



THE GROVE

CLIENT CASE STUDY

Fohse A3i v. HPS



FÖHSE™

FUTURE OF HORTICULTURAL
SCIENCE + ENGINEERING



TEST PARAMETERS



TEST LOCATION

The Grove
Las Vegas, NV



LEAD RESEARCHER

Mike Howard,
Head of Cultivation,
The Grove



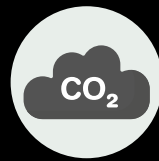
GROW STYLE

Single Level
Coco-pots



PLANT COUNT

520



CO₂ CONCENTRATION

1200ppm - 1500ppm



STRAINS

Candyland Diamond Master Cookies
Velvet Elvis Strawberry Cheesecake



FLOWER TEST DURATION

70 days



LIGHTING SCHEDULE

12 hours on,
12 hours off



ROOM TEMP.

82°F-83°F

HUMIDITY, EARLY FLOWER



A3i

68%



HPS

45%

HUMIDITY, MID FLOWER



A3i

50%



HPS

45%

HUMIDITY, LATE FLOWER



A3i

40%



HPS

40%



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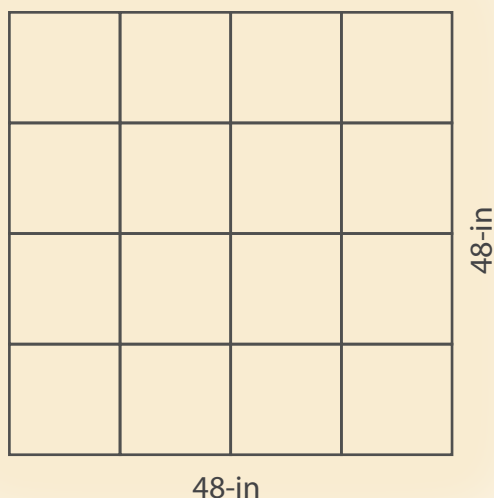
FIXTURE ANALYSIS & SET-UP

FIXTURE MODEL

A3i 1500W by Fohse



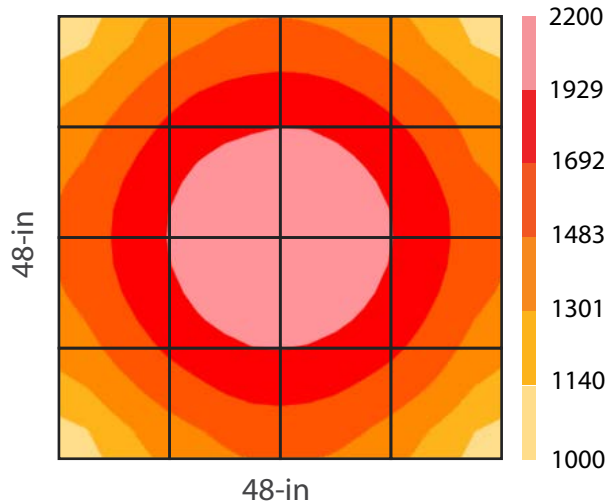
FIXTURE COVERAGE



The optics of the A3i 1500 are optimized for uniformity in a 5.5-ft x 5.5-ft space with marginal deviation when the footprints are properly overlapped.

LIGHT UNIFORMITY & INTENSITY

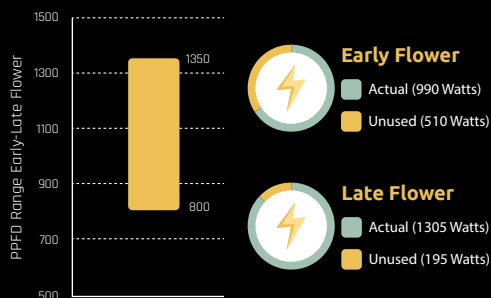
36-inches from canopy



The A3i 1500 was designed to remain stationary throughout the flowering process, which allowed the plants to mature into the greater light intensities that the A3i is renowned for.

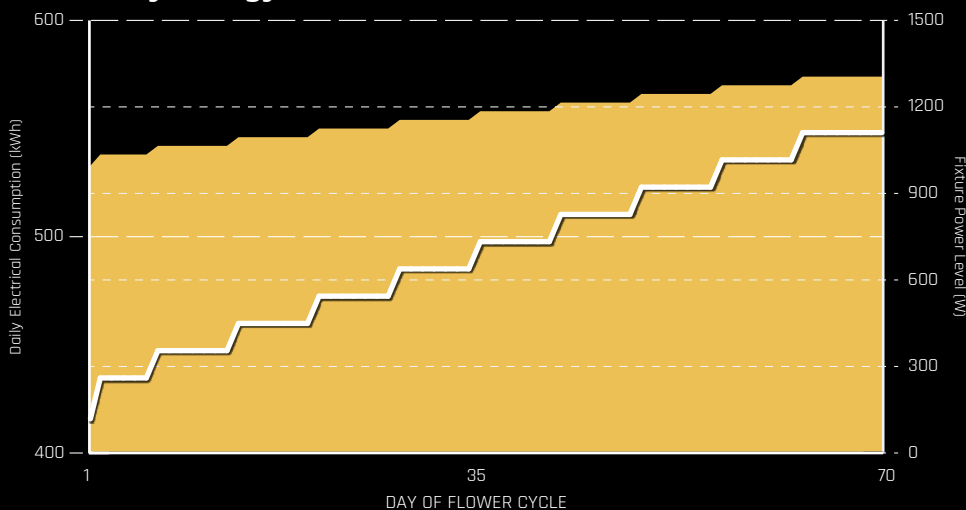
FIXTURE WATTAGE

The A3i is a workhorse capable of achieving PPFD levels akin to the best day for natural light levels - the Summer Solstice. Whether or not the full potential of the A3i can be utilized depends on environmental control systems as well as the capabilities of the cultivars grown.



Daily Energy Use

Fixture Power Level

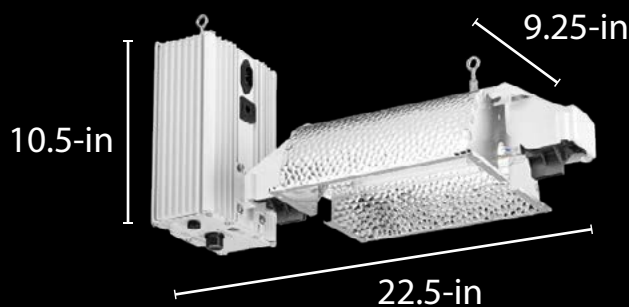


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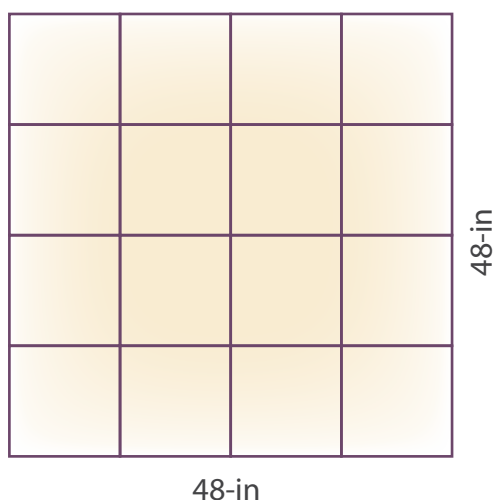
FIXTURE ANALYSIS & SET-UP

FIXTURE MODEL

1000W DE HPS by Gavita



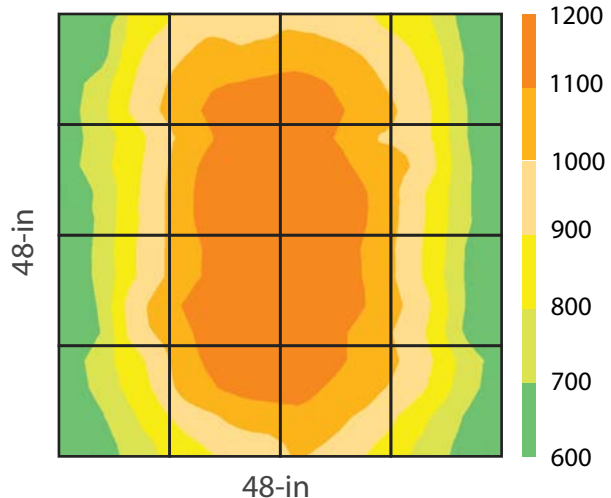
FIXTURE COVERAGE



HPS uniformity drops significantly outside a 4-ft x 4-ft area. To compensate for this, 29 additional lamps were needed to maintain adequate light levels throughout the grow room.

LIGHT UNIFORMITY & INTENSITY

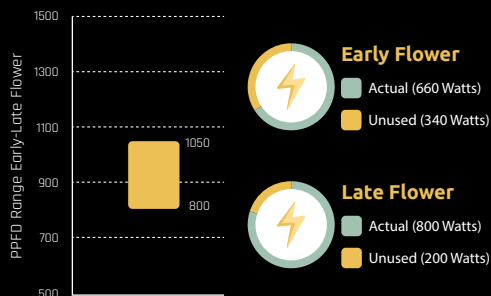
36-inches from canopy



The light intensity of an HPS grid will top out right around 1,000. Higher levels are achievable, but at the expense of over-taxing temperature and humidity control.

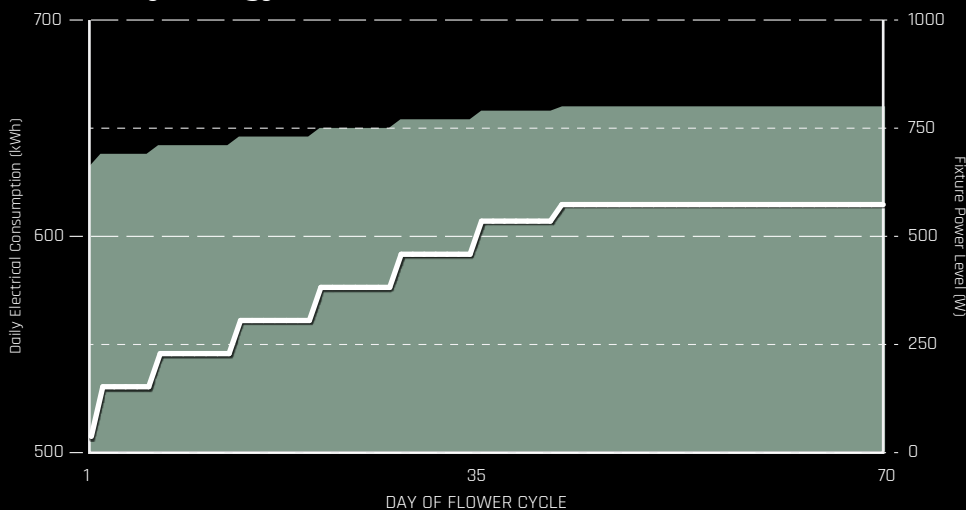
FIXTURE WATTAGE

1000W DE HPS has been the traditional standard for flowering. The issue at The Grove is that they were never able to juice their HPS system beyond 80% of its total output. Doing so would heat up and dry out the room beyond what HVAC and humidification systems could sensibly keep up with.



Daily Energy Use

Fixture Power Level



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TEST RESULTS

FIXTURE MODEL
A3i 1500 by Fohse



FIXTURE MODEL
100W DE HPS by Gavita



101.3 kg **TOTAL YIELD*** **61.2 kg**

AVERAGE YIELD / FT²

96 g

AVERAGE YIELD / FIXTURE

2.98 kg

AVERAGE YIELD / LABEL WATT

1.93 g

AVERAGE THCa CONTENT

27.54%

AVERAGE TERPENE CONTENT

26.58 mg/g



AVERAGE YIELD / FT²

58 g

AVERAGE YIELD / FIXTURE

0.96 kg

AVERAGE YIELD / LABEL WATT

0.96 g

AVERAGE THCa CONTENT

24.13%

AVERAGE TERPENE CONTENT

14.28 mg/g

*Dry, usable weight. The A3i room grossed 631.4 kg in 'wet weight' yield, while the HPS room grossed 324.8 kg.

TOTAL
ELECTRICITY COST
\$3,976.56



TOTAL
ELECTRICITY COST
\$4,756.22

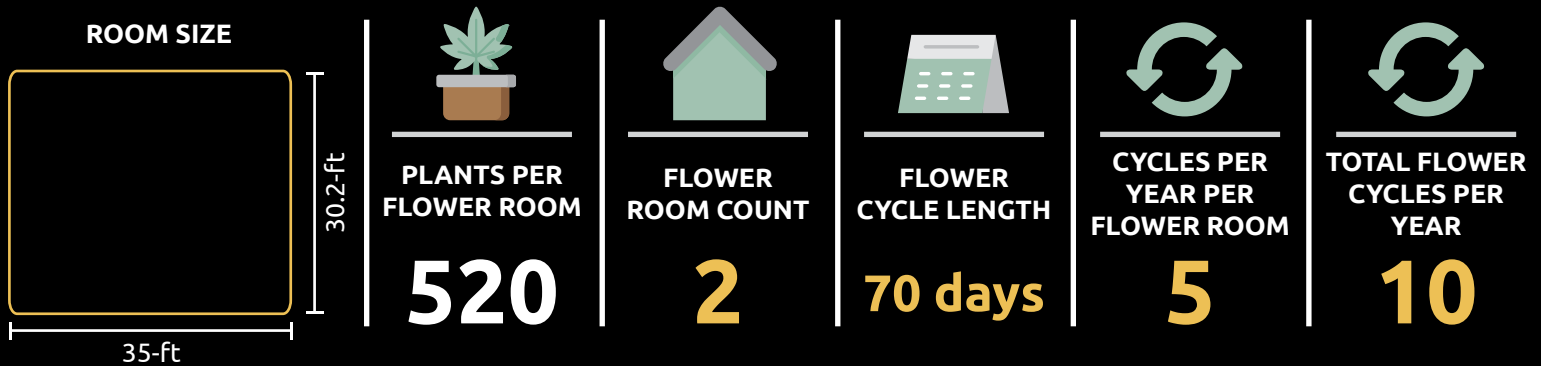
*Total electricity costs to power the fixtures was calculated by tallying up the rising daily fixture output.
Cost per kWh is 10¢.



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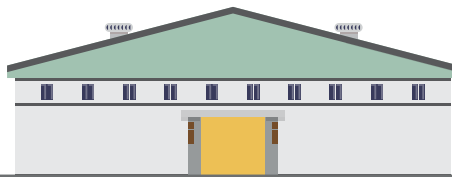
ANNUALIZED RESULTS



FIXTURE MODEL
A3i 1500 by Fohse

FIXTURE MODEL
1000W DE HPS by Gavita

FACILITY
FIXTURE COUNT
70



FACILITY
FIXTURE COUNT
128

YIELD PER
ROOM CYCLE
101.3 kg



YIELD PER
ROOM CYCLE
61.2 kg

ELECTRICITY COST
PER ROOM CYCLE
\$3,977



ELECTRICITY COST
PER ROOM CYCLE
\$4,756

NET REVENUE*
PER ROOM CYCLE
\$557,150

NET REVENUE*
PER ROOM CYCLE
\$336,600

ANNUAL NET
REVENUE
**\$5.57
MILLION**



ANNUAL NET
REVENUE
**\$3.36
MILLION**

*Assuming a wholesale price of \$5,500/kg.



THE GROVE™

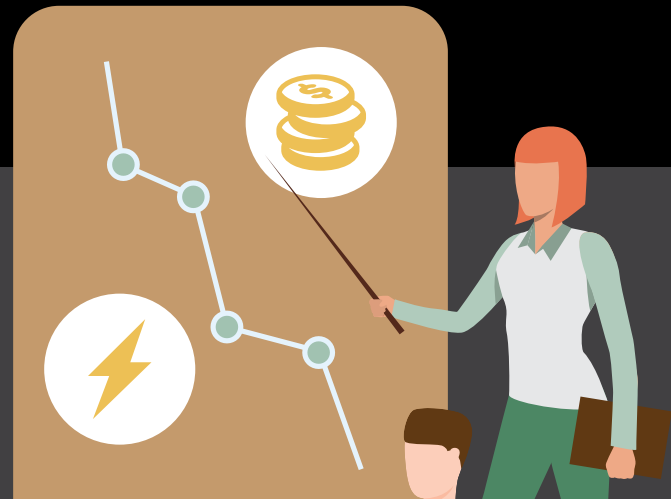


CONCLUSIONS

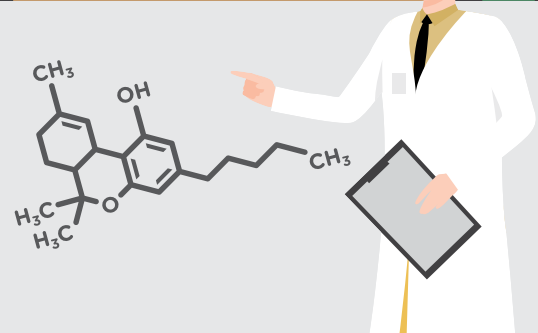


The **A3i 1500W** by **Fohse** is a more powerful and efficient fixture with exceptionally better canopy coverage than the Gavita 1000W DE HPS grow lamp.

These performance features generated **65% more** flower with **17% less** electricity and **46% fewer** fixtures than the incumbent HPS models.



Together with FOHSE's SOP recommendations, the A3i-grown crop generated an average of **14% more** THCa and a **86% more potent** terpene profile.



Scaling these results across the entire facility projects a potential revenue increase of **\$2.2 million** annually, including approximate electrical savings of **\$7,790!!**

