

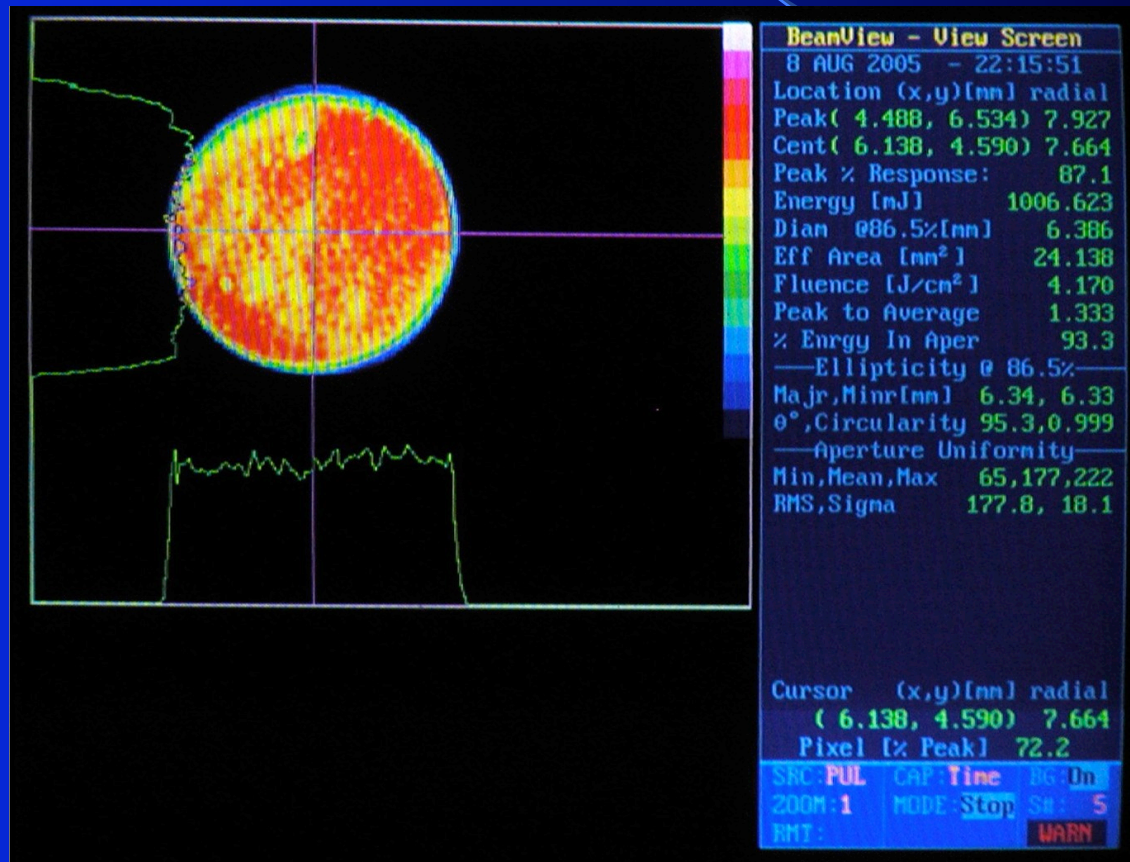
NaturaLase QS 2J

The highest energy tattoo removal
system in the world

4 Wavelengths

- 2000 millijoules of 1064 nm
 - Invisible IR radiation
 - Ideal for black and dark blue ink
- 1000 millijoules of 532 nm
 - Green light for red ink tattoos and vascular
- 500 millijoules of 585 nm
 - Yellow light for blue ink and other color tattoos
- 400 millijoules of 650 nm
 - Red light for green ink and other colors

Highest beam quality

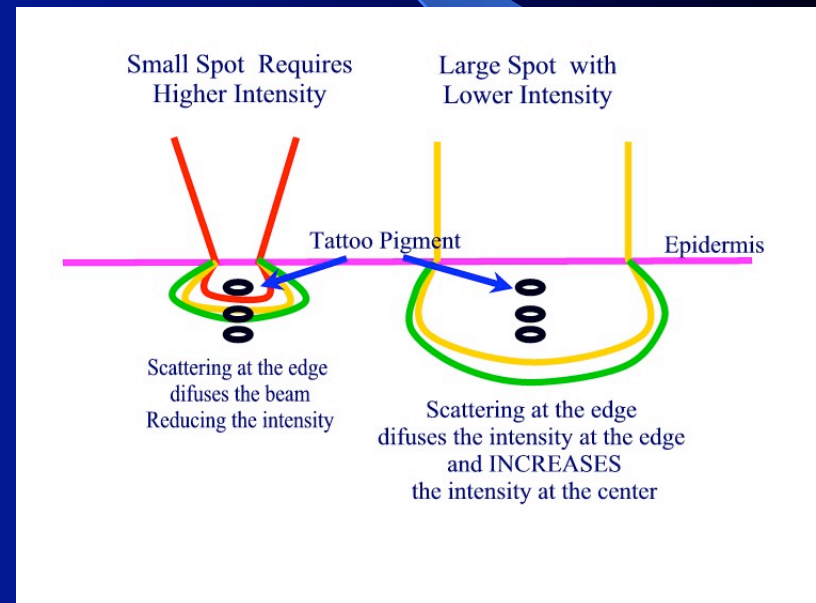


Why energy matters

- More energy allows a bigger spot
- Bigger spot means deeper penetration
- Deeper penetration means lower intensity
- Lowering intensity reduces complications
 - Less skin damage
 - Less scarring
 - Less hypo and hyper pigmentation
- Better results with deeper penetration

Penetration

- Deeper penetration at lower fluence
 - Penetration to the depth of the pigment
 - Depends on spot size and fluence
 - Flat top beam improves results
 - Lower intensity at the surface reduces complications



Energy Thresholds

Without enough energy an extra wavelength will not produce results.

Wavelength	Skin damage threshold	Min Fluence at Ink
1064 nm	6 J/cm ²	2 J/cm ²
532 nm	4 J/cm ²	2 J/cm ²
585 nm	5 J/cm ²	2 J/cm ²
650 nm	5 J/cm ²	2 J/cm ²

Spot Size, Energy and Depth

Bigger spots produce higher penetration
Smaller spots require higher surface fluence

Table shows energy requirements for 1064 nm

Spot size 1064 nm	Required Laser Energy	Surface Fluence	Fluence at Ink
10 mm	1500 mJ	2 J/cm ²	3 J/cm ²
8 mm	1200 mJ	3 J/cm ²	3 J/cm ²
6 mm	1000 mJ	6 J/cm ²	3 J/cm ²
4 mm	780 mJ	8 J/cm ²	3 J/cm ²

Spot Size, Energy and Depth

Bigger spots produce higher penetration
Smaller spots require higher surface fluence

Shown below are fluences for 1064 nm

Spot sizes below 4 mm are required for systems with low energy.

Spot size 1064 nm	Surface Fluence	Fluence at Ink level	Energy required
6 mm	2.5 J/cm ²	3 J/cm ²	1000 mJ
5 mm	4.5 J/cm ²	3 J/cm ²	900 mJ
3 mm	9 J/cm ²	3 J/cm ²	650 mJ
2 mm	15 J/cm ²	3 J/cm ²	480 mJ

For 532 nm

Shorter wavelengths scatter faster.

They need higher surface fluences to penetrate.

Shown below are fluences for 532 nm

**Spot sizes below 3 mm are required for systems from other laser companies.
These systems will produce skin damage during treatment.**

Wavelength	Spot Size	Surface Fluence	Minimum Ink Fluence	Required Energy
532	5	4.4	2.0	869
532	4	5.9	2.0	743
532	3	8.6	2.0	608
532	2	14.6	2.0	457

For 585 nm

Conversion to 585 nm uses about 70% of the available energy.
A 1000 mJ laser will typically produce about 300 mJ of 585 light.

NaturaLase QS produces 400 to 500 mJ of light at 585 nm.

Energies below 400 mJ are not useful at this wavelength

Wavelength	Spot Size	Surface Fluence	Minimum Ink Fluence	Required Energy
585	4	5.2	2.0	650
585	3	7.5	2.0	532
585	2.5	9.5	2.0	468
585	2	12.7	2.0	400

For 650 nm

Conversion to 650 nm uses 75% to 80% of the available energy.
A 1000 mJ laser will typically produce about 200 mJ of 650 light.

NaturaLase QS produces 400 to 500 mJ of light at 650 nm.

Energies below 350 mJ are not useful at this wavelength

Wavelength	Spot Size	Surface Fluence	Minimum Ink Fluence	Required Energy
650	4	4.9	2.0	612
650	3.5	5.8	2.0	557
650	2	12.0	2.0	377
650	1	29.5	2.0	232

NaturaLase QS Specifications

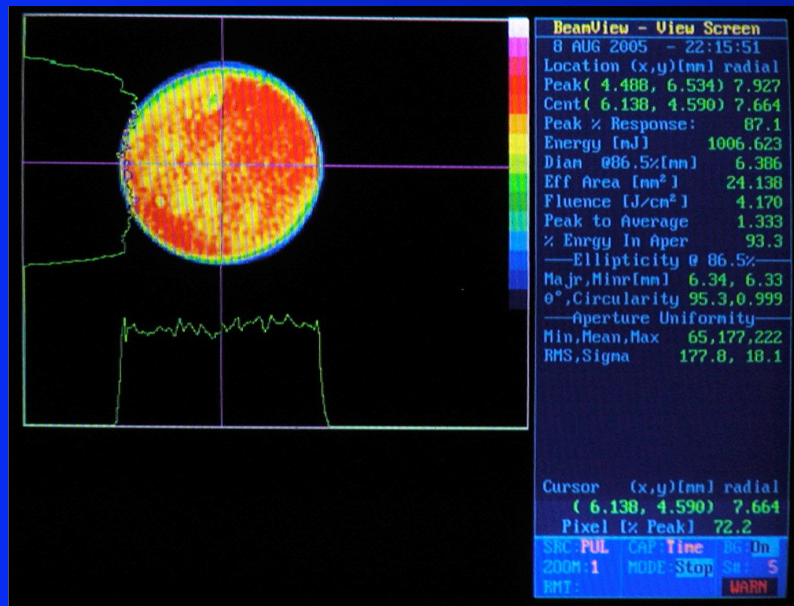
Wavelength	Energy	Spot size	Fluence
1064 nm	2000 mJ	10 mm	2.5 J/cm ²
532 nm	850 mJ	6 mm	3.0 J/cm ²
585 nm	450 mJ	2.5 mm	7.5 J/cm ²
650 nm	400 mJ	2 mm	12 J/cm ²

On the Skin Energies

Laser Product	1064 nm Energy	532 nm Energy	585 nm Energy	650 nm Energy
NaturaLase QS 2J	2000 mJ	900 mJ	560 mJ	400 mJ
NaturaLase QS 1J	1000 mJ	500 mJ	250 mJ	225 mJ
Conbio RevLight	950 mJ	500 mJ	300 mJ	200 mJ
Conbio C6	950 mJ	400 mJ	250 mJ	200 mJ
Palomar	800 mJ	400 mJ	NA	NA

Beam Profile

NaturaLase QS uses proprietary technology to produce the best beam profile in the business.



- Peak to average ratio of 1.3:1
- Treats evenly to the edge of the spot

The picture to the left is an example of a typical QC measurement from our production line

New Standard of Care

- Higher energy allows bigger spots
- Bigger spots produce higher fluences in the skin.
- These effects multiply to produce much lower fluence requirements.
- Much lower fluence means less skin damage

Fewer complications!!!