NORTHPOINT
CONSULTING GROUP, INC.

MEMORANDUM

FROM: Derek Roelle, E.I.T.
NorthPoint Consulting Group, Inc.

TO: Lake County Planning and Building Department

RE: Global Interactive Solutions, LLC – Commercial Electrical Service Demand Summary
1780 State HWY 3, Clearlake CA
APN: 010-055-24

DATE: December 10, 2024

The intent of this memo is to provide a summary of the analysis that was performed to estimate the total electrical demand for Global Interactive Solution LLC's proposed cannabis cultivation project.

Global Interactive Solutions, LLC is seeking approval of a Major Use Permit for A-Type 3 outdoor cultivation, A-Type 3B mixed-light cultivation, A-Type 4 nursery stock cultivation, and Type 13 self-transport distribution from the Lake County Community Development Department/Planning Commission. The phased development project will be located at 1780 State Hwy 53, Clearlake, CA - Lake County - APN 010-055-24.

This analysis assumes the project is at full buildout (Phase 2) which includes the following activities associated with future electrical demand:

- 6,000 square foot processing building
- 18,000 square feet nursery area (six (6) 30'x100' greenhouses)
- 18,000 square feet mixed-light cultivation (six (6) 30'x100' greenhouses)
- 87,120 square feet outdoor cultivation area (no electrical demand for artificial lighting)
- Irrigation Pumps

The nursery greenhouses and mixed light greenhouses will be equipped with LED lights, HVAC, receptacles and a Telephone/Data/Security/Fire Alarm system. Lighting specifications were obtained from *FoHSE Lighting*. The specifications include 'Room Calculations' which include a total of ninety (90) *Cobra* 700W LEDs in each of the nursery and mixed light greenhouses. This data was extrapolated to total sum of twelve (12) identical greenhouses (to be used for nursery and mixed light cultivation). The specifications and 'Room Calculation' sheet is included in Attachment 1. The 'Room Calculations' data sheet states that the LED lights result in a total load of 20.48 Watts per square foot (W/sq.ft.).

Loading rates of interior lighting allowances, HVAC allowances and receptacle allowances were determined using rates and loading factors from the International Building Code (IBC).

Equipment and loading rates for each of the activities associated with future electrical demand are described below.

Processing Building:

- General interior lighting: 0.45 W/SF (International Building Code C405.3.2 Interior Lighting Power Allowances – Warehouse)
- HVAC/Air Conditioning: 2.0 W/SF
- Receptacles: 1W/SF
- Other Equipment:
    - Microwaves: (2) at 1,800 W each
    - Refrigerator/Freezer: (1) at 500 W
    - Telephone/Data, Security & Fire Alarm: (1) at 1,000 W

Nursery Greenhouses:

- General interior lighting: 0.45 W/SF (International Building Code C405.3.2 Interior Lighting Power Allowances – Warehouse)
- GROW LIGHTS: 20.48 w/SF (Specifications listed in Attachment 2)
- HVAC/Air Conditioning: 2.0 W/SF
- Receptacles: 1W/SF
- Other Equipment:
    - Telephone/Data, Security & Fire Alarm: (1) at 1,000 W

Mixed Light Greenhouses:

- General interior lighting: 0.45 W/SF (International Building Code C405.3.2 Interior Lighting Power Allowances – Warehouse)
- GROW LIGHTS: 20.48 w/SF (Specifications listed in Attachment 2)
- HVAC/Air Conditioning: 2.0 W/SF
- Receptacles: 1W/SF
- Other Equipment:
    - Telephone/Data, Security & Fire Alarm: (1) at 1,000 W

Irrigation & Pumps:

- 10 HP Pump: 2 at 7,457 W each
- 1 HP Pump: 12 at 746 W each

Total electrical demand for the Project is outlined in Table 1. Total load demand for the project is approximately 915 kW. Table 1 also contains the service amps required to meet the approximate 915 kW demand for both a 208/120V 3 phase service as well as a 480/277V 3 phase service.

Table 1: Total Demand Load for Project.

Total Demand Load For The Project:	913,142	**W**
	913	**kW**
Amps at 208/120V, 3PH:	2,535	**AMPS**
Amps at 480/277V, 3PH:	1,098	**AMPS**

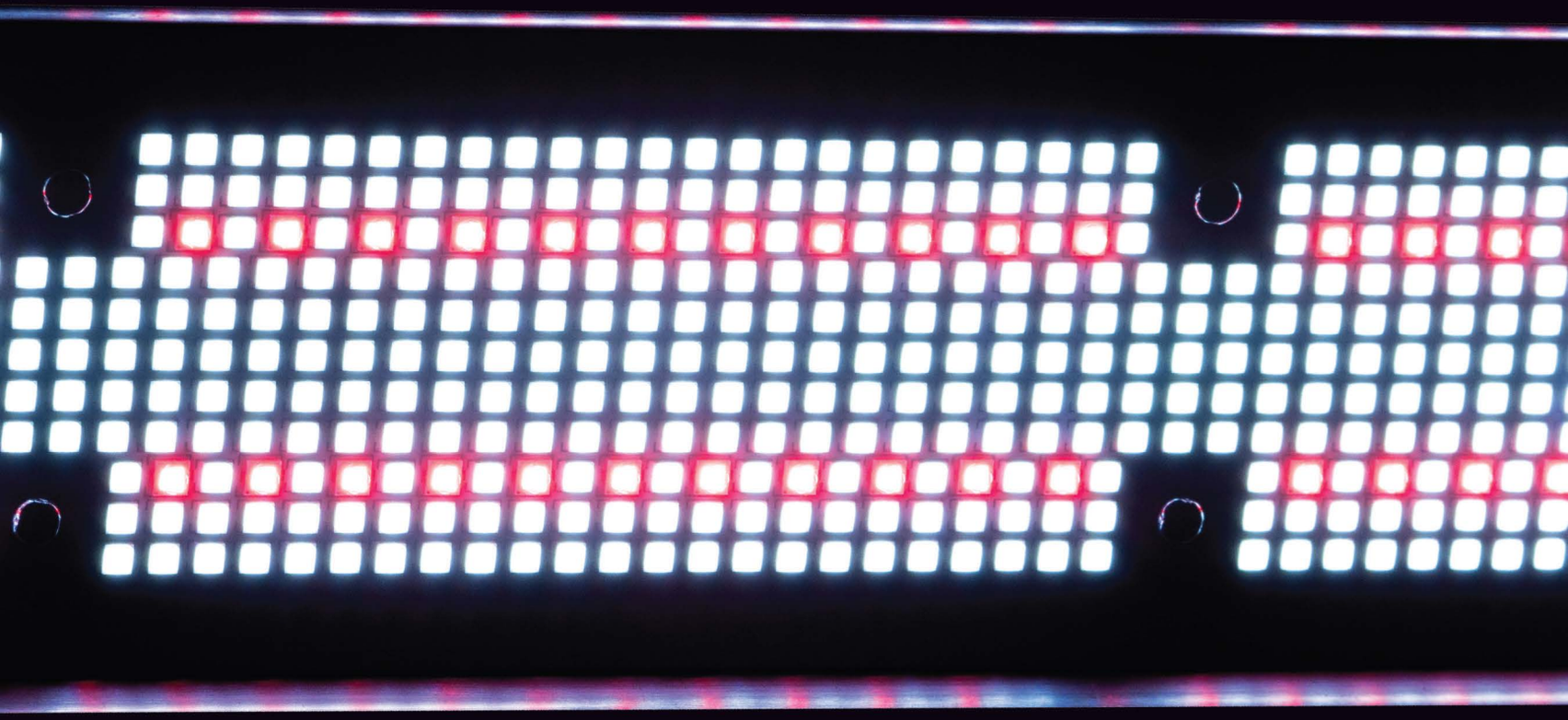
Attachment 2 contains the full electrical service calculation sheet.

Attachment 1: LED specifications and ‘Room Calculations’

COBRA [GREENHOUSE]

SLIM PROFILE. BIG POWER.

The FOHSE Cobra is the premier Smart LED Grow Light for Greenhouses. We designed the Cobra with a slim profile for seamless installation along the existing truss infrastructure in your greenhouse. This seamless integration casts no additional shadows, making it the perfect supplemental light source for your greenhouse, without sacrificing power and intensity.



COBRA 700

700W

PPE*

3.06-3.23 µmol/J

PPF*

2261 µmol/s

COBRA 1000

1000W

PPE*

3.06-3.22 µmol/J

PPF*

3220 µmol/s

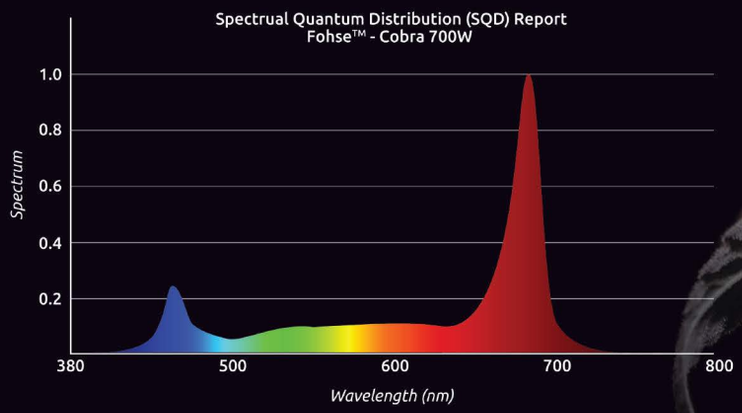
GET A QUOTE

* Options up to. Subject to change without notice. Tolerance ±10%

COBRA [700W]

PPE*	PPF*	IP RATING
3.06-3.23 µmol/J	2261 µmol/s	IP65

FIXTURE SPECS	
LED Type	Samsung 301D+ San'an 3535 660nm
Consumption Wattage at 100% Power	700
Maximum BTU Output	2387
Input Voltage Options	120 - 277
Max Ambient Air Operating Temp	104°F
Dimensions	46" x 4.75" x 5.75"
Weight	22 lbs.



SCAN TO RECEIVE A

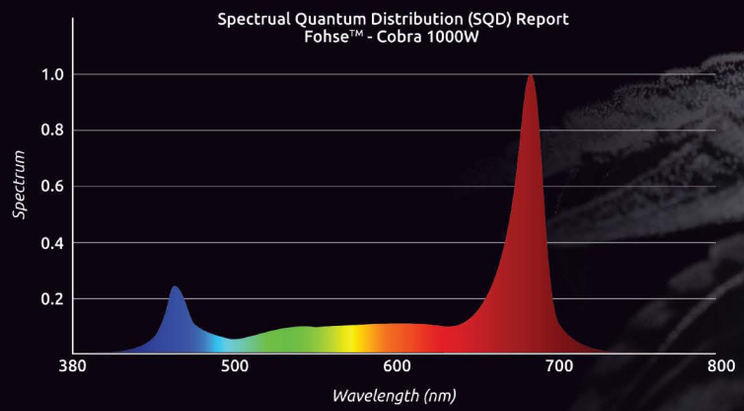
CUSTOM LIGHT PLAN

* Options up to. Subject to change without notice.
Tolerance ±10%
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**Specs updated quarterly and are subject to change

COBRA [1000W]

PPE*	PPF*	IP RATING
3.06-3.22 µmol/J	3220 µmol/s	IP65

FIXTURE SPECS	
LED Type	Samsung 301D+ San'an 3535 660nm
Consumption Wattage at 100% Power	1000
Maximum BTU Output	3410
Input Voltage Options	208 - 277
Max Ambient Air Operating Temp	104°F
Dimensions	46" x 6" x 5.75"
Weight	30 lbs.

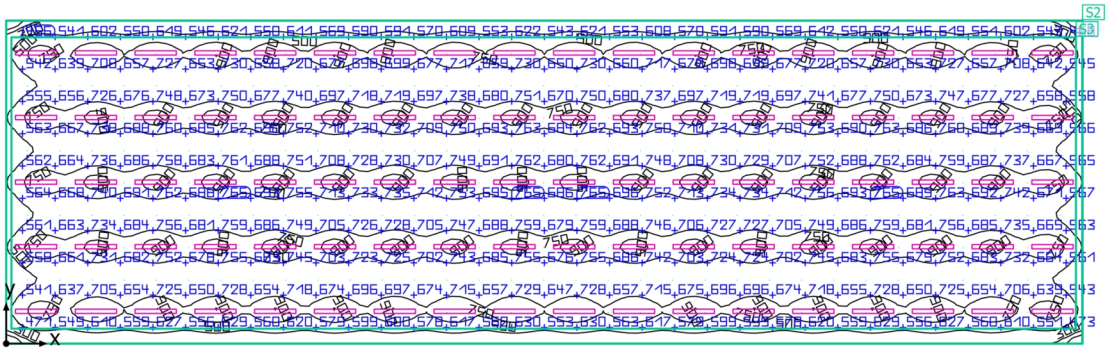


SCAN TO RECEIVE A

CUSTOM LIGHT PLAN

* Options up to. Subject to change without notice.
Tolerance ±10%
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**Specs updated quarterly and are subject to change

Summary



Ground area: 3000.07 sq ft | Reflection factors: Ceiling: 0.0 %, Walls: 0.0 %, Floor: 0.0 % | Light loss factor: 0.32 (fixed) | Clearance height: 8.000 ft | Mounting height: 8.000 ft

Building 1 · Storey 1 · Room 1

Summary

Results

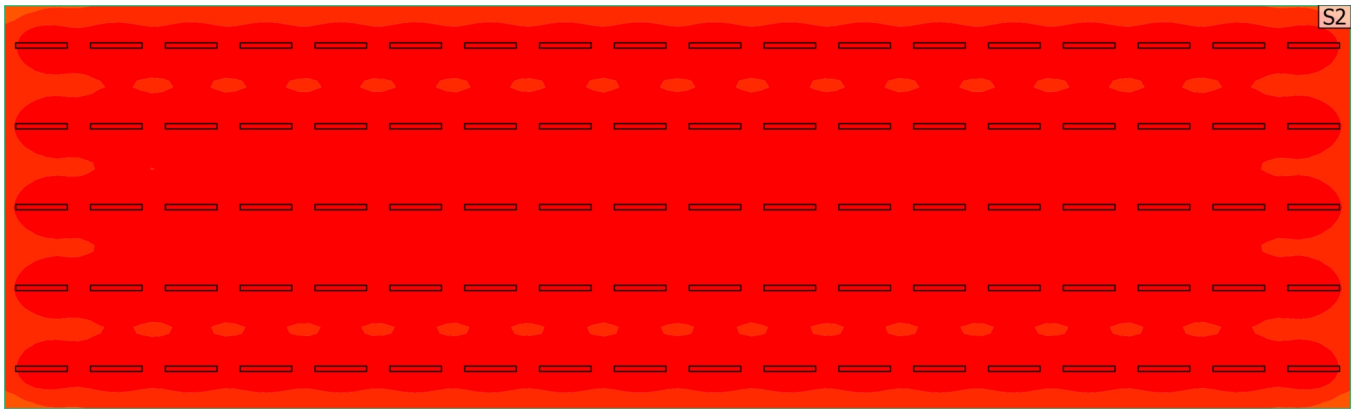
	Symbol	Calculated	Target	Check	Index
Workplane	$\bar{E}_{perpendicular}$	679 fc	≥ 46.4 fc	✓	S2
	g_1	0.30	-	-	S2
Consumption values	Consumption	168950 kWh/a	max. 9800 kWh/a	✗	
Lighting power density	Room	20.48 W/sq ft	-	-	
		0.30 W/sq ft/10 fc	-	-	

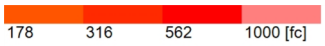
Utilisation profile: DIALux presetting, Standard (office)

Luminaire list

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
90	FOHSE			682.6 W	77342 lm	113.3 lm/W

Workplane (Room 1)



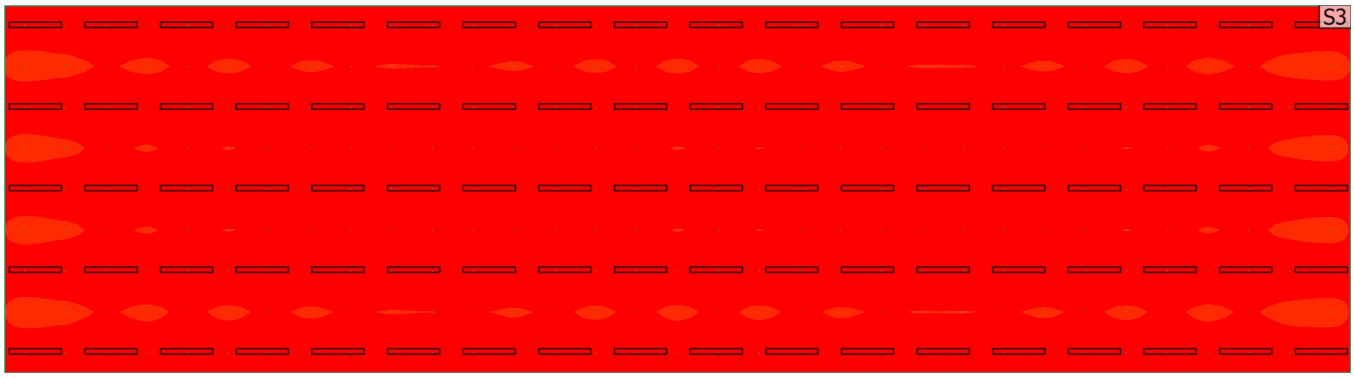


Properties	Ē (Target)	E_{min}	E_{max}	g_1	g_2	Index
Workplane (Room 1) Perpendicular illuminance (adaptive) Height: 4.520 ft, Wall zone: 0.000 ft	679 fc (≥ 46.4 fc) ✓	201 fc	950 fc	0.30	0.21	S2

Utilisation profile: DIALux presetting, Standard (office)

Calculation surface 1







Properties	Ē	E_{min}	E_{max}	g_1	g_2	Index
Calculation surface 1 Perpendicular illuminance Height: 4.520 ft	730 fc	456 fc	984 fc	0.62	0.46	S3

Utilisation profile: DIALux presetting, Standard (office)

Attachment 2: Electrical Service Calculation Sheet

Global Interactive Solutions, LLC **Date: 12/10/2024**

ELECTRICAL SERVICE CALCULATION SHEET

Building Area Summary	**sq.ft.**	**Description**
Processing Building	6,000	50'x120' processing building, including bathroom, breakroom and office
Nursery Green Houses	18,000	(6) 30'x100' greenhouses
Mixed Light Cultivation Greenhouses	18,000	(6) 30'x100' greenhouses
Outdoor Cultivation	43,560	Outdoor cannabis cultivation

Processing Building

					W	**kW**
General Interior Lighting						
	6,000 sq.ft.		0.45	W/sq.ft.	2,700	3
HVAC / Air Conditioning						
	6,000 sq.ft.		2	W/sq.ft.	12,000	12
Receptacles						
	6,000 sq.ft.		1	W per sq.ft.	6,000	6
Other:						
Microwaves		2	1,800	W each	3,600	4
Refrigerators/Freezers		1	500	W each	500	0.5
Tel/Data, Security, Fire Alarm		1	1,000	W each	1,000	1
				Total Demand W:	25,800	26
				Amps at 208/120V, 3PH:	72	
				Amps at 480/277V, 3PH:	31	

Nursery Greenhouses

					W	**kW**
General Interior Lighting						
	18,000 sq.ft.		0.45	W/sq.ft.	8,100	8
GROW LIGHTS						
	18,000 sq.ft.		20.48	W/sq.ft.	368,640	369
HVAC / Air Conditioning						
	18,000 sq.ft.		2	W/sq.ft.	36,000	36
Receptacles						
	18,000 sq.ft.		1	W/sq.ft.	18,000	18
Other:						
Tel/Data, Security, Fire Alarm		1	1,000	W each	1,000	1
				Total Demand W:	431,740	432
				Amps at 208/120V, 3PH:	1198	
				Amps at 480/277V, 3PH:	519	

Mixed Light Cultivation

					W	**kW**
General Interior Lighting						
	18,000 sq.ft.		0.45	W/sq.ft.	8,100	8
GROW LIGHTS						
	18,000 sq.ft.		20.48	W/sq.ft.	368,640	369
HVAC / Air Conditioning						
	18,000 sq.ft.		2	W/sq.ft.	36,000	36
Receptacles						
	18,000 sq.ft.		1	W/sq.ft.	18,000	18
Other:						
Tel/Data, Security, Fire Alarm		1	1,000	W each	1,000	1
				Total Demand W:	431,740	432
				Amps at 208/120V, 3PH:	1198	
				Amps at 480/277V, 3PH:	519	

Irrigation Pumps

					kW
10 HP Pump		2	7,457	W each	14,914	15
1 HP Pump		12	746	W each	8,948	8.9
				Total Demand W:	23,862	24
				Amps at 208/120V, 3PH:	1198	
				Amps at 480/277V, 3PH:	519	

Total Demand Load For The Project:	913,142	**W**
	913	**kW**
Amps at 208/120V, 3PH:	2,535	**AMPS**
Amps at 480/277V, 3PH:	1,098	**AMPS**