



ESSILOR
INSTRUMENTS



>

A New Paradigm
in Light Therapy
and Digital
Imaging



Technologies

Our imaging technologies leverage complex algorithms to provide screening for Meibomian Gland Dysfunction, which is identified in over 80% of dry eye conditions. The imaging is easy to perform and highly repeatable.

- > 3D IMAGING
- > INFRARED IMAGING
- > AUTOMATIC FOCUS DETECTION

Solution

Our technologies are seamlessly built into all our solutions, from diagnosis to treatment. We design, craft and test with the greatest attention and care in Italy.

- > me-check®

me-check® is registered under 21 CFR 886.1120 as an ophthalmic camera. It's a Class II exempt device.

Intended Use

The intended use of the me-check® device is the acquisition and display of images of the eye and its parts.

Espansione Ecosystem of Solutions

The Espansione Ecosystem of solutions is an end-to-end portfolio of medical devices, designed and manufactured focusing on patients' and operators' needs, whilst preserving the maximum degree of safety and reliability.

We developed me-check[®] and other solutions of the Espansione ecosystem in partnership with valued key opinion leaders.



HEIKO PULT
OD, PHD

QUALIFICATIONS

Optometrist at College of Optometry Munich, Germany
 MSc (Optometry) at PCO Salus University, Philadelphia, USA
 PhD (Vision Sciences) at School of Optometry and Vision Sciences, Cardiff University, Cardiff, UK
 Hon. – Vis. Prof. at Cardiff University, Cardiff, UK
 Academic Fellow at Aston University

MEMBERSHIPS

Fellowship+Founding Member European Academy of Optometry and Optics (EAOO)
 Fellowship, American Academy of Optometry (AAO)
 Fellowship, British Contact Lens Association (BCLA), Association of Research in Vision and Ophthalmology (ARVO)
 Tear Film and Ocular Surface Society (TFOS)



JAMES WOLFFSOHN
OD, PHD

Honours degree in Optometry (first class), University of Manchester
 Institute of Science and Technology (UMIST)
 PhD (Cardiff University)
 Diplomate of American Academy of Optometry
 University of Houston: Adjunct Professor
 Aston University: Senior Lecturer

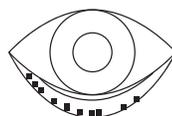
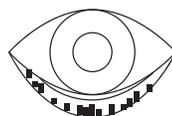
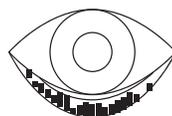
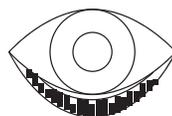
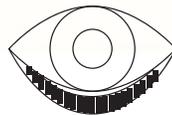
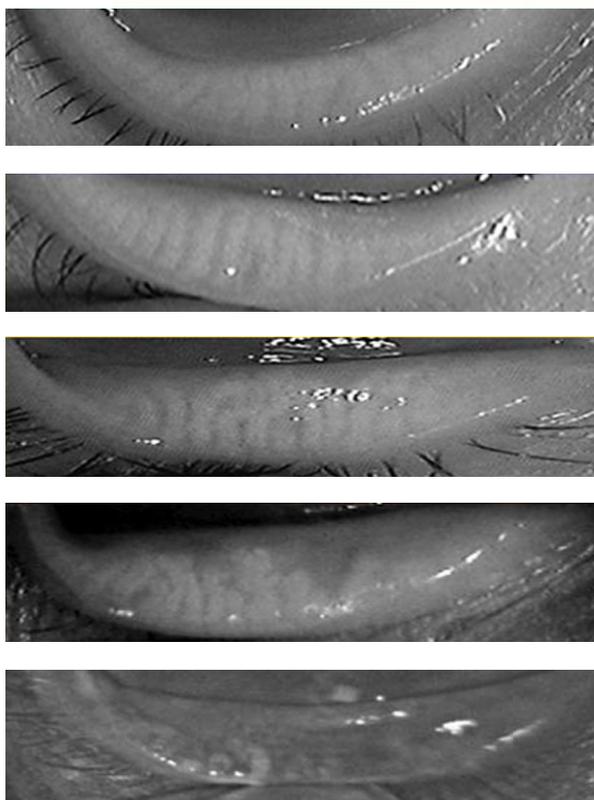
Fellowship, American Academy of Optometry
 Fellowship, Higher Education Academy
 Fellowship, International Association of Contact Lens Educators
 Fellowship, British Contact Lens Association
 Fellowship of Society of Biology

Developed with practitioners, for practitioners

me-check® is the ultimate solution for evaluation of the Meibomian glands —where inflammatory dry eye disease often originates.

We developed me-check® in cooperation with Dr. Heiko Pult and Prof. James Wolffsohn. It features the Meiboscale developed by Dr. Heiko Pult, alongside the OSDI-6 test developed with Prof. James Wolffsohn.

This means the me-check® software was built from scratch through complex mathematical algorithms, yet packaged with a fresh, operator-oriented user interface to provide specialists with the simplest, most effective screening—actionable in under 5 minutes.



Degree 0
= 0%

Degree 1
< 26%

Degree 2
26% ■ 50%

Degree 3
51% ■ 75%

Degree 4
>75%

MEIBOSCALE
BY DR. PULT



① Eye Test

Both eyes are tested via 2D/3D meibography. The average eye test is conducted within 5 minutes from start to finish, with no harm or discomfort for the patient.

The result is repeatable and consistent, and a wide variety of tests are available.

② OSDI-6

An OSDI-6 questionnaire is conducted to complete the results of the eye test.

The questionnaire is conducted by the practitioner, requires no more than 5 minutes and the results are input straight into the me-check® OS.

③ Diagnosis

The me-check® OS provides a comprehensive overview of the patient's conditions leveraging Dr. Pult's Meiboscale.

④ Management

Results of the diagnosis set the course for effective treatment of the root causes of inflammatory conditions.



epi-c plus[®] An all-in-one powerhouse with both OPE[®] IPL and LM[®] LLLT

epi-c plus[®] is our flagship solution featuring both our core technologies, Light Modulation[®] LLLT and Optimal Power Energy[®] IPL, for an optimal, non-invasive treatment of inflammatory conditions in the facial area, including the periorbital area.

epi-c plus[®] is an FDA-cleared device as per K070494

Device Description

The device is designed and manufactured to emit a high-intensity pulsed light applied to the patient's skin. The light is emitted by a quick discharge of capacitors on a xenon flash lamp with high energy. The lamp delivers a wavelength in the band of 390-1200nm. The three principal parts of the system include: the principal unit that contains all circuitry to control the device as the capacitor charge system, the microcontroller and all the electronic parts; the handpiece that contains part of circuitry to control the lamp and filter group; and the lamp and filter group, a removable box that contains a xenon flash lamp and a filter mounted onto the handpiece.

Intended Use

This product is intended for dermatological use by physicians and healthcare professionals for the following: treatment of vascular and benign pigmented lesions, cutaneous lesions including warts, scars, striae and facial and leg veins (from 550 to 1200nm filter) and a treatment of acne (from 390 to 1200nm filter) and the removal of unwanted hair in all skin types (from 570 to 1200nm filter).

Our epi-c plus® solution was built to last and to continually deliver value to both practitioners and patients.

A beautifully crafted, durable stainless steel body houses a technological wonder, developed entirely in-house to be obsolescence-proof, thanks to an upgradable operating system.

Hardware and software work hand in hand to provide effective, painless care to patients affected by inflammatory skin conditions such as acne. The epi-c plus device is extremely easy to program and operate.



About OPE® IPL

Leveraging OPE® IPL on epi-c plus® is as easy as turning on the flashlight on your phone. Based on the patient condition, OPE® IPL flashes can be leveraged to painlessly treat the face, including the periorbital area and malar region.

Our OPE® IPL technology improves blood circulation by dissipating blood vessels, improving the secretion of anti-inflammatory cytokines.

About Light Modulation® LLLT

The power of our Light Modulation® LLLT technology gets unleashed to the fullest on epi-c plus®. Based on the patient condition, Light Modulation® LLLT can be leveraged to painlessly treat the periorbital area.

On top of our Red Light, epi-c plus® features also Blue and Yellow LM® LLLT wavelengths.



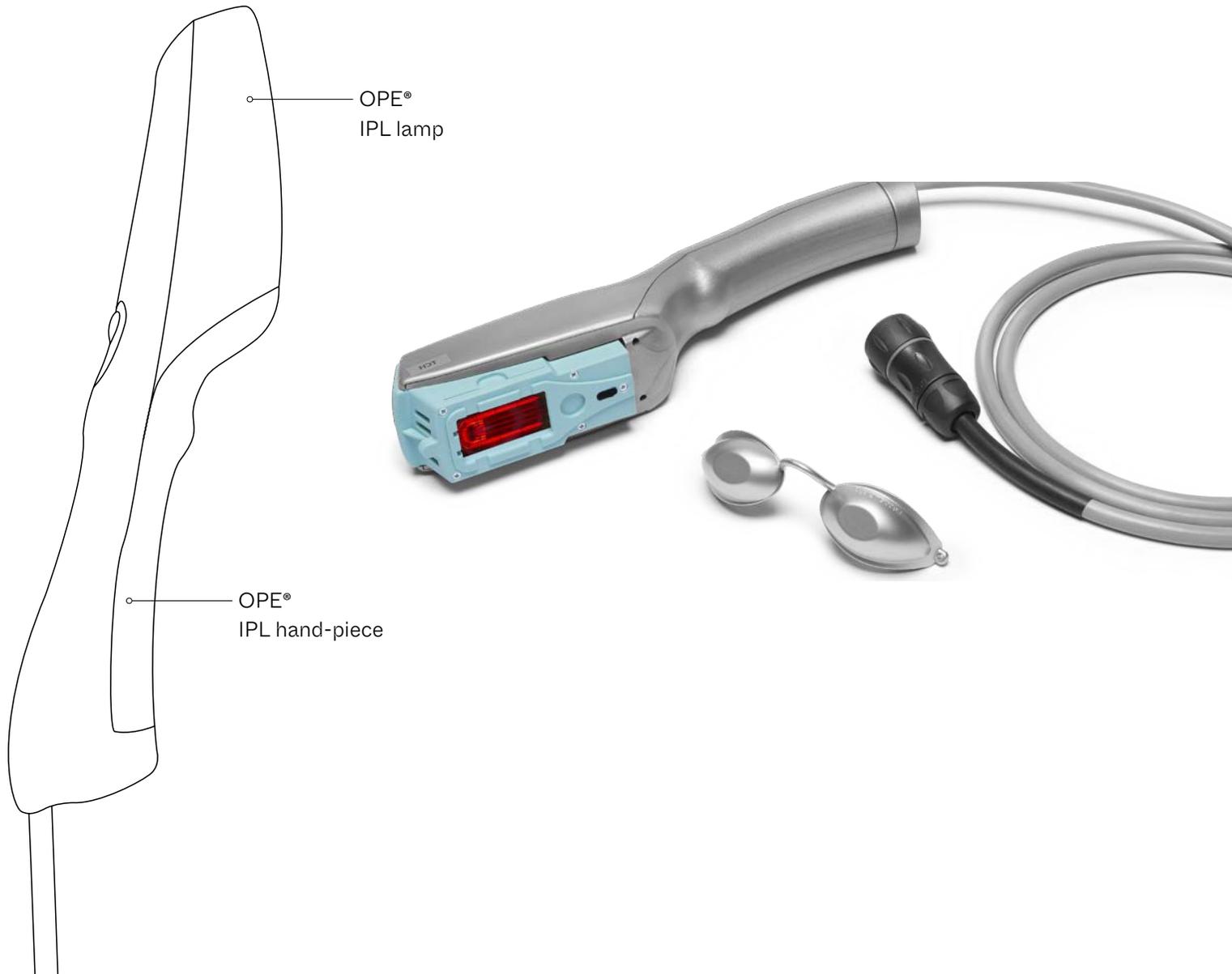
OPE® IPL

Optimal Power Energy®
Safe. Convenient. No gel involved.

epi-c plus®'s OPE® IPL is our patented Intense Pulsed Light technology. We designed OPE® as a polychromatic light whose thermal impulses are calibrated through software to always be emitted at just the right intensity, providing an extremely high degree of safety and effectiveness.

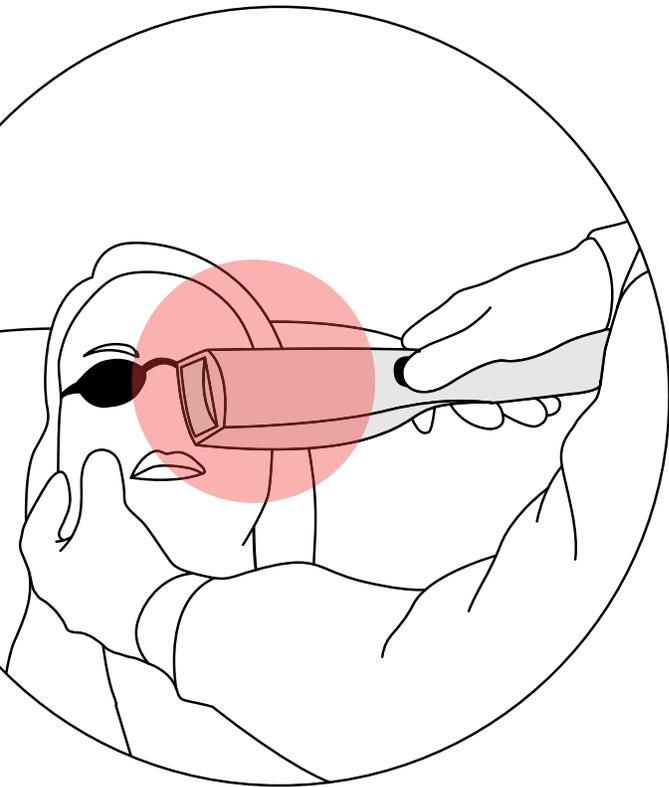
Safe, quick, convenient.

We invested heavily in designing an IPL technology that could minimize risk during treatment for the patient whilst maximizing ease of use for the operator administering the therapy.



The Benefits of OPE® IPL

- ① No gel is required; air-cooling provides convenience of use
- ② Pre-installed treatment settings based on the skin type
- ③ It provides homogenous energy application
- ④ Can be safely used on the patient's face, including the malar and periocular regions



Maximum convenience, exceptional ease of use

OPE® IPL is the only pulsed light allowing for usage without any protective gel. This is made possible by our patented, software-enabled technology providing a light impulse that is emitted at just the right frequency, every time, throughout every beam. This provides both operators and patients with an invaluable asset: the convenience of an exceptional, frictionless experience.



LM® LLLT

Light Modulation® Low-level Light Therapy is a unique, light-based photobiomodulation technology available for epi-c plus®.

Light Modulation® The power of light, cubed.

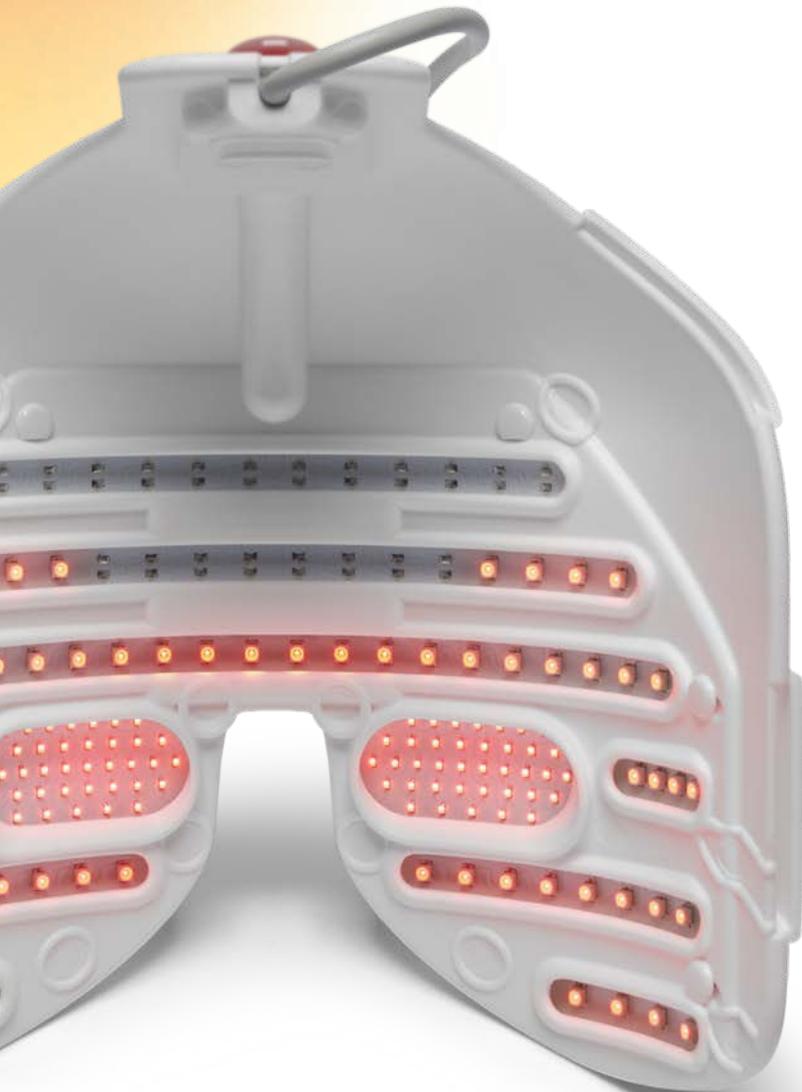
We developed and patented the technology originally used by NASA (Low-level Laser Therapy) to treat astronauts in space for medical use on patients.

LM® LLLT works at the biological level, generating endogenous heat through powerful LEDs stimulating ATP production in cells.

TECHNOLOGIES > EPI-C PLUS® / LM® LLLT

Discover the Science behind LM® LLLT

No pain,
Extreme gains.



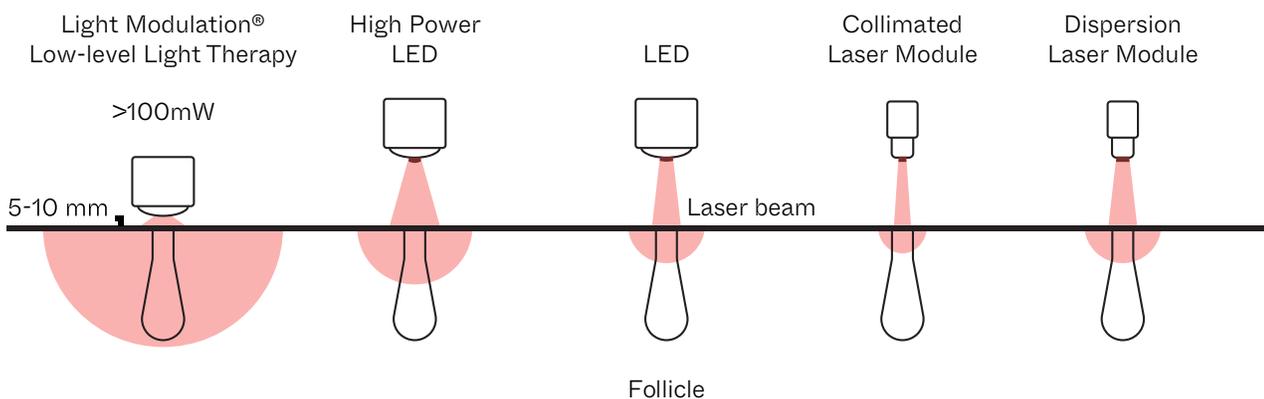
Photobiostimulation therapy enabled by LM® LLLT on epi-c® plus is completely painless for the patient —yet extremely effective in managing inflammation on the facial skin, including the eyelids, periorcular and malar areas.

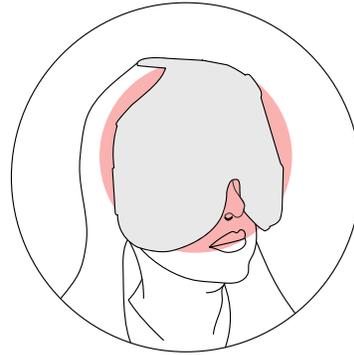
CLEARED FOR
MEDICAL USE

Maximum convenience, exceptional value.

The LM LLLT technology offers simplicity to the operator, convenience to the patient and impressive benefits to both.

This technology is exceptionally efficacious in the treatment of the facial skin for inflammation, including the periocular area.





Science told us it just works.

We believe that we have surpassed ourselves with LM® LLLT, crafting a technology that is bound to be deemed superior by the scientific community to our own OPE® IPL.

This applies not only to the safety and convenience of the technology, but also to its efficacy in the treatment of facial and periocular inflammation.

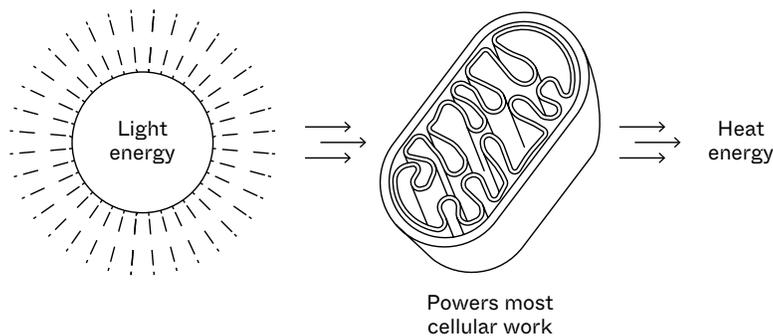
A technology like no other.

Operators and patients can enjoy the unique benefits of the LM® LLLT technology on epi-c plus®.

- ① It is fast—a treatment lasts 15 minutes.
- ② It is painless.
- ③ It grants immediate relief to the patient.
- ④ It is easy and safe for the operator.
- ⑤ It is plug and play and it does not require the operator to be constantly present during the treatment.

Light Science

LM® LLLT is our patented photobiomodulation technology—it triggers endogenous heating by stimulating ATP production in skin cells.



Three unique frequencies.

Light Modulation® Low-level Light Therapy can be leveraged employing three different light frequencies—each with its own unique benefits and use cases.

• Red Light

Used for Inflammation Reduction and ATP Production Stimulus

Key facts on Red LM® LLLT:

- ① Improves cells metabolism due to increased ATP production within mitochondria
- ② Reduces inflammation by regulating anti-oxidant defenses and reducing oxidative stress
- ③ Light-induced activation of transcription factors and signaling pathways
- ④ When a 15-minute treatment is applied, the total fluence in the treated area is 100 Joules/cm²
- ⑤ The photobiomodulation device has an emission power of 100 mW/cm²



HAMBLIN MR. MECHANISMS AND APPLICATIONS OF THE ANTI-INFLAMMATORY EFFECTS OF PHOTOBIMODULATION. AIMS BIOPHYS. 2017;4(3):337-362. DOI: 10.3934/BIOPHY.2017.3.337. EPUB 2017 MAY 19. PMID:28748217; PMCID; PMC552387

• Blue Light

Used for Bacteria Elimination

Key facts on Blue LM® LLLT:

- ① Blue light energy is absorbed by molecules called porphyrins within bacteria and photosensitization occurs
- ② Exposure to the light can result in photodynamic inactivation, a process in which bacteria are killed by light
- ③ The membrane-bound porphyrin molecules generate singlet oxygen radicals that damage or disrupt the cell wall of a variety of gram-positive bacteria and lead to cell death
- ④ The relatively weak defense mechanism in bacteria against singlet oxygen induces damage, contributing to the high efficiency of the photodynamic inactivation



SULEK A, PUCELIK B, KOBIELUSZ M, BARZOWSKA A, DABROWSKI JM. PHOTODYNAMIC INACTIVATION OF BACTERIA WITH PORPHYRIN DERIVATIVES: EFFECT OF CHARGE, LIPOPHILICITY, ROS GENERATION, AND CELLULAR UPTAKE ON THEIR BIOLOGICAL ACTIVITY IN VITRO. INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES. 2020; 21(22):8716.

• Yellow Light

Used for Drainage and Swelling Reduction

Key facts on Yellow LM® LLLT:

- ① Yellow light also acts on mitochondrial respiration and increases ATP production
- ② Promotes the release of nitric oxide to assist in neuro-transmission and tissue repair
- ③ Decreases the inflammatory response by reducing the oedema
- ④ Increases skin elasticity and decreases metalloproteinases activity



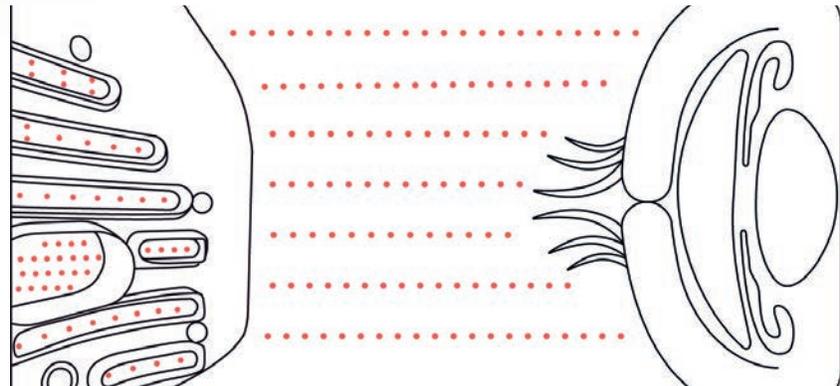
MENEZES PFC, URBACZEK AC, MATTA RFD, BAGNATO VS (2020) PHOTOBIMODULATION USING AMBER LED AND INFRARED LASER TO CONTROLLING THE PIGMENTATION AND FLACCIDITY FROM SKIN. JOURNAL OF AESTHETIC & RECONSTRUCTIVE SURGERY. VOLUME 6 NO.2:8 DOI: 10.36648/2472-1095.6.2.57



The epi-c plus[®] Light Modulation[®] Low-level Light Therapy is non-invasive, painless, and stress-free for patients.

The application of LM[®] LLLT can be used to treat several dermatological conditions on the upper face, periorbital and eyelids area, including inflammation, wrinkles and acne.

- > Comfortable, non-invasive periorbital application
- > Triggers endogenous heating of the periocular area
- > Stand-alone or supplemental application to OPE[®] IPL
- > Safe for most skin types on the Fitzpatrick scale
- > Low cost per patient and fast ROI



Benefits of LM[®] LLLT

LM[®] LLLT utilizes light modulation, a patented photobiomodulation technology where the emission of a specific wavelength of light stimulates the production of ATP (Adenosine Triphosphate). This increases cellular action and emphasizes cellular activity, triggering endogenous heat that stimulates the normalization of glands.

- > LM[®] LLLT therapy is easy. The automated software calculates the duration of the process.
- > The painless, non-contact 15-minute application provides a comfortable patient experience with no gel required.
- > A unique, patented LED mask covers the entire periorbital area.
- > LM[®] LLLT is capable of producing results for the patient from the first session. In many cases, 1-2 sessions may be enough.
- > Always have the latest generation of equipment with instrument and software upgrades.
- > Minimal economic commitment and low per patient costs make LM[®] LLLT a great option.



equinox®

equinox® is our answer to professionals who want to focus on the unique benefits of our LM® LLLT technology.

equinox® is a 510K-exempt device.

Intended Use

The device is intended for the generation of dry heat for the treatment of the body surface. The device operates with LED technology and is intended for use by healthcare professionals. The aim is to achieve, through the emission of LED light, surface temperature of the affected part of the body between 40°C and 44°C.

Photobiomodulation champion

equinox® is indicated for the application of localized heat of the facial area, including the eyelids, when recommended by a medical professional.

SOLUTIONS > TREATMENT

What are the benefits?

Built with the same industrial design of our other solutions, equinox® packs a punch when it comes to photobiomodulation technology—enabling patients and operators to benefit from everything Light Modulation® Low Level Light Therapy (LM® LLLT) has to offer:

① Complete + Direct Treatment

equinox® enables complete therapy, covering the full periorbital area and beyond into the whole face, to grant maximum efficacy in reducing inflammation.

② Totally Painless

equinox® and LM® LLLT provide patients with an entirely painless therapy.

③ Quick

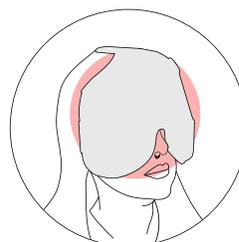
For patients, this means immediate heating of the face skin with only 15 minutes of therapy. For operators, it means delivering greater value to patients, with much less effort.

④ Easy

No training is needed and there is no setup time. It just works.



Our patented photobiomodulation technology solicits mitochondria in cells, triggering biochemical and biophysical reactions that stimulate them to a better protein synthesis.





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