

# SPECTROLIGHT® - NEW- Positive Fullspectrum Daylight



Made in Germany

Information

**SPECTROLIGHT®**  
Fullspectrum daylight lamps for positive,  
harmonic light at high illuminances and a  
minimum of glare.

## What is fullspectrum light?

Sunlight contains the colours of light in their visual brightness consistently spread over the spectrum. This is the same for incandescent lamps, but they only have a continuous emission in the yellow-red spectral range, the blue part is missing. Therefore their light is yellowish.

In contrast, fluorescent lamps emit their light as spectral bands, in general only in the range Red-Green-Blue (RGB). In-between these bands are gaps in the spectrum. That means, some colours are missing, or just very weak in their intensity.

Our visual centre balances these gaps by interpolation. Therefore the enduring work in "simple" RGB-light is downright exhausting, a generally wellknown experience. This is different with fullspectrum light.

This light has the spectral continuous character of a continuum, which is comparable to natural daylight, due to the presence of all visible colours. The high share of blue, including transition to UV-A effects a reproduction of natural daylight.

Due to the advantageous existence of all spectral colours the light of the SPECTROLIGHT fullspectrum lamp seems to be milder and less "sharp". In comparison to "simple" fluorescent lamps, it is perceived to be more comfortable even after a longer time of exposure and high illuminances.

Quite comprehensible, because high visual demands lead to considerable "stress for the brain" and thus fatigue the most natural reaction. The experience of seeing better and more comfortable for a longer time, is immediately recognized positively.

## Circadian Rhythm

The special sensitivity for blue on the retina has only shortly come to knowledge. The wavelengths effective there, at a maximum of 460 nm, are directed directly to the Hypothalamus, bypassing the visual centre. The Hypothalamus is the centre of our hormone regulation, the synchronization of our biological clock is happening there and for this reason also the apportionment of the circadian rhythm over the 24-hours-day.

The remarkable spectral blue share of the fullspectrum light is dispositive for the suppression of Melatonin distribution, the decisive hormone for the sleeping-waking-rhythm.

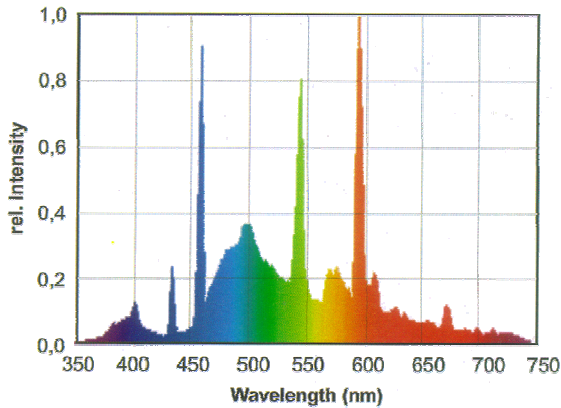
If this blue share is missing in the spectral colours, for example at incandescent lamps, this leads to fatigue because Melatonin is not suppressed, but distributed. Even bright halogen lamps are not effective, but in the contrary the point-shaped light radiation leads to glare, which then causes further fatigue.

# SPECTROLIGHT® - NEW- Fullspectrum Daylight 5,800 Kelvin

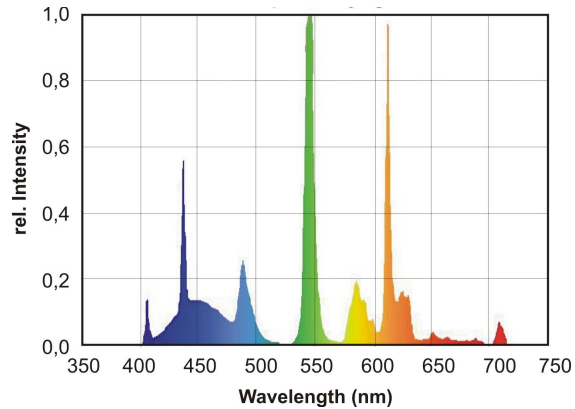


Made in Germany

Information



**SPECTROLIGHT® full spectrum lamps**  
power distribution with  
strong blue share and spike at  
**460 nm for the circadian effect!**



**Common fluorescent lamps**  
Three bands RGB power distribution  
with gaps in the spectrum  
**no 460 nm emission!**

## SPECTROLIGHT® fullspectrum fluorescent lamps

The new SPECTROLIGHT® lamps with the natural daylight colour of 5,800 Kelvin provide their balanced, circadian effective light by very high quality phosphors with a high share of blue and transition to longwave UV-A. A special glas material with extended transmission for it is used for the lamp tube.

The SPECTROLIGHT® daylight may be used as biologic timer, is effective against fatigue, stimulating the performance and can have a positive influence on depressive moods and SAD (Seasonal Affective Depression / Disorder). However, precondition are high illuminances of 5,000 Lux and more, as they are only reached with the DIALITE and VISION luminaires with two parallelly mounted compact fluorescent lamps ("Two lights in one"). Traditional linear lamps only reach these values when x-fold arranged.

The operation of these high quality lights with electronic ballasts is self-evident. Only the increased operation frequency of 40,000 Hz, instead of the 50 Hz of main's supply, creates an absolutely flickerfree light. Furthermore additional dimming of these modern power supplies enable comfortable and individual adjustment of illuminance to a brightness without glare.

SPECTROLIGHT® is the implemented lightphysiological conclusion of positive, harmonic fullspectrum light for a balanced illumination, for humans' wellness of physical condition.

**Kelvin (K)** A term for the relative yellowness, whiteness or blueness of the colour of light, expressed in units of Kelvin (K).

**Circadian** A **circadian rhythm** is an approximate daily periodicity, a roughly-24-hour cycle in the biochemical, physiological or behavioral processes of living beings.