



**Q.Light® PRO UNIT**

MEDICINE

## Q.Light® PRO UNIT - Phototherapy for health professionals

The **Q.Light® PRO UNIT** Indication Filter Set is specially designed for use by health professionals. It complies with the medical product standards in the EEC according the regulation 93/42.

**Q.Light® PRO UNIT** provides by using different, specific indication filters and colour filters maximum flexibility and is easy to use. The optical system with special light source and patented technology, offers an ideal spectrum for various applications in the field of Photo- and Colour Light Therapy. The electronic control unit ensures the correct dose. By the comfort of being able to adjust the treatment time and the treatment diameter, **Q.Light® PRO UNIT** is the ideal therapy device for clinics, doctor's offices and therapists.

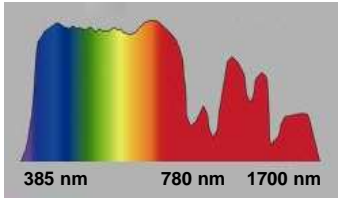
The following special indication filter modules are available for **Q.Light® PRO UNIT**:

- **PAIN CARE**  
for the treatment of acute and chronic pain
- **SAD CARE**  
for the general treatment of Seasonal Affective Disorder - SAD
- **ACNE CARE**  
for the treatment of mild and moderate Acne
- **WOUND CARE**  
for general wound care and treatment of difficult healing wounds

Additionally 6 colour filter modules for Colour Light Therapy are available:

- **Red - Orange - Yellow - Green - Blue - Violet**

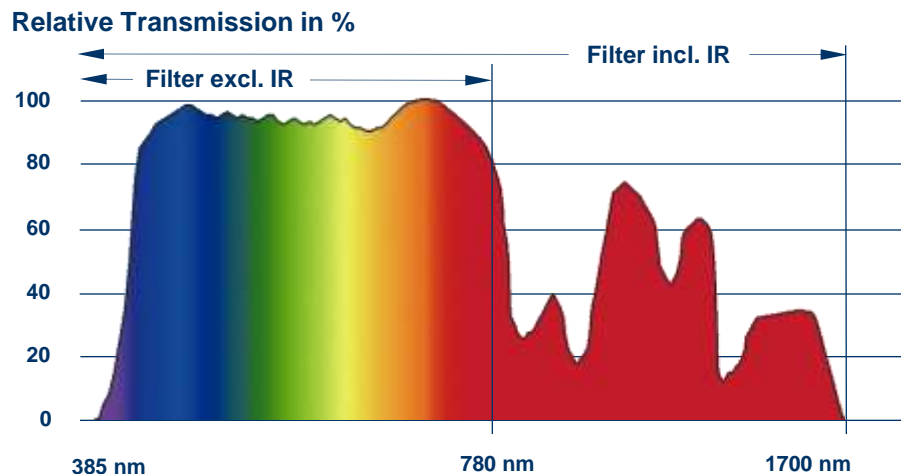
## Technical data of Q.Light® PRO UNIT

Digital display	Timer, Control treatment diameter
Modules	ACNE CARE, PAIN CARE, WOUND CARE, SAD CARE, COLOUR FILTER SET with 6 colours
Ø Standard treatment area	5 – 40 cm, variable
Light source	Natural Full Spectrum - Patented light source
Spectrum	385 – 1700 nm 
Polarization	≥ 98 %
ViS emission	Wavelength of 385 – 780 nm
Infrared emission	Near-infrared radiation of 780 – 1700 nm
UV emission	No UV-radiation
Colour temperature	4700 K
Certification	DIN EN ISO 9001:2008 & EN ISO 13485:2012 + AC:2012
CE Mark	0197

# professional therapy system

## Light quality & power density of **Q.Light®** PRO UNIT systems

**Q.Light®** emission spectrum with patented light source technology



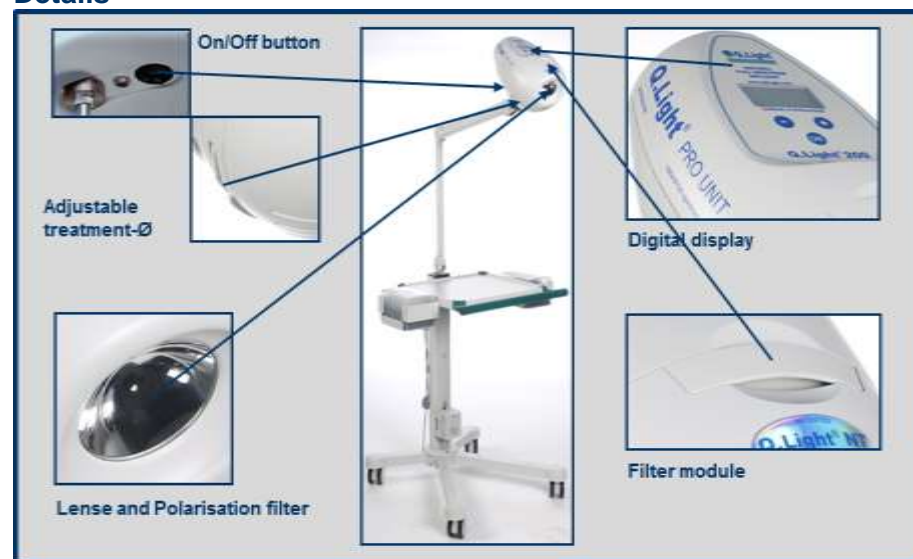
**Q.Light®** PRO UNIT – General treatment parameters

Device	Polarization-degree	Treatment-distance	Treatment-diameter	Power-density
<b>Q.Light® PRO UNIT</b>	<b>≥ 98 %</b>	40 cm	10 – 40 cm	20 mW/cm <sup>2</sup>
		30 cm	7 – 30 cm	30 mW/cm <sup>2</sup>
		20 cm	5 – 20 cm	40 mW/cm <sup>2</sup>

## Additional technical data for **Q.Light®** PRO UNIT

<b>Medical devices class</b>	Ila
<b>Voltage</b>	230 V, 50 - 60 Hz
<b>Power supply</b>	60 VA max.
<b>Safety class</b>	II, Type B
<b>Ø Treatment-energy efficiency</b>	40 mW/cm <sup>2</sup> , 2,4 Joule/cm <sup>2</sup> (min.) at standard treatment distance
<b>Weight</b>	1'200 g
<b>Size</b>	260 x 158 x 173 mm (L x B x H)
<b>Guarantee</b>	24 month

## **Q.Light®** PRO UNIT assembled on Standwagon Pro Details



defined spectrum

## General information about **Q.Light®** Phototherapy

**Q.Light®** Phototherapy is efficacious in all phases of healing: It arrests inflammations, alleviates pain, activates the immune response, improves perfusion and revascularization, increases lymphatic drainage and improves the metabolism.

**Q.Light®** Phototherapie regulates the hormonal system and optimizes the neuroimmunological parameters.

The **Q.Light® PRO UNIT** spectrum is clearly defined. It contains no ultraviolet rays and provides consistent energy output in the spectrum 385 to 1700 nm. The emitted light is polarized. Based on a power density of 40 mW/cm<sup>2</sup> at standard treatment distance, it penetrates deep into the tissue. The dose may be adjusted individually.

**Q.Light®** Phototherapy can be combined with standard treatment programs and thus represents an integratable treatment with a significant improvement in the regeneration.

Side effects or contraindications have not been reported.

## How to treat with **Q.Light® PRO UNIT**

For optimal results, the **Q Light®** therapy with specialized treatment modules should be applied on a daily base. The average therapy dose should correspond exactly to the specifications. The light beam is directed in a right angle to the area to be treated. Only after treatment area has been properly cleansed, the patient's regenerative capacity is activated by Phototherapy.

At best, one session a day, up to 20 sessions within 4 weeks in average.

The **Q.Light® PRO UNIT** is specially designed for the treatment of wounds, pain, skin problems and psychological disorders.



Radiation is not recommended for people who are extremely sensitive to light (e.g. by the use of psychotropic drugs) and women in pregnancy.

# optimized treatment results

## **Q.Light® PRO UNIT** Indication Filter Set: 4 specialized treatment modules

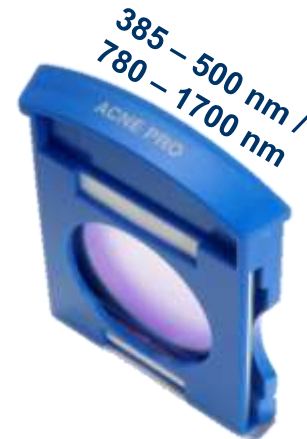
The **Q.Light® PRO UNIT** offers specialized treatment modules which allows to treat specific indications always with the right and best spectrum. Just insert the module into the foreseen module slot in the **Q.Light® PRO UNIT** device and you are set for the treatment. The following specialized treatment modules are available:



### **PAIN CARE**

The **Q.Light® PAIN CARE** module is specially designed for the treatment of

**Rheumatologic diseases,  
Chronicle pain**



### **ACNE CARE**

The **Q.Light® ACNE CARE** module is specially designed for the treatment of

**mild and moderate Acne and  
Acne Vulgaris**



### **SAD CARE**

The **Q.Light® SAD CARE** module is specially designed for the treatment of

**SED / Saisonal Effective Disorder,  
Depressions**



### **WOUND CARE**

The **Q.Light® WOUND CARE** modules are specially designed for the treatment of

**Stasis Ulcers, Decubitus Ulcers,  
Pressure sores, Diabetic Gangrene,  
Surgical Wounds, Injury wounds,  
Burns**

# specialized filter modules

## **Q.Light® Phototherapy for the treatment of acute and chronic pain**

The **Q.Light® PAIN CARE** system is specially designed for the application of pain care treatments in medical practices, clinics, specialized treatment centres, nursing homes/services and for treatment at home.

The main applications for the **Q.Light® PAIN CARE** system are:

- **Rheumatologic diseases**
- **Chronic pain**
- **Back problems**



For pain treatment, the PAIN CARE module is used:

### **Q.Light® PRO UNIT**



### **Q.Light® PAIN CARE module**



## **Technical data of Q.Light® PAIN CARE module**

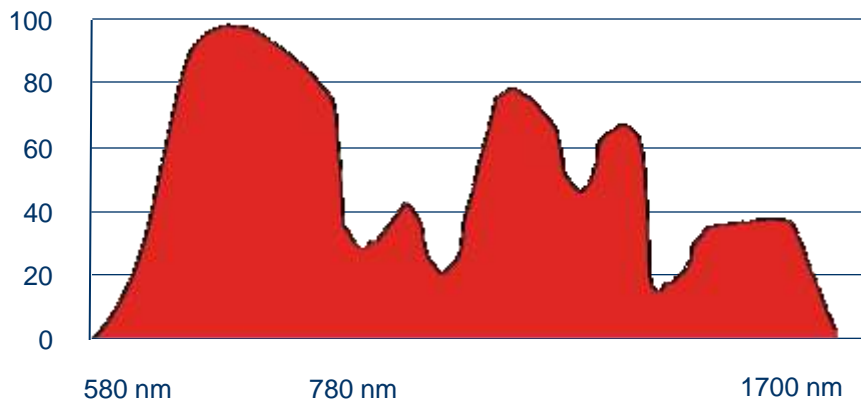
<b>Spectrum</b>	580 – 1700 nm
<b>Polarization</b>	≥ 98 %
<b>ViS emission</b>	Wavelength of 580 – 780 nm
<b>Infrared emission</b>	Near-infrared radiation of 780 – 1700 nm
<b>UV emission</b>	No UV-radiation
<b>Light temperature</b>	N.A.
<b>Certification</b>	DIN EN ISO 9001:2008 & EN ISO 13485:2012 + AC:2012
<b>CE Mark</b>	0197

**activates microcirculation**

## Light quality & power density of Q.Light® PAIN CARE module

**Q.Light®** - emission spectrum with patented light source technology

Transmission in %



**Q.Light®** - treatment parameters & treatment dose in min. for  
**Q.Light® PAIN CARE** module

Device	Polarization-degree	Treatment-distance	Treatment-diameter	Therapy dose in min.
Q.Light® PRO UNIT	≥ 98 %	40 cm	10 – 40 cm	20
		30 cm	7 – 30 cm	10
		20 cm	5 – 20 cm	5

## Scientific research on pain care

### The use of monochromatic Infrared Energy Therapy in Podiatry. Podiatry

Carnegie D.

Published: Management. Nov/Dec. 2002. 129-34

**Restoration of sensation, reduced pain, and improved balance in subjects with diabetic peripheral neuropathy: a double-blind, randomized, placebo-controlled study with monochromatic near-infrared treatment** - Emerging Treatments and Technologies

by David R. Leonard, M. Hamed Farooqi, Sara Myers

Published: Diabetes Care, Jan, 2004

**Risk of falls in elderly patients is markedly reduced through improvement in sensation, balance, and gait with infrared photo energy, and other physical therapy** (Abstract).

Kochman AB:

Published: J Geriatric Phys Therapy 25:29, 2002

**Changes of cytokine content in human blood after ist in vivo and invitro exposure to visible polarized light at therapeutic dose.**

K.A.Samoilova, D.I.Sokolov, K.D.Obolenskaya.

In: Abstracts. 13th International Congress on Photobiology and 28th Annual Meeting American Society for Photobiology. San Francisco, 2000, N 327, p.108..

defined spectrum



## Systemic mechanisms of anti-inflammatory, immunomodulating effects of Phototherapy with visible and near infrared spectrum

Research of pain, treated with red and infrared radiation, demonstrates that the effect above the microvessels of the skin, influences the entire blood in the body positive.

The overall action can be described as the following:

Irradiated blood is able to influence the total volume of blood in the body within a time of 90 minutes. Continuation of changes are observed to be continued, at a slower rate, for up to 24 hours after irradiation. The dose of emitted light applied for treatment is  $12 \text{ J/cm}^2$  with a wavelength of 580-1700 nm and a polarization degree of 98 %.

The treatment result can be summarized as the following:

- Immediate effect on blood changes are due to transcutaneous photo-modification with a fast (30-90 minutes) translation of light-induced changes to the whole circulating volume of blood.
- Changes in blood cells and plasma of the entire circulating blood are induced.
- Increased functional activity of monocytes, granulocytes, lymphocytes, platelets and improves rheologic transport and gas-transport properties of erythrocytes
- Induced lipid peroxidation levels in the erythrocyte membrane and plasma
- Modified haemostasis
- Significant is also the corresponding decreases in the plasma content of pro-inflammatory cytokines and increased levels of anti-inflammatory IL10 and IFN- $\gamma$ ; modulated growth content factors and increased growth-promoting plasma properties for keratinocytes, endotheliocytes, fibroblasts and radiation-damaged autologous cells.

The changes demonstrated regulatory character of phototherapy and it's therapeutic efficacy for pain care even in cases of chronic pain.

**Q.Light®** Phototherapy can also successfully used for chronicle pain treatment.

**Q.Light®** is effective to treat pain



# regulated photomodulation



## **Q.Light® PAIN CARE system with deep-red-beam for Physiotherapy, Rehabilitation & Sports medicine**

### **General information about Q.Light® PAIN CARE**

**Q.Light®** Therapy System is suited for use in standard-therapies, prophylactic treatment therapies and rehabilitation. It is a practicable and innovative high tech method of treatment. This medically certified device is already used by medical professionals in many countries. Anyone can benefit from this effective and low cost treatment. Also physiotherapists, rehabilitation clinics and sports doctors increasingly set on **Q.Light®**.

The emitted red light and infrared light is incoherent, polarized and without ultraviolet radiation. This radiation has been shown to have an analgetic effect on the entire organism.

The bio-positive effects strengthen the immune system, inhibit inflammation and stimulate beyond the entire metabolism, the result is a sustained pain relief.

The effectiveness of the **Q.Light® PAIN CARE** system is based on an exactly defined spectrum and a polarized radiation. The system works with a spectrum of 580 to 1700 nm and an energy output of 40 mW/cm<sup>2</sup> at standard treatment distance.

Moreover, **Q.Light®** therapy will certainly play an important role in individual health care due to it's ease of use and reasonable price.

Side effects or contraindications have not been reported.

## **How to treat pain with Q.Light®**

### **General pain care**

For optimal results the **Q.Light®** deep red beam pain care therapy should be applied on a daily base. The average dose should be at least 12 J/cm<sup>2</sup>. The light beam is directed at a right angle to the treatment area.



**Q.Light® PAIN CARE** therapy can be an ideal complementary treatment to a variety of pain management programs.

The patient is irradiated per treatment only 5-10 minutes by **Q.Light® PAIN CARE** system, ideally twice a day. In acute cases, three to four times per day. The treatment distance is about 10-40 cm.

For the treatment of joints, the treatment time should be extended per treatment safely up to 20 min. The minimum treatment distance is 10 cm.

# for best treatment results

## **Q.Light®** Lighttherapy for the general treatment of Seasonal Affective Disorder - SAD

The **Q.Light® SAD CARE** system is specially designed for the application of neurological treatments in medical practices, clinics, specialized treatment centers, nursing homes/services and for the treatment at home.

The main applications for the **Q.Light® SAD CARE** system are:

- Seasonal Affective Disorder – SAD
- Depressions
- Burn Out



For neurological treatment, the SAD CARE module is used:

**Q.Light® PRO UNIT**

**Q.Light® SAD CARE module**



## Technical data of **Q.Light®** SAD CARE module

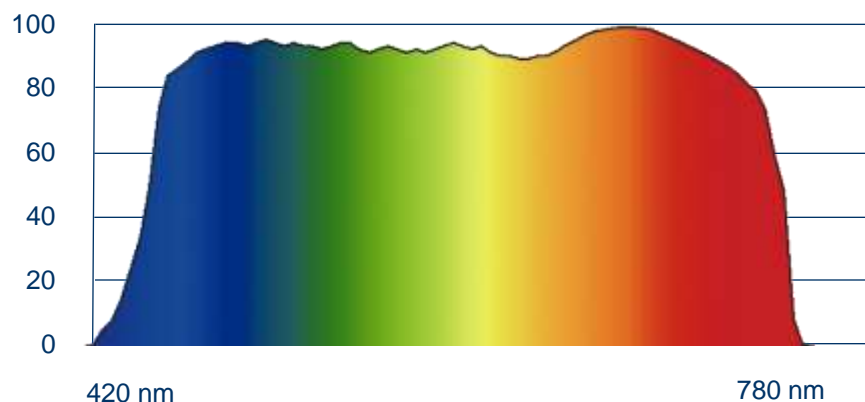
<b>Spectrum</b>	420 – 780 nm
<b>Polarization</b>	≥ 98 %
<b>ViS emission</b>	Wavelength of 420 – 780 nm
<b>Infrared emission</b>	No Infrared-radiation
<b>UV emission</b>	No UV-radiation
<b>Light temperature</b>	4700 K
<b>Certification</b>	DIN EN ISO 9001:2008 & EN ISO 13485:2012 + AC:2012
<b>CE Mark</b>	0197

stabilized hormone system

## Light quality & power density of **Q.Light®** SAD CARE module

**Q.Light®** emission spectrum with patented light source technology

Transmission in %



**Q.Light®** - treatment parameters & treatment dose in min. for  
**Q.Light® SAD CARE** module

Device	Treatment-distance	Treatment-diameter	Lux	Therapy dose in min.
<b>Q.Light® PRO UNIT</b>	20 cm	20 cm	2'500	60 - 90
	10 cm	15 cm	10'000	30

## Scientific research on Seasonal Affective Disorder

### Light suppresses melatonin secretion in humans

*Lewy, A J, Wehr TA, Goodwin FK, Newsome DA, Markey SP.*

*Published: Science. 1980; 210: 1267-1269.*

### A description of the syndrome and preliminary findings with light therapy

*Resenthal NE, Sack DA, Gillin JC, et al. Seasonal affective disorder.*

*Published: Arch Gen Psych. 1984; 41: 72-80*

### Canadian consensus for the treatment of seasonal affective disorder

*Lam RW, Levit A (eds)..*

*Canadian J of Diagnosis 1998; Supplement; 2 – 15:*

### Lichttherapie 3. edition

*Zulley J, Wirz-Justice, A (eds). Regensburg:*

*S. Rodner Verlag, 1999*

### Beginning to see the light.

*Wirz-Justice A,*

*Commentary. Arch Gen Psychiatry 1998; 55: 861-862; auch alle Originalartikel pp 875 – 896*

### Seasonal Affective Disorder and Beyond: Light treatment for SAD and non SAD conditions

*Lam RW (ed). Washington DC American Psychiatric Press 1998*

defined spectrum

## Neuroimmunomodulating effects induced by visible light

The immune system is susceptible to a variety of stresses. Recent work in neuroimmunology has begun to define how mood alteration, stress, the seasons, and daily rhythms can have a profound effect on immune response through hormonal modifications. Central to these factors may be light through an eye-brain hormonal modulation.

By human beings, only visible light (380-780 nm) is received by the retina of the eye. This light energy is then transduced and delivered to the visual cortex and, by an alternative pathway, to the suprachiasmatic nucleus (SCN), the hypothalamic region that directs circadian rhythm. Visible light exposure also modulates the pituitary and pineal glands, leading to neuroendocrine changes. Melatonin, norepinephrine and acetylcholine decrease with light activation, whereas cortisol, serotonin and dopamine levels increase.

The synthesis of vasoactive intestinal polypeptide (VIP), gastrin releasing peptide (GRP) and neuropeptide Y (NPY) has been shown to be modified by light. These induced neuroendocrine changes can lead to alterations in mood and circadian rhythm as well as immune modulation. An alternative pathway for immune modulation by light is through the skin. Visible light can penetrate epidermal and dermal layers of the skin and may directly interact with circulating lymphocytes to modulate immune function.

It is therefore important for treatment to control the intensity, dose and wavelength of emitted light.

## Q.Light® is effective to treat SAD symptoms



Lighttherapy is the effective method to effectively treat the symptoms of seasonal disturbances. It is a side-effect free alternative to drug treatment.

# regulating photomodulation

## Therapeutic guidelines for the treatment of Seasonal Affective Disorder – SAD

1. Encourage daily walks outdoors; the patient may look up at the sky but never directly at the sun. Enhance indoor lighting with regular lamps and fixtures.
2. Set a timer on a light to go on early in the morning in the patient's bedroom. Consider a dawn simulator for a more naturalistic artificial dawn.
3. Initiate **Q.Light®** therapy with 10,000 lux, starting with 30 minutes ideally in the morning, not later than noontime. Increase the duration if symptoms become more severe, up to 45 minutes per day.
4. Aerobic exercises, preferably in combination with exposure to bright light, may be quite helpful.
5. To help the patient manage stress, suggest vacations (preferably in the south) at strategic times, and provide support, counseling and therapy.

## How to treat SAD with Q.Light®

For optimal results with **Q.Light® SAD CARE** it is important to apply an effective dose. To receive adequate biological response an dose is applied to the eyes of approx. 30 min. at 10.000 Lux. The light beam is directed at a right angle to the face, ideally with open eyes.



The treatment should be performed daily.

Some studies have reported positive responses in patients with non-seasonal depression, premenstrual syndrome (late luteal dysphoria), bulimia, alcohol withdrawal symptoms and Burn Out. Beneficial results were also obtained at the treatment of insomnia and jet leg.

# optimized treatment results

## Q.Light® Phototherapy for the treatment of Acne

The **Q.Light® ACNE CARE** system is specially designed for the treatment of mild and moderate acne in medical practices, clinics, specialized treatment centres, beauty salons and for treatment at home.

The main applications for the **Q.Light® ACNE CARE** system are:

**mild and moderate**

- **Common acne**
- **Acne Vulgaris**
  - Acne Comedonica
  - Acne Papulopustulosa
  - Acne Conglobata



For acne treatment, the ACNE CARE module is used:

**Q.Light® PRO UNIT**



**Q.Light® ACNE CARE module**



## Technical Data of Q.Light® ACNE CARE module

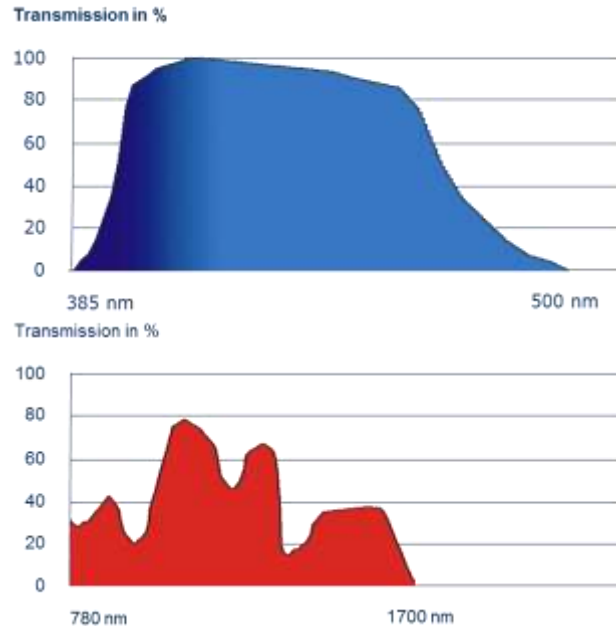
<b>Spectrum</b>	385 – 1700 nm
<b>Polarization</b>	≥ 98 %
<b>ViS emission</b>	Wavelength of 385 – 500 nm
<b>Infrared emission</b>	Near-infrared radiation of 780 – 1700 nm
<b>UV emission</b>	No UV-radiation
<b>Light temperature</b>	N.A.
<b>Certification</b>	DIN EN ISO 9001:2008 & EN ISO 13485:2012 + AC:2012
<b>CE Mark</b>	0197

excites porphyrin



## Light quality & power density of **Q.Light®** ACNE CARE module

**Q.Light®** emission spectrum with patented light source technology



**Q.Light®** - treatment parameters & treatment dose in min. for **Q.Light®** ACNE CARE module

Device	Polarization-degree	Treatment-distance	Treatment-diameter	Therapy dose in min.
<b>Q.Light®</b> <b>PRO UNIT</b>	<b>≥ 98 %</b>	<b>30 cm</b>	<b>8 – 30 cm</b>	<b>12</b>
		<b>20 cm</b>	<b>7 – 20 cm</b>	<b>10</b>
		<b>10 cm</b>	<b>5 – 10 cm</b>	<b>6</b>

## Scientific research on acne

**An action spectrum for blue and near ultraviolet inactivation of *Propionibacterium acnes*; with emphasis on a possible porphyrin photosensitisation.**

Kjeldstad B, Jhonsson

Photochemistry-Photobiology 1986: 43(1); 67-70

**Singlet oxygen ( $^1\Delta_g$ ) generation from coproporphyrin in *Propionibacterium acnes* on irradiation.**

Arakane K, Ryu A, Hayashi C, Masunaga T, Schinmoto K, Mashiko S, Nagano T, Hirobe M.

Biochem Biophys Res Commun 1996; 223 (3): 578-82.

**Effect of Visible Light on Reactive Oxygen Species Production**

*R. Lubart,<sup>1</sup> H. Friedmann,<sup>1</sup> R. Lavie,<sup>1</sup> N. Grossman,<sup>2</sup> M. Sinyakov and S. Belotsky*

*Department of Chemistry and Physics, Department of Life Sciences Bar-Ilan University, Ramat-Gan 52900, Israel*

**Visible light promotes proliferation of normal skin cells**

Grossman, N., Reuveni, H., Halevy, S., Lubart, R., J. Invest. Dermatol., 102649A (1994)

**Improvement of rheologic parameters, ligand- and oxygen-binding capacity of erythrocytes of circulating blood after exposure of the body surface to visible polarized light.**

K.A.Samoilova, K.D.Obolenskaya, A.V.Vologdina, N.V.Mineeva, N.Yu.Romanenko, M.F.Balljuzek: Published: 8th Congress of European Society for Photobiology. Book of Abstracts, P106, p.145, Granada (1999)

defined spectrum

## Details about Acne

Cosmetic medicine, also called cosmetology or dermatocosmetics, deals with skin disorders. Dermatocosmetic treatments rank very highly, as they support medical treatments, occasionally even contributing decisive elements to their success. A very good example for skin disorders that both physicians and beauticians are frequently confronted with is common acne or acne vulgaris:

### Common acne

Common acne is one of the most widespread skin disorders. It typically begins during puberty, often - but not always - subsiding when patients are in their thirties. Depending on the severity of the disorder, acne vulgaris can take on three different forms:

#### Acne comedonica

Acne comedonica is characterized by the predominant presence of open and closed comedones appearing in varying numbers and intensities, but mainly in the facial region, which is very distressing for most patients.

#### Acne papulopustulosa

With the inflammation progressing, painful papules tend to appear, often leaving behind visible scars after healing and thus provoking significant emotional stress.

#### Acne conglobata

The severest form of common acne is acne conglobata. Acne conglobata is characterized by the concurrent presence of comedones, pustules, indurated papules and abscesses with interconnecting sinuses that affect large skin regions. They develop on the back and the nape; in the latter case, it's called acne inversa. Patients are generally "stigmatized" by numerous scars that can be very pronounced, even disfiguring.

The phototherapy with a range of 385 - 500 nm and 780 - 1700 nm (red & blue) is proving to be a very successful method of treatment against acne.

## Significant treatment results with **Q.Light®** ACNE CARE



**before**



**after phototherapy**



**before**



**after phototherapy**

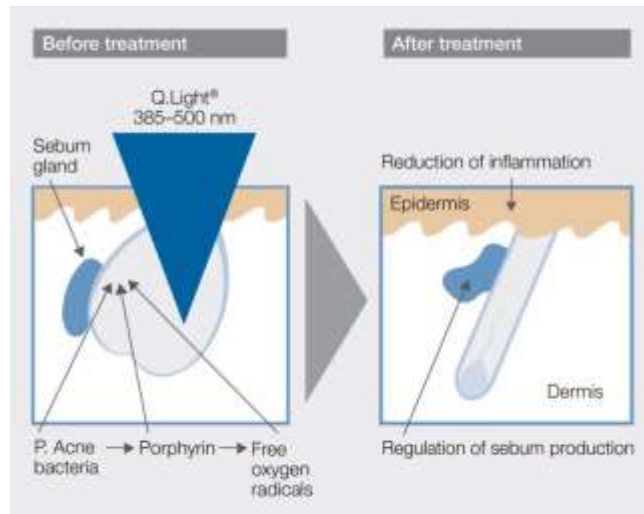
# regulated photomodulation

## Effectiveness of the **Q.Light®** phototherapy for Acne

Acne is a dermatological disease that interests about 40 % of the population between 12 and 30 years.

**Q.Light® ACNE CARE** has been specially designed for the treatment of acne. Due to the concentrated spectrum between 385-500 nm, the additional use of near-infrared radiation and power density, optimal treatment results are achieved.

As part of its reproduction and metabolism process, the Propionil- bacterium Acnes (P. Acne bacteria) releases a certain pigment called porphyrin. Porphyrin molecules, once absorbing photons, become chemically active and transform into a state of aggregation that can result in several formations. One of the formations is a free oxygen radical that attacks the cell membrane and leads to the destruction of the P. acne bacterium. Like any other photochemical reaction, the efficacy of the process is determined by the production rate of excited porphyrin molecules, influenced by concentration of porphyrin, concentration of photons and the wavelength of the photons.



## How to treat acne with **Q.Light®**

**Q.Light® ACNE CARE** with specified spectrum (blue range of light and the high intensity of the IR irradiation) has a favorable influence on acne. Scientific studies and empirical reports show individual cases of acne to be significantly reduced or even completely healed by regular exposition to **Q.Light®**. As individual treatment sessions are very short, **Q.Light®** phototherapy can easily be integrated into traditional - local or systemic - regimens of acne therapy. For optimal results it is recommended to clean the area to be treated with a mild cleanser. Then direct the **Q.Light® ACNE CARE** beam in a right angle to the treatment area. The average dose applied is 9.6 J/cm<sup>2</sup> on a daily base. The treatment time per session is 10 minutes with 40 mW/cm<sup>2</sup> = treatment distance of approx. 20 cm.



Acne before treatment with Q.Light



Acne after treatment with Q.Light



for best treatment results

## **Q.Light®** Phototherapy for general wound care and treatment of difficult healing wounds

The **Q.Light® WOUND CARE** system is specially designed for the application of wound care treatments in medical practices, clinics, specialized treatment centres, nursing homes/services and for treatment at home.

The main applications for the **Q.Light® WOUND CARE** system are:

- **Stasis Ulcers / Leg Ulcers**
- **Decubitus Ulcers / Pressure sores**
- **Diabetic Gangrene**
- **Surgical Wounds**
- **Injury Wounds**
- **Burns**



For wound treatment, the WOUND CARE module is used:

### **Q.Light® PRO UNIT**



### **Q.Light® WOUND CARE modules**



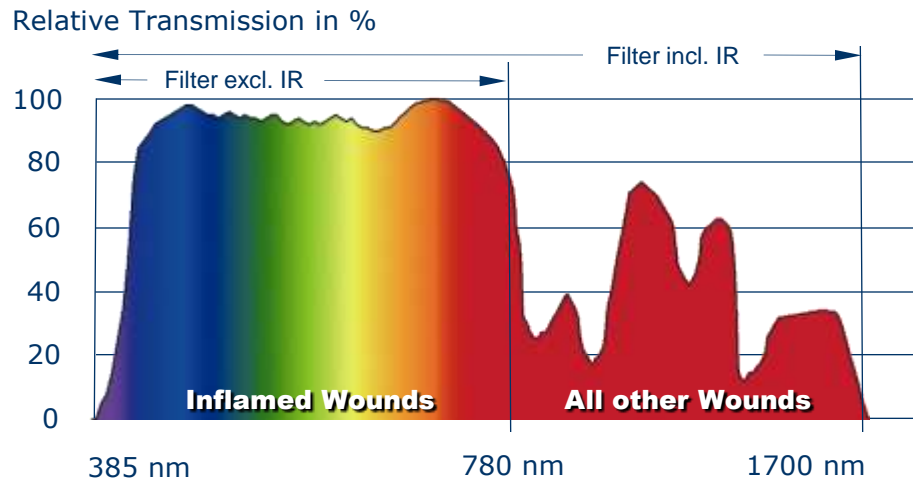
## Technical Data of **Q.Light®** WOUND CARE module

<b>Spectrum</b>	385 – 1700 nm
<b>Polarization</b>	≥ 98 %
<b>ViS emission</b>	Wavelength of 385 – 780 nm
<b>Infrared emission</b>	Near-infrared radiation of 780 – 1700 nm (optional)
<b>UV emission</b>	No UV-radiation
<b>Light temperature</b>	4700 K
<b>Certification</b>	DIN EN ISO 9001:2008 & EN ISO 13485:2012 + AC:2012
<b>CE Mark</b>	0197

activates microcirculation

## Light quality & power density of **Q.Light®** WOUND CARE module

**Q.Light®** emission spectrum with patented light source technology



**Q.Light®** - treatment parameters & treatment dose in min. for **Q.Light®** WOUND CARE module

Device	Polarization-degree	Treatment-distance	Treatment-diameter	Therapy dose in min.
<b>Q.Light®</b> <b>PRO UNIT</b>	<b>≥ 98 %</b>	<b>30 cm</b>	<b>8 – 30 cm</b>	<b>12</b>
		<b>20 cm</b>	<b>7 – 20 cm</b>	<b>10</b>
		<b>10 cm</b>	<b>5 – 10 cm</b>	<b>6</b>

## Scientific research on wound healing

### The effect of polarized-light on wound healing

S. Monstrey, H. Hoeksema, H. Saelens, K. Depuydt, M. Hamdi, K. Van Landuyt and P. Blondeel

Department of Plastic Surgery, University Hospital Gent, Belgium  
Published: European Journal of Plastic Surgery – 2000

### A conservative approach for deep dermal burn wounds using polarised-light therapy

S. Monstrey, H. Hoeksema, H. Saelens, K. Depuydt, M. Hamdi, K. Van Landuyt and P. Blondeel

Department of Plastic Surgery, University Hospital Gent, Belgium  
Published: British Journal of Plastic Surgery – 2002

### On the mechanism of enhancement of wound healing by visible incoherent polarized light: stimulation of the human keratinocyte and fibroblast proliferation in vitro by soluble factors of the circulating blood.

M.I.Blinova, K.A.Samoilova, N.M.Yudintzeva, N.M.Kalmykova:  
Published: 8th Congress of European Society for Photobiology. Book of Abstracts, P108, p.145, Granada (1999).

### Effect of NASA Light-Emitting Diode (LED) Irradiation on Wound Healing.

Cevenini V, Stinson H, Ignatius R, Martin T, Cwiklinski J, Philippi AF, Graf  
WR, Hodgson B, Gould L, Kane M, Chen G, Caviness J

Published: Journal of Clinical  
Laser Medicine and Surgery. 2001;19:305-314

defined spectrum



## Systemic mechanisms of anti-inflammatory, immunomodulating, wound-healing effects of phototherapy with visible and near infrared spectrum

Recent research on pain, even in connection with the treatment of wounds, have shown that the visible radiation on the microvasculature of the skin affects the total volume of blood in the body.

Already after a short treatment with a dose of  $12 \text{ J/cm}^2$ , at a wavelength of 400-1700 nm and a degree of polarization of 98 %, there is a complete photo-modulation within 90 minutes.

Continuation of changes are observed at a slower rate, for up to 24 hours after irradiation

The treatment result can be summarized as the following:

- Immediate effect on blood changes are due to transcutaneous photo-modification with a fast (30-90 minutes) translation of light-induced changes to the whole circulating volume of blood.
- Immediate changes in blood cells and plasma of the entire circulating blood.
- Increased functional activity of monocytes, granulocytes, lymphocytes, platelets.
- Rapidly improves oxygen flow- and transport properties of erythrocytes.
- Increased lipid peroxidation in plasma and the membrane of the erythrocytes.
- Slight positive change in blood clotting.
- Significant reduction in the plasma content and proinflammatory cytokines and increased levels of IFN- $\gamma$  respectively IL-10
- Increased rate of wound healing and improved growth promoting plasma properties in relation to the keratinocytes, endotheliocytes, fibroblasts and radiation-damaged autologous cells.

The changes demonstrate the regulative effect of phototherapy and their therapeutic effect for the treatment of wounds. Phototherapy has been successfully used in chronic wounds, as well as slow-healing wounds.

## Effective treatment of wounds by phototherapy



Deep second degree burn



After 2 weeks of light therapy



Result after 9 month



Venous ulcer by submission



After 2 weeks of light therapy



Result after 2 month

# regulated photomodulation



## General information about **Q.Light®** wound treatment

**Q.Light®** Phototherapy is efficacious in the different phases of wound healing, arresting inflammations, alleviating pain, activating the immune response, improving perfusion and revascularization, increasing lymphatic drainage and generally improving the metabolism.

All of these effects support the body's power of self-healing. In the case of chronic wound healing disorders, they have a significant positive influence on pathological wound environments. Wounds can heal if newly formed capillaries increase the blood supply, if increased lymphatic drainage dissipates edemas, if an improved immune response fights infections and metabolism is reactivated. Thus, **Q.Light®** Phototherapy has a systemic effect, promoting wound healing by restoring formerly disturbed metabolic and regenerative processes.

The **Q.Light® WOUND CARE** spectrum is clearly defined, without ultraviolet rays and provides consistent energy in the range 385 - 1700 nm, polarized. The dose may be adjusted individually. The radiation emitted by **Q.Light® WOUND CARE** system has a power density of about 40 mW/cm<sup>2</sup> at the standard distance of 20 cm and treatment penetrates deep into the tissue. It is also possible to treat infected wounds or burns without infrared radiation (Filter module **Q.Light® WOUND CARE excl. IR**).

**Q.Light®** Phototherapy can be optimally combined with standard wound care and thus represents an integratable treatment with a significant improvement in wound healing.  
Side effects or contraindications have not been reported.

## How to treat wounds with **Q.Light®**

### General wound care

For optimal results the **Q.Light® WOUND CARE** therapy applied on a daily basis. The average dose should be at least 12 J/cm<sup>2</sup>, that is 10 minutes at a power density of 40 mW/cm<sup>2</sup> at a therapy distance of about 20 cm. The light beam is directed at a right angle to the treatment area. Only after wounds have been properly cleansed, the patient's regenerative capacity is activated in the wound area.

The subsequent healing process of the wound takes place in three interlinking phases:

- endogenous purification
- granulation
- epithelialization



### Burn wounds

The **Q.Light® WOUND CARE** therapy in many cases reduces the need for surgery in the treatment of deep dermal burns, if applied immediately after submission. Within this group of patients, the use of polarized light accelerates wound healing and allows very early pressure therapy, thus reducing hypertrophic scarring and contractures. No extension of the hospital stay is required because of the better aesthetic and functional results, this especially applies to burns of the hands. Phototherapy with polarized radiation has become the preferred method of therapy for the treatment of deep dermal burns in special clinics.

# optimized treatment results

## **Q.Light® PRO UNIT & Colour Filter Set - 6 colour filter modules**

The **Q.Light® PRO UNIT** offers special dichroic colour filter modules which allows to use the device also for colour therapy. The brilliant colours are achieved by the patented light source that is powered by the **Q.Light® PRO UNIT**.



### **Filter Module RED**

#### **Characterization**

- activity and warmth

#### **Global effect**

Activates energy reserves in case of mental and physical exhaustion



### **Filter Module ORANGE**

#### **Characterization**

- Activity and inspiration

#### **Global effect**

Stimulates creativity and self-respect especially under stress and depression



### **Filter Module YELLOW**

#### **Characterization**

- Intelligence and success

#### **Global effect**

Strengthens and motivates in tired and moody phases



### **Filter Module GREEN**

#### **Characterization**

- Balance and hope

#### **Global effect**

Boosts equilibrium, composure and stamina in weak and restless situations



### **Filter Module BLUE**

#### **Characterization**

- Coolest and most relaxing colour

#### **Global effect**

Reassures and relaxes nervous irritability and stressful strain of all nature



### **Filter Module VIOLET**

#### **Characterization**

- Individualism and intuition

#### **Global effect**


Unblocks, relaxes and revives in hopeless moments

There are many ways and techniques of how to apply **Q.Light®** colour light to the human body for therapeutic purposes. It is advisable to visit colour therapy education courses or seminars. For first information visit: [www.QLight.info](http://www.QLight.info)

# brilliant colours

## Quality certificate

**Q.Light®** Phototherapy Systems are certified active medical products based on DIN EN ISO 9001:2008 & EN ISO 13485:2012 + AC:2012 and carry the CE Mark **CE 0197**



**EC Certificate**  
Directive 93/42/EEC Annex V  
Production Quality Assurance  
Medical Devices

Registration No.: DD 60107707 0001  
Report No.: 21238979 001

Manufacturer: Q. Products AG  
Säntlestr. 11  
9401 Rorschach  
Schweiz

Products: medical devices for Light Therapy/Phototherapy  
(see attachment for products included)  
Registreur Switzerland, Registration No.: DD 60104314 0001

Expiry Date: 2023-01-28

The Notified Body hereby declares that the requirements of Annex V of the directive 93/42/EEC have been met for the listed products. The above named manufacturer has established and applies a quality assurance system, which is subject to periodic surveillance, defined by Annex V, section 4 of the aforementioned directive. For placing on the market of class III and class II devices covered by this certificate an EC type-examination certificate according to Annex B is required.

Effective Date: 2018-01-28  
Date: 2018-01-28

Notified Body  
*[Signature]*  
Dipl.-Ing. I. Munkler

TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg

TÜV Rheinland LGA Products GmbH is a Notified Body according to Directive 93/42/EEC, concerning medical devices with the identification number 0197.

## Free Sales Certificate

This certification approves **Q.Products AG** to manufacture and sell **Q.Light®** therapy devices internationally.



**swissmedic**

**FREE SALES CERTIFICATE**

Nr.: FSC-16-20243 valid until: 21 February 2019

The SWISS AGENCY FOR THERAPEUTIC PRODUCTS certifies herewith, that medical devices are regulated in Switzerland under the Federal Law on Medicinal Products and Medical Devices (Law on Therapeutic Products) of 15 December 2000 in force since 1 January 2002 and the Medical Devices Ordinance of 17 October 2001 in force since 1 January 2002.

The following medical device(s) meets (meet) the legal requirements set out in the Swiss Medical Devices Ordinance and which incorporates the Medical Devices Directives of the European Union:

**Q. Light® Photo Therapy Devices.**

Therefore, the firm **Q.Products AG, Säntlestrasse 11, 9401 Rorschach, Switzerland,**

in conformity with the medical devices law of Switzerland is authorized to manufacture and sell on the Swiss market and to export into any country the CE marked medical device(s) above-mentioned.

This certificate is valid until 21 February 2019

Bern, 22 February 2018

Swiss Agency for Therapeutic Products  
Medical Devices Division

*[Signature]*  
Claude-Philippe Föllmi, Master of Law

Fee: CHF 300.00

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certified medical products

## **Q.Products AG – biotechnology & photomedicine**

**Q.Products AG** develops and manufactures specialized phototherapy devices for professional application and for self medication at home. Additionally to our **Q.Light® PRO UNIT** we also manufacture the following specialized devices:

- **Q.Light® ACNE CARE**
- **Q.Light® PAIN CARE**
- **Q.Light® WOUND CARE**
- **Q.Light® SAD CARE**

### **Q.Products AG**

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Version 2016/02/16

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# specialized systems