

# Research Topics

Date: September 2023

## Overview

Spec sheets and rough price of a) whatever Fluence's latest toplight-style LED is and b) latest Gavita double-ended 1000W HPS, both the luminaire itself (ballast + reflector) and replacement lamp (the "bulb")

## Gavita 1000 W HPS

### Lighting Fixtures

Gavita GAN Electronic 1000 W HPS Lamp ([Gavita](#))

Gavita Pro 1000 W E-Series Slim Line SL2 DE Grow Light Fixture

Price: \$237.17 - 380.37 ([HydroBuilder](#), out-of-stock)

Lamp Base: K12 x 30 S

### Lamps

Gavita Pro 1000W EL DE HPS K12x 30s

- \$126.20 ([HydroBuilder](#), *no longer available*)
- \$134.95 ([EcoGardenSupply](#), in-stock, 1000 items available)
- \$223.03 ([YourGrowDepot](#), in-stock)
- \$131.59 ([GrowersHouse](#), out-of-stock, unknown availability)

# Fluence Lighting Options

[Fluence](#) offers a few different grow light options:

- RAY Series (*Indoor + Vertical*)
- RAZR Series (*Indoor + Vertical*)
- SPYDER Series (*Indoor + Vertical*)
- RAPTR Series (*Indoor + Greenhouse*)
- VYNE Series (*Intercanopy*)

Fluence RAZRm Modular Array LED Grow Light Kit

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- (3 Tier / 4 Bar Kit) - (x12) 48" LED Light Bars
- (4 Tier / 3 Bar Kit)
- *No docs on HB*

## RAY Series

(*Indoor + Vertical*)

*Note: The RAY series has (6) different spectral options (see Table 1)*

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Fixture Type	Single Bar
Dimmable	True
PAR Efficiency	(Varies by Spectrum)
Total PPF Output	(Varies by Spectrum)
Price	\$196.95 ( <a href="#">HydroBuilder</a> ) \$190.00 ( <a href="#">Better Grow Hydro</a> )

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Fixture Type	Single Bar
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Dimmable	True
PAR Efficiency	(Varies by Spectrum)
Total PPF Output	(Varies by Spectrum)
Price	\$260.00 ( <a href="#">Better Grow Hydro</a> )

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Fixture Type	Single Bar
Dimmable	True
PAR Efficiency	(Varies by Spectrum)
Total PPF Output	(Varies by Spectrum)
Price	\$335.00 ( <a href="#">Better Grow Hydro</a> )

## SPYDR Series

*(Indoor + Vertical)*

### 2h

Fixture Type	Multi-Bar
Dimmable	True
PAR Efficiency	2.75 umol/J
Total PPF Output	2180 umol/s
Price	\$1299.00 ( <a href="#">HydroBuilder</a> )

### 2i

Fixture Type	Single Bar
Dimmable	True
PAR Efficiency	(varies by configuration)
Total PPF Output	(varies by configuration)
Price	\$1099.95 ( <a href="#">HydroBuilder</a> )
	\$1240.00 ( <a href="#">Greenhouse MegaStore</a> )

### 2p

Fixture Type	Multi-Bar
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Dimmable	True
PAR Efficiency	2.46 umol/J
Total PPF Output	1550 umol/s
Price	\$1051.95 ( <a href="#">HydroBuilder</a> )

## **2x**

Fixture Type	Single Bar
Dimmable	True
PAR Efficiency	(varies by configuration)
Total PPF Output	(varies by configuration)
Price	\$812.95 ( <a href="#">HydroBuilder</a> )

## **Fang 630 W**

Fixture Type	Multi-Bar
Dimmable	True
PAR Efficiency	2.6 umol/J
Total PPF Output	1600 umol/s
Price	\$525.00 ( <a href="#">HydroBuilder</a> )
	\$549.00 ( <a href="#">Greenhouse MegaStore</a> )

## **RAZR Series**

*(Indoor + Vertical)*

### **RAZR<sub>x</sub>**

Fixture Type	Multi-Bar
Dimmable	True
PAR Efficiency	2.3 umol/J
Total PPF Output	210 umol/s
Price	\$383.95 ( <a href="#">HydroBuilder</a> )

### **RAZR<sub>m</sub>**

Fixture Type	Multi-Bar
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Dimmable	True
PAR Efficiency	2.6 umol/J
Total PPF Output	270 umol/s (fixture), 810 umol/s (per array)
Price	\$1203.95 ( <a href="#">HydroBuilder</a> )

## VYPR Series

(Greenhouse)

### VYPR 3p

Fixture Type	Single Bar
Dimmable	True
PAR Efficiency	2.7 umol/J
Total PPF Output	1663 umol/s
Price	\$1143.95 ( <a href="#">HydroBuilder</a> )

### VYPR 3x

Fixture Type	Single Bar
Dimmable	True
PAR Efficiency	2.6 umol/J
Total PPF Output	876 umol/s
Price	\$766.95 ( <a href="#">HydroBuilder</a> )

## Additional Information

### SPYDR 2x LED Series

SPYDR 2x is an early-development stage top-lighting solution for commercial horticulture cultivation, or a full-cycle top-lighting solution for home hobbyists cultivating without CO2 supplementation at ambient conditions around 400 ppm. SPYDR 2x is comparable to the previous generation's SPYDRx and delivers an average of 550  $\mu\text{mol}/\text{m}^2/\text{s}$  of highly-uniform light over a 4'x4' area at only 6"–12" above canopy. The

series has an average PPFD up to 1,060  $\mu\text{mol}/\text{m}^2/\text{s}$  over a 4'x4' (122x122 cm) canopy. The two PPF output levels and built-in dimmability enable the exact and dynamic PPFD control over each of the plant growing stages.

More Power:

- 2i
- 2p

### SPYDR 2i LED Series

The SPYDR 2i is a high-performance, full-cycle top-lighting solution for commercial horticulture cultivation, with the power to scale from vegetative growth to higher light intensities in bloom. It was designed for commercial growers to push the envelope with high-PPFD cultivation practices along with sophisticated CO<sub>2</sub> supplementation.

### SPYDR 2p LED Series

SPYDR 2p is a full-cycle top-lighting solution for commercial cultivation. For optimal results, we recommend SPYDR 2p deployed in environments with CO<sub>2</sub> supplementation between 800-1400 ppm in the reproductive growth stage due to high PPFD levels

**Table 1. RAY Series Additional Specs by Spectrum.**

Spectrum	Model	Total PPF Output ( $\mu\text{mol}/\text{s}$ )	PAR Efficiency ( $\mu\text{mol}/\text{J}$ )
Indoor	22	93	2.33
	44	185	2.34
	66	278	2.42
Greenhouse	22	93	2.33
	44	185	2.34

	66	278	2.42
Antho	22	79	1.84
	44	158	1.82
	66	237	1.88
Pfr	22	81	2.53
	44	162	2.49
	66	243	2.59
Pr	22	91	2.46
	44	182	2.46
	66	273	2.53
UV	22	33	0.85
	44	66	0.85
	66	99	0.87

\*(360-780 nm)

**Table 2. SPYDR Series**

Model	Fixture Size	Photon Flux ( $\mu\text{mol/s}$ )	Efficacy* ( $\mu\text{mol/J}$ )	AC Power* (W)	Distribution
<b>x</b>	47"	860	2.51	342	
	40"	852	2.49	342	
	33"	705	2.40	294	
<b>i</b>	47"	1700	2.70	631	120 deg.
	40"	1600	2.54	631	120 deg.
	33"	1250	2.48	505	120 deg.
<b>p**</b>	47"	1550	2.46	631	120 deg.
<b>h</b>	47" x 43"	2180	2.75 @ 277 V	790 @ 277 V	120 deg.

\*Input Voltage: 277 V

\*\*2p is only available in 47" model