.4 ft.	66 ft.	70	25.5 ft.	66 ft.	76	30.2 ft.	66 ft.	39	45.0 ft.	66 ft.	22	55.1 ft.
133 ft.	31	32.8 ft.	133 ft.	17	51.0 ft.	133 ft.	19	60.3 ft.	133 ft.	10	89.9 ft.	133 ft.	6	110.3 ft.
200 ft.	14	49.2 ft.	200 ft.	8	76.5 ft.	200 ft.	9	90.4 ft.	200 ft.	4	134.9 ft.	200 ft.	3	165.4 ft.
300 ft.	6	73.7 ft.	300 ft.	4	114.7 ft.	300 ft.	4	135.7 ft.	300 ft.	2	202.3 ft.	300 ft.	1	248.1 ft.
Beam Angle: 14° Field Angle: 27°			Beam Angle: 23° Field Angle: 46°			Beam Angle: 26° Field Angle: 57°			Beam Angle: 39° Field Angle: 81°			Beam Angle: 46° Field Angle: 119°		

AEON[™] Flood Light

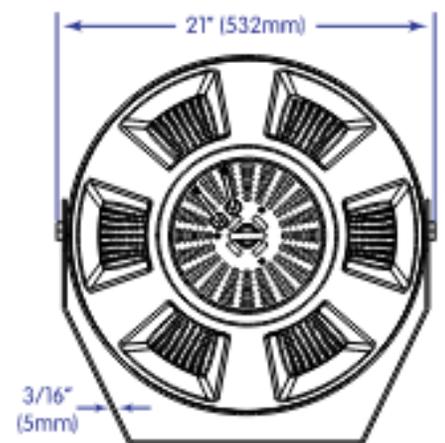
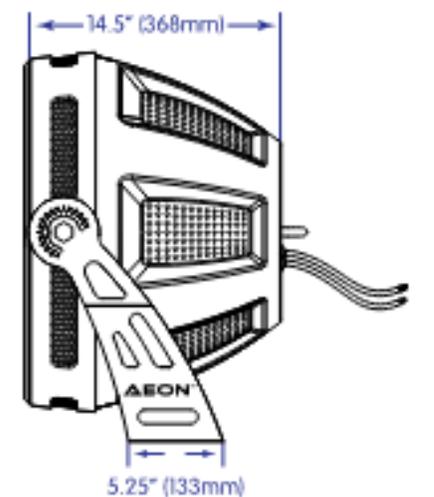
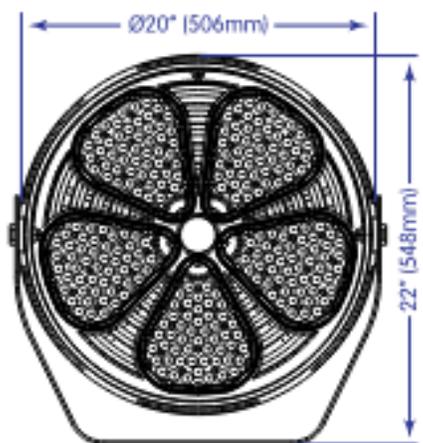
HL-AF-230WD



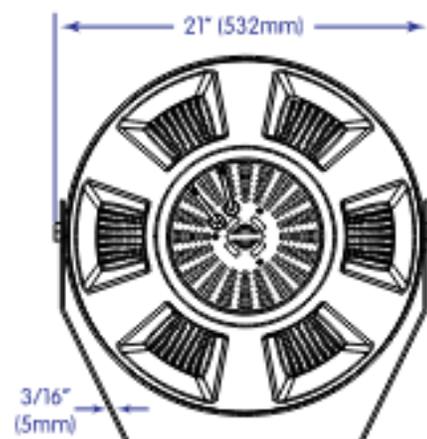
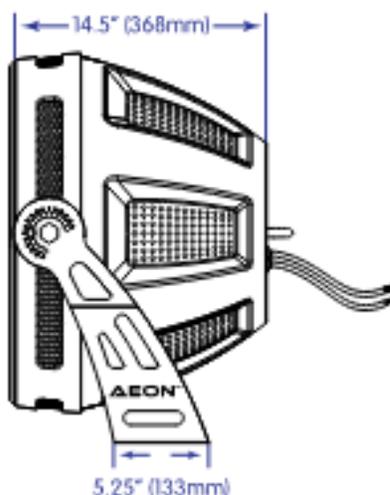
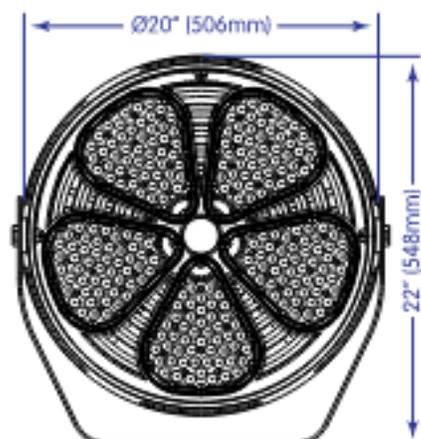
HL-AF-310WD



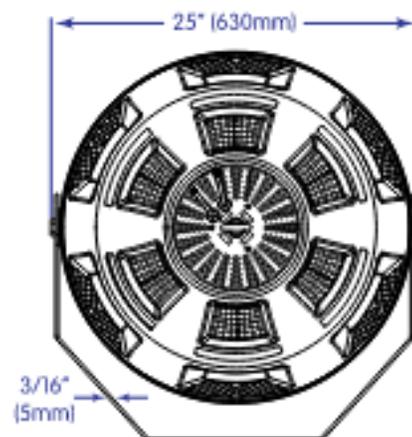
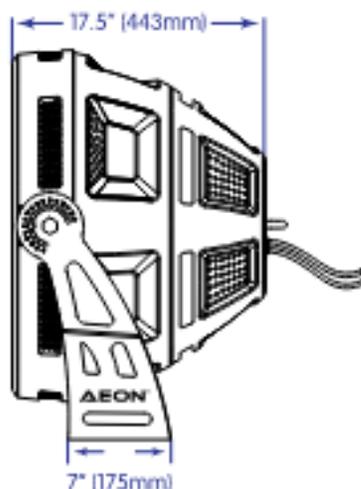
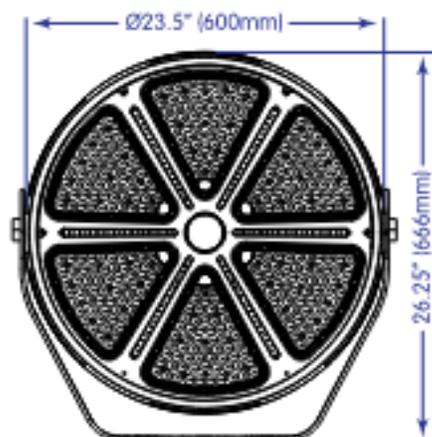
HL-AF-440WD



HL-AF-520WD



HL-AF-750WD



Ordering Nomenclature:

HL	-	AF	-	440WD	-	50K	-	N6	-	277V	-	WH	-	PCK-7
COMPANY		SERIES		WATTS		CCT		NEMA SPREAD		VOLTAGE		COLOR		OPTIONS
				230WD		50K = 5000K		2		277V = 120V-277V		WH = White		See Options, below
				310WD		57K = 5700K		3		480V = 347V-480V		GY = Gray		
				440WD		Important Note:		4				BK = Black		
				520WD		Standard CCT: 5000K		5				Important Note:		
				750WD		5700K available as "Special Order" only and with Longer Lead Times		6				Standard Color: White Gray and Black available as "Special Orders" only and with Longer Lead Times		

Options:

- YB-2331 High Mast / Indirect Lighting Yoke Bracket for 230W-310W
- YB-4452 High Mast / Indirect Lighting Yoke Bracket for 440W-520W
- YB-7500 High Mast Yoke Bracket for 750W
- PCK-7 Photo Control Receptacle Kit Only (Photocell not included)

- NMA-1270F Indirect Lighting Mount Adapter, 3/4NPT
- NLM-1840 Indirect Lighting Loop Mount Assembly
- PMA-1230B Pendant Mount Adapter, 3/4NPT
- HMA-34NPT Hook Mount Adapter, 3/4NPT

As part of the company's continuous product improvement program, HyLite reserves the right to change materials or modify the design of its product without notification. All Specifications subject to change without notice. All values are design and/or typical values when measured under laboratory conditions. Actual Values depend upon the ambient temperature of the installation location. Please consult factory for your specific requirements.

Laydown Light Towers

LED/Metal Halide/LED Balloon



Robust and reliable with unique features for enhanced performance

- High-output light fixtures
- Telescoping tower rotates nearly 360 degrees
- Multiple low-speed engine options
- Heavy gauge all-steel body
- Unobstructed engine accessibility



Not just another light tower, Wanco Laydown Light Towers use state-of-the-art technology for superior illumination, shining a uniform light pattern across the entire job site and exceeding government regulations for worksite illumination.

For fast job-site setup and less downtime, each light fixture can be aimed independently without the use of tools—and the fixtures stay in place once positioned. Choose either LED or metal halide lights when specifying your light tower. Wanco's proprietary LED fixtures are the brightest available on any portable light tower, and Wanco's metal halide fixtures feature high-intensity parabolic reflectors that increase illumination. Balloon lights are also available.

The telescoping tower stows securely in a travel cradle when it is horizontal, then extends vertically to 30 feet when deployed. While upright, the tower rotates nearly 360 degrees and the lights operate at any height, eliminating the need to move the trailer frequently. Two winches raise and extend the tower easily. Manual winches are standard and power winches are optional.

A choice of industrial diesel engines and four-pole generators ensure reliable performance. The high-efficiency engine and 30-gallon fuel tank provide extended run times between refuelings—up to 120 hours with Wanco's exclusive LED light fixtures. Performance enhancing options include an automated dusk-to-dawn start/stop system and cold-weather start package.

For system maintenance, Wanco's exclusive hinged top panel provides unimpeded access to the engine, generator and electrical components. The equipment bay is a rugged all-steel cabinet with gull-wing doors that can be locked closed to protect against unauthorized access.

Wanco Laydown Light Towers boast trouble-free performance and exceptional longevity—hallmarks of the Wanco brand.

To order one today, call **800.972.0755** or visit wanco.com.

Brief specifications

Physical

Deployed footprint	127 × 112 in. (321 × 285 cm), L × W
Operating height	Max. 30 ft (9.14m) Min. 12½ ft (3.81m)
Travel height	66 in (168cm)
Weight	Operating Approx. 1800 lb (815kg) Shipping Approx. 1550 lb (703kg)

Lights

Lamps*	480-watt LEDs Four 480W fixtures	350-watt LEDs Four 350W fixtures	Metal halides Four 1000W lamps
Luminosity**	57,800 lm per fixture 231,200 lm total	49,000 lm per fixture 196,000 lm total	110,000 lm per lamp 440,000 lm total

NOTE 1

Power system

Engine type	Tier 4 Final diesel, 3-cylinder, 4-cycle
Engine speed*	1800 rpm @ 60 Hz or 1500 rpm @ 50 Hz
Generator type	Brushless, class H
Sound level	71 dB @ 23 ft (7m) at max. load
Battery	12 Vdc, 550 CCA

	Kubota® D1005	Mitsubishi® L3E	Kohler® KD1003
Maximum power output*	13.1 hp (9.8 kW)	15.4 hp (11.5 kW)	23.7 hp (17.7 kW)
Displacement*	61.08 in³ (1001cm³)	68.53 in³ (1123cm³)	62.7 in³ (1028cm³)
Fuel tank capacity	30 gal (114L)	30 gal (114L)	30 gal (114L)
	480-watt LEDs	350-watt LEDs	Metal halides
Fuel consumption*	0.31 gal/hr (1.17L/h)	0.25 gal/hr (0.096L/h)	0.49 gal/hr (1.86L/h)
Runtime before refueling*	Approx. 97 hrs	Approx. 120 hrs	Approx. 62 hrs

Output power

Output*	6 kW or 8 kW
Voltage*	120 Vac or 240 Vac
Amperage	50 A @ 120V, 25 A @ 240V
Frequency*	60 Hz or 50 Hz
Voltage regulation	±6%, no load to full load

*Depending on model **Continuous intensity for LEDs, initial intensity for metal halides

**NOTE 1: MODELED AS POWER LITE LED-FL480W
SEE DATA SHEET ATTACHED FOR 62,400
LUMENS PER FIXTURE.**



WANCO INC.
5870 Tennyson Street
Arvada, Colorado 80003 USA
800-972-0755
303-427-5700
303-427-5725 fax
www.wanco.com

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Printed on recycled paper



POWER-LITE®

Certainty at The Speed of Light



LED-FL480W



LED-FL720W



LED-FL960W

LED STADIUM

FLOOD LIGHT

LED-FL

Utilising the POWER-LITE® LED Flood Light provides many benefits in addition to the substantial costs savings achieved through our LED technology. Our LED Flood Lights tackle the usual challenges faced with providing a lighting solution, including the elimination of UV therefore insects will not be attracted to this light. There is no warm up process, the light is immediate and reaches full output upon the flick of a switch. The IP65 rating and high quality powder coating provides a durable and safe solution, protecting the product against rust and water penetration, meaning no maintenance is required.



E2362



ROHS



APPLICATIONS

Warehouses
Petrol Stations
Stadiums
Commercial
Industrial



☎ 1800 909 306

🌐 nedlandsgroup.com.au

✉ sales@nedlandsgroup.com.au

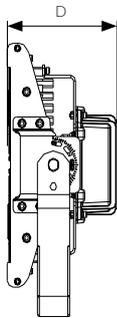
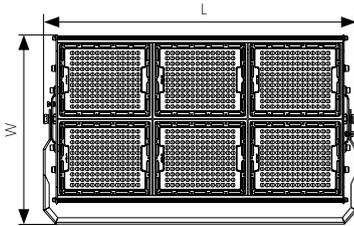


POWER-LITE®

Certainty at The Speed of Light

DIMENSIONS (L x W x D mm)

LED-FL480W	579.4 x 442 x 201
LED-FL720W	833.4 x 442 x 201
LED-FL960W	1079.4 x 442 x 200



LED Chip
Philips SMD 3030

Lens
PC Lens

Working Temp
-40°C to +50°C

Power Factor
>0.95

Lifespan
50,000hrs

Efficacy
Up to 125lm/W

LED Driver
Meanwell
Non-dimmable

Connection
1m Power Cable

Material
Aluminium

Carton Qty
1

5700K

AC100-277V

Black

PRODUCT SPECIFICATIONS CODE

LED STADIUM FLOOD LIGHT

480W
62,400lm

Net Weight 19kg
Replaces 1000W

LED-FL480W

720W
93,600lm

Net Weight 30kg
Replaces 1500W

LED-FL720W

960W
124,800lm

Net Weight 36kg
Replaces 2000W

LED-FL960W

AMPS 4 Amps

IP66

IK10

60 x 100° Beam Angle

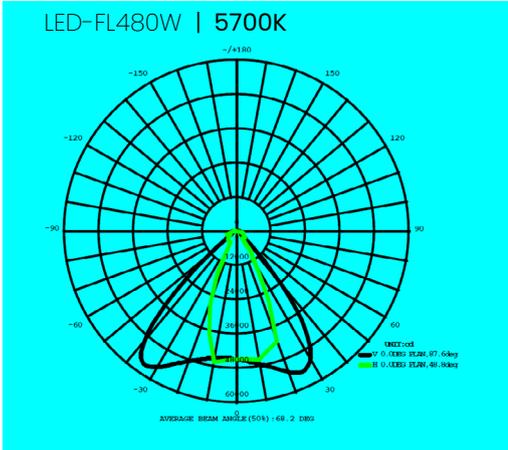


POWER-LITE®

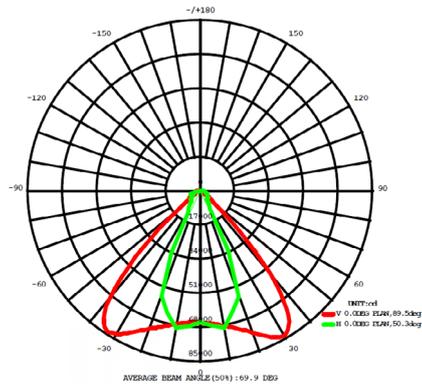
Certainty at The Speed of Light

PHOTOMETRICS

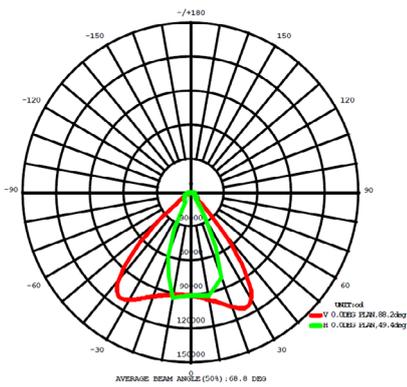
LED-FL480W | 5700K



LED-FL720W | 5700K



LED-FL960W | 5700K





Color: Bronze

Weight: 20.9 lbs

Project:
BOOMHOG

Type:
FXLED150SF

Prepared By:
HALKER

Date:
06.05.23

Driver Info

Type	Constant Current
120V	1.39A
208V	0.80A
240V	0.70A
277V	0.60A
Input Watts	163.6W

LED Info

Watts	150W
Color Temp	5000K (Cool)
Color Accuracy	72 CRI
L70 Lifespan	100,000 Hours
Lumens	20,686 lm
Efficacy	126.4 lm/W

Technical Specifications

Compliance

UL Listed:

Suitable for wet locations. Suitable for mounting within 1.2m (4ft) of the ground.

IESNA LM-79 & LM-80 Testing:

RAB LED luminaires and LED components have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80

IP Rating:

Ingress protection rating of IP66 for dust and water

DLC Listed:

This product is listed by Design Lights Consortium (DLC) as an ultra-efficient premium product that qualifies for the highest tier of rebates from DLC Member Utilities.

DLC Product Code: P0000173K

Performance

Lifespan:

100,000-Hour LED lifespan based on IES LM-80 results and TM-21 calculations

Wattage Equivalency:

Equivalent to 400W Metal Halide

Other

Note:

All values are typical (tolerance +/- 10%)

Warranty:

RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish. RAB's warranty is subject to all terms and conditions found at rablighting.com/warranty.

Buy American Act Compliance:

RAB values USA manufacturing! Upon request, RAB may be able to manufacture this product to be compliant with the Buy American Act (BAA). Please contact customer service to request a quote for the product to be made BAA compliant.

LED Characteristics

LEDs:

Long-life, high-efficacy, surface-mount LEDs

Color Stability:

LED color temperature is warranted to shift no more than 200K in color temperature over a 5-year period

Color Uniformity:

RAB's range of Correlated Color Temperature follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2017.

Construction

EPA:

2

Ambient Temperature:

Suitable for use in up to -40°C (-40°F) to 40°C (104°F)

Lens:

Tempered glass lens included

Housing:

Die-cast aluminum housing and door frame

Mounting:

Heavy-duty slipfitter for 2 3/8"OD pipe

Finish:

Formulated for high durability and long-lasting color

Tilt Increment:

Rotates in 6 degree increments

Electrical

Driver:

Constant Current, Class 2, 120-277V, 50/60 Hz, 120V: 1.39A, 208V: 0.81A, 240V: 0.70A, 277V: 0.60A

THD:

1.95% at 120V, 8.2% at 277V

Power Factor:

99.9% at 120V, 97.6% at 277V

Photocell:

120-277V Twistlock photocell included. Photocell is compatible with 120-277V.



Ceiling Mount HAZLED is a Class I, Division 2 LED fixture designed with 60 years of experience in hazardous location lighting.

Color: Gray

Weight: 10.5 lbs

Project:
BOOMHOG

Type:
HAZSLED42F

Prepared By:
HALKER

Date:
06.05.23

Driver Info

Type	Constant Current
120V	0.36A
208V	0.18A
240V	0.17A
277V	0.16A
Input Watts	43.2W

LED Info

Watts	42W
Color Temp	5000K (Cool)
Color Accuracy	71 CRI
L70 Lifespan	100,000 Hours
Lumens	3,578 lm
Efficacy	82.8 lm/W

Technical Specifications

Hazardous Location Classifications

UL 844:

Electric lighting fixtures for use in hazardous (classified) locations

UL 1598:

Electric lighting fixtures for use in non-hazardous locations

UL 8750:

Light Emitting Diode (LED) Light Sources for Use in Lighting Products

Hazardous Location Classifications:

Class I: A hazardous location in which flammable gases or vapors may be present in the air in sufficient quantities to be explosive or ignitable, such as petroleum refineries, aircraft hangars, dry cleaning plants, utility gas plants or storage areas for liquified petroleum or natural gas, and spray finishing areas.

Division 2: Abnormal condition, where ignitable concentrations of flammable gases, vapors or liquids are not like to exist under normal operating conditions, for example:

Closed storage drums containing flammable liquids in an inside storage room would not normally allow the hazardous vapors to escape into the atmosphere. But if one of the containers is leaking, you've got an abnormal condition.

Groups A - D: The gases and vapors of Class 1 locations are broken into four groups by the Code: A,B,C, and D. These materials are grouped according to the ignition temperature of the substance, its explosion pressure, and other flammable characteristics.

Group A - The only substance in group A is acetylene because it is a gas with extremely high explosion pressures.

Group B - This group includes hydrogen and other materials with similar characteristics.

T Ratings:

HAZLED™ 42W model is T2B rated

LED Characteristics

LEDs:

Multi-chip, high-output, long-life LEDs

Color Stability:

LED color temperature is warranted to shift no more than 200K in color temperature over a 5-year period

Color Uniformity:

RAB's range of Correlated Color Temperature follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2017.

Construction

Minimum Starting Temperature:

-40°C

Maximum Ambient Temperature:

Suitable for use in up to 40°C (104°F)

Thermal Management:

Superior heat sinking with external Air-Flow fins

Housing:

Die-cast aluminum housing, lens frame and mounting arm

Hardware:

All external hardware is stainless steel

Group C & D - The most usual Class 1 groups. They comprise the greatest percentage of all Class I hazardous locations. Found in Group C is ethylene. Found in Group D are many of the most common flammable substances such as butane, gasoline, natural gas and propane.

Reflector:

Semi-specular aluminum

Technical Specifications (continued)

Lens/Globes:

Clear flat glass lens

Mounting:

Ceiling mounting with (2) steel lugs

Conduit Entry:

3/4"

Gaskets:

Closed cell silicone gasket

Finish:

Our environmentally friendly polyester powder coatings are formulated for high-durability and long-lasting color

Green Technology:

Mercury and UV free. RoHS-compliant components.

Compliance

IP Rating:

Ingress protection rating of IP66 for dust and water

IESNA LM-79 & LM-80 Testing:

RAB LED luminaires and LED components have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80.

Performance

Lifespan:

100,000-Hour LED lifespan based on IES LM-80 results and TM-21 calculations

Wattage Equivalency:

Equivalent to 100W Metal Halide

Optical

BUG Rating:

B1 U2 G1

Other

Warranty:

RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish. RAB's warranty is subject to all terms and conditions found at rablighting.com/warranty.

Buy American Act Compliance:

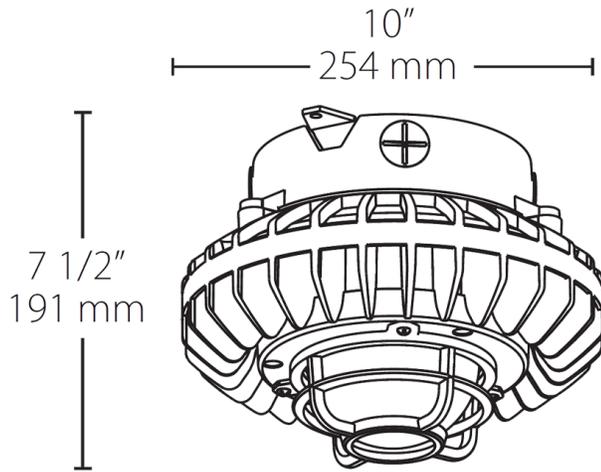
RAB values USA manufacturing! Upon request, RAB may be able to manufacture this product to be compliant with the Buy American Act (BAA). Please contact customer service to request a quote for the product to be made BAA compliant.

Electrical

Driver:

Constant Current, Class 2, 100-277V, 50/60 Hz, 1050mA, THD <20%, Power Factor 95%

Dimensions



Features

- Class 1, Division 2, Groups A, B, C, D
- IP66, UL1598, UL8750 and UL 844 ratings
- Resistant to shock and vibration
- Rugged construction ensures long-life and safe operation
- 100,000-Hour LED lifespan
- 5-Year, no-compromise warranty

Ordering Matrix

Family	Wattage	Lens/Globes	Guard	Driver Options
HAZXLED	42	CF	-	DG
	26 = 26W 42 = 42W 80 = 80W	CF = Clear Flat Lens FF = Frosted Flat Lens C = Clear Globe F = Frosted Globe FR = Frosted Red Globe FG = Frosted Green Globe FB = Frosted Blue Globe FA = Frosted Amber Globe	Blank = No guard G = Wire guard DG = Die cast guard	Blank = On/Off /D10 = 0-10V Dimming /480 = 480V On/Off