SPECTRASOL
PROCOGNITIVE LIGHTING

The energy of the sun for work, health and vitality

The Spectrasol light source principle and design are protected by two patents.

PATENT NO 308363 PATENTED

PATENT NO 309539 PATENTED

1000+
COMPLETED PROJECTS
IN THE CZECH REPUBLIC



Better concentration, vitality, mood, sleep, eyesight and overall health

The performance of the human body is evolutionarily dependent on natural light. For the past hundred years, however, people have been spending most of their active lives in artificially lit interiors. The artificial light quality is therefore crucial for human health. Procognitive lighting does not replace the Sun completely, although it comes very close, and has been proven to help people in several areas.



Procognitive light improves productivity, vitality and concentration, and also reduces fatigue

...A claim made by more than users alone. The beneficial effect of procognitive light has also been confirmed in many studies.



Procognitive light improves mood. Even on cloudy days, people feel like they do in summer

Exposure to full-spectrum light helps to counteract agitation and negative emotions, both immediately and in the long term. Procognitive light is also used to treat seasonal affective disorder (SAD).

Procognitive light reduces eye strain. The red light component helps regenerate the retina

Less blue energy helps reduce the effects of harmful blue light. The red component compensates the effects of blue light and supports the regenerative functions of mitochondria in the retina by photobiomodulation. It also provides superior visual comfort.





Procognitive light improves sleep quality

Procognitive light stabilises the level of the interacting daytime serotonin and night-time melatonin hormones. This positively affects the quality of sleep and the body's ability to regenerate.

Procognitive light supports overall health

A harmonious circadian rhythm, which requires a sufficient amount of good-quality light during the day and reduced amounts of light in the evening and at night, significantly reduces the risk of health problems such as cardiovascular disease, diabetes, obesity and psychological problems. Studies confirm that biologically optimised light improves overall mental and physical health and vitality.

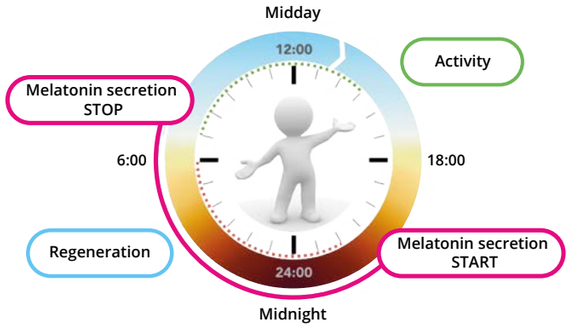


For information on health effects and corresponding studies, visit www.spectrasol.eu/effects

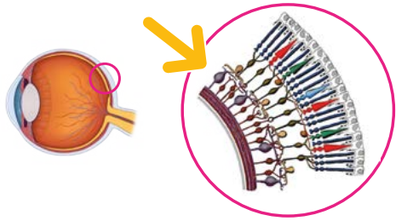
HOW IT WORKS BIOLOGICALLY ?

Light synchronises the circadian rhythms of the human body

1 Natural sunlight and its variations during the day synchronise the circadian rhythm through the eye's non-image-forming (NIF) system. It directs human organism to be active during the day and to regenerate at night. It was only in 2003 that the circadian system was comprehensively described by J.C. Hall, M. Rosbash and M.W. Young, who were subsequently awarded the Nobel Prize in 2017.



2 Photosensitive ganglion cells in the eye receive information from light and send signals to the suprachiasmatic nucleus (SCN) in the hypothalamus. The SCN is the master 'timer' or central clock that synchronises the body's circadian rhythm with the external environment.



3 Ganglion cells respond properly to natural light. The more artificial light differs from natural sunlight, the more poorly the ganglion cells respond and the circadian rhythm synchronisation is disturbed.

Spectrasol technology certification and verification

The procognitive and photobiomodulatory circadian effects of Spectrasol light have been verified by several studies performed by independent scientific institutions. We have additionally acquired certifications according to applicable standards.

NÁRODNÍ ÚSTAV DUŠEVNÍHO ZDRAVÍ · ČVUT · BIOCEV

Local manufacturing, ESG, EPD and WELL certification

Manufacturing in the Czech Republic guarantees high quality, short delivery times and a small carbon footprint.
The Spectrasol technology combines health and practical benefits with sustainability principles. It contributes to meeting organizations' ESG goals and obtaining WELL, BREEAM and LEED building certifications. Many of our lights also have EPD certification.

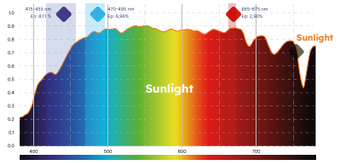
INTERNATIONAL WELL BUILDING INSTITUTE™ · BREEAM® · U.S. GREEN BUILDING COUNCIL LEED USGBC · EPD® THE INTERNATIONAL EPD® SYSTEM

OUR TECHNOLOGY

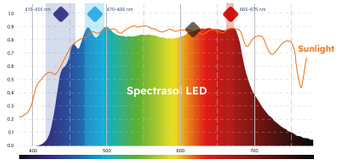
Spectrum closest to sunlight

PATENT No 308363 PATENTED · PATENT No 309539 PATENTED

Spectrasol technology light emissions contain a balanced representation of all wavelengths and are a 97% match of the spectral composition of sunlight.

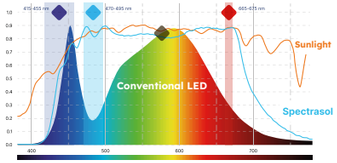


Sun
Natural sunlight spectrum on a clear day.

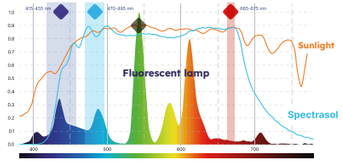


Spectrasol LED
Featuring healthy light components and minimal undesirable components.

Unsuitable spectral composition of conventional light sources



Conventional LED
Unbalanced spectrum, concentrated blue energy, lack of red energy.



Fluorescent lamp
The discontinuous and incomplete spectrum is most different from sunlight.

SPECTRAL COMPOSITION

The Spectrasol LED light source has a uniquely continuous and balanced spectral composition based on natural sunlight.

It does not contain unnaturally concentrated harmful blue light energy in the 415-455 nm range.

Spectrasol has a balanced azure energy in the procognitive melanopic range of 460-500 nm, which naturally supports the circadian system during the day.

Spectrasol emits red energy in the photobiomodulation range of 665-675 nm, whereby the negative effects of harmful blue light are compensated.



We have proven all our claims by exact measurement

Measurement of the spectral composition of Spectrasol lights installed in a fire brigade control room in Prague. The radio spectrometer demonstrates the overall balance of the spectral composition, as well as the presence and correct intensity of both procognitive and regenerative energy.

For more information on the technology, visit www.spectrasol.eu/technology

PRODUCTS

Luminaires for all types of installations

- SURFACE-MOUNTED LIGHTS
- LIGHTS FOR INSTALLATION IN FALSE CEILINGS
- PENDANT LIGHTS
- WALL LIGHTS
- STANDING LAMPS
- DUST-TIGHT LIGHTS
- PHOTOTOTHERAPY

For a complete product overview, visit www.spectrasol.eu/products

REFERENCE PROJECTS

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The energy of the sun, wherever you need to be focused, vital and comfortable





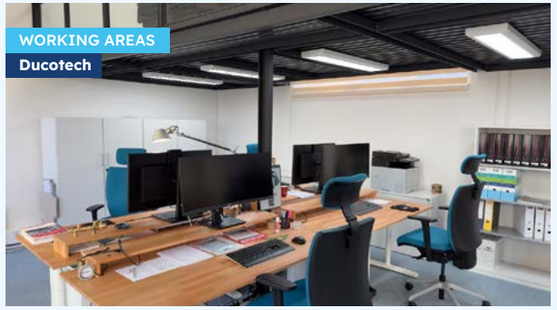














A selection of Spectrasol lighting references

COMPANIES, MANUFACTURING PLANTS

VEOLIA SIEMENS ThermoFisher SCIENTIFIC

and many others...

HEALTH SECTOR

VFN PRAHA VŠEOBECNÁ FAKULTNÍ NEMOCNICE FNO DOMOV PRO SENIORY SOKOLNICE příspěvková organizace

and many others...

SCHOOLS AND EDUCATIONAL FACILITIES

Gymnázium Na Pražačce Open Gate ZŠ 710 BUČOVICE www.zs710.eu

and many others...

SECURITY, DEFENCE, 24/7 WORKPLACES

POLICIE ČESKÉ REPUBLIKY VĚZEŇSKÁ SLUŽBA ČESKÉ REPUBLIKY CS CELNÍ SPRÁVA

and many others...

For a complete list of references, visit
www.spectrasol.eu/testimonials

CONTACT

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