Bio-Avance

IPL 950LS-UV

The IPL950 can be fitted with multiple tip wavelengths and spot sizes for your convenience. Changing tips takes 1-2 minutes with a regular Phillips screwdriver.
Standard 36mm or 24mm Options
$149.90 (24mm) to $169.90 (36mm)

Unfiltered 410-1200nm Tip *Stock # P-216-2607*
Photorejuvenation 505-670nm Tip *Stock # P-216-2608*
Acne 405-550nm Tip *Stock # P-216-2609*
Pigmentation 515-640nm Tip *Stock # P-216-2610*
Skin Toning 640-780nm Tip *Stock # P-216-2611*
Vascular Treatment 643-750nm Tip *Stock # P-216-2612*
Wrinkle Treatment 450-530nm Tip *Stock # P-216-2613*

IPL Cooling & Coupling Gels $26.95
Unfiltered 410-1200nm *Stock # P-217-2613*
Photorejuvenation 505-670nm *Stock # P-217-2614*
Acne 405-550nm *Stock # P-217-2615*
Pigmentation 515-640nm *Stock # P-217-2616*
Skin Toning 640-780nm *Stock # P-217-2617*
Vascular Treatment 643-750nm *Stock # P-217-2618*
Wrinkle Treatment 450-530nm *Stock # P-217-2619*

IPL Spider Vein Treatment 150ml Gel 3 Pack
Stock # P-218-2600 Each $44.90
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IPL Eyewear
Eyewear # D-218-4600 Each $69.95
TCA High Viscosity 150ml Gel 3 Pack
Stock # D-218-6700 Each $44.90
Carbon Dye Low Viscosity 250ml 5 Pack
Stock # P-218-2500 Each $59.90
Carbon Dye High Viscosity 150ml Gel 3 Pack
Stock # P-218-2505 Each $44.90

Prices are subject to change without notification. To order on-line, go to
http://www.centre-biotechnique-avance.com

For technical assistance beyond what this manual provides, please e-mail
support@centre-biotechnique-avance.com
Please allow 24 hours for processing.

U8529001
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Bio-Avance IPL 950LS

Instruction Material for IPL
Hair, Vein & Nail Fungus Reduction System.

Quick Setup Guide

Also approved for: Acne, Scars/Stretchmarks, Wrinkle Reduction, Photo Rejuvenation, Toning/Tightening and Hyperpigmentation Issues.

Keep this manual in a convenient place for quick and easy reference at all times.

In the interest of providing superior equipment, Bio Avance Industries reserves the right to modify or amend equipment specifications without notice or obligation.

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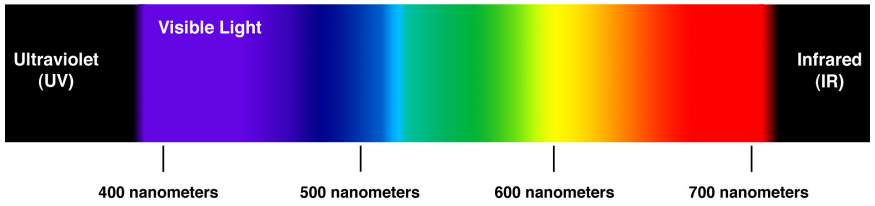
Intense Pulsed Light (IPL)

IPL Epilation is a relative newcomer to the scene of photo-based hair removal. Laser hair removal provided stunning results using a fast and entirely non-invasive beam of light. Doctors around the world began using lasers in their practices, and it seemed that there was no end to what lasers could accomplish. Yet each laser could produce only a single wavelength, and depending on a number of factors such as skin type, it was impossible to provide this incredible treatment for certain people, particularly those with deep tans and/or darker skin tones.

In the late 90s, dermatologists began asking themselves how they could provide more treatment options while improving results. Pulsed light uses a broad-wavelength light source (for example, a xenon or halogen flash bulb) to create an intense pulse of light which is focused through a condenser lens. As each wavelength is represented with a smaller number of photons, the light can readily pass through darker skin without heating the melanin. The concentrated dark color of the pigment contained in the hair follicle absorbs many different wavelengths of light, converting them to heat.



IPL provides a much safer alternative to laser, while at the same time being much more versatile.

In addition to treating unwanted hair, IPL has long been used for general dermatology, enabling such treatments as dermal resurfacing, scar and stretch mark removal/reduction, and tattoo removal. Spider veins, rosacea, port-wine stain (birthmark), and even acne can be treated using IPL.

Client Pre-Qualifications

The best candidate for IPL hair removal has fair skin with dark terminal hairs. Skin typing for exposure to ultraviolet light can be categorized by the Fitzpatrick classification, developed by Dr. Thomas Fitzpatrick of Harvard Medical School.

Skin Type I: Never tans, always burns (extremely fair skin, blonde hair, blue/green eyes).
Skin Type II: Occasionally tans, usually burns (fair skin, sandy to brown hair, green/brown eyes).
Skin Type III: Often tans, sometimes burns (medium skin, brown hair, brown eyes).
Skin Type IV: Always tan, never burns (olive skin, brown/black hair, dark brown/black eyes).
Skin Type V: Never burns (dark brown skin, black hair, black eyes)
Skin Type VI: (black skin, black hair, black eyes).

Types 1 through 4 are outstanding candidates. Type 5 will have excellent results as well, but care must be taken to assure that the IPL will not burn the skin. Type 6 should not undergo IPL or laser hair removal unless used in conjunction with skin bleaching due to the high risk of burning and hypo/hyper pigmentation issues.

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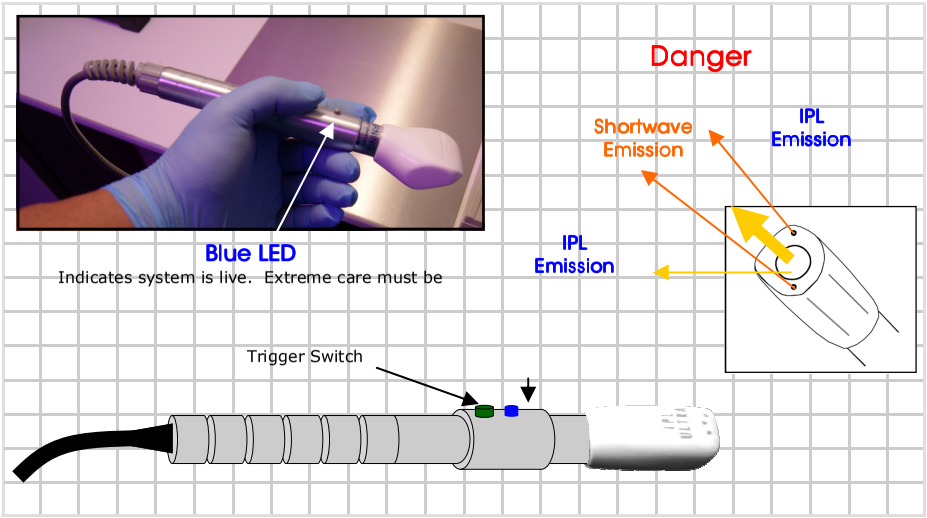
1. Bjerring P, Cramers M, Egekvist H, Christiansen K, Troilius A. Hair reduction using a new intense pulsed light irradiator and a normal mode ruby laser. J Cutan Laser Ther 2000; 2: 63-71.
2. Kauvar AN. Treatment of pseudofolliculitis with a pulsed infrared laser. Arch Dermatol 2000; 136:1343-6.
3. Eremia S, Li C, Newman N. Laser hair removal with alexandrite versus diode laser using four treatment sessions: 1-year results. Dermatol Surg 2001; 27: 925-9.
4. Gorgu M, Aslan G, Akoz T, Erdogan B. Comparison of alexandrite laser and electrolysis for hair removal. Dermatol Surg 2000; 26:37-41.
5. Bencini PL, Luci A, Galimberti M, Ferranti G. Long-term epilation with long-pulsed neodimium:YAG laser. Dermatol Surg 1999; 25:175-8.
6. Lloyd JR, Mirkov M. Long-term evaluation of the long-pulsed alexandrite laser for the removal of bikini hair at shortened treatment intervals. Dermatol Surg 2000; 26:633-7

IPL 950-LS Instrument



The IPL 950LS comes with a 300jcm2 maximum fluence per second adjustable pulse frequency (fixed pulse duration) instrument for superior operator control. The addition of high frequency shortwave energy substantially amplifies the thermolysis deep in the tissue for greater intensity and improved results. RF enhanced IPL treatments enable a greater range of treatments.

The instrument should be returned to the holder on the top panel of the enclosure with the emitter side DOWN for safety. The holder will lock the instrument in place by pressing downward until you feel it click. Do NOT leave the IPL instrument laying on any surface as there is risk of accidental eye exposure to persons who may pick it up out of curiosity and press the trigger switch. Remove key from lock switch when not in use.

Trouble Shooting

Should you encounter technical problems with your IPL 950 system, refer to the following guide for potential problems and the appropriate solution.

—Unit is plugged into the wall, all accessories are correctly inserted into the unit but no IPL output is being registered.
++Check all connections. Plug and unplug each one being sure all contacts are sound.
++Check all cords. Due to continual bending and fatigue, wires may fray or break resulting is full loss of power.
—Unit hums or makes abnormal noises.
++Unit needs servicing. A clicking sound is normal.
—IPL output is weak.
++Emitter may be obstructed with debris (dried coupling gel, dirt etc.). Clean thoroughly with a cotton tipped applicator and alcohol. If the performance of the IPL does not improve after cleaning the head your unit needs servicing by a qualified agent. Contact technical support for assistance.
—No output from the IPL is registered after all trouble-shooting suggestions listed above have been checked.
++Probable flash emitter failure. Unit needs servicing.

IPL 950LS Power Output Capabilities			
Standard	Intensity Setting	2, HF Function Disabled	2, with HF Assist
	Treatment Duration	1 second (5 pulses)	1 second (5 pulses)
	Jcm2/second	150	240
Intense	Intensity Setting	3, HF Function Disabled	3, with HF Assist
	Treatment Duration	1 second (7 pulses)	1 second (7 pulses)
	Jcm2/second	250	300
Gentle	Intensity Setting	2, HF Function Disabled	2, with HF Assist
	Treatment Duration	1 second (3 pulses)	1 second (3 pulses)
	Jcm2/second	150	180

IPL Startup Procedure

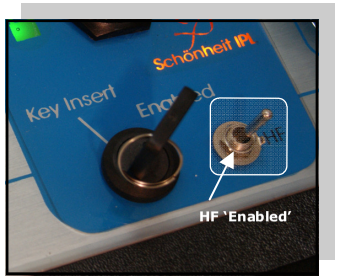
Put on your IPL eyewear before powering up your system. Wear the eye protection throughout the entire procedure.

Before connecting your IPL instrument to the main system, be sure the key switch is off (Counter and indicator LEDs will be off). Failure to adhere to the start-up procedure may cause damage to your IPL emitter.

Before connecting your IPL instrument to the main system, be sure the key switch is off (counter and indicator LEDs will be off). Failure to adhere to the start-up procedure may cause damage to your IPL emitter.

Place the IPL head in a secure position POINTED AWAY from you and the client.

1. Turn the key lockout switch clockwise to system status IPL 'Enabled'. At this time your digital pulse counter readout will show the number of pulses since the last reset. A bright LED on the instrument will begin flashing. The flashing blue warning LED means your IPL is now live and extreme care must be exercised while handling to avoid accidental eye-exposure.
2. Activate the HF 'Enabled'. The red and yellow warning indicators will confirm this operation.
3. Set power level for treatment. It is recommended to start out on setting 2 then work your way up to 3 if client discomfort is minimal. The use of a lidocaine pre-treatment spray or an IPL coupling gel reduces discomfort substantially.

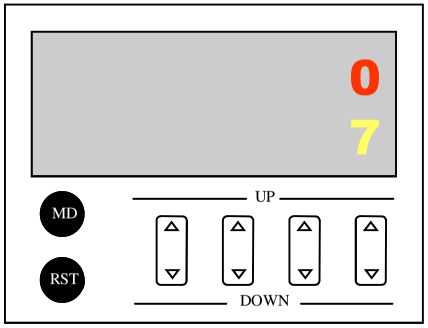


WARNING: This IPL instrument emits photon intensity equivalent to an arc welder and many times the intensity of the sun. It must be handled with great care. Do not allow person into the treatment room who are not wearing ANSI certified IPL protective eyewear. In addition, this instrument emits high intensity shortwave radiation which also poses risk to the human eye. Never treat on or near the eyes. The eyelid provides no protection. IPL and shortwave radiation will pass easily through and may seriously damage the retina and/or lens resulting in permanent loss of quality of vision and/or blindness.

It is recommended to use the IPL in high pulse mode (setting 3) for most applications. This will allow the technician to deliver single pulses each time the trigger switch is pressed. If the switch is held down, the IPL driver will deliver a steady series of pulses at approximately 7 per second. This is the ideal rate for most treatments.

Light Unit Counter

Your IPL950 comes with a convenient pulse counter to track total photon emissions in light units (for conversion to joules, see chart to the right of the graphic). To reset to zero press the RST button on the unit counter.



J/cm²/sec.	Reading Pulse Setting 3
80	4
120	5
180	6
220	7
300	8

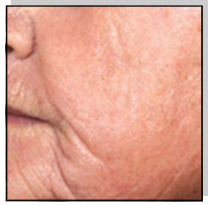
If you choose to deliver more than 7 pulses per second (above 300J/cm^2 total energy) there is a risk of burning the epidermis of the client. It is better to deliver less energy per treatment but more treatments overall as the risk of over treatment is reduced.

IPL Resurfacing and Photo-Rejuvenation

IPL resurfacing is performed using a beam of light energy which vaporizes the upper layers of damaged skin at specific and controlled levels of penetration. The procedure offers many advantages which others do not have.

Unlike *Microdermabrasion*, the IPL penetrates deeply into the dermis where promotion of collagen proteins can be stimulated. Chemical peels can be very unpredictable and dangerous while an IPL can be dialed in to deliver precisely the right amount of radiation to produce safe and effective results.

All resurfacing treatments work essentially the same way. First, the outer layers of damaged skin are stripped away. Then, as new cells form during the healing process, a smoother, tighter, younger-looking skin surface appears.



For superficial or medium resurfacing, the IPL can be limited to the epidermis and papillary dermis. For deeper resurfacing, the upper levels of the reticulas dermis can also be removed. Varied penetration allows treatment of specific spots or wrinkles.

It's also important to consider the length of recovery when choosing among the skin-resurfacing alternatives. In general, the more aggressive the resurfacing procedure is, the more prolonged the recovery is likely to be. "Light" resurfacing procedures, such as superficial chemical peels or superficial IPL resurfacing, offer shorter recovery times. However, these lighter procedures may need to be repeated multiple times to achieve results comparable to those achieved with more aggressive techniques.

General Dermatology

Treatment of additional skin afflictions such as Rosacea, Fine Wrinkles, Sun Damaged Skin, Acne Scars, Age Spots, Large Pores, Acne Prone Skin.

As the IPL goes over the dermis, vascular spaces with hemoglobin in them absorb the light energy thereby heating the surrounding tissue and stimulating the fibroblasts to produce type 1 collagen and dermal proteins. The treatment rearranges and/or replaces the solar elastosis in the upper dermis, resulting in NEW collagen formation.

What used to be loose, irregular collagen in the dermis is now tighter, refreshed and rejuvenated.

The benefits of each IPL treatment over all other skin rejuvenation procedures include: Low downtime, non-surgical, little pain and discomfort, immediate results after 1 - 2 treatments, affordable, enhances your own collagen growth, produces more dermal proteins and treats most types of skin.

Treatment Procedure: Resurfacing and Wrinkle Reduction

Deliver 5 pulses (approximately 220 joules) to each area of 2.5 cm square. Be very systematic and thorough, but resist the temptation to over treat. Applying more than 220 joules may burn the skin.

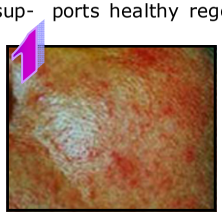
Figure 1 shows normal sagging and wrinkling of the skin which can be expected as humans age. Figure 2 shows excellent improvement on a 47 year old female after 6 treatments.

Always use an approved cooling and coupling gel with your IPL treatments. This will substantially reduce patient discomfort and protect the dermis from excessive thermal retention or damage from heat. It will also increase the 'translucency' (rate of which the skin will allow IPL energy to pass through) factor which improves overall results.

Call your patient back in for a follow up in 48 hours. Additional treatments may be applied in 7-10 days depending on the level of dermal trauma the patient experience and their rate of healing.

Treatment Procedure: Rosacea

Apply 'IPL Spider Vein Treatment Gel' (see back page of pamphlet for ordering information). This formula contains activated phylloquinone, which supports healthy regeneration of new capillaries (reducing the recurrence of future Rosacea) by strengthening the capillary walls.

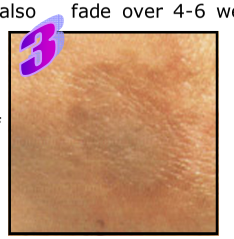


Deliver 5 pulses on high power (approximately 180 joules) to each area of 2.5 cm square. Be very systematic and thorough but resist the temptation to over treat.

Figure 1 shows severe late stage Rosacea of a 30 year old male. Figure 2 shows the substantial improvement achieved with 20 treatments over 24 months. Spider veins and enlarged capillaries require more treatments overall than most other laser procedures.

Treatment Procedure: Age Spots

This condition is caused by melanin deposits in the skin which do not fade. Normal melanin will darken (proliferate) with exposure to sun, but will also fade over 4-6 weeks when the exposure is stopped. It is most common in the elderly but occurs in all ages. IPL treatments are remarkably effective for this affliction.



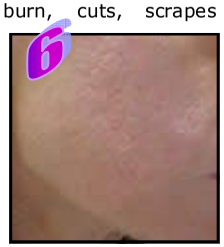
Apply 'IPL Wrinkle Treatment Gel' (see back page of pamphlet for ordering information).

Deliver 6 pulses (approximately 200 joules) to each area of 2.5 cm square. Fading of the age spots (also known as 'liver spots') will be evident after 4-6 weeks.

Figure 3 shows moderate age spot activity on a 46 year old female. Note the improvement in figure 4 showing nearly complete regression of the skin disorder. This patient underwent 3 treatments over 11 weeks.

Treatment Procedure: Scars

This condition can be caused by any trauma to the skin from acne, sun burn, cuts, scrapes and surgical procedures. To reduce the appearance of the scar, it will be necessary to rebuild the collagen proteins in the skin with IPL radiation. This process is extensive (especially in cases where severe scarring exists). It may take 5-10 treatments over 12 months to achieve desired results.



Apply 'IPL Scar Reduction Treatment Gel' (see back page of pamphlet for ordering information).

Deliver 7 pulses (approximately 220 joules) to each area of 2.5 cm square. Remember, applying more than 220 joules may burn the skin so this procedure must be done very carefully. You must deliver the seven pulses in under one second for maximum thermal heat exchange in the tissue (simply hold the trigger switch down).

Figure 5 shows a 28 year old female with acne scarring which was left over from teenage puberty. There are very deep pocks, which are the hardest to improve. In figure 6, the appearance of the scars (including the pock) has improved 90%.

Treatment around the eyes must be done with adequate protection. Exposure to IPL radiation (even through the eye lid) can permanently injure the eyes up to and including vision quality loss.

Photos are for example purposes only and may not indicate results which will be achieved on every patient. Medical IPL treatments for dermatology purposes are rated by improvement and not by cure. Many skin conditions such as Rosacea may return and require future treatments to be controlled. Advise your patient to expect improvement but caution them as to which degree of improvement they will be able to achieve.

IPL Control Locations/Feature Descriptions

A. **Key Lockout:** This feature is required by law on all high-power laser and light devices. The first step in the correct sequence to power-up your laser is to turn this clockwise using the special key included in your kit.
B. **System Status LEDs:** These lights will indicate system status (neutral or live) and which modality is enabled.
C. **Pulse Control:** This allows the operator to set the number of IPL/RF pulses per second.
D. **IPL Jack:** An eight-prong coaxial power jack for the IPL hand piece.
E. **IPL Instrument:** A 95,000mW high intensity pulsed light and high powered RF emitter instrument with thumb switch and counter reset button.
F. **Eyewear:** This is an essential part of the treatment process. Direct or reflective IPL radiation can seriously injure the eye. Both the technician and the patient must use the protective eyewear while the IPL is enabled or activated. Eyewear is intended for ***accidental*** exposure only. Never stare directly into an IPL emission.
G. **Carbon Dye:** This is an 'atomized' form of molecular carbon which easily penetrates deeply into the follicle shaft. The dye adds pigment which gives a receptor for the photon/heat exchange reaction.
H. **RF (High Frequency):** This switch enables or disables the secondary function RF energy mode to amplify the thermolysis effects of the IPL treatment.
I. **Post Treatment Gel:** This is a special formula which speeds healing and reduces hair growth activity with OTC anti androgens.
J. **Dermal-Plast:** A special 3.5% lidocaine gel formula to reduce patient discomfort.
K. **High-Precision Tweezers:** Apparatus for the extraction of follicle prior to carbon dye application.
L. **Intensity Dial:** Control feature for the regulated output of the laser module. Settings range from 1-3.

Equipment Warranty

We warrant to the original purchaser the equipment manufactured by us to be free from defects in material and workmanship under normal use and service. Our obligation under this warranty shall be limited to the repair or exchange of any part or parts which may prove defective under normal use and service within 12 calendar months from the date of shipment and which our examination shall disclose to our satisfaction to be thus defective. When necessary, purchaser shall apply for a Return Materials Authorization and instructions on proper return procedures from their original sales associate. The laser diode (head) requires special operating precautions which, if defied, may void warranty.

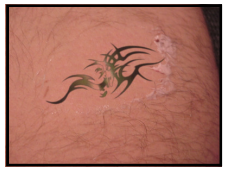
Warranty Extension Certification:

Customer Number Authorization Number

Warranty Extension ( ) years Warranty Type: **A B C D**

IPL Tattoo Removal

To begin the process it will be necessary for you to scrub the skin over the tattoo with an abrasive applicator. This is will remove the outer layers of the epidermis which will allow for greater penetration of the IPL radiation.



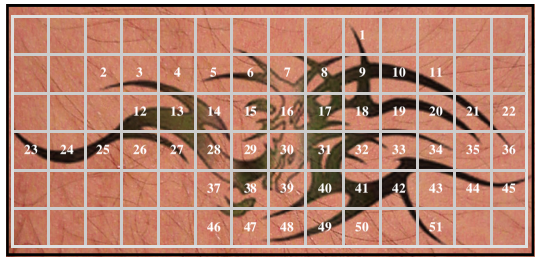
Using a depilatory wax or epilation paper, remove all hair from the tattoo area. Hair growth will block some of the IPL radiation from entering the tattoo. Follicles in the skin of the tattoo will also be permanently damaged by the radiation which may not be desirable to your patient.

Apply the pre treatment TCA enhanced cooling and coupling gel to the tattoo. This is a very important step which should not be omitted. Although the gel does contain the desensitizing compound lidocaine it will be quite common for the patient to feel some burning in the minutes and hours following the procedure. If the patient requests extra relief, apply a cold pack as needed.

The Treatment Procedure

Carefully power up your IPL (see page 3). Dial in full intensity 'high' pulse frequency setting 3. Place the optics side down (in contact with the skin) on top of the tattoo.

Deliver 7 pulses (approximately 300 joules) to each area of 2.5 cm square (depending on color). Be very systematic and thorough, but resist the temptation to over treat. Applying more than 300 joules per cm2 may burn the skin.



Black ink can be successfully treated with 220 jcm2. Blue and green normally requires 180 jcm2, and red requires up to 300.

The example tattoo at right would require 1530 pulses for a total of roughly 8,000 joules.

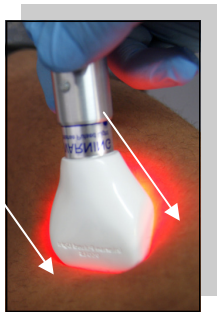
In picture number 4, you can see some of the redness, swelling and scabbing which may show up 1-3 days following treatment. In picture number 5 and 6, you can see some fading of the tattoo, but also a mild form of hypo pigmentation (loss of the patient's natural skin color). This condition is temporary and will subside as the melanin regenerates with natural healing.

In picture number 7, you can see that the tattoo has faded to a point where it is not recognizable. This type of tattoo should require about 6 treatments over 7 months. It is always a good idea to take pictures of your patient's treatment areas to show them the steady improvement. This will help them to stay committed and motivated as the process requires a substantial investment of time.

Patient Group	Treatment Area	Tattoo Clearance (Average)	Notes
2 Patients Black Ink Only	Arms	90% after 3 mos.	5 treatment average
5 Patients Blue and Black Ink	Torso	90% after 3 - 12 mos.	8 treatment average

Intense Pulsed Light Progressively Permanent Hair Removal

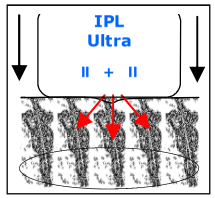
The IPL can be considered an excellent replacement for laser hair removal as the results and overall procedure are similar in many ways. It can be noted that IPL treatments are more efficient due to the substantial increase in overall energy being used (which equates to less overall treatment time).



Like laser, IPL will injure the cells which are responsible for hair growth by way of thermolysis (heat in the follicle tissue). This trauma is just below the threshold of injuring other cells (notably skin) around the follicle. IPL works best on clients who have light skin combined with dark hair growth. Should a hair follicle survive the IPL treatment, it will grow back slower and thinner. After a series of treatments the continual 'site specific' localized trauma to the follicle tissue will eventually destroy all hair growth. Once destroyed, the follicle cannot produce another hair.

Discomfort and Client Reaction

Remarkably, the sensation felt with an IPL treatment is no more intense than that of a laser (although much more total energy is being delivered to the tissue). The first few pulses from the IPL generally are not felt by the client. Pulses 5-6 (if the technician chooses to deliver that many) begins to feel like a snap of a rubber band (as the tissue absorbs and retains the energy). Seven or more pulses in less than one second may be uncomfortable for some clients. The use of a topical desensitizing spray or pre-treatment cold pack will alleviate most sensation.



Pre-Treatment Preparation

First spray the area with a lidocaine or benzocaine topical numbing compound. Now coat the IPL emitter tip with the cooling and coupling gel included with your kit. The patient will be able to withstand as many as 8-10 pulses per 2.5 cm2 without much sensation. It is generally not necessary to deliver more than 7 pulses for effective hair removal treatment (maximum pulse freq. setting 3).

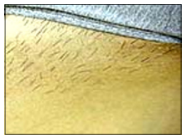
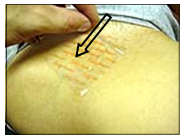
IPL Hair Removal Variation 1

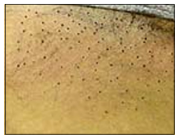
This procedure is the most popular among professionals as it requires only shaving prior to the application. It will be necessary to remove all hair above the skin with a razor. Any hair which protrudes above the skin may cause pits in your optics which will reduce the overall efficiency of the device.

Turn your IPL driver to maximum pulse frequency (setting 3) with HF assist enabled. Place the IPL emitter port against the skin in the area where the unwanted hair growth is occurring. Press the trigger switch down for 1 second delivering seven total emissions equating to 300 jcm2 of energy density) then move to the next treatment area and repeat. The treatment will effectively damage or destroy most or all anagen follicles in an area of 2.5 cm2 which have dark pigment.

IPL Hair Removal Variation 2: Deep Tissue Trauma With Follicle Extraction with Carbon Dye

Before applying treatment, remove all hair from the area by tweezing or waxing. IPL hair removal is most effective when applied to an empty follicle shaft. Human hair simply does not normally have enough pigment to allow for sufficient heat exchange to cauterize, desiccate and necrotize the cells which produce hair. To compensate for this lack of 'quantitative' and 'qualitative' photon

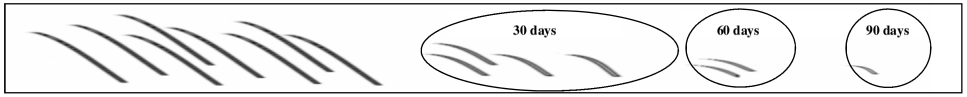





targets, it will be necessary to place a high-density carbon dye inside the follicle prior to treatment. Using a cotton-tipped applicator, completely cover the treatment area with the special dye included in your kit. Massage the dye into the follicle pore with a firm downward circular motion. Repeat 2-3 times to saturate the follicle pore. Use an ***ethyl alcohol*** based wipe (isopropyl alcohol will not dissolve the dye) clean the excess from the surface of the skin. At this point you will have all desired follicles ***visibly highlighted*** with a dark spot. Apply IPL treatment as normal.

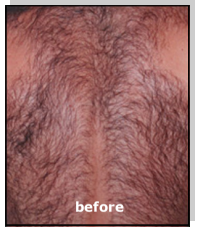
Treatment Efficacy

Permanent hair removal is a gradual process which takes 90 days or more for complete destruction of the follicle tissues. Each hair must go through its entire growth cycle for it to be effectively treated. Generally, it is only during the ***early anagen*** phase that it is vulnerable to destruction. The following chart will give you an accurate example of what the reduction in growth activity should look like from 30, 60 , and 90 days of treatments.



Important Considerations for Safe IPL Hair Removal Treatment

Treatment Around or Near the Eyes: Great care must be exercised when working near the eyes. The IPL emission is powerful enough to actually penetrate the eyelid and permanently damage the eye. Having the patient close their eyes is not satisfactory protection. The use of a dark-colored damp wash cloth which is folded over four times will deflect the harmful radiation; however, only IPL protective eyewear is recommended.



Treatment Around or Near Mucus Membranes: IPL radiation will severely damage the tissues inside the nose and ear canal. Treatment should be avoided in these areas altogether.

Treatment Around or Near the Genitals: IPL hair removal is safe for application to the pubic regions including the reproductive organs of both sexes. Care must be taken into consideration in these areas due to the increased level of neural sensitivity.

Treatment Around or Near the Areola (nipple): IPL hair removal is safe and effective on hair growth which occurs from the areola of both sexes.

Post-Treatment: The skin surrounding the treatment area may experience short-term erythmia (reddening) which will subside within 12-24 hours. Should the treatment area show signs of excess scabbing you may wish to reduce the overall treatment time or intensity. The application of a post-treatment cooling and healing gel (such as Aloe) is encouraged to speed healing and reduce sensitivity. Instruct the patient to refrain from applying cosmetics or sunbathing for at least 24 hours.

Over Treatment: Each IPL pulse sends a photon 'bundle' deep into the skin where it damages the hair follicle tissues. This IPL radiation also will have mild effects on capillaries and skin tissue. If too many IPL pulses are administered the capillary network will begin to break down. This will create a bruise which will take several days to subside.

The general rule of thumb is to patch test the skin with 7 pulses then send the patient home. Have them back in the office in 24 hours to observe the reaction. If there is no burning or bruising, administer the full treatment. It is not recommended to deliver more than 10 pulses to one stationary area at a time. If more than 10 pulses are delivered the technician should make a small circular motion with the IPL head to avoid sending all the energy through the exact same entry points.

Patient #	hair counts			12 week clearance
1 females, 1 males	pre	post	number of treatments	percent
#1: deep tissue with hair	225	11	10	95%
#2: deep tissue with dye	166	1	7	99%

Emitting wavelength	*(100-800 ± 10) nm*	*Classification: Exempt*
Output power	*User-adjustable 0 to 180 Joules*	*Designation: OEM*
Generation modes	*IPL*	*Manufacturer: Quazar Industries, UK*
Beam characteristic	*Flash Lamp*	*Warranty: 1 Year*
Pulse duration	*Manual Adjust*	*Emission Indicator: Yes*
Weight	*15 kg max*	*Key Lock: Yes*
Optics	*Glass*	*Beam Shutter: No*
Dimensions	*170 x 500 x 370 mm*	*21CFR 1040, IEC 825-1:1993: No*

Fluence	*120J/cm2 max*
Energy Instability	*19% maximum*
Safety goggles	*OD 8.0 @ 100-1000nm (minimum) suggested.*
Electrical requirements	*100/120 VAC, 50/60 Hz nominal, 1.0 A max. 220 or 240 VAC, 50/60 Hz nominal, 1.2 A max.*
Ambient operating temperature	*10°C to 30°C*
Ambient storage temperature	*-25°C to 70°C*

Intense Pulsed Light Tattoo Removal

Nearly 1/2 of all people with tattoos eventually want them removed. Until recently these people had no viable (and safe) options available to them. In the mid 1980's lasers had been used experimentally to remove the pigment with encouraging success rates. A newer procedure used an intense pulsed light. Surprisingly, lasers and IPL's do not actually burn the ink out; they fracture it into tiny pieces which are then removed from the skin by your immune system.

On average, professional tattoos require 5-6 treatments, while amateur tattoos may require 3-4 treatments, spaced approximately 1-2 weeks apart. The number of treatments depends on the amount and type of ink used and the depth of the ink in the skin. Occasionally technicians have needed to treat a tattoo 5-10 times.

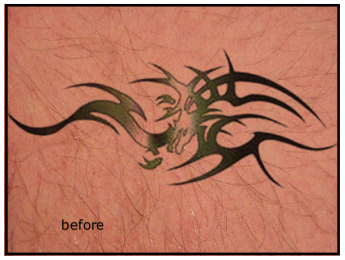
What should I charge for the procedure? The fee depends on the size of each tattoo, and how many treatments it takes to lighten or remove it to your satisfaction. Each tattoo treatment generally costs $135 for the 1st square inch and $25 for each additional inch. If more than one tattoo is being treated at the same time, you may offer pricing alternatives. A consultation fee of $40-$60 should be assessed for this quote.

What will the treatment be like? It is less painful to have a tattoo removed than getting it put on. A numbing spray and ice pack should be applied before the procedure. After the procedure the treated area may blister, swell, crust, scab, or bleed slightly. Care for the treated area daily in order to prevent infection and to get the best possible healing results. The tattoo will then gradually fade for 1-2 weeks when it can be treated again. You may see additional fading for as long as several months so you can space the treatments farther apart but not closer than 7-10 days.

Important Considerations for Safe IPL Tattoo Treatment

Treatment on Skin with Hair Growth: One of the major side effects of IPL tattoo removal is destruction of hair follicles. If your client would like a tattoo removed from an area in which there is 'wanted' hair growth, manually extract all follicles before treatment. The use of an aggressive depilatory wax is best. If the follicle is removed there will be far less damage to the papilla cells which produce growth. The hair follicle unit will regenerate in 2-3 weeks.

Treatment Around or Near the Genitals: IPL tattoo removal is safe for application to the pubic regions including the reproductive organs of both sexes. Care must be taken into consideration in these areas due to the increased level of neural sensitivity. The patient may find the process uncomfortable without a topical desensitizing spray.



Treatment Around or Near the Eyes: Great care must be exercised when working near the eyes. The IPL emission is powerful enough to actually penetrate the eyelid and permanently damage the eye. Having the patient close their eyes is not satisfactory protection. The use of a dark-colored damp wash cloth which is folded over four times will deflect the harmful radiation; however, only IPL protective eyewear is recommended.

Post-Treatment: The skin surrounding the treatment area may experience short-term erythmia (reddening) which will subside within 12-24 hours. Should the treatment area show signs of excess scabbing you may wish to reduce the overall treatment time or intensity. The application of a post-treatment cooling and healing gel (such as Aloe) is encouraged to speed healing and reduce sensitivity. Instruct the patient to refrain from applying cosmetics or sunbathing for at least 24 hours.

REFERENCES
Nestor, Mark S., MD, PhD, "Laser Hair Removal: Clinical Results and Practical Applications of Selective Photothermolysis", Skin & Aging, January 1998.
Lask, Gary, MD, Elman, Monica, MD, Slatkine, Michael, PhD, Waldman, Amir, PhD, Rozenberg, Zvi, PhD, "Laser-Assisted Hair Removal by Selective Photothermolysis: Preliminary Results", the American Society for Dermatology Surgery, 1997.

—Black ink absorbs all wavelengths of light and responds very well to IPL treatments.
—Green and Blue ink absorbs 670-890nm light best and responds very well to IPL treatments.
—Red, Orange, and Purple inks absorb 500-700nm light best and responds very well to IPL treatments.
—Turquoise responds variably, depending on the pigments in the ink.
—Flesh tones tend to reflect light and does not respond well to IPL *treatments.*
—Yellow tends to reflect light and does not respond well to IPL *treatments.*