

The screen light ageing

The hazards of
highly connected
lifestyles

sederma

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SCREEN LIGHT SHIELDS

The screen light overexposure

An estimation of the time spent in front of a screen of an adult working in an office:



2:27 using a smartphone



3:43 watching TV



7:00 working in an office on a computer

up to **~12** hours per day
in front of a screen light.*

In an ever more
connected world, mixed
reality screens could
become the next
standard.

Screens emit very strong blue light rays which
have consequences on our health.
As we are more and more overexposed and
dependent of our screens, it's a new form of
pollution which must be seriously considered.

SCREEN LIGHT SHIELDS

Need of a « screen detox »

Sleep disturbance, danger to the eyes and more recently premature skin ageing...
As for sunlight overexposure, issues of screen overexposure are more and more highlighted:

SCREEN HAZARDS

franceinfo:
Quels sont les vrais dangers des écrans pour vos enfants ?

Sommeil: Les effets «catastrophiques» de la lumière bleue des écrans

Blinded by your smartphone?
The danger lurking in handheld devices

M Sciences
Smartphones et tablettes, les ennemis du sommeil



New media reports on the harmful effects of screens on **sleep** and **child development**.



Opticians are communicating to the public about the risks of **blue ray hazard**.



SCREEN DEPENDENCE



Raise of « **digital detox** »: stays with technological dependence weaning.



« **The death of conversation** »
Illustration of screen addiction by the younger generation, the most exposed to premature ageing.

SCREEN LIGHT AGEING

High consumer awareness in Japan.
30% of cosmetic products with blue light protection claims are launched in Japan**

New Lancôme's launch in Japan: UV Expert XL « features blue light shield technology »



Yet **37%** of adults know that electronics emit blue rays*.
Growing consumer's perception and awareness of the screen light danger.

Source: *bluelightexposed.com
**Mintel

SCREEN LIGHT SHIELDS

Visible light, part of the skin's external stressors

External stressors are considered as the **main causes of premature skin ageing.**

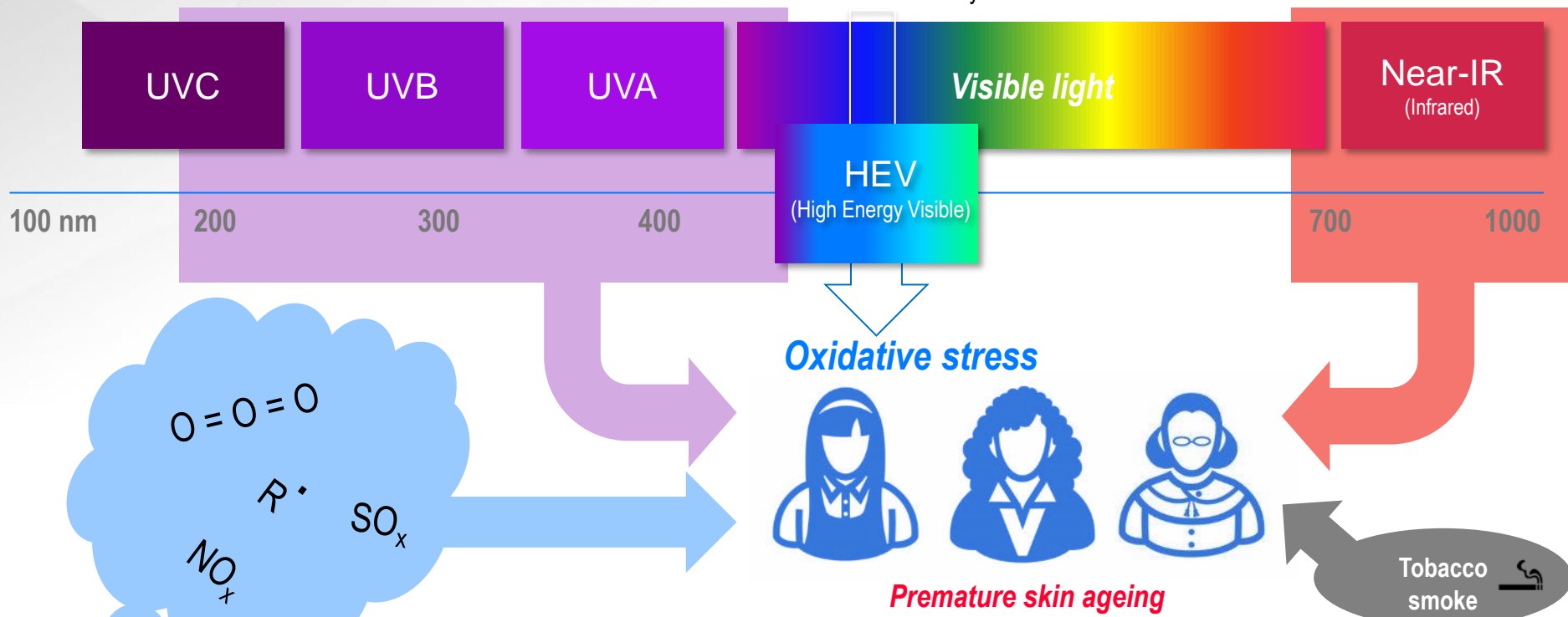
Blue rays belong to the HEV part of the visible spectrum: High Energy Visible light, a very short wavelength which produces a high amount of energy.

Overexposure to HEV blue rays causes strong damage to the skin.

HEV blue rays, a form of light pollution & indoor pollution.



Excessive HEV Blue rays

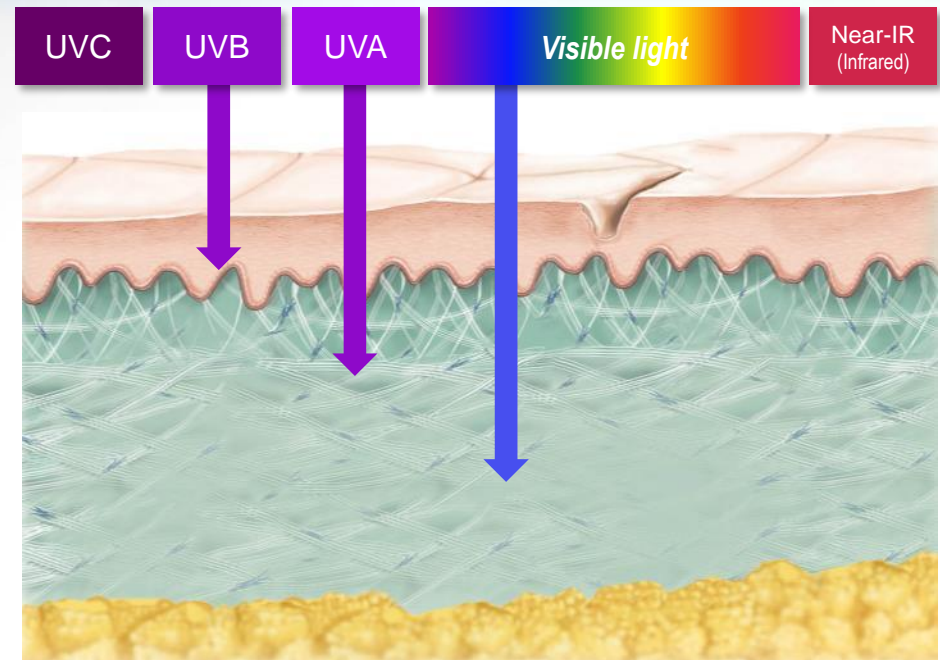


SCREEN LIGHT SHIELDS

Harmful effects of blue rays on the skin

Recent research showed that blue rays lead to skin **premature ageing** and induce a **skin hyperpigmentation**, more pronounced than UVB* and similar to UVA**.

Blue rays penetrate **more deeply** into the layers of the skin than UV rays, thus **accelerating skin ageing**.



Sederma conducted a study to evaluate blue rays damaging effects on skin cells.

Results showed an increase of:

- **oxidation factors**
- **inflammatory potential**

SCREEN LIGHT SHIELDS

Market potential for screen light protection

Screen light overexposure concerns **all ages, all regions, urban & non urban population.**

People feel concerned by skin protection. The consumer is increasingly aware of **the need of a global light & environmental pollution protection** hence the rise of **hybrid protectors** on the market:



Cityshield

Helena Rubinstein - Urban Active Shield Skin Reinforcer Fluid



Hybrid mist

Givenchy - Beautifying Mist High Protection - Urban Shield



Hybrid skincare/make-up

Lancôme - UV Expert XL-Shield Ultimate XL UV Protection CCC

Blue irradiation is a form of **light pollution** and **indoor pollution**. Blue ray protection can be used in both skin care and sun care products. Market potential for reformulation of existing skincare products:

€80 billion of facial skin care + **€7 billion** of sun protection & after sun market*

SCREEN LIGHT SHIELDS

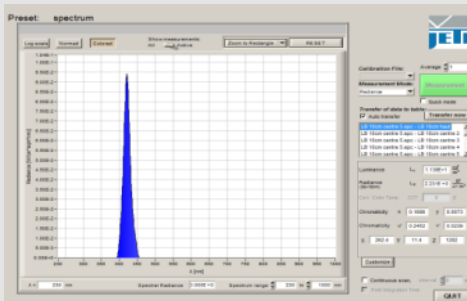
Protocol

in vitro 

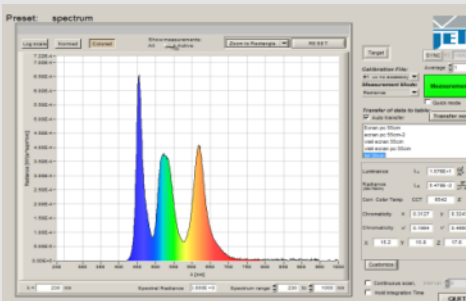
In vitro results, obtained with **BL-LEDs emitting strong blue rays, comparable to those of smart phones and computers.**

BL-LEDs emission spectrum: between 390 and 470 nm.

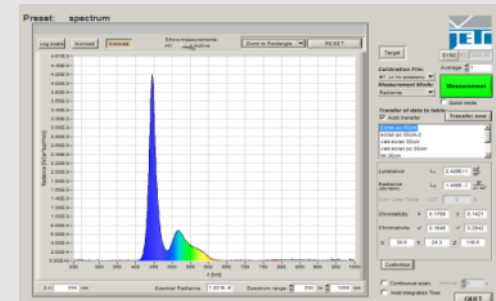
Emission spectrum of a blue LED light lamp



Emission spectrum of a smartphone



Emission spectrum of a computer



TEST CONDITIONS *(Tested effect, exposure time, n)*

Oxidation factors

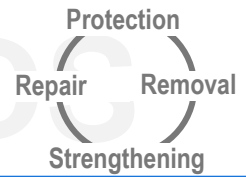
- Singlet Oxygen production: 50 min ; n=3
- Lipid peroxidation: 2 hrs, 13 min ; n=3
- ROS production into keratinocytes: 20 min ; n=6

Pro-inflammatory mediator release

- IL8 and IL6 by fibroblasts: 38 min ; n=5



Counteracting pollution attacks



Award Winning Pollution Defence Active

Citystem™

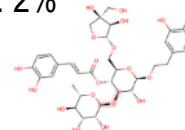
CITYSTEM™, A GLOBAL SOLUTION AGAINST ENVIRONMENTAL AND SCREEN LIGHT POLLUTION.

Makes the skin feel **soft and smooth**, **refines skin grain**. Helps make **blackheads less visible**, leaving the skin **radiant and purified**.

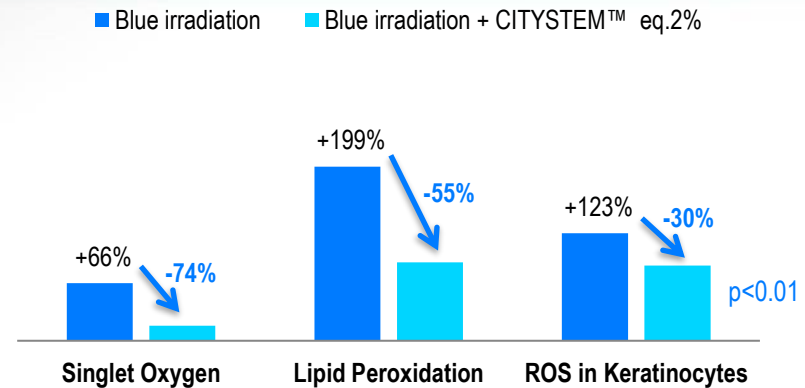
Picking Pollution Defence from Nature Advanced technology to 'city-zen' and refreshed skin.

Marrubium vulgare extract derived from HTN™ technology.

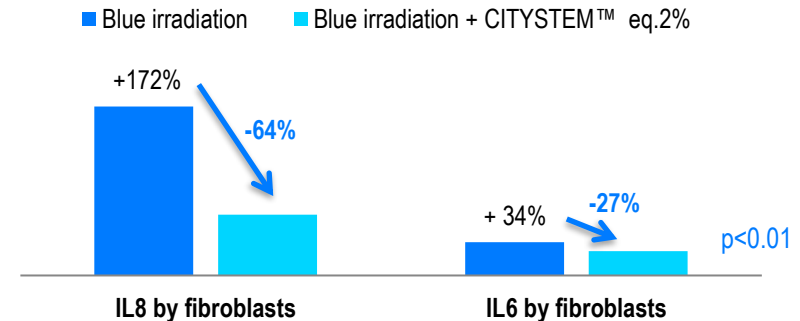
- Titrated at 350 ppm in forsythoside B.
- Recommended level: 2%



Reduction of oxidation factors



Reduction of pro-inflammatory mediator release



COSMOS APPROVED

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SCREEN LIGHT SHIELDS

Citysystem™

They **protect the skin** against the harmful effects of screen light by **neutralising toxic oxidation factors** and **reducing inflammatory potential** into skin cells.

Screen light shield

Anti-screen light

Screen light protection


Blue irradiation protection

Anti-screen pollution

Screen light detox

We are facing a new form of light pollution and indoor pollution.

As for UV rays and more recently IR rays & environmental pollution, a protection against blue irradiation is needed and the cosmetic industry has a role to play by educating the consumer on the damage they induce on skin.



The screen light ageing

SEDERMA SAS
sederma@sederma.fr
www.sederma.com

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The hazard of highly connected lifestyles