

SPECTRASOL

BIODYNAMIC HUMAN SOLUTIONS



INDOORS LIKE UNDER THE OPEN SKY



Patented procognitive
and regenerative LED lighting
that emulates natural
sunlight

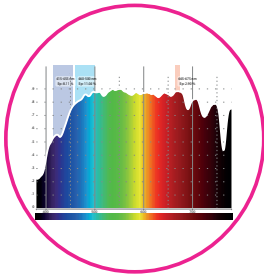
Spectrasol improves cognitive performance during
work and study, subjective satisfaction, visual
comfort and overall health and vitality

Why Spectrasol

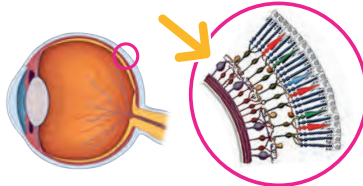
Light is one of the key elements directly affecting the biological functions of the organism. Natural sunlight and its changes during the day synchronise the circadian rhythms through the non-image-forming (NIF) visual system. The circadian rhythms control the entire human body functions to be active during the day and regenerate at night. Circadian rhythms are controlled by spectral composition of light (SPD), which is insufficient in conventional artificial light sources and does not create the necessary sources and conditions for the human organism functions.

Spectral composition of light controls the circadian rhythms of the body through the non-image-forming system of ganglion cells of the eye

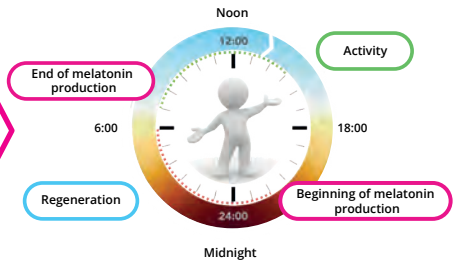
Spectral composition of light



Ganglion cells in the retina of the eye



Circadian rhythms



People today spend most of their time indoors, so the quality of artificial lighting is crucial. Scientific studies clearly demonstrate the significant impact of lighting on the human body's performance and productivity, general alertness, ability to concentrate, cognitive functions, mood and overall health and vitality, as humans are biologically dependent on light as much as on air, water or food.

This is addressed by Spectrasol's circadian procognitive LED lighting, with the balanced spectral composition and biological efficiency of which are the closest to natural sunlight of all existing artificial light sources.

Spectrasol will light up your interior during the day like the sun under the open sky

Uniqueness of Spectrasol

Key areas of spectral composition

1 NO HARMFUL BLUE LIGHT

Does not damage retinal cells

No concentrated energy emission in the harmful blue light risk range (415-455 nm)

1

2 PROCOGNITIVE – CIRCADIAN – MELANOPIC ENERGY

Supports the circadian system and cognitive performance

Balanced energy in the azure procognitive range (460-500 nm)

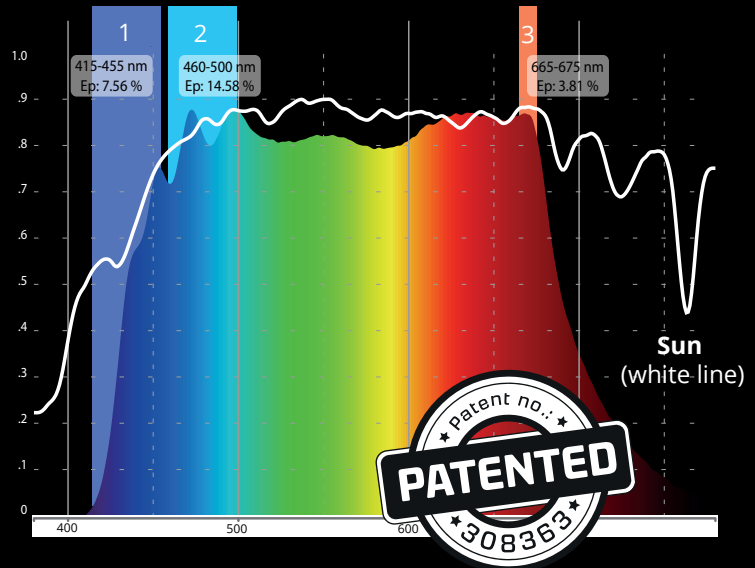
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3 REGENERATIVE ENERGY – PHOTOBIMODULATION

Regenerates damaged cells of the retina

Peak in the photobiomodulation red range (~670 nm)

3



Spectrasol lights have a uniquely balanced spectral composition approaching that of sunlight, with well-balanced procognitive energy and no concentrated energy emission in the short-wavelength harmful blue light range that increases the risk of macular degeneration of the retina. In fact, Spectrasol regenerates the eyes by emitting energy in the red photobiomodulation part of the light spectrum, which acts as a compensatory factor against the risks posed by the harmful blue light, with both preventive and therapeutic effects.



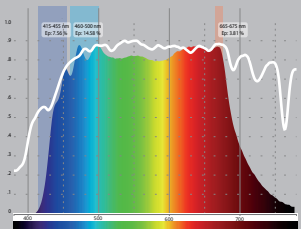
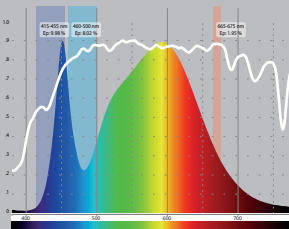
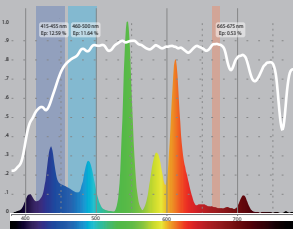
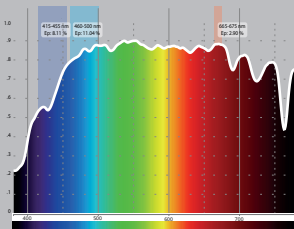
Of all existing artificial light sources, Spectrasol is the closest to sunlight

THE SUN AT NOON

FLUORESCENT LAMP

STANDARD LED

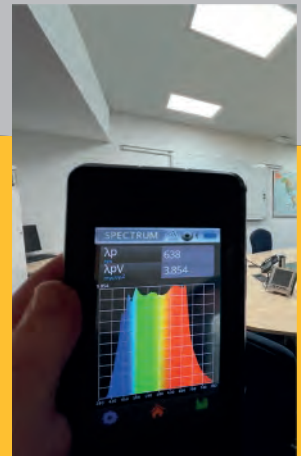
SPECTRASOL



In contrast to fluorescent lamps and conventional LEDs, Spectrasol light has a balanced spectral composition containing all visible wavelengths in the 450-670 nm range (full-spectrum artificial light source) and has a 97% match to the sunlight according to Brainard's method.

Independent confirmation of the circadian, procognitive and photobiomodulation effects of Spectrasol

The effectiveness of Spectrasol light has been verified by experimental researches performed by the Czech Technical University, the National Institute of Mental Health, the BIOCEV European Biomedical and Biotechnology Centre and other scientific institutions.



PRÍRODOVĚDECKÁ
FAKULTA
Univerzita Karlova



BIOCEV

Key benefits for people and organisations



INCREASED PERFORMANCE, OVERALL HEALTH AND VITALITY, REGENERATION OF THE EYES AND IMPROVED MOOD INDOORS

Spectrasol benefits overall health and immunity | provides highest level of visual comfort | no harmful blue light effects | regenerates the retina of the eye

Increases cognitive performance, alertness, concentration and productivity | reduces error rates

Improves mood and subjective satisfaction | reduces stress | increases interior attractiveness

Improves sleep quality | improves regeneration and vitality



HEALTH



PRODUCTIVITY



MOOD



SLEEP

Where to apply Spectrasol lighting



WORK

Offices and manufacturing areas, control centres and service areas, laboratories and development centres



EDUCATION

Schools and other educational facilities, training centres



SECURITY AND DEFENSE

Supervisory and monitoring workplaces, control rooms, shooting ranges, mobile units, offices etc.



HEALTHCARE

Healthcare and social care facilities



SERVICES

Service establishments



HOUSING

Hotels and home interiors



TRANSPORT

Underground transport, ships, submarines



And other interiors where daily mental or physical activity takes place

Examples of Spectrasol lighting applications



Apply Spectrasol procognitive lighting on your premises as well



Key benefits of Spectrasol

- Best-balanced spectrum to emulate sunlight
- Highest circadian, melanopic and procognitive efficacy naturally stimulating the human organism
- Pleasant and exceptionally comfortable white light
- Highest level of visual comfort
- Promotes alertness, speed of thinking and concentration
- Enhances memory and recall
- Increases work or study performance and reduces error rates
- Increases subjective satisfaction and improves mood
- Improves communication, human relationships and overall team climate
- Promotes overall health and vitality and continuously boosts immunity
- Regenerates the retina in real time (photobiomodulation energy)
- Increases workplace safety
- Increases the attractiveness of working conditions
- More efficient and better quality light source compared to traditional lights



spectrasol.eu



Animation about us
and our lighting

