

Lighting Designs for Vegetative Growth

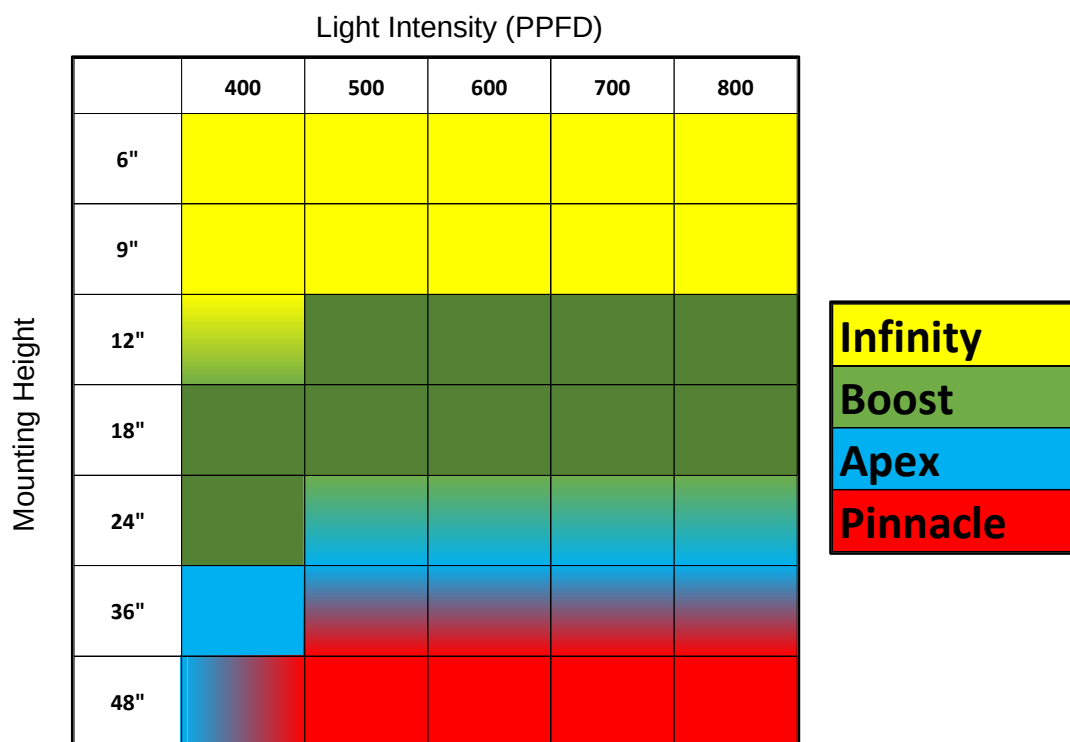


Products for Vegetative Growth

Introduction

This guide describes lighting designs for vegetative growth using Thrive Agritech's LED lights. Contact Thrive Agritech for a customized lighting design if needed. An overview of the lighting products is shown below, as well as a chart that provides a general guideline of recommended products at varying light intensities and mounting heights.

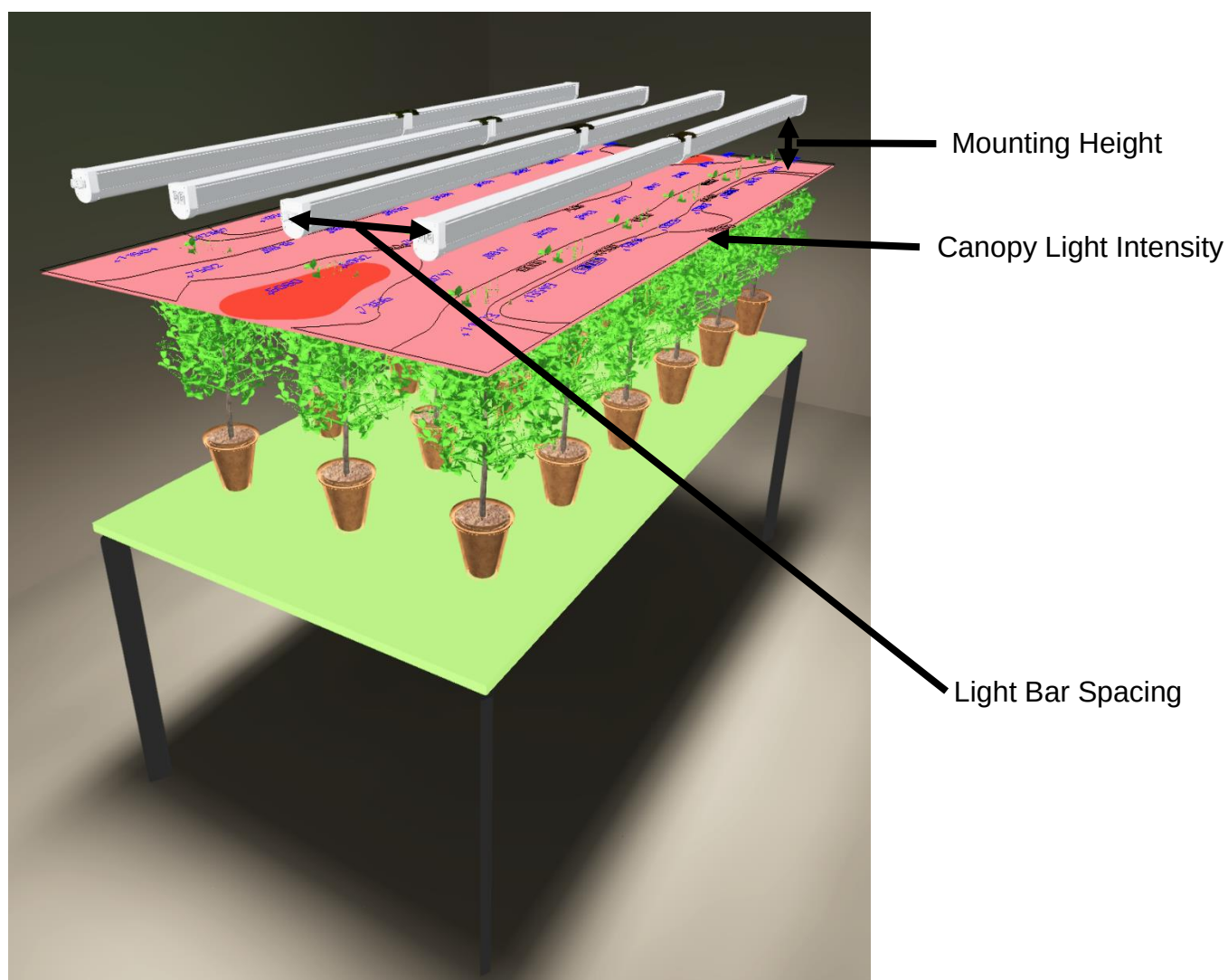
	INFINITY XE	BOOST XE	APEX	PINNACLE
				
Input Power	60 Watts	120 Watts	300 Watts	600 Watts
Input Voltage	110-277V	110-277V	110-277V or 347-480V	110-277V or 347-480V
Light Output	168 umols/sec	336 umols/sec	780 umols/sec	1,680 umols/sec
Efficiency	2.8 umols/joule	2.8 umols/joule	2.6 umols/joule	2.8 umols/joule
Driver	Internal	Internal	External	External
Dimming	Yes	Yes	Yes	Yes
IP66	Yes	Yes	Yes	Yes
UL / DLC Listed	Yes	Yes	Yes	Yes
Warranty	5 Years	5 Years	5 Years	5 Years



Lighting Design Overview

Lighting designs in this guide provide the following information:

- Light Intensity on the canopy
- Canopy dimensions (length x width)
- Quantity of light bars
- Mounting height (bottom of light bar to canopy)
- Center spacing between light bars



Choosing a Lighting Design

4'x8' Bench

How to choose a lighting design:

- 1) Select the size of your canopy
 - a) 4'x8' Bench
 - b) 20'x40' Sea of Green / Rolling Benches (see page 4)
- 2) Select desired light intensity (PPFD) and mounting height.
- 3) Review the detailed lighting design on the page number specified in the far-right column.

4'x8' Bench

<i>PPFD ($\mu\text{mols}/\text{m}^2/\text{sec}$)</i>	<i>Mounting Height</i>	<i>Product</i>	<i>Number of Lights</i>	<i>Page Number for Design</i>
400	6"	Infinity	8	5
	9"	Infinity	8	6
	12"	Boost	4	7
	18"	Boost	4	8
	24"	Boost	6	9
500	6"	Infinity	10	10
	9"	Infinity	10	11
	12"	Boost	5	12
	18"	Boost	6	13
	24"	Apex	3	14
600	6"	Infinity	13	15
	9"	Infinity	12	16
	12"	Boost	6	17
	18"	Boost	7	18
	24"	Apex	4	19
700	12"	Boost	8	20
	18"	Boost	8	21
	24"	Apex	4	22
800	12"	Boost	9	23
	18"	Boost	9	24
	24"	Apex	5	25

Choosing a Lighting Design ***Sea of Green (20'x40' Canopy)***

How to choose a lighting design:

- 1) Select the size of your canopy
 - a) 4'x8' Bench (see page 3)
 - b) 20'x40' Sea of Green / Rolling Benches
- 2) Select desired light intensity (PPFD) and mounting height.
- 3) Review the detailed lighting design on the page number specified in the far-right column.

20'x40' Sea of Green / Rolling Benches

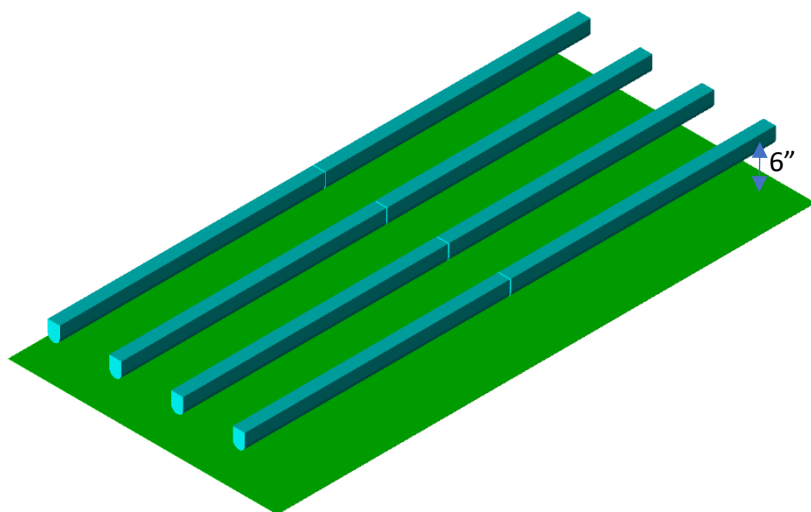
<i>PPFD ($\mu\text{mols}/\text{m}^2/\text{sec}$)</i>	<i>Mounting Height</i>	<i>Product</i>	<i>Number of Lights</i>	<i>Page Number for Design</i>
400	24"	Boost	100	26
	36"	Apex	40	27
	48"	Pinnacle	20	28
500	24"	Apex	49	29
	36"	Apex	49	30
	48"	Pinnacle	24	31
600	24"	Apex	63	32
	36"	Apex	63	33
	48"	Pinnacle	28	34
700	24"	Apex	72	35
	36"	Apex	72	36
	48"	Pinnacle	35	37
800	24"	Apex	81	38
	36"	Apex	90	39
	48"	Pinnacle	40	40

4'x8' Bench, 400 PPFD
6-inch Mounting Height, Infinity Light

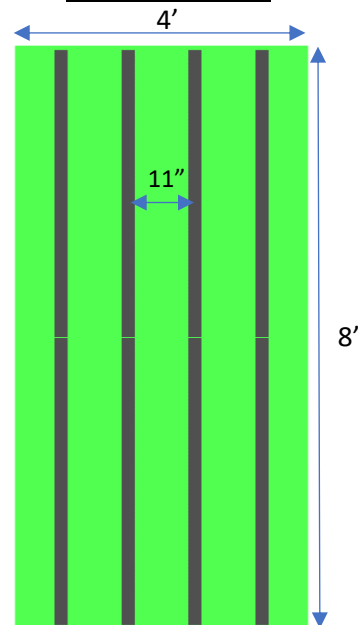
Lighting Design

- # of Infinity light bars: 8 (4 lines of 2 lights/line)
- Mounting Height: 6-inches over the canopy
- Light Bar Center Spacing: 11-inches

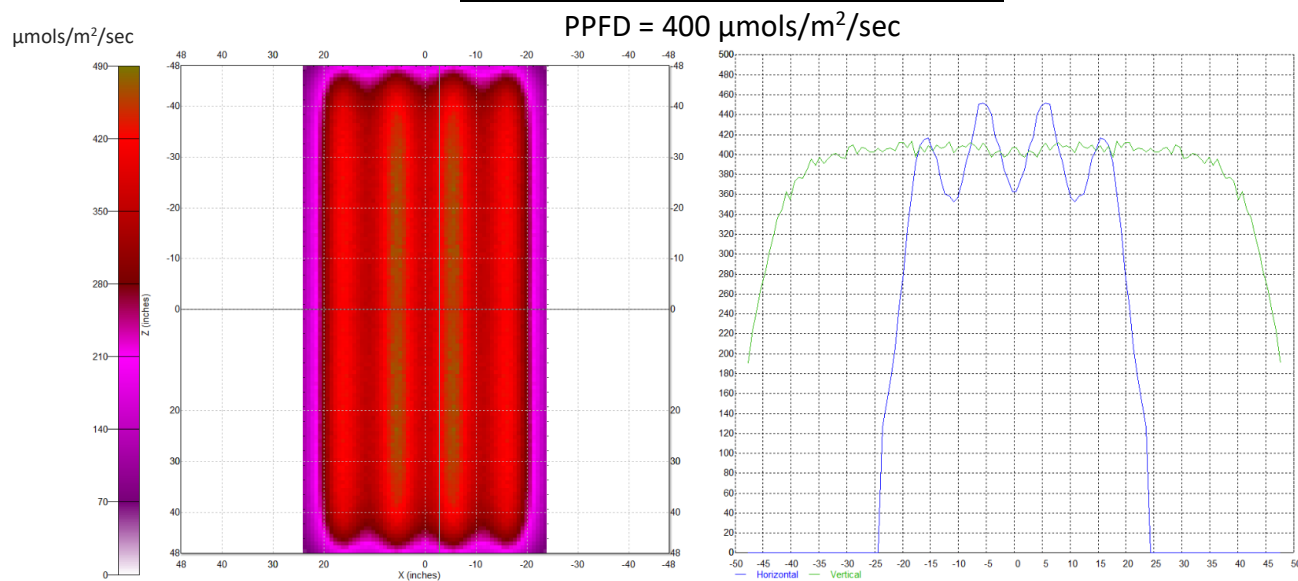
Isometric View



Top Down View



Light Intensity Map on 4'x8' Canopy

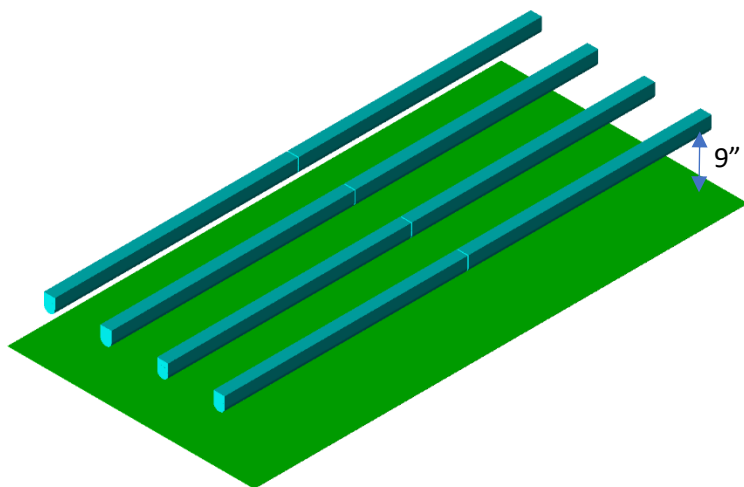


4'x8' Bench, 400 PPFD
9-inch Mounting Height, Infinity Light

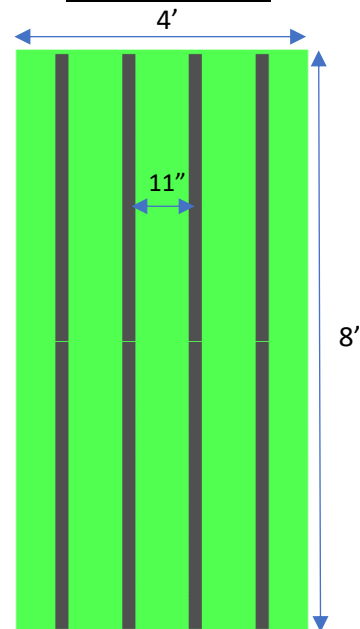
Lighting Design

- # of Infinity light bars: 8 (4 lines of 2 lights/line)
- Mounting Height: 9-inches over the canopy
- Light Bar Center Spacing: 11-inches

Isometric View

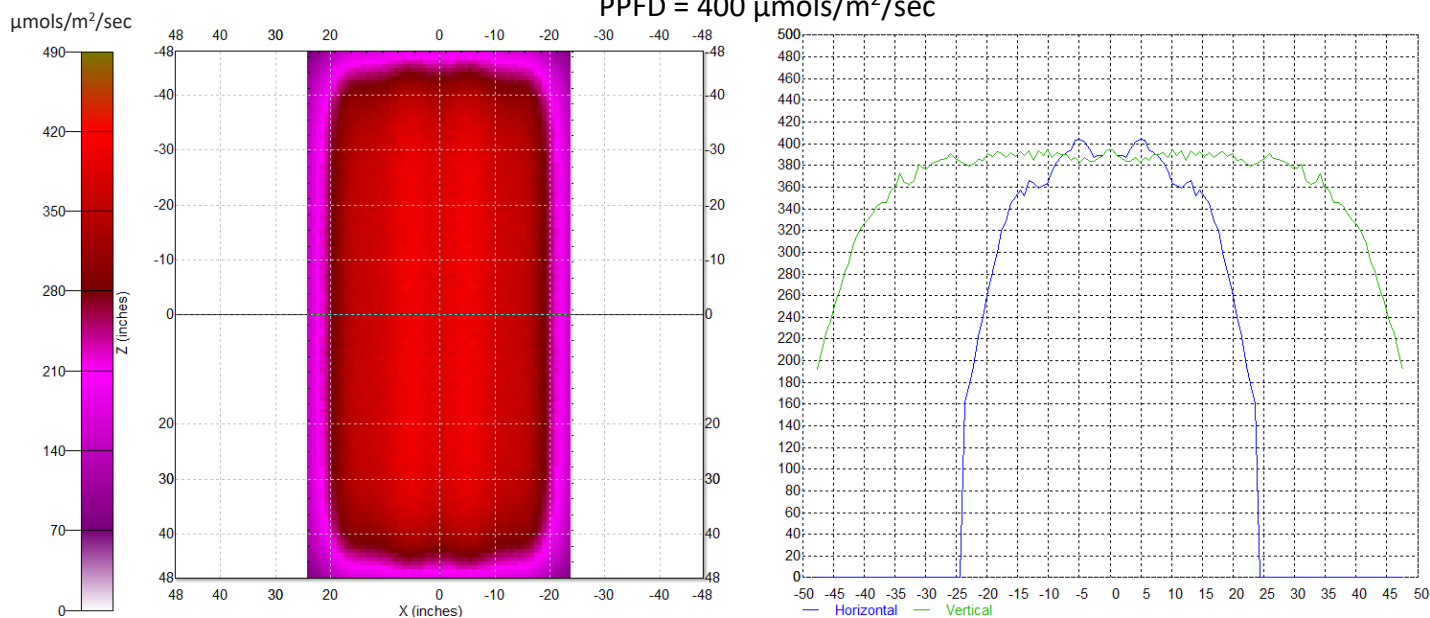


Top Down View



Light Intensity Map on 4'x8' Canopy

PPFD = 400 $\mu\text{mol}/\text{m}^2/\text{sec}$

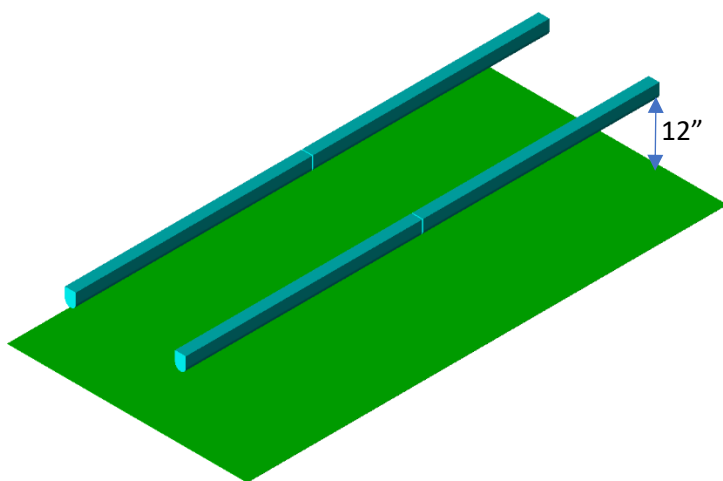


4'x8' Bench, 400 PPFD
12-inch Mounting Height, Boost Light

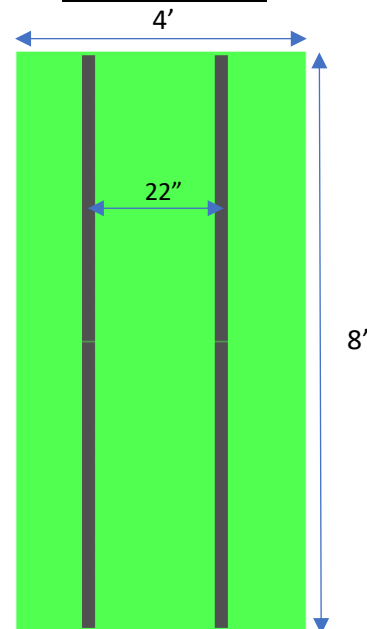
Lighting Design

- # of Boost light bars: 4 (2 lines of 2 lights/line)
- Mounting Height: 12-inches over the canopy
- Light Bar Center Spacing: 22-inches

Isometric View



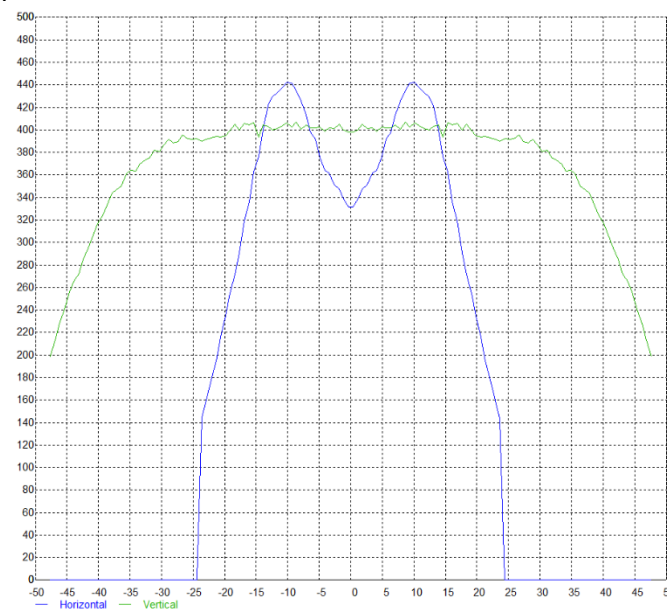
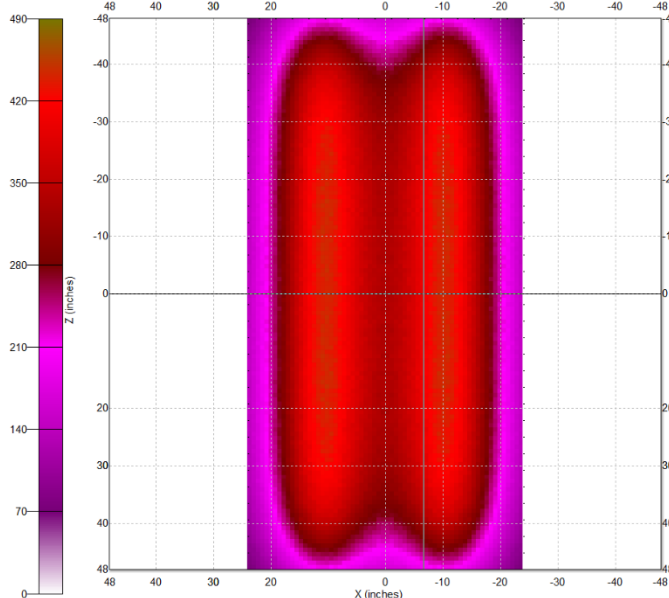
Top Down View



Light Intensity Map on 4'x8' Canopy

PPFD = 400 $\mu\text{mol}/\text{m}^2/\text{sec}$

$\mu\text{mol}/\text{m}^2/\text{sec}$

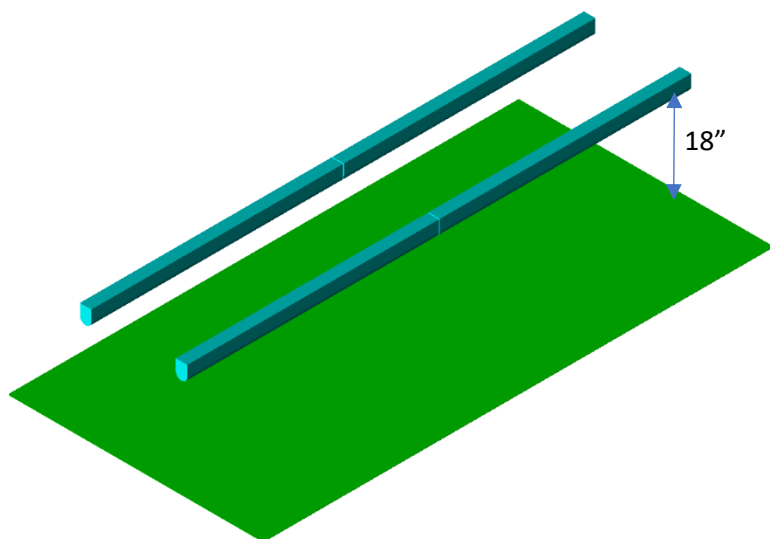


4'x8' Bench, 400 PPFD
18-inch Mounting Height, Boost Light

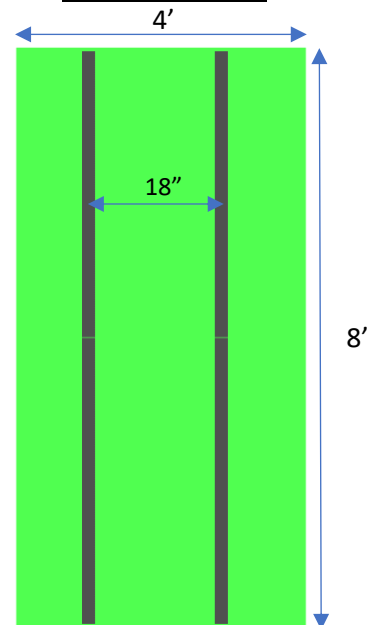
Lighting Design

- # of Boost light bars: 4 (2 lines of 2 lights/line)
- Mounting Height: 18-inches over the canopy
- Light Bar Center Spacing: 18-inches

Isometric View

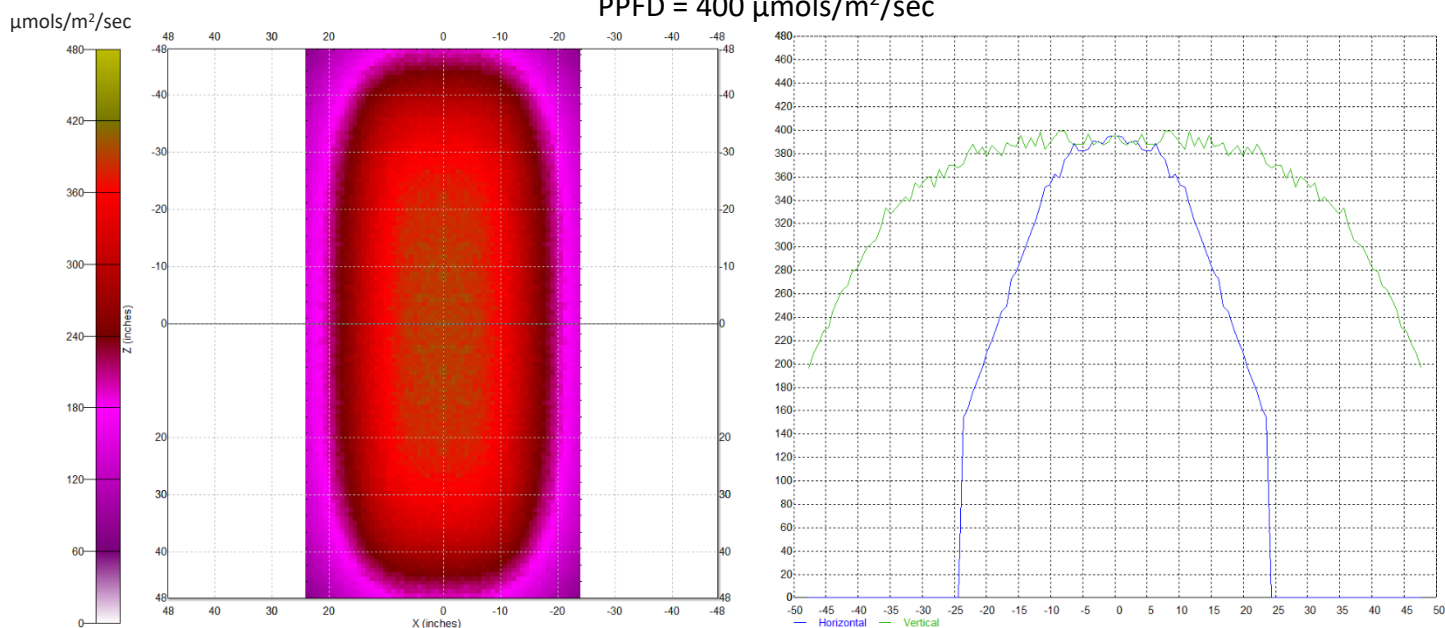


Top Down View



Light Intensity Map on 4'x8' Canopy

PPFD = 400 $\mu\text{mol}/\text{m}^2/\text{sec}$

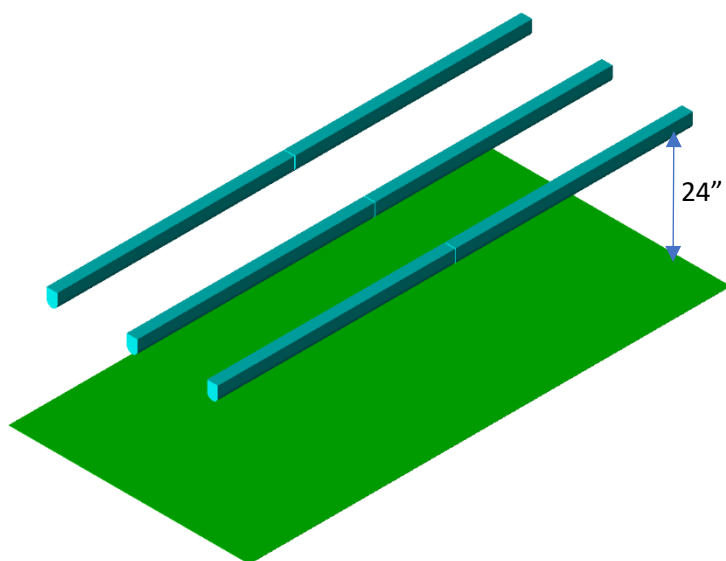


4'x8' Bench, 400 PPFD
24-inch Mounting Height, Boost Light

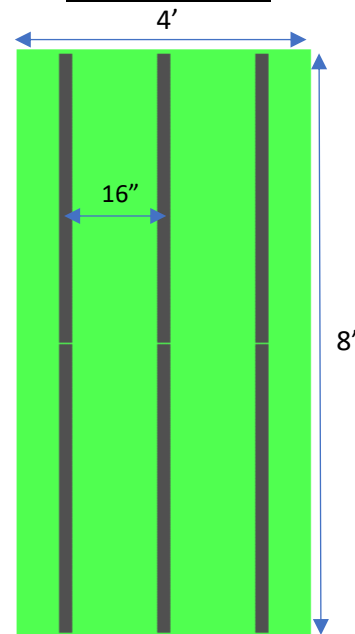
Lighting Design

- # of Boost light bars: 6 (3 lines of 2 lights/line)
- Mounting Height: 24-inches over the canopy
- Light Bar Center Spacing: 16-inches

Isometric View



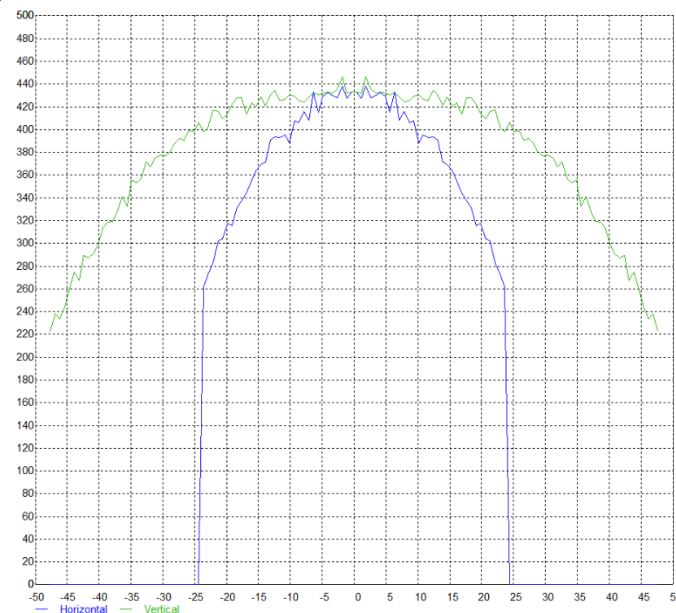
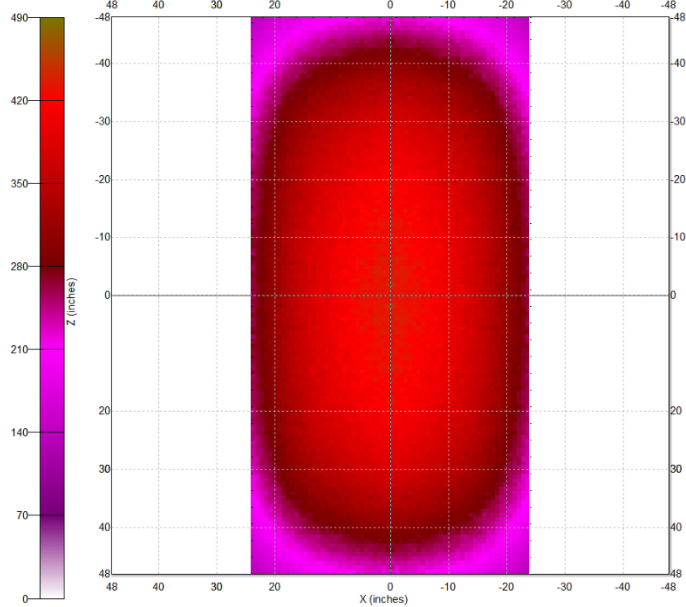
Top Down View



Light Intensity Map on 4'x8' Canopy

PPFD = 400 $\mu\text{mol}/\text{m}^2/\text{sec}$

$\mu\text{mol}/\text{m}^2/\text{sec}$

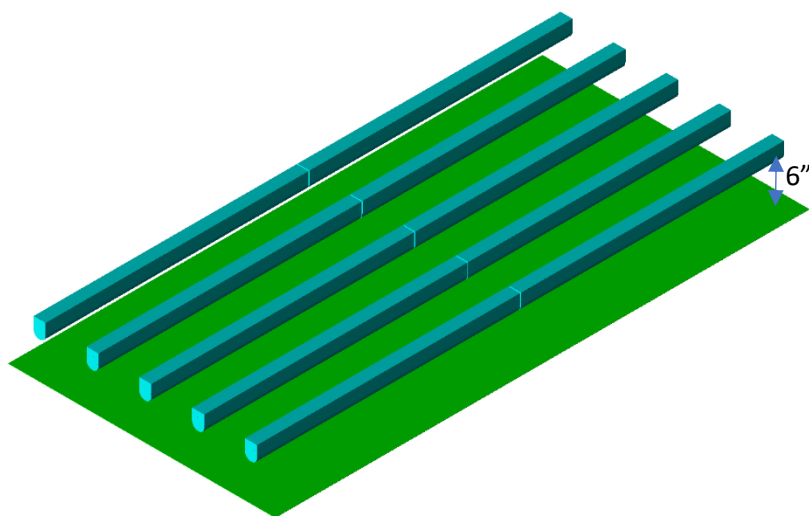


4'x8' Bench, 500 PPFD
6-inch Mounting Height, Infinity Light

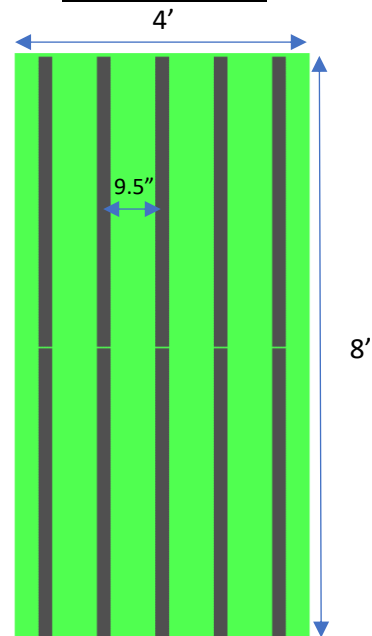
Lighting Design

- # of Infinity light bars: 10 (5 lines of 2 lights/line)
- Mounting Height: 6-inches over the canopy
- Light Bar Center Spacing: 9.5-inches

Isometric View



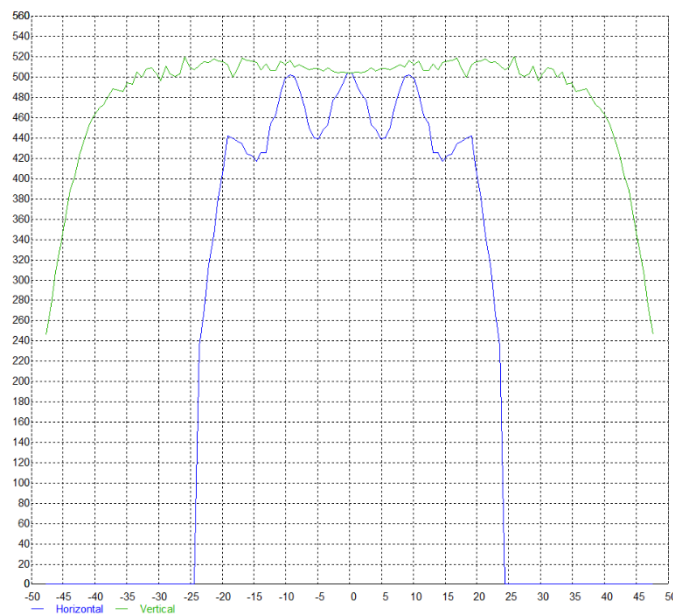
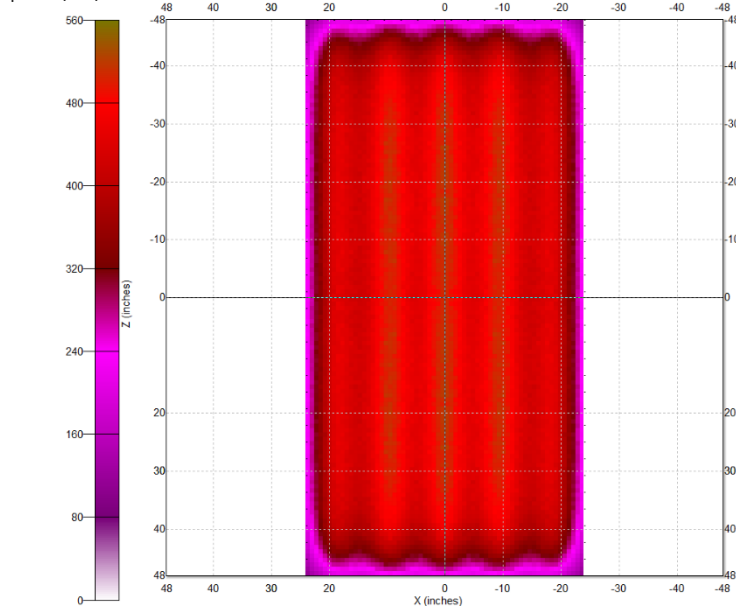
Top Down View



Light Intensity Map on 4'x8' Canopy

PPFD = 500 $\mu\text{mol}/\text{m}^2/\text{sec}$

$\mu\text{mol}/\text{m}^2/\text{sec}$

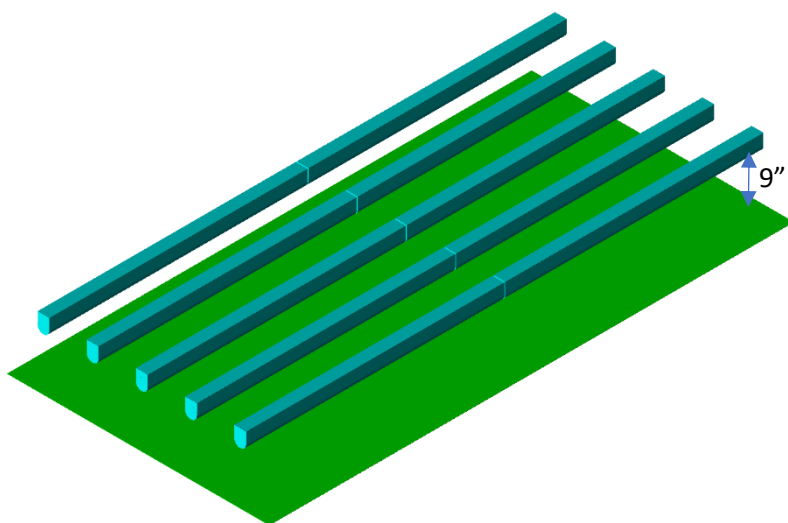


4'x8' Bench, 500 PPFD
9-inch Mounting Height, Infinity Light

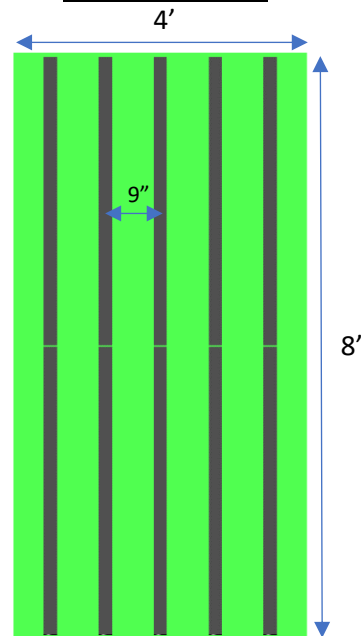
Lighting Design

- # of Infinity light bars: 10 (5 lines of 2 lights/line)
- Mounting Height: 9-inches over the canopy
- Light Bar Center Spacing: 9-inches

Isometric View



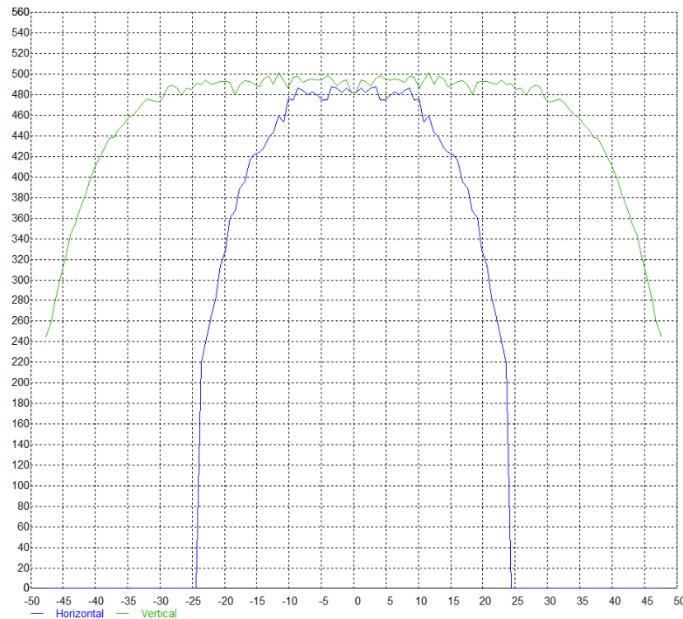
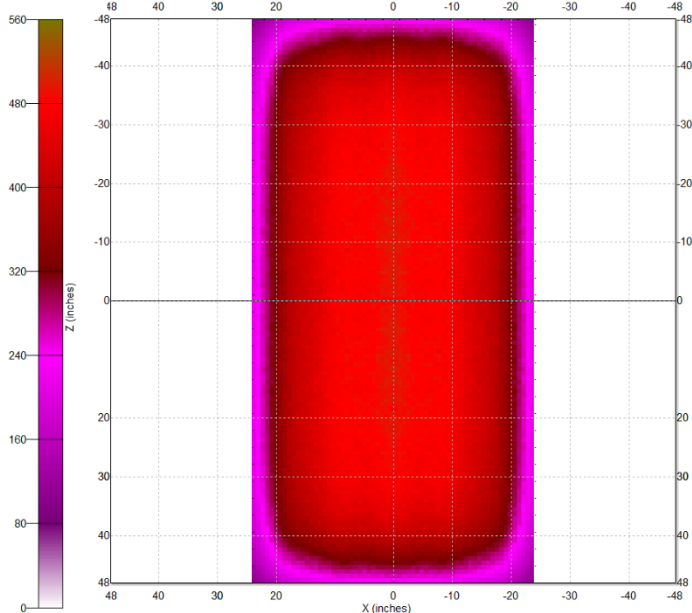
Top Down View



Light Intensity Map on 4'x8' Canopy

PPFD = 500 $\mu\text{mol}/\text{m}^2/\text{sec}$

$\mu\text{mol}/\text{m}^2/\text{sec}$

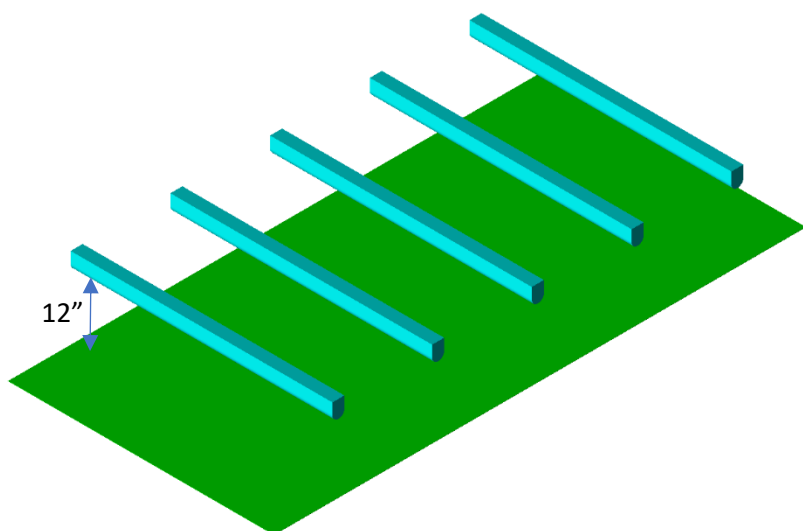


4'x8' Bench, 500 PPFD
12-inch Mounting Height, Boost Light

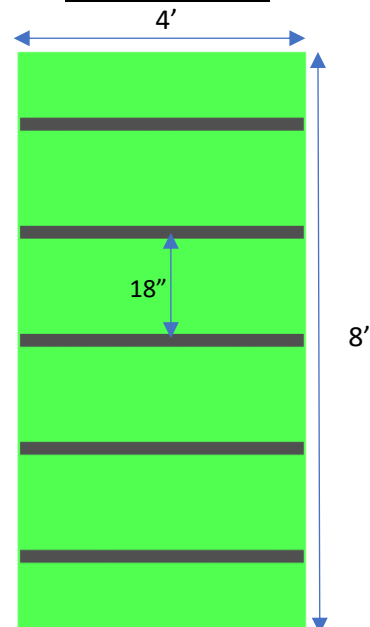
Lighting Design

- # of Boost light bars: 5
- Mounting Height: 12-inches over the canopy
- Light Bar Center Spacing: 18-inches

Isometric View



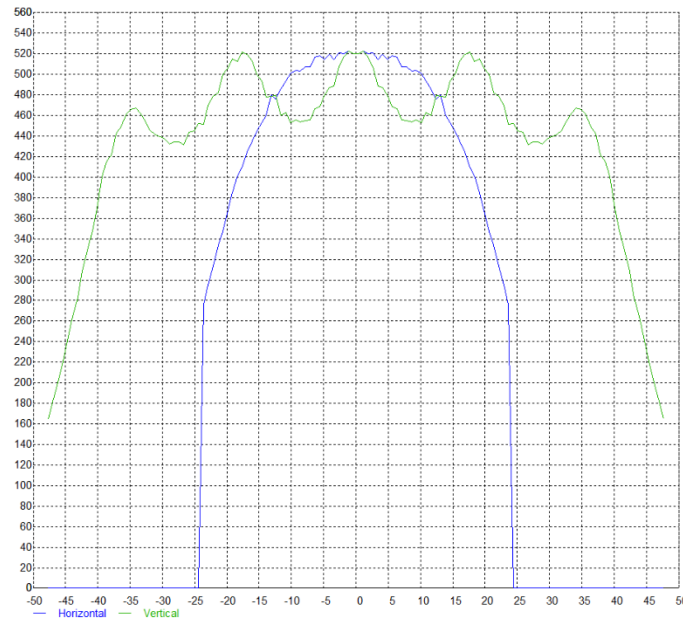
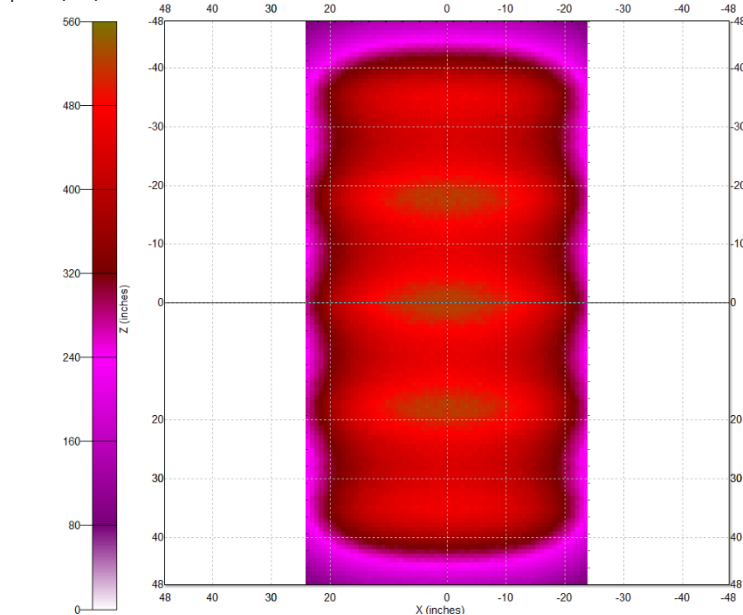
Top Down View



Light Intensity Map on 4'x8' Canopy

PPFD = 500 $\mu\text{mol}/\text{m}^2/\text{sec}$

$\mu\text{mol}/\text{m}^2/\text{sec}$

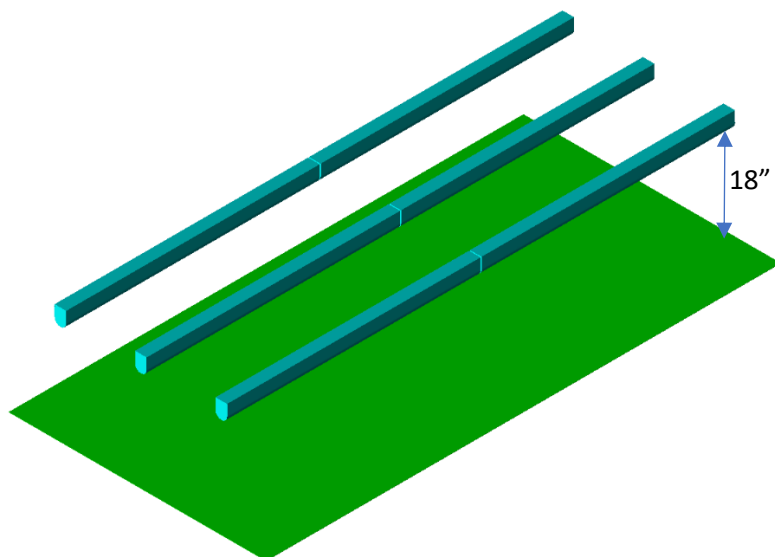


4'x8' Bench, 500 PPFD
18-inch Mounting Height, Boost Light

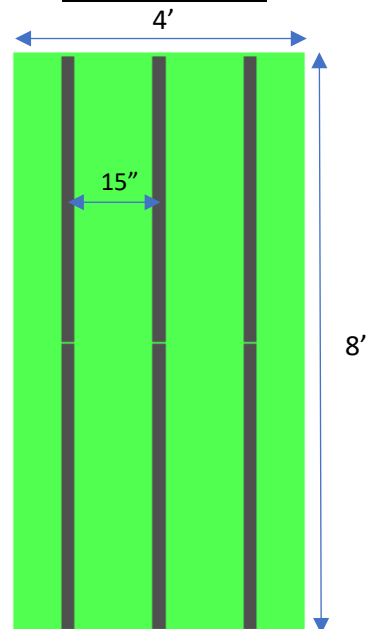
Lighting Design

- # of Boost light bars: 6 (3 lines of 2 lights/line)
- Mounting Height: 18-inches over the canopy
- Light Bar Center Spacing: 15-inches

Isometric View



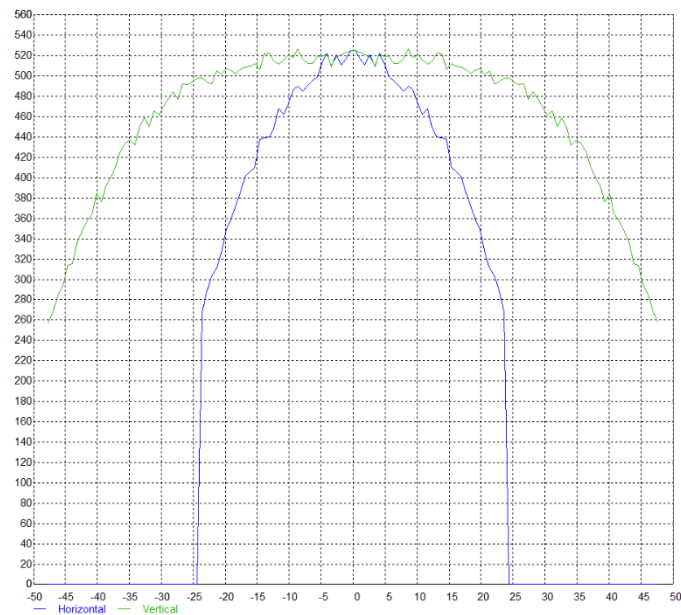
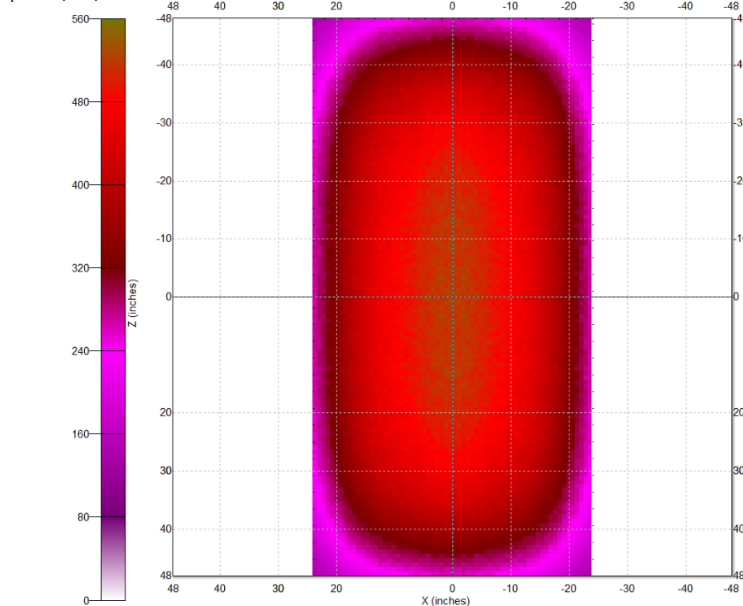
Top Down View



Light Intensity Map on 4'x8' Canopy

PPFD = 500 $\mu\text{mol}/\text{m}^2/\text{sec}$

$\mu\text{mol}/\text{m}^2/\text{sec}$

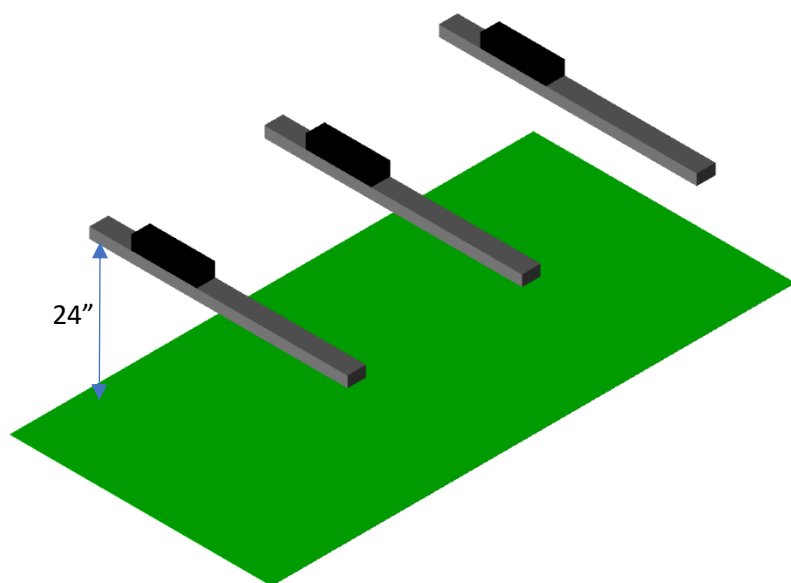


4'x8' Bench, 500 PPFD
24-inch Mounting Height, Apex Light

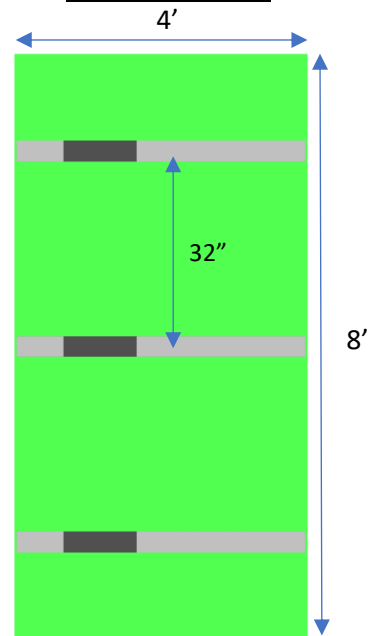
Lighting Design

- # of Apex light bars: 3
- Mounting Height: 24-inches over the canopy
- Light Bar Center Spacing: 32-inches

Isometric View



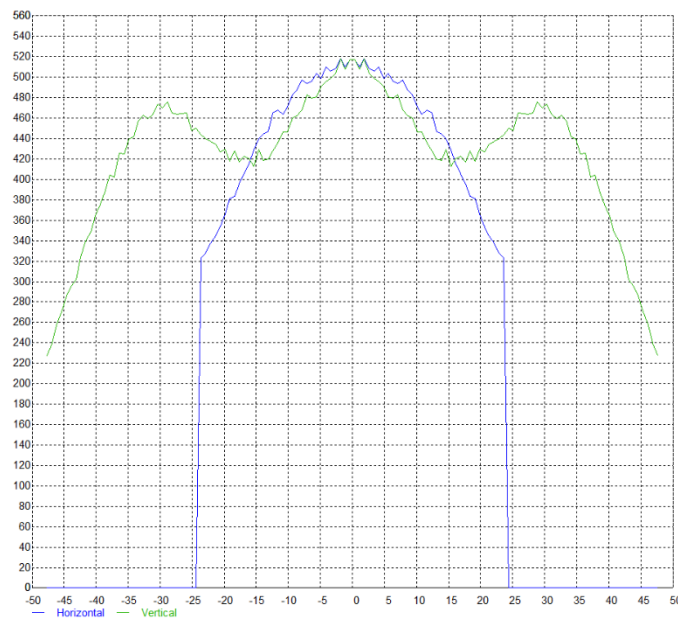
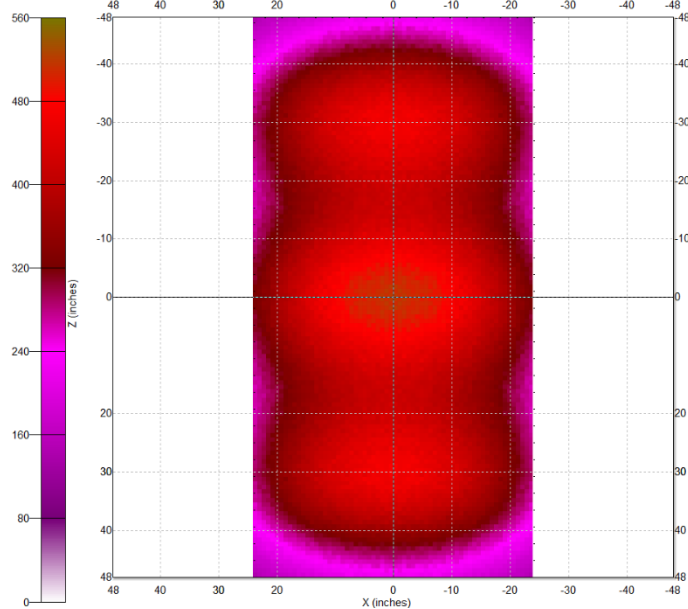
Top Down View



Light Intensity Map on 4'x8' Canopy

PPFD = 500 $\mu\text{mol}/\text{m}^2/\text{sec}$

$\mu\text{mol}/\text{m}^2/\text{sec}$

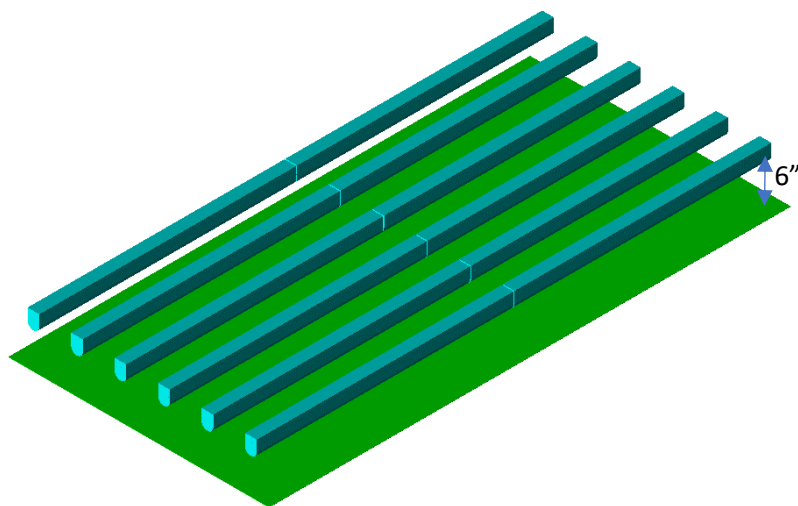


4'x8' Bench, 600 PPFD
6-inch Mounting Height, Infinity Light

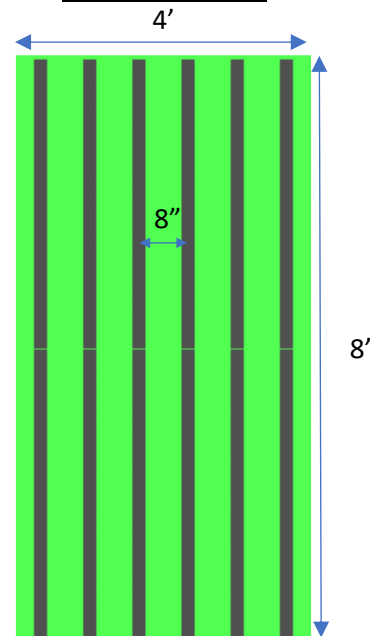
Lighting Design

- # of Infinity light bars: 12 (6 lines of 2 lights/line)
- Mounting Height: 6-inches over the canopy
- Light Bar Center Spacing: 8-inches

Isometric View

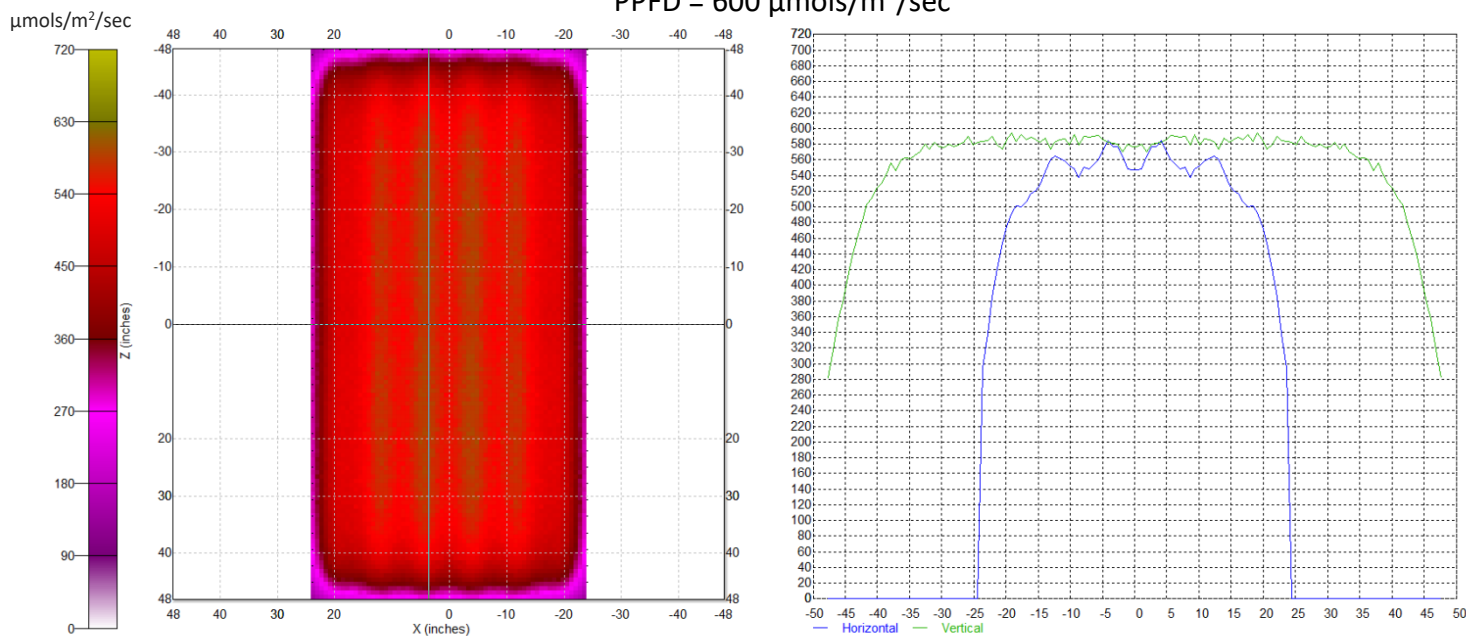


Top Down View



Light Intensity Map on 4'x8' Canopy

PPFD = 600 $\mu\text{mol}/\text{m}^2/\text{sec}$

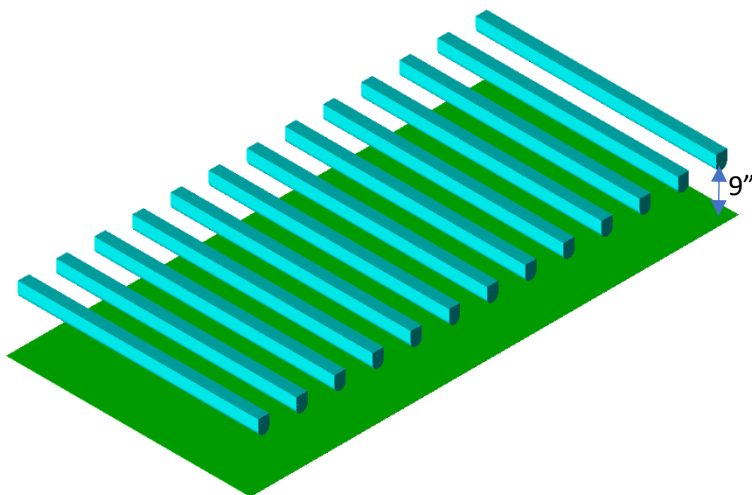


4'x8' Bench, 600 PPFD
9-inch Mounting Height, Infinity Light

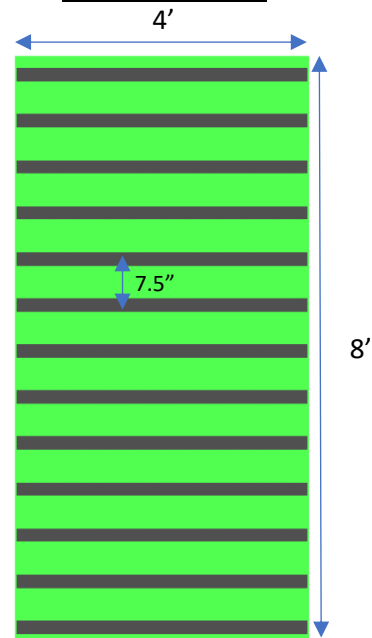
Lighting Design

- # of Infinity light bars: 13
- Mounting Height: 9-inches over the canopy
- Light Bar Center Spacing: 7.5-inches

Isometric View



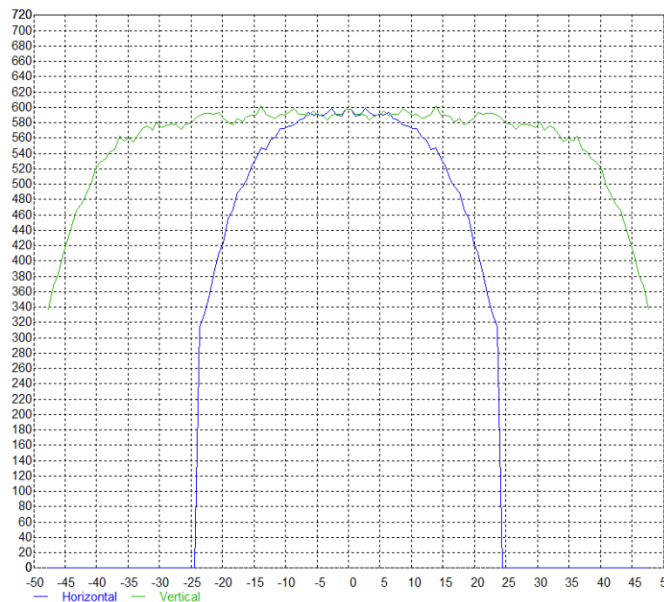
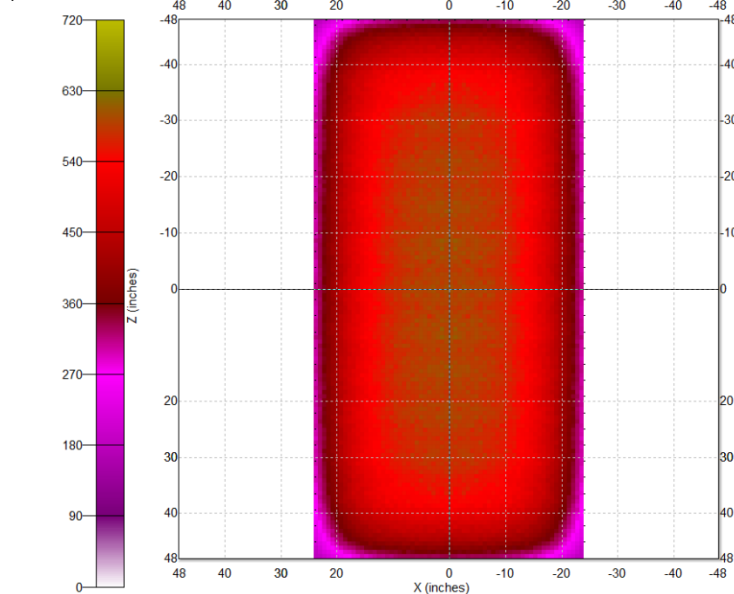
Top Down View



Light Intensity Map on 4'x8' Canopy

PPFD = 600 $\mu\text{mol}/\text{m}^2/\text{sec}$

$\mu\text{mol}/\text{m}^2/\text{sec}$

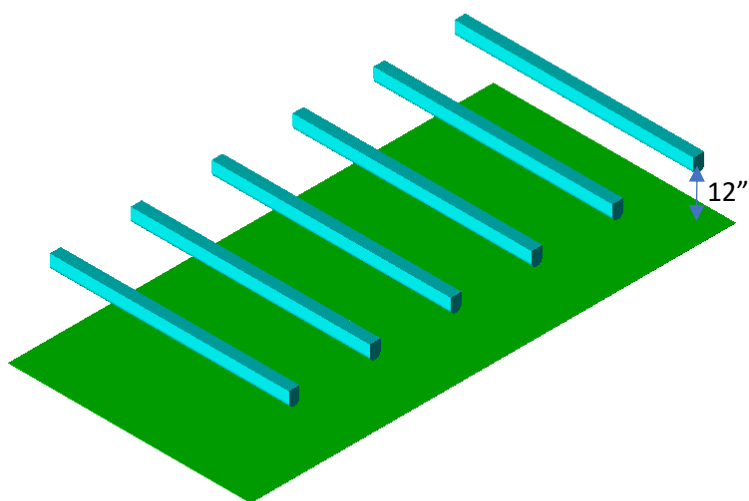


4'x8' Bench, 600 PPFD
12-inch Mounting Height, Boost Light

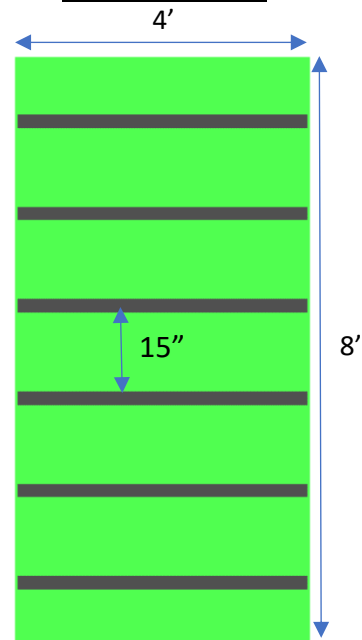
Lighting Design

- # of Boost light bars: 6
- Mounting Height: 12-inches over the canopy
- Light Bar Center Spacing: 15-inches

Isometric View



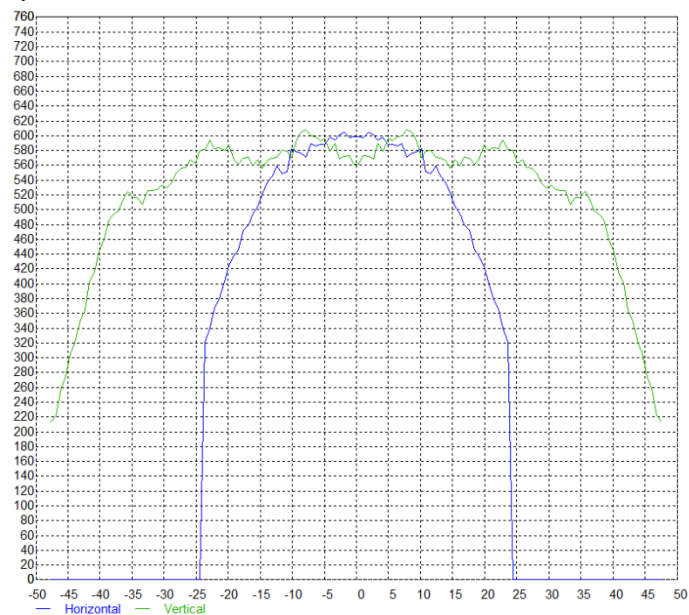
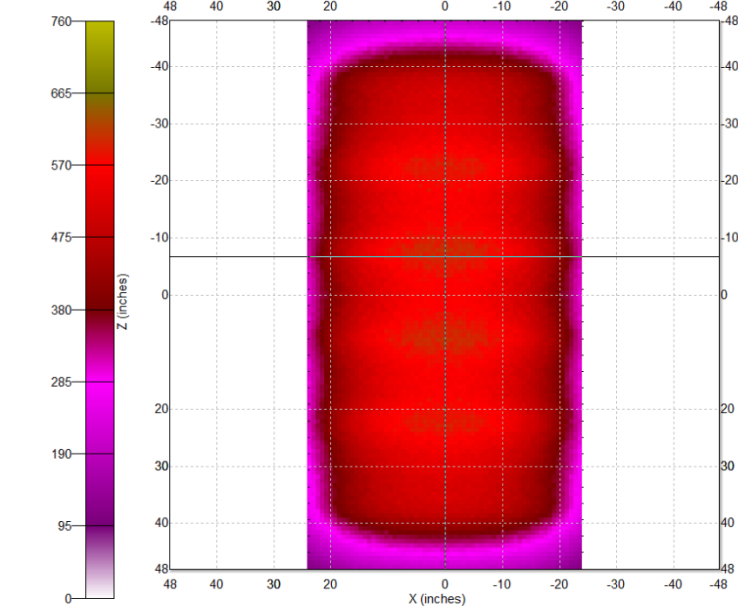
Top Down View



Light Intensity Map on 4'x8' Canopy

PPFD = 600 $\mu\text{mol}/\text{m}^2/\text{sec}$

$\mu\text{mol}/\text{m}^2/\text{sec}$

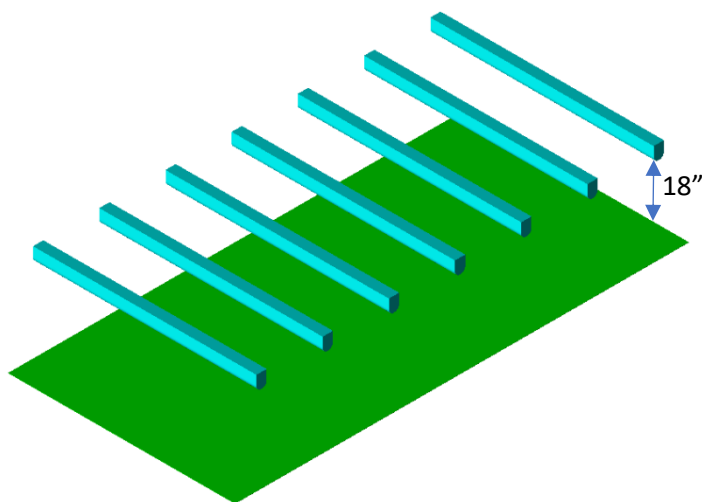


4'x8' Bench, 600 PPFD
18-inch Mounting Height, Boost Light

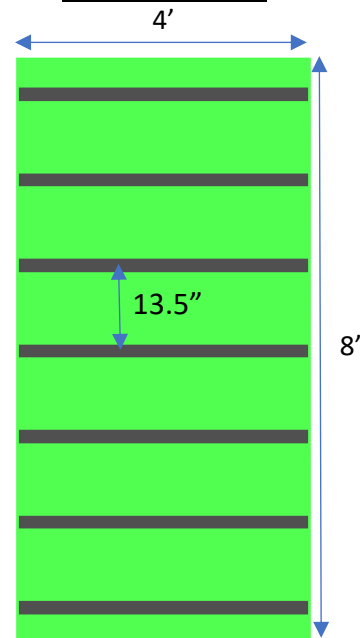
Lighting Design

- # of Boost light bars: 7
- Mounting Height: 18-inches over the canopy
- Light Bar Center Spacing: 13.5-inches

Isometric View



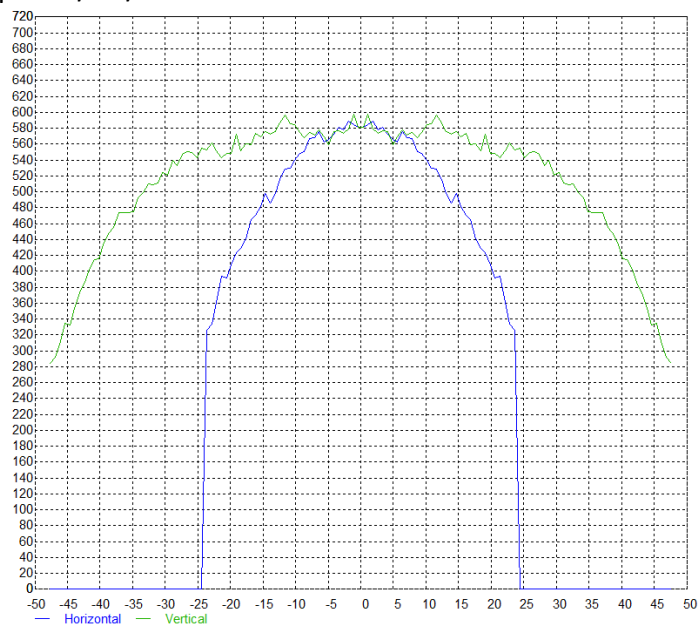
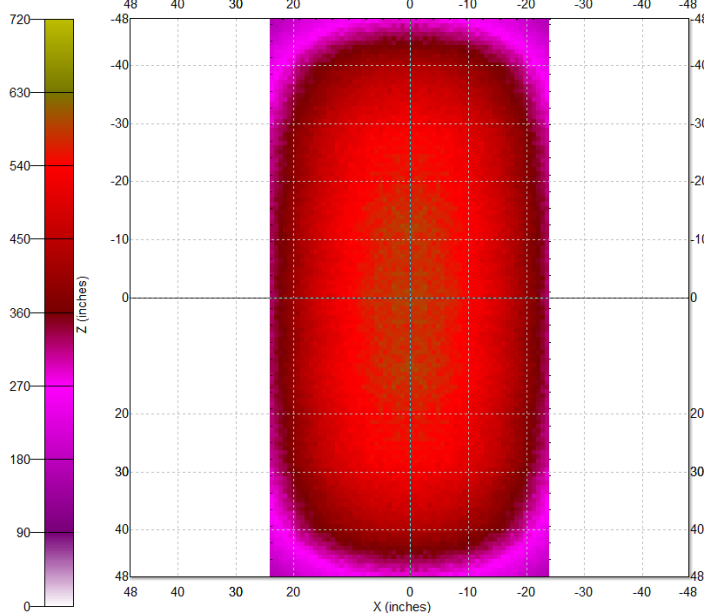
Top Down View



Light Intensity Map on 4'x8' Canopy

PPFD = 600 $\mu\text{mol}/\text{m}^2/\text{sec}$

$\mu\text{mol}/\text{m}^2/\text{sec}$

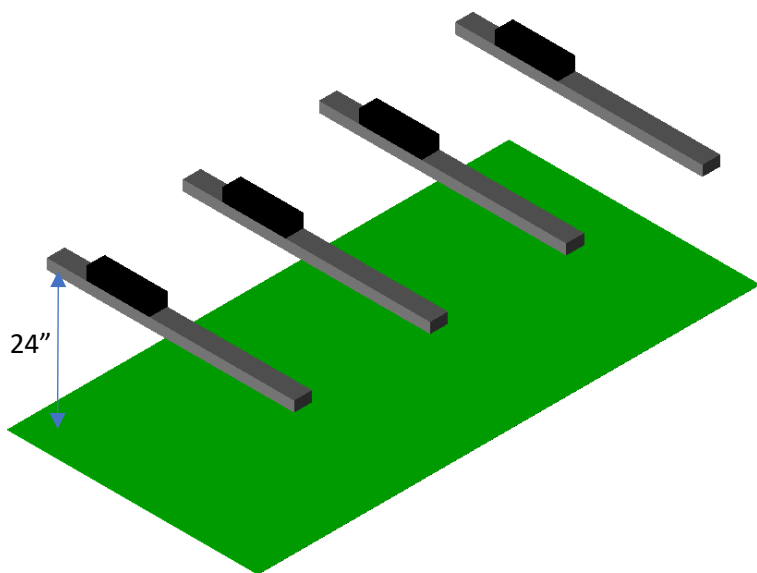


4'x8' Bench, 600 PPFD
24-inch Mounting Height, Apex Light

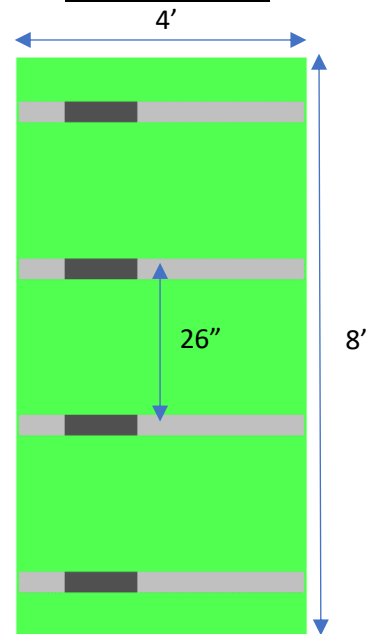
Lighting Design

- # of Apex light bars: 4
- Mounting Height: 24-inches over the canopy
- Light Bar Center Spacing: 26-inches

Isometric View



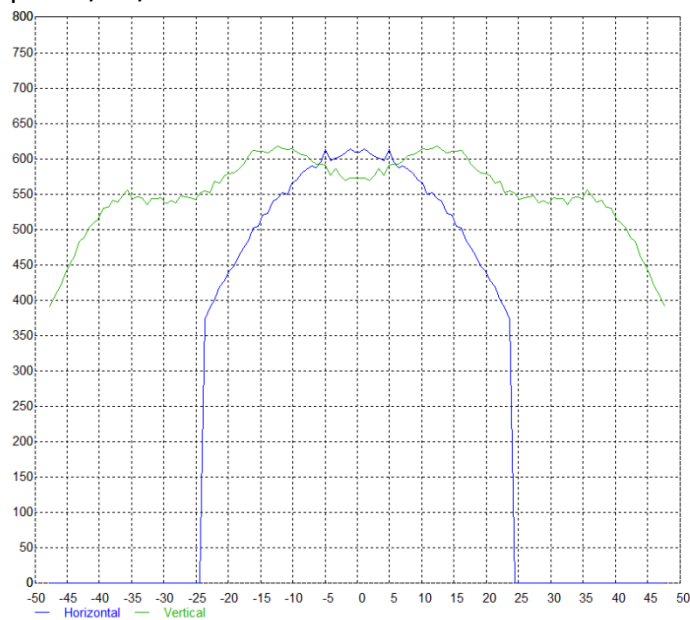
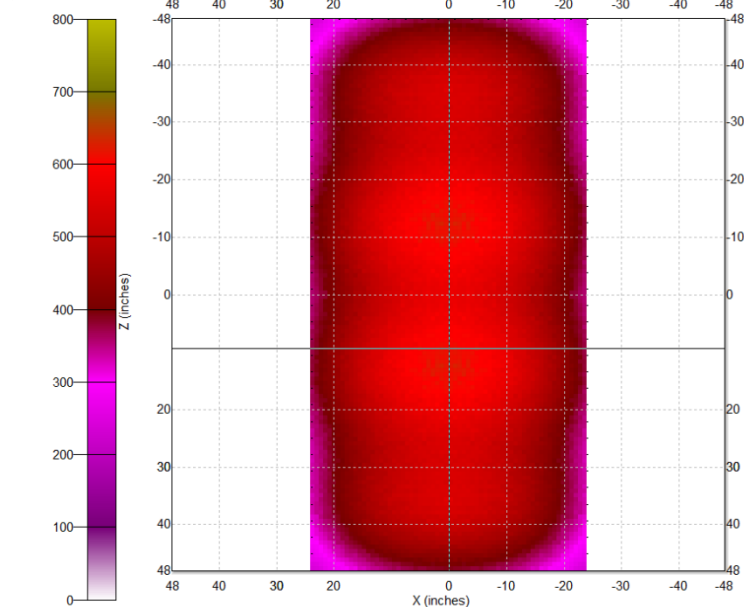
Top Down View



Light Intensity Map on 4'x8' Canopy

PPFD = 600 $\mu\text{mol}/\text{m}^2/\text{sec}$

$\mu\text{mol}/\text{m}^2/\text{sec}$

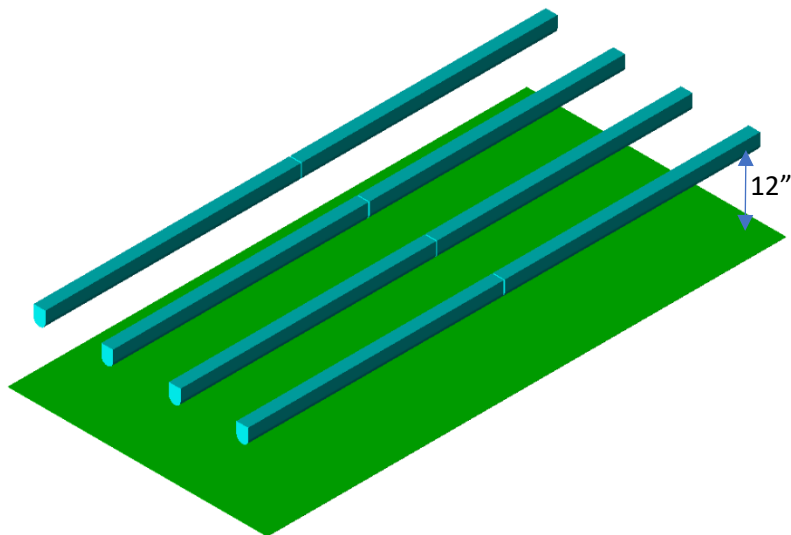


4'x8' Bench, 700 PPFD
12-inch Mounting Height, Boost Light

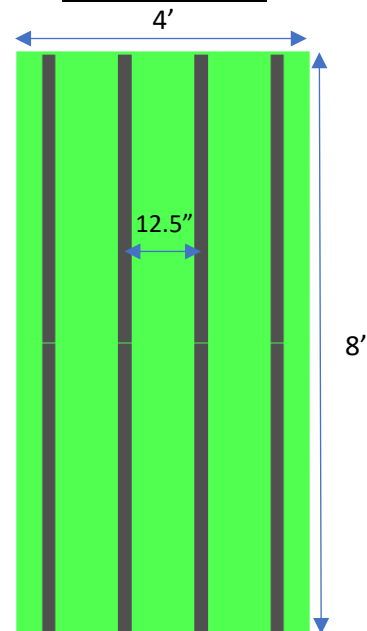
Lighting Design

- # of Boost light bars: 8 (4 lines of 2 lights/line)
- Mounting Height: 12-inches over the canopy
- Light Bar Center Spacing: 12.5-inches

Isometric View



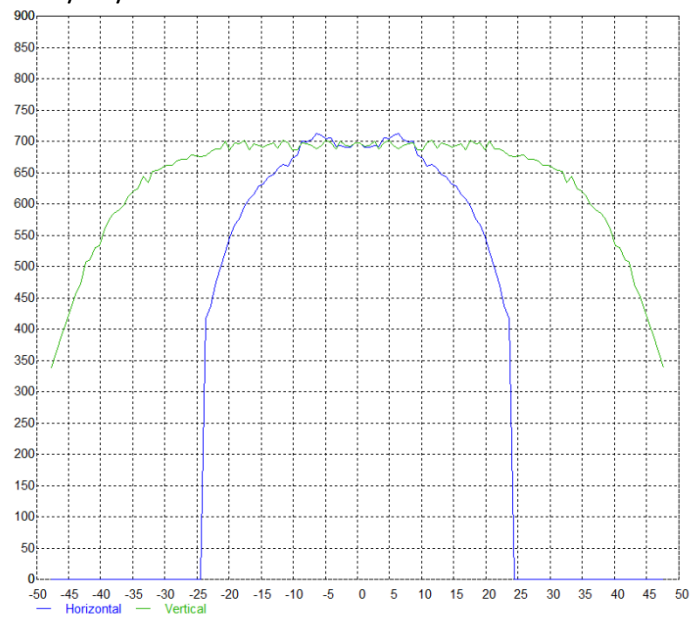
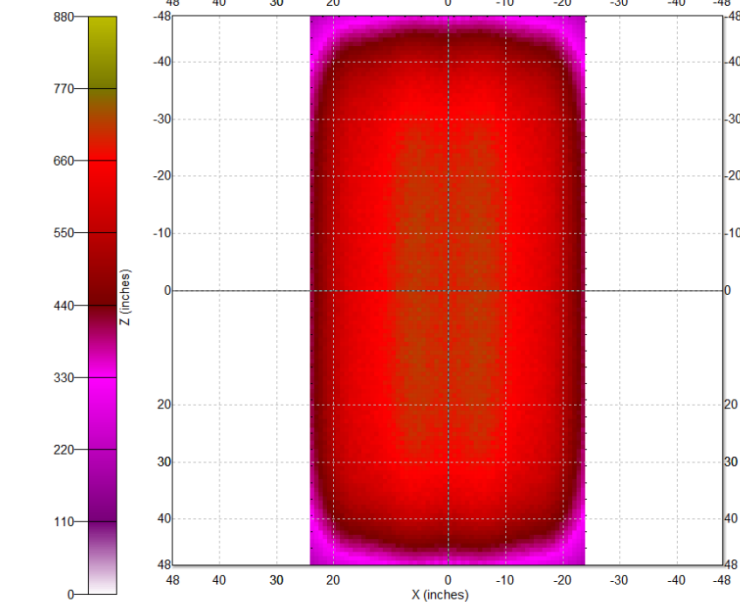
Top Down View



Light Intensity Map on 4'x8' Canopy

PPFD = 700 $\mu\text{mol}/\text{m}^2/\text{sec}$

$\mu\text{mol}/\text{m}^2/\text{sec}$

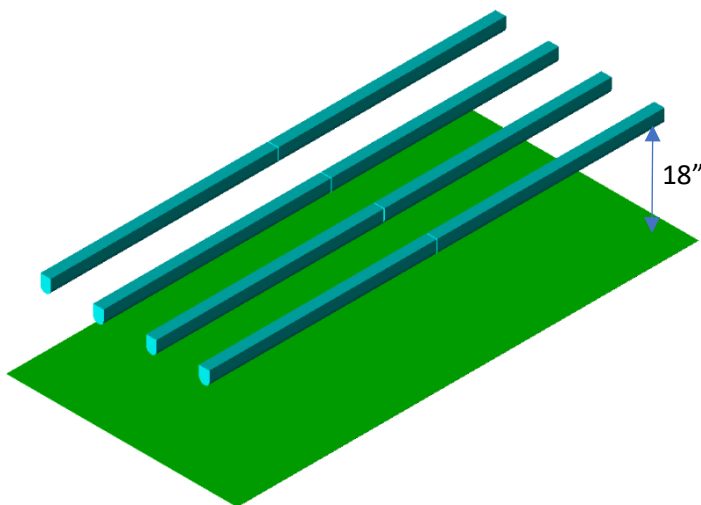


4'x8' Bench, 700 PPFD
18-inch Mounting Height, Boost Light

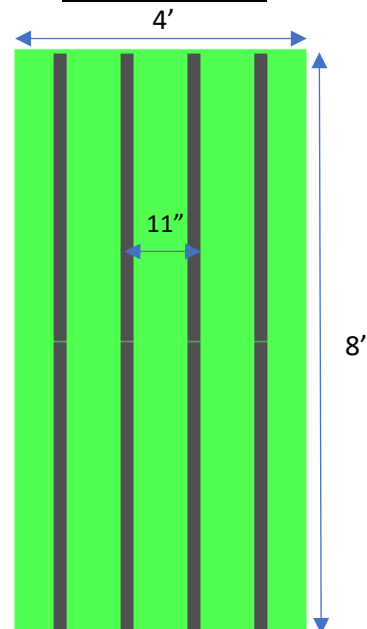
Lighting Design

- # of Boost light bars: 8 (4 lines of 2 lights/line)
- Mounting Height: 18-inches over the canopy
- Light Bar Center Spacing: 11-inches

Isometric View



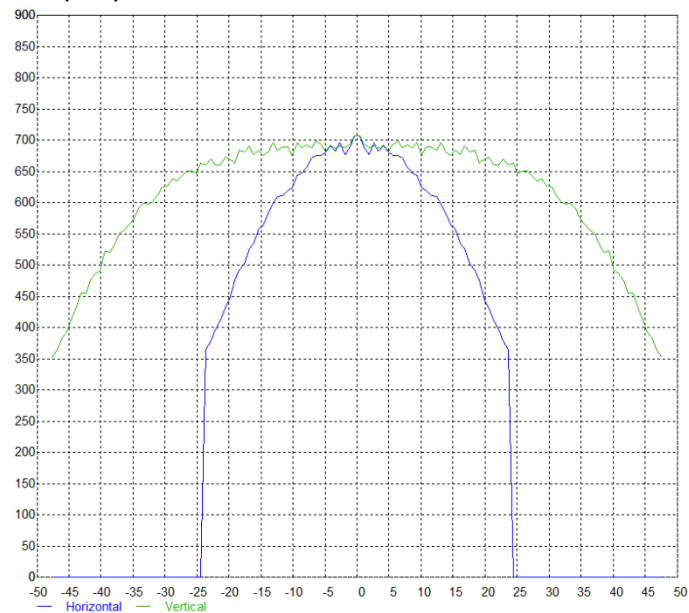
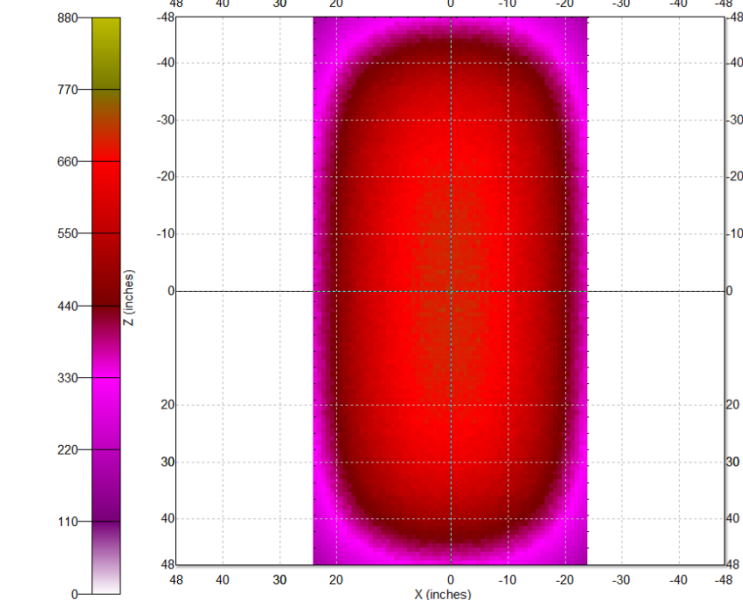
Top Down View



Light Intensity Map on 4'x8' Canopy

PPFD = 700 $\mu\text{mol}/\text{m}^2/\text{sec}$

$\mu\text{mol}/\text{m}^2/\text{sec}$

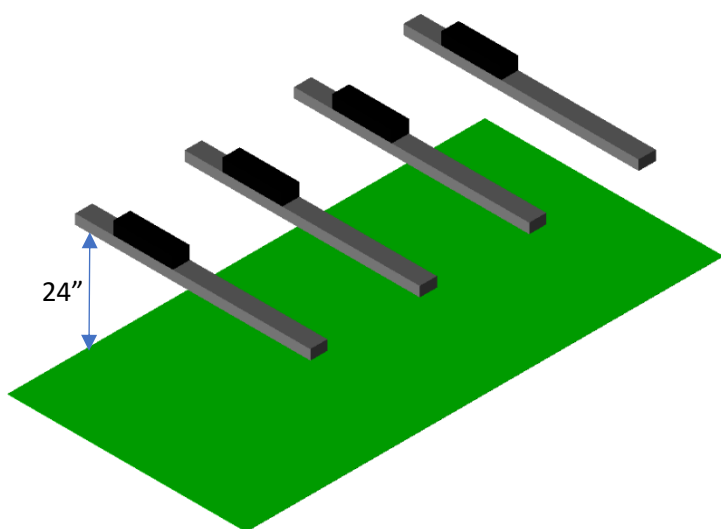


4'x8' Bench, 700 PPFD 24-inch Mounting Height, Apex Light

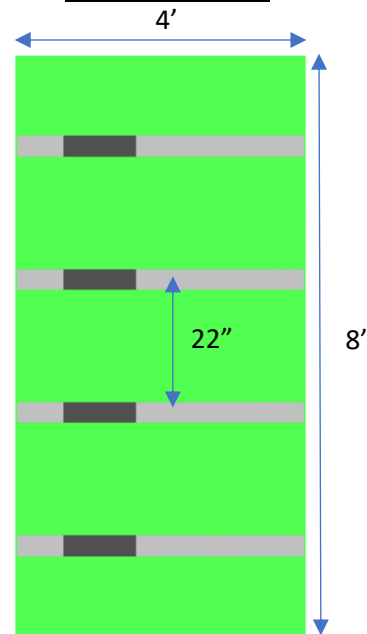
Lighting Design

- # of Apex light bars: 4
- Mounting Height: 24-inches over the canopy
- Light Bar Center Spacing: 22-inches

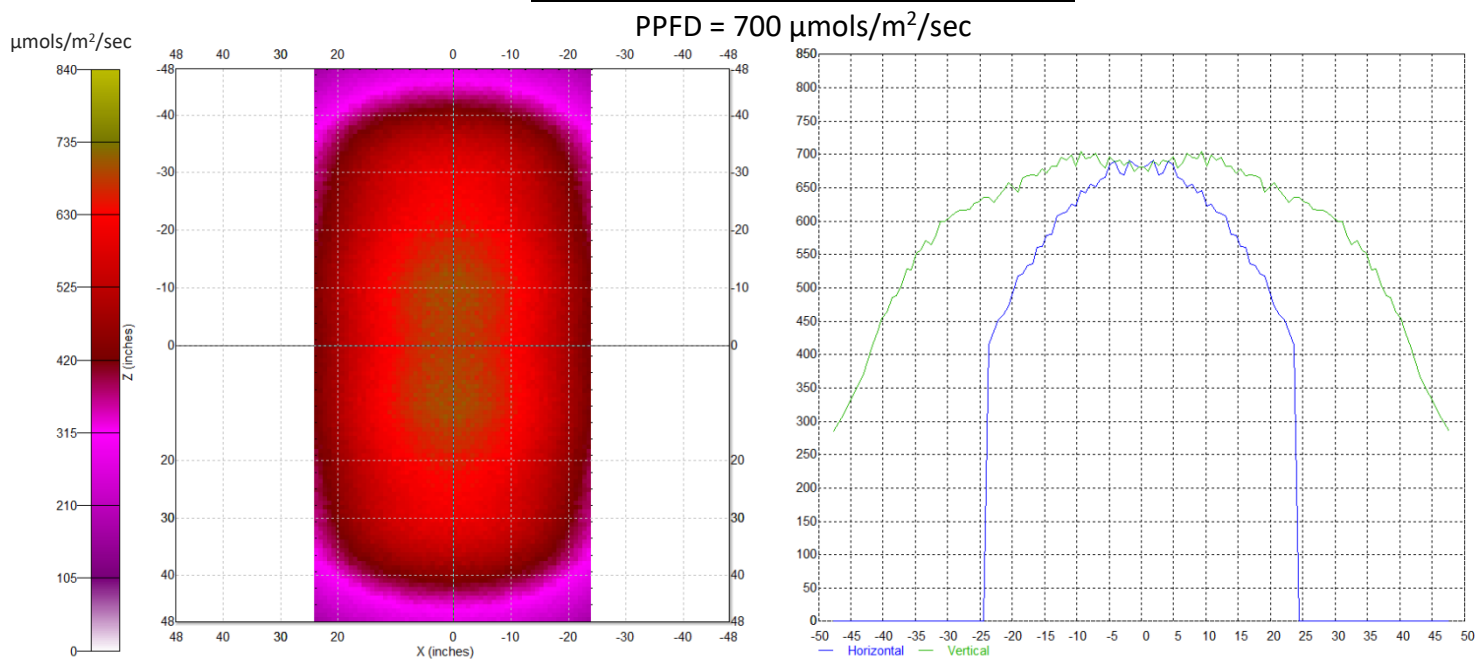
Isometric View



Top Down View



Light Intensity Map on 4'x8' Canopy

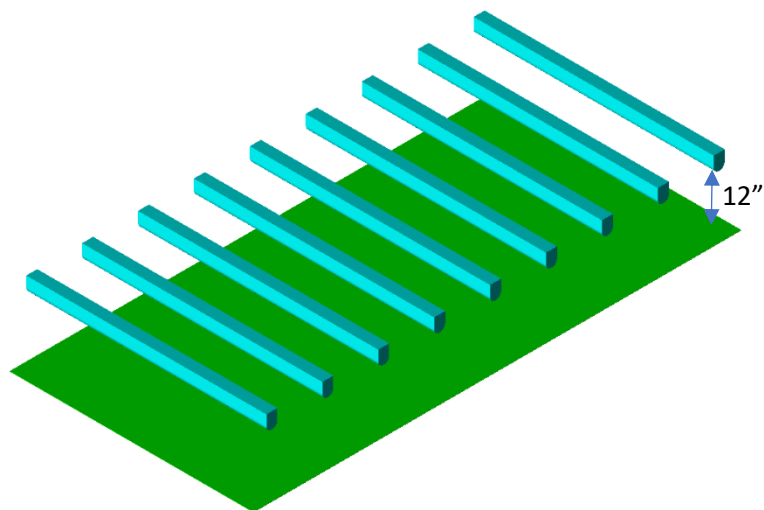


4'x8' Bench, 800 PPFD
12-inch Mounting Height, Boost Light

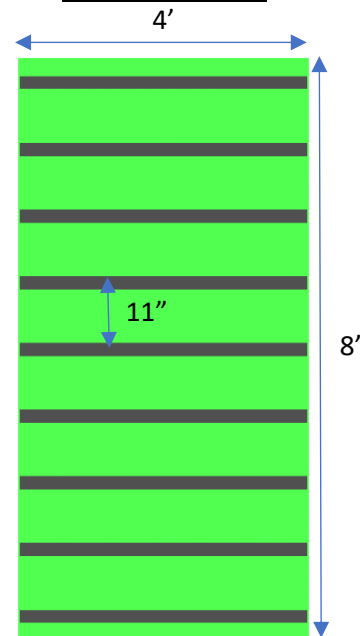
Lighting Design

- # of Boost light bars: 9
- Mounting Height: 12-inches over the canopy
- Light Bar Center Spacing: 11-inches

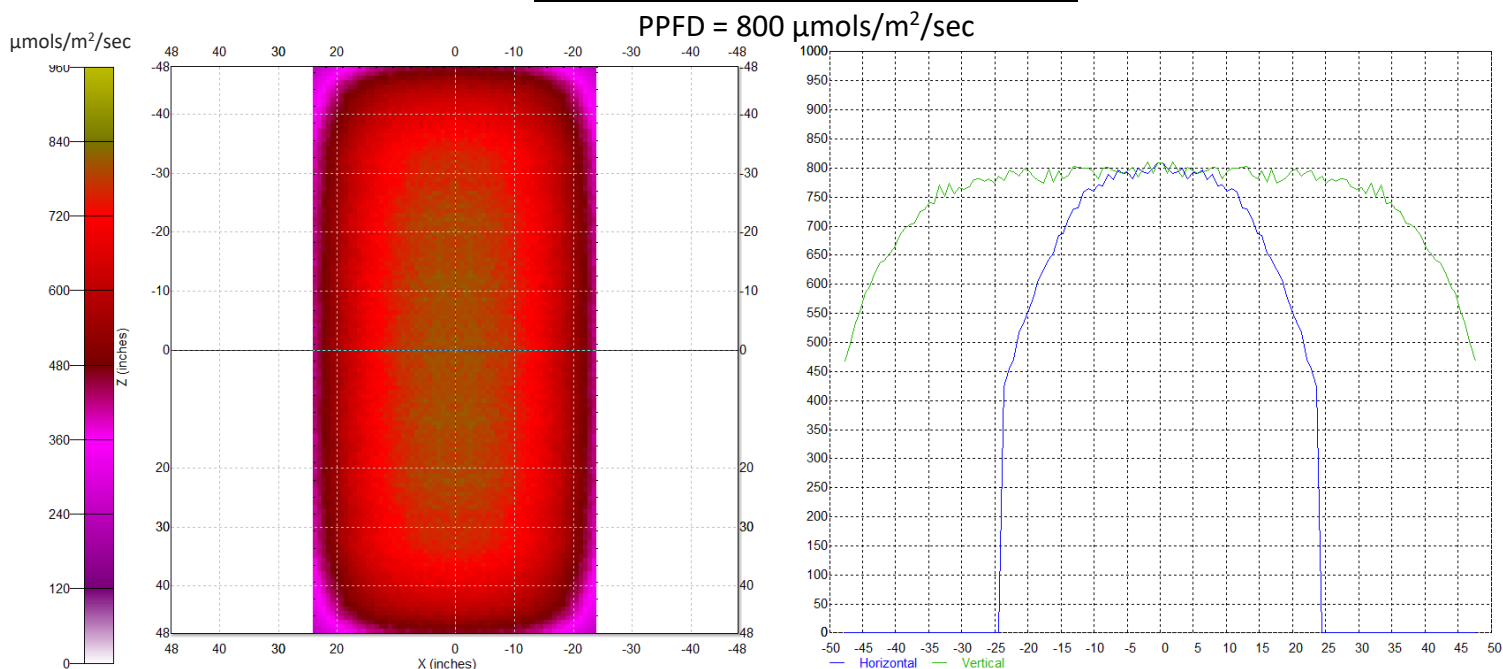
Isometric View



Top Down View



Light Intensity Map on 4'x8' Canopy

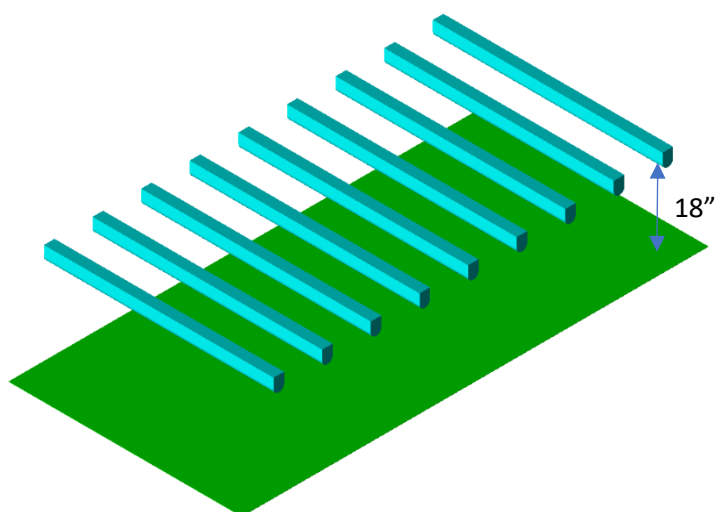


4'x8' Bench, 800 PPFD
18-inch Mounting Height, Boost Light

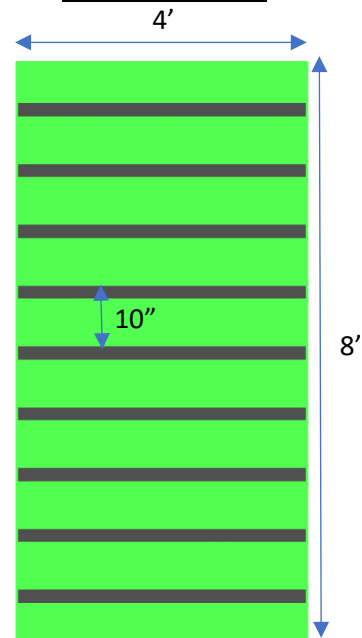
Lighting Design

- # of Boost light bars: 10
- Mounting Height: 18-inches over the canopy
- Light Bar Center Spacing: 10-inches

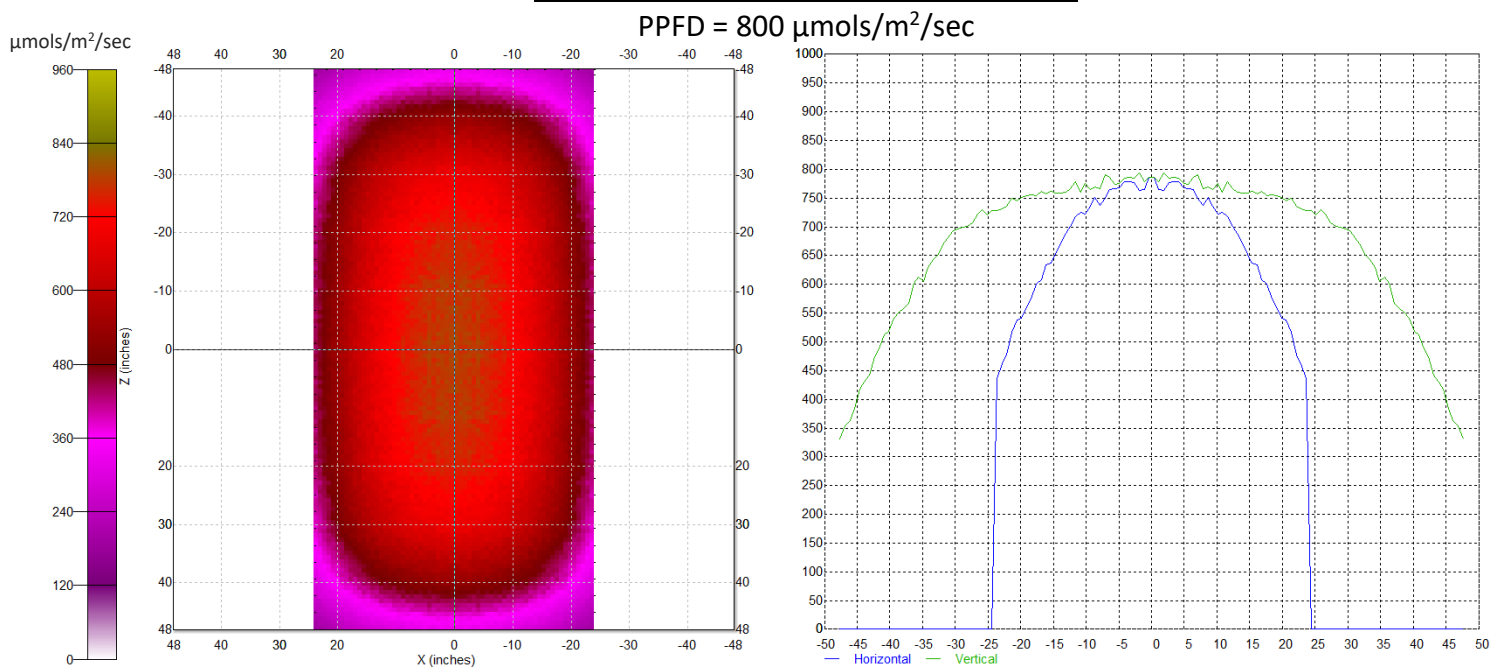
Isometric View



Top Down View



Light Intensity Map on 4'x8' Canopy

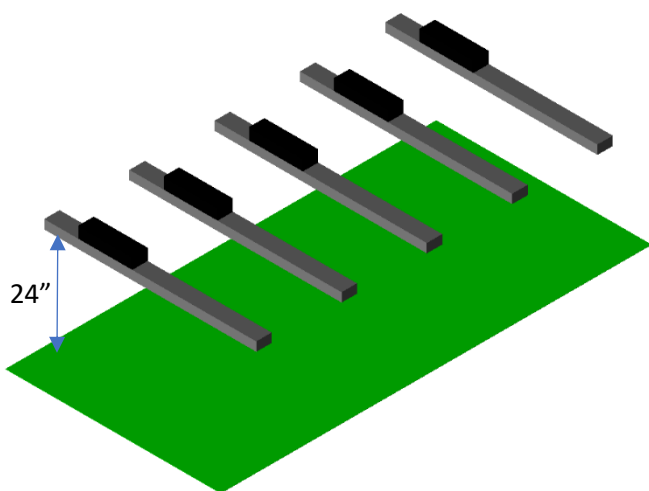


4'x8' Bench, 800 PPFD
24-inch Mounting Height, Apex Light

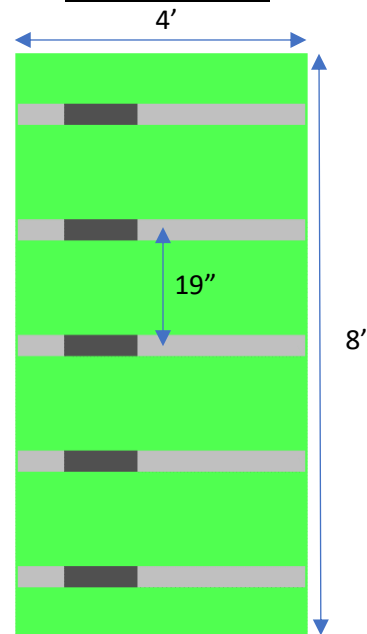
Lighting Design

- # of Apex light bars: 5
- Mounting Height: 24-inches over the canopy
- Light Bar Center Spacing: 19-inches

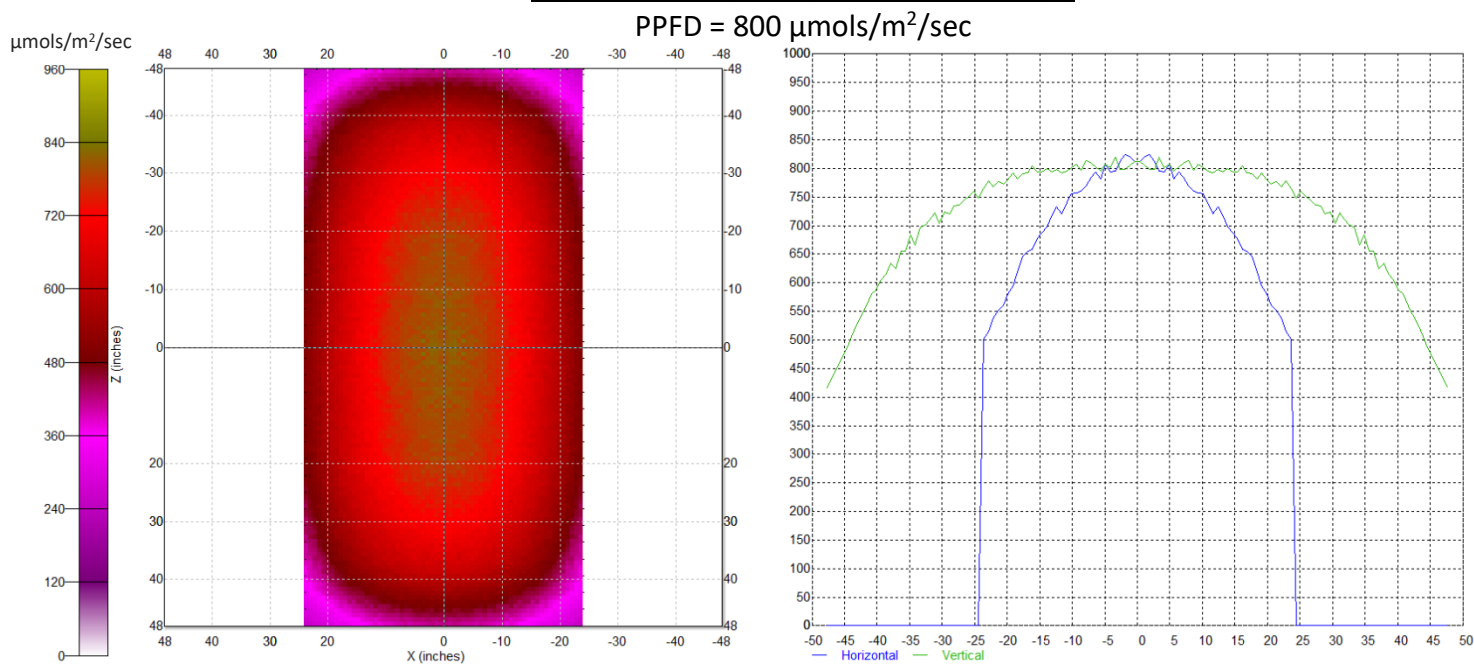
Isometric View



Top Down View



Light Intensity Map on 4'x8' Canopy

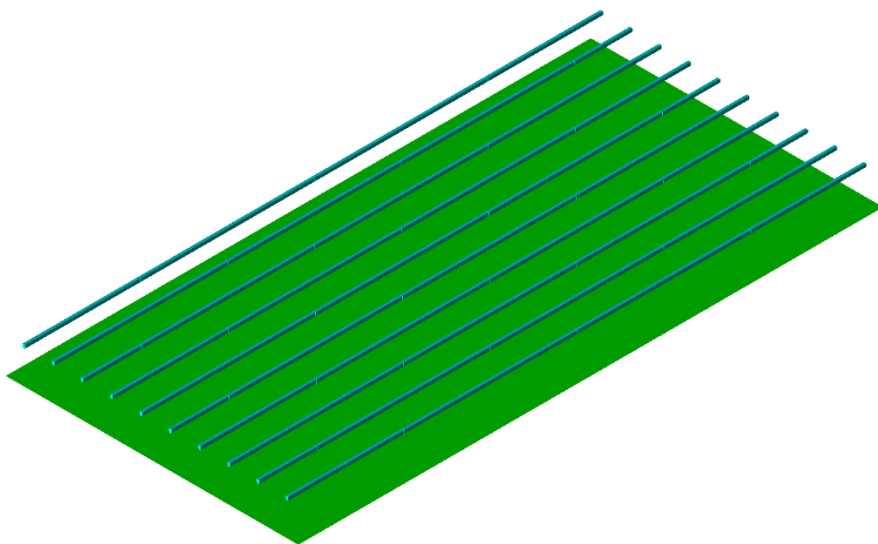


20'x40' Room, 400 PPFD
24-inch Mounting Height, Boost Light

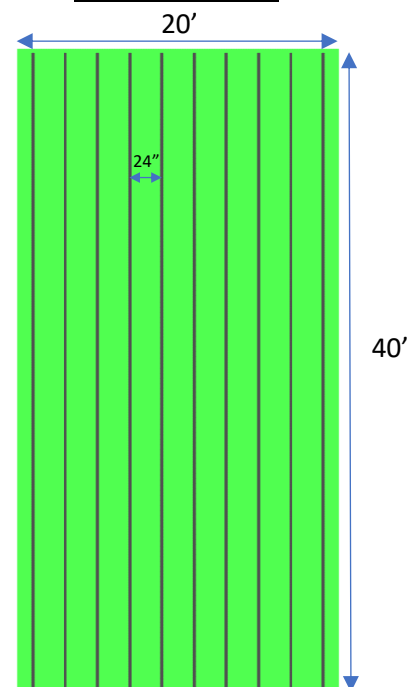
Lighting Design

- # of Boost light bars: 100 (10 lines of 10 lights/line)
- Mounting Height: 24-inches over the canopy
- Light Bar Center Spacing: 24-inches

Isometric View

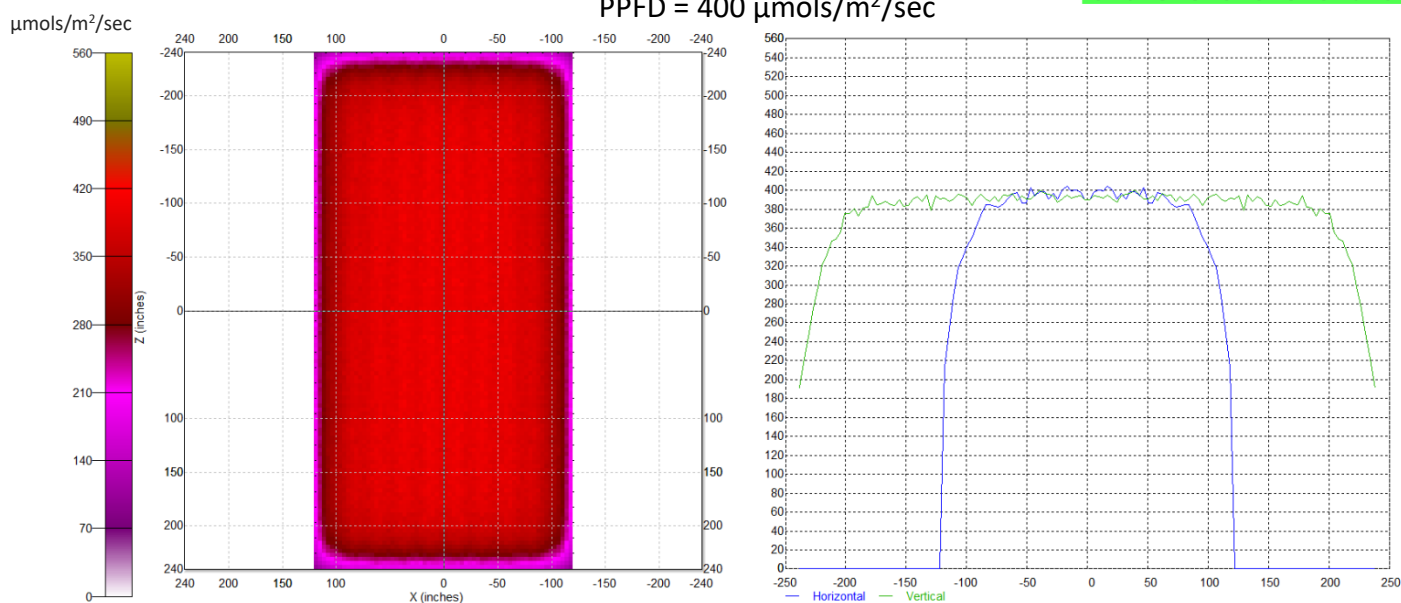


Top Down View



Light Intensity Map on 20'x40' Canopy

PPFD = 400 $\mu\text{mol}/\text{m}^2/\text{sec}$



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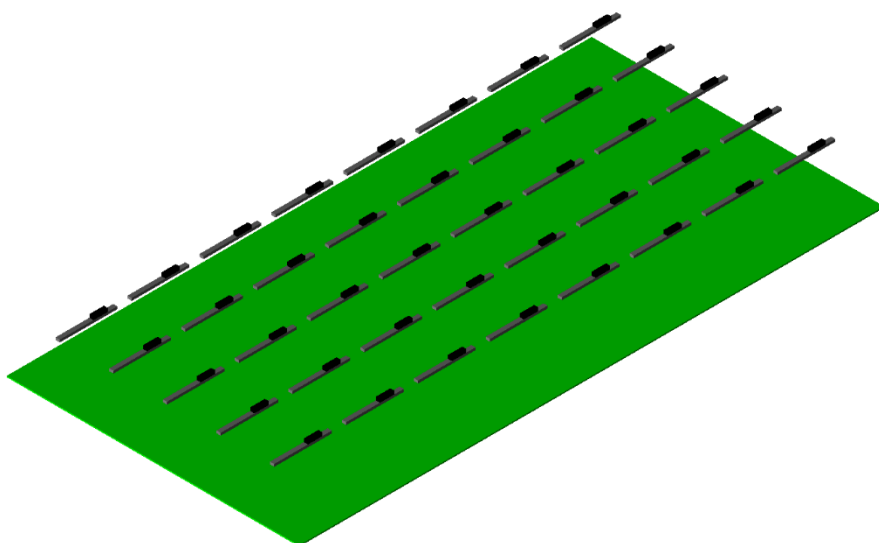
800-205-7216

20'x40' Room, 400 PPFD
36-inch Mounting Height, Apex Light

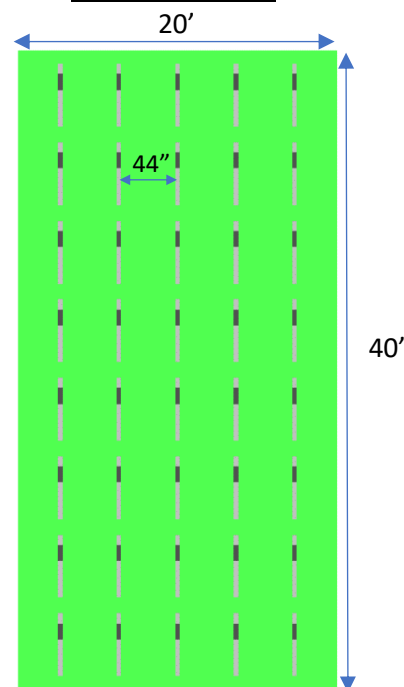
Lighting Design

- # of Apex light bars: 40 (5 lines of 8 lights/line)
- Mounting Height: 36-inches over the canopy
- Light Bar Center Spacing: 44-inches

Isometric View



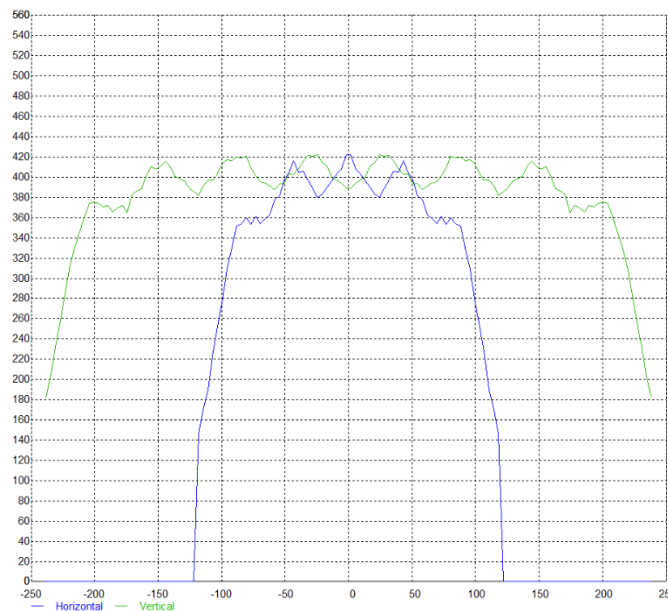
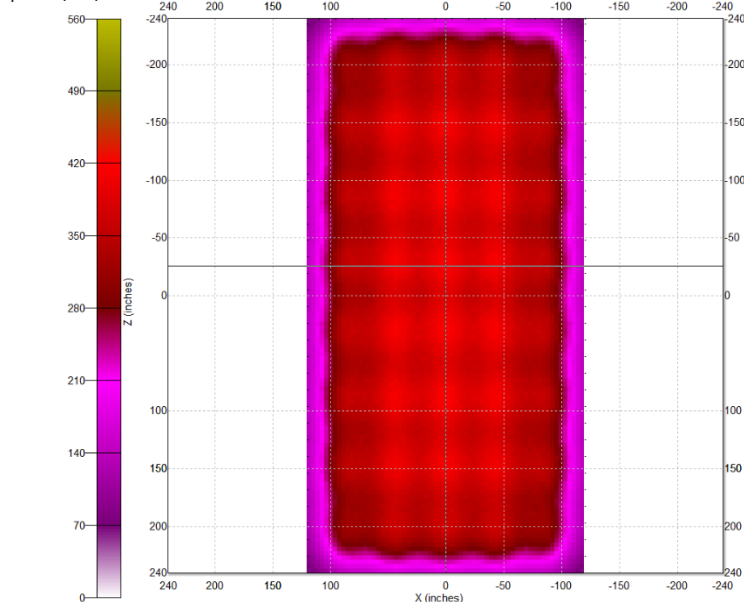
Top Down View



Light Intensity Map on 20'x40' Canopy

PPFD = 400 $\mu\text{mol}/\text{m}^2/\text{sec}$

$\mu\text{mol}/\text{m}^2/\text{sec}$

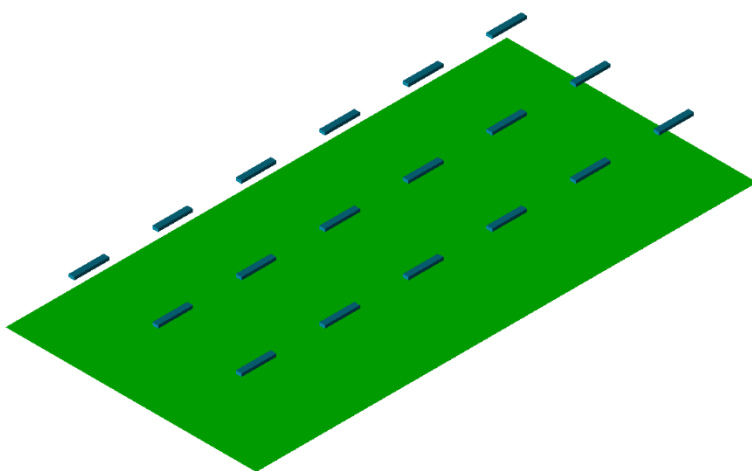


20'x40' Room, 400 PPFD
48-inch Mounting Height, Pinnacle Light

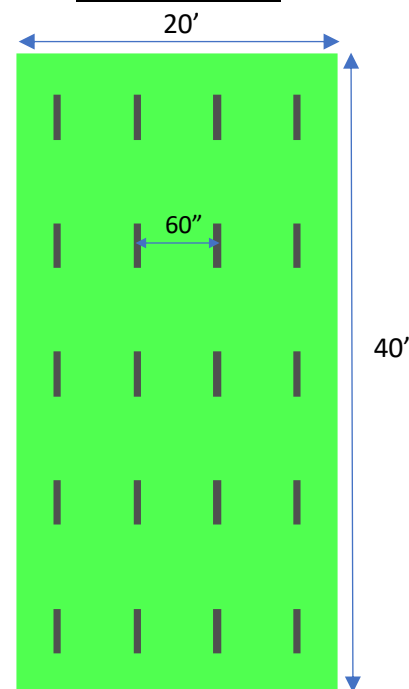
Lighting Design

- # of Pinnacle light bars: 20 (4 lines of 5 lights/line)
- Mounting Height: 48-inches over the canopy
- Light Bar Center Spacing: 60-inches

Isometric View

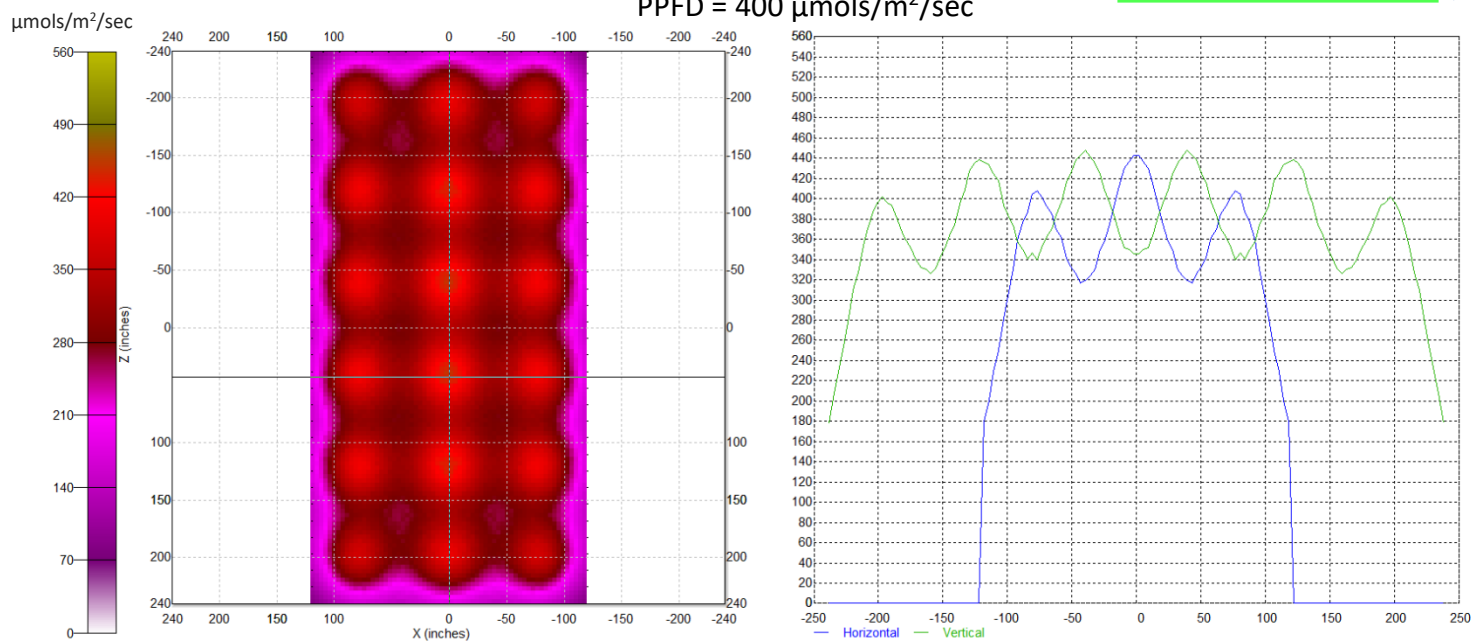


Top Down View



Light Intensity Map on 20'x40' Canopy

PPFD = 400 $\mu\text{mol}/\text{m}^2/\text{sec}$

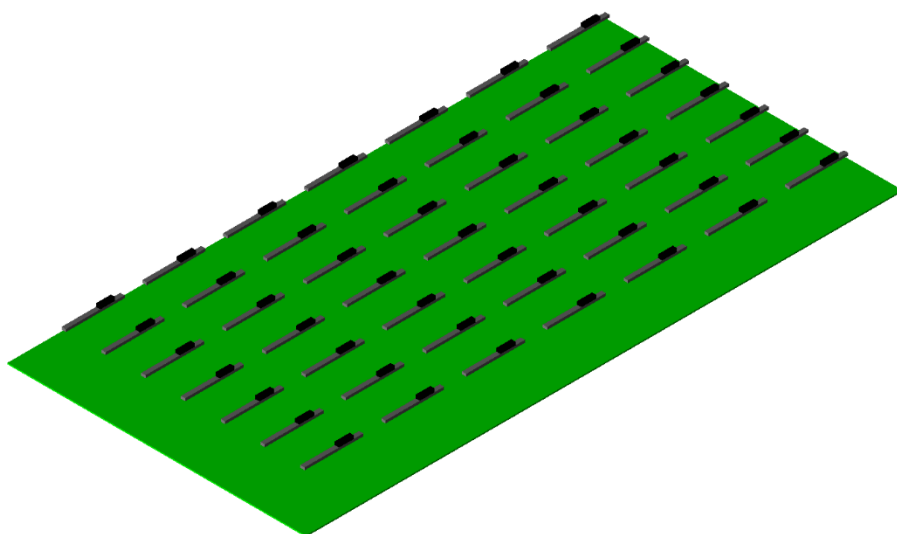


20'x40' Room, 500 PPFD
24-inch Mounting Height, Apex Light

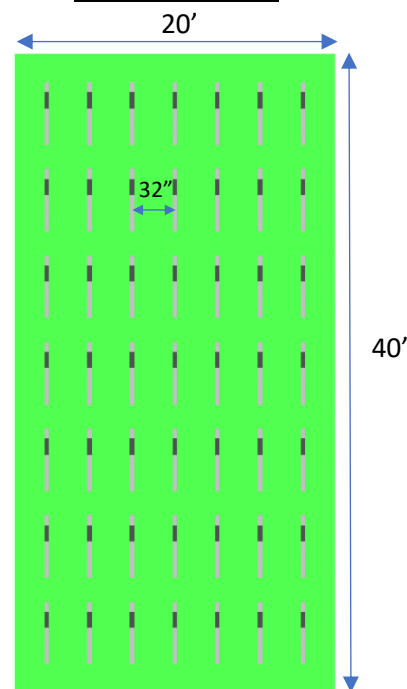
Lighting Design

- # of Apex light bars: 49 (7 lines of 7 lights/line)
- Mounting Height: 24-inches over the canopy
- Light Bar Center Spacing: 32-inches

Isometric View



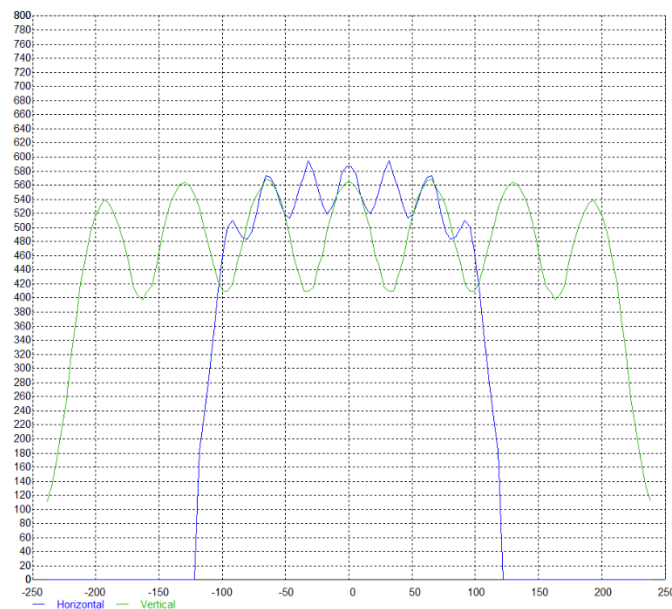
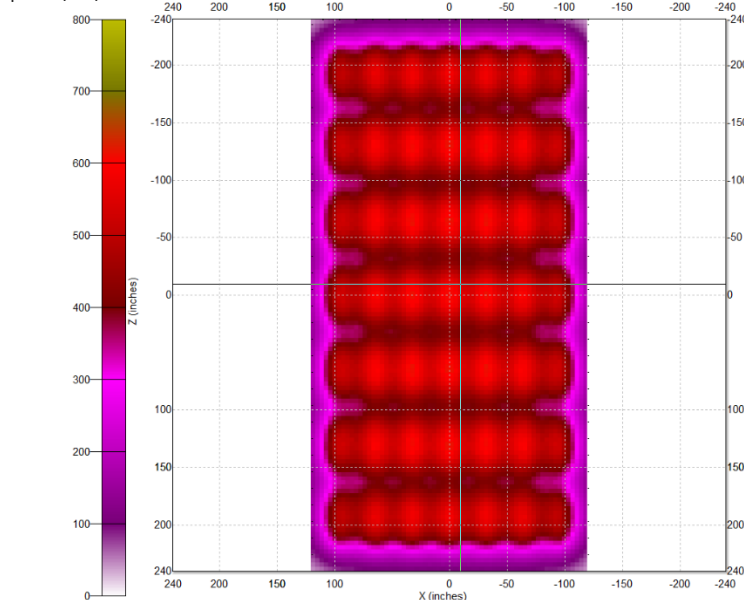
Top Down View



Light Intensity Map on 20'x40' Canopy

PPFD = 500 $\mu\text{mol}/\text{m}^2/\text{sec}$

$\mu\text{mol}/\text{m}^2/\text{sec}$

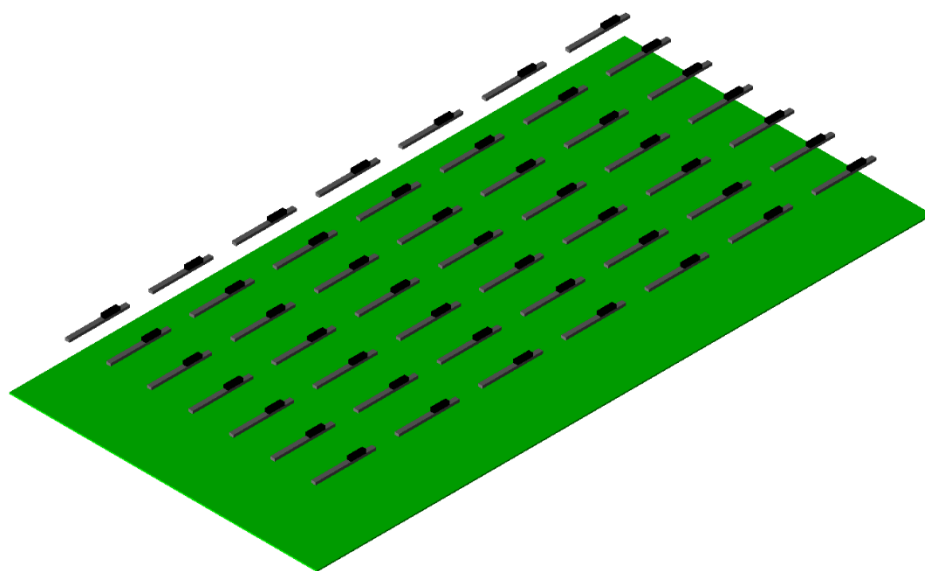


20'x40' Room, 500 PPFD
36-inch Mounting Height, Apex Light

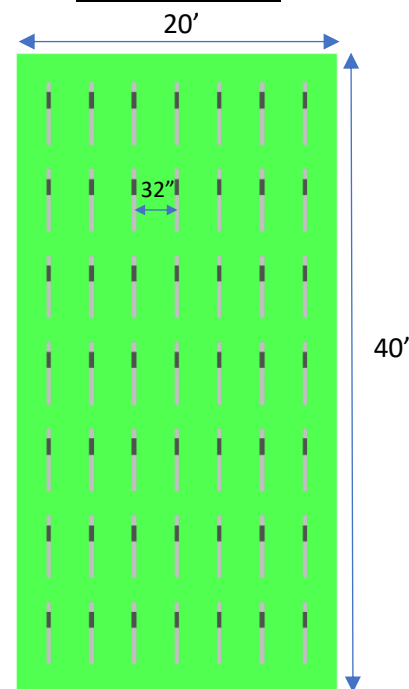
Lighting Design

- # of Apex light bars: 49 (7 lines of 7 lights/line)
- Mounting Height: 36-inches over the canopy
- Light Bar Center Spacing: 32-inches

Isometric View



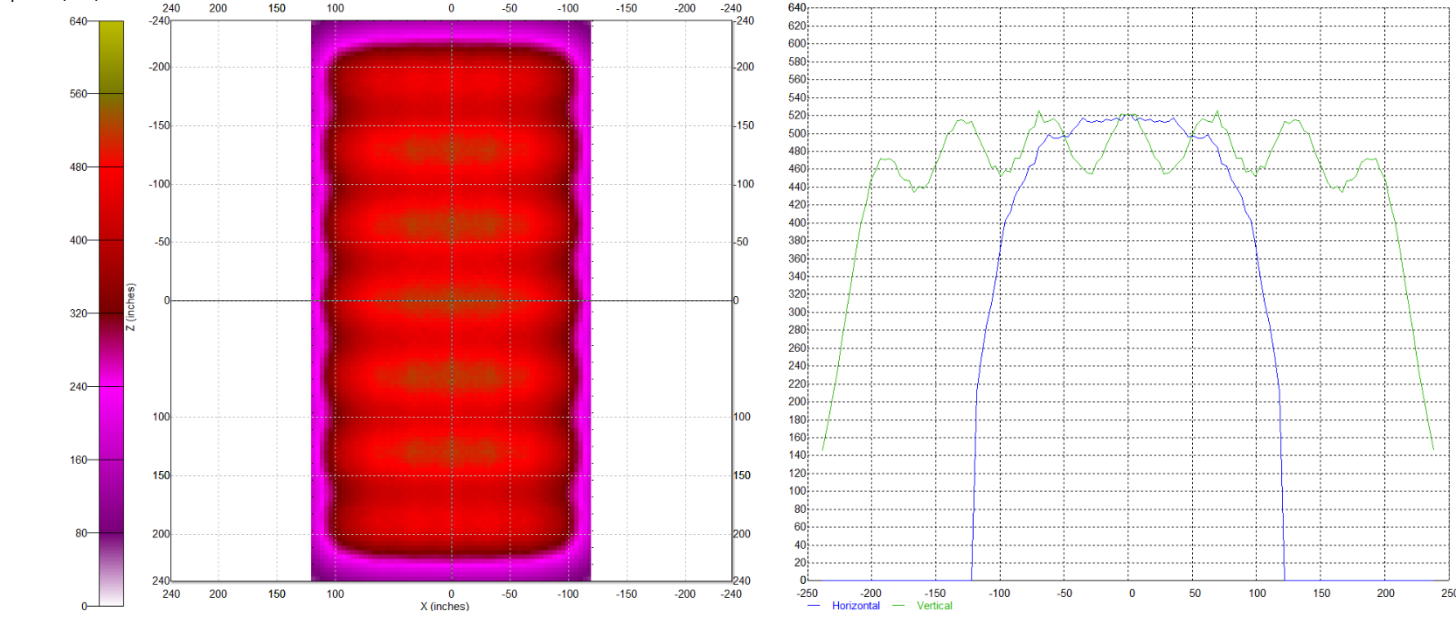
Top Down View



Light Intensity Map on 20'x40' Canopy

PPFD = 500 $\mu\text{mol}/\text{m}^2/\text{sec}$

$\mu\text{mol}/\text{m}^2/\text{sec}$

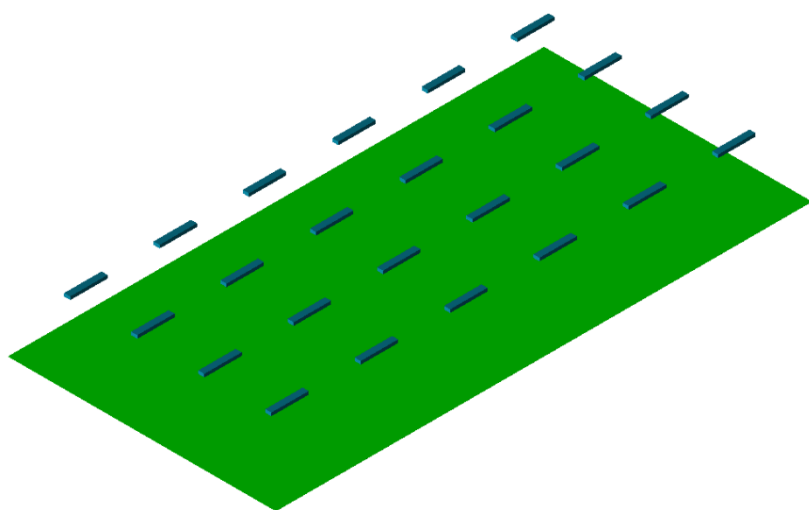


20'x40' Room, 500 PPFD
48-inch Mounting Height, Pinnacle Light

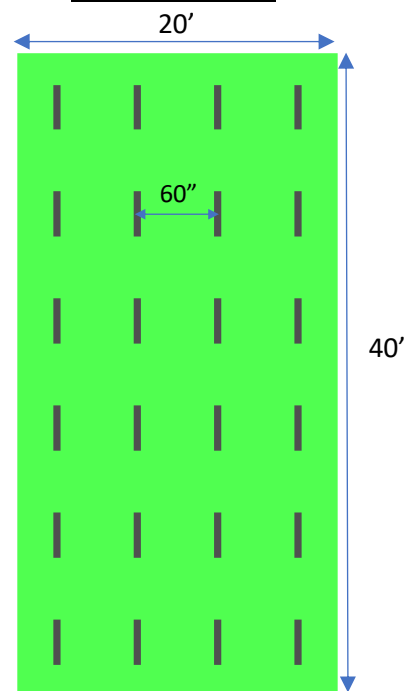
Lighting Design

- # of Pinnacle lights: 24 (4 lines of 6 lights/line)
- Mounting Height: 48-inches over the canopy
- Light Bar Center Spacing: 60-inches

Isometric View

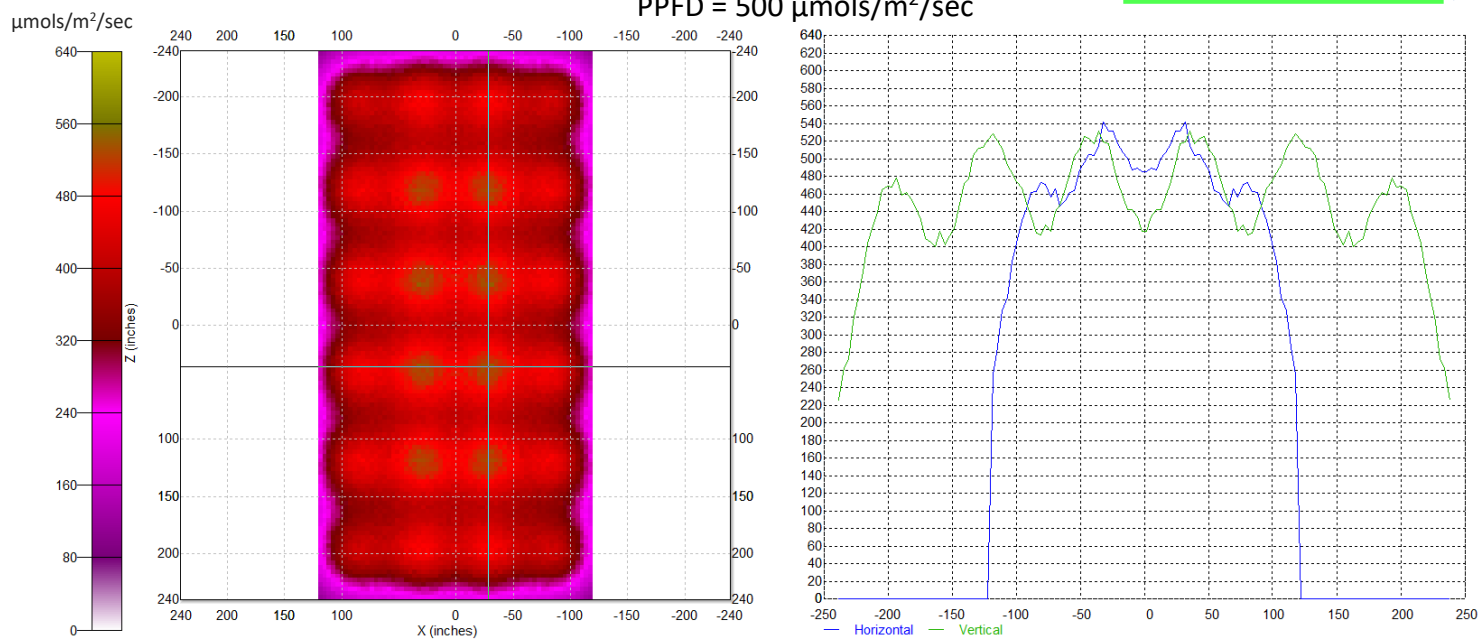


Top Down View



Light Intensity Map on 20'x40' Canopy

PPFD = 500 $\mu\text{mol}/\text{m}^2/\text{sec}$

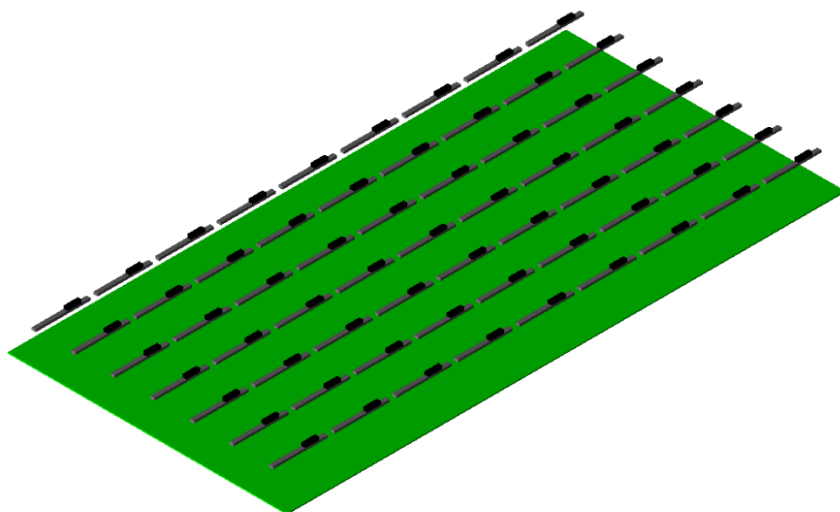


20'x40' Room, 600 PPFD
24-inch Mounting Height, Apex Light

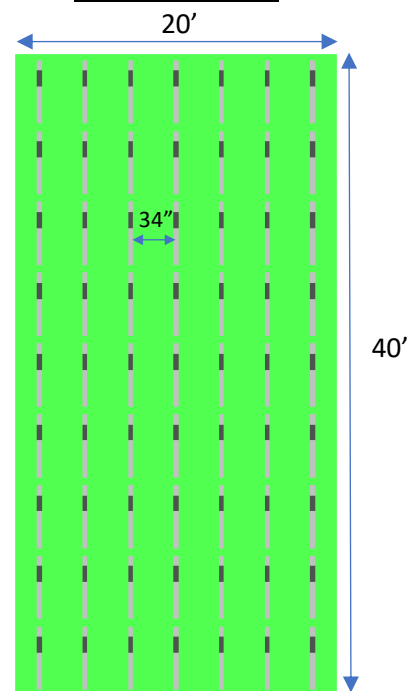
Lighting Design

- # of Apex light bars: 63 (7 lines of 9 lights/line)
- Mounting Height: 24-inches over the canopy
- Light Bar Center Spacing: 34-inches

Isometric View



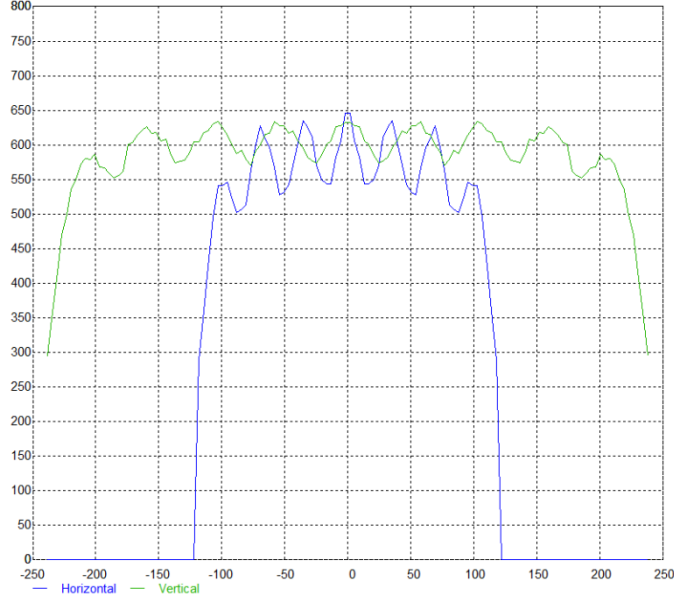
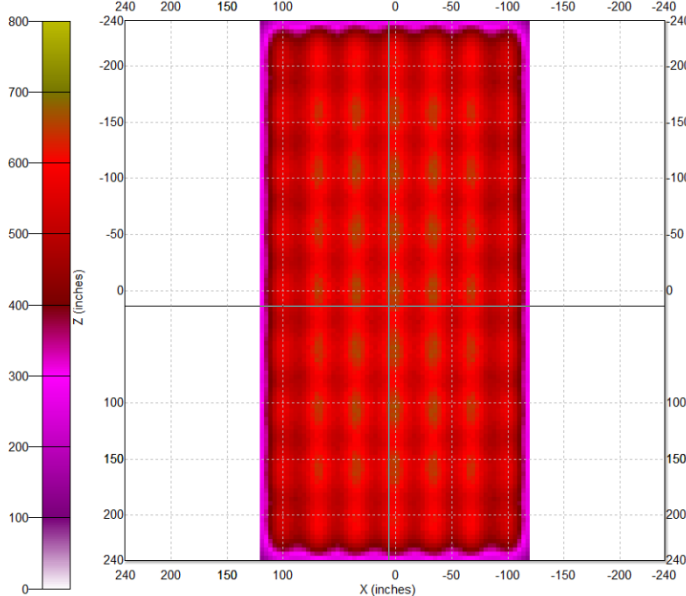
Top Down View



Light Intensity Map on 20'x40' Canopy

PPFD = 600 $\mu\text{mol}/\text{m}^2/\text{sec}$

$\mu\text{mol}/\text{m}^2/\text{sec}$

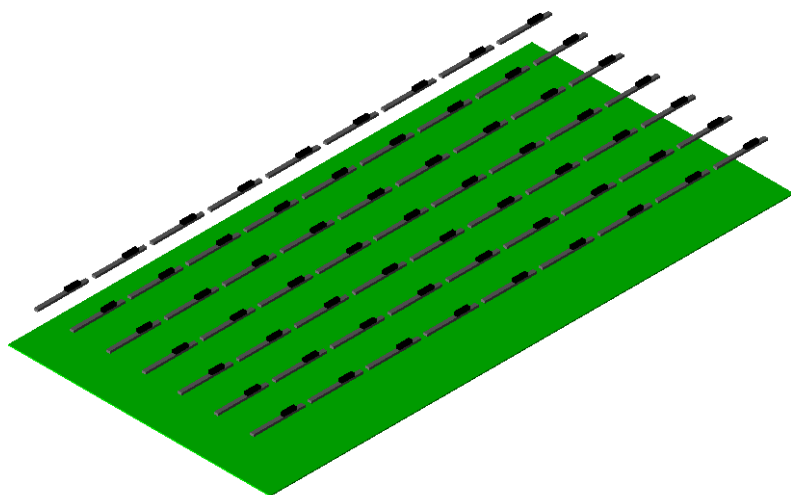


20'x40' Room, 600 PPFD
36-inch Mounting Height, Apex Light

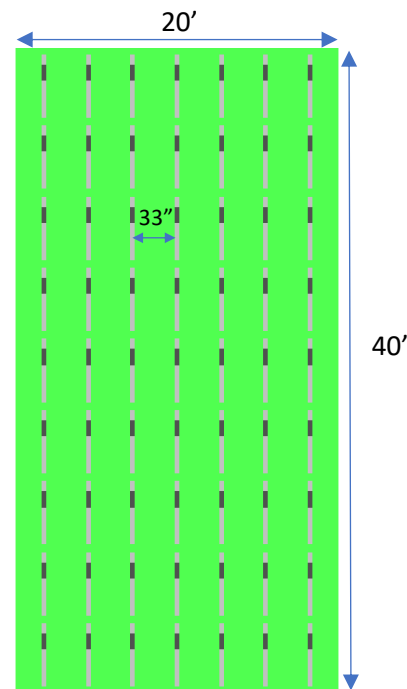
Lighting Design

- # of Apex light bars: 63 (7 lines of 9 lights/line)
- Mounting Height: 36-inches over the canopy
- Light Bar Center Spacing: 33-inches

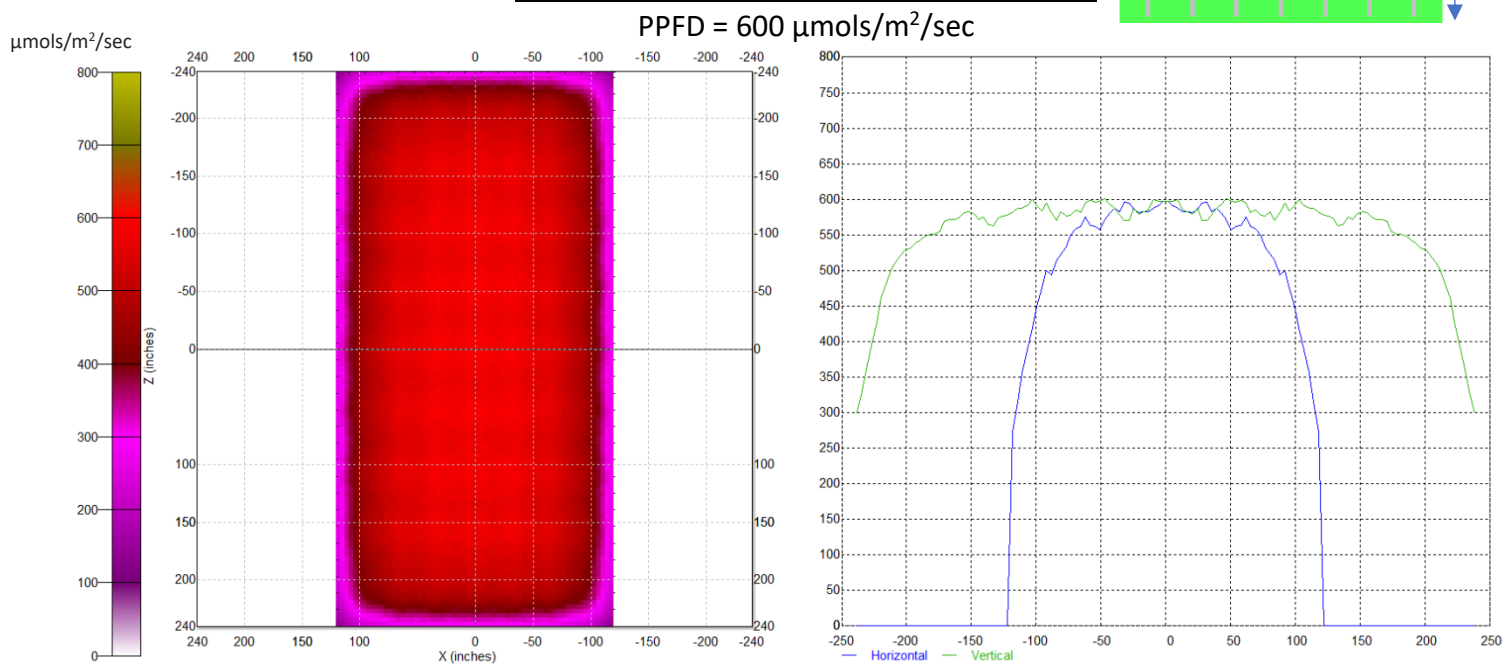
Isometric View



Top Down View



Light Intensity Map on 20'x40' Canopy

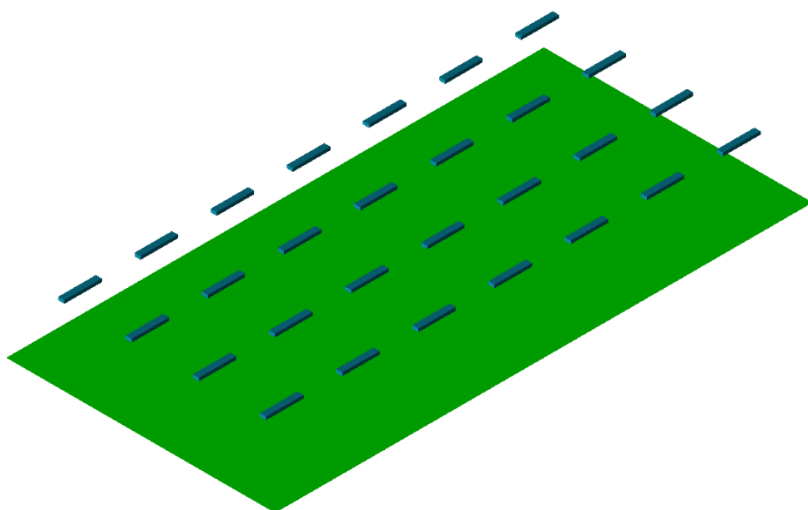


20'x40' Room, 600 PPFD
48-inch Mounting Height, Pinnacle Light

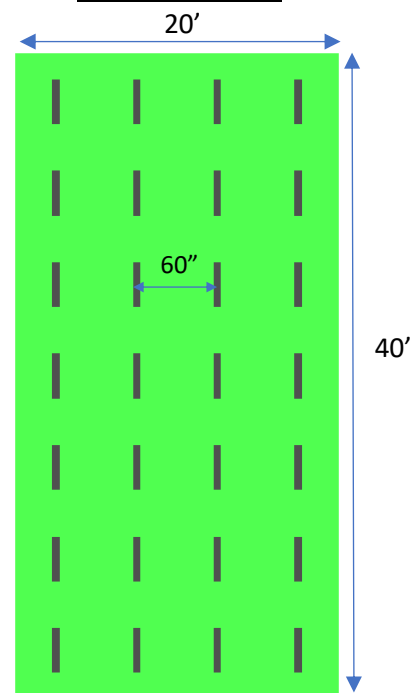
Lighting Design

- # of Pinnacle lights: 28 (4 lines of 7 lights/line)
- Mounting Height: 48-inches over the canopy
- Light Bar Center Spacing: 60-inches

Isometric View

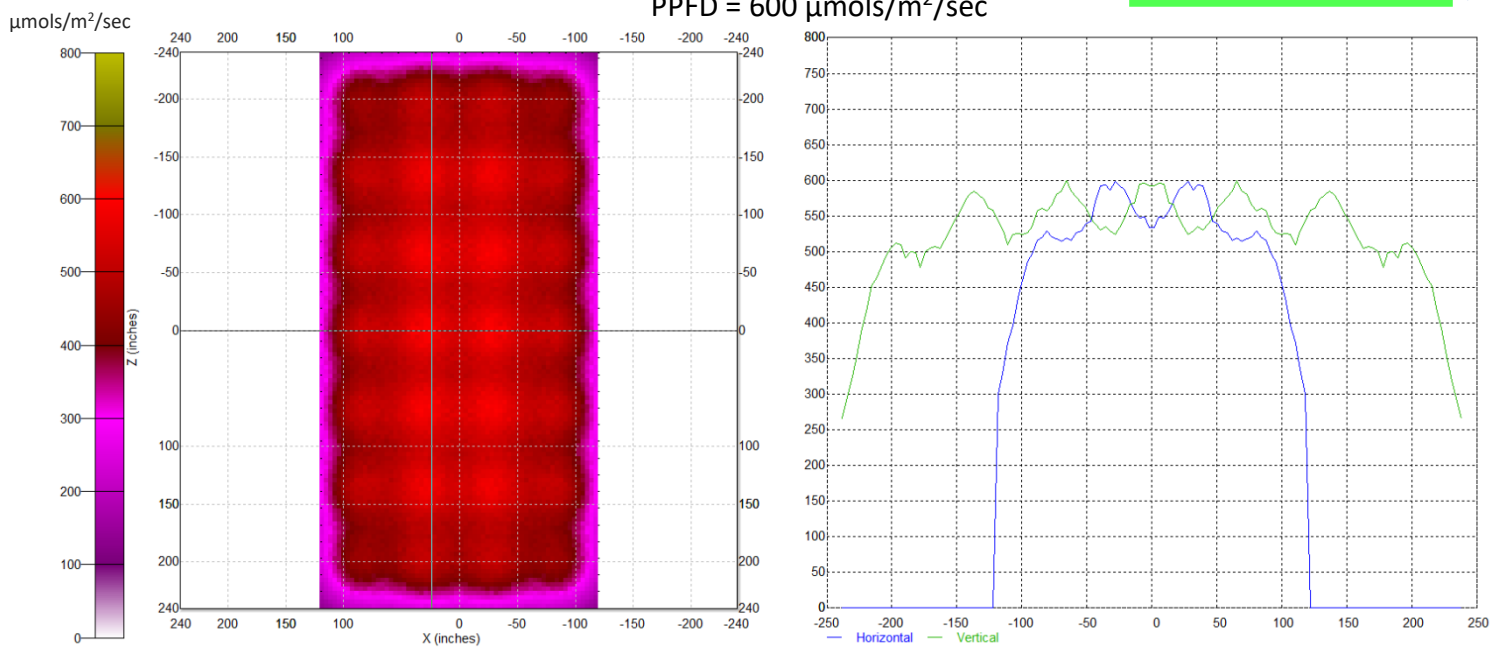


Top Down View



Light Intensity Map on 20'x40' Canopy

PPFD = 600 $\mu\text{mol}/\text{m}^2/\text{sec}$

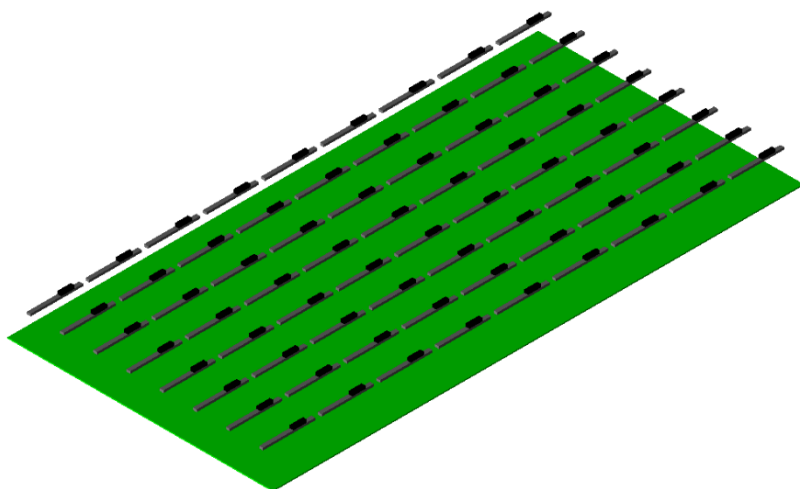


20'x40' Room, 700 PPFD
24-inch Mounting Height, Apex Light

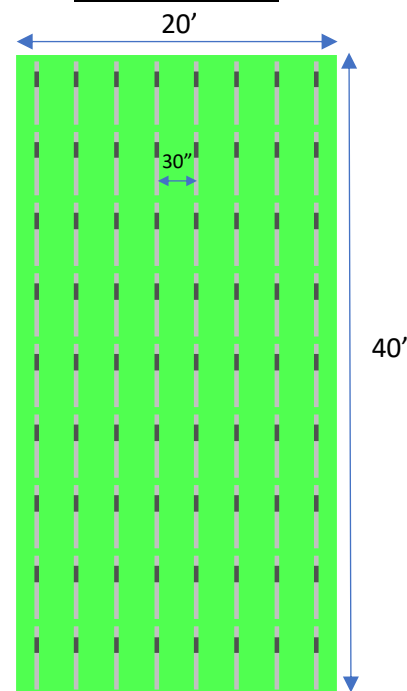
Lighting Design

- # of Apex light bars: 72 (8 lines of 9 lights/line)
- Mounting Height: 24-inches over the canopy
- Light Bar Center Spacing: 30-inches

Isometric View



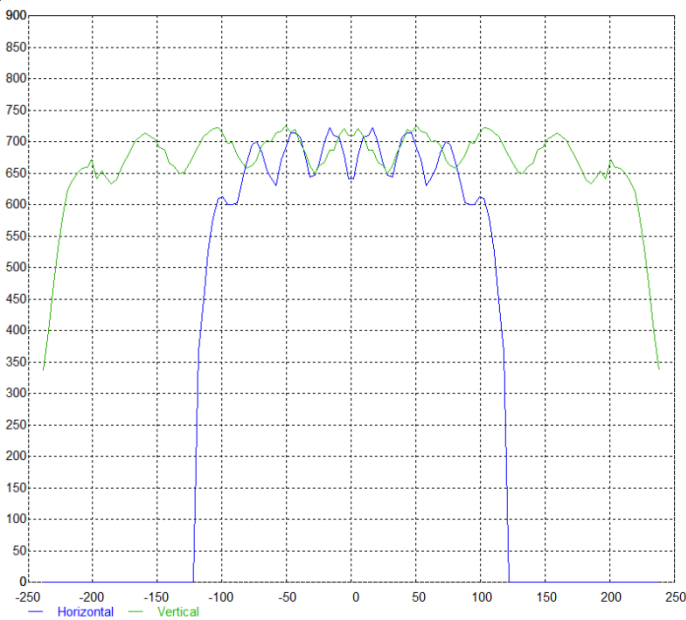
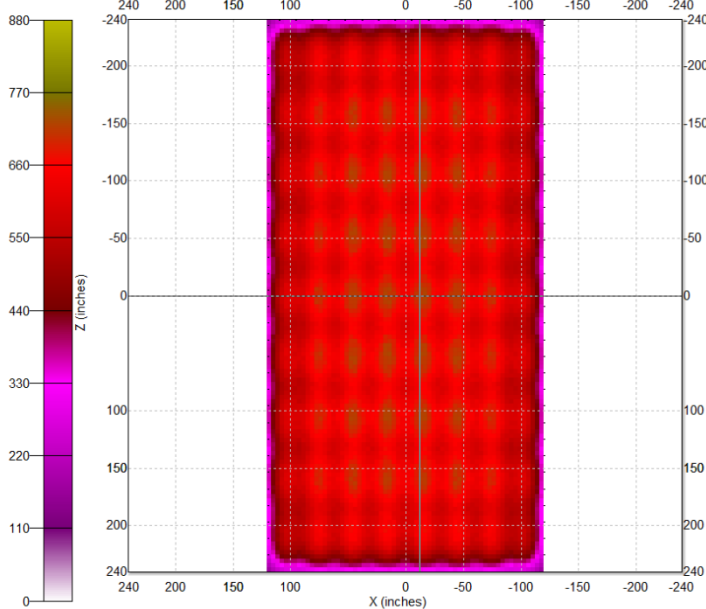
Top Down View



Light Intensity Map on 20'x40' Canopy

PPFD = 700 $\mu\text{mol}/\text{m}^2/\text{sec}$

$\mu\text{mol}/\text{m}^2/\text{sec}$

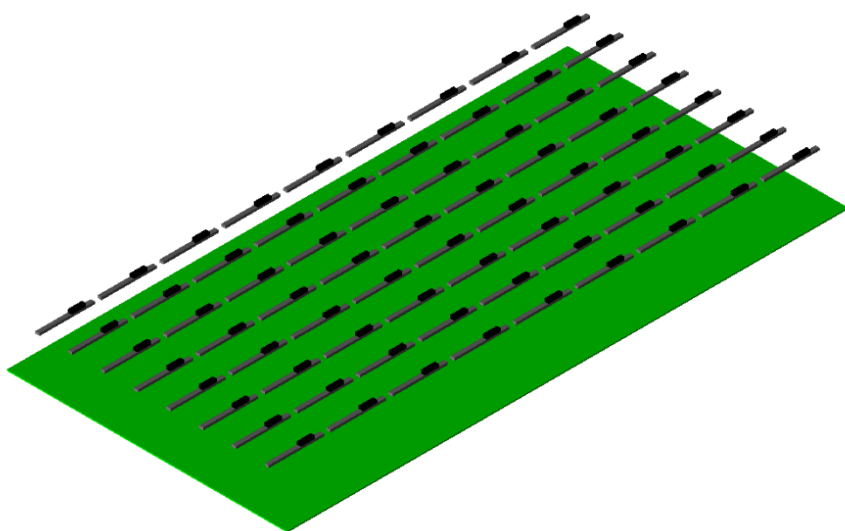


20'x40' Room, 700 PPFD
36-inch Mounting Height, Apex Light

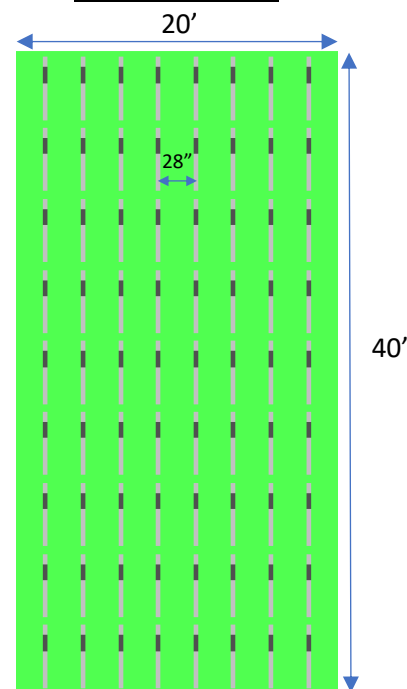
Lighting Design

- # of Apex light bars: 72 (8 lines of 9 lights/line)
- Mounting Height: 36-inches over the canopy
- Light Bar Center Spacing: 28-inches

Isometric View



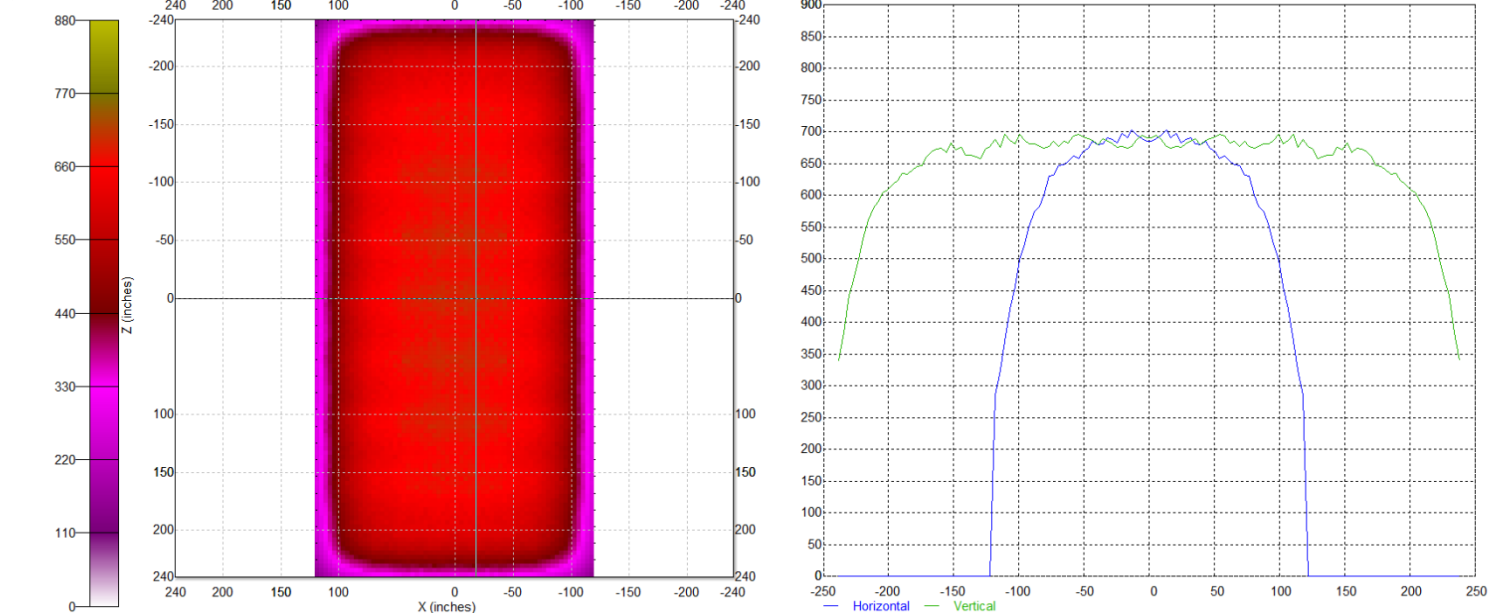
Top Down View



Light Intensity Map on 20'x40' Canopy

PPFD = 700 $\mu\text{mol}/\text{m}^2/\text{sec}$

$\mu\text{mol}/\text{m}^2/\text{sec}$

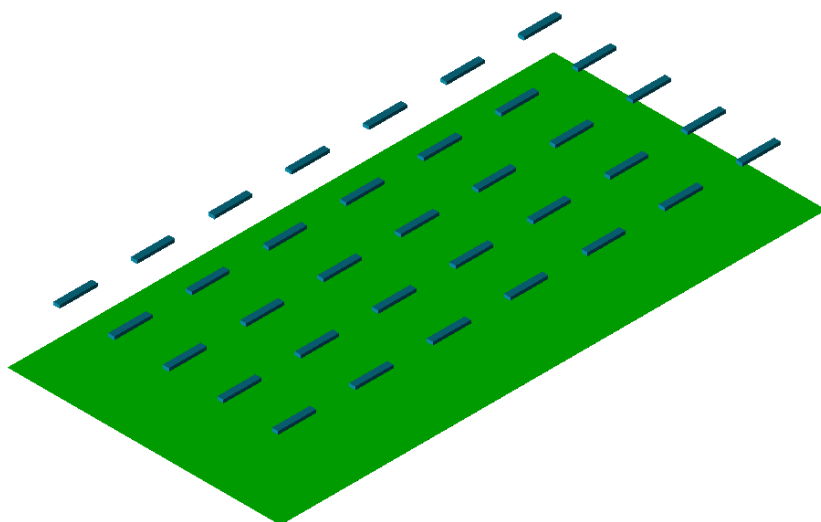


20'x40' Room, 700 PPFD
48-inch Mounting Height, Pinnacle Light

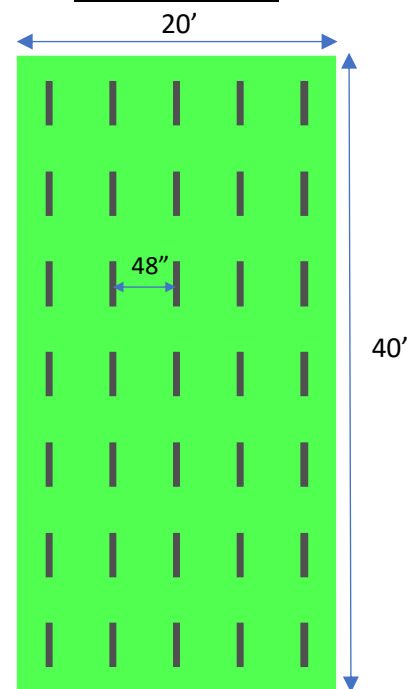
Lighting Design

- # of Pinnacle lights: 35 (5 lines of 7 lights/line)
- Mounting Height: 48-inches over the canopy
- Light Bar Center Spacing: 48-inches

Isometric View

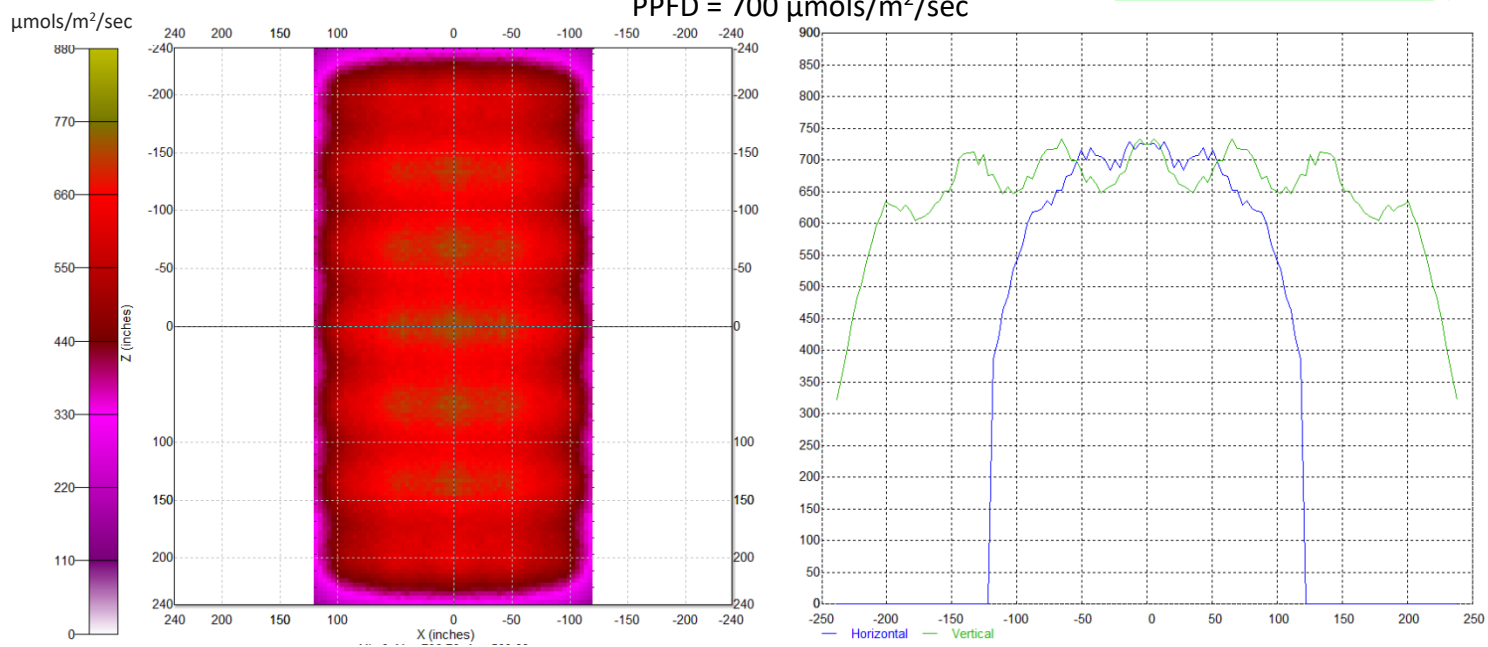


Top Down View



Light Intensity Map on 20'x40' Canopy

PPFD = 700 $\mu\text{mol}/\text{m}^2/\text{sec}$

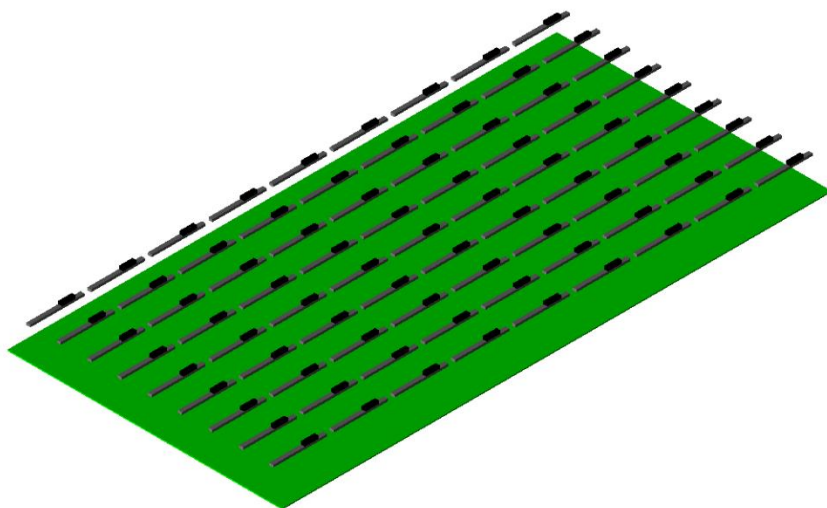


20'x40' Room, 800 PPFD
24-inch Mounting Height, Apex Light

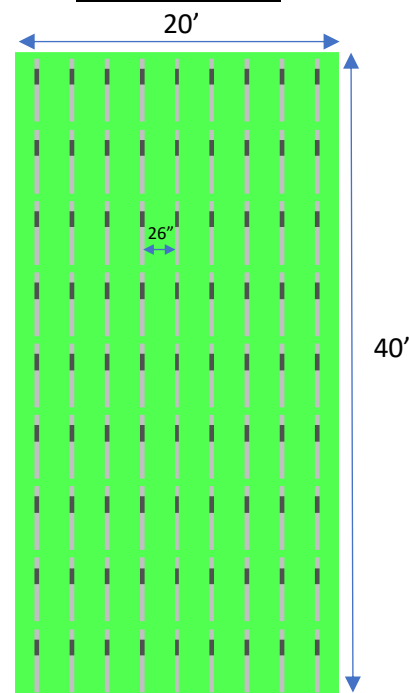
Lighting Design

- # of Apex light bars: 81 (9 lines of 9 lights/line)
- Mounting Height: 24-inches over the canopy
- Light Bar Center Spacing: 26-inches

Isometric View

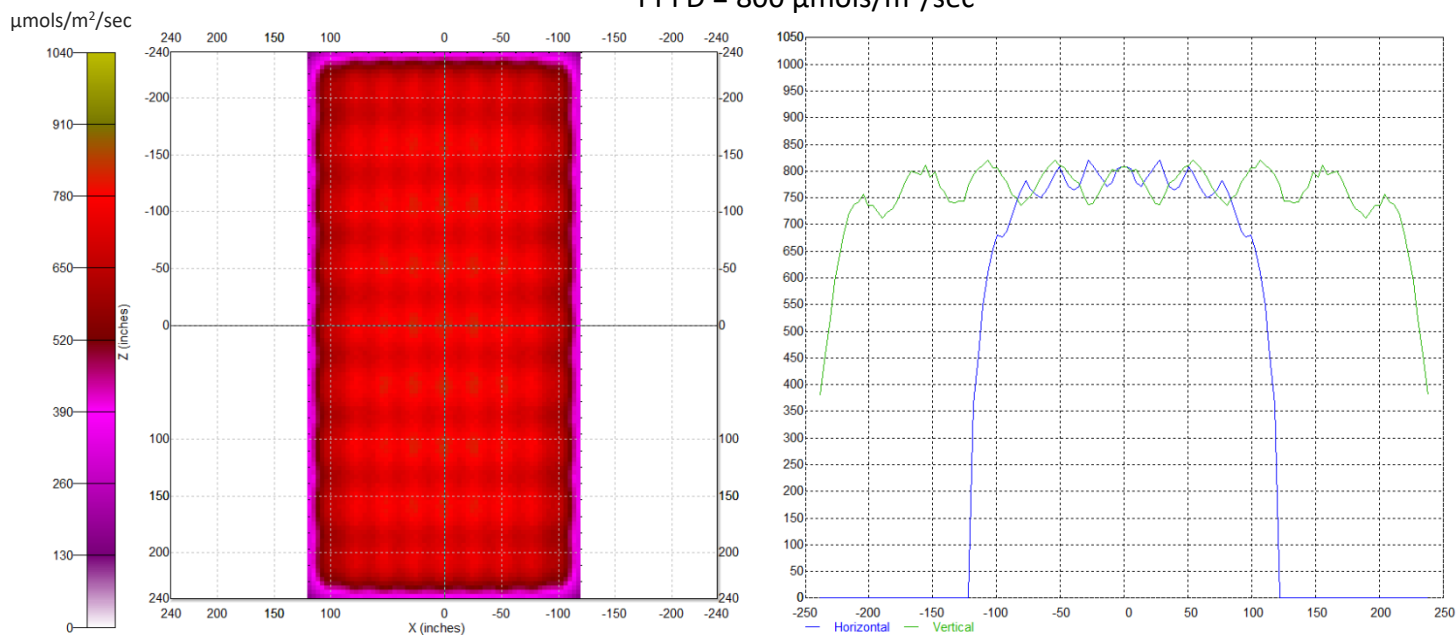


Top Down View



Light Intensity Map on 20'x40' Canopy

PPFD = 800 $\mu\text{mol}/\text{m}^2/\text{sec}$

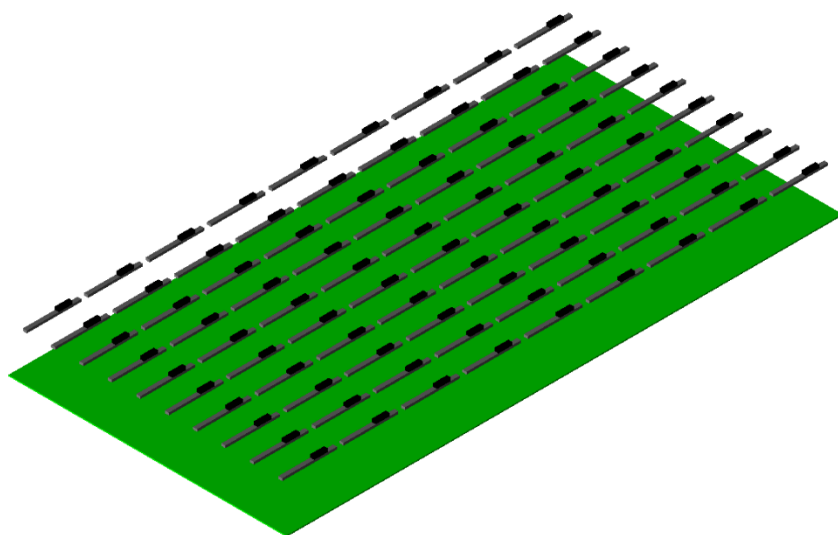


20'x40' Room, 800 PPFD
36-inch Mounting Height, Apex Light

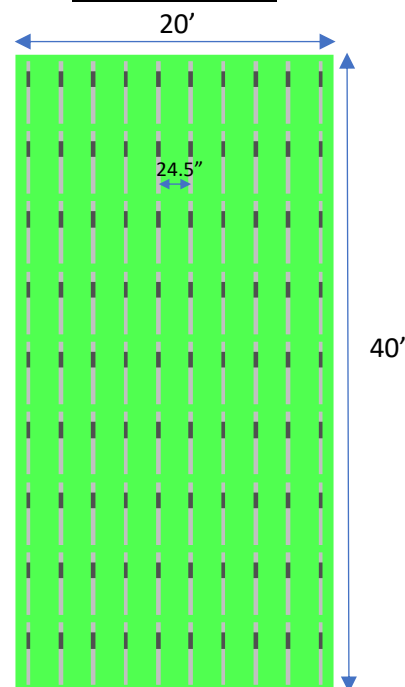
Lighting Design

- # of Apex light bars: 90 (10 lines of 9 lights/line)
- Mounting Height: 36-inches over the canopy
- Light Bar Center Spacing: 24.5-inches

Isometric View



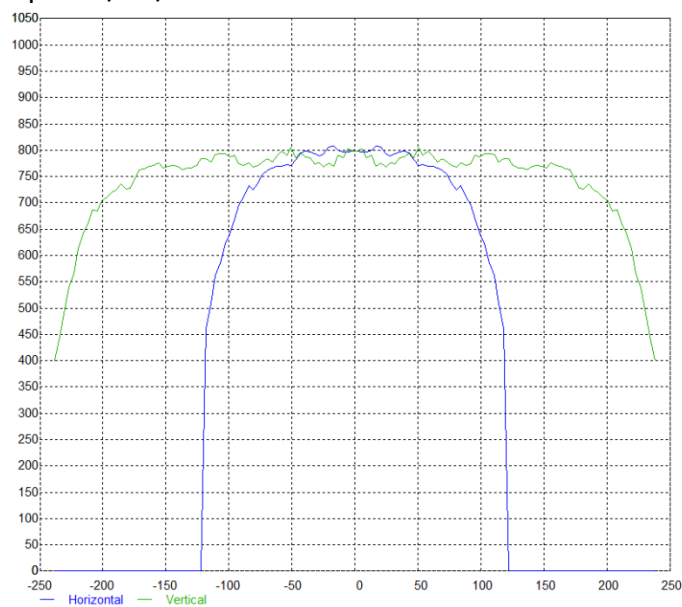
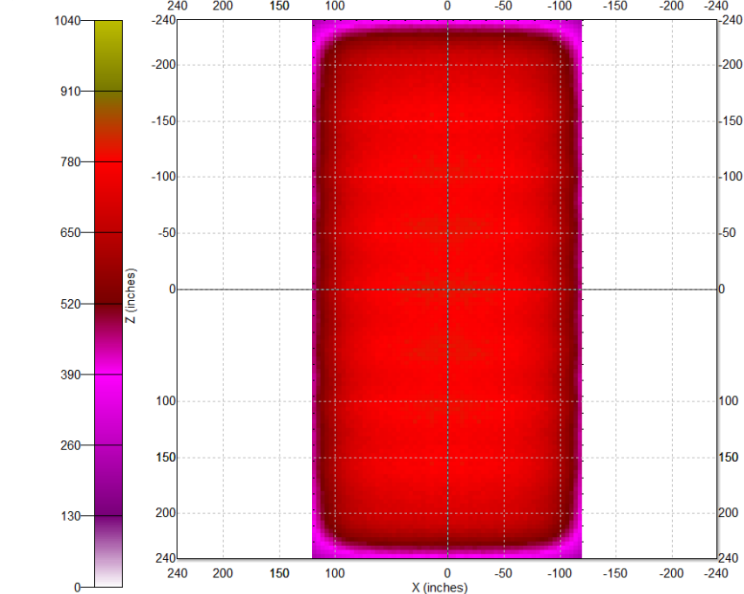
Top Down View



Light Intensity Map on 20'x40' Canopy

PPFD = 800 $\mu\text{mol}/\text{m}^2/\text{sec}$

$\mu\text{mol}/\text{m}^2/\text{sec}$

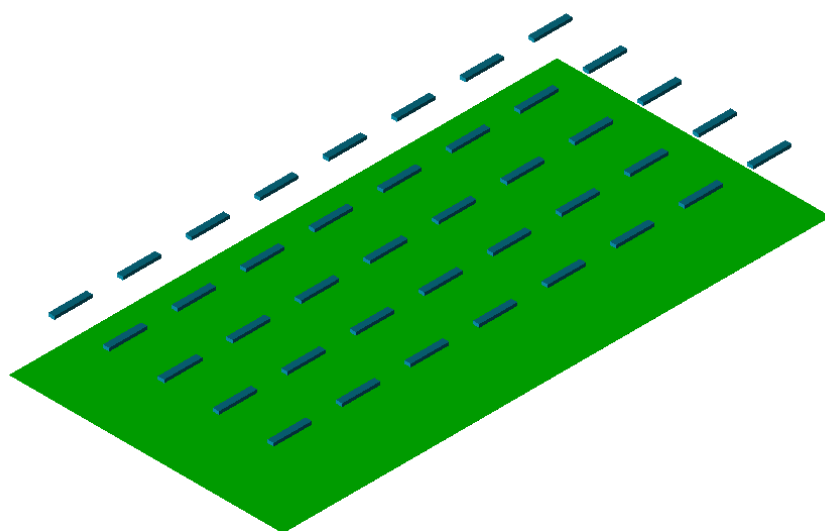


20'x40' Room, 800 PPFD
48-inch Mounting Height, Pinnacle Light

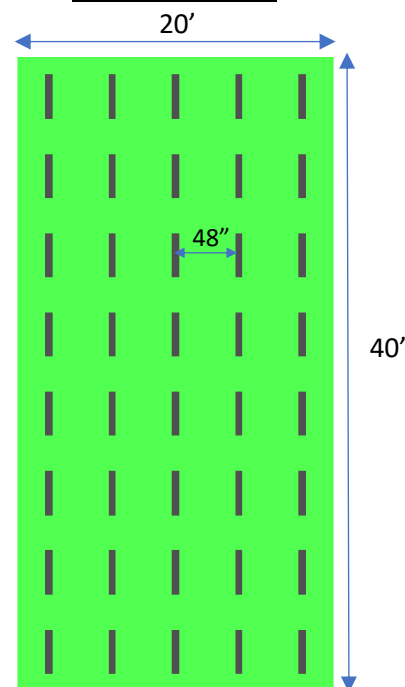
Lighting Design

- # of Pinnacle lights: 40 (5 lines of 8 lights/line)
- Mounting Height: 48-inches over the canopy
- Light Bar Center Spacing: 48-inches

Isometric View



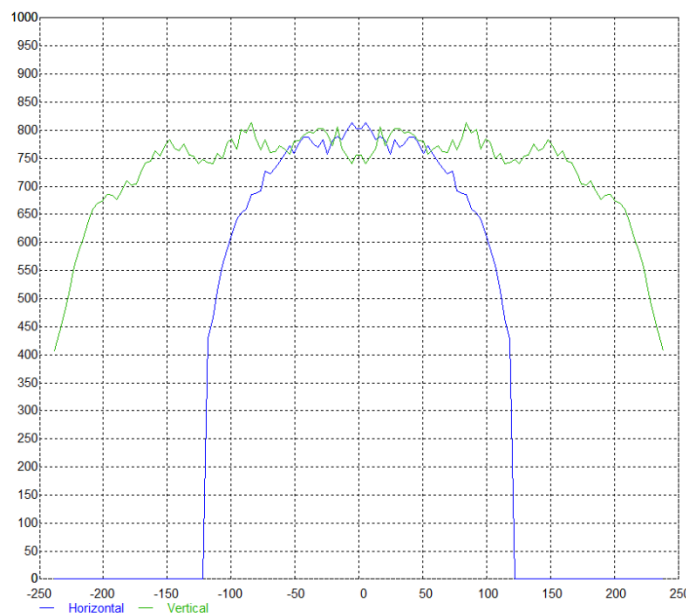
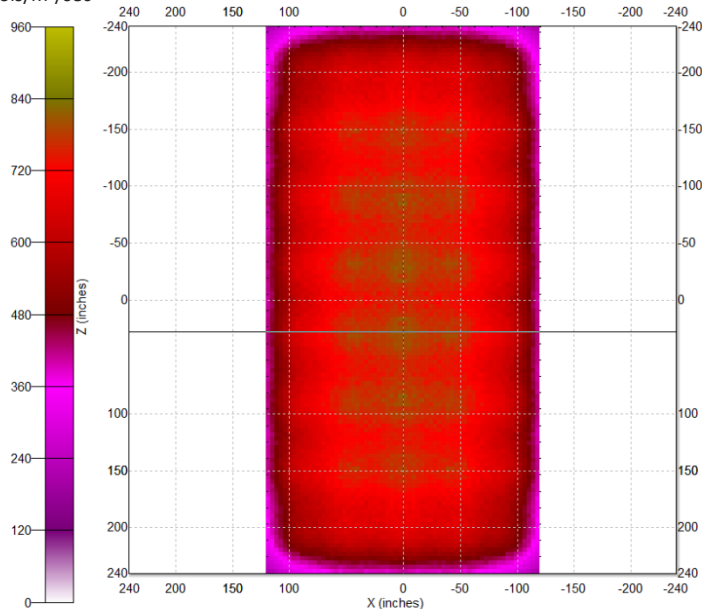
Top Down View



Light Intensity Map on 20'x40' Canopy

PPFD = 800 $\mu\text{mol}/\text{m}^2/\text{sec}$

$\mu\text{mol}/\text{m}^2/\text{sec}$



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