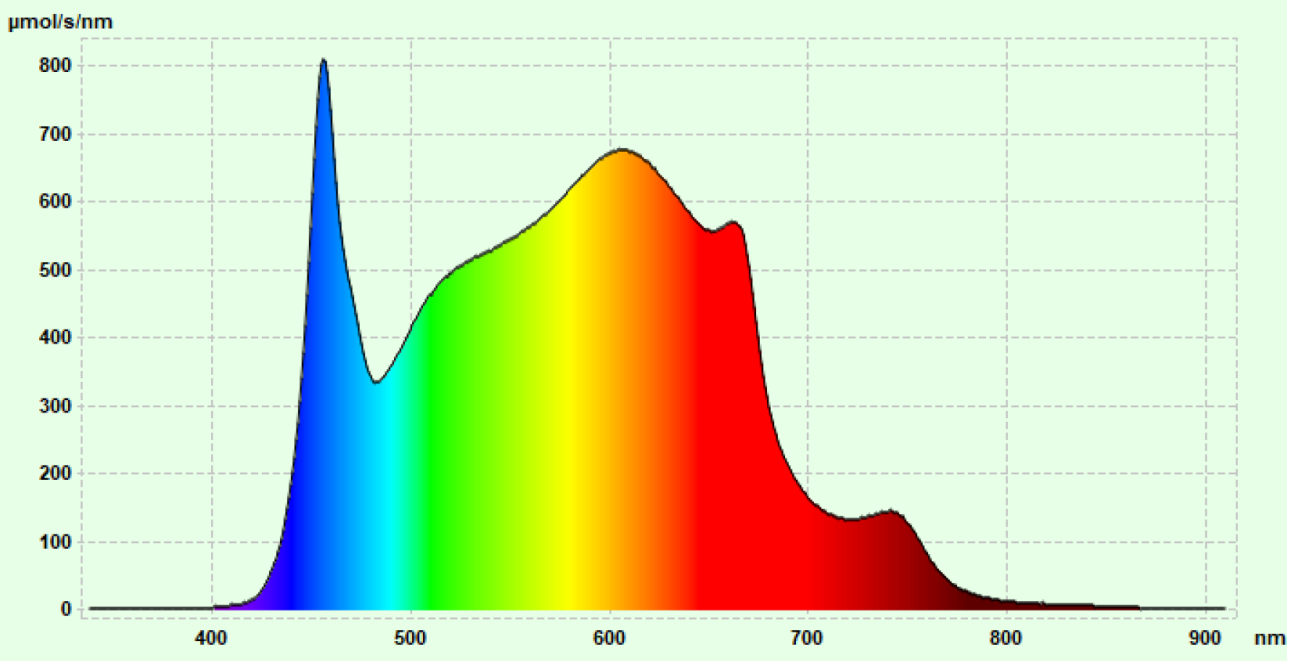
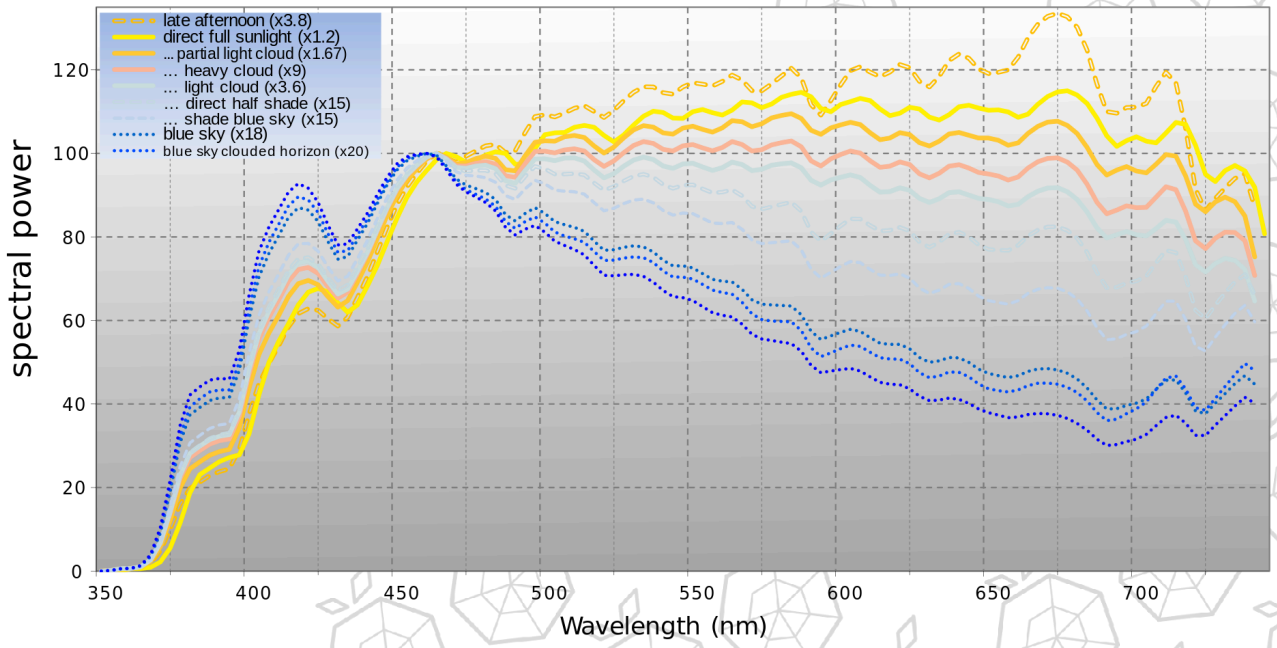
BILBERRY

The Bilberry LED universal grow spectrum



The Bilberry LED spectra of GROW.CN3 fixtures for vegetation, flowering and UVA pre-harvest treatment

In order to better imitate the variability of the sunlight spectrum, we have created a lighting fixture that emits three different light spectra. Below, different variants of the sun spectrum with different proportions of colors depending on the time of the day, time of the year, weather conditions or air pollution are shown.



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The Bilberry system allows using 3 different light spectra at different times of the day with varying intensity. By "mixing" spectra doses of individual colors emitted during a day or at a particular stage of cultivation can be adjusted.

GROW

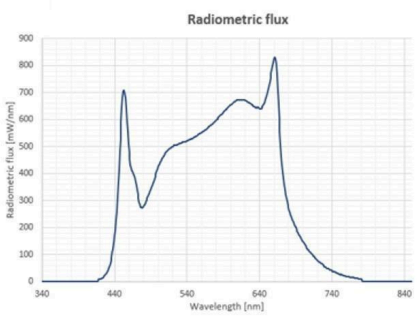

Figure 1. Spectrum designed for vegetative phase

BLOOM

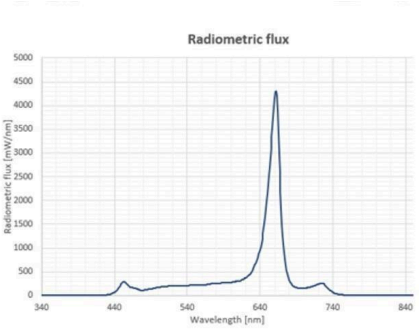

Figure 2. Spectrum designed for generative phase

HARVEST

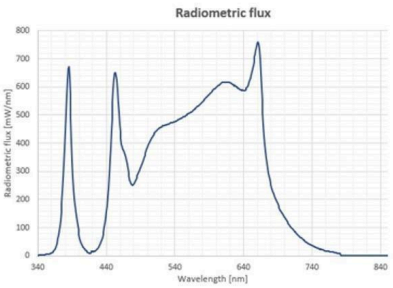

Figure 3. Spectrum designed for pre-harvest phase

The GROW spectrum is the most universal and versatile. It contains similar proportions of each light color and is best suitable for vegetative growth. The BLOOM spectrum is intended to induce and support flowering. It is a warm color temperature light spectrum. The red color (660 nm), which dominates in this spectrum, is supplemented with far-red (730 nm), green and blue light. The spectrum mimics the sunrise and sunset spectrum and is recommended to be used at the beginning and end of the cultivation day or at cultivation phases that should mimic late summer light spectrum.
The HARVEST spectrum, a low color temperature light spectrum (cool light) is dominated by blue (450 nm) and UVA (390 nm) light. This spectrum mimics the sunlight spectrum of a sunny summer midday. This type of spectrum is most stimulating for plants, which leads to induction of secondary metabolite production such as fragrant substances, for ex. terpenes or pigments, and other substances that contribute to the quality of harvested plant material.

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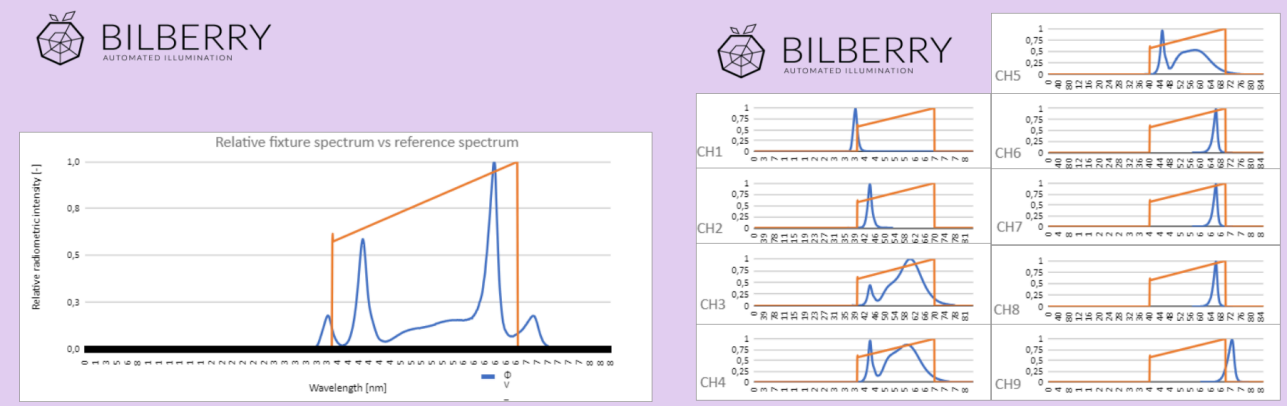
The Bilberry 9 channel LED lamp

Channel	Name	Value	Unit	Color	Intensity (0-100%)	Multiplier	Radiometric radiant flux [mW]	Photometric flux
CH1	395 nm (A)	395	nm	UV	100	2	3171	13
CH2	Royal blue	445		Royal blue	100	2	8495	36
CH3	3000 K CRI80 (A)	3000	K	3000K	100	2	7322	31
CH4	4000 K CRI80 (A)	4000	K	4000K	100	2	7623	32
CH5	5000 K CRI80 (A)	5000	K	5000K	100	2	7876	33
CH6	Crimson 3	660		Crimson	100	2	6086	26
CH7	Crimson 3	660		Crimson	100	2	6086	26
CH8	Crimson 3	660		Crimson	100	2	6086	26
CH9	IR	730		IR	100	2	4939	21
					Total		57683 mW	243 umol/s
Select photometric unit		Photosynthetic photon flux density PPFD						



Monochromatic diodes:

1) UVA (390 nm)
2) Blue (445 nm)
3) Red (660 nm)
4) Red (660 nm)
5) Red (660 nm)
6) Far-red (730 nm)

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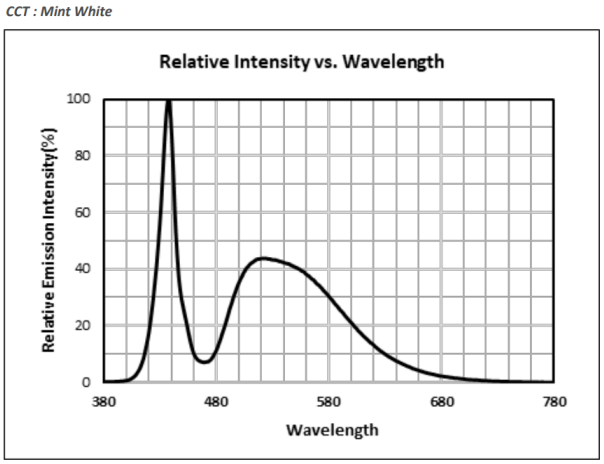
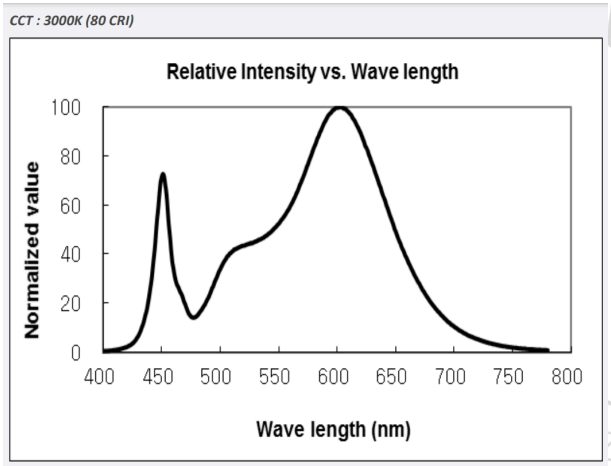
Full spectrum white diodes:

7) LM301H EVO Mint White



8) LM301H 3000K CRI80 White



9) LM301H 4000K CRI80 White