

Royal Exclusiv

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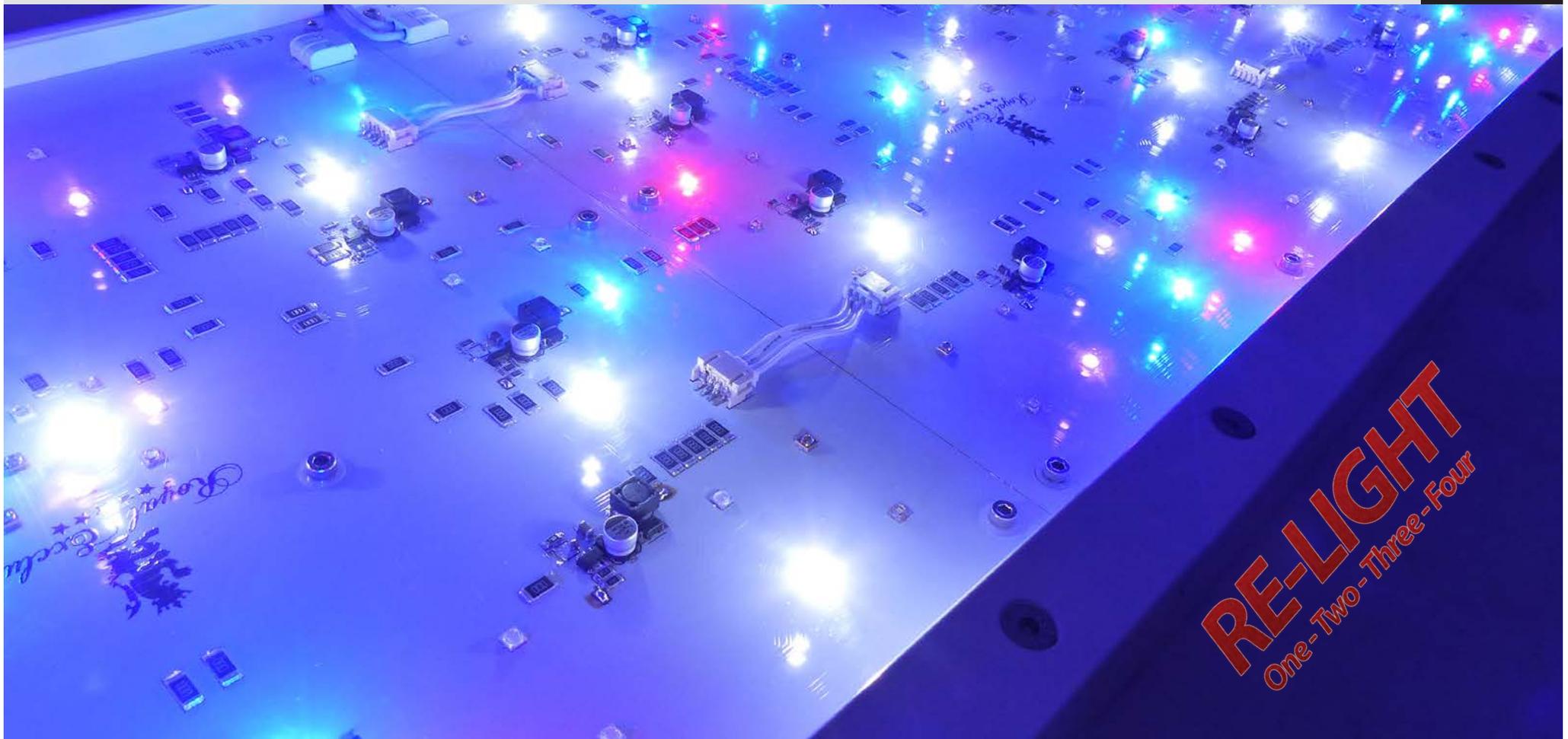
Since 1986



Data sheet Royal Exclusiv® LED Lamp - RE-LIGHT -
LED-Panel luminaire especially for seawater aquariums - modular -

v1.0

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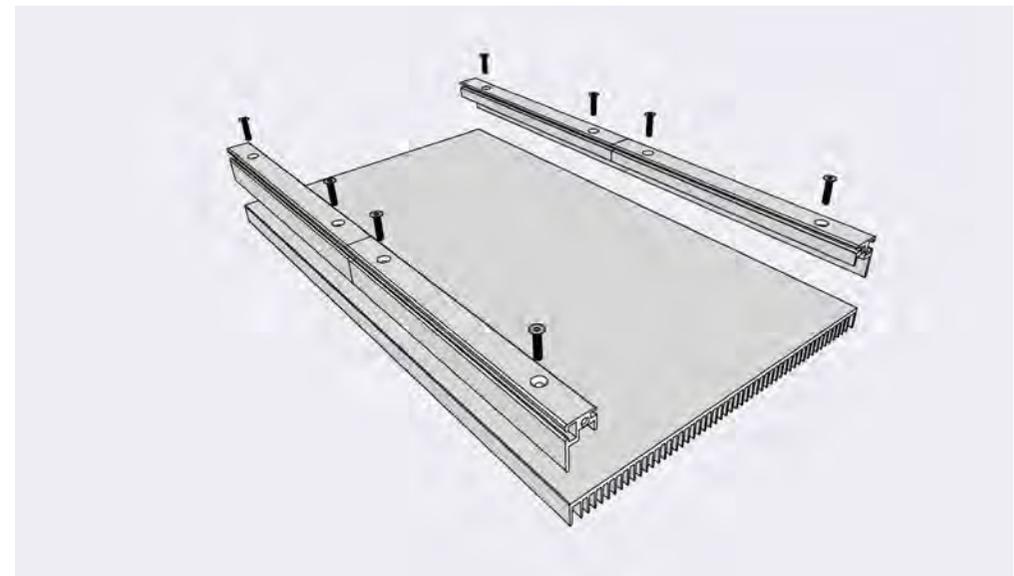
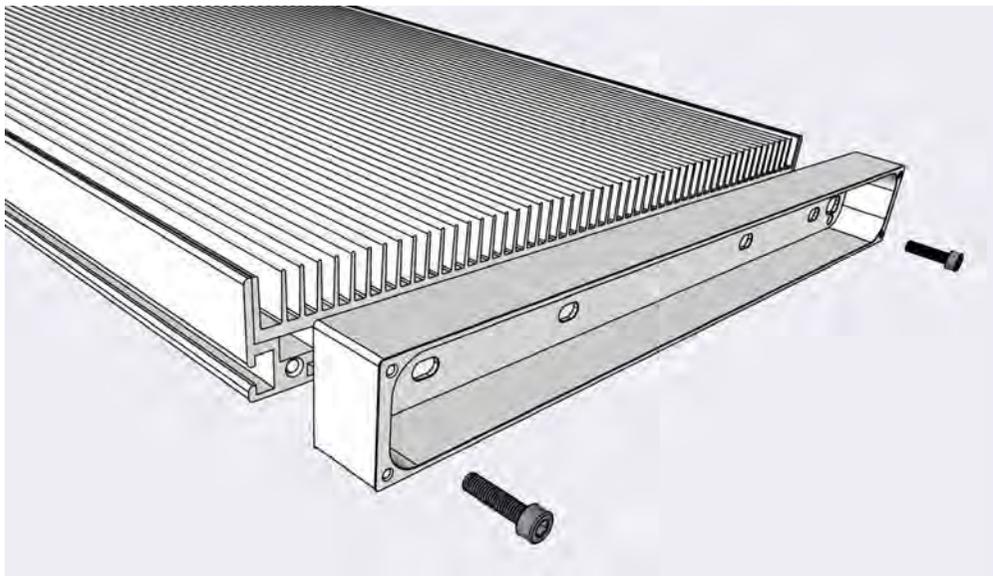
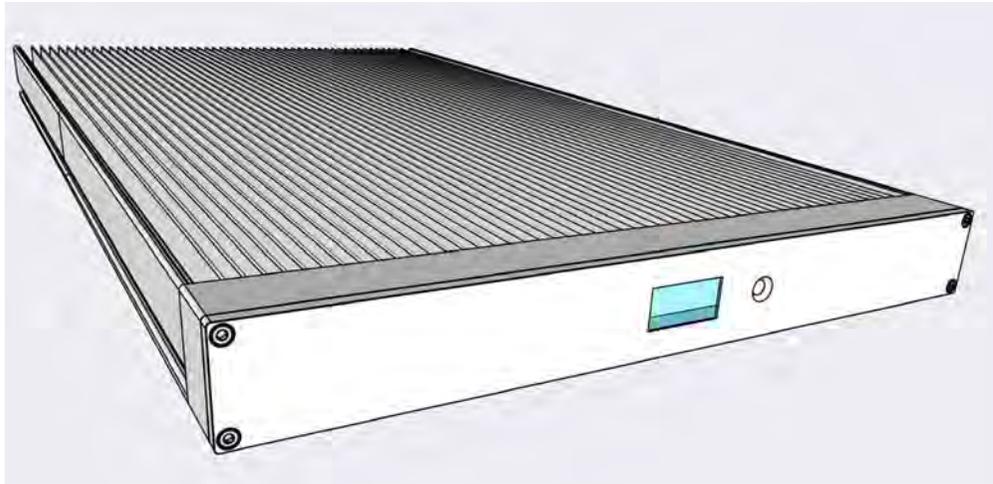
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Data sheet Royal Exclusiv® LED Lamp - RE-LIGHT - LED-Panel luminaire especially for seawater aquariums - modular -

Royal Exclusiv®, the premium manufacturer of exclusive seawater products such as skimmers, pumps and filter systems, is expanding its product portfolio with a high-quality LED lamp „Made in Germany“ in various formats.

Module-like expandability, simple operation of the individually adjustable color channels are just some of the core features that distinguish this lamp.

Due to more than 30 years of experience in the field of salt/seawater aquariums, Royal Exclusiv® knows the diverse needs of customers and the extreme requirements of the products. It is precisely with this knowledge that the development and research of a revolutionary surface luminaire based on LEDs was implemented.

Through several years of development work and in cooperation with the University of Giessen (Germany), the LED luminaire was specially optimized for seawater aquariums. The result are LED modules of 100 W power each with state-of-the-art efficiency.

Individual LED modules are installed in different numbers, depending on the lamp model. During development, the focus was particularly on creating a nature-identical light during the day and at night, which is indistinguishable for animals and humans. The animals thus receive a spectrum that mimics their natural habitat and contributes to the synthesis of color pigments as well as to a strong growth.

With 8 different wavelengths and a specially selected white high power LED, it is possible to individually adjust almost any spectrum of different water depths in 7 channels. In particular, UV near high-energy LEDs react comparatively sensitive in long-term operation at full power. The UV and UV-near LEDs of specific wavelengths used at RELIGHT have been carefully selected. The main application of this special LED is in medical technology. The requirements of these LEDs are correspondingly high and therefore particular emphasis is placed on stability and a long service life.

Overall, the viewer also receives the shimmering effects under the water surface **kringel effect** similar to what is known from the sunlight. Due to the clever selection of LED clusters and distribution on the luminaire surface, this ringing effect is neither too restless and therefore disturbing for the viewer, nor too diffuse as it could be in the case with T5 luminaires.

An additional and adjustable channel for a realistic moonlight with real-time moon phase calendar for the night optimally completes the photoperiod during the day. This gives the artificial reef the natural simulation of a day and night rhythm from which not only the reef inhabitants benefit!

Via the intelligent and intuitively controllable microcontroller with integrated, high-contrast OLED display directly situated on the luminaire, the spectrum and its

intensity can be adapted to the respective requirements in a matter of seconds without having to establish an annoying wireless connection with an additional computer or smartphone.

Overheating prevention of the passively cooled lamp (e.g. at elevated room temperature in the summer) and thus a shortening service life of the emitters is achieved by intelligent temperature control. When a critical temperature for the LED is reached, the total intensity is automatically reduced in barely perceptible steps until the luminaire is back in the safe temperature range. With this solid and nature-simulating LED panel light for optimal and future-oriented aquariums, Royal Exclusiv® wants to position itself anew and at the top of high-quality luminaires for seawater aquariums and provide the customer with the best possible service.

Your Royal Exclusiv Team

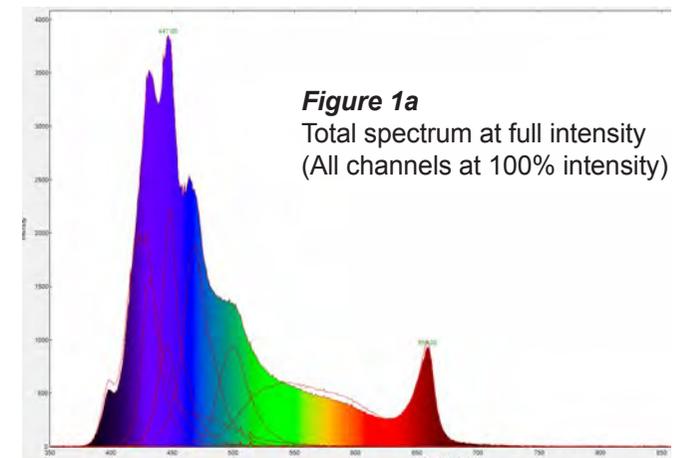
Joystick / Button



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Product benefits

- Optimized distribution of the LEDs used, depending on their power on the luminaire surface for better heat dissipation. This results in an extended service life and constant intensity of individual emitters
- Passive cooling (silent)
- Low-maintenance
- Dimmable without flicker effect
- A temperature control prevents overheating of the LED and thus an extension of the service life
- Optimally matched aluminum housing for better heat dissipation
- complete lamp body made of powder-coated aluminium
- optional as an accessory: replaceable splash guard on the light surface side, diffuse, clear and diffuse with spots
- „Diffuser“ ringing effect (strength of the effect depending on the splash screen used)
- Individual color channels adjustable (7 light/color channels)
- Of the 9 different LEDs, 7 are in the wavelength range between 400-500nm. As a result, no photosynthetic gap is left in the animals **(see Figures 1a and 1b)**.
- Separate, adjustable white and self-sufficient white moon phase channel
- Modularly expandable
- Quick and intuitive operation directly on the box
- OLED display (with screensaver or deactivated)
- Preset programs for special species basins (e.g. LPS, SPS,...)
- PAR values above $1700 \mu\text{mol}/(\text{s}\cdot\text{m}^2)$ (in air) depending on model size. Attached is a PAR measurement series below the water surface **(see Figures 2a and 2b)**.
- LED modules can be replaced by the customer: loosen screws then loosen and replace connectors
- Controller can be replaced by the customer (possibly by a wireless controller developed in the future)
- Luminaire available in different sizes. The smallest model with 1 module has a power of 100 W, the largest 4 modules with 400W.
- Made in Germany



RE LIGHT - THREE

PAR measurement

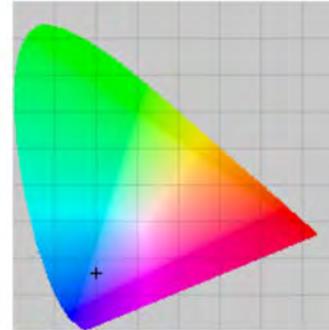


Figure 1b

Placement of the light color in the color space at full intensity (All channels at 100% intensity)

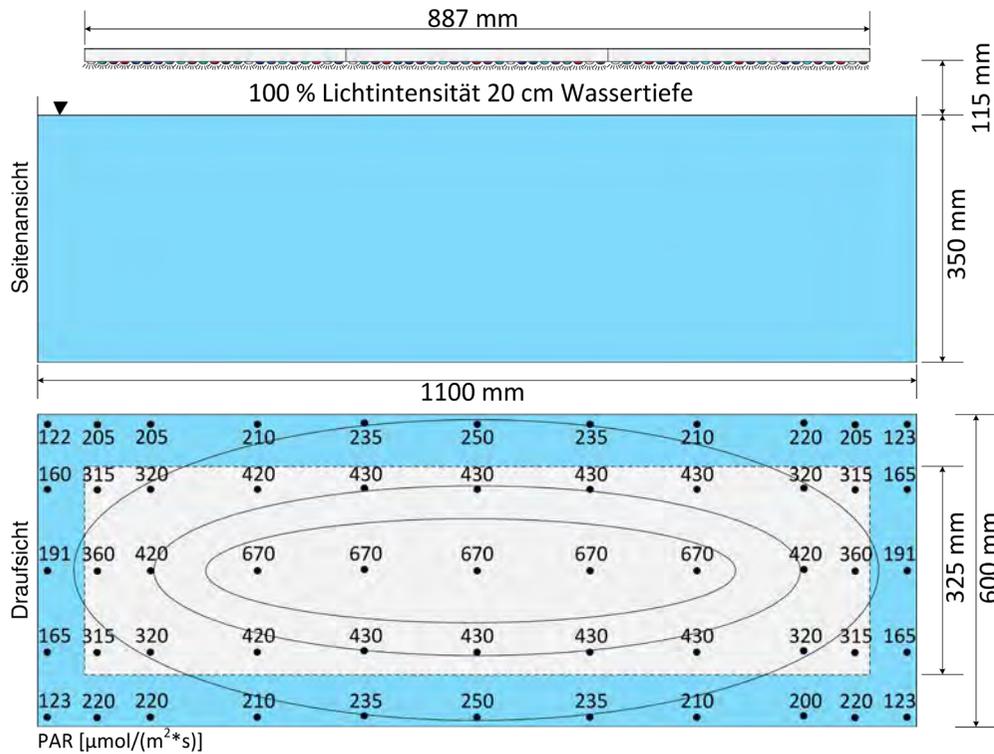


Figure 2a

PAR value distribution at 100% in 20 cm water depth.
 In this example, the luminaire is located about 12 cm above the water surface
 (with support supports on the edge of the pool)

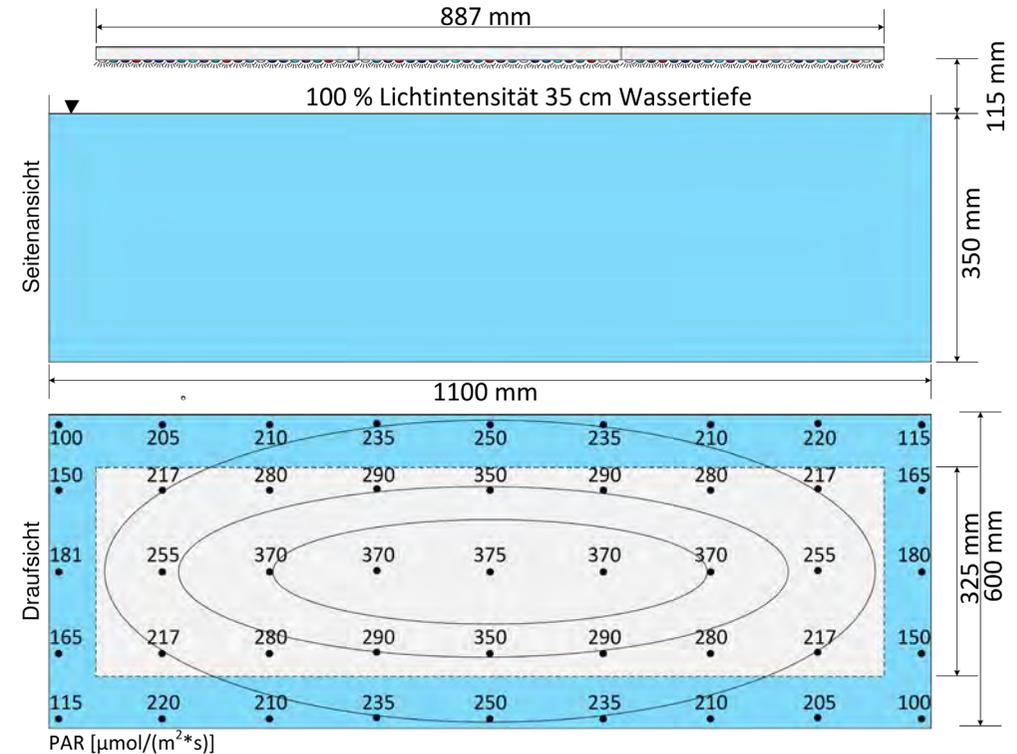


Figure 2b

PAR value distribution at 100% in 35 cm water depth.
 In this example, the luminaire is located about 12 cm above the water surface
 (with support poles on the edge of the pool)

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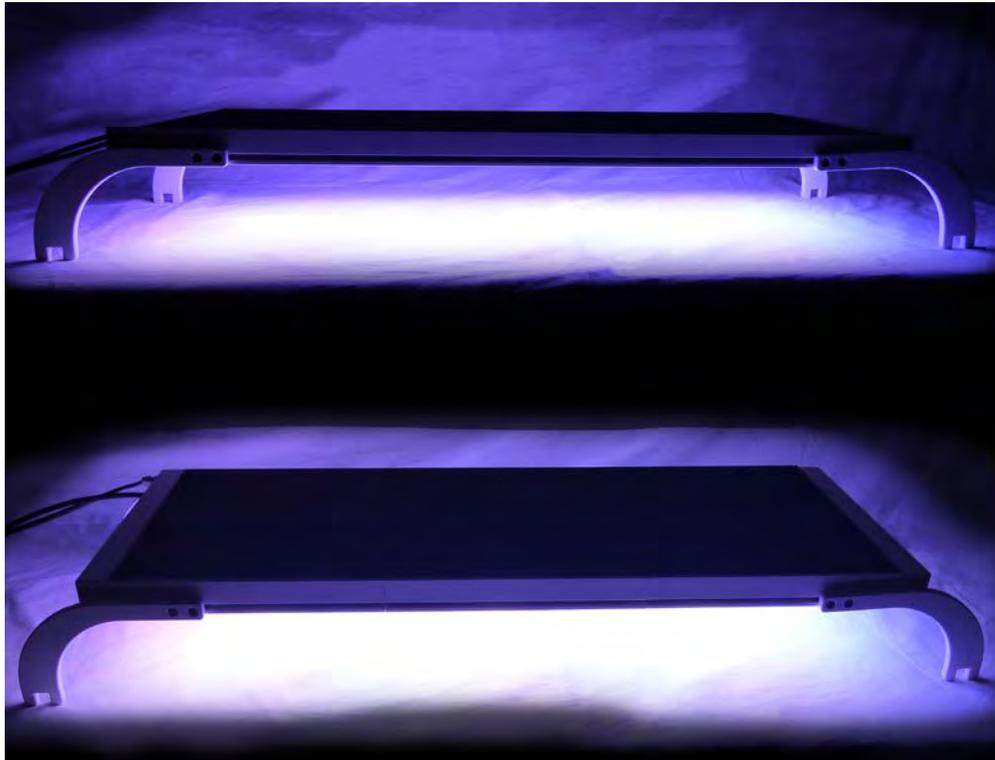
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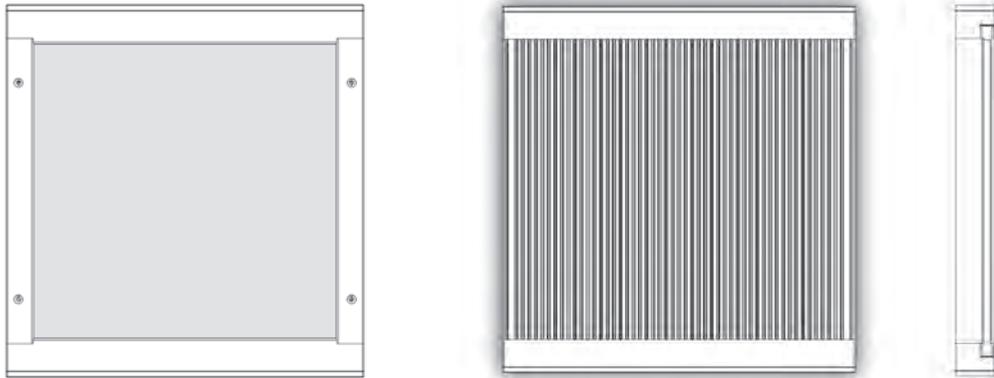
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RE LIGHT - ONE

Technical details

Numbers of LED module:	1
Dimensions LED board:	275 * 300 * 20 l x w x h
Dimensions lamp complete:	355 * 325 * 38 l x w x h
Weight lamp, without power supply:	4 kg
Power supply:	100W MeanWell
Mounting:	foot or rope suspension
Connection cable length:	selectable 2,5 - 5 -10m

Made in Germany

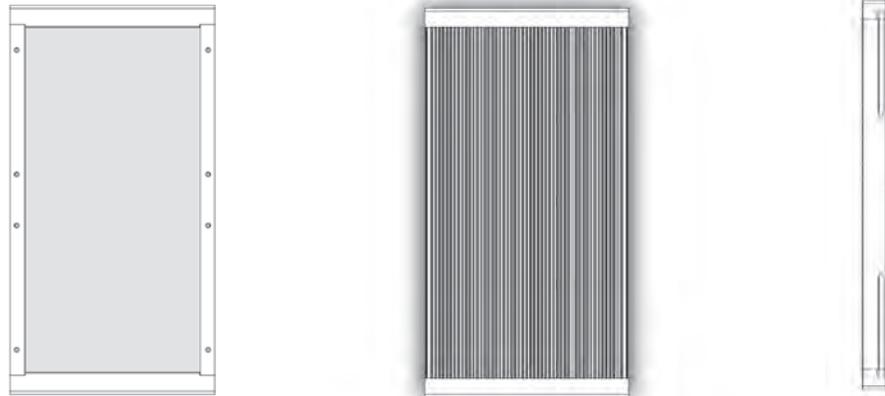


RE-LIGHT
One - Two - Three - Four

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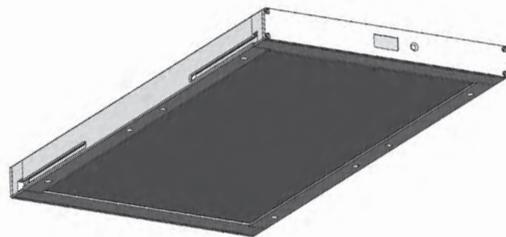


RE LIGHT - TWO

Technical details

Numbers of LED module:	2
Dimensions LED board:	550 * 300 * 20 l x w x h
Dimensions lamp complete:	625 * 325 * 38 l x w x h
Weight lamp, without power supply:	8 kg
Power supply:	200W MeanWell
Mounting:	foot or rope suspension
Connection cable length:	selectable 2,5 - 5 - 10m

Made in Germany



RE-LIGHT
One - TWO - Three - Four

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RE LIGHT - THREE

Technical details

Numbers of LED module:	3
Dimensions LED board:	825 * 300 * 20 l x w x h
Dimensions lamp complete:	895 * 325 * 38 l x w x h
Weight lamp, without power supply:	11 kg
Power supply:	300W MeanWell
Mounting:	foot or rope suspension
Connection cable length:	selectable 2,5 - 5 -10m

Made in Germany



RE-LIGHT
One-Two-Three-Four

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RE LIGHT - FOUR

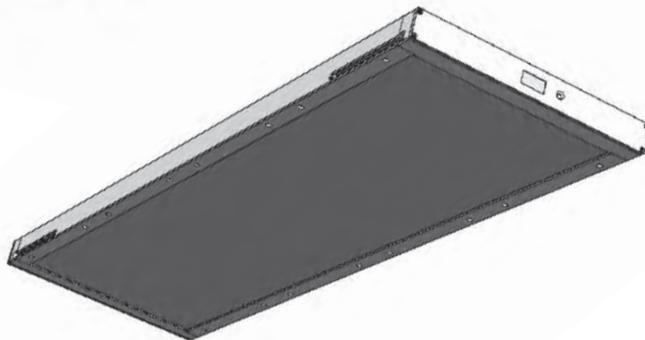
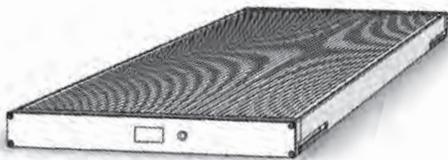
Technical details

Numbers of LED module:	4
Dimensions LED board:	1100 * 300 * 20 l x w x h
Dimensions lamp complete:	1165 * 325 * 38 l x w x h
Weight lamp, without power supply:	14 kg
Power supply:	400W MeanWell
Mounting:	foot or rope suspension
Connection cable length:	selectable 2,5 - 5 -10m

Made in Germany



RE-LIGHT
One - Two - Three - Four



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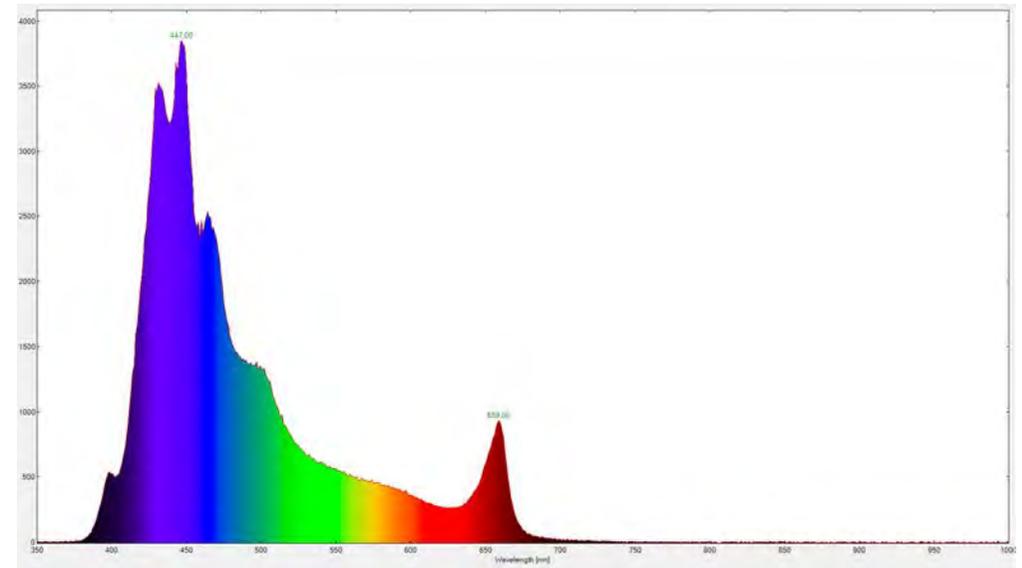
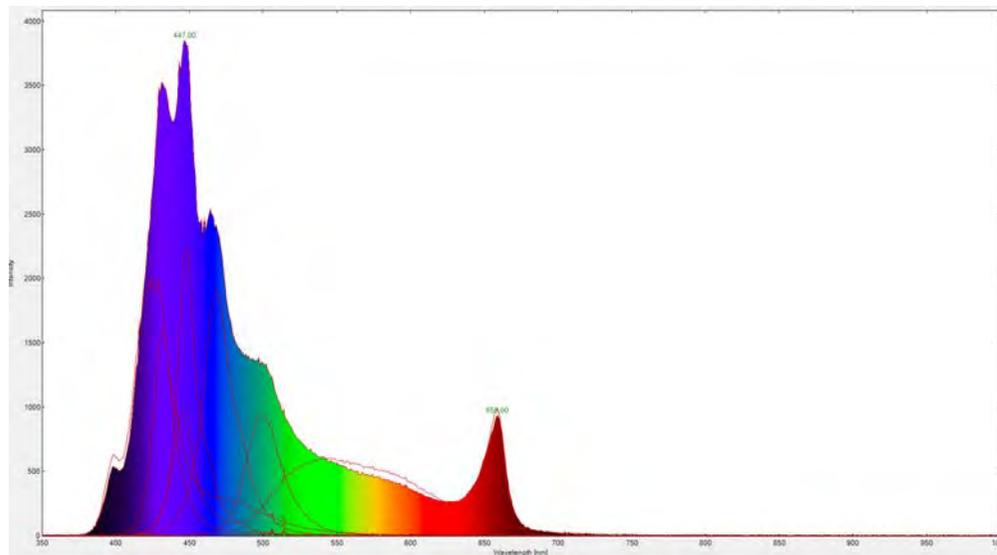
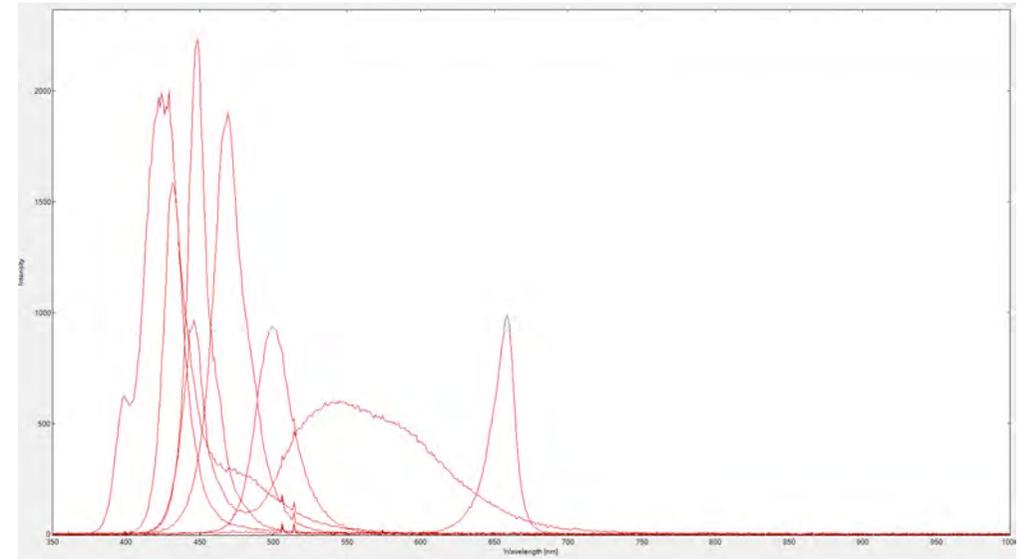
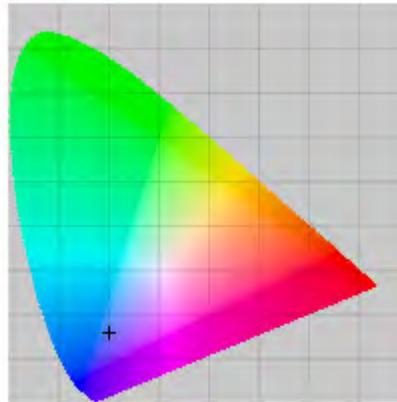


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RE LIGHT - Spectral analysis -

All channels together 100%
Channels 1-7



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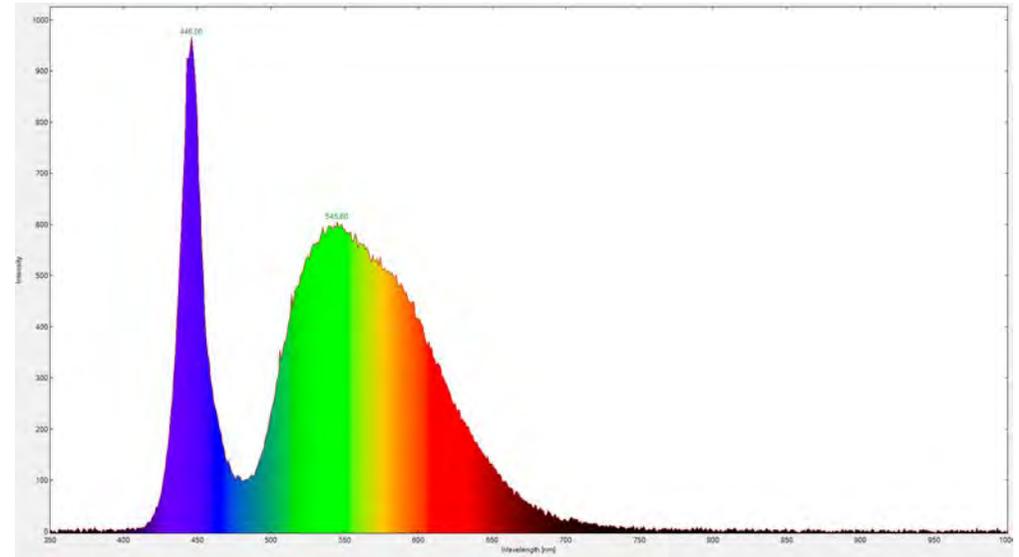
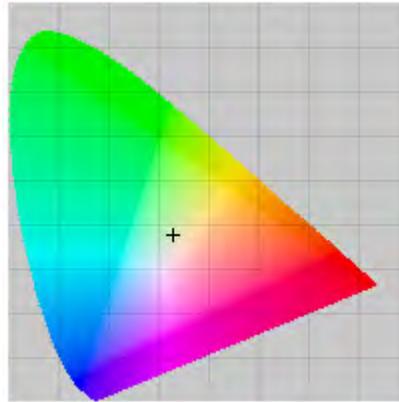


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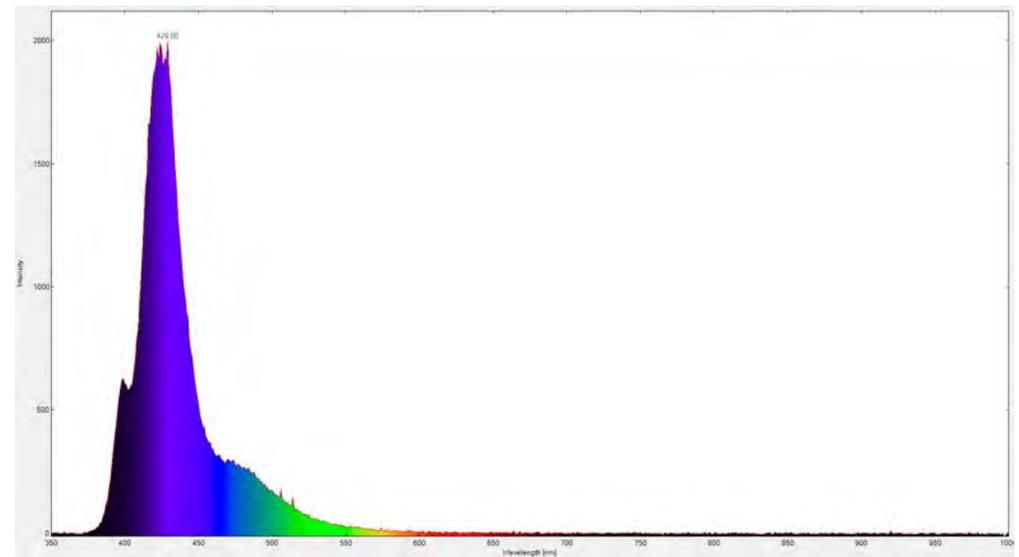
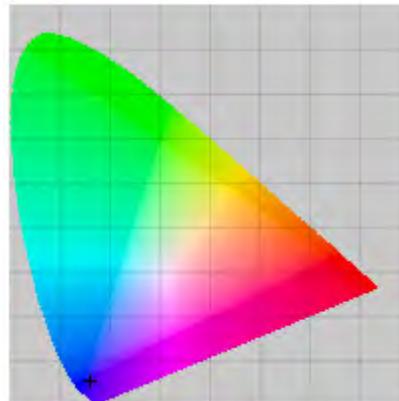


RE LIGHT - Spectral analysis -

White 100%
Moon white



Purple 100%



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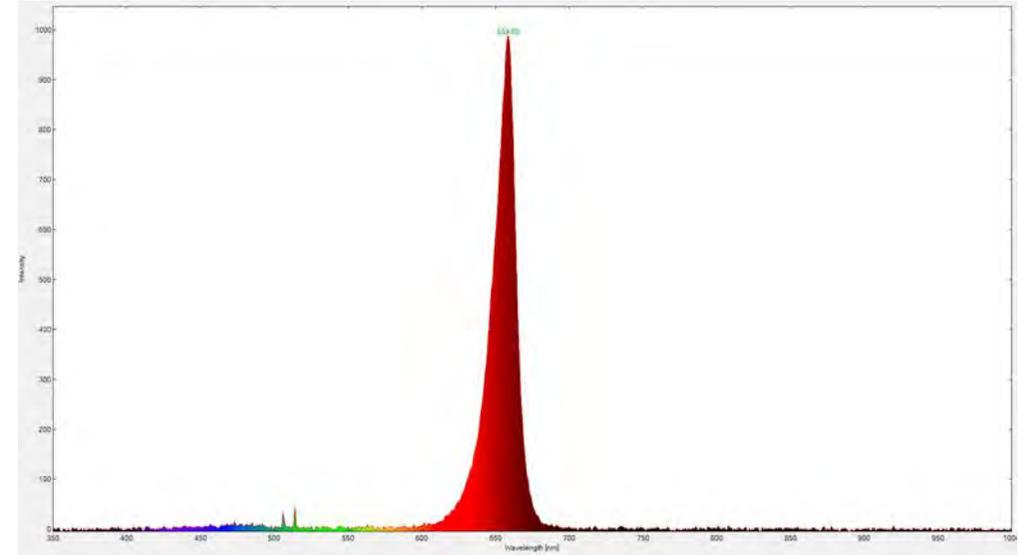
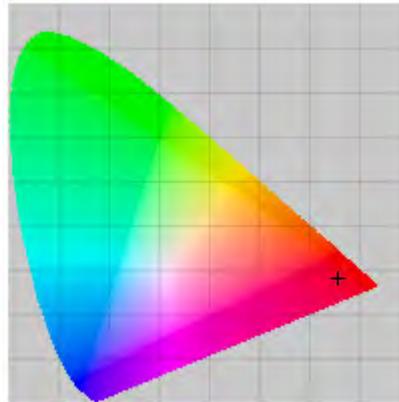


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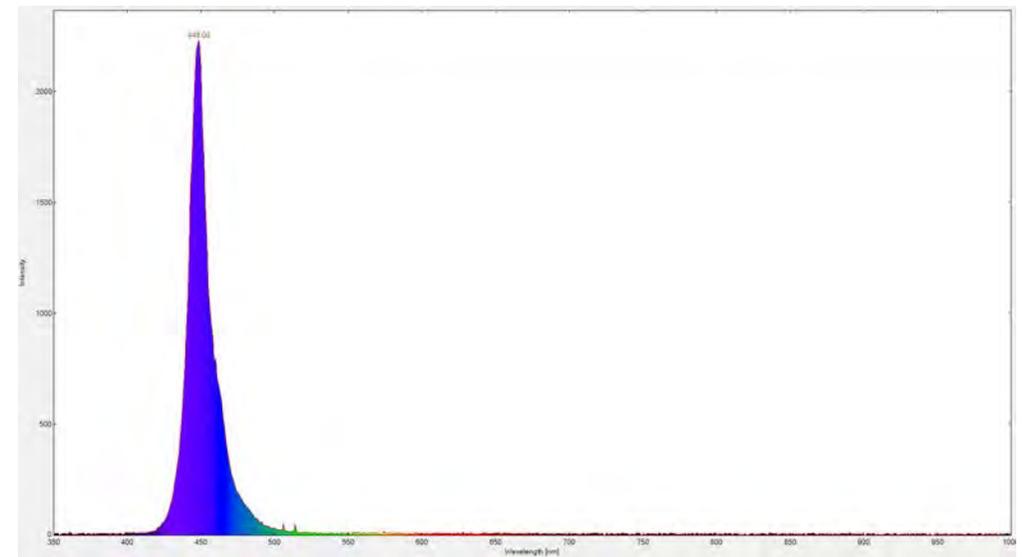
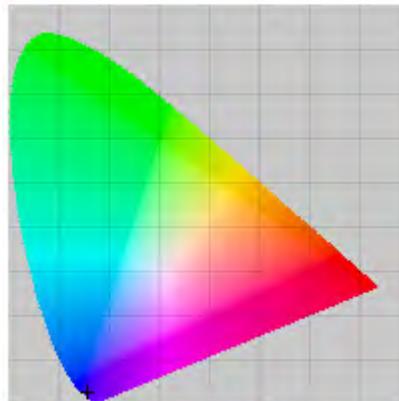


RE LIGHT - Spectral analysis -

Red 100%



Royal Blue 2 100%
Dark Blue 2



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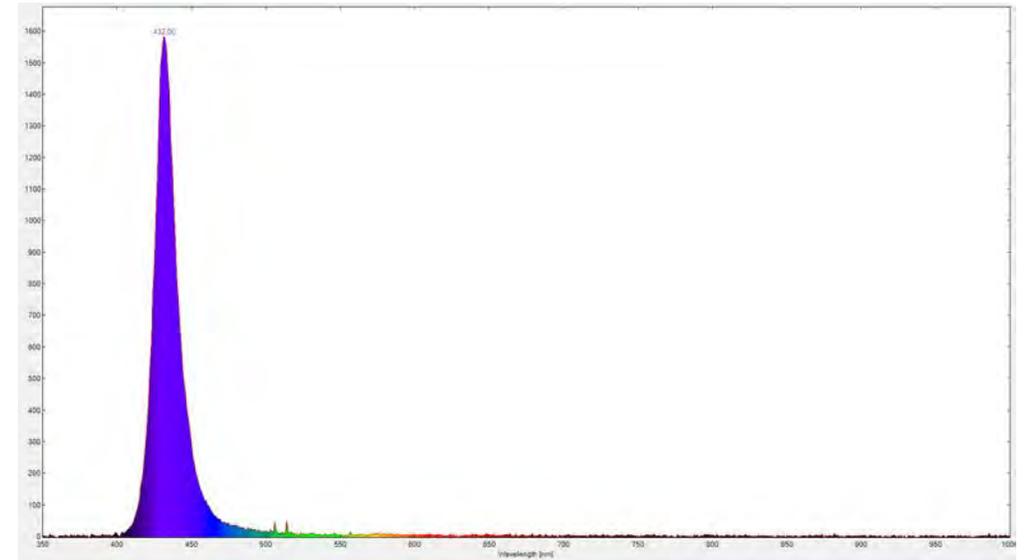
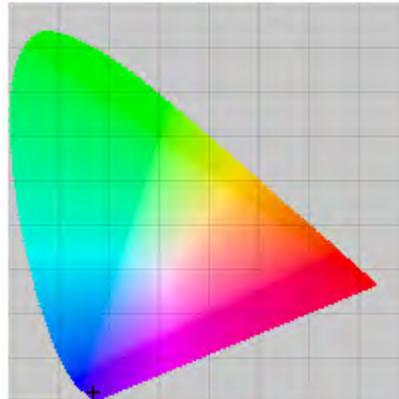
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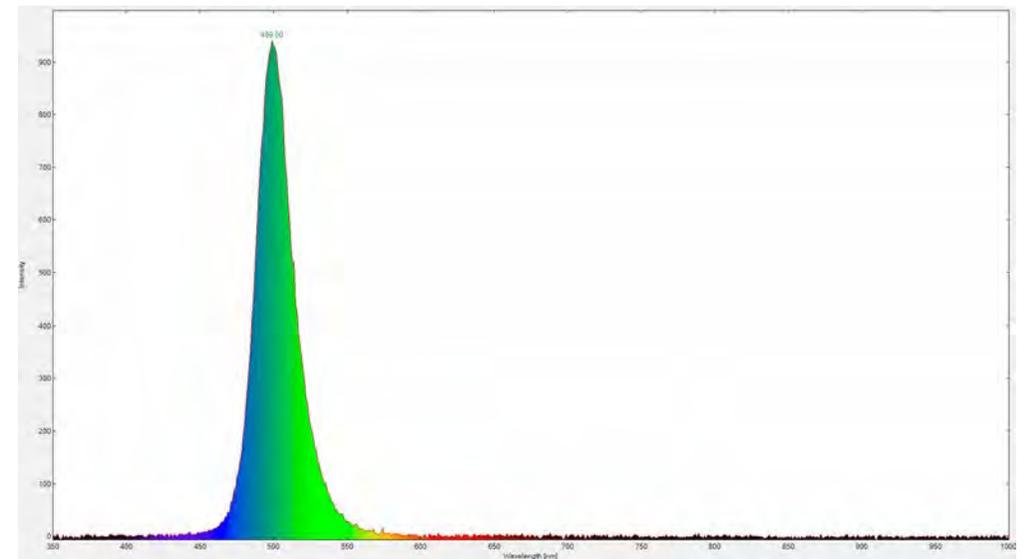
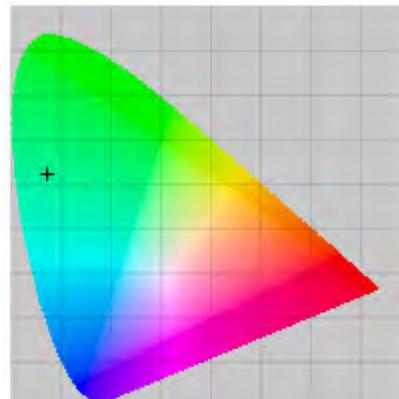


RE LIGHT - Spectral analysis -

Royal Blue 1 100%
Dark Blue 1



Light Blue 100%
Cyan



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RE LIGHT - Spectral analysis -

Blue 100%

