The basic concept of multilayer plant production is to produce a very high amount of plants in a small area. Plants per area is typically multiplied by number of shelves stacked vertically on top of each other.

As each layer shadows the next one, each layer also needs an own set of artificial lights.

The high amount of artificial light also creates a substantial amount of heat. This needs to be removed, cooled and controlled, so the less heat is generated from light, the lower the cooling and environmental control costs are.

Artificial lights are a pre-requisite for plant production in no-natural light environments. In the absence of sunlight the quality of the light (spectrum) is accentuated to the highest degree.

As artificial light is the sole source of light, higher light intensities are also required, than in many supplemental light situations. Producing higher light intensity also leads to a higher thermal load to be cooled in these environments.

The triple benefit of Valoya lights stem from superior light spectrum allowing: 1) higher crop yields, 2) lower light intensity required 3) less energy used for illumination and cooling.
Benefits From Valoya’s Products

**Light**

Optimal light spectrum provides increased yields as well as energy savings. Valoya’s spectra enable superior growth at lower light intensities compared with traditional light or un-optimized generic LEDs.

Light output should be optimized to avoid wasting light past the shelves. Uniform light distribution ensures even growth in general and prevents stretching towards light (phototropism), that is a risk when using lights relying on optics.

Valoya’s L-series and C-series products are ideal for multilayer environments, owing to their modularity in light delivery. Low wattage per meter ensures an optimal light canopy.

**Heat**

Artificial light, even high efficiency LEDs, still generate heat that needs to be cooled to keep the overall temperature of the multilayer plant growing room right. Valoya light fixtures use passive cooling producing minimal heat radiation towards the plants. The optimized passive cooling ensures durability and noise free usage. Due to usage of full spectrum LEDs rather than monochromatic red/blue LEDs, light uniformity is excellent and allows installation close to plants.

**Total cost of ownership**

Valoya’s products are designed to have a long working life, typically rated at more than 90% of initial output remaining at 35,000 hours, which in most cases leads to a productive life of 7 - 8 years and beyond. The long time is the result of excellent thermal properties of the LED fixture, high quality of the LEDs and the high quality power units used by Valoya.
L Series (T8 Tubes)

- Lengths (mm): 1200 and 1500
- Lengths (inches): 47.2 and 59
- Retrofit for fluorescent tube fixtures
- Comes with either clear or diffused cover
- Up to 2.1 µmol/W
- Up to IP67 (dust and humidity resistant)

C Series

- Lengths (mm): 1175, 1475 and 1756
- Lengths (inches): 46.3, 58 and 69.9
- Slim and lightweight with high light intensity
- Dimmable
- Up to 1.8 µmol/W
- IP66 (dust and humidity resistant)