



# BISON IV OPERATING, LLC

REMORA OGD

Lighting Plan



**Bison IV Operating, LLC**  
**REMORA OGDG LIGHTING PLAN**

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**Article I. Introduction**

*Location Information*

This document provides site-specific information for the Remora 6 Pad within the Remora OGDP, 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 sixteen (16) proposed horizontal wells on this location.

The proposed location is rangeland approximately 0.4 miles north of the intersection of E 6<sup>th</sup> Ave and Schumaker Road. The Pad will be in the SWNW of Section 6, Township 4 South, Range 63 West, zoned Agricultural within Arapahoe County. An Administrative Use by Special Review with Arapahoe County will be filed with the OGDP application.

Total initial area of disturbance is planned to be 20.0 acres. Bison IV Operating, LLC (Bison) plans to reclaim 10.48 acres, leaving 9.52 acres of well pad disturbance for the life of production. The Pad is on Parcel 1981-00-0-00-244 owned by AJS Management Co LLC. The location is currently used for agriculture.

The proposed production facility equipment for the Remora 6 Pad will be located within the WPS adjacent to the wells and will consist of oil tanks, water tanks, vapor recovery towers (VRT), separators, oil polishers, surge vessels, gas lift compressors, vapor recovery units (VRU), oil and water LACTs, scrubbers, blower/oxygen destructors, instrument air skids, gas lift meters, sales gas meters, electrical skids, and emission control devices (ECD).

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

<b>Phase</b>	<b>Duration (days)</b>	<b>Estimated Start Date</b>
Construction	+/- 35 days	3 <sup>rd</sup> Quarter 2024
Drilling	+/- 104 days	4 <sup>th</sup> Quarter (December) 2024
Completion	+/- 60 days	1 <sup>st</sup> Quarter (March) 2025
Flowback	+/- 10 days	2 <sup>nd</sup> Quarter (May) 2025
Production	Ongoing +/- 30 years	2 <sup>nd</sup> Quarter (June) 2025
Interim Reclamation	+/- 30 days	2 <sup>nd</sup> Quarter (June) 2025*

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

**Article II. Plan Narrative**

*Jurisdictional Agency*

The Relevant Local Government has lighting requirements under applicable Arapahoe County Land Development Code.

The Land Use designation of the proposed location is agricultural. Bison is including Lighting Layout Sheets with the Administrative Use by Special Review application. Lighting will adhere to the adopted Arapahoe County oil and gas regulations that address key safety, traffic, and quality of life considerations which include guidelines for site lighting. There will be permanent lighting onsite during the production phase (refer to the attached Lighting Layout Sheets).



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

<b>Land Use</b>	<b>Lumens per SF of WPS</b>
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 more protective than the Arapahoe County standards. Bison will comply with the stricter agency's (ECMC) 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 Remora 6 Pad 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 Remora 6 Pad Oil and Gas Facilities do 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.

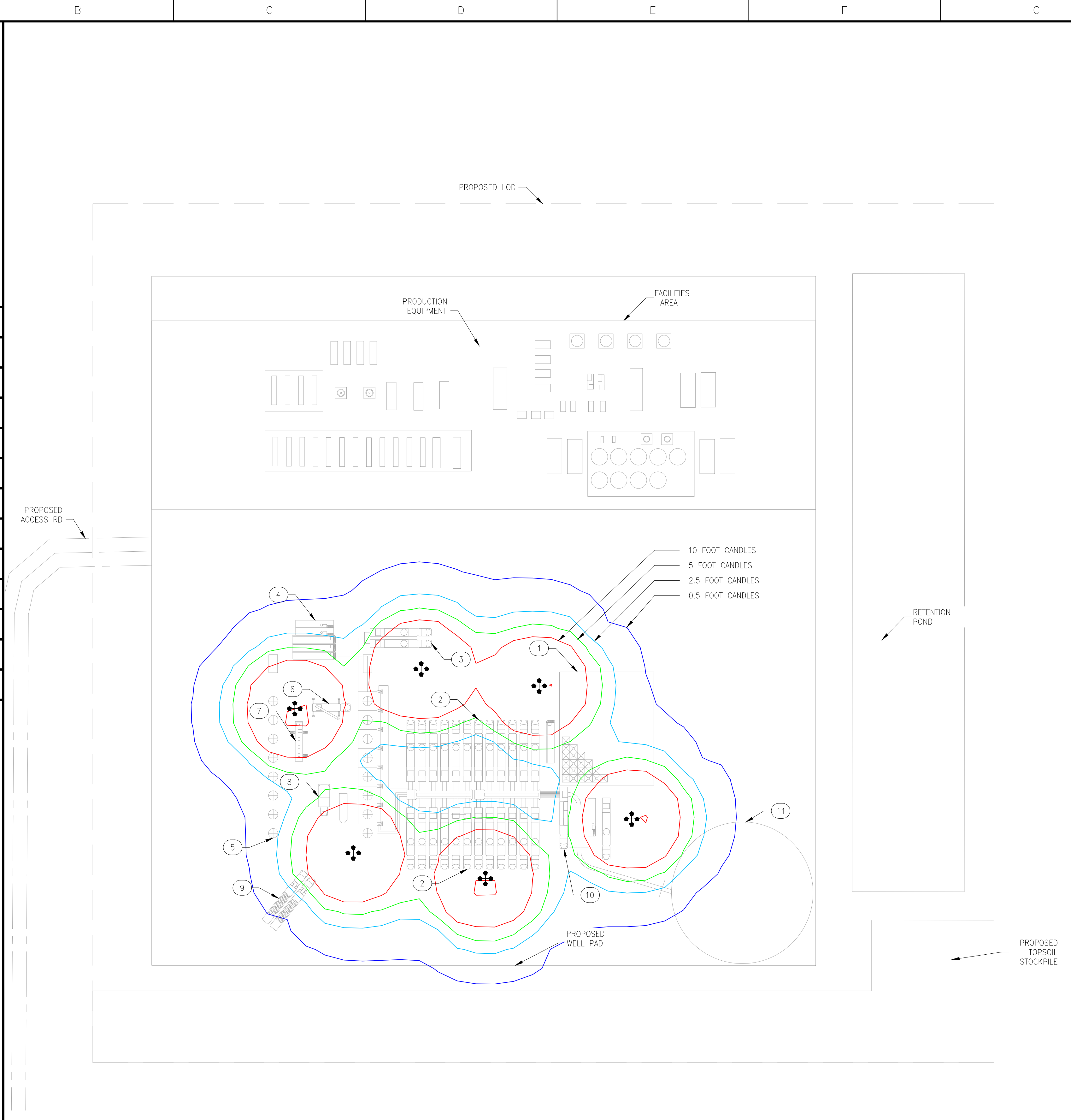






FILE PATH: P:\BISON OIL & GAS\23064-01-REMOVAL PAD\3-0-DESIGN\3-6-EI&C\FOR REVIEW\23064-01-73011-REMOVA 6 PAD COMPLETION.DWG BY:LUISALBERDAS DATE:Sep 29, 2023 1:29pm

FACILITY EQUIPMENT LIST	
1	DANCE FLOOR
2	PUMP TRUCKS STAGING
3	PUMPDOWN TRUCKS
4	FLOWBACK TANKS
5	WELLHEADS
6	CRANE
7	COMMAND TRAILER
8	WIRELINE TRUCK
9	CHEMICAL TRAILERS
10	BLENDER
11	197' DIAMETER MLVT



LIGHTING FIXTURE SCHEDULE					
TYPE	SYMBOL	DESCRIPTION	LUMENS PER FIXTURE	FIXTURE COUNT	FIXTURE SUBTOTAL
1	☼	WANCO LIGHT TOWERS 480 W LED FIXTURES (MODELED AS POWER-LITE LED-FL480W) (4 LIGHTS MOUNTED PER TRAILER AT MAX HEIGHT OF 30')	62,400	4	249,600

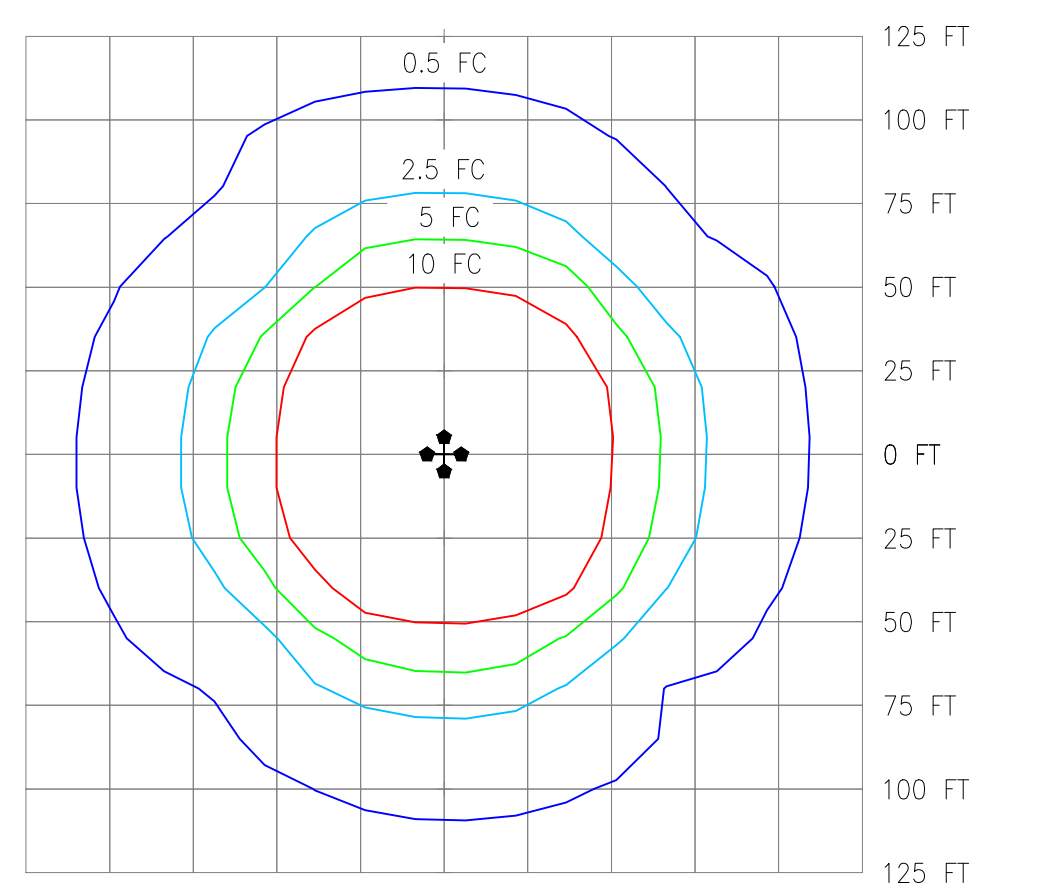
SITE TOTALS	
PROPOSED NUMBER OF TRAILERS	6
TOTAL LUMENS	1,497,600 LUMENS
SITE SQUARE FOOTAGE	871,200 SQ. FT
LUMENS/SQ. FT	1.72 LUMENS/SQ. FT
ILLUMINATION AT 2000'	<0.1 LUX
ILLUMINATION AT 1-MILE	<0.1 LUX
LUMINATION MAXIMUM PER COGCC RULE 424.F	4 LUX

FRAC LIGHTING UTILIZES TRAILER MOUNTED LIGHTS. FINAL LIGHT TRAILER SUBJECT TO CHANGE. THIS LAYOUT BASED ON GENERAC MLT6SMD5 TRAILER WITH LIGHTS MOUNTED AT 45 DEGREES. FINAL PLACEMENT DETERMINED BY CONTRACTOR.

CONTRACTOR SHALL NOT PLACE ANY TRAILER WITHIN 100' OF SITE BOUNDARY TO AVOID ANY LIGHT TRANSMISSION OUTSIDE OF SITE BOUNDARY. IF LIGHTS ARE NEEDED IN THESE AREAS, THE TRAILER LIGHTS SHALL BE ADJUSTED POINT INWARD TOWARDS SITE WITH NO ANGLES EXCEEDING 45 DEGREES FROM GROUND TO AVOID UPWARD LIGHT POLLUTION.



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.



TEMPORARY LIGHT TRAILER FOOT CANDLE TEMPLATE  
LIGHTS ADJUSTED AT 45 DEGREE TILT  
AND MAX HEIGHT OF 30'

NOTES:

A. THIS DRAWING IS BASED ON TYPICAL COMPLECTIONS LAYOUT 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.

B. ALL LIGHT FIXTURES AND INSTALLATION MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST ISSUE OF LOCAL AND NATIONAL ELECTRICAL CODES, ELECTRICAL SPECIFICATIONS AND DRAWINGS.

C. ALL LIGHT FIXTURES AND THE INSTALLATION OF THESE LIGHT FIXTURES SHALL COMPLY WITH COGCC SECTION 424 AND DARK SKY COMPLIANT REQUIREMENTS.

REFERENCE DRAWINGS		REVISIONS						
DWG NO.	TITLE	REV	DESCRIPTION	DATE	BY	CHK	ENG	APR
		▲	ISSUED FOR PERMIT	09/29/23	LMA	OGG	RJM	RB

**HALKER**  
ENGINEERED SOLUTIONS

**BISON**  
IV OPERATING

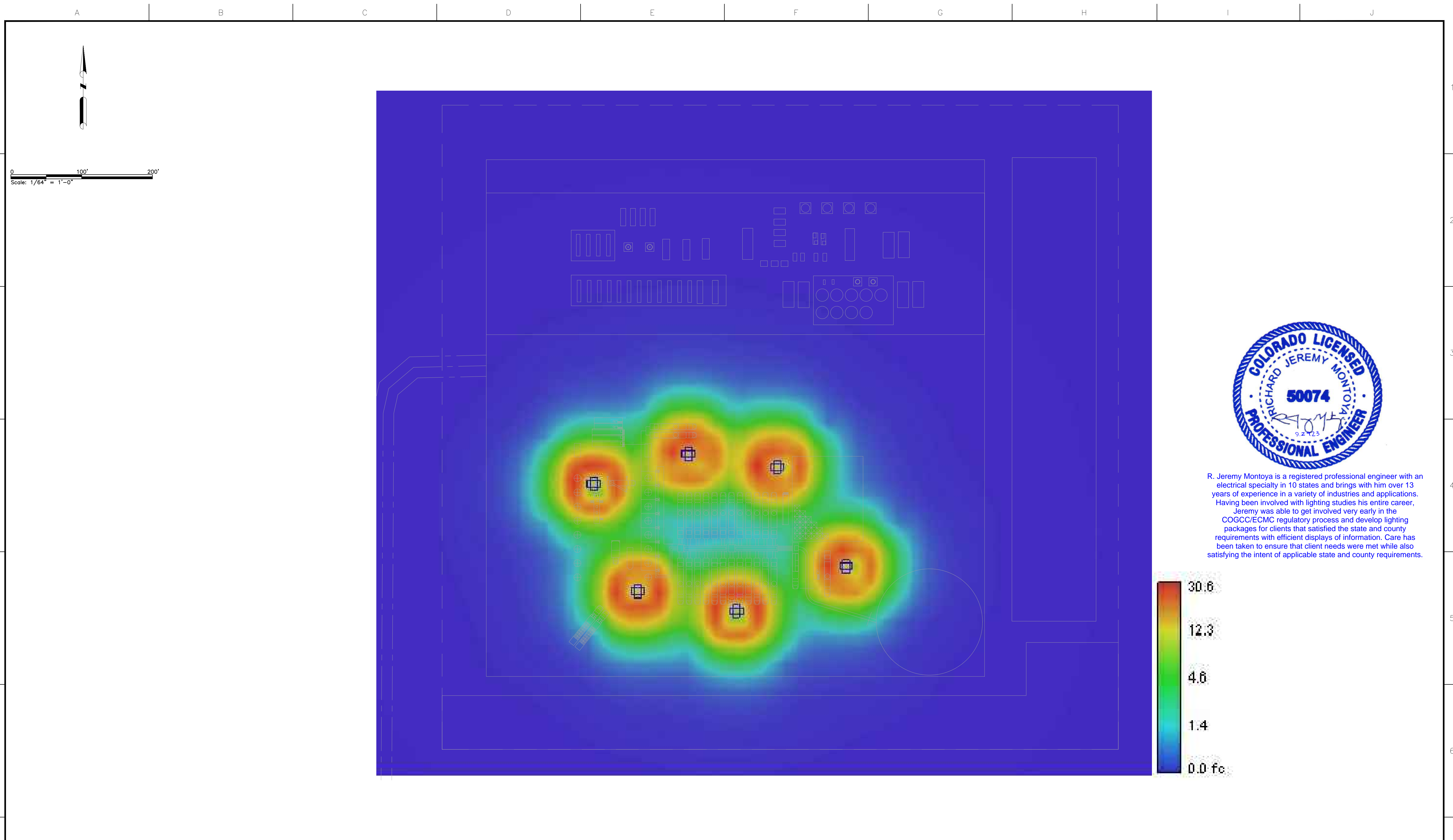
BISON IV OPERATION  
REMORA 6 PAD  
COMPLECTIONS  
LIGHTING LAYOUT

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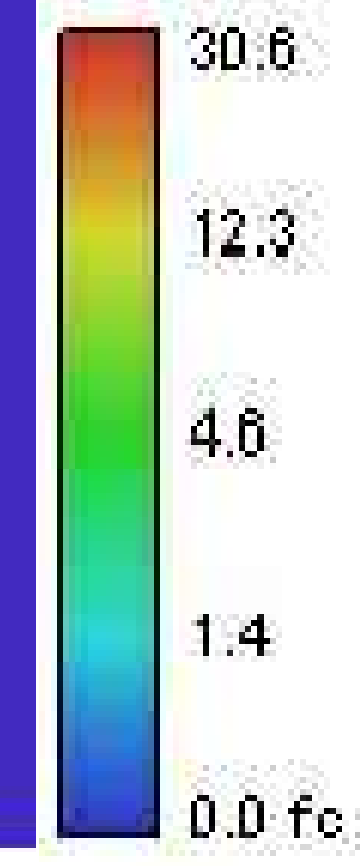
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NOTES:  
 A. HEAT MAP INTENDED TO SHOW VISUAL REPRESENTATION OF CONTENT SHOWN ON OTHER DRAWINGS ASSOCIATED WITH THIS PHASE OF SITE DEVELOPMENT. REFER TO DRAWING-73011 FOR ADDITIONAL DETAILS ON LIGHT FIXTURE LOCATIONS, FIXTURE TYPES, AND EQUIPMENT CALLOUTS.

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**HALKER**  
ENGINEERED SOLUTIONS

**BISON**  
IV OPERATING

BISON IV OPERATION  
 REMORA 6 PAD  
 COMPLETIONS  
 LIGHTING - HEATMAP

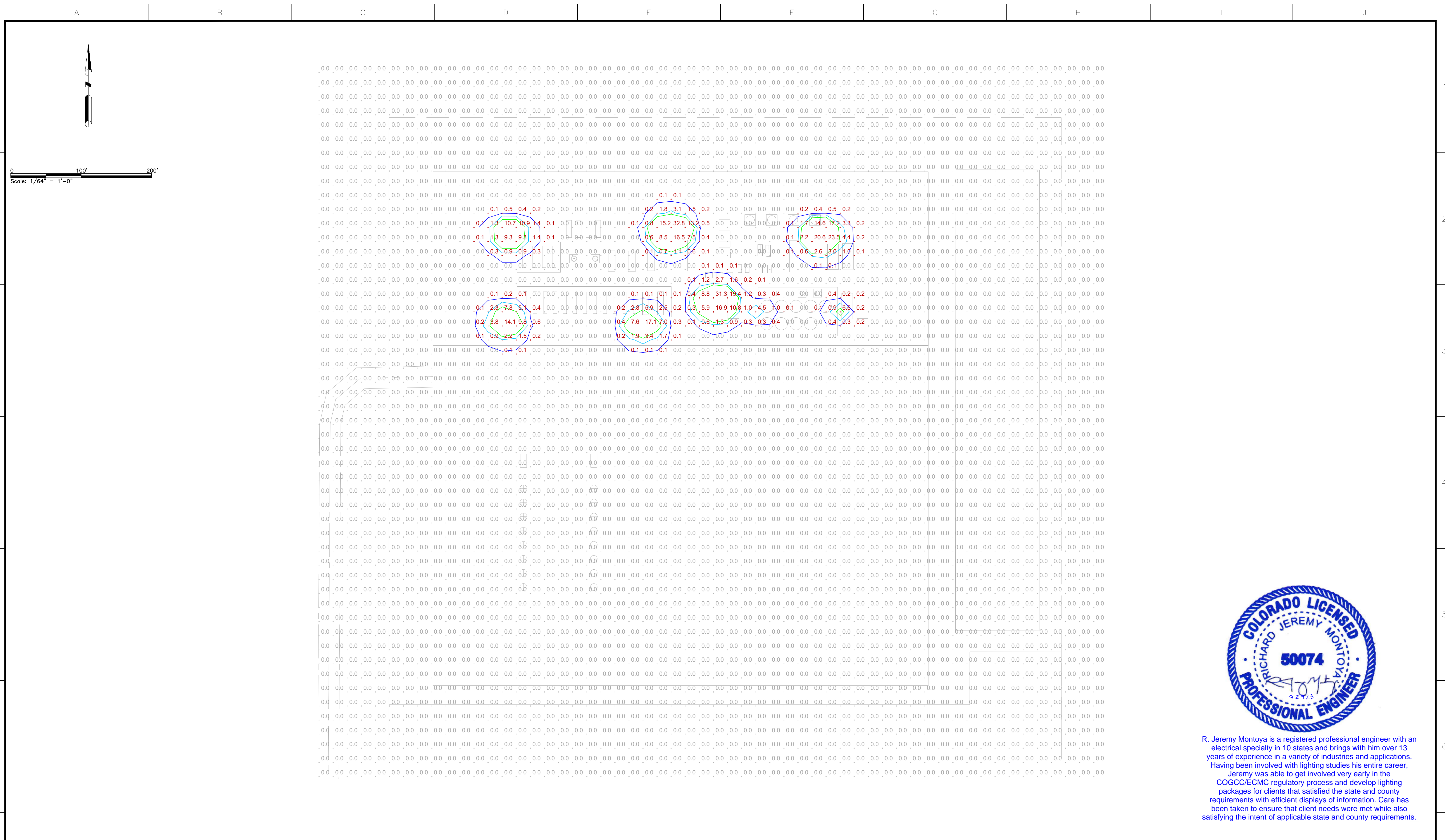
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**NOTES:**  
 A. THIS DRAWING IS INTENDED TO SHOW FOOTCANDLE POINT CALCULATING FOR THIS PHASE OF SITE DEVELOPMENT. REFER TO DRAWING -73021 FOR FURTHER LIGHTING DETAILS

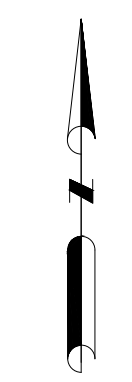
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		▲			RJM
		▲			RB
		▲			APR

BISON IV OPERATION  
 REMORA 6 PAD  
 PRODUCTION  
 LIGHTING POINT CALCULATIONS

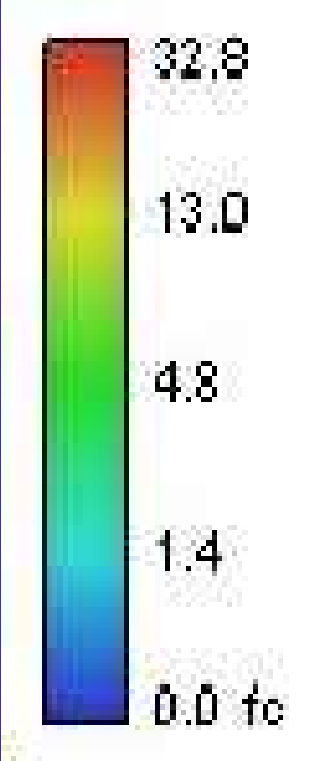
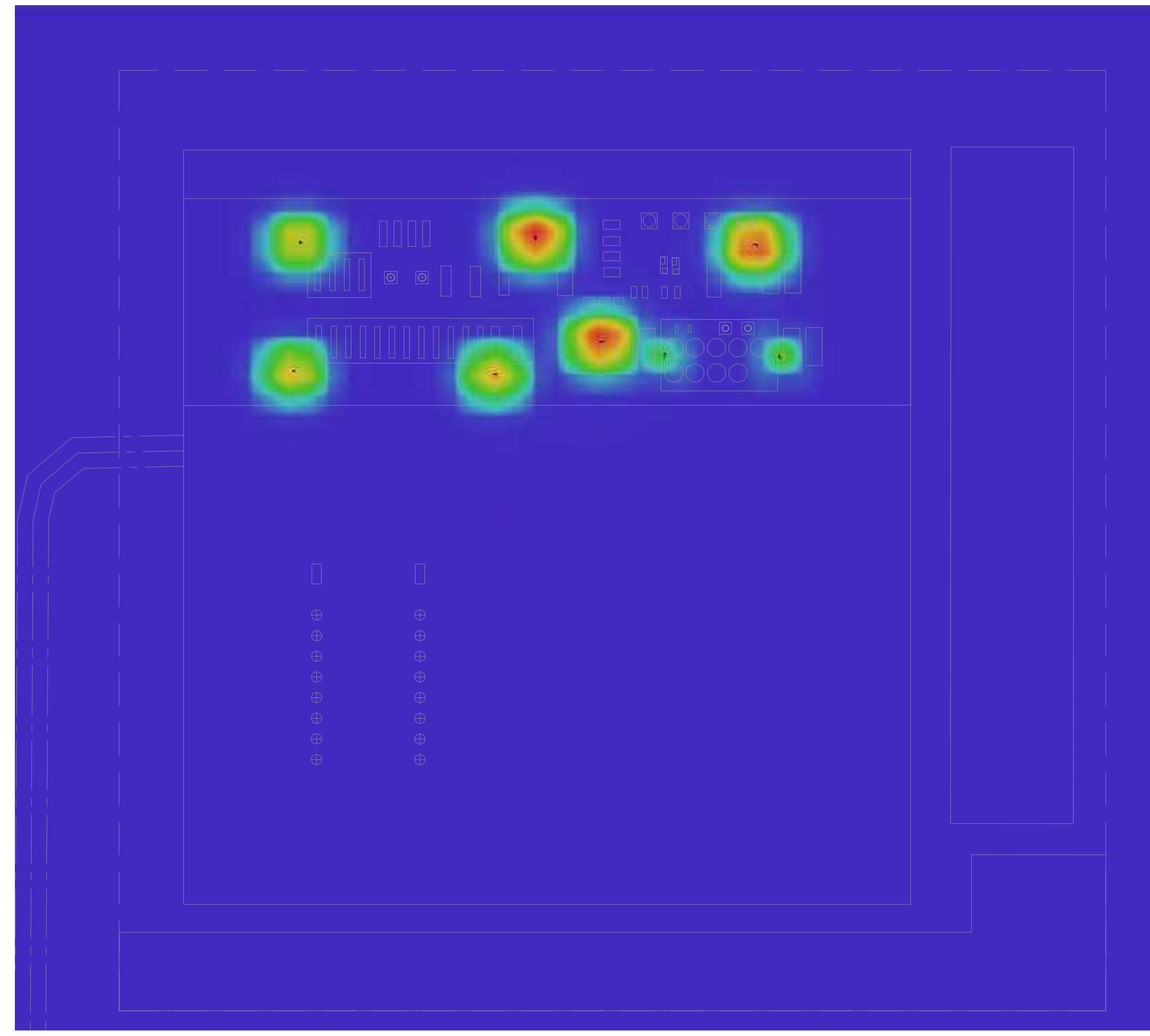
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A B C D E F G H I J



0 100' 200'  
Scale: 1/64" = 1'-0"



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**HALKER**  
ENGINEERED SOLUTIONS

**BISON**  
IV OPERATING

BISON IV OPERATION  
REMORA 6 PAD  
PRODUCTION  
LIGHTING - HEATMAP

SCALE: (FORMATTED 22X34)  
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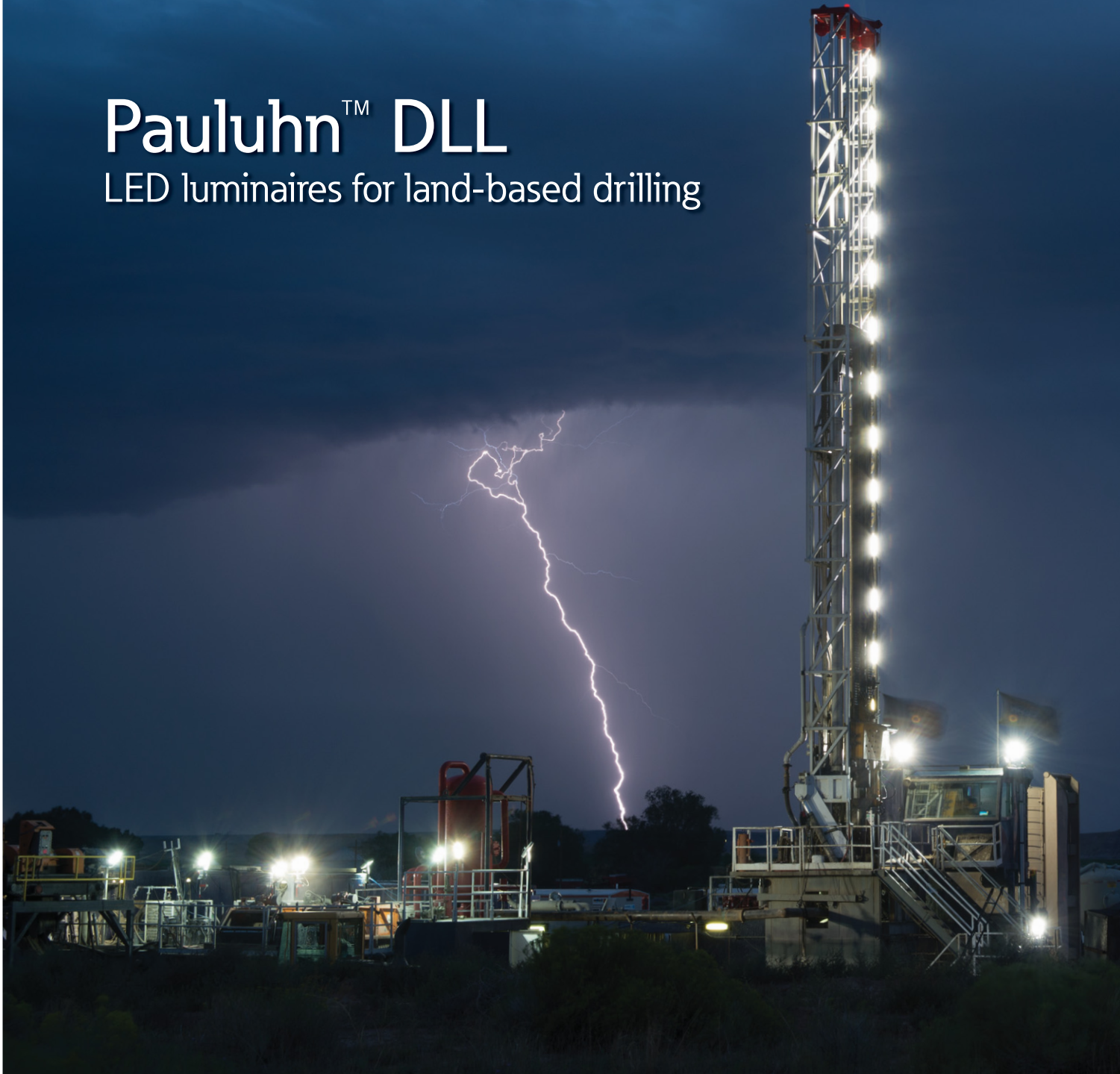
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LED lighting for land-based rigs  
Pauluhn™ DLL LED Luminaires

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

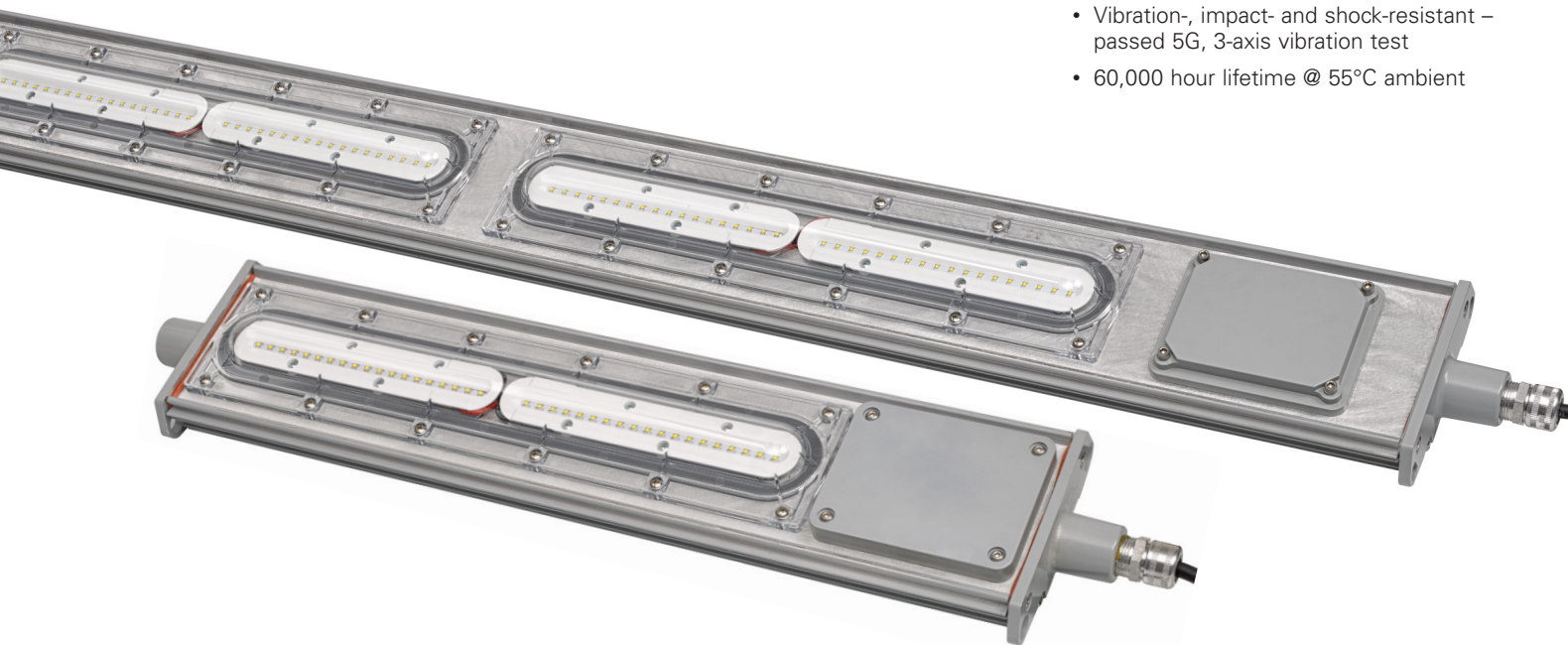


## Slim profile:

- 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

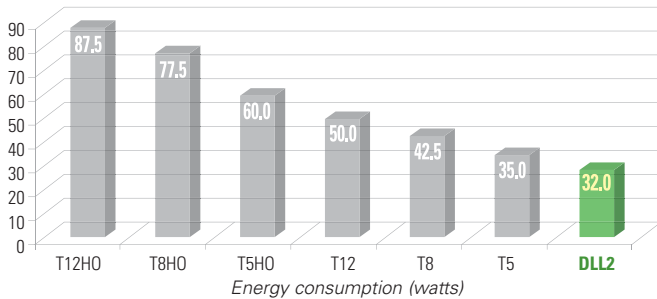
\* Refer to [www.designlights.org](http://www.designlights.org) Qualified Products List under Family Models for full listing details. Not all models are approved for all application categories.

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

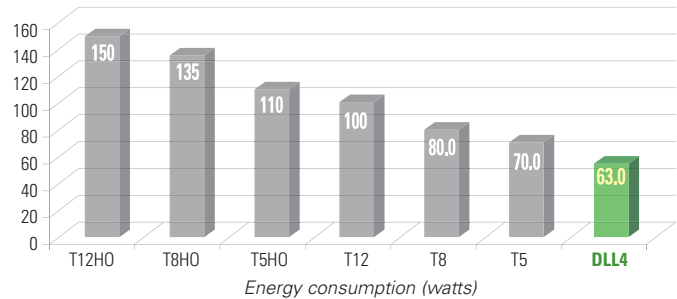


## Energy consumption comparison

2 foot DLL linear LED vs. fluorescent



4 foot DLL linear LED vs. fluorescent



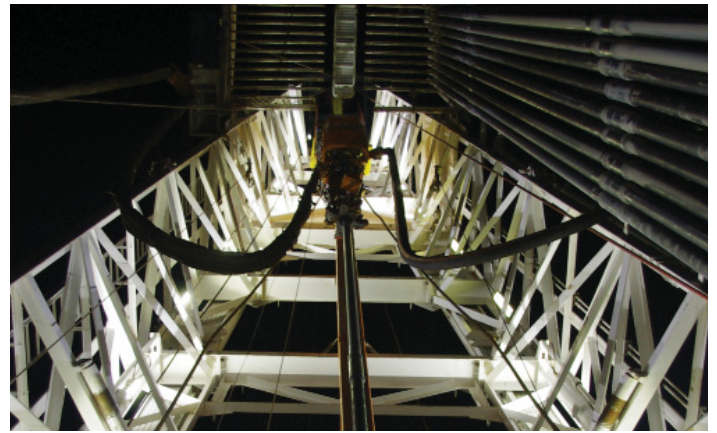
Model	Typical lumens	Wattage	Lumens per watt	Equivalent HID luminaire	Typical energy savings / lifetime
DLL2	3,958	32	124	T12HO	Up to 63%
				T8HO	Up to 59%
				T5HO	Up to 47%
				T12	Up to 36%
				T8	Up to 25%
				T5	Up to 9%

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
<b>Lumen output</b>	3,958	7,900
<b>Frequency</b>	50/60 Hz	50/60 Hz
<b>Voltage</b>	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:

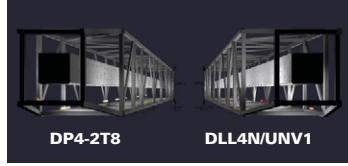
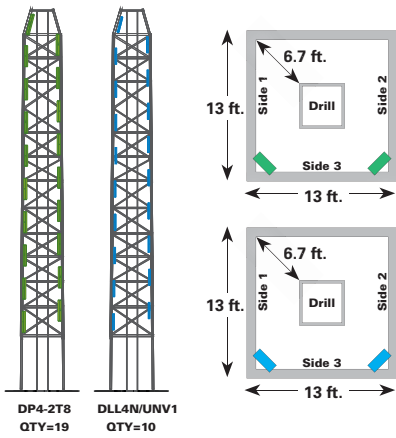
Ambient temperature	Min. temp. wire supply	Class I, Div. 2	Class II, Div. 2	Simultaneous rating
				Class I, Div. 2, Class II, Div. 2
40°C	60°C	T6	T6	T6
55°C	75°C	T5	T5	T5
65°C	90°C	T5	T5	T5

## Weights:

Luminaire	lbs.	kg.
DLL2	12.5	5.7
DLL4	22.5	10.2

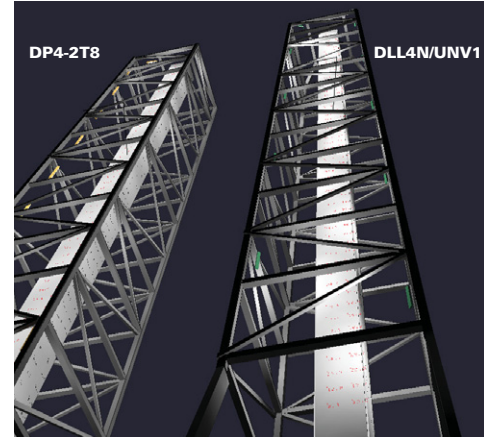
# Photometrics: high mast derrick

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

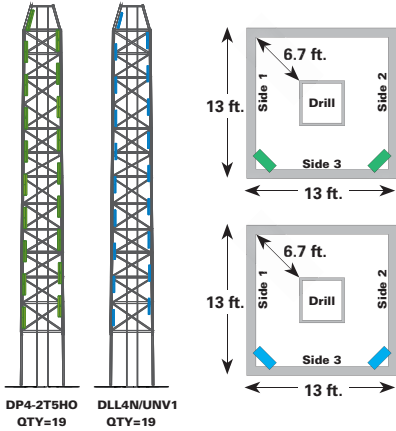


Model	Average footcandles	
	DLL4N/UNV1	DP4-2T8
Side 1	12.37	9.18
Side 2	10.80	9.56
Side 3	21.66	16.19

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

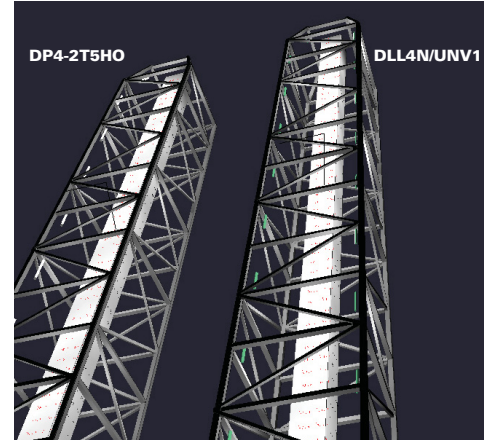


4 foot DLL LED with 80° optics vs. 4 foot. 2 lamp T5HO DuraPro



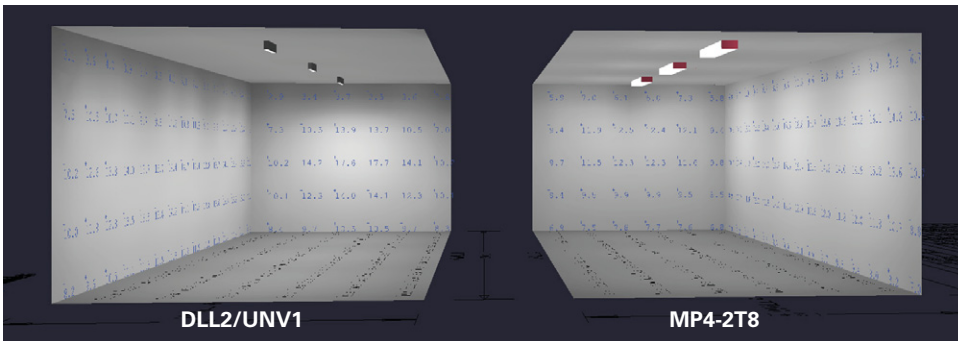
Model	Average footcandles	
	DLL4N/UNV1	DP4-2T5HO
Side 1	25.68	20.33
Side 2	18.88	20.52
Side 3	42.00	35.79

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



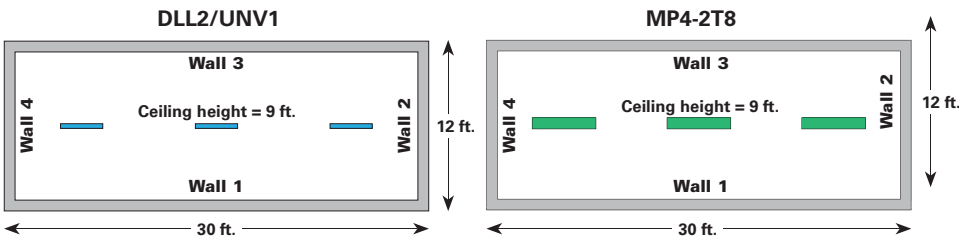
# Photometrics: control room/pump shed

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

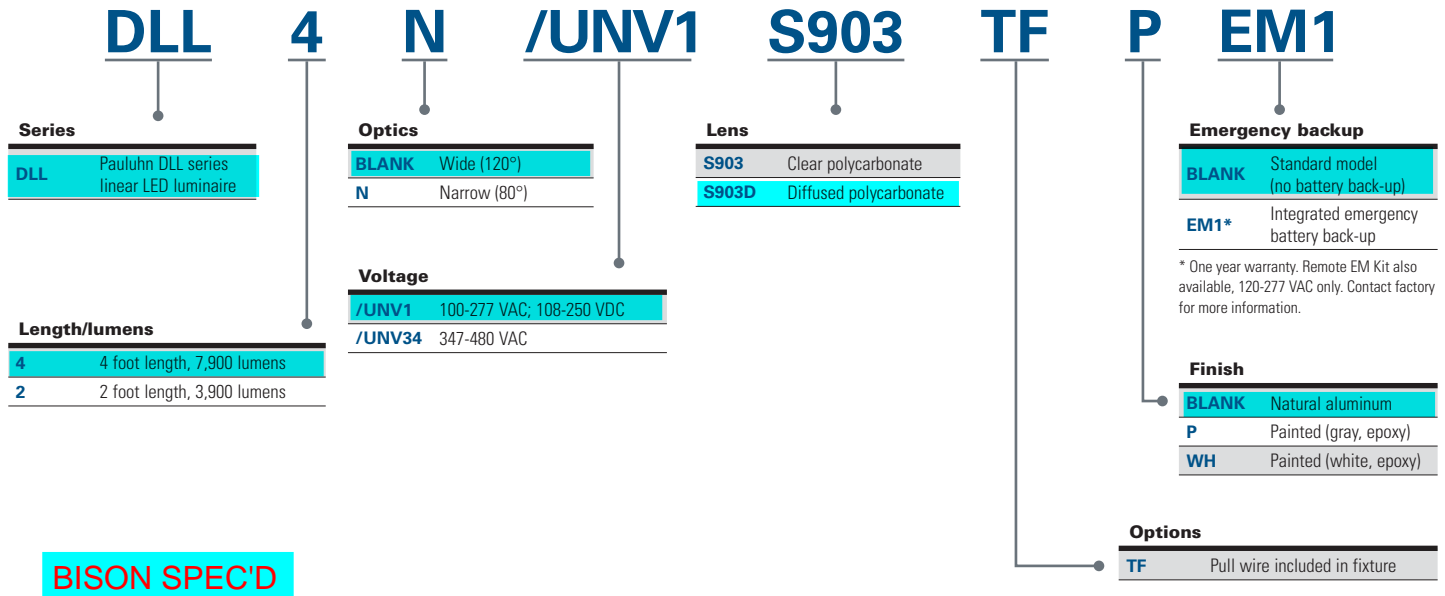


# Ordering information

## 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**

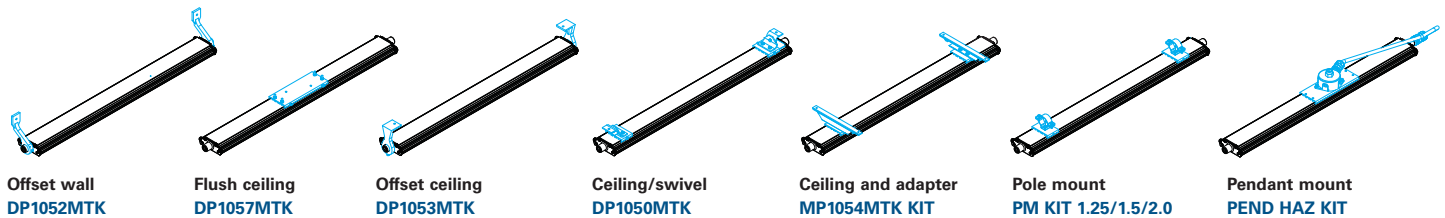
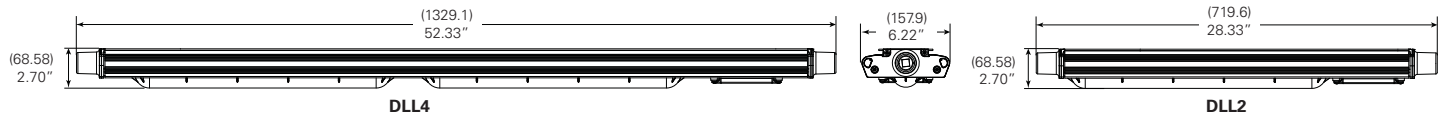
#### Accessories (ordered separately)

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

#### Accessories (ordered separately)

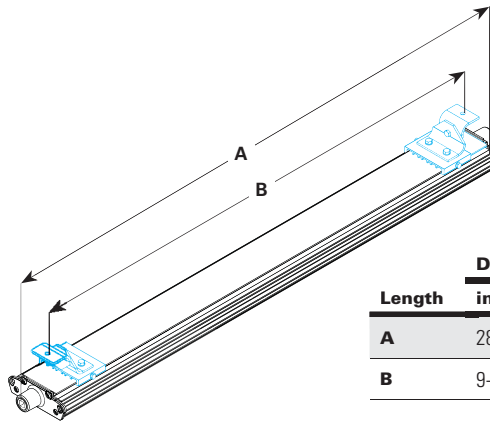
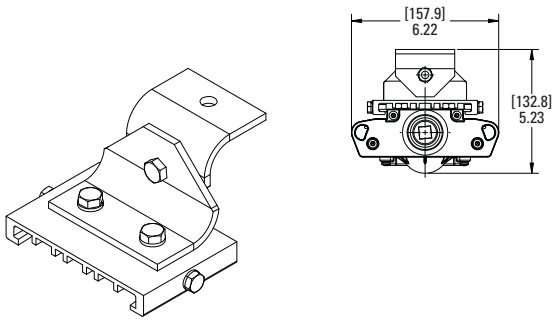
<b>PEND HAZ KIT</b>	Pendant mount kit
<b>SS KIT</b>	Safety chain kit
<b>VMVL/UNV1 80W 1A KIT</b>	1 amp driver replacement kit 100-277 VAC for 4 ft. linear
<b>VMVL/UNV34 80W 1A KIT</b>	1 amp driver replacement kit 347-480 VAC for 4 ft. linear
<b>VMVL/UNV1 80W 0.5A KIT</b>	0.5 amp driver replacement kit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

## Dimensions & mounting options:



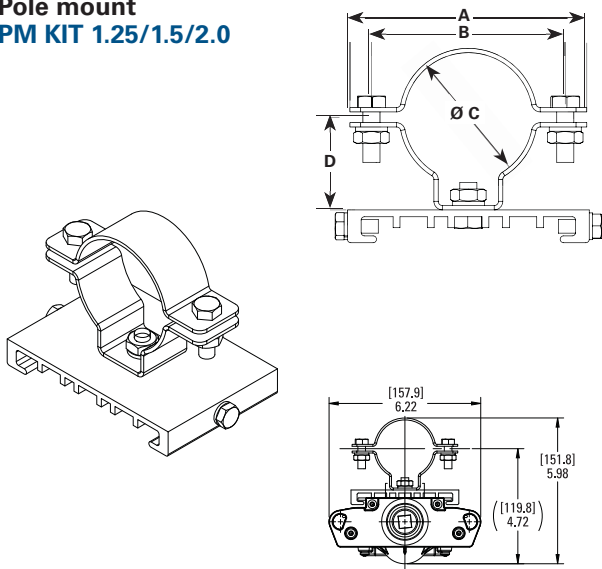
# Mounting options

## Ceiling/swivel mount DP1050MTK

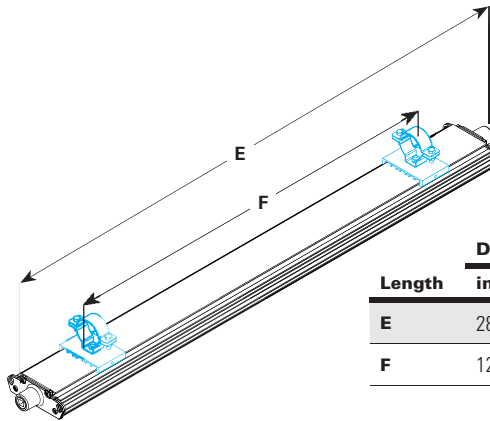


Length	DLL2		DLL4	
	in.	mm.	in.	mm.
A	28.3	720	52.3	1329
B	9-27	222-681	9-51	222-1289

## Pole mount PM KIT 1.25/1.5/2.0

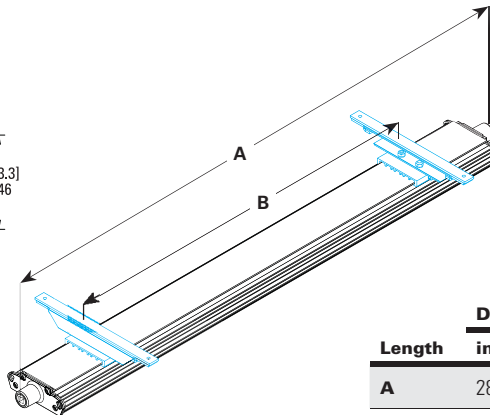
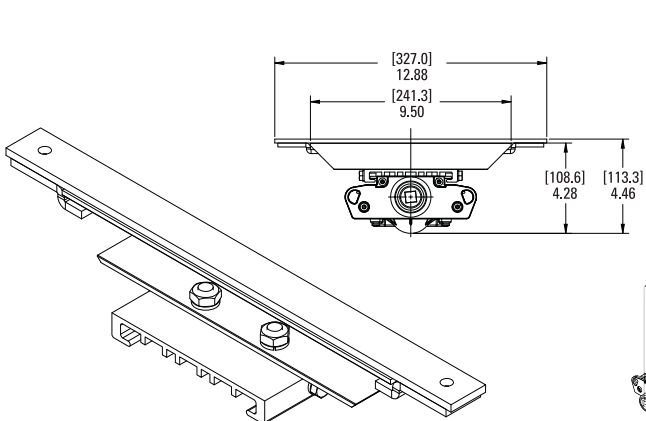


Configuration	ALL MEASUREMENTS IN INCHES			
	A	B	C	D
PM KIT 1.25	4.331	3.543	1.680	1.693
PM KIT 1.5	3.740	2.953	2.000	1.535
PM KIT 2.0	3.386	2.598	2.360	1.378



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

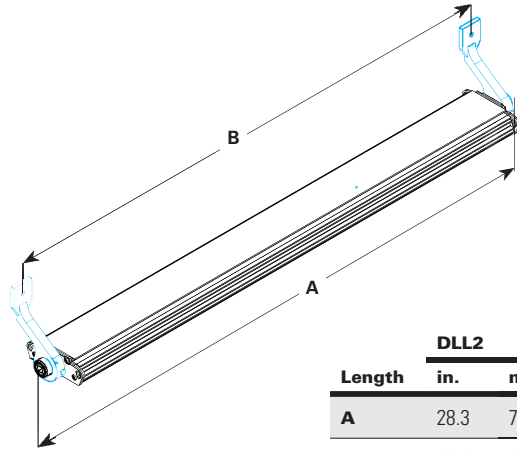
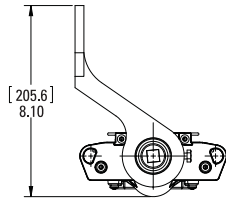
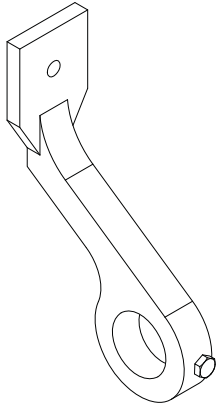
## MagnaPro mount MP1054MTK KIT



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

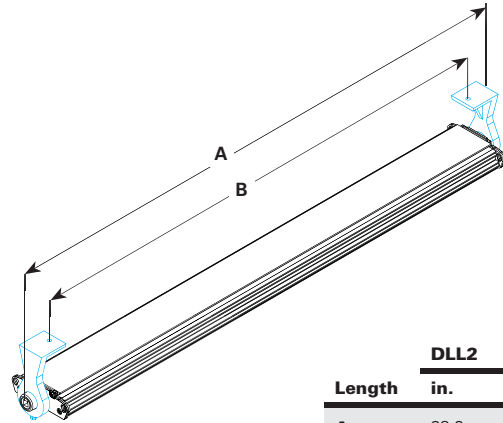
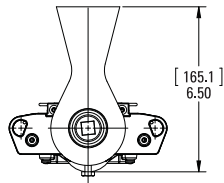
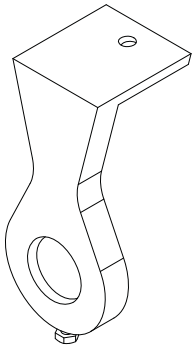
# Mounting options

## Offset wall DP1052MTK



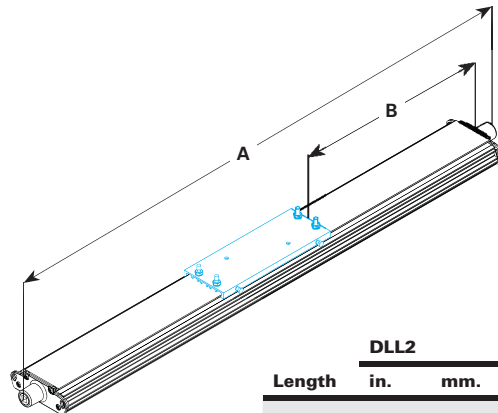
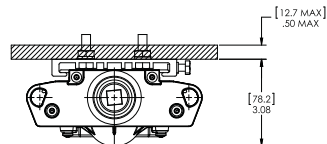
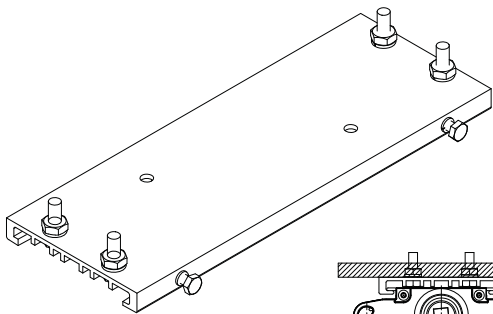
Length	DLL2		DLL4	
	in.	mm.	in.	mm.
<b>A</b>	28.3	720	52.3	1329
<b>B</b>	26.3	669	50.3	1278

## Offset ceiling/wall mount DP1053MTK



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

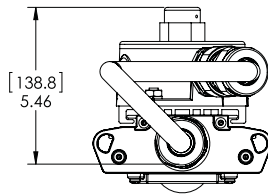
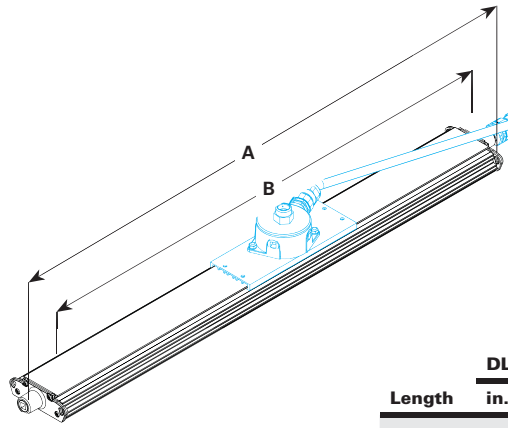
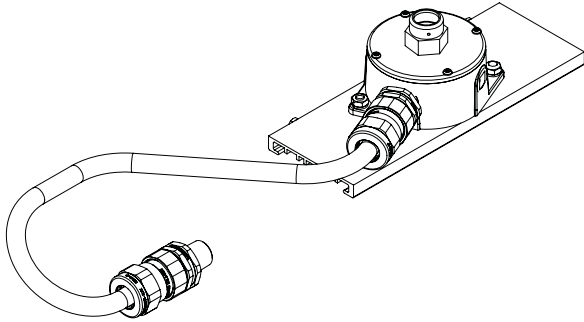
## Flush ceiling DP1057MTK



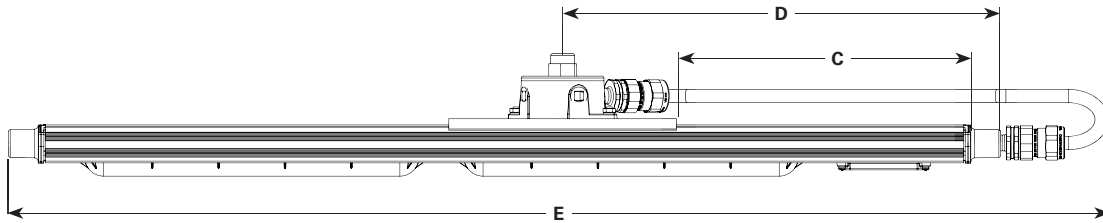
Length	DLL2		DLL4	
	in.	mm.	in.	mm.
<b>A</b>	28.3	720	52.3	1329
<b>B</b>	6.2	157.5	18.2	462

# Mounting options

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



Length	DLL2		DLL4	
	in.	mm.	in.	mm.
<b>A</b>	31.7	805	55.8	1418
<b>B</b>	28.3	720	52.3	1329
<b>C</b>	4.2	108	16.0	406
<b>D</b>	12.2	310	24.0	610
<b>E</b>	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
<b>DLL4/UNV1 S903 EM1</b>	1,400 lumens (100-277V)	6,720 lumens (100-277V)

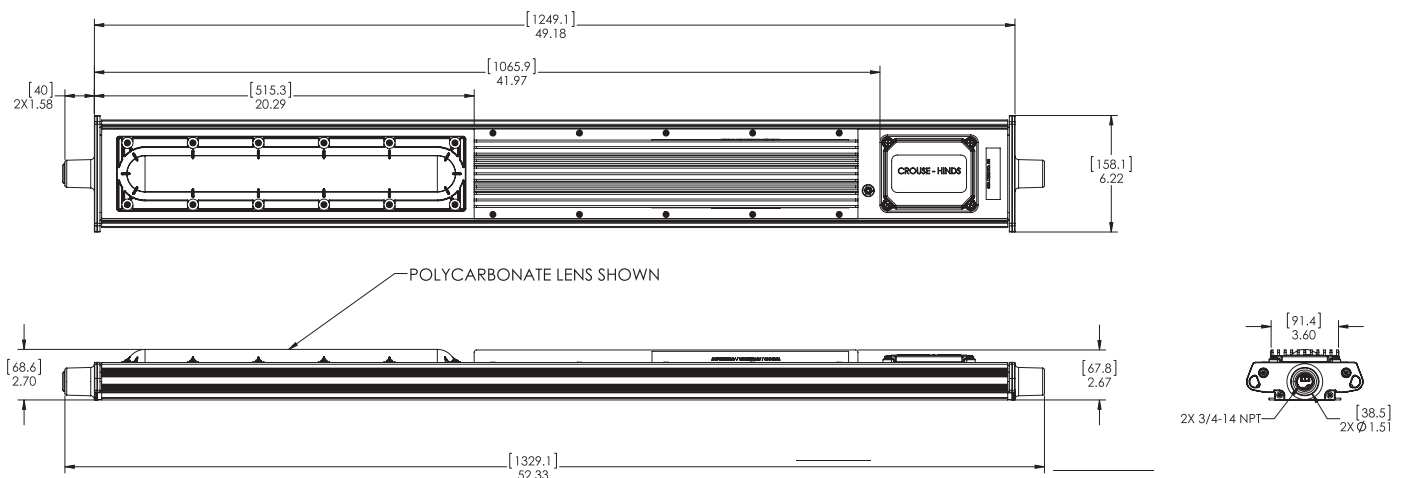
### Applications:

- 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:

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

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FAX: 971 4 8894813  
chmesales@eaton.com

**Singapore**

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FAX: 65-6297-4819  
chsi-sales@  
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**China**

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**Australia**

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cooperindustries.com

**India**

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FAX: 91-124-4683899  
cchindia@  
cooperindustries.com

**Eaton**  
1000 Eaton Boulevard  
Cleveland, OH 44122  
United States  
Eaton.com

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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<sup>A</sup>; 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](http://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

<sup>A</sup>Not 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	<b>L<sup>B</sup></b>
• 480V	<b>480</b>
<i>Replace /MT in catalog number with /480</i>	
• 230V	<b>230</b>
<i>Replace /220 ONLY in catalog number with /230</i>	

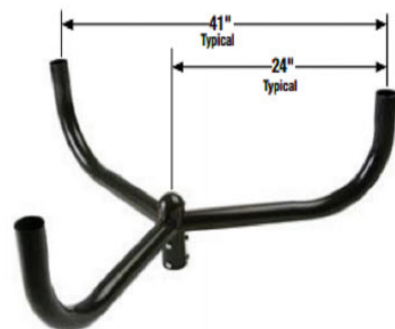
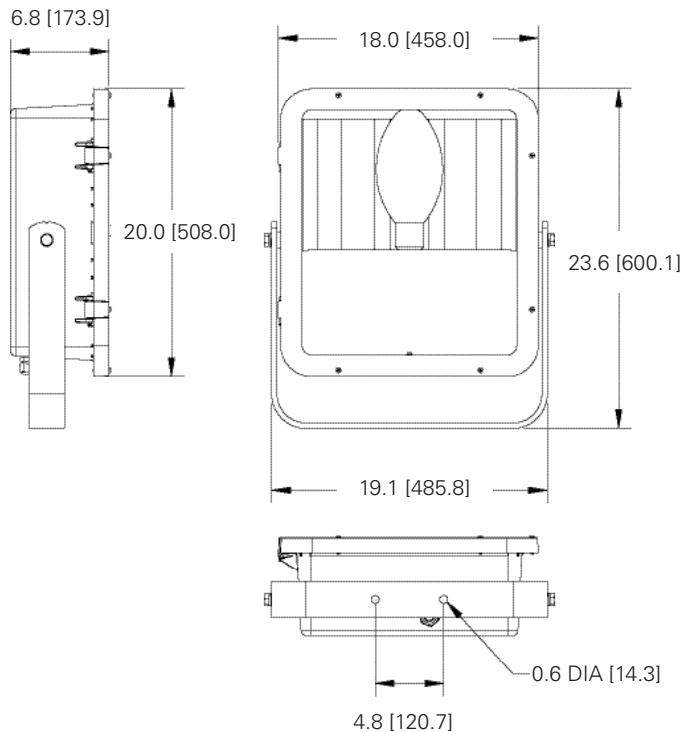
## Accessories (ordered separately):

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

## 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 <sup>C</sup>	Probe start metal halide	250	42.0	M58 <sup>C</sup>	T3	T1	40/55/65	90/90/105
DFLMY400/TT 76 <sup>C</sup>	Probe start metal halide	400	44.0	M59 <sup>C</sup>	T3	T1	40/55	90/105
DFLMY250/220 50 76 <sup>C</sup>	Probe start metal halide	250	42.0	M58 <sup>C</sup>	T3	T1	40/55/65	90/90/105
DFLMY400/220 50 76 <sup>C</sup>	Probe start metal halide	400	44.0	M59 <sup>C</sup>	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

<sup>B</sup> Lamp is not included unless option 'L' is selected.  
<sup>C</sup> 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
- Complete Package with Poles, Platforms & Cross-Arms

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		
Distance	Max FC	Beam Diameter
50 ft.	99	11.8 ft.
75 ft.	44	17.7 ft.
100 ft.	25	23.5 ft.
150 ft.	11	35.3 ft.
200 ft.	6	47.1 ft.

Beam Angle: 14°  
Field Angle: 25°

230WD - NEMA 3		
Distance	Max FC	Beam Diameter
50 ft.	53	20.2 ft.
75 ft.	23	30.3 ft.
100 ft.	13	40.4 ft.
150 ft.	6	60.7 ft.
200 ft.	3	80.9 ft.

Beam Angle: 23°  
Field Angle: 43°

230WD - NEMA 4		
Distance	Max FC	Beam Diameter
50 ft.	34	27.0 ft.
75 ft.	15	40.5 ft.
100 ft.	8	54.0 ft.
150 ft.	4	81.0 ft.
200 ft.	2	108.0 ft.

Beam Angle: 30°  
Field Angle: 64°

230WD - NEMA 5		
Distance	Max FC	Beam Diameter
50 ft.	25	30.9 ft.
75 ft.	11	46.2 ft.
100 ft.	6	61.6 ft.
150 ft.	3	92.5 ft.
200 ft.	2	123.3 ft.

Beam Angle: 35°  
Field Angle: 80°

230WD - NEMA 6		
Distance	Max FC	Beam Diameter
50 ft.	13	40.9 ft.
75 ft.	6	61.2 ft.
100 ft.	3	81.7 ft.
150 ft.	2	122.4 ft.
200 ft.	1	163.3 ft.

Beam Angle: 45°  
Field Angle: 114°

310WD - NEMA 2		
Distance	Max FC	Beam Diameter
50 ft.	135	11.3 ft.
75 ft.	60	17.0 ft.
100 ft.	34	22.6 ft.
150 ft.	15	34.0 ft.
200 ft.	8	45.1 ft.

Beam Angle: 14°  
Field Angle: 24°

310WD - NEMA 3		
Distance	Max FC	Beam Diameter
50 ft.	71	19.4 ft.
75 ft.	32	29.0 ft.
100 ft.	18	38.7 ft.
150 ft.	8	58.0 ft.
200 ft.	5	77.4 ft.

Beam Angle: 22°  
Field Angle: 42°

310WD - NEMA 4		
Distance	Max FC	Beam Diameter
50 ft.	45	26.6 ft.
75 ft.	20	40.0 ft.
100 ft.	11	53.1 ft.
150 ft.	5	80.0 ft.
200 ft.	3	106.3 ft.

Beam Angle: 30°  
Field Angle: 64°

310WD - NEMA 5		
Distance	Max FC	Beam Diameter
50 ft.	33	30.5 ft.
75 ft.	15	46.0 ft.
100 ft.	8	61.0 ft.
150 ft.	4	91.5 ft.
200 ft.	2	122.0 ft.

Beam Angle: 34°  
Field Angle: 80°

310WD - NEMA 6		
Distance	Max FC	Beam Diameter
50 ft.	18	41.0 ft.
75 ft.	8	61.3 ft.
100 ft.	5	81.7 ft.
150 ft.	2	122.5 ft.
200 ft.	1	163.3 ft.

Beam Angle: 45°  
Field Angle: 114°

440WD - NEMA 2		
Distance	Max FC	Beam Diameter
33 ft.	375	7.4 ft.
66 ft.	94	14.7 ft.
99 ft.	42	22.1 ft.
133 ft.	23	29.4 ft.
200 ft.	10	44.2 ft.

Beam Angle: 13°  
Field Angle: 24°

440WD - NEMA 3		
Distance	Max FC	Beam Diameter
33 ft.	187	12.5 ft.
66 ft.	47	25.0 ft.
99 ft.	21	37.4 ft.
133 ft.	12	49.9 ft.
200 ft.	5	74.8 ft.

Beam Angle: 22°  
Field Angle: 45°

440WD - NEMA 4		
Distance	Max FC	Beam Diameter
33 ft.	180	14.9 ft.
66 ft.	45	29.8 ft.
99 ft.	20	44.6 ft.
133 ft.	11	59.5 ft.
200 ft.	5	89.3 ft.

Beam Angle: 26°  
Field Angle: 58°

440WD - NEMA 5		
Distance	Max FC	Beam Diameter
33 ft.	93	22.8 ft.
66 ft.	23	45.6 ft.
99 ft.	10	68.4 ft.
133 ft.	6	91.2 ft.
200 ft.	3	136.9 ft.

Beam Angle: 39°  
Field Angle: 80°

440WD - NEMA 6		
Distance	Max FC	Beam Diameter
33 ft.	55	27.3 ft.
66 ft.	14	54.5 ft.
99 ft.	6	81.8 ft.
133 ft.	3	109.1 ft.
200 ft.	2	163.6 ft.

Beam Angle: 45°  
Field Angle: 115°

520WD - NEMA 2		
Distance	Max FC	Beam Diameter
33 ft.	416	7.3 ft.
66 ft.	104	14.6 ft.
99 ft.	46	21.9 ft.
133 ft.	26	29.2 ft.
200 ft.	12	43.8 ft.

Beam Angle: 13°  
Field Angle: 24°

520WD - NEMA 3		
Distance	Max FC	Beam Diameter
33 ft.	221	12.8 ft.
66 ft.	55	25.6 ft.
99 ft.	25	38.4 ft.
133 ft.	14	51.2 ft.
200 ft.	6	76.7 ft.

Beam Angle: 22°  
Field Angle: 45°

520WD - NEMA 4		
Distance	Max FC	Beam Diameter
33 ft.	213	15.1 ft.
66 ft.	53	30.2 ft.
99 ft.	24	45.3 ft.
133 ft.	13	60.4 ft.
200 ft.	6	90.6 ft.

Beam Angle: 26°  
Field Angle: 58°

520WD - NEMA 5		
Distance	Max FC	Beam Diameter
33 ft.	110	22.7 ft.
66 ft.	28	45.4 ft.
99 ft.	12	68.1 ft.
133 ft.	7	90.9 ft.
200 ft.	3	136.3 ft.

Beam Angle: 38°  
Field Angle: 80°

520WD - NEMA 6		
Distance	Max FC	Beam Diameter
33 ft.	66	27.3 ft.
66 ft.	17	54.5 ft.
99 ft.	7	81.8 ft.
133 ft.	4	109.0 ft.
200 ft.	2	163.5 ft.

Beam Angle: 45°  
Field Angle: 114°

750WD - NEMA 2		
Distance	Max FC	Beam Diameter
33 ft.	501	8.2 ft.
66 ft.	125	16.4 ft.
133 ft.	31	32.8 ft.
200 ft.	14	49.2 ft.
300 ft.	6	73.7 ft.

Beam Angle: 14°  
Field Angle: 27°

750WD - NEMA 3		
Distance	Max FC	Beam Diameter
33 ft.	278	12.7 ft.
66 ft.	70	25.5 ft.
133 ft.	17	51.0 ft.
200 ft.	8	76.5 ft.
300 ft.	4	114.7 ft.

Beam Angle: 23°  
Field Angle: 46°

750WD - NEMA 4		
Distance	Max FC	Beam Diameter
33 ft.	305	15.1 ft.
66 ft.	76	30.2 ft.
133 ft.	19	60.3 ft.
200 ft.	9	90.4 ft.
300 ft.	4	135.7 ft.

Beam Angle: 26°  
Field Angle: 57°

750WD - NEMA 5		
Distance	Max FC	Beam Diameter
33 ft.	158	22.5 ft.
66 ft.	39	45.0 ft.
133 ft.	10	89.9 ft.
200 ft.	4	134.9 ft.
300 ft.	2	202.3 ft.

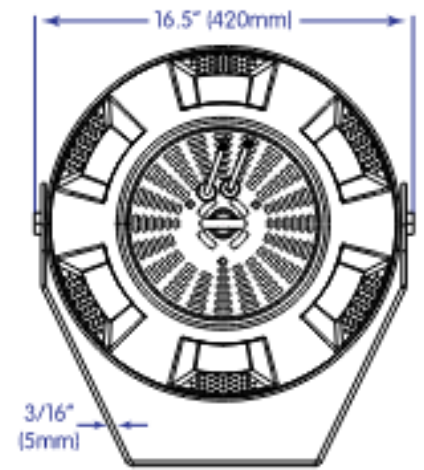
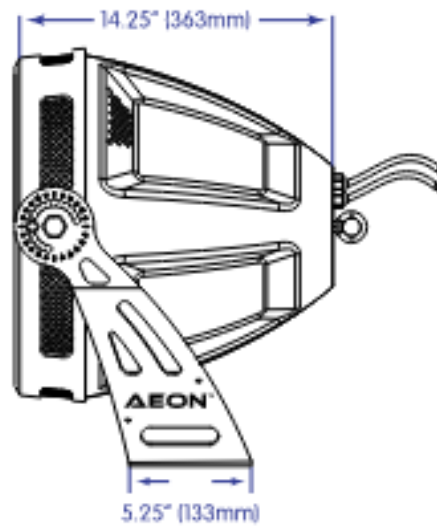
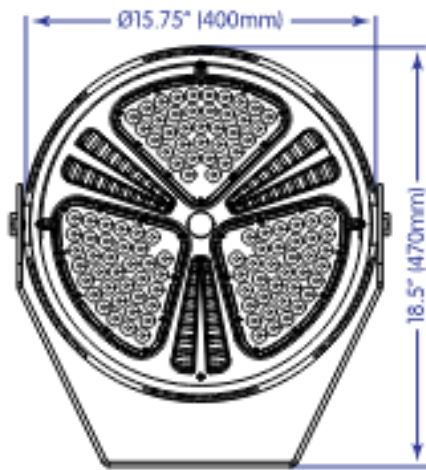
Beam Angle: 39°  
Field Angle: 81°

750WD - NEMA 6		
Distance	Max FC	Beam Diameter
33 ft.	90	27.6 ft.
66 ft.	22	55.1 ft.
133 ft.	6	110.3 ft.
200 ft.	3	165.4 ft.
300 ft.	1	248.1 ft.

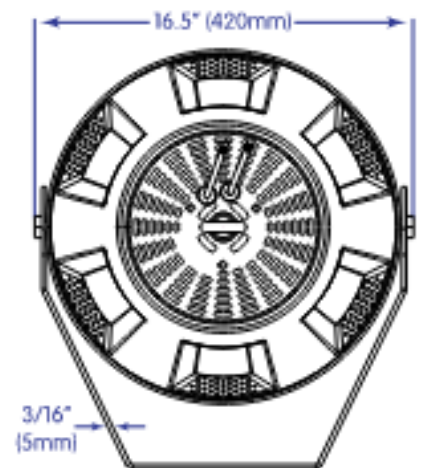
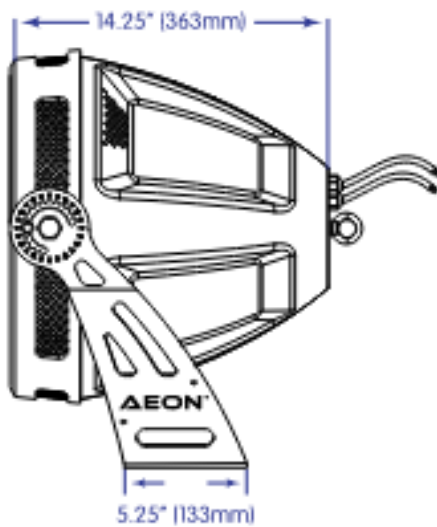
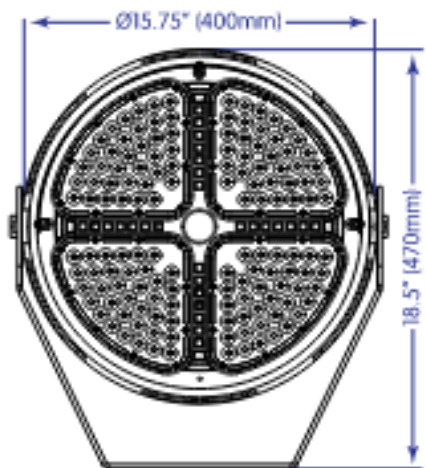
Beam Angle: 46°  
Field Angle: 119°

# AEON<sup>™</sup> Flood Light

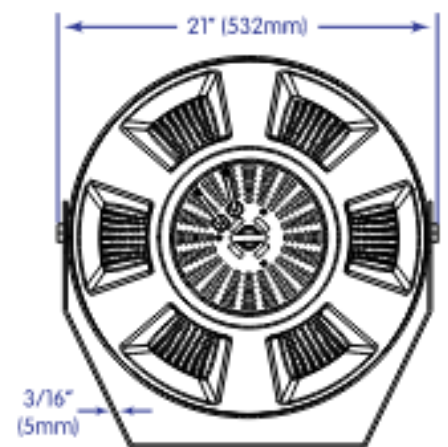
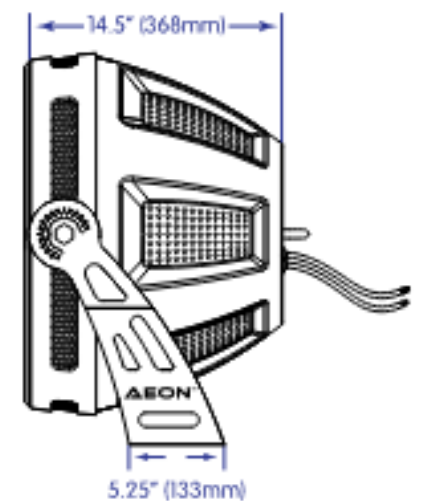
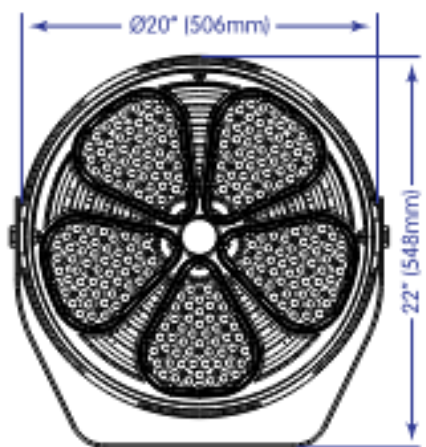
HL-AF-230WD



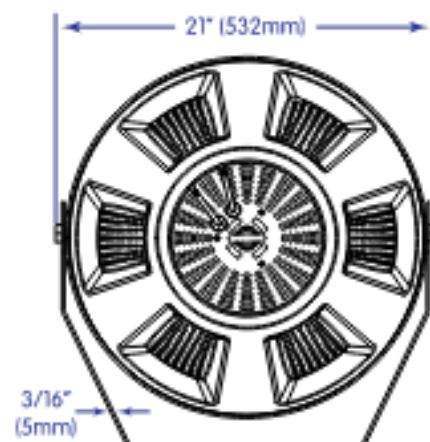
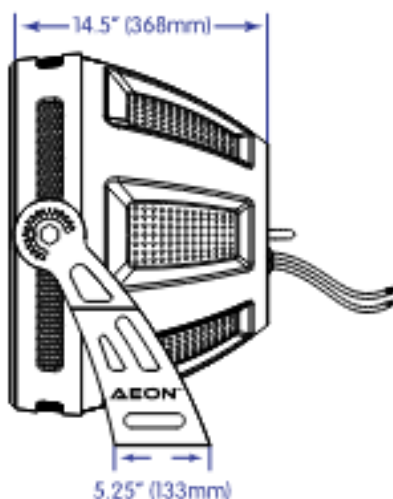
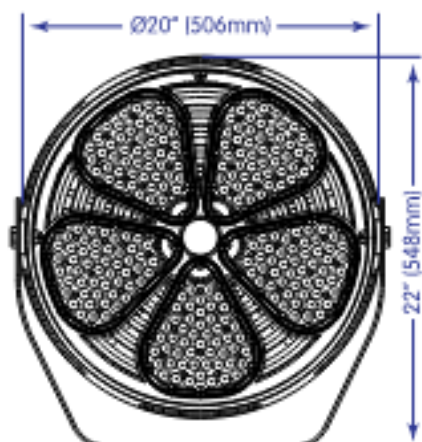
HL-AF-310WD



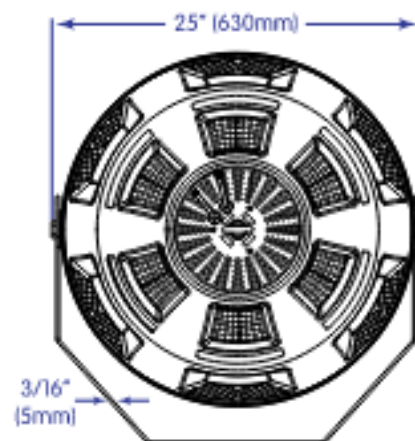
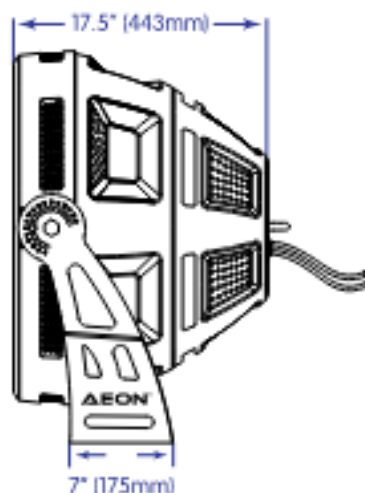
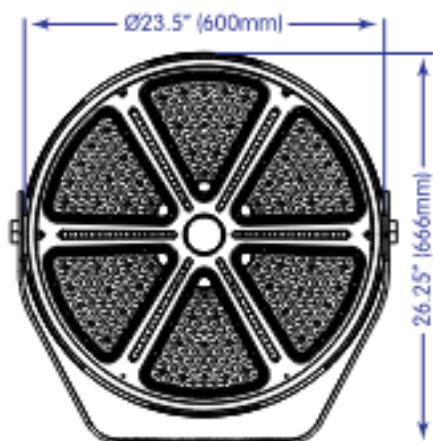
HL-AF-440WD



## 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](http://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*	<b>480-watt LEDs</b> Four 480W fixtures	350-watt LEDs Four 350W fixtures	Metal halides Four 1000W lamps
Luminosity**	<del>57,800 lm per fixture</del> <del>231,200 lm total</del>	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

	<b>Kubota® D1005</b>	<b>Mitsubishi® L3E</b>	<b>Kohler® KD1003</b>
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)
	<b>480-watt LEDs</b>	<b>350-watt LEDs</b>	<b>Metal halides</b>
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](http://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.



#### APPLICATIONS

- Warehouses
- Petrol Stations
- Stadiums
- Commercial
- Industrial



☎ 1800 909 306  
 🌐 [nedlandsgroup.com.au](http://nedlandsgroup.com.au)  
 ✉ [sales@nedlandsgroup.com.au](mailto:sales@nedlandsgroup.com.au)

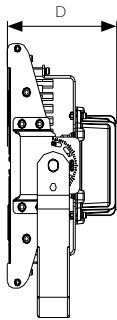
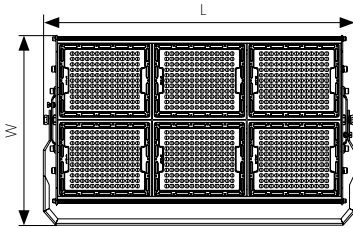


# POWER-LITE®

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

720W

93,600lm

960W

124,800lm

AMPS 4 Amps

Net Weight 19kg

Replaces 1000W

Net Weight 30kg

Replaces 1500W

Net Weight 36kg

Replaces 2000W

LED-FL480W

LED-FL720W

LED-FL960W

IP66

IK10

60 x 100° Beam Angle

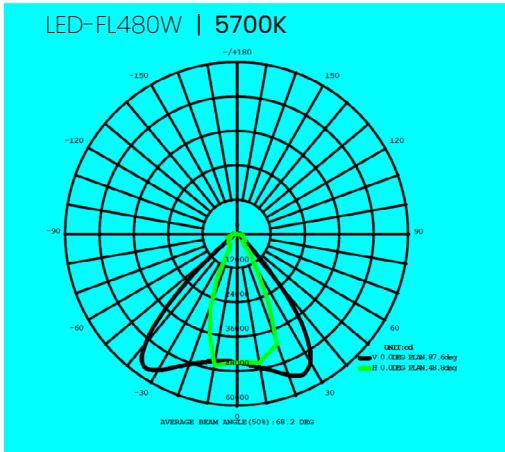


# POWER-LITE®

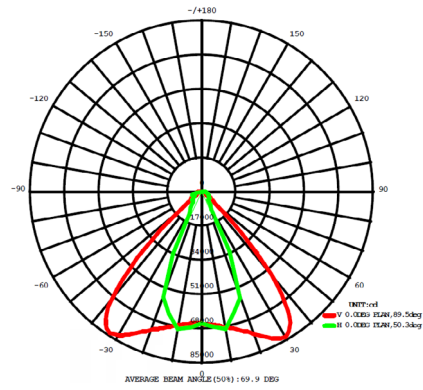
Certainty at The Speed of Light

## PHOTOMETRICS

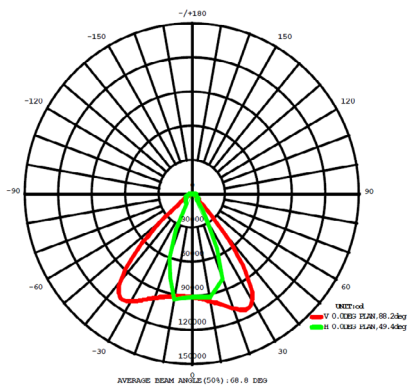
LED-FL480W | 5700K



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](http://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

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#### 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

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#### Lifespan:

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

#### Wattage Equivalency:

Equivalent to 100W Metal Halide

### Optical

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#### BUG Rating:

B1 U2 G1

### Other

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#### Warranty:

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### Buy American Act Compliance:

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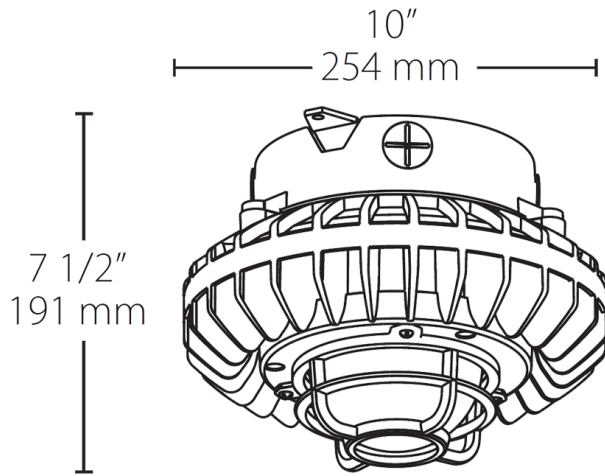
### Electrical

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#### 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