



## **Light Mitigation Plan**

Date: 6/17/2025

Location: Brahman OGD / Bodacious State F33-10 Pad

Legal Description: NWSE Section 33, Township 5 North, Range 65 West, 6<sup>th</sup> P.M., Weld County, Colorado

## **Location Information**

Noble Energy (Noble) is presenting this Light Mitigation Plan for the proposed Brahman OGD, specifically the Bodacious State F33-10 Pad (Bodacious Pad). The Bodacious Pad will consist of eighteen (18) proposed horizontal wells and produce to the Maximus State G04-11 Multi production facility. The anticipated operations schedule is provided below.

Phase	Duration (days)	Estimated Start Date
Construction (Daylight Only)	143 days	3rd Quarter 2026
Drilling	93 days	4th Quarter 2026
Completion	74 days	1st Quarter 2027
Flowback	N/A	Flowing back directly to permanent facility
Production	30 years	2nd Quarter 2027
Interim Reclamation (Daylight Only)	24 days	3rd Quarter 2027

## **Potentially Impacted Parties**

The Working Pad Surface (WPS) of the Bodacious State F33-10 Pad is within 2,000 feet of four (4) Residential Building Units (RBUs), zero (0) High Occupancy Building Units (HOBUs), and zero (0) Designated Outside Activity Areas (DOAAs). The location is not within High Priority Habitat (HPH); however, the access road will be partially within ECMC defined bald eagle roost or communal roost HPH.

## **Requirements**

### **1. *Background and Regulations***

Lighting at oil and gas locations is regulated by Weld County and the ECMC and the requirements are outlined below. Both entities specify light levels applicable to each phase of operations as well as standards for orientation, shielding, and best management practices to limit the impact of site lighting. During all phases of operations, Noble Energy will comply with the most stringent limits applicable.

#### **Weld County**

Section 21-5-402. of the Weld County Code prescribes permissible light levels applicable to oil and gas operations, measured in lumens per square foot (SF) of hardscape. Table 402 A.1 describes five lighting zones (LZ-0 to LZ-4) that are based on the level and type of development occurring in that area with LZ-0 being the least developed to LZ-4 being the most-intensely developed. Table 402 B.1 provides the allowable base lumens during the construction (pre-production) phase of operations as shown below.

Weld County **Table 402 B.1**

<b>Construction Phase Base Allowance for Lighting at Oil and Gas Locations</b>				
LZ-0	LZ-1	LZ-2	LZ-3	LZ-4
For all LZs, up to 12.0 lumens per SF of hardscape				

The Construction Phase hardscape shall equal the acreage of the Oil and Gas Location, or up to twelve (12) acres, whichever is less.

Table 402 C.1 provides the allowable base lumens during the production phase of operations as shown below.

Weld County **Table 402 C.1**

<b>Production Phase Base Allowance for Lighting at Oil and Gas Locations</b>				
LZ-0	LZ-1	LZ-2	LZ-3	LZ-4
0.5 lumens per SF of hardscape	1.25 lumens per SF of hardscape	2.5 lumens per SF of hardscape	5.0 lumens per SF of hardscape	7.5 lumens per SF of hardscape

The Production Phase hardscape shall equal the acreage of the Oil and Gas Location after interim reclamation.

Weld County has determined the Bodacious Pad will adhere to the LZ-1 standard during construction and production.

Energy and Carbon Management Commission (ECMC)

ECMC Rule 424 establishes standards and permissible light levels. Lighting will be designed and operated to provide sufficient illumination to ensure the safety of all persons on or near the site while also limiting any unnecessary impacts within 2,000 feet of the location to the health, safety and welfare of persons occupying building units, motorists on roads, and wildlife occupying any High Priority Habitat.

After the commencement of production operations, ECMC Rule 424.d. requires adequate lighting to ensure the safety of personnel working on or near the facility while adhering to the limits outlined in the table below.

<b>LAND USE</b>	<b>Lumens per square foot of Working Pad Surface</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

Noble has determined the Bodacious Pad is zoned Agricultural.

ECMC Rule 424.f. further establishes that the cumulative nighttime light intensity does not exceed four (4) lux at any Residential Building Unit or High Occupancy Building Unit within 1-mile of any Oil and Gas Facility.

2. ***The plan will include a description of the lighting standards that are planned including a description of how light will be blocked or diffused to reduce impacts beyond the Oil and Gas Location.***

- Noble will direct site lighting downward and inward, such that no light shines above a horizontal plane passing through the center point light source.
- Noble will use dampening and focusing technology within fixtures that obscures, blocks, or diffuses the light to reduce light intensity outside the boundaries of the Oil and Gas Location.

3. ***The plan will demonstrate how the location will be sufficiently lit for safety during all phases of operations.***

Temporary lighting will be used during drilling and completions operations and the lighting types, quantities, and placements are depicted in the attached lighting models. Noble does not anticipate the usage of any lighting sources during construction, flowback, or interim reclamation operations as these will be conducted during daylight hours. In addition, there will be no permanent lighting installed on the location during the production phase.

4. ***The plan will specify the zoning of the location and the surrounding lands and the maximum permissible light levels***

The proposed Bodacious Pad was assigned Lighting Zone LZ-1 Per Weld County Code, allowing for up to 12.0 lumens per square foot of hardscape during construction and 1.25 lumens per square foot of hardscape during production. During production, the proposed location will also comply with ECMC Agricultural limits of 2.5 lumens per square foot of working pad surface. Based on the attached equipment lumens calculations, the site lighting achieves regulatory compliance with both Weld County and ECMC standards.

5. ***The plan will include a description of how site lighting will manage cumulative nighttime light intensity at Residential Building Units and High Occupancy Building Units.***

- Noble will construct temporary sound walls on the location due to the proximity of the nearby receptors to the location. The sound wall will further reduce the transmission of light from location and remain in place during drilling and completion activities and removed thereafter.
- The attached lighting analysis calculations will address Noble Energy's commitment to mitigating the impact of light from operations at this location. The lighting analysis addresses Noble Energy's use of full cutoff lighting. This includes installing lighting sources which ensures a luminous intensity of zero at or above 90 degrees as well as not exceeding 10% of luminous flux of the lamp(s) at or above a vertical angle of 80 degrees.
- Noble contracted with Sargent & Lundy to create the illumination models of the anticipated light sources at this location. The attached light models demonstrate a reduction below 1.0 foot-candles within 200' of the edge of location.
- Should a change in lighting equipment occur, Noble will ensure the modification does not lead to the location surpassing the lumens per square foot standards.
- Construction of this location will be conducted during daylight hours only; therefore, lighting analysis is only considered during drilling and completions operations.

6. ***Best Management Practices ("BMPs") by Phase of Operation.***

Construction, Flowback, Interim Reclamation, and Production

- Noble will conduct construction, flowback, and reclamation activities only during daylight hours to maximize the use of natural lighting. In addition, there will be no permanent lighting installed on the location during the production phase.
- On occasion, the use of additional or alternative lighting sources may be required for site security or when field conditions experience a significant alteration. These events would include unpredictable situations, such as emergency repairs or newly identified hazards. If such changes occur, light measurements may be conducted at the nearest RBU(s) to ensure compliance. If it is determined that the measured light level exceeds standards, additional BMPs will be implemented to the site lighting to achieve compliance. These changes may include removing or replacing light sources, repositioning equipment on location, or installing additional sound walls.

Drilling and Completions

- Noble will deactivate lighting when not needed using timers or motion sensors.
- Noble will use full cut-off lighting to minimize light pollution and obtrusive lighting.
- Noble will use lighting colors that reduce light intensity, including using neutral white lights.
- Noble will use low-glare or no-glare lighting that utilizes high-mount, narrow-beam angle settings and will direct lighting downwards and towards the interior of the location.

- Noble will schedule regular production activities during daylight hours to maximize the use of natural lighting.
- Noble will regularly identify permanent and temporary housing of resident wildlife and ensure locations are recorded in wildlife reports kept in-house.
- Noble will conduct regular walkthroughs of the location to ensure no wildlife have built nests in or around lighting sources. If nests are found, direction will be issued to either remove the nest or temporarily disable the lighting source until the nest is abandoned.

7. ***The plan will include BMPs to control light impacts to Residential Building Units by vehicles if the access road passes close to or would otherwise cause vehicle lights to shine from the access road to nearby Residential Building Units.***

Prior to the Commencement of Production Operations, Noble will take all necessary and reasonable precautions to ensure that lighting from Oil and Gas Locations does not unnecessarily impact the health, safety, and welfare of Motorists within 2,000 feet of the Oil and Gas Location. This includes:

- Designing access roads and vehicle staging areas to direct light away from RBUs.
- Ensuring all vehicle traffic follows the designated haul route approved by the ECOM and Weld County.
- Ensuring vehicles operate below the designated speed limits, preventing the need to use high-beam headlights.
- Reducing vehicle traffic through the adoption of new technology and efficiencies and prioritizing the reduction in transportation during night-time hours.
- Should any RBUs along the haul route be impacted negatively by noise or lighting, Noble will work with the occupants to mitigate the impacts, which may include the deployment of temporary barriers around the structures or roadways.

8. ***The plan will contain the necessary maps, diagrams and drawings to thoroughly describe the planned lighting layout and equipment.***

- Attachments include:
  - Light Model Certification Signature
  - Operations Light Calculations and Models
  - Light Specifications

## **Supplemental Information**

### **Complaints**

Noble shall provide and post 24-hour, 7 days per week contact information to deal with all lighting complaints arising from Noble Energy's oil and gas locations. If a lighting complaint is made to Noble directly, or to the ECMC or Weld County and Noble is notified of the complaint, light levels will be measured within forty-eight (48) hours of Noble Energy's receipt of the complaint.

Noble will contact the concerned party (if contact information is available) to discuss the complaint and the results of the corrective actions.

### **Vendors**

Noble will occasionally reach out to third-party vendors to help ensure compliance with all applicable standards. Below is the list of vendors who have been selected:

- Sargent & Lundy  
400 Inverness Parkway, Suite 200, Englewood, CO 80112  
214.578.5394

### **Contacts**

Should a lighting complaint be filed with the ECMC, Weld County, or any other Relevant Local Government, the complaint should be forwarded to the following address:

- Noble Energy  
2115 117th Ave  
Greeley, Colorado 80634  
[RBUSurfaceLand@Chevron.com](mailto:RBUSurfaceLand@Chevron.com)



**March 28, 2025**

The lighting mitigation plan for the Brahman OGD: F33-10 Pad has been reviewed and approved by the signee listed below. Every effort has been made to provide accurate and authoritative information regarding the subject matter covered, according to the applicable Weld County and Energy and Carbon Management Commission (ECMC) guidelines. The Drawings listed below were created and reviewed in accordance with ECMC and Weld County rules and regulations.

The signee listed below has received formal lighting training and has experience creating and reviewing lighting designs and calculations in industrial settings according to applicable state and local regulations and guidelines. The signee has experience working with vendors in lighting fixture selection and evaluating photometric drawings.

This review included Drawings:

Pad

- F33-10-01-01 REV A F33-10 Pad (Gen 6) Photometric Lighting Plan: Drilling
- F33-10-01-02 REV A F33-10 Pad (Gen 6) Color Gradient Lighting Plan: Drilling
- F33-10-01-03 REV A F33-10 Pad (Gen 6) Raytrace Lighting Plan: Drilling
- F33-10-02-01 REV A F33-10 Pad (Gen 6) Photometric Lighting Plan: Completions (FRAC)
- F33-10-02-02 REV A F33-10 Pad (Gen 6) Color Gradient Lighting Plan: Completions (FRAC)
- F33-10-02-03 REV A F33-10 Pad (Gen 6) Raytrace Lighting Plan: Completions (FRAC)
- F33-10-03-01 REV A F33-10 Pad (Gen 6) Photometric Lighting Plan: Drillout
- F33-10-03-02 REV A F33-10 Pad (Gen 6) Color Gradient Lighting Plan: Drillout
- F33-10-03-03 REV A F33-10 Pad (Gen 6) Raytrace Lighting Plan: Drillout

*Sarah Haviland*

**Sarah Haviland, E.I.T**

Electrical Engineer Associate

**Sargent & Lundy**

720-279-9557

[sarah.haviland@sargentlundy.com](mailto:sarah.haviland@sargentlundy.com)

[www.sargentlundy.com](http://www.sargentlundy.com)

400 Inverness Pkwy, #400 | Englewood, CO 80112

<b>Bodacious State F33-10 Pad Drilling Lighting</b>	
DiaLight SafeSite LED Flood Lights	10
Lumens per SafeSite LED Flood Light	15,646
AFL Halide Flood Lights	24
Lumens per AFL Halide	31,905
Dialight Safesite LED High Bay Lights	4
Lumens per Safesite LED Bay Lights	14,250
Dialight SafeSite LED Linear Low-Profile Lights	10
Lumens per SafeSite LED Linear Lights	7,477
C-MOR Rig-Mounted Crown Lights <sup>(1)</sup>	6
Lumens per Crown Light	120,500
<b>Total Lumens</b>	<b>1,776,950</b>
WOGLA - Hardscape Acreage <sup>(2)</sup>	10.90
WOGLA - Hardscape Square Footage	474,804
<b>Lumens Per Square Foot</b>	<b>3.74</b>

<b>WOGLA Pre-Production Permissible Light Levels</b>	
Lighting Zone	Lumens Per Square Foot of Hardscape
LZ-0	12
<b>LZ-1</b>	<b>12</b>
LZ-2	12
LZ-3	12
LZ-4	12

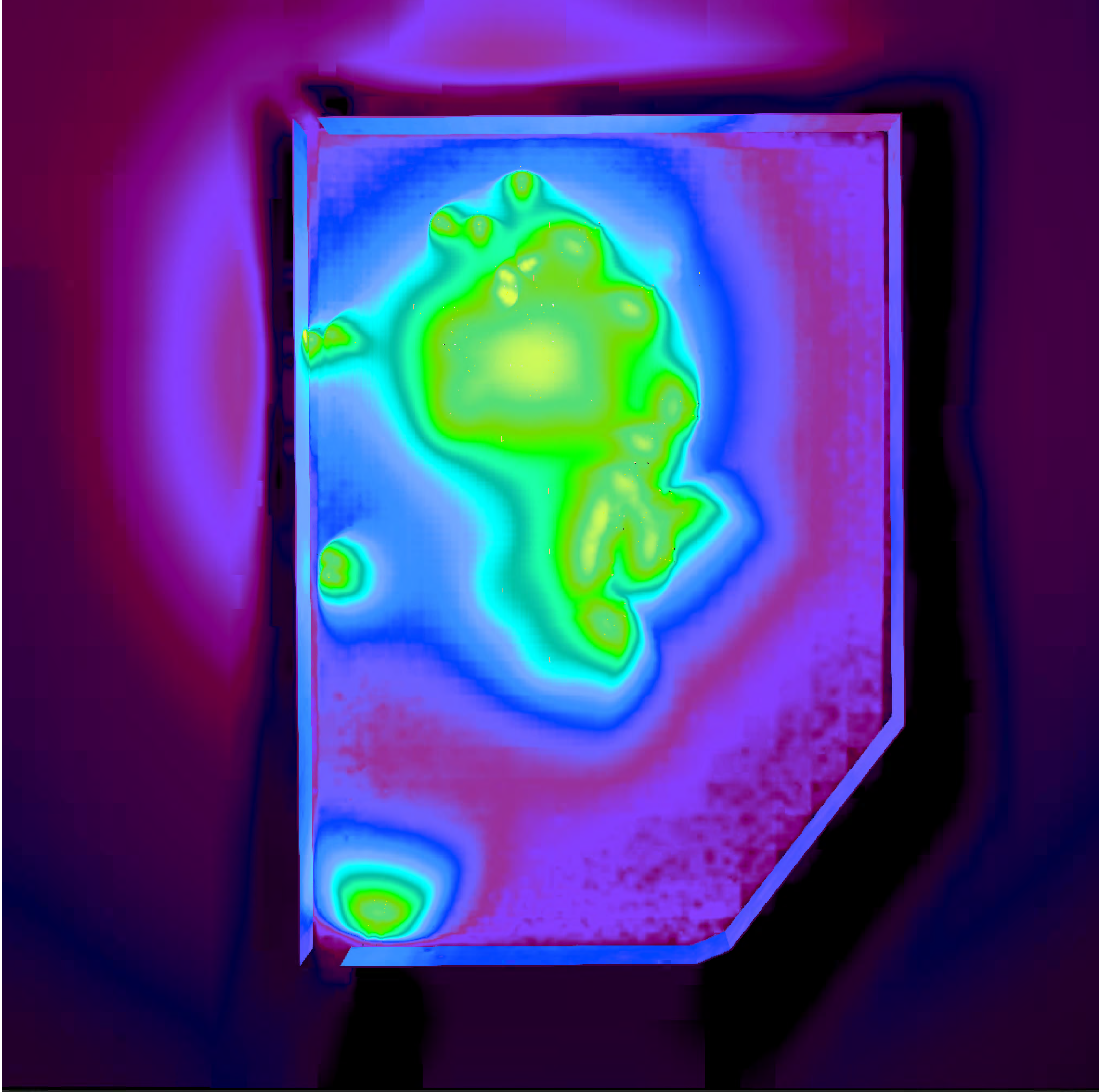
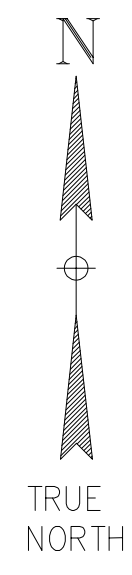
Due to limitations with the availability of manufacturer provided Illuminating Engineering Society (IES) files, the following lighting changes have been made in the photometric models:

- (1) The C-MOR Rig Mounted Crown Light IES file provided by C-MOR states each lighting fixture provides 65,228 lumens. C-MOR confirmed each light provides the 120,500 lumens stated on the cut sheet. For modeling purposes, two lights were used in each location within the model. The "12" C-MOR lights provide a total of 130,456 lumens per lighting source.
- (2) 1041WOGLA Sec. 201-5-402.B. states the Construction Phase hardscape shall equal the acreage of the Oil and Gas Location, or up to twelve (12) acres, whichever is less.



A B C D E F G H I J K L M N O P Q R S T U V

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NOTES:

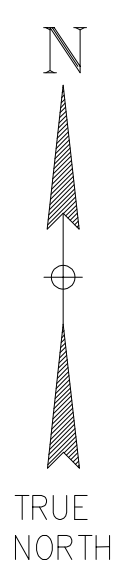
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NO.	TITLE	NO.	DATE	DESCRIPTION	BY	CHK.	APP.	BY	DATE
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								DES: LLH	03/17/25
								CHK: SGH	03/28/25
								APP: MGG	03/28/25
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								S&L JOB NO.	A15553.007
								PROJ. ENGR:	M. GRAY
								SCALE:	N.T.S.
		A	03/28/25	ISSUED FOR PERMIT	LLH	SGH	MGG		

**Sargent & Lundy**  
 400 Inverness Parkway, #400  
 Englewood, CO 80112  
 303.500.1356 Office



CHEVRON  
 F33-10 PAD (GEN 6)  
 COLOR GRADIENT LIGHTING PLAN  
 PRE-PRODUCTION LIGHT MITIGATION: DRILLING

DWG. NO. F33-10-01-02 REV A



NOTES:

REFERENCE DRAWINGS		REVISIONS				ENGINEERING RECORD			
NO.	TITLE	NO.	DATE	DESCRIPTION	BY	CHK.	APP.	BY	DATE
								DRN: LLH	03/17/25
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								APP: MGG	03/28/25
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								S&L JOB NO.	A15553.007
								PROJ. ENGR:	M. GRAY
								SCALE:	N.T.S.
		A	03/28/25	ISSUED FOR PERMIT	LLH	SGH	MGG		

**Sargent & Lundy**  
 400 Inverness Parkway, #400  
 Englewood, CO 80112  
 303.500.1356 Office



CHEVRON  
 F33-10 PAD (GEN 6)  
 RAYTRACE LIGHTING PLAN  
 PRE-PRODUCTION LIGHT MITIGATION: DRILLING

DWG. NO. F33-10-01-03 REV A



# Photometric Toolbox™

## IES ROAD REPORT

PHOTOMETRIC FILENAME : FLD466NC4NG\_SAFESITE LED FLOODLIGHT\_CID2\_GLASS LENS\_NEMA 6\_CW\_15000 LUM

### DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] L15114

[TESTLAB]

[ISSUE DATE]

[MANUFAC] DIALIGHT

[LUMCAT] FLD466NC4NG

[LUMINAIRE] SafeSite LED Flood Light 15000 Lumens, NEMA 6 Distribution, Clear Tempered Glass Lens

[LAMP CAT] FLD466NC4NG

[LAMP] SafeSite LED Flood Light - FLD466NC4NG 132.2W 15645.95lm

### CHARACTERISTICS

IES Classification	Type V
Longitudinal Classification	Very Short
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	15664
Downward Total Efficiency	N.A. (absolute)
Total Luminaire Efficiency	N.A. (absolute)
Luminaire Efficacy Rating (LER)	118
Total Luminaire Watts	132.2
Ballast Factor	1.00
Upward Waste Light Ratio	0.00
Maximum Candela	15082.7
Maximum Candela Angle	360H 0V
Maximum Candela (<90 Degrees Vertical)	15082.7
Maximum Candela Angle (<90 Degrees Vertical)	360H 0V
Maximum Candela At 90 Degrees Vertical	0 (0.0% Luminaire Lumens)
Maximum Candela from 80 to <90 Degrees Vertical	11 (0.1% Luminaire Lumens)
Cutoff Classification (deprecated)	N.A. (absolute)

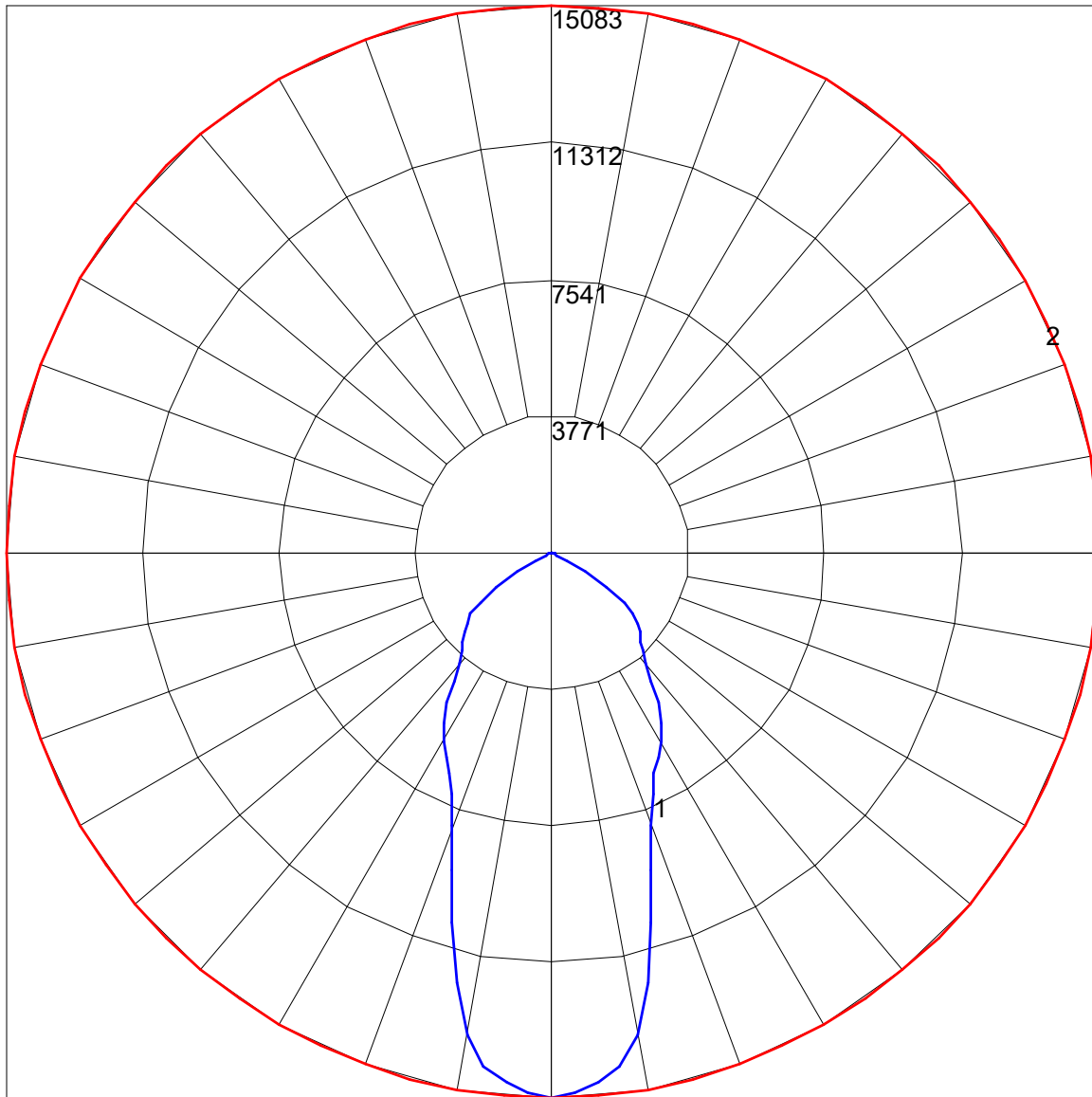
**IES ROAD REPORT****PHOTOMETRIC FILENAME : FLD466NC4NG\_SAFESITE LED FLOODLIGHT\_CID2\_GLASS LENS\_NEMA 6\_CW\_15000 LUM****LUMINAIRE CLASSIFICATION SYSTEM (LCS)**

	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	3731.2	N.A.	23.8
FM - Front-Medium (30-60)	3934.0	N.A.	25.1
FH - Front-High (60-80)	164.6	N.A.	1.1
FVH - Front-Very High (80-90)	2.5	N.A.	0.0
BL - Back-Low (0-30)	3731.2	N.A.	23.8
BM - Back-Medium (30-60)	3934.0	N.A.	25.1
BH - Back-High (60-80)	164.6	N.A.	1.1
BVH - Back-Very High (80-90)	2.5	N.A.	0.0
UL - Uplight-Low (90-100)	0.0	N.A.	0.0
UH - Uplight-High (100-180)	0.0	N.A.	0.0
Total	15664.6	N.A.	100.0
BUG Rating	B4-U0-G0		

IES ROAD REPORT

PHOTOMETRIC FILENAME : FLD466NC4NG\_SAFESITE LED FLOODLIGHT\_CID2\_GLASS LENS\_NEMA 6\_CW\_15000 LUM

POLAR GRAPH



Maximum Candela = 15082.7 Located At Horizontal Angle = 360, Vertical Angle = 0

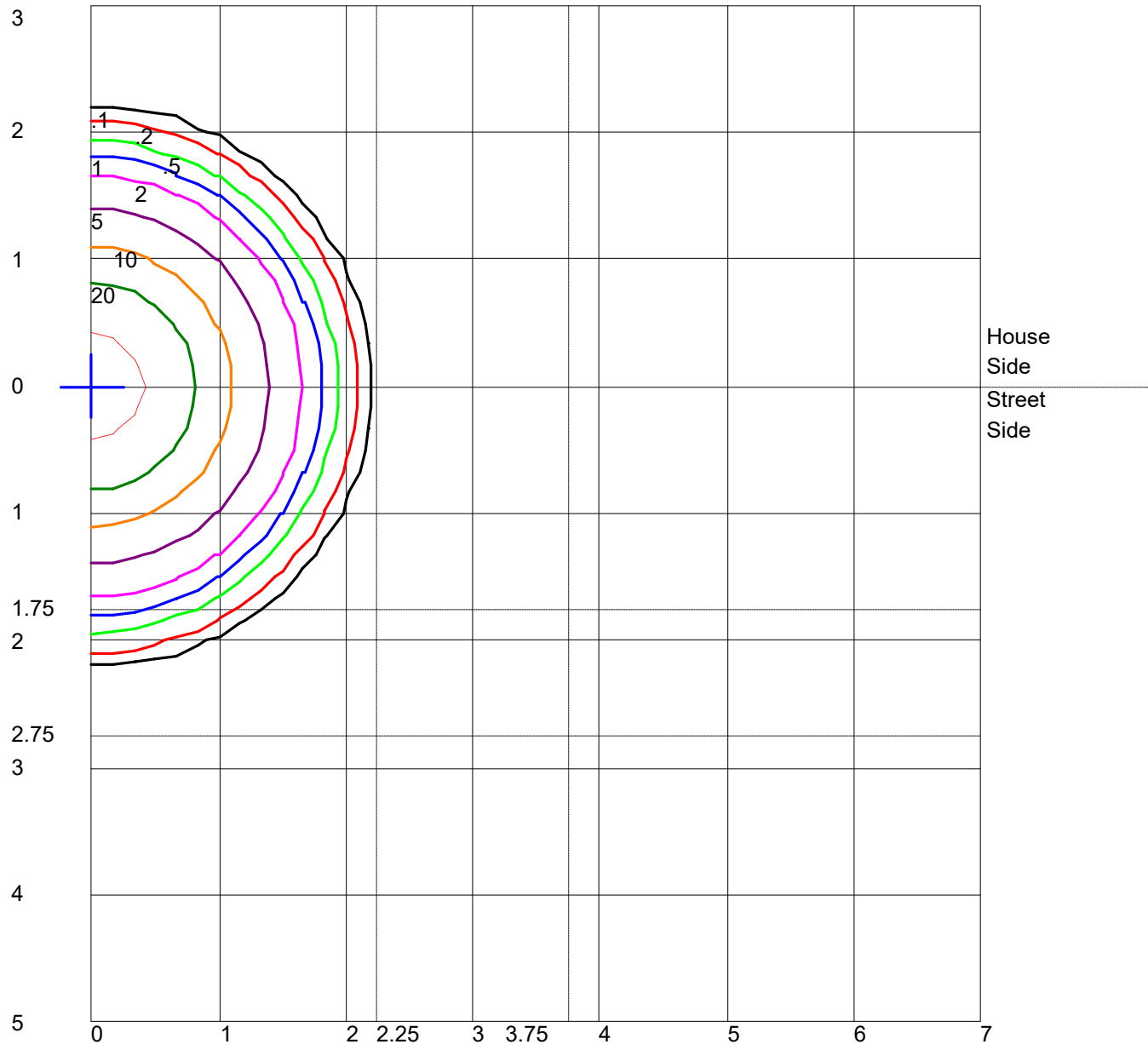
# 1 - Vertical Plane Through Horizontal Angles (360 - 180) (Through Max. Cd.)

# 2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)

IES ROAD REPORT

PHOTOMETRIC FILENAME : FLD466NC4NG\_SAFESITE LED FLOODLIGHT\_CID2\_GLASS LENS\_NEMA 6\_CW\_15000 LUM

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE

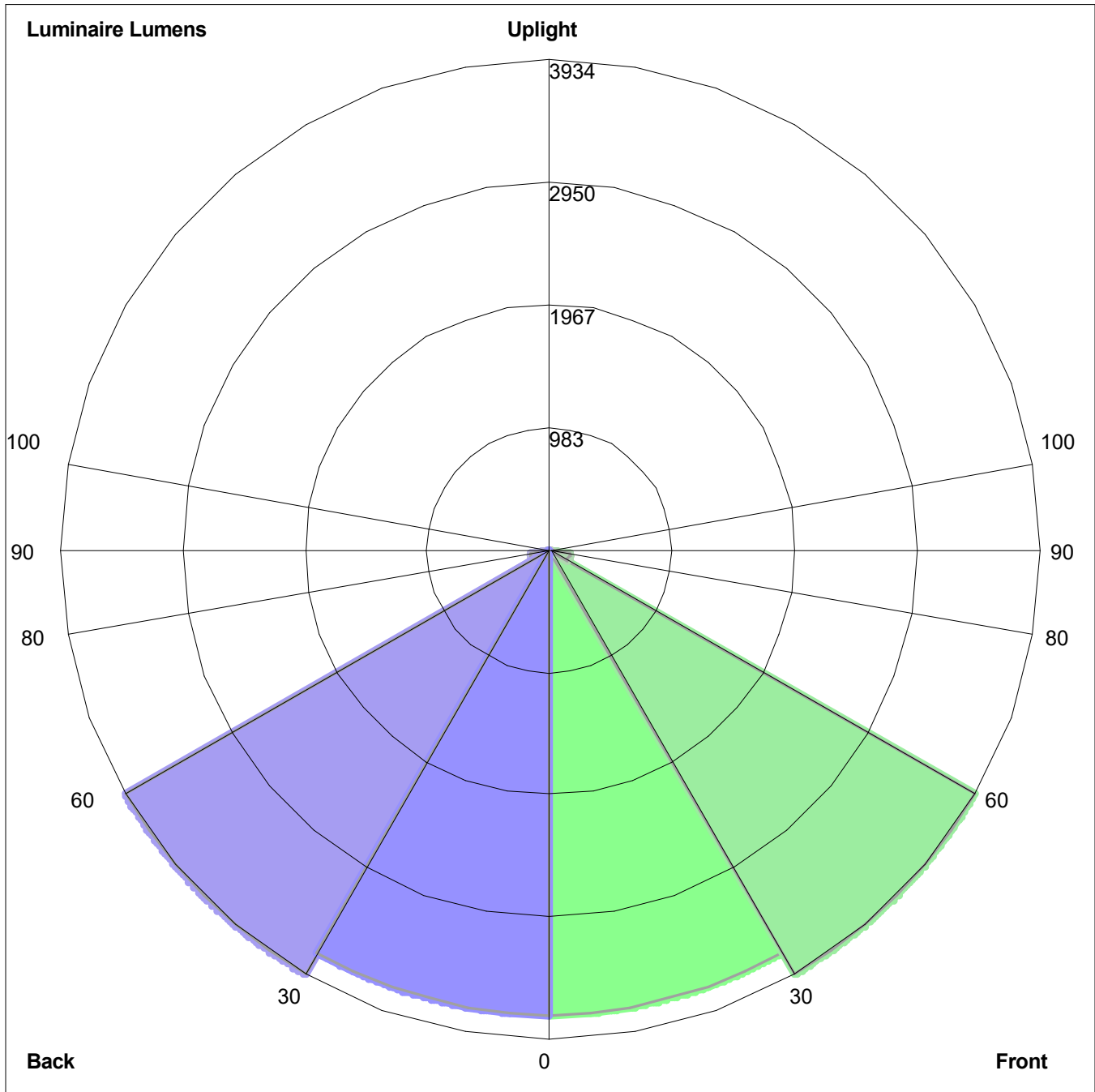


Distance In Units Of Mounting Height  
Values Based On 10 Foot Mounting Height  
1/2 Maximum Candela Trace Shown As Dashed Curve  
(+) = Maximum Candela Point

IES ROAD REPORT

PHOTOMETRIC FILENAME : FLD466NC4NG\_SAFESITE LED FLOODLIGHT\_CID2\_GLASS LENS\_NEMA 6\_CW\_15000 LUM

LUMINAIRE CLASSIFICATION SYSTEM (LCS) GRAPH



Luminaire Lumens:

Front: Low=3731.2, Medium= 3934.0, High=164.6, Very High=2.5

Back: Low=3731.2, Medium= 3934.0, High=164.6, Very High=2.5

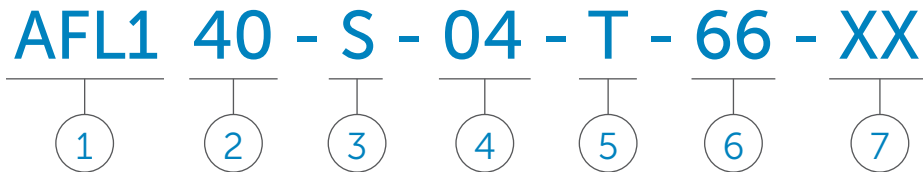
Uplight: Low=0.0, High=0.0

BUG Rating : B4-U0-G0

# AFL Floodlight

## Flood lighting for hazardous locations

### Catalog Number Logic



#### 1

##### BASIC SERIES

AFL Floodlight Series

(i) AFL1 = 70-400 Watt Metal Halide and High Pressure Sodium ; Class I, Division 2, Groups A, B, C & D ; Zone 2, Groups IIA, IIB and IIC ; UL 844 Hazardous Locations ; UL 1598A Marine Outside Type ; CUL

#### 2

##### LAMP CURRENT/LAMP WATTAGE

07 = 70 Watt  
 10 = 100 Watt  
 15 = 150 Watt  
 17 = 175 Watt  
 25 = 250 Watt  
 32 = 320 Watt  
 35 = 350 Watt  
 40 = 400 Watt

#### 3

##### LAMP TYPE (MOGUL BASE)

S = High Pressure Sodium  
 (70, 100, 150, 200, 250, 400 Watt)  
 H = Metal Halide  
 (70, 100, 150, 175, 250, 320, 350, 400, Watt)

#### 4

##### BALLASTIC VOLTAGE

04 = Multi-Tap (120, 208, 240 & 277V)  
 12 = 120V 60 HZ  
 20 = 208V 60HZ  
 22 = 220V 50 HZ  
 24 = 240V 60 HZ  
 27 = 277V 60 HZ  
 34 = 347V 60 HZ  
 48 = 480V 60 HZ

#### 5

##### MOUNTING

T = Trunnion

#### 6

##### BEAM SPREAD

66 = 6V X 6H

#### 7

##### OPTIONS<sup>1</sup>

Q = Auxiliary Quartz Relay  
 QTD = Auxiliary Quartz Relay Hot and Cold Start  
 PC = Photo Cell<sup>3</sup>  
 V = Visor  
 LS = Lamp Support  
 FB1 = Single Fuse Block<sup>2,3,4</sup>  
 FB2 = Double Fuse Block<sup>2,3</sup>  
 PL = Clear Acrylic Shield  
 SMS = Shock Mounted Socket  
 SC = Safety Cable (Eye Bold Included)  
 PS = Pulse Start<sup>5</sup>  
 R = Instant Restrike (HPS only up to 150W)

<sup>1</sup> Consult factory for pricing.

<sup>2</sup> Limited to 175W Maximum HID Lamp

<sup>3</sup> Not suitable for hazardous locations.

<sup>4</sup> Not available with multi-tap ballast unless incoming voltage is specified. When installed, one fuse block/fuse holder is provided for 120, 277V. Fuse not included. Option not available for marine listed fixtures.

<sup>5</sup> Use universal or appropriate position oriented lamp.

Catalog logic is for explaining catalog number structure only. Not all combinations are possible; consult factory for catalog numbers not listed in charts.

### Certification Guide

Model	Lamp	Ambient Temperature, °C	Class I, Div. 2, Group A, B, C & D	Supply Wire Suitable Temperature, °C
AFL140	MH	55	T1 (350°C)	105
AFL125	MH	55	T1 (325°C)	90
AFL117	MH	55	T1 (325°C)	90
AFL115	MH	55	T1 (325°C)	90
AFL140	HPS	55	T1 (450°C)	105
AFL125	HPS	55	T1 (350°C)	90
AFL115	HPS	55	T1 (350°C)	90

# AFL Floodlight

## Flood lighting for hazardous locations



Shown with optional visor.  
(Lamps not included)

- Class I, Division 2, Groups A,B,C and D  
(See below for suitability as designated for ①,②or③)
- UL 844 Hazardous Locations
- UL 1598A Marine Outside Type
- Zone 2, Groups IIA, IIB and IIC
- One-piece copper-free cast aluminum lamp and ballast housing with baked on bronze polyester powder coat finish
- Precision formed specular finished reflector for optimum photometric performance
- Thermal shock, heat and impact-resistant tempered glass lens
- Marine grade hardware
- 55°C Ambient Temperature (AFL1 Series)

Fixture Type	Figure Number	Lamp Wattage	Voltage	Catalog Number	Shipping Weight (lbs.)
High Pressure Sodium	1	70	Multi-Tap*	AFL07-S-04-T-66 ①②③	34.0
			480V/60HZ	AFL07-S-48-T-66 ①②③	34.0
		100	Multi-Tap*	AFL110-S-04-T-66 ①②③	34.0
			480V/60HZ	AFL110-S-48-T-66 ①②③	34.0
		150	Multi-Tap*	AFL115-S-04-T-66 ①②③	34.0
			480V/60HZ	AFL115-S-48-T-66 ①②③	34.0
		250	Multi-Tap*	AFL125-S-04-T-66 ①②③	37.0
			480V/60HZ	AFL125-S-48-T-66 ①②③	36.5
		400	Multi-Tap*	AFL140-S-04-T-66 ①②③	39.5
			480V/60HZ	AFL140-S-48-T-66 ①②③	39.0
Metal Halide	1	175	Multi-Tap*	AFL117-H-04-T-66-PS ①②	35.0
			480V/60HZ	AFL117-H-48-T-66-PS ①②	35.0
		250	Multi-Tap*	AFL125-H-04-T-66-PS ①②③	35.0
			480V/60HZ	AFL125-H-48-T-66-PS ①②③	34.0
		320	Multi-Tap*	AFL132-H-04-T-66-PS ①②③	39.5
			480V/60HZ	AFL132-H-48-T-66-PS ①②③	39.0
		350	Multi-Tap*	AFL135-H-04-T-66 ①②③	36.5
			480V/60HZ	AFL135-H-48-T-66 ①②③	36.5
		400	Multi-Tap*	AFL140-H-04-T-66 ①②③	36.5
			480V/60HZ	AFL140-H-48-T-66 ①②③	36.5

\*120/208/240/277V 60HZ  
 ① Class I, Division 2, UL 844 Listed  
 ② UL 1598A Listed  
 ③ CUL

Active luminaire

Not yet a DIALux member  
AFL1-40S.IES



! This brand is not yet a DIALux member. [Learn more...](#)

1.260 x 0.729 x 0.328ft

Luminaire type index

Designation in DWG plan

Select

Photometric data

Luminaire luminous flux

31905 lm

Light output ratio

63.8 %

Connected load

400.0 W

Luminous efficacy

79.8 lm / W

This image shows the IES File within the DiaLux light modeling program for the AFL Floodlight.



**IES ROAD REPORT**

**PHOTOMETRIC FILENAME : HED7MC2BXXXXXN\_SAFEBSITE LED HIGH BAY-12848.IES**

**DESCRIPTIVE INFORMATION (From Photometric File)**

IESNA:LM-63-2002  
 [TEST] Simulated  
 [TESTLAB]  
 [ISSUE DATE]  
 [MANUFAC] DIALIGHT  
 [LUMCAT] HED7MC2BxxxxxN  
 [LUMINAIRE] SafeSite LED High Bay 14250 Lumens, Medium Distribution, Glass Lens  
 [LAMP CAT] HED7MC2BxxxxxN  
 [LAMP] HED7MC2BxxxxxN\_SafeSite LED High Bay (scaled) 102W 14250.05lm

**CHARACTERISTICS**

IES Classification	Type VS
Longitudinal Classification	Very Short
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	14255
Downward Total Efficiency	N.A. (absolute)
Total Luminaire Efficiency	N.A. (absolute)
Luminaire Efficacy Rating (LER)	140
Total Luminaire Watts	102
Ballast Factor	1.00
Upward Waste Light Ratio	0.00
Maximum Candela	6344.1
Maximum Candela Angle	270H 27.5V
Maximum Candela (<90 Degrees Vertical)	6344.1
Maximum Candela Angle (<90 Degrees Vertical)	270H 27.5V
Maximum Candela At 90 Degrees Vertical	0 (0.0% Luminaire Lumens)
Maximum Candela from 80 to <90 Degrees Vertical	7.1 (0.0% Luminaire Lumens)
Cutoff Classification (deprecated)	N.A. (absolute)

**IES ROAD REPORT**

**PHOTOMETRIC FILENAME : HED7MC2BXXXXXN\_SAFESITE LED HIGH BAY-12848.IES**

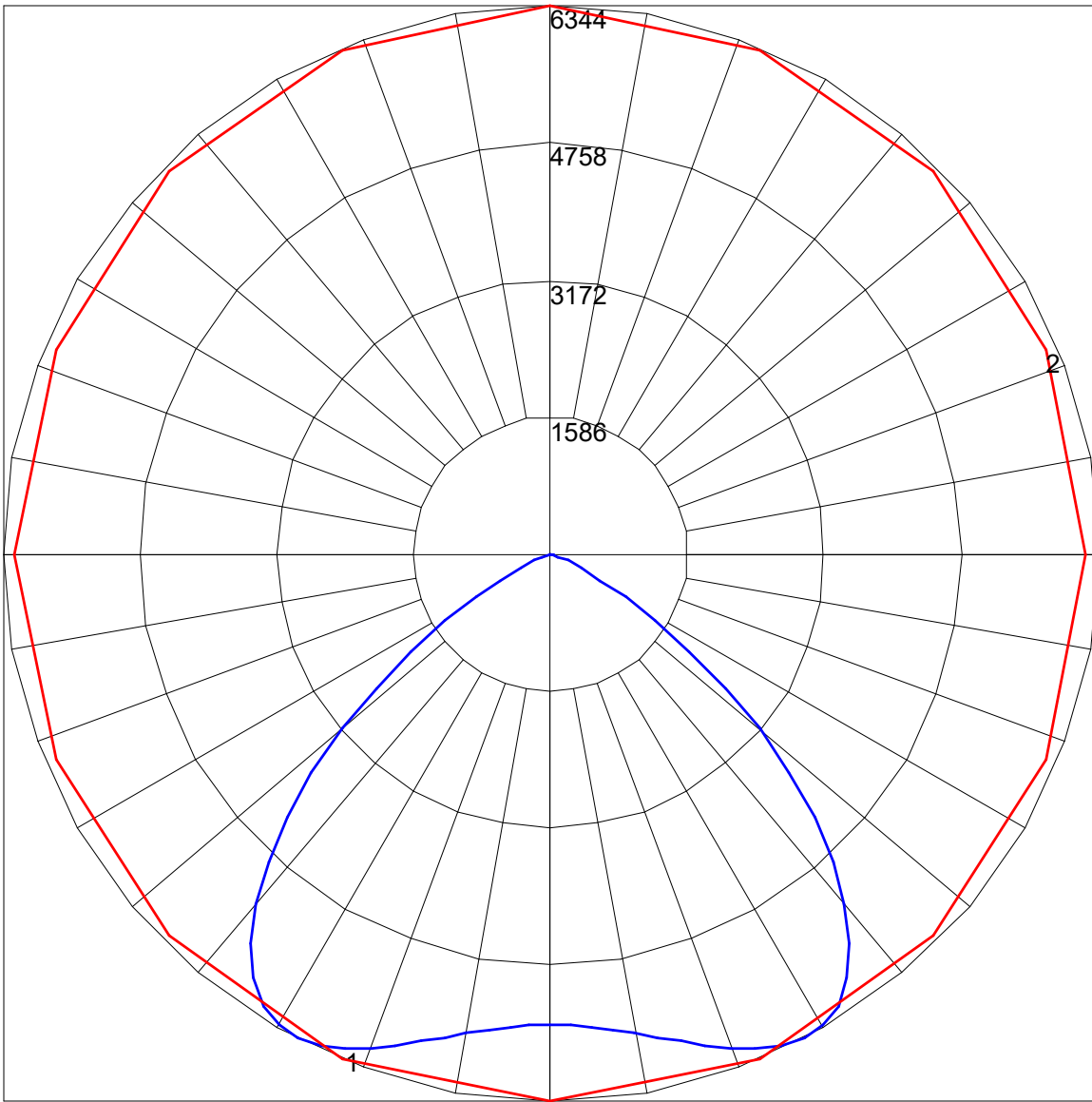
**LUMINAIRE CLASSIFICATION SYSTEM (LCS)**

	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	2525.4	N.A.	17.7
FM - Front-Medium (30-60)	4365.8	N.A.	30.6
FH - Front-High (60-80)	234.9	N.A.	1.6
FVH - Front-Very High (80-90)	1.3	N.A.	0.0
BL - Back-Low (0-30)	2525.4	N.A.	17.7
BM - Back-Medium (30-60)	4365.8	N.A.	30.6
BH - Back-High (60-80)	234.9	N.A.	1.6
BVH - Back-Very High (80-90)	1.3	N.A.	0.0
UL - Uplight-Low (90-100)	0.0	N.A.	0.0
UH - Uplight-High (100-180)	0.0	N.A.	0.0
Total	14254.8	N.A.	100.0
BUG Rating	B4-U0-G0		

**IES ROAD REPORT**

**PHOTOMETRIC FILENAME : HED7MC2BXXXXXN\_SAFESITE LED HIGH BAY-12848.IES**

**POLAR GRAPH**



Maximum Candela = 6344.1 Located At Horizontal Angle = 270, Vertical Angle = 27.5

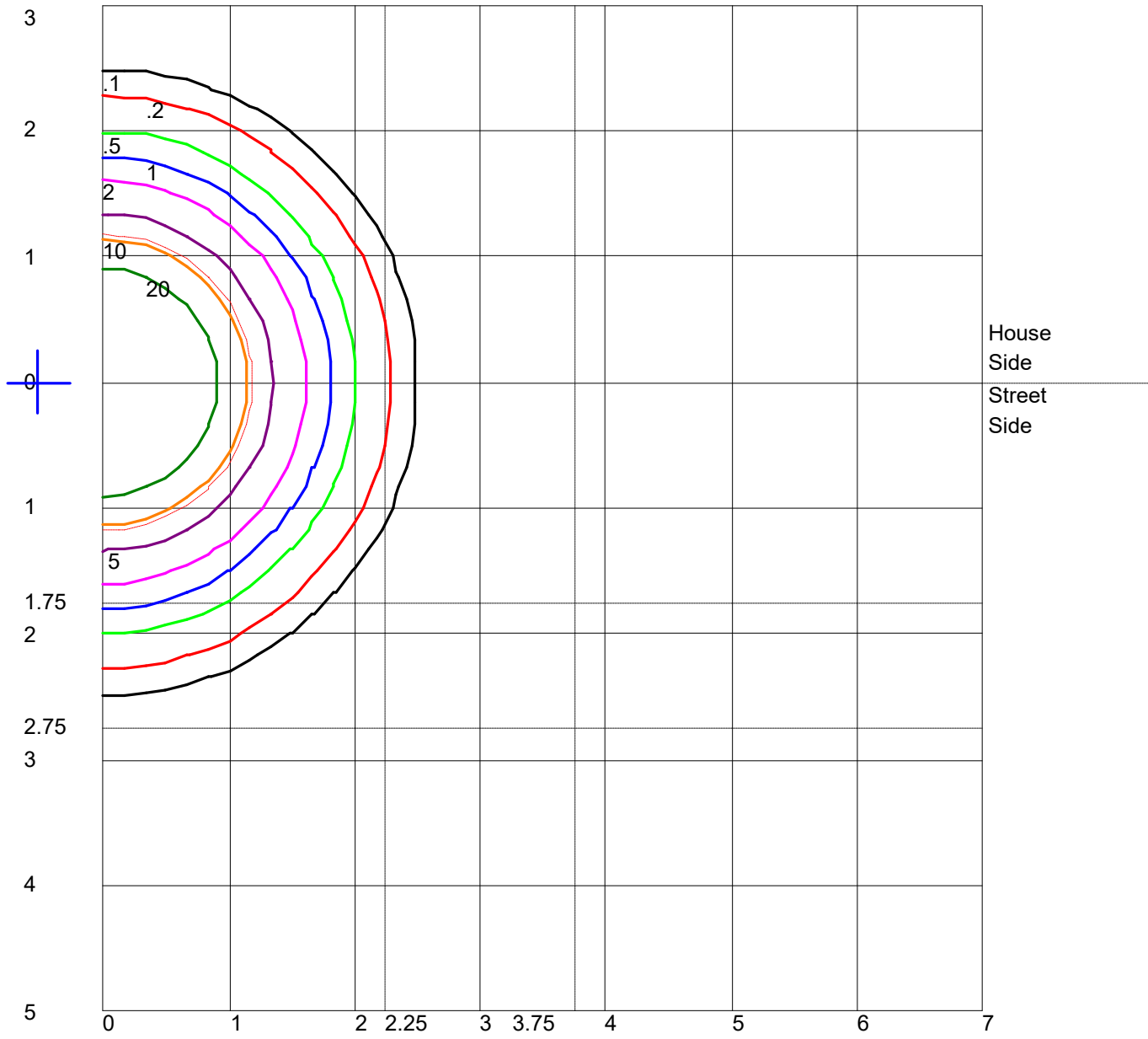
# 1 - Vertical Plane Through Horizontal Angles (270 - 90) (Through Max. Cd.)

# 2 - Horizontal Cone Through Vertical Angle (27.5) (Through Max. Cd.)

IES ROAD REPORT

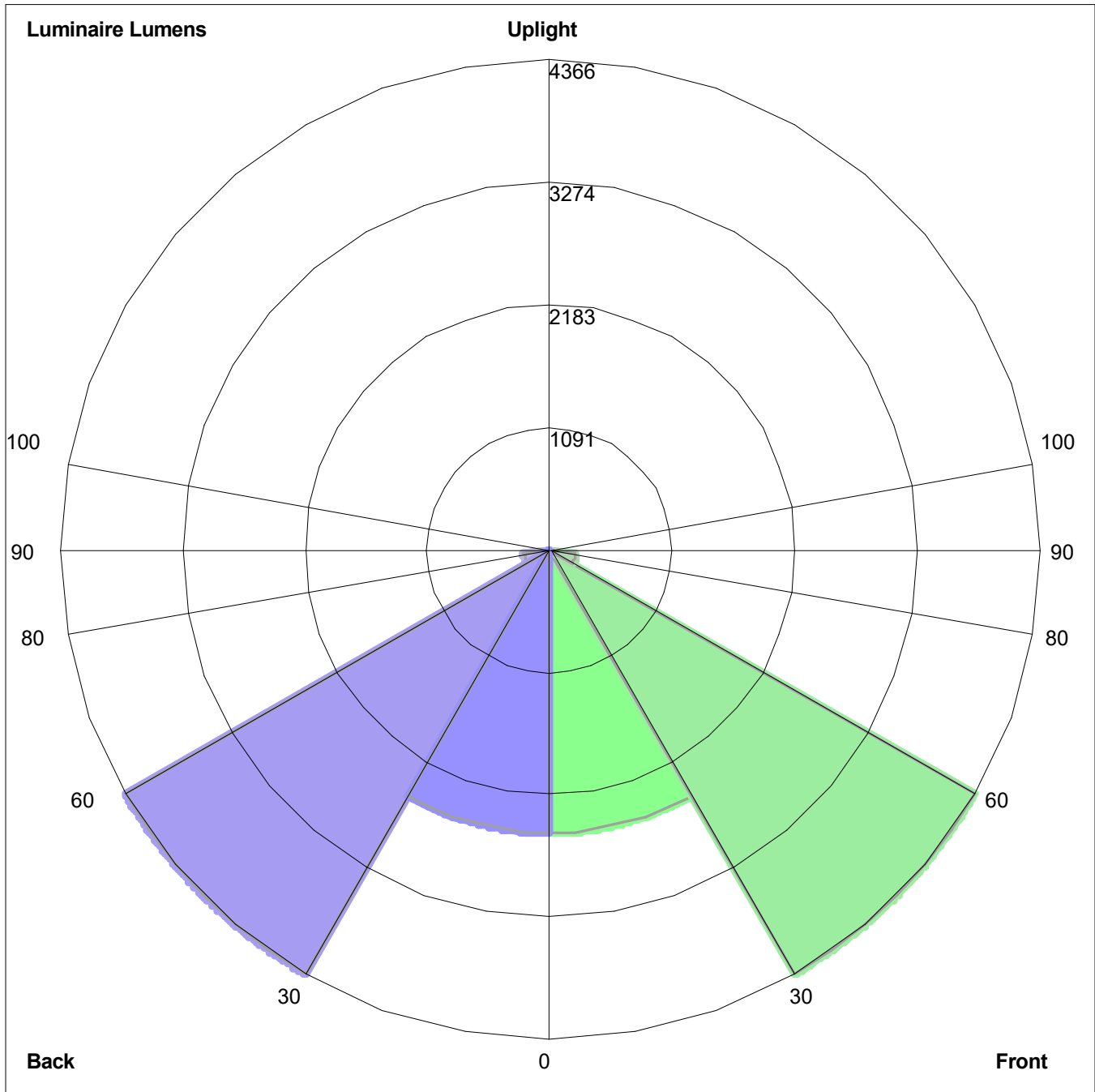
PHOTOMETRIC FILENAME : HED7MC2BXXXXXN\_SAFESITE LED HIGH BAY-12848.IES

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE



Distance In Units Of Mounting Height  
Values Based On 10 Foot Mounting Height  
1/2 Maximum Candela Trace Shown As Dashed Curve  
(+) = Maximum Candela Point

LUMINAIRE CLASSIFICATION SYSTEM (LCS) GRAPH



Luminaire Lumens:  
Front: Low=2525.4, Medium=4365.8, High=234.9, Very High=1.3  
Back: Low=2525.4, Medium=4365.8, High=234.9, Very High=1.3  
Uplight: Low=0.0, High=0.0

BUG Rating : B4-U0-G0



**IES ROAD REPORT**

**PHOTOMETRIC FILENAME : LKU4MC27DXXXXN\_VIGILANT LED LINEAR LOW PROFILE\_POLYCARB LENS\_MEDIUM\_CV**

**DESCRIPTIVE INFORMATION (From Photometric File)**

IESNA:LM-63-2002

[TEST] Scaled

[TESTLAB]

[ISSUE DATE]

[MANUFAC] DIALIGHT

[LUMCAT] LKU4MC27DxxxxN\_Scaled

[LUMINAIRE] Vigilant LED Linear Low Profile 7250 Lumens, 4 Foot, Medium Distribution, Clear Polycarbonate Lens

[LAMP CAT] LKU4MC27DxxxxN\_Scaled

[LAMP] Vigilant LED Linear - LKU4MC27DxxxxN 52.2W 7476.22lm

**CHARACTERISTICS**

IES Classification	Type V
Longitudinal Classification	Very Short
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	7479
Downward Total Efficiency	N.A. (absolute)
Total Luminaire Efficiency	N.A. (absolute)
Luminaire Efficacy Rating (LER)	143
Total Luminaire Watts	52.2
Ballast Factor	1.00
Upward Waste Light Ratio	0.00
Maximum Candela	3103.4
Maximum Candela Angle	360H 10V
Maximum Candela (<90 Degrees Vertical)	3103.4
Maximum Candela Angle (<90 Degrees Vertical)	360H 10V
Maximum Candela At 90 Degrees Vertical	0 (0.0% Luminaire Lumens)
Maximum Candela from 80 to <90 Degrees Vertical	12 (0.2% Luminaire Lumens)
Cutoff Classification (deprecated)	N.A. (absolute)

**IES ROAD REPORT**

**PHOTOMETRIC FILENAME : LKU4MC27DXXXXN\_VIGILANT LED LINEAR LOW PROFILE\_POLYCARB LENS\_MEDIUM\_CV**

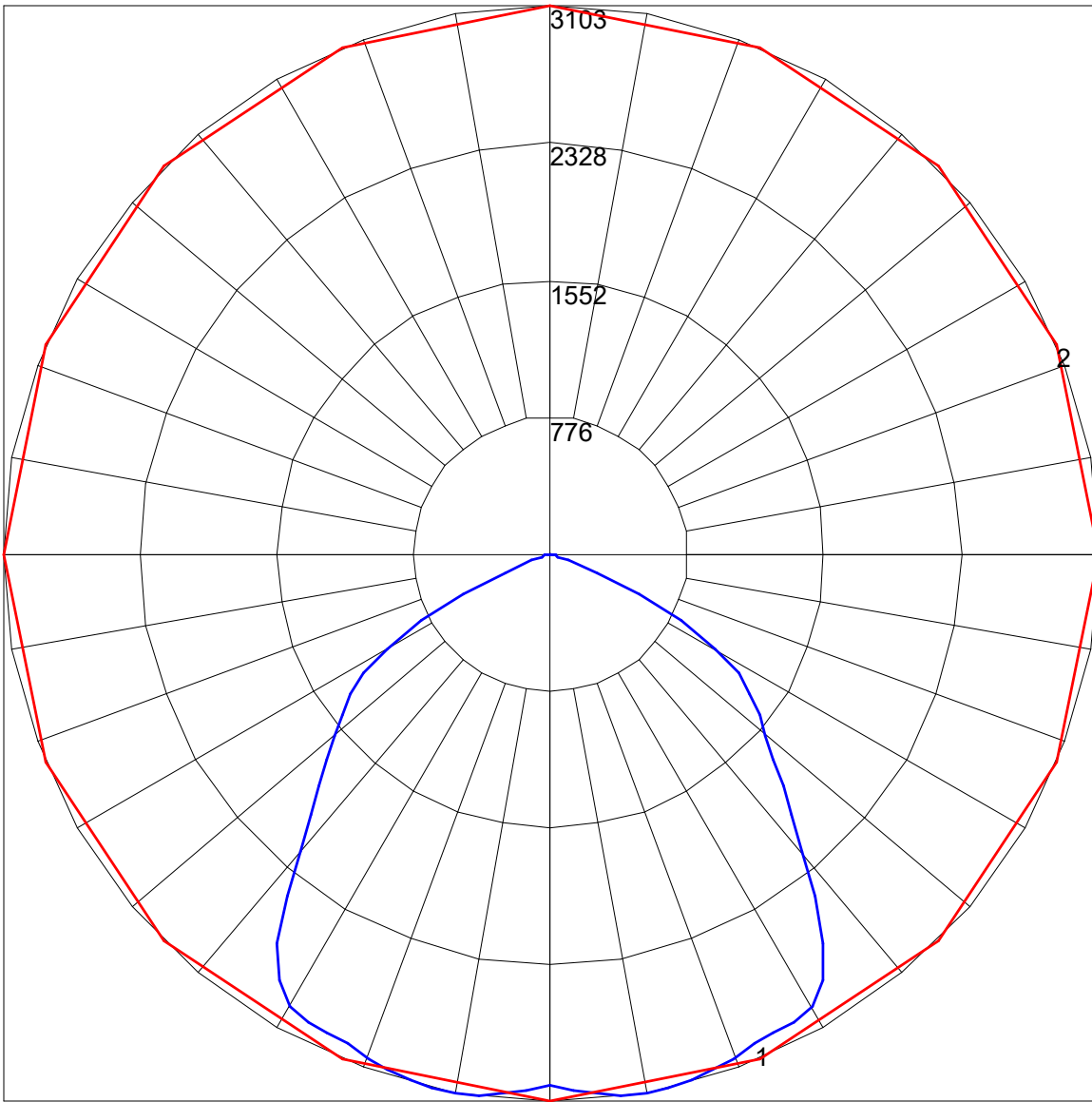
**LUMINAIRE CLASSIFICATION SYSTEM (LCS)**

	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	1276.9	N.A.	17.1
FM - Front-Medium (30-60)	2162.7	N.A.	28.9
FH - Front-High (60-80)	297.4	N.A.	4.0
FVH - Front-Very High (80-90)	2.6	N.A.	0.0
BL - Back-Low (0-30)	1276.9	N.A.	17.1
BM - Back-Medium (30-60)	2162.7	N.A.	28.9
BH - Back-High (60-80)	297.4	N.A.	4.0
BVH - Back-Very High (80-90)	2.6	N.A.	0.0
UL - Uplight-Low (90-100)	0.0	N.A.	0.0
UH - Uplight-High (100-180)	0.0	N.A.	0.0
Total	7479.2	N.A.	100.0
BUG Rating	B3-U0-G0		

IES ROAD REPORT

PHOTOMETRIC FILENAME : LKU4MC27DXXXXN\_VIGILANT LED LINEAR LOW PROFILE\_POLYCARB LENS\_MEDIUM\_CV

POLAR GRAPH



Maximum Candela = 3103.4 Located At Horizontal Angle = 360, Vertical Angle = 10

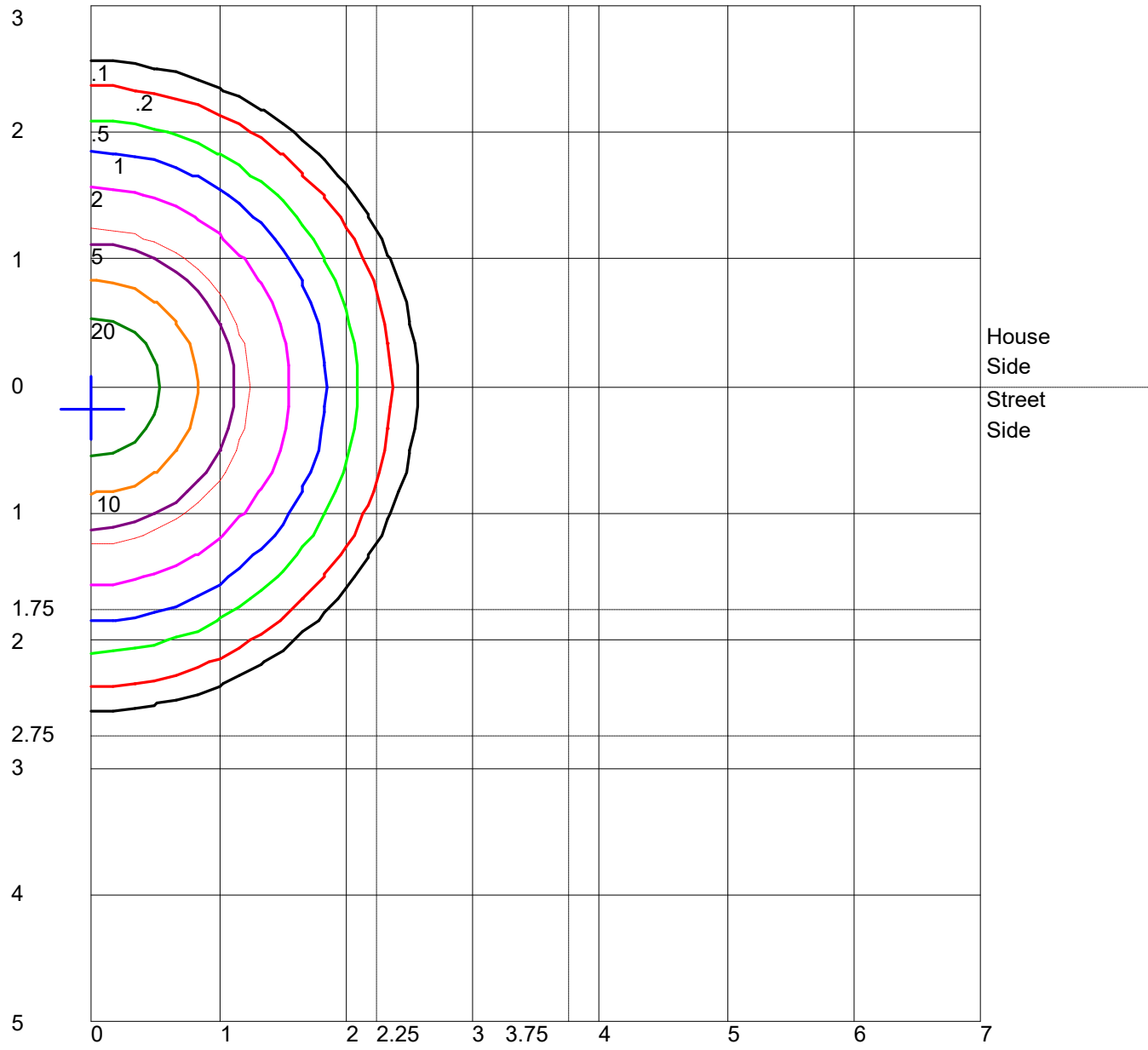
# 1 - Vertical Plane Through Horizontal Angles (360 - 180) (Through Max. Cd.)

# 2 - Horizontal Cone Through Vertical Angle (10) (Through Max. Cd.)

IES ROAD REPORT

PHOTOMETRIC FILENAME : LKU4MC27DXXXXN\_VIGILANT LED LINEAR LOW PROFILE\_POLYCARB LENS\_MEDIUM\_CV

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE

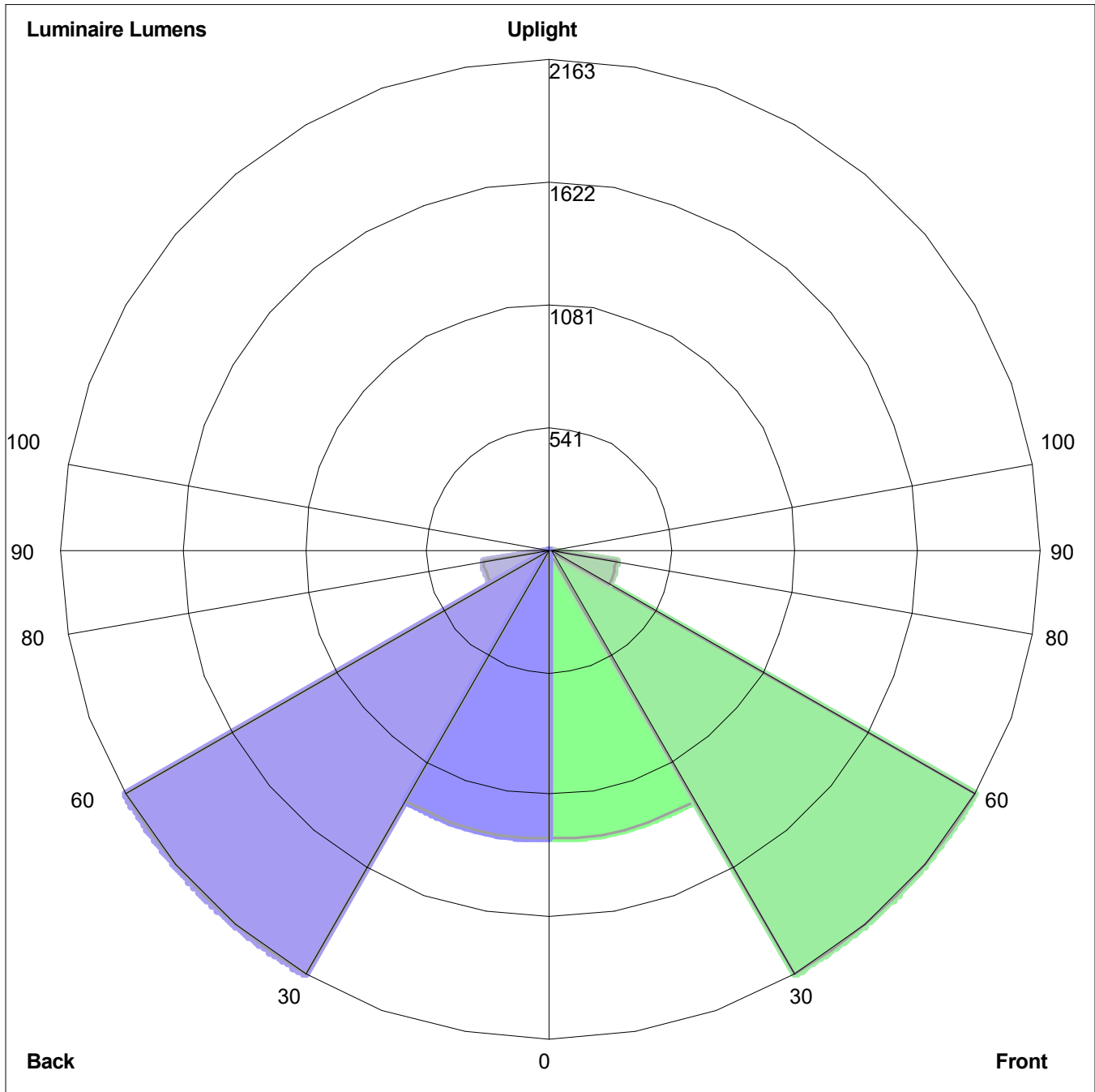


Distance In Units Of Mounting Height  
Values Based On 10 Foot Mounting Height  
1/2 Maximum Candela Trace Shown As Dashed Curve  
(+) = Maximum Candela Point

**IES ROAD REPORT**

**PHOTOMETRIC FILENAME : LKU4MC27DXXXXN\_VIGILANT LED LINEAR LOW PROFILE\_POLYCARB LENS\_MEDIUM\_CV**

**LUMINAIRE CLASSIFICATION SYSTEM (LCS) GRAPH**



Luminaire Lumens:

Front: Low=1276.9, Medium=2162.7, High=297.4, Very High=2.6

Back: Low=1276.9, Medium=2162.7, High=297.4, Very High=2.6

Uplight: Low=0.0, High=0.0

BUG Rating : B3-U0-G0



## Description

The FL series is a compact LED fixture designed for high performance sport lighting applications. Compare the FL500 to 1500 WATTS metal halide.

## Certification

**CONFIDENTIAL AND PROPRIETARY**

**PATENT PENDING**

ETL / DLC



## Specifications

Part No.:	FL600
Wattage:	600 W
Efficacy:	150 LM/W
Lumens:	120,500 LM
Input Voltage:	100-277 V
Power Factor:	.92
CCT:	5000K
CRI:	80+
IP Rating:	IP66
Dimensions:	15.7" x 15.7" x 10"
Weight:	38 lbs. 17.2 kg
Lifespan:	80,000 L70 Hours
EPA Rating	1.2 ft <sup>2</sup>
Standard Colors:	Black



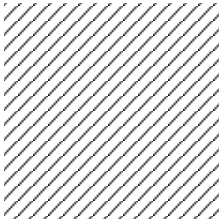
**C-MOR**<sup>TM</sup>  
ENERGY SERVICES

THE INFORMATION CONTAINED HEREIN SHALL BE CONSIDERED THE SOLE PROPERTY OF JCA COMPANIES, JCA RENTALS, LLC/C&M OILFIELD RENTALS, LLC/C-MOR ENERGY SERVICES, LLC AND RECIPIENT THEREOF AGREES NOT TO DISCLOSE SAID INFORMATION TO PARTIES OUTSIDE THE RECIPIENTS ORGANIZATION AND TO USE, MODIFY, CHANGE OR DUPLICATE SAID INFORMATION FOR ANY PURPOSES EXCEPT AS SPECIFIED BY JCA RENTALS, LLC/C&M OILFIELD RENTALS, LLC/C-MOR ENERGY SERVICES, LLC WITH THE WRITTEN PERMISSION OF JCA COMPANIES, JCA RENTALS, LLC/C&M OILFIELD RENTALS, LLC/C-MOR ENERGY SERVICES, LLC.

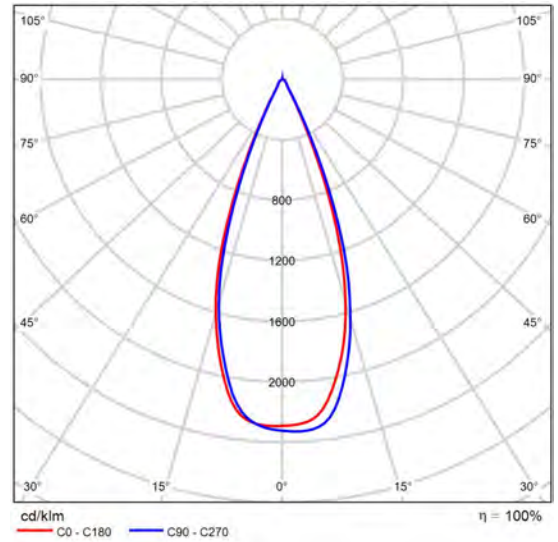
300 x 300 ft Area With 500W GEN IV 8 Pcs

## Product data sheet

LED LIGHTING DYNAMO 3 STADIUM FLOOD LIGHT 600W



P	600.0 W
$\Phi_{Lamp}$	96000 lm
$\Phi_{Luminaire}$	95951 lm
$\eta$	99.95 %
Luminous efficacy	159.9 lm/W
CCT	5000 K
CRI	100

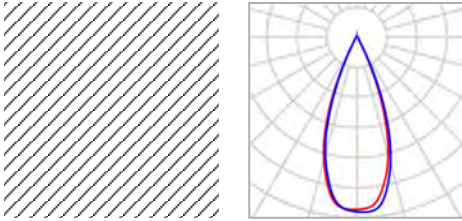


Polar LDC

300 x 300 ft Area With 500W GEN IV 8 Pcs

Site 1

## Luminaire layout plan



Manufacturer	LED LIGHTING
Article name	DYNAMO 3 STADIUM FLOOD LIGHT 600W

### Individual luminaires

X	Y	Mounting height	Luminaire
133.270 ft	-131.361 ft	180.400 ft	1
144.270 ft	-131.361 ft	180.400 ft	2
133.270 ft	-144.361 ft	180.400 ft	3
144.270 ft	-144.361 ft	180.400 ft	4
133.270 ft	-137.861 ft	180.400 ft	5
138.770 ft	-131.361 ft	180.400 ft	6
144.270 ft	-137.861 ft	180.400 ft	7
138.770 ft	-144.361 ft	180.400 ft	8

<b>Bodacious State F33-10 Pad Completions - Frac Lighting</b>	
LED Light Plants <sup>(1)</sup>	15
LED Lights per Plant	4
Lumens per LED Light	38,500
<b>Total Lumens</b>	<b>2,310,000</b>
WOGLA - Hardscape Acreage <sup>(2)</sup>	10.90
WOGLA - Hardscape Square Footage	474,804
<b>Lumens Per Square Foot</b>	<b>4.87</b>

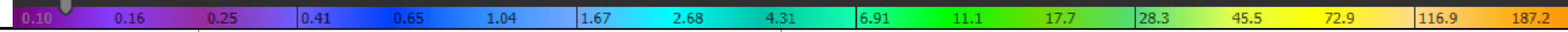
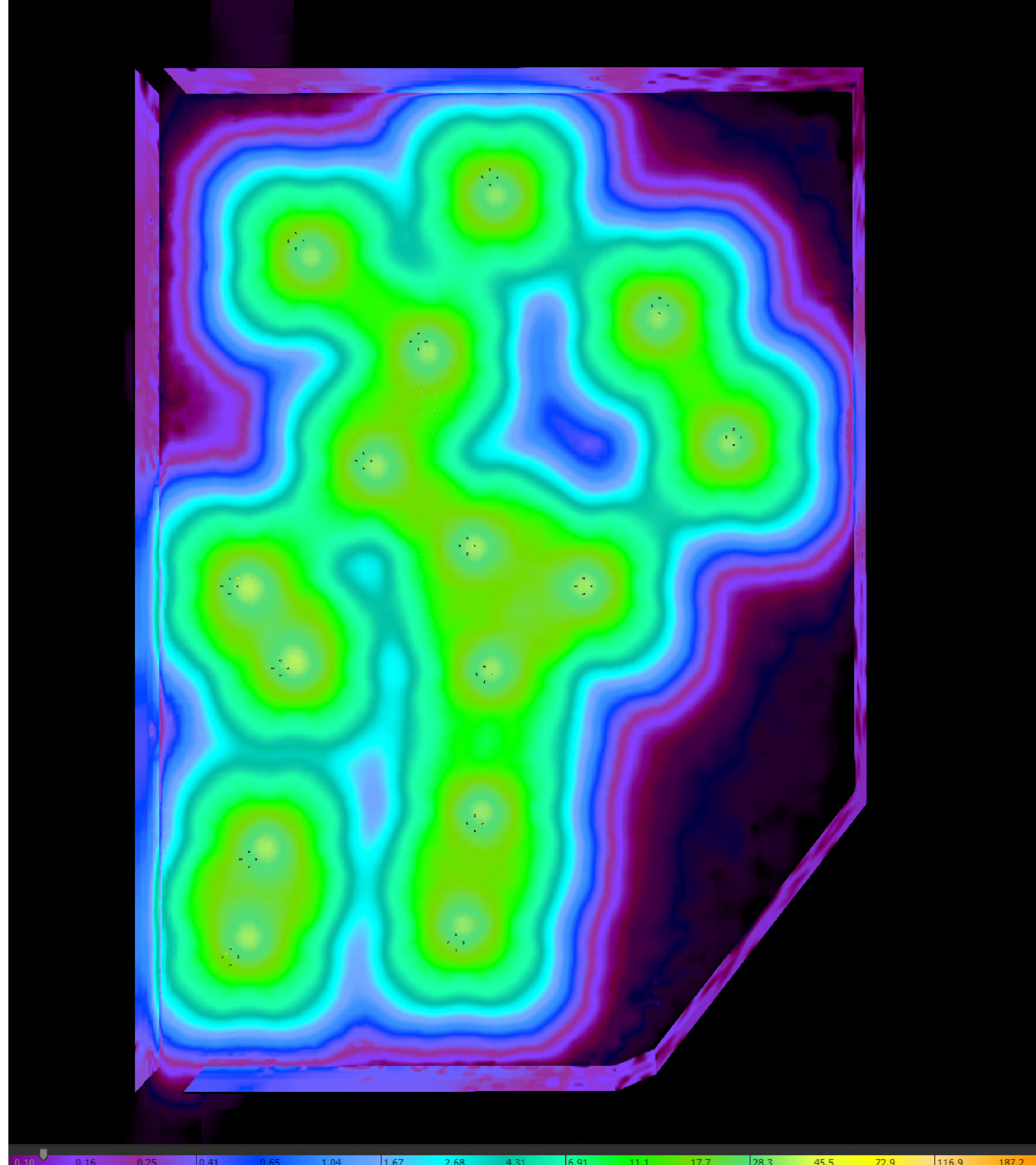
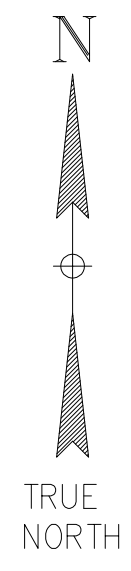
<b>WOGLA Pre-Production Permissible Light Levels</b>	
Lighting Zone	Lumens Per Square Foot of Hardscape
LZ-0	12
<b>LZ-1</b>	<b>12</b>
LZ-2	12
LZ-3	12
LZ-4	12

Due to limitations with the availability of manufacturer provided Illuminating Engineering Society (IES) files, the following lighting changes have been made in the photometric models:

(1) Noble Energy has been unable to locate an IES file for the Allmand LED light towers. For modeling purposes, a comparable LED IES file has been used, which provides 37,589 lumens per lighting fixture.

(2) 1041WOGLA Sec. 201-5-402.B. states the Construction Phase hardscape shall equal the acreage of the Oil and Gas Location, or up to twelve (12) acres, whichever is less.





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NOTES:

REFERENCE DRAWINGS		REVISIONS				ENGINEERING RECORD			
NO.	TITLE	NO.	DATE	DESCRIPTION	BY	CHK.	APP.	BY	DATE
								DRN: LLH	03/17/25
								DES: LLH	03/17/25
								CHK: SGH	03/28/25
								APP: MGG	03/28/25
								AFE No.	
								S&L JOB NO.	A15553.007
								PROJ. ENGR:	M. GRAY
								SCALE:	N.T.S.
		A	03/28/25	ISSUED FOR PERMIT	LLH	SGH	MGG		

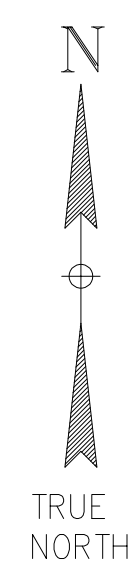
**Sargent & Lundy**  
 400 Inverness Parkway, #400  
 Englewood, CO 80112  
 303.500.1356 Office



CHEVRON  
 F33-10 PAD (GEN 6)  
 COLOR GRADIENT LIGHTING PLAN  
 PRE-PRODUCTION LIGHT MITIGATION:  
 COMPLETIONS (FRAC)

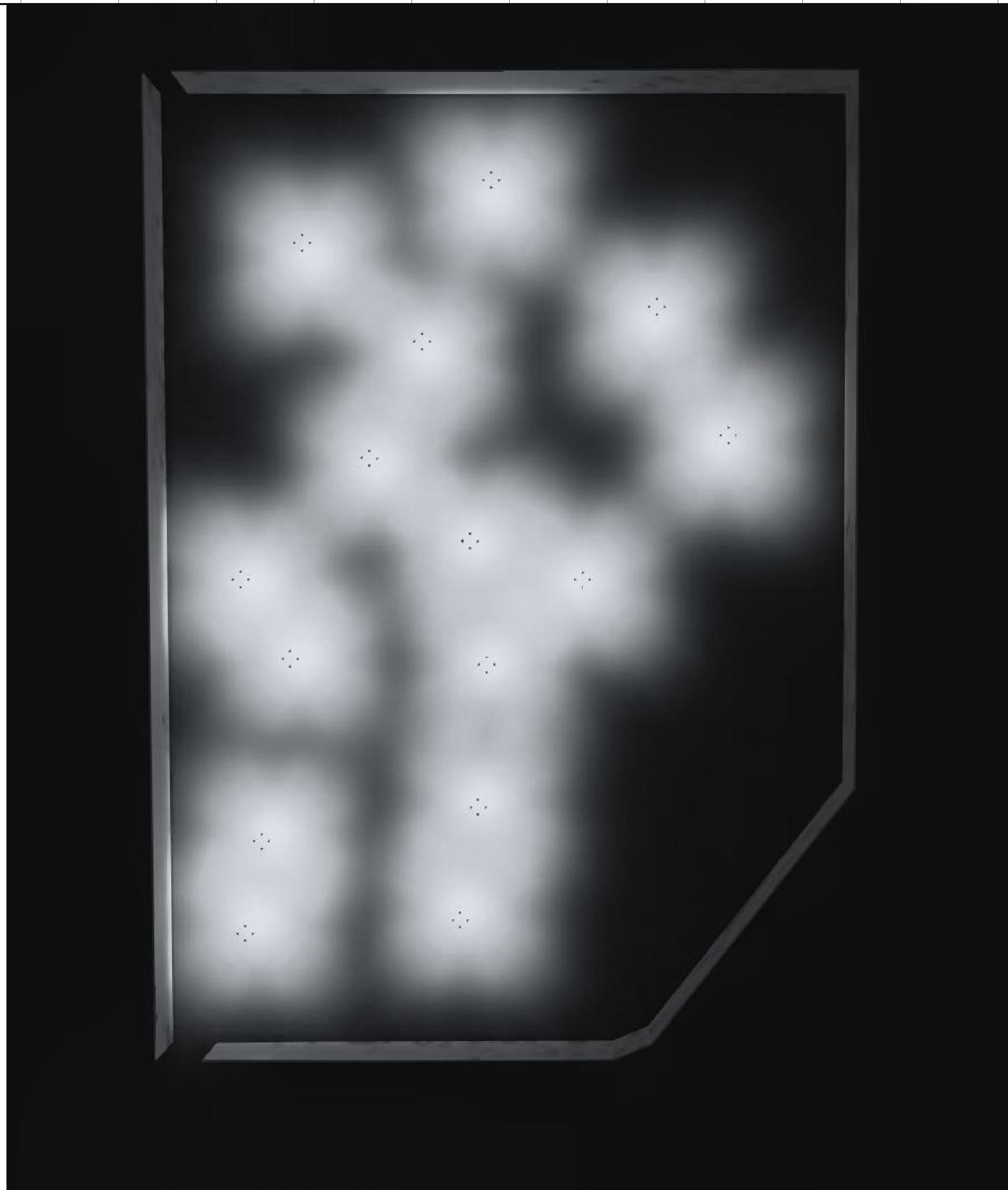
DWG. NO. F33-10-02-02 REV A

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NOTES:

REFERENCE DRAWINGS		REVISIONS				ENGINEERING RECORD			
NO.	TITLE	NO.	DATE	DESCRIPTION	BY	CHK.	APP.	BY	DATE
								DRN: LLH	03/17/25
								DES: LLH	03/17/25
								CHK: SGH	03/28/25
								APP: MGG	03/28/25
								AFE No.	
								S&L JOB NO.	A15553.007
								PROJ. ENGR:	M. GRAY
								SCALE:	N.T.S.
		A	03/28/25	ISSUED FOR PERMIT	LLH	SGH	MGG		



CHEVRON  
F33-10 PAD (GEN 6)  
RAYTRACE LIGHTING PLAN  
PRE-PRODUCTION LIGHT MITIGATION:  
COMPLETIONS (FRAC)

DWG. NO.	F33-10-02-03	REV	A
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<b>Bodacious State F33-10 Pad Completions - Drillout Lighting</b>	
Halogen Units <sup>(1)</sup>	3
Halogen Lights per Unit	4
LED Units <sup>(2)</sup>	4
LED Lights per Unit	4
Lumens per Halogen Light	135,500
Lumens per LED Light	38,500
<b>Total Lumens</b>	<b>2,242,000</b>
WOGLA - Hardscape Acreage <sup>(3)</sup>	10.90
WOGLA - Hardscape Square Footage	474,804
<b>Lumens Per Square Foot</b>	<b>4.72</b>

<b>WOGLA Pre-Production Permissible Light Levels</b>	
Lighting Zone	Lumens Per Square Foot of Hardscape
LZ-0	12
<b>LZ-1</b>	<b>12</b>
LZ-2	12
LZ-3	12
LZ-4	12

Due to limitations with the availability of manufacturer provided Illuminating Engineering Society (IES) files, the following lighting changes have been made in the photometric models:

(1) Noble Energy has been unable to locate an IES file for the Allmand Metal Halide light towers. For modeling purposes, a comparable Halide IES file has been used, which provides 92,245 lumens per lighting fixture. To ensure accurate modeling of site conditions, 6 halide lighting fixtures were used per light tower, for a total of 553,470 lumens per lighting source.

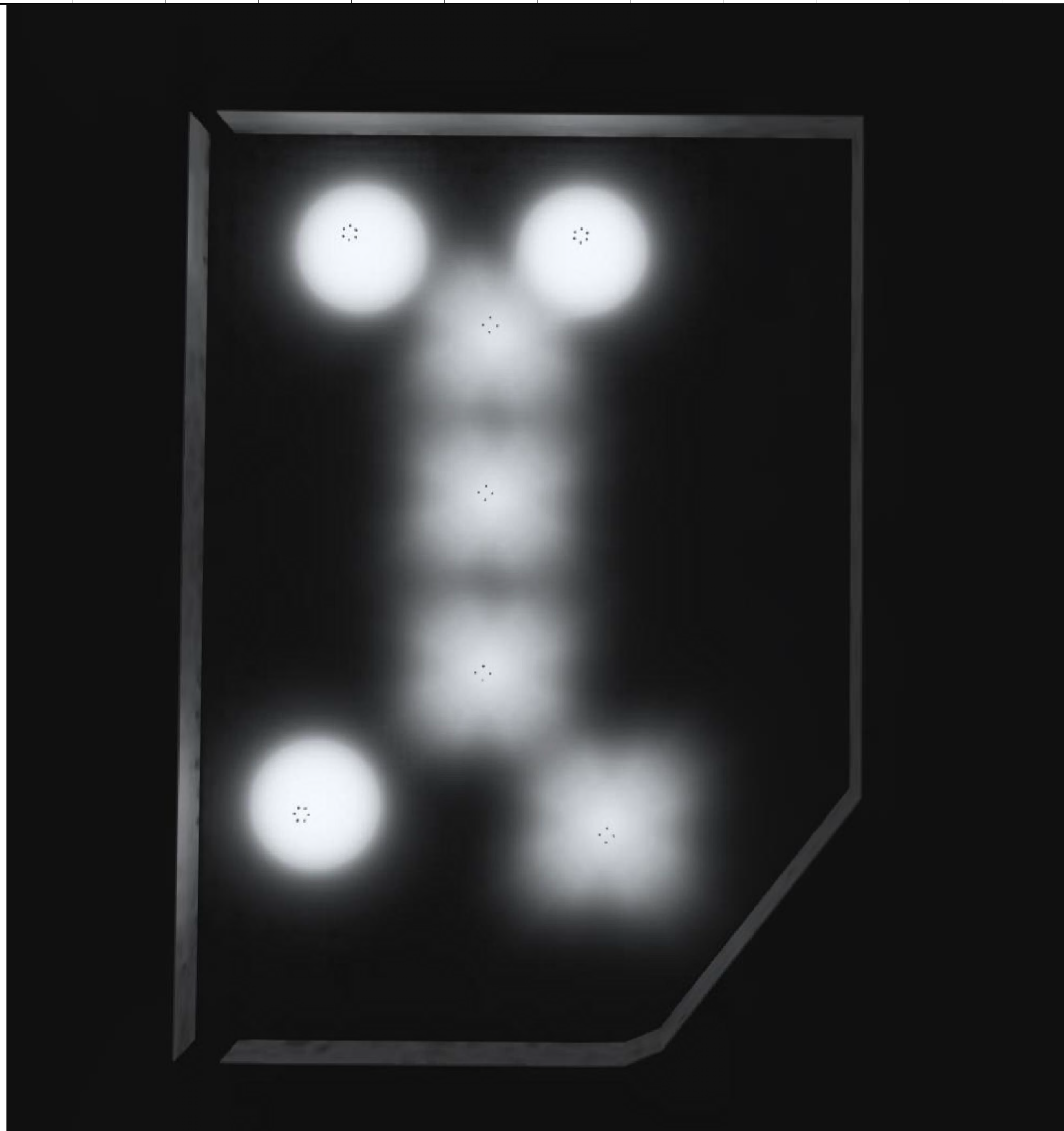
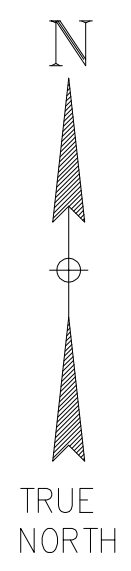
(2) Noble Energy has been unable to locate an IES file for the Allmand LED light towers. For modeling purposes, a comparable LED IES file has been used, which provides 37,589 lumens per lighting fixture.

(3) 1041WOGLA Sec. 201-5-402.B. states the Construction Phase hardscape shall equal the acreage of the Oil and Gas Location, or up to twelve (12) acres, whichever is less.





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NOTES:

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								CHK: SGH	03/28/25
								APP: MGG	03/28/25
								AFE No.	
								S&L JOB NO.	A15553.007
								PROJ. ENGR:	M. GRAY
								SCALE:	N.T.S.
		A	03/28/25	ISSUED FOR PERMIT	LLH	SGH	MGG		

**Sargent & Lundy**  
 400 Inverness Parkway, #400  
 Englewood, CO 80112  
 303.500.1356 Office



CHEVRON  
 F33-10 PAD (GEN 6)  
 RAYTRACE LIGHTING PLAN  
 PRE-PRODUCTION LIGHT MITIGATION:  
 DRILLOUT

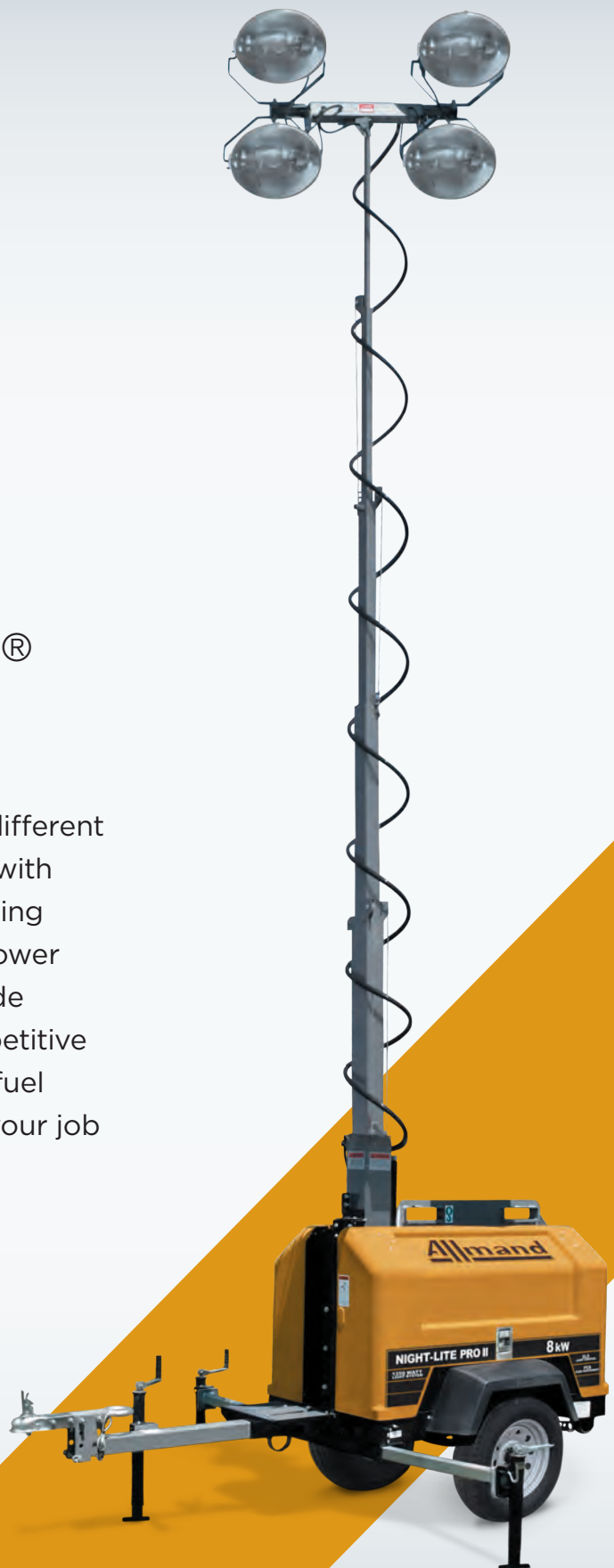
DWG. NO. F33-10-03-03 REV A



# NIGHT-LITE PRO II®

V-SERIES®

The **Night-Lite Pro II® V-Series®** offers four different engine mode and features a vertical tower with power cables encased in Nycoil™ flexible tubing to eliminate tangling and stretching of the tower wiring. The metal halide lamp fixtures provide 135,500 lumens per lamp - more than competitive light towers. With a 30 gallon polyethylene fuel tank, this dependable light tower will keep your job site running all through the night.



A SUBSIDIARY OF



BRIGGS & STRATTON CORPORATION

# KEY FEATURES

## Night-Lite Pro II<sup>®</sup> V-Series<sup>®</sup>

**(4) Metal Halide Light Fixtures**

**359° Fixture Rotation**

**55 mph Operating Wind Speed Rating**

**Height\***  
Mast Lowered /  
Raised  
8.3 ft (2.5 m) /  
26.6 ft (8.1 m)

### Width

Transport / Operating  
50.5 in (1,283 mm) /  
100.6 in (2,555 mm)

### Length

Transport / Operating  
123.5 in (3,137 mm) /  
120.3 in (3,056 mm)

**Hydraulic Winch**

### Gull-Wing Style Doors

Reaction Injection  
Molded (RIM) doors  
providing strength and  
corrosion resistance  
with a lockable latch

**Elliptical Leaf Springs**

**Formed, Welded Steel Frame**

**Reversible Coupler**

Adjustable height  
2" ball / 3" pintle

**Remote Engine Oil Drain**

Easily accessible at  
rear of trailer

**Structure** Six-section  
tubular steel design

### Sequenced Light System (SLS™)

Automatically delays engine  
shutdown to turn off lights  
and prevent generator  
from shutting down  
while **under load**.

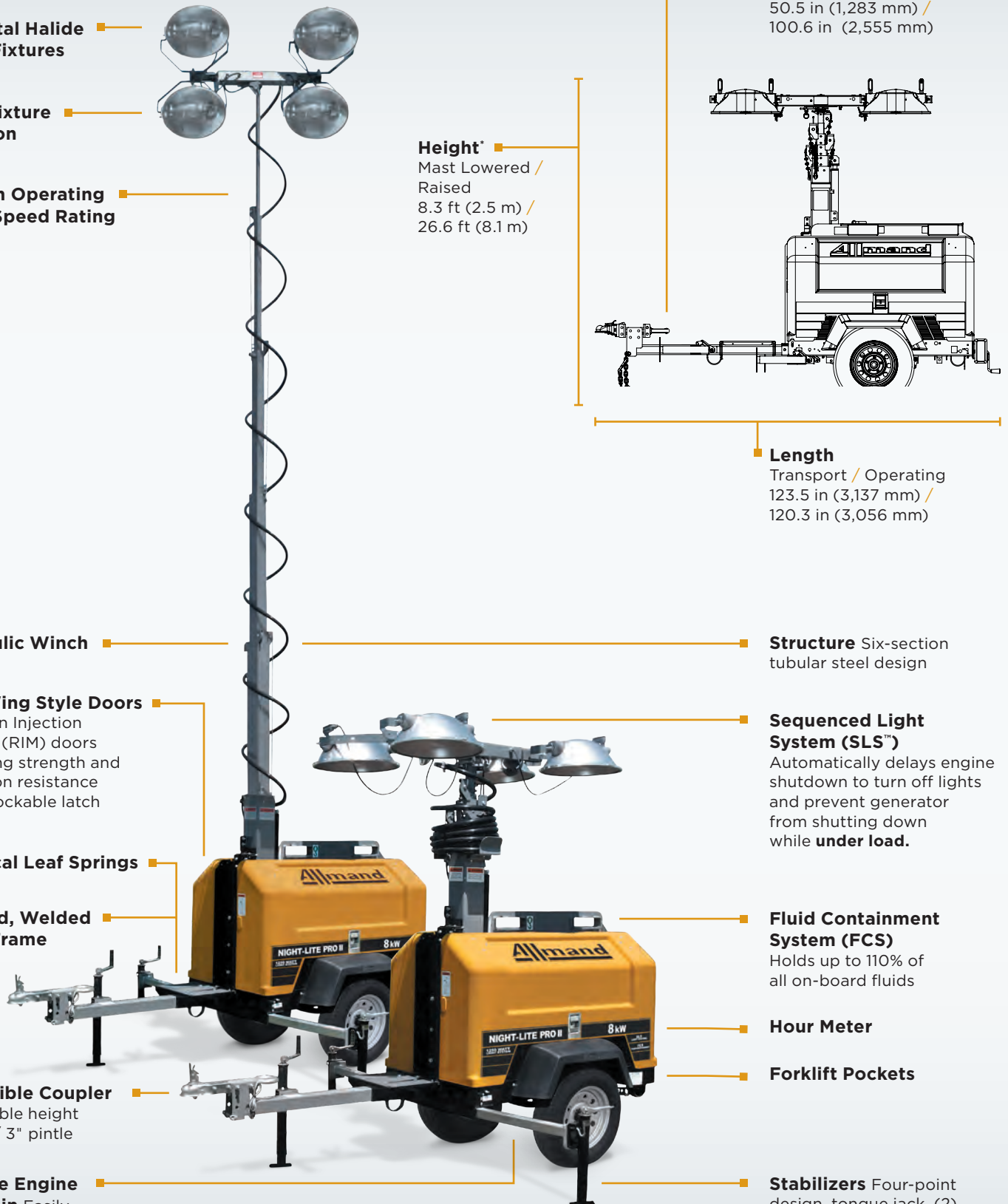
### Fluid Containment System (FCS)

Holds up to 110% of  
all on-board fluids

**Hour Meter**

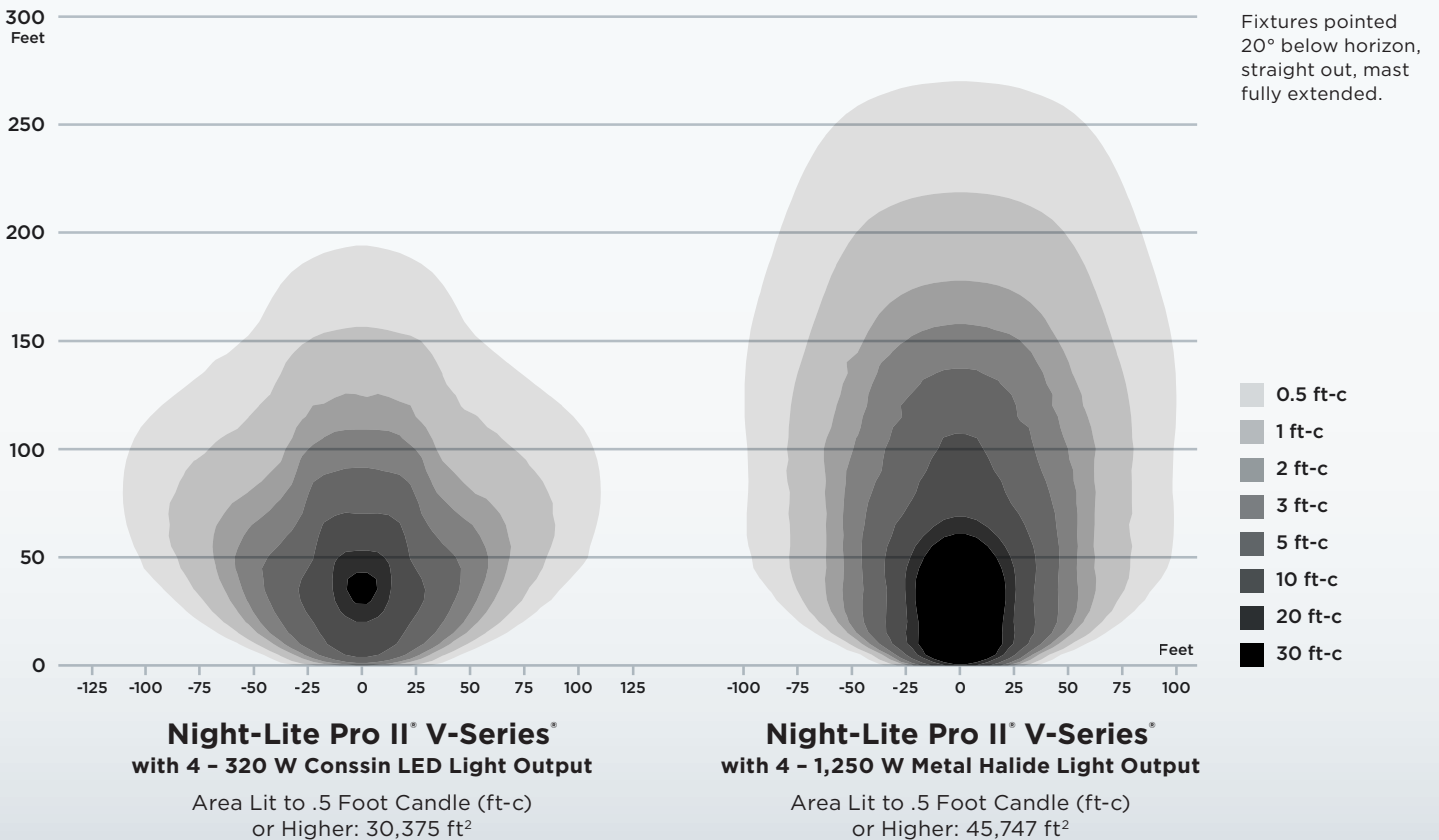
**Forklift Pockets**

**Stabilizers** Four-point  
design, tongue jack, (2)  
retractable side outriggers  
at front of trailer, rear jack



Model	NLPROV-ML3E	NLPROV-KD1005	NLPROV-KD1105	NLPROV-P1.1
Engine Brand / Model	Mitsubishi / L3E	Kubota / D1005	Kubota / D1105	Perkins / P1.1
Engine Prime Power (kW)**	6	7	8	8
Fuel Capacity gal (L)	30 (113.6)	30 (113.6)	30 (113.6)	30 (113.6)
<b>Light Type - Metal Halide</b>	(4) Metal Halide SHO-HD® fixture			
Metal Halide Wattage (per lamp)	1,250	1,250	1,250	1,250
Metal Halide Lumens (per lamp / total)	135,500 / 542,000	135,500 / 542,000	135,500 / 542,000	135,500 / 542,000
Operating Time (hrs)*** <small>(Using four 1,250 W metal halide light fixtures)</small>	50	48.4	47.6	50
<b>Light Type - LED (Optional)</b>	(4) Two LED, 5000°K color temperature			
LED Wattage (per lamp)	320	320	320	320
LED Lumens (per lamp / total)	38,500 / 154,000	38,500 / 154,000	38,500 / 154,000	38,500 / 154,000
Operating Time (hrs)*** <small>(Using four 320 W LED light fixtures)</small>	81.1	103.4	83.3	78.9
<b>Features</b>				
Outlets	Standard 20 A 120 VAC duplex GFCI / 30 A 240 VAC 4-Wire Twist Lock (NEMA L14-30R) 30 A 120 VAC RV (NEMA TT-30R)			
<b>Weights &amp; Shipping</b>				
Weight lbs (kg)	1,950 (884.5)			
Gross Vehicle Weight Rating (GVWR) lbs (kg)	2,200 (998)			
Shipping	16 units on a 48' or 53' flatbed			

LIGHT COVERAGE



\* Balloon light only included in raised dimension - balloon light is removed for transportation. \*\* Prime generator electrical output per Allmand® testing. \*\*\* Based on one hour run test full fuel tank consumption. Allmand® has a policy of continuous product improvement and reserves the right to modify its specifications at any time and without prior notice. See operator's manual or www.allmand.com website for complete warranty details.