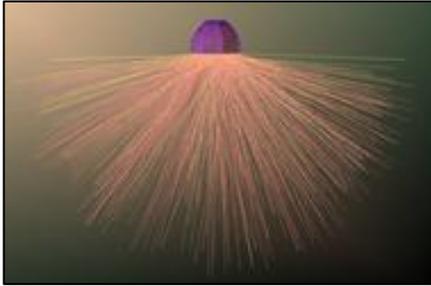
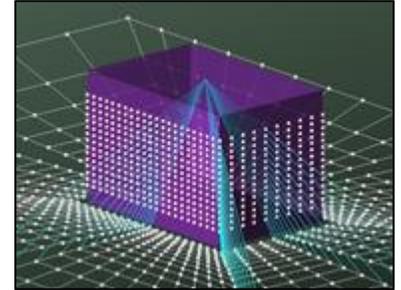


**Cycloptics Mission is to maximize the average yield per kWh for indoor plant production.**

Greenbeams accomplishes this by delivering **Wall to Wall Uniformity** over the full plant canopy. This outcome produces zero hot spots without risk of leaf tip burn; improving the average yield per plant per kWh.

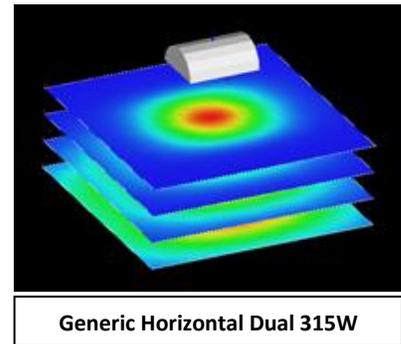
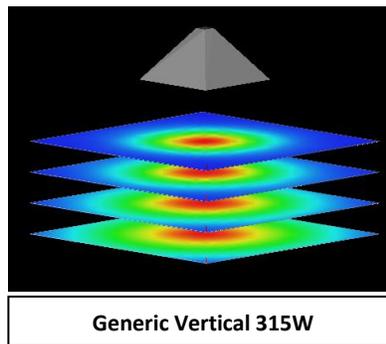
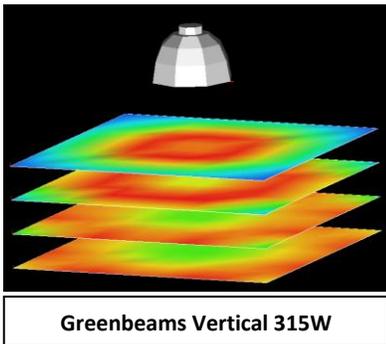


**Greenbeams reflector controls 100% of the beam.** It uniformly disperses the light exiting its vertical 315W CMH lamp in a radial 360-degree pattern that is reflected off the grow room walls to uniformly land over the plant canopy. This lighting method eliminates hot spots and the risk of leaf tip burn which increases the average yield per plant per kWh.



### Greenbeams Uniformity Comparisons

Uniform lighting across a full canopy is dependent on the light distribution of the reflector. Below are images of the beam patterns of a single 315W CMH vertical lamp Greenbeams reflector and that of a generic vertical lamp 315W and dual horizontal 315W CMH lamp reflectors. The images for each reflector was generated by ItiOptics using the IES file for each product.



The data below compares Greenbeams uniformity to the other types of 315W CMH reflectors. The data was calculated by ItiOptics using the IES file for each product over a 4ft x 4ft irradiance plane without any walls to interact with the beam patterns.

ItiOptics Uniformity Data	Greenbeams Vertical 315W	Generic Vertical 315W	Generic Dual Horizontal 315W
Max/Min Uniformity @ 12" Below	6.9	45.5	1826
Max/Min Uniformity @ 24" Below	1.7	10.3	21.9
Max/Min Uniformity @ 36" Below	1.7	5.8	7.2

A key measure in the uniformity of the PPF light intensity over a plant canopy can be measured by the Max/Min ratio. This is the ratio of the individual highest PPF reading divided by the lowest measured every 6"; in these tests over a 4ft x 4ft irradiance plane.