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Presentation IPL-Sq®

VYDENCE
CONTINUING MEDICAL EDUCATION Program

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reviewed and approved by **Antonio Olivatto**

proprietary and confidential

see more at:

vyndence
LASER ACADEMY **tv**



ETHEREA-MX[®] PLATFORM



LEADER IN THE WORLD'S SECOND-LARGEST AESTHETICS MARKET



- Maximum versatility;
- LASER and light technologies;
- 70+ treatment indications;
- LASER for all types of skin;
- Always with new technologies;
- Greater profitability and return;
- Compact design that is easy to transport;
- Reliable: second-generation platforms;
- Powerful and with proven results;
- Easily changeable handpieces, plug-and-play;
- Dual voltage, with no need for a voltage stabilizer;
- International standard, FDA approved;
- Sold in nearly 20 countries.

ProDeep®
Nd:YAP 1340 nm
For deep epidermal
nonablative fractional
LASER treatments.



GoSmooth®
Er:GLASS 1540 nm
Gold standard
technology for non-
ablative LASER skin
resurfacing.



LongPulse®
Nd:YAG 1064 nm
Nd:YAG LASER with
variable pulse modes.

ACROMA-QS®
Nd:YAG 1064/532 nm
Dual-wavelength
Fractional Q-switched
LASER with optional
fractional spot.



DualMode®
Er:YAG 2940 nm
Powerful, dual-effect
Er:YAG with improved
coagulation effect.



IPL-Sq®
Intense Pulsed Light
Square-Wave Pulse
Technology and all-in-
one available cut-off
filters.



ATHENA®
DualMode® Accessory
intimate LASER
treatment for women's
health and wellness.



intenseIR®
Infrared Light
Hi-powered IR light
for skin tightening
of the body and face.



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about LASERs and light: **science and technology**

TIMELINE

1995	<ul style="list-style-type: none">• FDA approval to use IPL to treat vascular lesions - FDA K950493
1995	<ul style="list-style-type: none">• study reported hair loss as a side effect of treating vascular lesions
1997	<ul style="list-style-type: none">• FDA approval to use IPL to permanently reduce hair - FDA K 963249
2000	<ul style="list-style-type: none">• FDA begins accepting IPL for permanent hair reduction in Fitzgeral scale skin types I-V - FDA K 991935
2003+	<ul style="list-style-type: none">• other indications, such as pigmentary lesions and skin rejuvenation

ADVANTAGES OF THE TECHNOLOGY



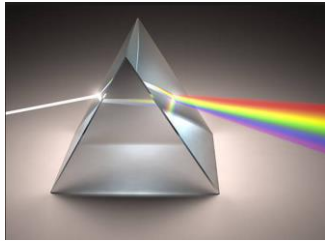
- **Highly flexible system:** for treating various indications with a single device
- **Effective:** the results are good, similar to some applications of laser;
- **Safe:** proven by hundreds of scientific articles and years of clinical practice.

ACTION MECHANISM

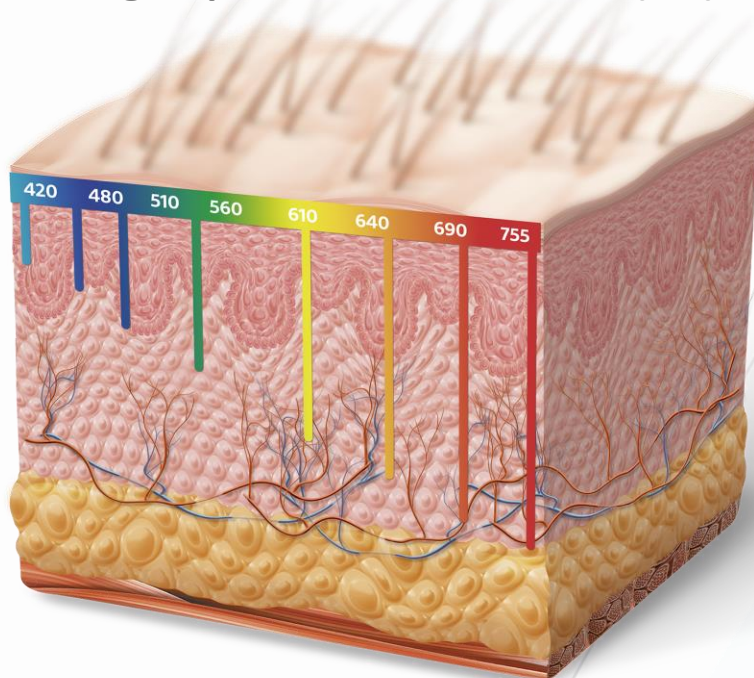


- IPL is a **flashing light**, where part is reflected on the surface of the skin and another part penetrates the skin;
- The light is converged on the target, producing a **temperature increase** of around 70°C;
- By conduction, these targets transfer the heat to the adjacent cells, including the papilla and the bulb, resulting in the **denaturation of the target** of the treatment;
- + Photochemical interaction

WAVELENGTH



Light spectrum in nanometers (nm)

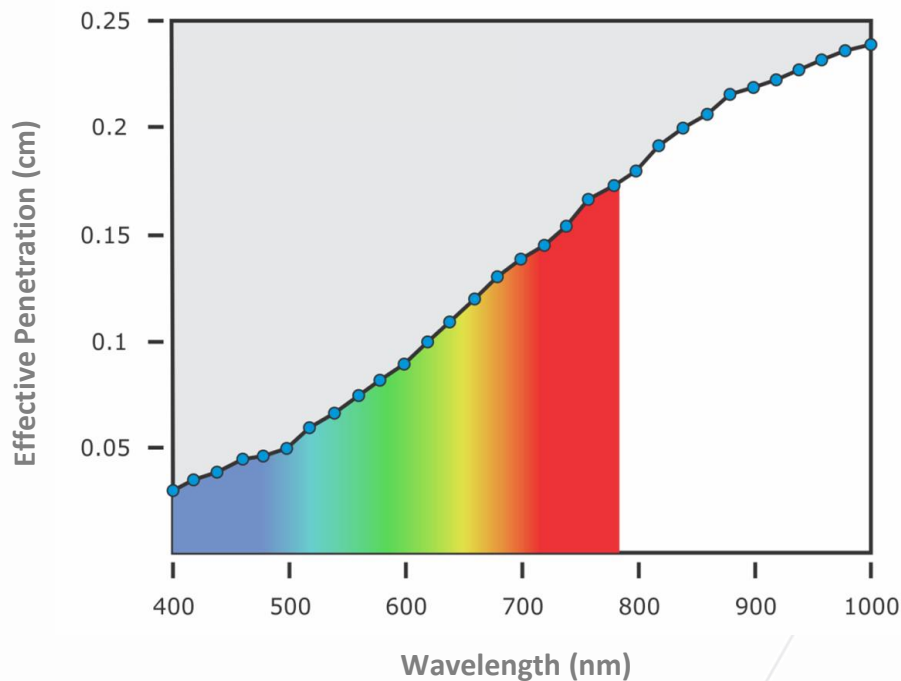


- Through a prism, light is separated into a broad spectrum;
- Excluding UV radiation, the lamp's output consists of visible and infrared light with a **wavelength of 400 to 1200 nm;**

COLOR	λ
Violet	380 to 440 nm
Blue	440 to 490 nm
Green	490 to 565 nm
Yellow	565 to 590 nm
Orange	590 to 630 nm
Red	630 to 780 nm

WAVELENGTH AND DEPTH OF ACTION

Graph of penetration by wavelength

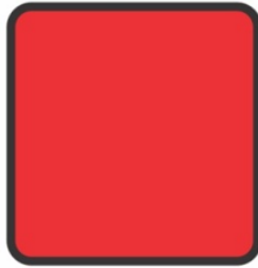


In IPL's spectrum, **penetration is proportional to the wavelength** – less affinity for water vs. melanin;

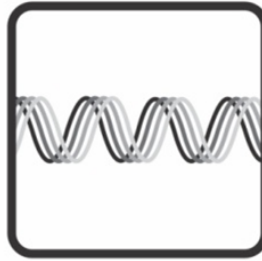
DIFFERENCES BETWEEN LASER AND LIGHT



Collimated



Monochromatic



Coherent

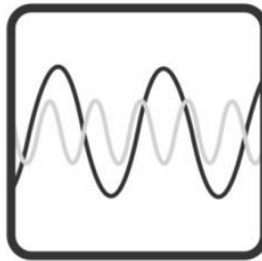
LASER



Divergent



Broad Spectrum



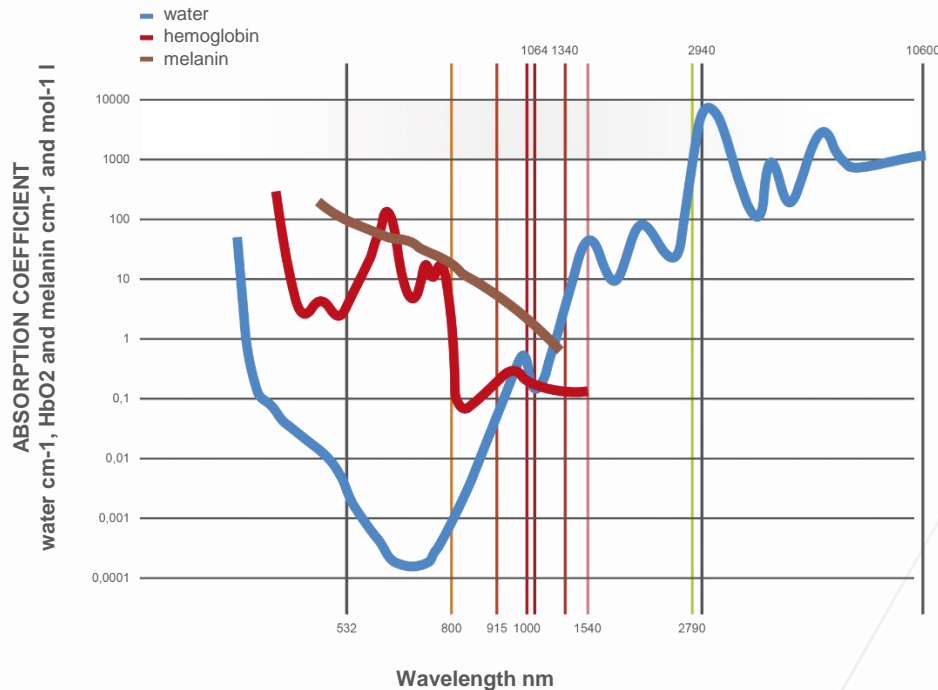
Incoherent

LIGHT

Intensive pulsating light

- **Multiple applications and indications** as a function of the broad spectrum;
- **Restricted to the surface of the tissue** as a function of the divergent and incoherent beam.

TARGET CHROMOPHORE AND ABSORPTION CURVE



- Relationship of target chromophore and absorption curve as a function of wavelength;
- Different wavelengths, different target chromophores;
- IPL target chromophores: water, hbo, melanin, endogenous porphyrin (p. acne);
- Able to absorb luminous energy;
- They treat certain structures: hair follicles, pigmentary lesions, vascular lesions.

*Manstein et al. FRACTIONAL PHOTOTHERMOLYSIS: A NEW CONCEPT FOR CUTANEOUS REMODELING USING MICROSCOPIC PATTERNS OF THERMAL INJURY. LASERS Surg Med 2004;34:426-38.

INTERACTION WITH TISSUE

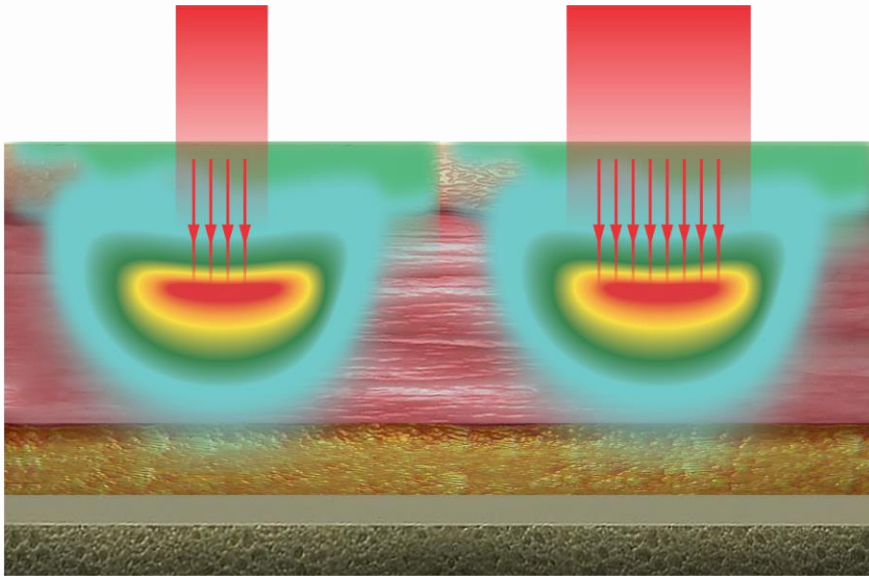


- **Photochemical:** biostimulation, PDT and tissue fluorescence, achieved through low-power LASERs and LEDs;
- **Photothermal:** photothermolysis, vaporization and tissue coagulation, achieved through LASERs and IPL equipment;
- **Photomechanical:** disruption (through shockwaves), achieved with q-switched LASERs.

TARGET CHROMOPHORE

INDICATION	TARGET CHROMOPHORE	FILTER
HAIR REMOVAL	Melanin	580 nm 640 nm 695 nm
PIGMENTED LESIONS	Melanin	515 nm 540 nm 580 nm
VASCULAR LESIONS AND RECENT SCARS	Hemoglobin	515 nm 540 nm 580 nm
ACNE VULGARIS	Endogenous porphyrin (p. acne) + Photobiostimulation	400 nm 640 nm 695 nm

PULSE TIME



THERMAL SELECTIVITY IS ACHIEVED THROUGH THE DIFFERENCE BETWEEN THE THERMAL CAPACITY AND THE THERMAL RELAXATION TIME (TRT).

- Pulse time is the time necessary to deliver the fluence or selected energy, measured in milliseconds (ms) in the case of IPL;
- It must be less than the TRT for there to be the correct photothermal process in the target chromophore;
- TRT: between the epidermis and between the different targets of the treatment;
- Time for the dissipation of 50% of the heat absorbed by the tissue or target chromophore.

THERMAL RELAXATION TIME

AREA	SIZE μm	TRT ms
EPIDERMIS	-	08 - 10
MELANOSOME	1	0.2 μs
VESSELS	100	10
HAIR FOLLICLE	150 - 300	10 - 60

FITZPATRICK SCALE



- **Type I** – White – Always burns, never tans
- **Type II** – White – Usually burns, tans with difficulty
- **Type III** – White – Sometimes burns, tans well
- **Type IV** – Olive – Rarely burns, tans easily
- **Type V** – Brown – Very rarely burns, tans easily
- **Type VI** – Dark brown – Never burns, tans very easily

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IPL-Sq[®]: features & technology

FEATURES & TECHNOLOGY

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TECHNICAL CHARACTERISTICS



	IPL-SQ	
Wavelength	400 to 1.200nm	
Maximum energy	33 J/cm ²	
Pulse time	5 to 100 ms	
Operating frequency	up to 2 Hz	
Filters	400 515 540	580 640 695
Vascutips	40 x 12 mm 12x12 mm Ø 8 mm	

FEATURES & TECHNOLOGY

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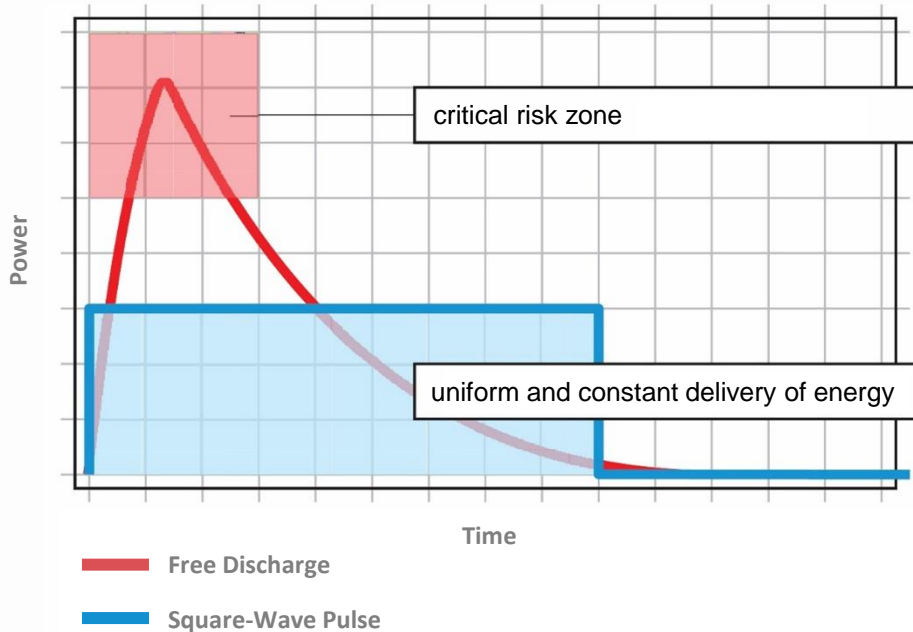
IPL-Sq® DIFFERENTIALS



- **All-in-one system:** one handpiece, with multiple plug-and-play cutting filters;
- **Exclusive 695 nm filter** for darker skin tones;
- Pulses from 5 to 100 ms, which offer **aggressiveness when necessary and safety when needed**;
- **Versatility unmatched** on the market, maximizing the technology's potential indications.

SQUARE-WAVE PULSE

Free Discharge of Energy vs. Square-Wave Pulse



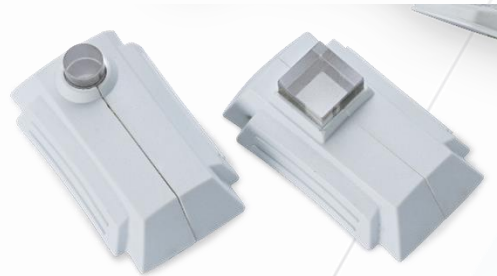
- Delivery of energy in **Square-wave pulse®**, optimizing safety and amplifying results;
- With the Square-wave pulse®, the amounts are constant, with a calculated and controlled discharge, ensuring **uniform distribution of energy during the entire pulse**;
- With **free discharge**, there is a **higher risk of adverse side effects** because the peak temperature reached is far higher than what is actually necessary.

DEPTH OF PENETRATION AS A FUNCTION OF A LASER WAVELENGTH. Nelson et al. 2002

FEATURES & TECHNOLOGY

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CONTACT BY SAPPHIRE

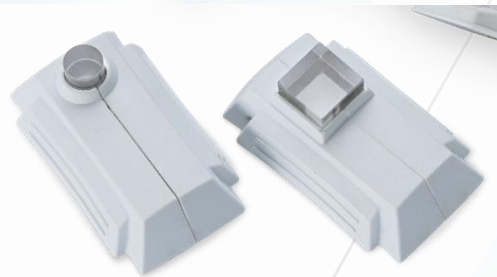


- Sapphire – **more efficient cooling** compared to other materials;
- **Cooling** of up to 5°C on Etherea
- **Protects the epidermis** against possible collateral damage from the treatment;
- Mild anesthetic effect, **reducing patient discomfort** during the treatment;
- **Allows the use of higher fluence** to obtain bigger and better results.

FEATURES & TECHNOLOGY

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CONTACT BY SAPPHIRE



- **Broad coverage area**, with 40 x 12 mm (4.8 cm²) for treatments with a lower number of shots, resulting in **faster and more profitable sessions**;
- Exclusive Vascutips® with Ø 8 mm and 12 x 12 mm for **localized lesions**;
- Repetition rate of up to 2 Hz on Etherea, offering **much faster treatments**.

FEATURES & TECHNOLOGY

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CONTACT BY SAPPHIRE



VascuTips

- When using VASCUTIPS, it could be necessary to increase fluence by around 1–2 J/cm²;
- The cooling of the Vascutips is done by the physical contact of the Sapphire with the Sapphire Crystal (round or square);
- It is therefore necessary to **check the efficacy of cooling every three shots**;
- If the cooling effect is not noted, contact Customer Service and do not use it in the procedure.

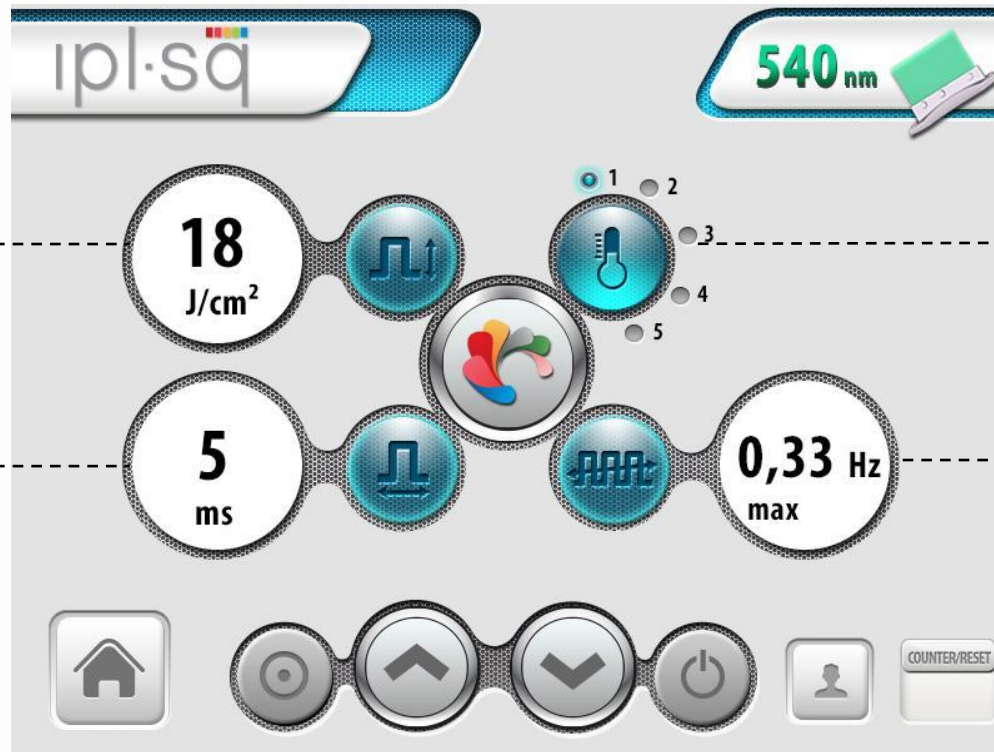
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**IPL-SQ[®]:
interface and
parameterization**

INTERFACE AND PARAMETERIZATION



ETHEREA-MX® INTERFACE



fluence: energy delivered by area (J/cm²)

pulse time: time for the fluence to be delivered (ms)

automatic recognition of the handpiece and filter

cooling: indicates the level of cooling of the Sapphire

frequency: or repetition rate between shots (Hz)

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IPL-SQ[®]:
practice and
training

PRACTICE AND TRAINING

QUICK REFERENCE GUIDE

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INDICATIONS



- Various **pigmented lesions**;
- **Vascular lesions** on the face, neck and chest (superficial);
- **Hair removal** for lighter skin tones;
- **Other indications:** acne vulgaris, recent scars and stretch marks.



- Freckles
- Café au lait spots
- Infraorbital hyperpigmentation
- Post inflammatory hyperpigmentation

PRACTICE AND TRAINING

CLINICAL GUIDE – PIGMENTED LESIONS



Photo: VYDENCE C Training Center

The endpoint: light erythema of the lesion, without visible alteration in the surrounding tissue. There can also be darkening of the lesion after a few minutes (photo).

USAGE PARAMETERS

Filter	<u>515 or 540</u> : clear and/or superficial lesions <u>580</u> : dark and/or deep lesions
Fluence:	10 to 19 J/cm ²
Pulse time:	10 to 20 ms
Sessions:	2 to 4
Interval:	20 to 30 days



- Rosacea
- Telangiectasia
- Poikiloderma of Civatte
- Angiomas
- Spider veins
- Hemangioma
- Port wine stains
- Recent scars

PRACTICE AND TRAINING

CLINICAL GUIDE – VASCULAR LESIONS



The endpoint: erythema of the lesion without visible alteration in the adjacent tissue, collapse of the vessel or changing its color (gray, blue, purple).

USAGE PARAMETERS

Filter	515 or 540: superficial lesions 580: deep lesions
Fluence:	13 to 26 J/cm ²
Pulse time:	10 to 40 ms
Sessions:	2 to 4
Interval:	30 to 40 days

Some precautions:

- Do not put pressure on the vessels before and during the shot because this can result in the dispersion of blood and consequent ineffectiveness of the treatment;
- Do not treat vascular lesions overlaid by pigmentary lesions and/or hair;
- Intensive Pulsating Light is indicated only for superficial vascular lesions on the face and trunk – it is not effective on the legs because of the depth of the lesions;
- Fluence and the pulse time must be adjusted according to the caliber of the vessel and the patient's skin type.

CLINICAL GUIDE – POIKILODERMA OF CIVATTE



In treating poikiloderma of Civatte, filters can be associated in a single session for:

- Neocollagenosis (640 or 695). Part of the visible improvement of the vessels is due to the deposit of collagen in the area;
- Pigmentary and vascular lesions (540 or 580). If the pigmentary lesions are dark, it is necessary to first use parameters for these lesions and, only after they lighten, begin treatment for the vascular conditions.

CLINICAL GUIDE – POIKILODERMA OF CIVATTE



Photo: VYDENCE Training Center

USAGE PARAMETERS

Filter	540 or 580
Fluence:	14 to 20 J/cm ²
Pulse time:	15 to 20 ms
Sessions:	3 to 4
Interval:	30 to 40 days



- Safe hair removal for Fitzpatrick scale skin tones I-IV;
- Effective even on fine hair;
- More comfortable with the Sapphire cooling system.

PRACTICE AND TRAINING



CLINICAL GUIDE – HAIR REMOVAL



USAGE PARAMETERS

Filter	<u>580</u> : light or fine hair <u>640</u> : normal hair <u>695</u> : thick hair or Fitzpatrick scale skin types IV and V
Fluence:	10 to 22 J/cm ²
Pulse time:	20 to 100 ms
Sessions:	4 to 8
Interval:	30 to 60 days

PRACTICE AND TRAINING



CLINICAL GUIDE – ACNE VULGARIS



USAGE PARAMETERS

Filter	<u>695 / 640</u> : inflammatory <u>400</u> : pustular
Fluence:	6 to 18 J/cm ²
Pulse time:	30 to 100 ms
Sessions:	4 to 6
Interval:	7 to 14 days

CLINICAL GUIDE

CONTRAINDICATIONS	PRETREATMENT	POSTTREATMENT
<p>Pay attention to skin tones and patients with tans!</p>	<ul style="list-style-type: none">• Avoid exposure to the sun 30 days before the session;• For hair removal, the hair must be short (shave with a razor on the same day or the previous day);• Remove creams and/or lotions before the application;• Avoid overlapping the shots.	<ul style="list-style-type: none">• Advise using sunscreen and avoiding exposure to the sun during the entire treatment;• If there are small “scabs” after the treatment of pigmented lesions, instruct the patient not to remove them, thereby avoiding hypochromia.

AREAS OTHER THAN THE FACE



- Lower number of hair follicles than on the face;
- The healing process is considerably slower;
- If possible, treat using the Dynamics Mode
- Always use maximum cooling;
- Fluence: decrease around 10–15% in relation to facial treatments;
- Seek less aggressive treatment options;
- Higher number of sessions.



The MyPractice is a continued medical education program proposed by VYDENCE® to the doctors that use our products and technologies may share their experiences in a practical and quick way.



» My Practice Online

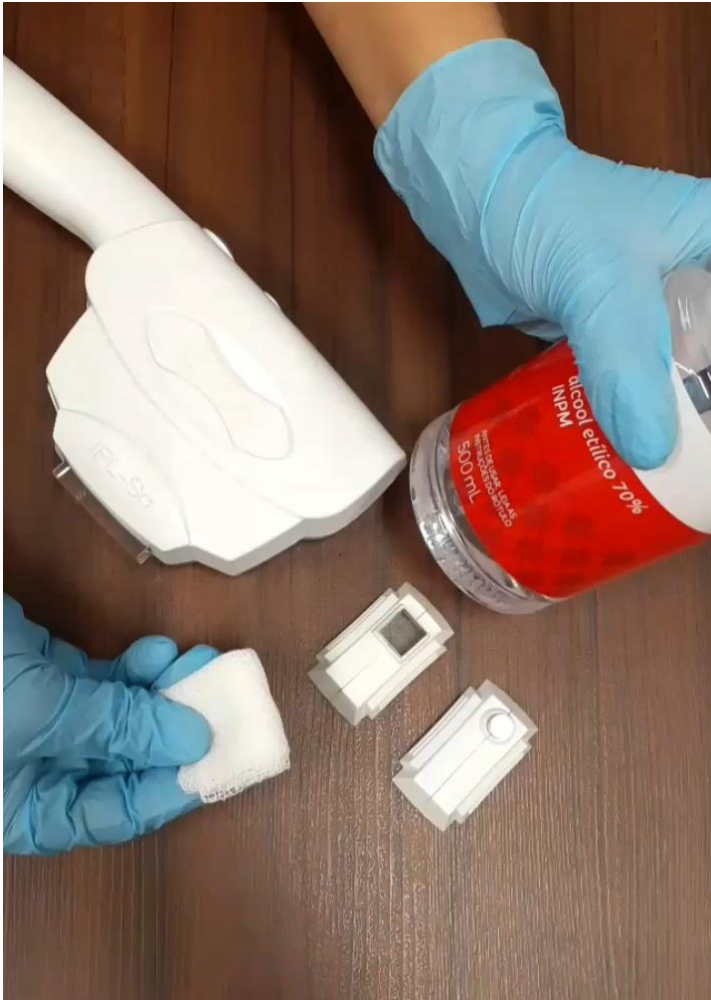
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**IPL-Sq[®]:
care and
preventative maintenance**

CARE AND MAINTENANCE



CARE AND PREVENTATIVE MAINTENANCE



- Cleaning the filters: use a soft cloth moistened with isopropyl alcohol until all stains and residue are removed;
- Clean after of each application;
- Pro rata guarantee of the handpiece: 60,000 shots;
- Damage from falls or misuse (usage not in accordance with the recommendations) is not covered;
- Careful during transportation, misalignment can result in ineffective treatment;
- Send the handpiece to technical support after reaching the recommended number of shots.

CARE AND MAINTENANCE

CARE AND PREVENTATIVE MAINTENANCE



- Always check the integrity and cleanliness of the filters and sapphires before use;
- Damage caused to the filter coating is irreversible and can cause severe harm to patients.

CARE AND MAINTENANCE



CARE AND PREVENTATIVE MAINTENANCE



[WATCH NOW](#)

Learn more about maintenance procedures on our channel

vydence  LASER ACADEMY 

- Use only deionized water;
- Replace all the water in the reservoir annually;
- Change the deionizing filter annually;
- Annual inspection of the platform and handpieces.

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IPL-SQ[®]: cases and results

CASES AND RESULTS

HAIR REMOVAL

Photo from VYDENCE Training Center
São Paulo, SP



IPL: Filter 640 nm, 16 J/cm², 30 ms.

CASES AND RESULTS

HAIR REMOVAL

Photo from VYDENCE Training Center
São Paulo, SP

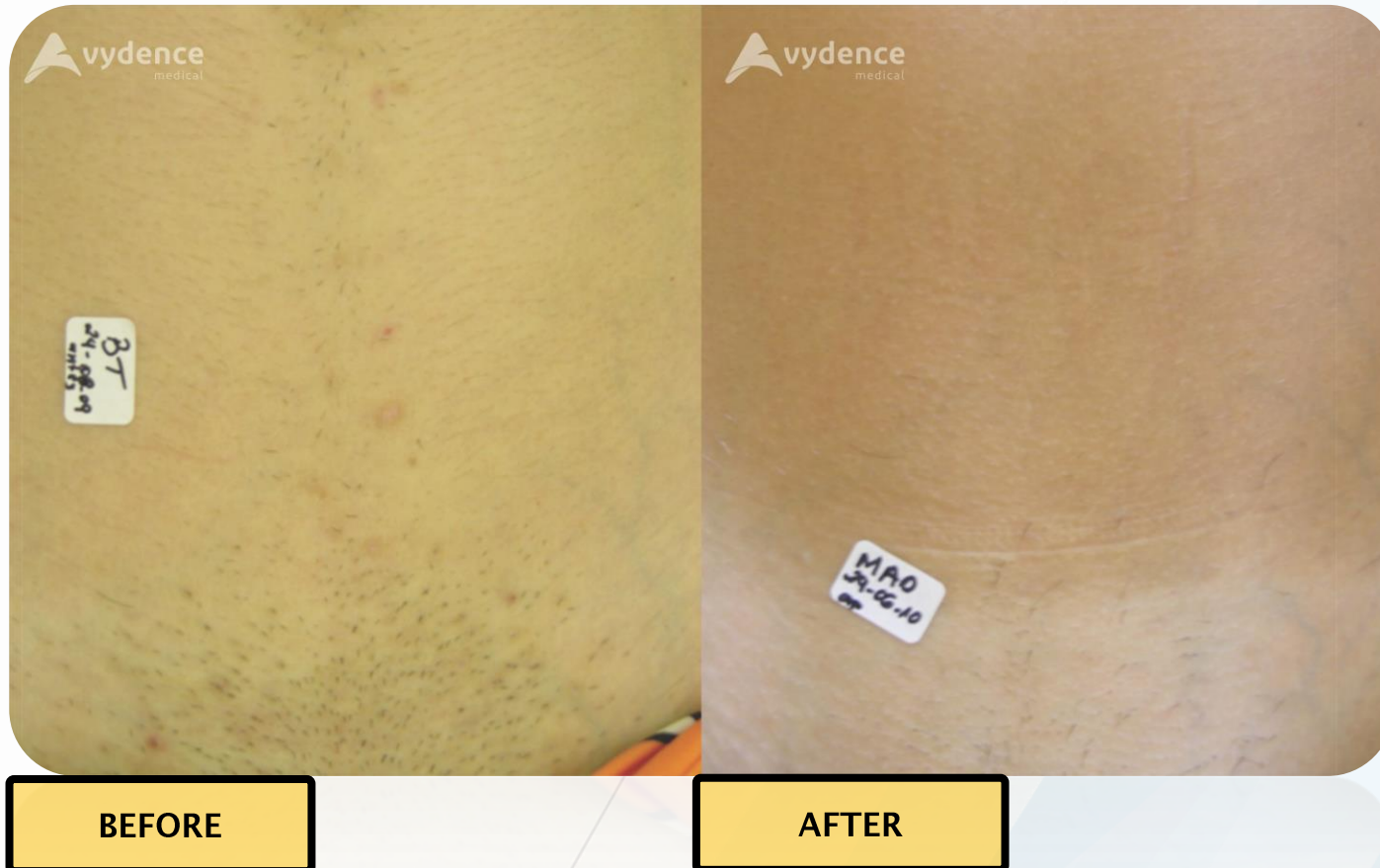


IPL: Filter 640 nm, 17 J/cm², 30 ms

CASES AND RESULTS

HAIR REMOVAL

Photo from VYDENCE Training Center
São Paulo, SP



IPL: Filter 640 nm, 17 J/cm², 20 ms

CASES AND RESULTS

HAIR REMOVAL

Photo from VYDENCE Training Center
São Paulo, SP



BEFORE

AFTER

IPL: Filter 640 nm, 16 J/cm², 30 ms

CASES AND RESULTS

HAIR REMOVAL

Photo from VYDENCE Training Center
São Paulo, SP



BEFORE



AFTER

IPL: Filter 640 nm, 16–17 J/cm², 30 ms, 8 sessions.

CASES AND RESULTS

HAIR REMOVAL

Photo from VYDENCE Training Center
São Paulo, SP



BEFORE



AFTER

IPL: Filter 640 nm, 16–17 J/cm², 30 ms, 8 sessions.

CASES AND RESULTS

HAIR REMOVAL

Photo from VYDENCE Training Center
São Paulo, SP



BEFORE

AFTER

IPL: Filter 640 nm, 16 J/cm², 30 ms

CASES AND RESULTS

HAIR REMOVAL

Photo from VYDENCE Training Center
São Paulo, SP



IPL: Filter 640 nm, 16 J/cm², 30 ms

CASES AND RESULTS

PIGMENTED LESIONS

Photo from VYDENCE Training Center
São Paulo, SP



IPL: Filter 580 and 540 nm, 15–16 J/cm², 15 ms, 3 sessions.

CASES AND RESULTS

PIGMENTED LESIONS

Photo from VYDENCE Training Center
São Paulo, SP



IPL: Filter 580 and 540 nm, 15–17 J/cm², 15 ms, 3 sessions.

CASES AND RESULTS

PIGMENTED LESIONS

Photo from VYDENCE Training Center
São Paulo, SP

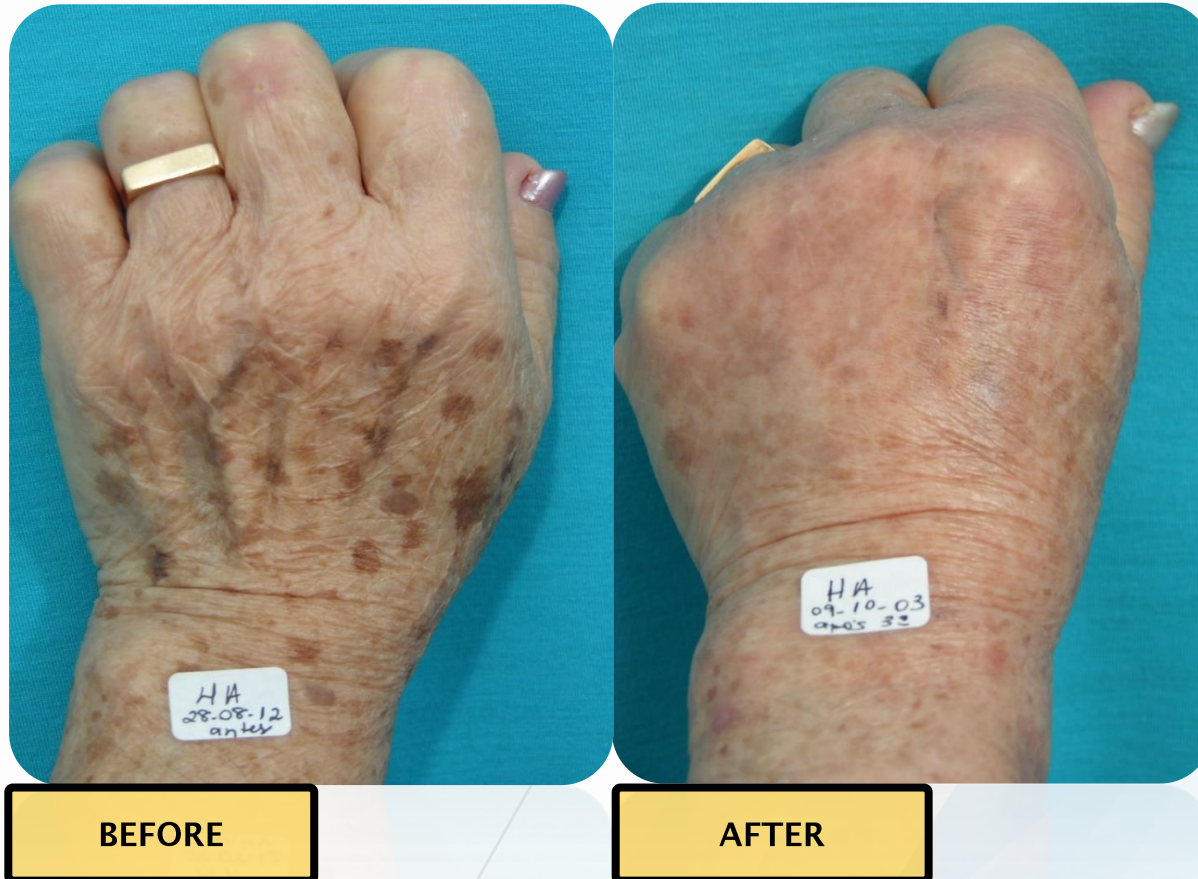


IPL: Filter 580 and 540 nm, 15–16 J/cm², 15 ms, 3 sessions.

CASES AND RESULTS

PIGMENTED LESIONS

Photo from VYDENCE Training Center
São Paulo, SP



IPL: Filter 580 and 540 nm, 15–16 J/cm², 15 ms, 3 sessions.

CASES AND RESULTS

PIGMENTED LESIONS

Photo from VYDENCE Training Center
São Paulo, SP



IPL: Filter 640 nm, 14 J/cm², 30 ms + Filter 540 nm, 15-16 J/cm², 15 ms + AR 5%

CASES AND RESULTS

VASCULAR LESIONS

Photo from VYDENCE Training Center
São Paulo, SP



BEFORE

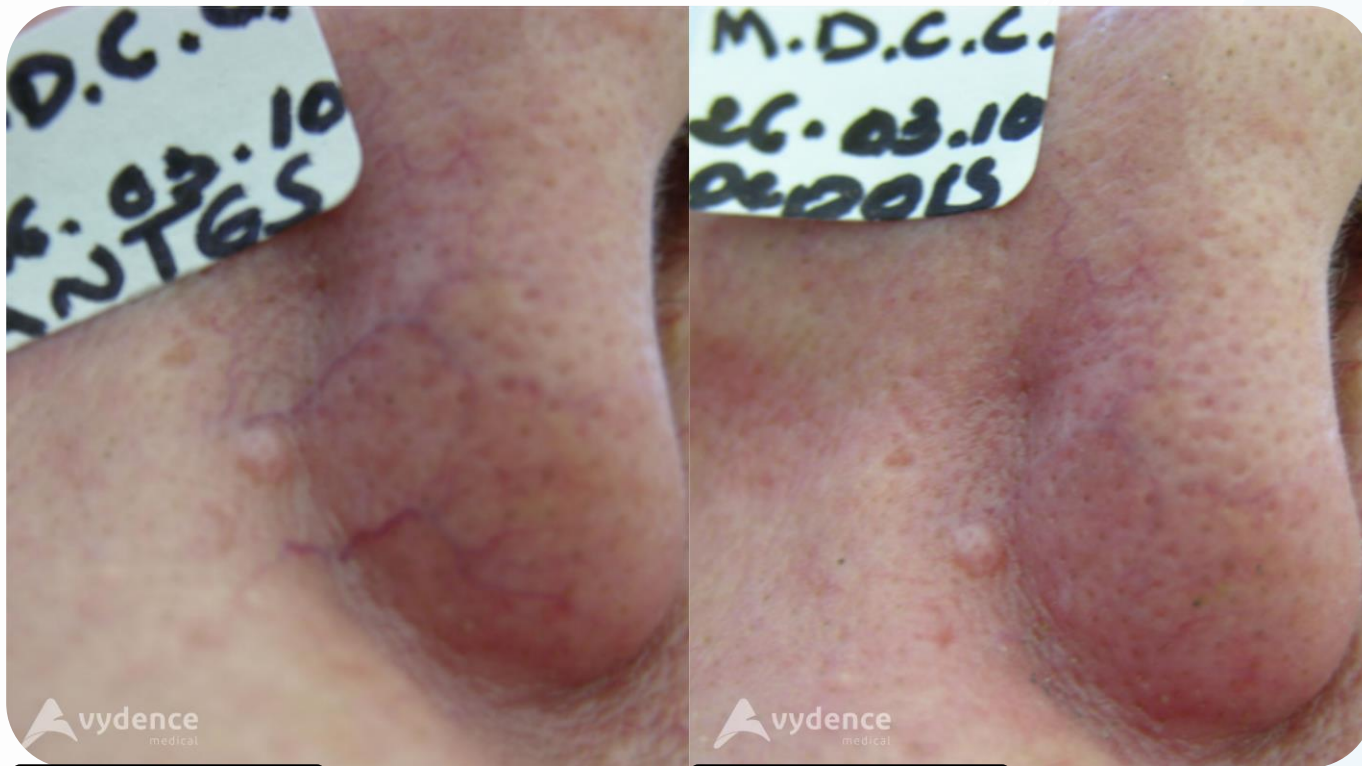
AFTER

IPL: Filter 580 and 540 nm, 20 J/cm², 15 ms.

CASES AND RESULTS

VASCULAR LESIONS

Photo from VYDENCE Training Center
São Paulo, SP



BEFORE

AFTER

IPL: Filter 580 and 540 nm, 20 J/cm², 15 ms..

CASES AND RESULTS

VASCULAR LESIONS

Photo from VYDENCE Training Center
São Paulo, SP



IPL: Filter 580 and 540 nm, 20 J/cm², 15 ms.

CASES AND RESULTS

ACNE VULGARIS

Photo from VYDENCE Training Center
São Paulo, SP



IPL: Filter 640 nm, 12 J/cm², 100 ms + Filter 400 nm, 10 J/cm², 30 ms..

CASES AND RESULTS

ACNE VULGARIS

Photo from VYDENCE Training Center
São Paulo, SP



BEFORE



AFTER

IPL: Filter 640 nm, 12 J/cm², 100 ms + Filter 400 nm, 10 J/cm², 30 ms..

CASES AND RESULTS

RECENT SCARS

Photo courtesy of Dr. Carlos Alberto Ferreira
Campinas, SP



ANTES



DEPOIS

IPL: Filter 540 nm, 10-15 J/cm², 10-20 ms, 3 sessions.

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9. Taylor M, Porter R, Gonzalez M. INTENSE PULSED LIGHT MAY IMPROVE INFLAMMATORY ACNE THROUGH TNF-A DOWN-REGULATION. *J Cosmet Laser Ther*. 2014 Apr;16(2):96-103
10. Raulin C, Greve B, Grema H. IPL TECHNOLOGY: A REVIEW. *LASERS Surg Med*. 2003;32(2):78-87.
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Thank you

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