

DUAL
YELLOW
MULTI WAVELENGTH LASER

Yellow laser power

Deep . Effective . Gentle . . . Just right.



How to provide excellent aesthetic results using
copper bromide based technology with multi wavelengths



Copper Bromide lasers treating: Vascular, Pigmentation, Acne, Melasma, Bulky lesions, Rejuvenation

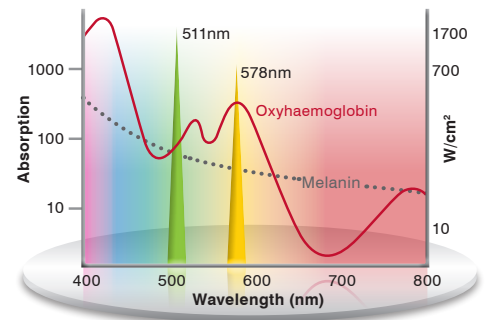
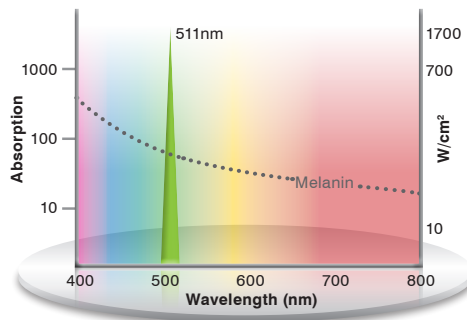
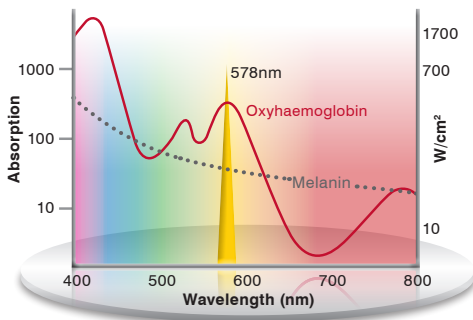
Understanding the unique capabilities of copper bromide lasers

Since 1989, Norseld's copper bromide based laser technology has assisted thousands of people to be treated for **Vascular, Pigmentation, Acne, Melasma, Bulky lesions and Rejuvenation**, with minimal collateral damage and minimal pain.

Here's how.

Optimal wavelengths for effective treatment with no damage

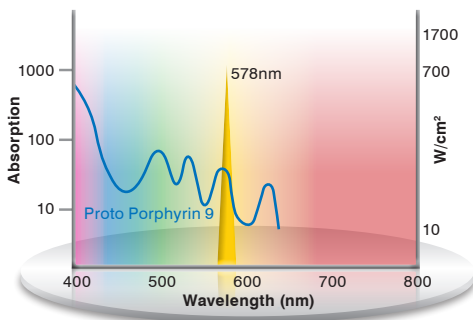
A key to treatment without damage is the multi wavelength capability, which emits wavelengths that correspond with absorption peaks for vascular and pigmented conditions.



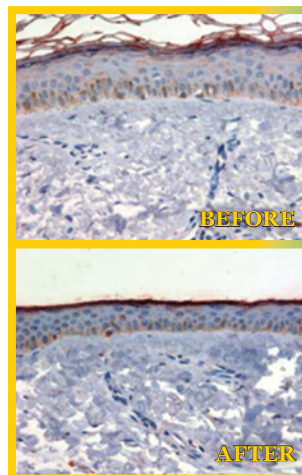
578nm yellow wavelength targets vascular lesions, matching the absorption of haemoglobin exactly. The laser produces $700\text{W}/\text{cm}^2$ in yellow to rapidly photo coagulate vessels without perivascular damage.

511nm green wavelength targets pigmented lesions, ideally absorbed by melanin contained within melanocytes. The laser produces $1700\text{W}/\text{cm}^2$ in green to rapidly coagulate pigmented lesions without collateral damage.

Combined yellow 578nm & green 511nm wavelengths target bulky lesions, when combined produce a beam of over $2000\text{W}/\text{cm}^2$, powerful enough to ablate tissue, but bloodless in operation.



578nm yellow wavelength is perfect for treating active acne. Large amounts of Proto Porphyrin 9 (PPIX) exists within *P. Acnes* bacteria. PPIX is light sensitive at 578nm, destroying the bacteria while shrinking the sebaceous gland.



The gold standard for melasma treatment

Clinical Studies have shown that the Dual Yellow multi wavelength laser is effective in treating and clearing Melasma with unique dual wavelength of 511nm and 578nm.^{1,2}

Increased Vascular Endothelial Growth factor (VEGF) and the vascular nature of melasma have been well established as the principal contributor to continued hyper pigmentation known as melasma.^{1,2} It is essential that VEGF and vascularity can be targeted well into the dermis without damage to overlying structures or causing collateral damage.

1. Kim EH, et al, The Vascular Characteristics of melasma. *Jn soc. Invest Dermatol* 2007 46, 111-116
2. Kim BJ, et al, Clinicopathologic efficacy of copper bromide Plus/Yellow laser (578nm with 511nm) for treatment of melasma in Asian patients. *Dermatol Surg* 36:885 (2010)

578nm yellow wavelength for proven total photo rejuvenation.

Visible yellow laser light at 578nm is strongly absorbed by haemoglobin. The benefits are visible immediately during and after treatment with the reduction or elimination of vascular abnormalities.

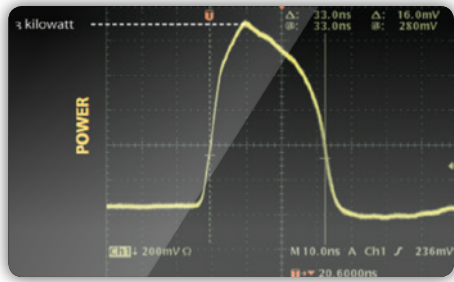
With the extravasation and reabsorption of the microvasculature in the epidermis and upper dermis, skin appears refreshed, and the texture is improved with the generation of new dermal collagen.

Without FEM[®], you won't get the results your patient deserves

The real power of FEM[®] is the steeply rising pulse of yellow light, and then rapid decrease, delivering 3kW of peak power exactly where it is needed.



Since its inception over 20 years ago, FEM[®] (Fast Edge Micropulse) has ensured that aesthetic treatment has minimal discomfort and maximum therapeutic benefits. This is achieved with a unique train of thousands of nanosecond pulses per second of powerful yellow light to stimulate the cytochromes in the dermal tissue directly.



The steeply rising FEM[®] laser pulses produces 3kW of peak power, enabling the delivery of the ideal 578nm wavelength

FEM[®] technology optimizes the excitation of chemical reactions within cells but limits thermal damage to other structures which can cause PIH (Post Inflammatory Hyperpigmentation). FEM[®] works on three levels, combining power, delivery and penetration to create intracellular activity.

- 1) Penetration Depth | This is vital to delivering the correct amount of energy without causing collateral damage to the surrounding tissue
- 2) Collateral Damage | Dual Yellow multi wavelength laser delivers 22,000 nanosecond pulses per second and is able to change the cell structure, necrose vessels and suppress VEGF without causing any damage to the surrounding tissue
- 3) Treatment Efficacy | By combining high peak power (3kW) and a train of nanosecond pulses the Dual Yellow multi wavelength laser provides the most efficient treatment platform for both user and patient.

FEM[®] Technology provides the penetration depth without the associated collateral damage. Clinical studies show that treatment from Dual Yellow multi wavelength laser suppresses vascular endothelial growth factor thus removing any chance of post inflammatory hyperpigmentation. If the peak power density is too low then there is insufficient energy to cause intra cellular changes. However if the energy is too high then cellular damage occurs. In the region of 3kW the peak efficacy of treatment occurs.^{1,2}

The peak power density of laser systems is often overlooked when considering performance and treatment efficacy. This should be a major consideration along with selective wavelength in the successful treatment of melasma, acne and a range of other photochemical modalities. Norseld has incorporated FEM[®] technology which optimizes the power density required particularly for the successful treatment of melasma.

1. Kim EH, et al, The Vascular Characteristics of melasma. Jn soc. Invest Dermatol 2007 46, 111-116
2. Kim BJ, et al, Clinicopathologic efficacy of copper bromide Plus/Yellow laser (578nm with 511nm) for treatment of melasma in Asian patients. Dermatol Surg 36:885 (2010)

Just like their skin, the evidence has become clearer



ACNE/PDT using 578 Yellow Output

Acne has cleared after 4 treatments. The P. Acnes bacteria are destroyed by yellow light in the sebaceous gland, with sebum production greatly reduced.



MELASMA using Y10G Yellow & Green Output

Lesion has improved after 4 treatments. Decreasing the vascularity inhibits the growth factor (VEGF) therefore the melanocytes become less productive.



BULKY LESION using G30Y Green & Yellow Output

Instant ablation of superficial tissue, removing blemishes such as seborrhoeic keratosis immediately, with permanent results. This is achieved in a bloodless manner with a powerful green/yellow beam of over 2000W/cm².



VASCULAR using 578 Yellow Output

Single treatment. Instant coagulation of vessels occur and immediately disappear. This is due to the exact matching and absorption of oxyhaemoglobin.



REJUVENATION using 578 Yellow Output

After 1 treatment, collagen production has increased significantly, with reduction of vascular endothelial growth factors, and therefore the production of melanin. The skin is lightened and has been irradiated with 578nm, 10J/cm².



PIGMENTED using 511 Green Output

Benign Nevi after 2 treatments has excellent long-term results. Melanocytes are easily photo-coagulated without any collateral damage, as the green output is readily absorbed by the melanin.

Overview of the Dual Yellow Multi wavelength laser



Multi wavelengths enable multiple treatments, using just one laser

Each wavelength is powered by our copper bromide based technology to penetrate deeply, without creating collateral damage. The Dual Yellow multi wavelength laser eliminates the need for other aesthetic lasers, with proven results in over 30 different countries and all skin types on the Fitzpatrick I - VI scale.

Dual Yellow contact delivery devices

The range of Dual Yellow delivery devices offer ease of operation and consistent outcomes for the patient. Energy lost on the surface of the skin through reflection is reduced, as is heat from scattered energy in the stratum corneum and epidermis. The result is a vast reduction in pain for the patient, and better post treatment recovery, with no need to cool the skin after treatment.

Contact Scanner



10.0mm and 5.0mm options

0.6mm Handpiece



1.0mm Contact Handpiece



5.0mm Contact Handpiece



Dual Yellow multi wavelength technical data

LASER TYPE	COPPER BROMIDE LASER
Wavelengths	578nm (Yellow) 511nm (Green) G30Y (Green with 30% Yellow) Y10G (Yellow with 10% Green) <i>Depending on handpiece used</i>
Fluence on the skin (nominal)	Adjustable • Yellow 1-300J/cm ² • Green 3-300J/cm ² • G30Y 5-300J/cm ² • Y10G 3-300J/cm ² <i>Note: minimum & maximum fluence depends on the handpiece used</i>
Variable pulse width	10-950ms
Variable pulse rate	1-20 pps (Hz) (shutter rate)
Spot size	0.6mm & 1.0mm standard
Beam delivery	via optical fibre
Scanner	5mm, 10mm patterns
Power supply	200-240 V +/- 10% (50/60 Hz)
Power consumption	Approx. 1700 W Standard wall socket
Laser dimensions	28 x 62 x 100 cm (B x H x D)
Laser weight	50 kg (approximately)
Display panel dimensions	25 x 20 x 26 cm (B x H x D)
Monitor	High resolution LCD colour touchscreen display
Classification	Therapeutic laser conforming to EN 60825-1, laser class 4

Subject to technical modification

Global use covering every skin type

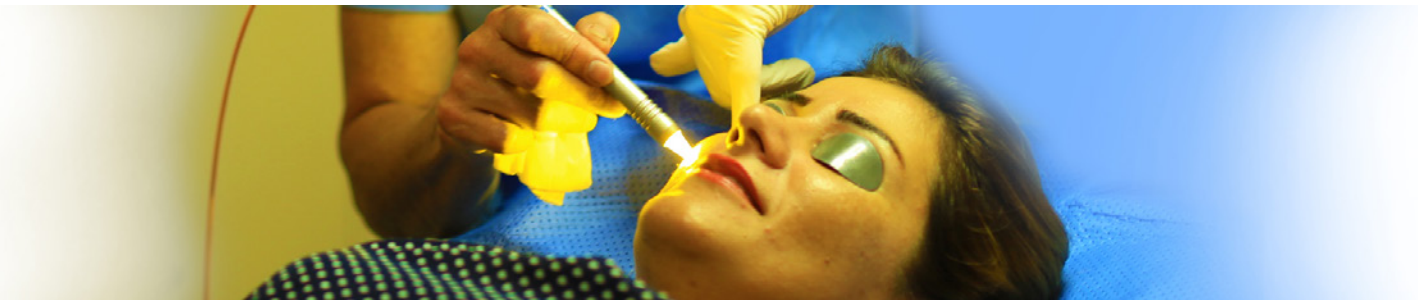
Our lasers are used in North America, Asia-Pacific, Middle-East and Europe, covering every skin type on the Fitzpatrick I-VI scale. Since 1989, we have led the world for medical applications using copper bromide lasers. Norseld's Dual Yellow multi wavelength laser with FEM® technology has helped thousands of people around the world to improve their aesthetic looks and treat serious skin conditions. We are proud to know that these treatments have caused minimal discomfort, while helping people to feel better about themselves.

Your obligation free clinical trial

We know that once you try the Dual Yellow multi wavelength laser in your own clinic, you will be amazed at the results and enjoy the quality of care it provides to your patients. Undoubtedly, with the results you provide to your patients, they are sure to share with others the aesthetic improvements they have benefited from, for all the world to see.

Benefits:

- High revenue earning capacity
- Excellent results rapidly increases client base
- Immediate improvement in appearance
- Flexible energy choices for optimising treatment
- Mostly single treatment
- High power for rapid treatment and minimal damage to surrounding skin
- No purpura response
- No bruising
- Bloodless lesion removal
- Multiple handpieces
- Convenient compact movable control panel
- Simple touch screen for precise control



YOUR LOCAL DISTRIBUTOR



CE 0805
Certified according to
ISO 9001:2000, ISO 13485
Medical Device Directive
93/42/EEC, Annex ■



 **NORSELD**

18 Lowe Street, Adelaide South Australia 5000
Phone: +61 (0)8 8231 9000 | Fax: +61 (0)8 8231 9009 | Email: sales@norseld.com | www.norseld.com