

LEDzx REFERENCE MODEL LAYOUT

10' x 10' x 8'

Date: 03-23-2023

Designer: C.A.A.

Description: The LEDZX is near identical in output to both the Fluence SPYDR 2P and SPYDR 2i. All three have the same power input (630w). They only slightly differ in efficiency. The LEDZX ranks 50 μmol stronger than the SPYDR 2p and 50 μmol weaker than the SPYDR 2i. The LEDZX sits right in the middle in output and efficiency of both those Fluence Bioengineering Fixtures-- minimal difference in performance.

The LEDZX fixture is less expensive.

I did notice that the Fluence reference layouts for bloom applications is quite impractical at 6" above canopy. At that distance the uniformity is horrendous and a max 1200 μmol reading directly under the individual bars along with a minimum reading of 300 μmol in between bars is detrimental.

Their vegetative layout at 3.1' and 3.2' is feasible and accurate.

Ideal distance for the LEDzx with maximum uniformity and efficiency = 1.5' ~ 2.5'.

@1.5 from canopy = max 1072 μmol

@2.0 from canopy = max 990 μmol - BEST

@2.5 from canopy = max 907 μmol

For vegetative purposes this fixture can be hung 3-4 feet above canopy or hung 1.5 to 2 feet from canopy and dimmed down 75% power.

This layout is 2.5' from canopy surface and 5.5' from floor surface with 4'-3" foot center spacings.

The nominal values shown in this report are the result of precision calculations, based upon precisely positioned luminaires in a fixed relationship to each other and to the area under examination. In practice the values may vary due to tolerances on luminaires, luminaire positioning, reflection properties and electrical supply.

HRG Inc.

Building 9A, Bay 1 884 W 2nd

Street Ogden Utah

84404

USA

Telephone: 1-844-NANOLUX (626-6589)

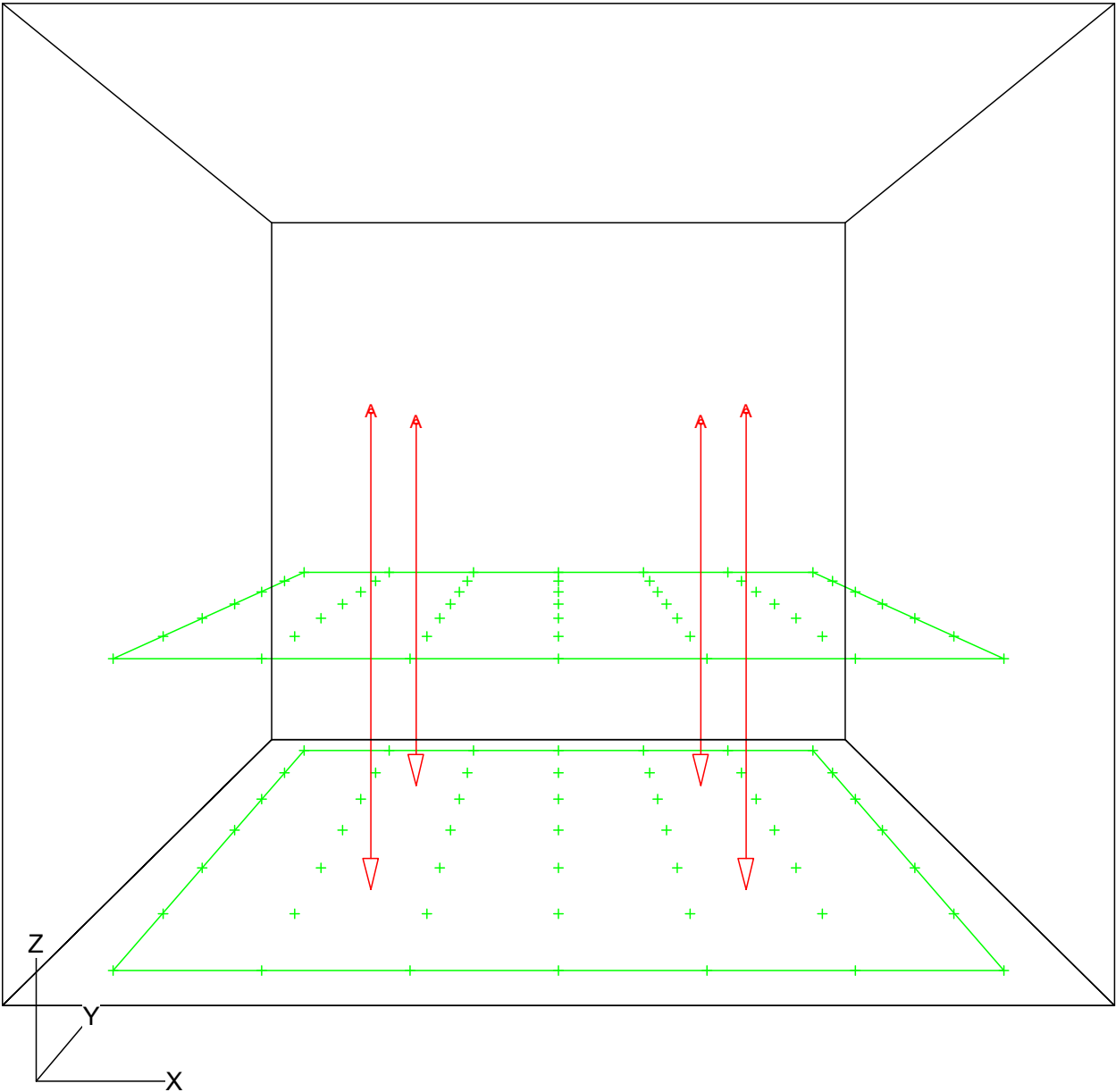
E-Mail: tech@nanoluxtech.com

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1. Project Description

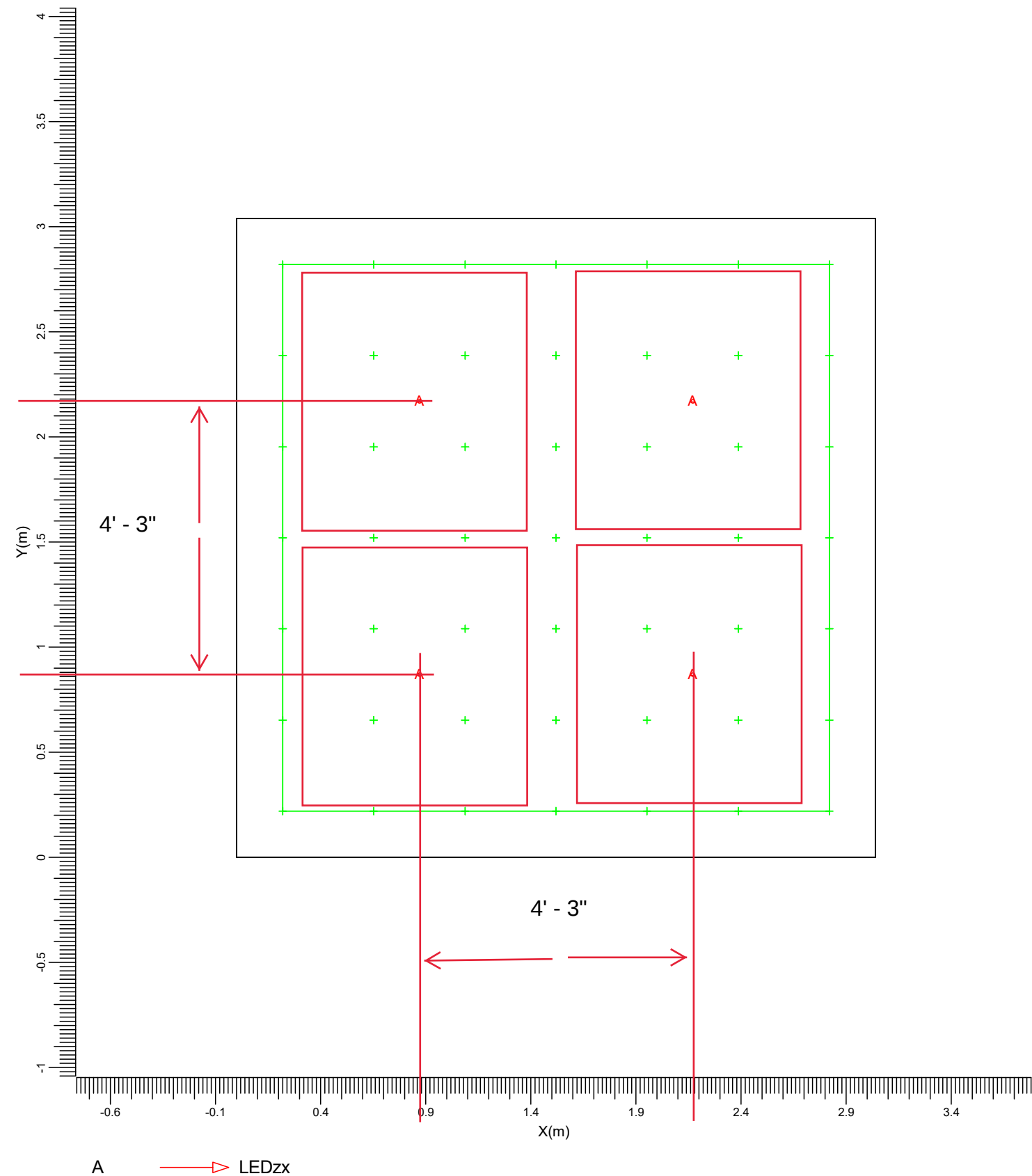
1.1 3-D Project Overview



A  LEDzx

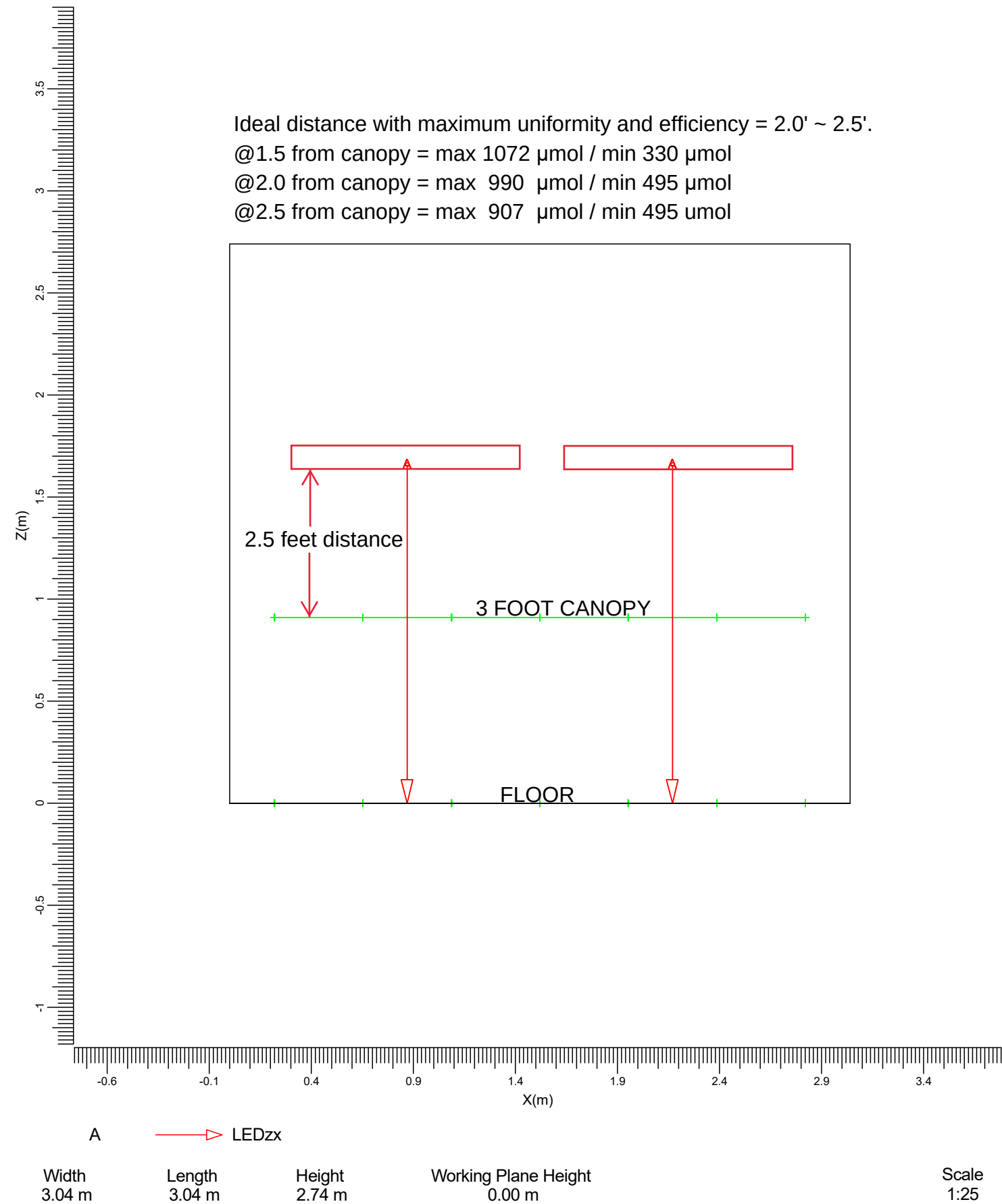
Width	Length	Height	Working Plane Height
3.04 m	3.04 m	2.74 m	0.00 m

1.2 Top Project Overview



Width 3.04 m	Length 3.04 m	Height 2.74 m	Working Plane Height 0.00 m	Scale 1:25
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1.3 Front Project Overview



2. Summary

2.1 Room Summary

Room Dimensions			Surface	Reflectance
Width	3.04	m	Ceiling	0.30
Length	3.04	m	Left Wall	0.65
Height	2.74	m	Right Wall	0.65
Working Plane Height	0.00	m	Front Wall	0.65
			Back Wall	0.65
			Floor	0.10

Unified Glare Rating (CIE): Undefined

The overall maintenance factor used for this project is 1.00.

2.2 Project Luminaires

Code	Qty	Luminaire Type	Lamp Type	Power (W)	PPF (μmol)
A	4	LEDzx	1 * LED	651.1	1 * 1650

The total installed power: 2.60 (kWatt)

Number of Luminaires Per Arrangement:

Arrangement	Luminaire Code	Power (kWatt)
	A	
Room Block	4	2.60

2.3 Calculation Results

(II)luminance Calculations:

Calculation	Type	Unit	Ave	Min	Max	Result
PPFD @0.91m - 3' CANOPY	PPFD	μmol	907	330	990	Total
PPFD@0.0m Floor	PPFD	μmol	515	370	536	Total

3. Calculation Results

3.1 PPFD @0.91m - 3' CANOPY: Filled Iso Contour

Grid

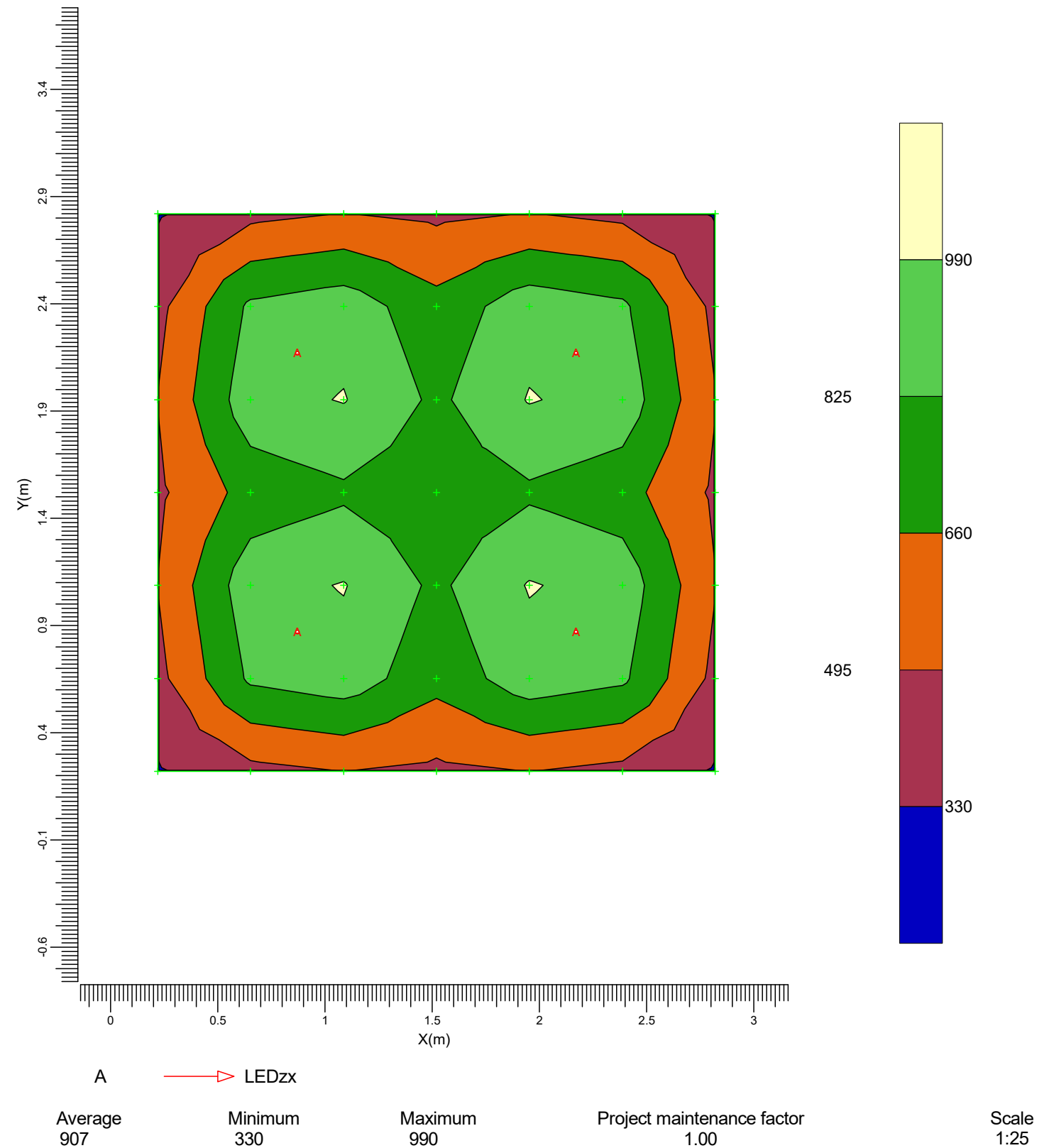
Calculation

Result Type

: PPFD @0.91m - 3' CANOPY at Z = 0.91 m

: PPFD (μmol)

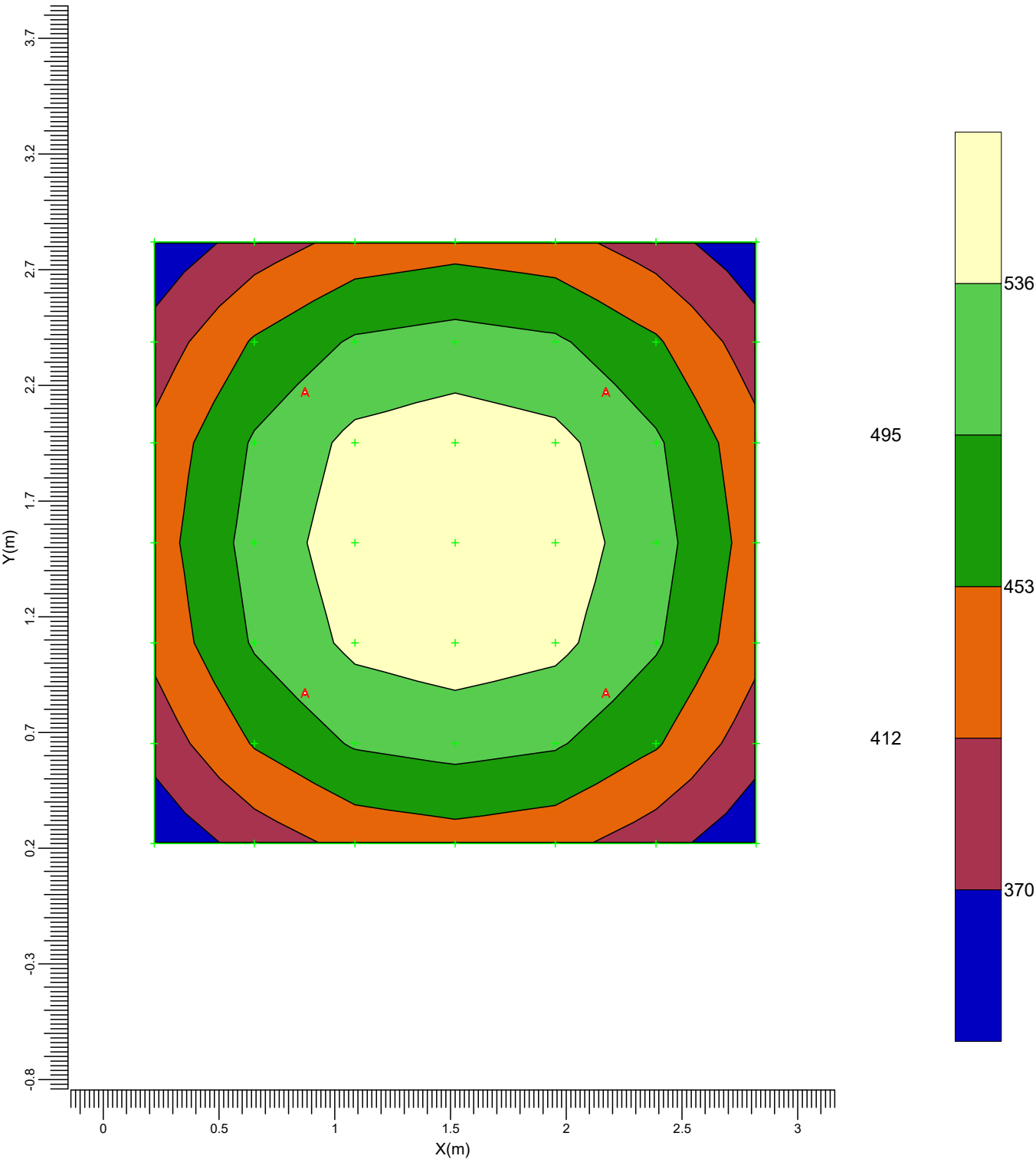
: Total



3.2 PPFD@0.0m Floor: Filled Iso Contour

Grid
Calculation
Result Type

: PPFD @0.0m Floor at Z = 0.00 m
: PPFD (μmol) **5-FOOT DISTANCE FROM FLOOR SURFACE**
: Total



A  LEDzx

Average 515	Minimum 370	Maximum 536	Project maintenance factor 1.00	Scale 1:25
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4. Luminaire Details

4.1 Project Luminaires

LEDzx 1xLED

Light output ratios	
DLOR	: 1.01
ULOR	: 0.00
TLOR	: 1.01
Ballast	: /
Lamp ppf	: 1650 μmol
Luminaire wattage	: 632 W
Measurement code	: /

Note: Luminaire data not from database.

