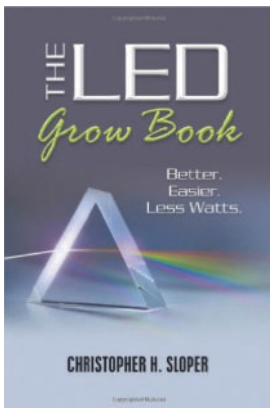


Individual Fixture Home Grow Test

BIOS *Icarus*[™]

Grower: Christopher H. Sloper, author of *The LED Grow Book*



Christopher Sloper has been growing cannabis under a variety of electrical light sources for well over a decade. He has become an industry expert on all aspects of the subject of indoor cultivation and is a huge advocate of technologies that save energy and improve plant yield and quality. This led Christopher to begin using LED technology for cannabis production, and he has developed expertise about integrating LEDs and plant production. This experience is so unique that he wrote and published a book on the subject (*The LED Grow Book*, 2013, ISBN-10:1482697327). When Christopher learned of the new BIOS Icarus[™] LED fixture, he had to try it out in his personal grow operation, a 12 ft² growth chamber with six seed-grown “LSD” strain plants.

“I am always skeptical when it comes to LED manufacturer’s claims of performance or HID equivalency”, says Christopher. “The team at BIOS created a LED fixture with total PAR light output and photon efficacy higher than any others on the market. Their expertise in LED technology development and horticultural integration was exceptional. The results in my first flowering cycle with the Icarus[™] fixture speak for themselves - impressive.”

Testing Parameters

Strain Data: Barney Farm’s “LSD” grown from seed. Six plants were grown. Plants were harvested between 60 and 67 days (April 17th – June 24th). A flowering cycle of 63.5 days was used in the kWh calculations.

Energy Consumption (lighting system): 63.5 days x 12 hr/day x 660 watts = 502.9 kWh

Plant Containers: The plants were grown in 3 gallon AutoPots. AutoPots are self-feeding, gravity fed, wicking grow systems. They were filled with 50% Promix, 10% Vermicrop VermiBlend, and 40% perlite.

Grow Space: 12 square feet (3’ x 4’)

Environment: Day: 76-85 degrees F, 45-50% humidity. Night: 67-69 degrees F, 50-55% humidity, ambient CO2.

Nutrition: Hydroponic Research Veg+Bloom (8-5-13) and Kimitec Bombardier Sugar (4-0-0).



Initiation of the flowering phase

Results

Table 1: Dry flower weight of six plants of strain “LSD” harvested on average at 63.5 days with a flowering photoperiod of 12 hr light/12 hr dark.

Plant Number	Total Dry Flower Weight (g)	Total Dry Flower Weight (oz)
1	73	2.61
2	116	4.14
3	75	2.68
4	76	2.71
5	142	5.07
6	146	5.21
Total	628	22.43



“LSD” strain flowers at time of harvest. Note the excellent flower and trichome development.

Table 2: Yield analysis of “LSD” at the tested 12 ft² (3' x 4') canopy area with 6 plants.

Total Dry Flower Weight (g)	Electrical Consumption (kWh)	Yield (g/kWh)	Yield (g/ft ²)	Electrical Cost (\$)*	Yield Value (\$) **
628	502.9	1.25	52.3	\$67.39	\$6,280

*Electricity rate of \$0.134/kWh used in this calculation.

**Retail value of \$10/g used in this calculation.

Table 3: Yield analysis of “LSD” extrapolated (calculated) for a 16 ft² (4' x 4') canopy area with 9 plants.

Total Dry Flower Weight (g)	Electrical Consumption (kWh)	Yield (g/kWh)	Yield (g/ft ²)	Electrical Cost (\$)*	Yield Value (\$) **
837	502.9	1.66	52.3	\$67.39	\$8,370

*Electricity rate of \$0.134/kWh used in this calculation.

**Retail value of \$10/g used in this calculation.

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