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Power Max module placement for MIT Grow Container

2017-02-15

Project Description

MIT shipping container inner section

- Size: x=96", z=96"
- Room reflectivity: **80%**
- Shelf size = 21" x 53"

Requirement:

Average 400 umol/s*m2 (25% Blue, 75% Red)

Light Panel:

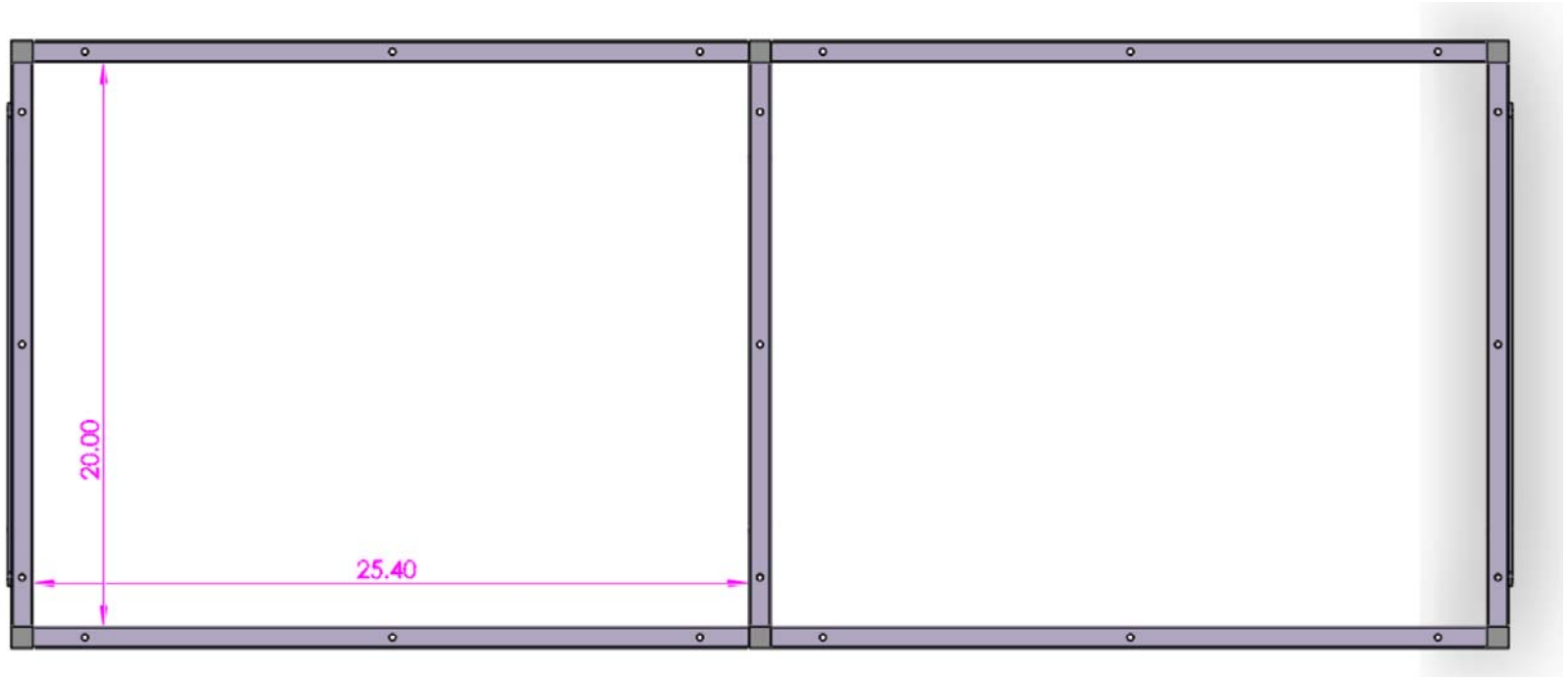
20" x 25.4"

Setup:

Same light panel for the 12 and the 24 inch distance. Use dimming to adjust the light density for each shelves.

Setup

Shelf size (to afford 2 light panel)



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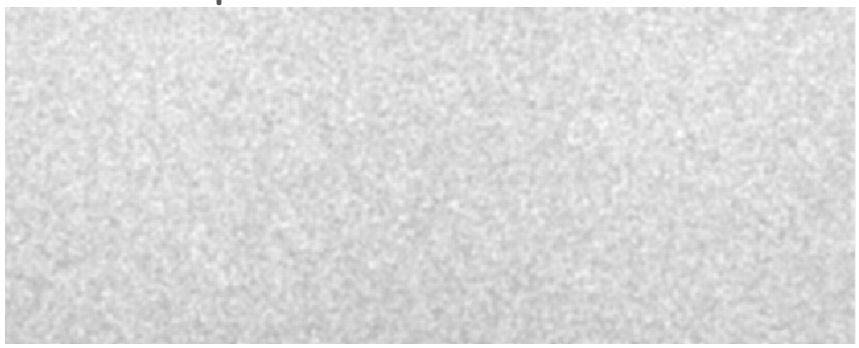
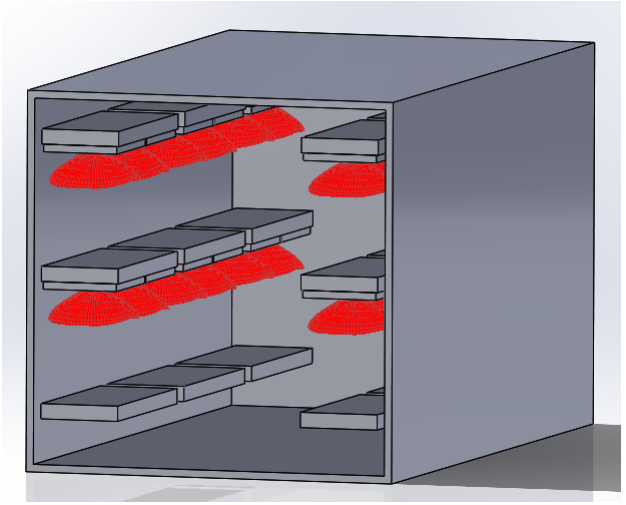
Configuration H

PPFD map



3D model
With 6 Rack



Need per 20 x 25.5 light panel :
56 Red Module
24 Blue Module
18 White Module
Total 96 Module = 5.2”Sqr per module (Positioning OK)

Maximum Power per Shelf (2 light panel): 296W
Total Quantity of driver per shelf (2 light panel): 6x GEPS12D-60U

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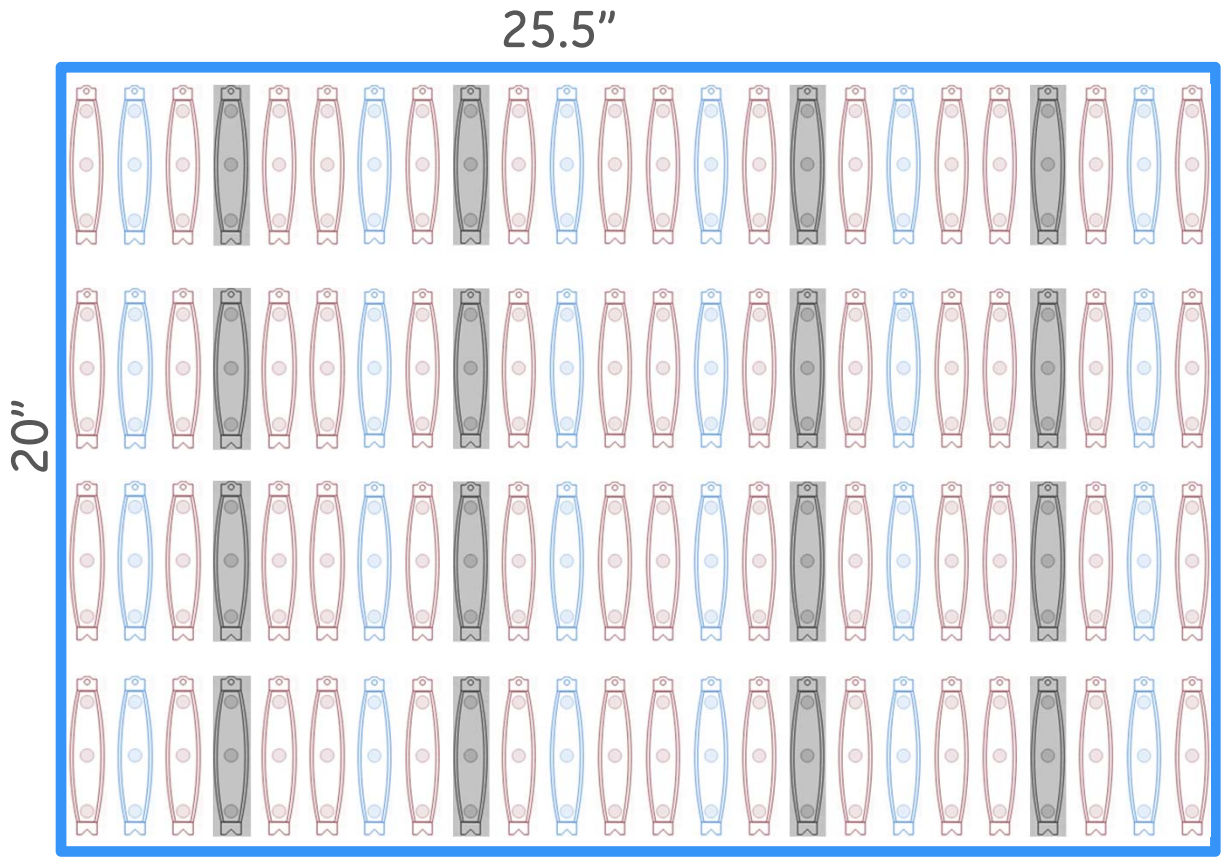
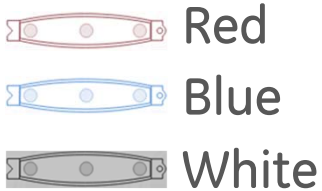
Propose Horti Max module placement
On light panel



Propose placement of
4*24 = 96 modules
56 Red
24 Blue
16 White



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Driver capability

Maximum quantity of module per driver (GEPS12D-60U)

- Red 660nm (GEHM2415H12-1) = 38 modules
- Blue 450nm (GEHM0818D12-1) = 32 modules
- White (GEHM1013W12-1) = 42 modules

Assumption and consideration

- The light level (PPFD) vary depending on the environment.
- It all depend on the contribution of all shelves surrounding in the container.
- If only one shelf is on then the light level is very low.
- Please consider placing all the high light level close together to increase contribution and be more efficient.


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