

Advalight

*Bringing world-class laser
innovation to dermatology*

“Say Hello to Yellow”



**VERSATILE, EFFICIENT &
EFFECTIVE TREATMENT**



SIMPLE TO OPERATE



**MULTIPLE
INDICATIONS**



Evolution



- Founded in 2006 to capitalize on PulSync technology
- 2006 – 2011
 - Patent protection
 - 1st prototypes
 - Early clinical evaluation
- 2011 – 2017
 - Product engineering
 - Creation of USA subsidiary
 - Clinical validation (USA & Europe)
 - FDA & CE approval
 - Sales to early adopters
- 2018
 - Full international release
 - Move to new 1,700 m² production, R&D, and office facility

ADVATx laser system



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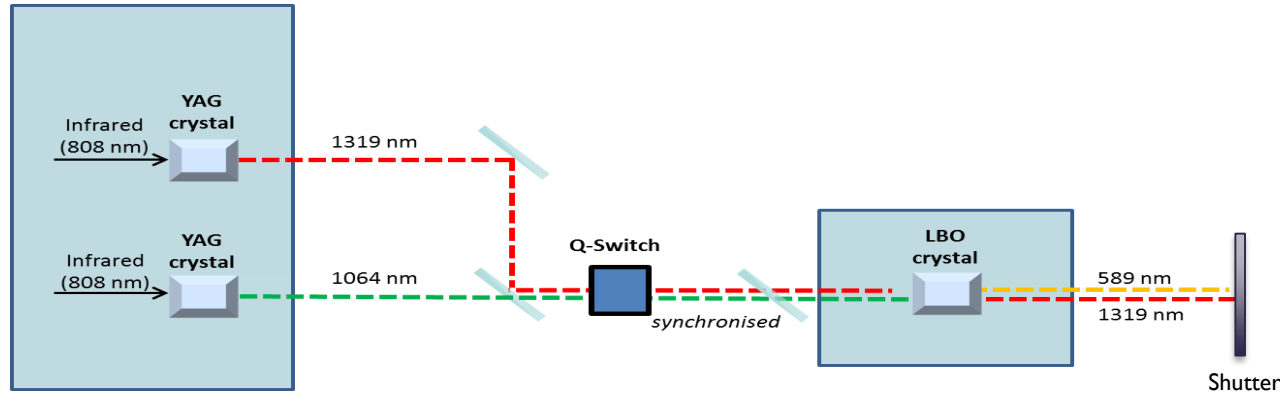
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PulSync™ (patented pulse synchronization)



- Two laser cavities (1064 & 1319nm)
- Q-Switch modulates both wavelengths to generate a train of pulses
- Pulse trains are synchronized and simultaneously sent through a non-linear crystal (LBO)
- In the LBO, 1064nm and 1319nm combine to generate 589nm (yellow) light
- Alternatively, 1319nm may be selected alone



SHG (Second Harmonic Generation)



- Ability to combine photonic energy to generate different wavelengths

 - Various crystals available: KTP, LBO, BBO, etc.

- Photon energy is inversely proportional with wavelength: $E = \frac{h c}{\lambda}$

- Frequency doubling: combining 2 photons of the same λ :

$$\frac{1}{1064} + \frac{1}{1064} = \frac{2}{1064} = \frac{1}{532}$$

- PulSync: combining 2 photons of different λ :**

$$\frac{1}{1064} + \frac{1}{1319} = \frac{1}{589}$$



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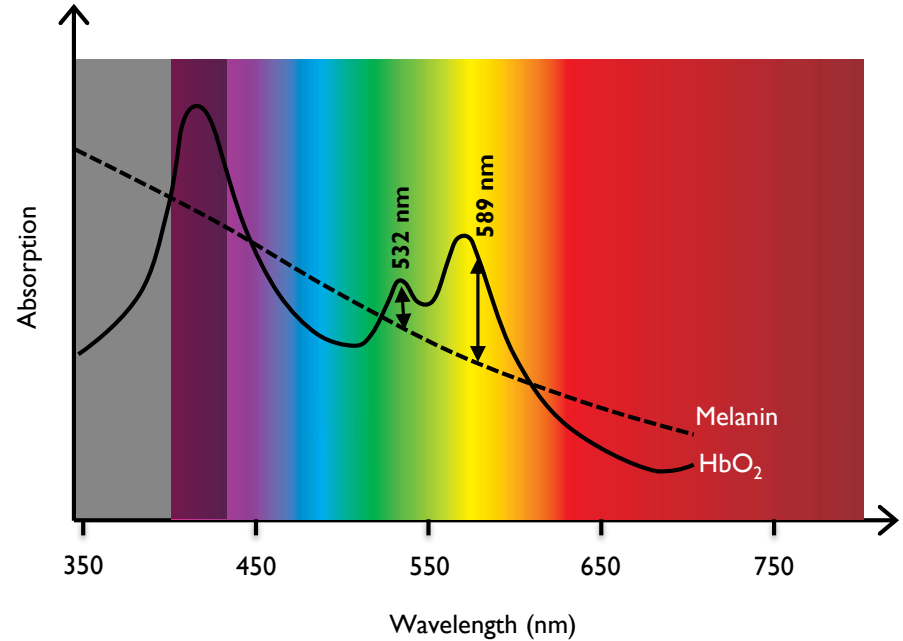


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Why Yellow?

- High absorption in HbO₂
- Low melanin absorption
- Large therapeutic window
 - Inherently safe
 - More "forgiving"



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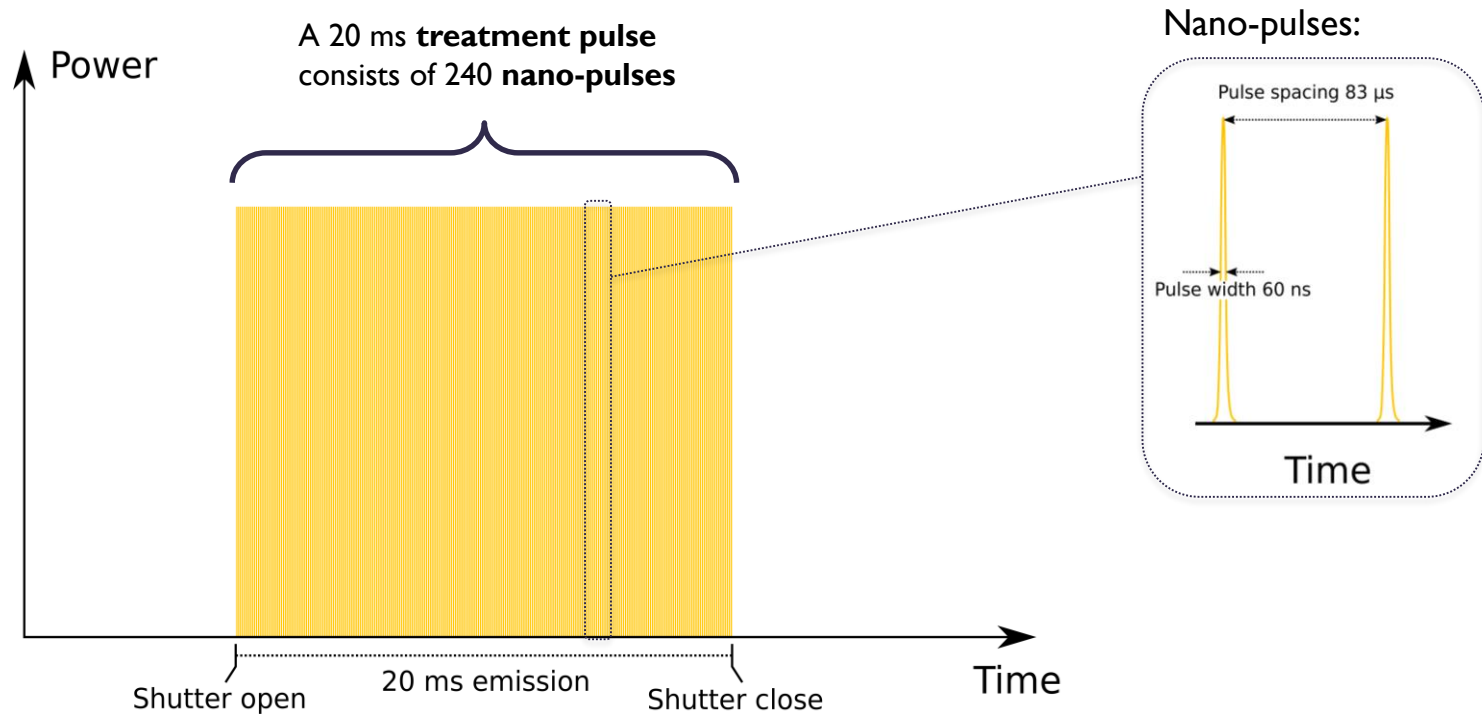
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Soft CW Pulsing



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☛ Selective photothermolysis:

- Selective heating of the vessel by light absorption in HbO₂
- 589 nm results in optimal selectivity of heating

Depending on the wavelength, fluence and pulse duration, photothermolysis may result in:

☛ Photocoagulation

- Obtained when using ms pulse durations (**ADVATx PulSync**)
- Controlled transfer of heat from target to vessel wall
- No purpura
- Gold standard for Aesthetic indications

☛ Photomechanical Response

- Obtained when using μ s pulse durations (PDL, short-pulsed KTP)
- Rupturing of blood vessel results in purpura



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➤ Superficial pigmentary disorders:

- When the 589 nm beam is directed at a highly pigmented area, melanin absorption will suffice to treat pigmentary disorders

➤ Sub-coagulative inflammation / Skin rejuvenation:

- Mechanism of fibroblast stimulation similar to 1319 nm (see following slide), but at a more superficial level of the skin



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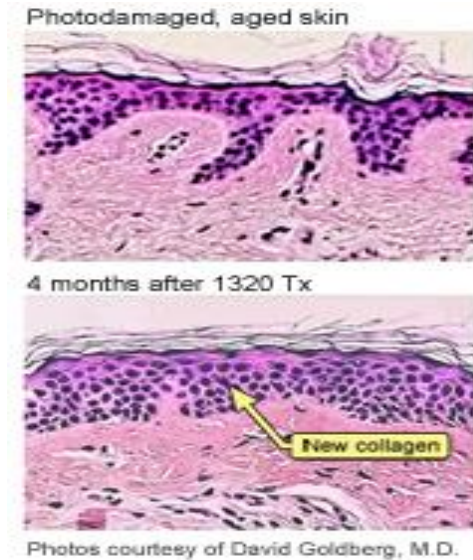
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Mechanism of Action – 1319nm



- Non-ablative
- Thermally injure a dermal region in the skin or sebaceous glands
 - Initiate the body's wound healing response
 - Stimulate fibroblast activity
- Reduce oil production



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Cleared indications



CE 0459

589nm

- Telangiectasia
- Spider veins, both facial and leg
- Rosacea
- Hemangiomas
- Port wine stains
- Venous lakes
- Red or hypertrophic scars
- Melasma
- Hyper pigmentation
- Skin rejuvenation

1319nm

- Skin rejuvenation
- Reduction of acne scars
- Reduction in the appearance of pores
- Mild and moderate inflammatory acne vulgaris



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INDICATIONS



589nm

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1319nm

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Early clinical validation



- Clinical efficacy of ADVATx established by first adopters 2014-16:
 - Over 70 patients treated and documented by Dr. Carsten Philipp (DE)
 - Over 1500 patients treated successfully by Dr. Tomas Dam (DK)



American Society for Laser Medicine and Surgery Abstracts 411 (2017)
TREATMENT OF FACIAL VASCULAR LESIONS WITH A NOVEL 589nm SOLID-STATE LASER _ FIRST CLINICAL OBSERVATIONS
Carsten Philipp, Serge Mordon
Zentrum Lasermedizin, Evangelische Elisabeth Klinik, Berlin, Germany; University Lille, INSERM, CHU Lille, U1189 _ ONCO-THAI, Lille, France



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MULTIPLE INDICATIONS



Telangiectasias



Pre



Post 1 Tx



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INDICATIONS



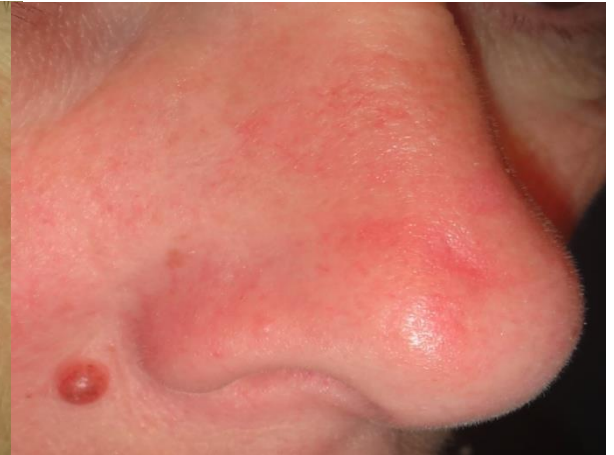
Spider naevus



Pre



10 Days post



Control at 6 Weeks



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Telangiectasias



Pre

During

Post 1 Tx



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Rosacea



Pre



Control 3 months (2tx)



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Poikiloderma of Civatte (POC)



Pre



3 months post ITx



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Inflammatory acne



Pre



Post 1 Tx



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Inflammatory acne



Pre



Post 3 Tx



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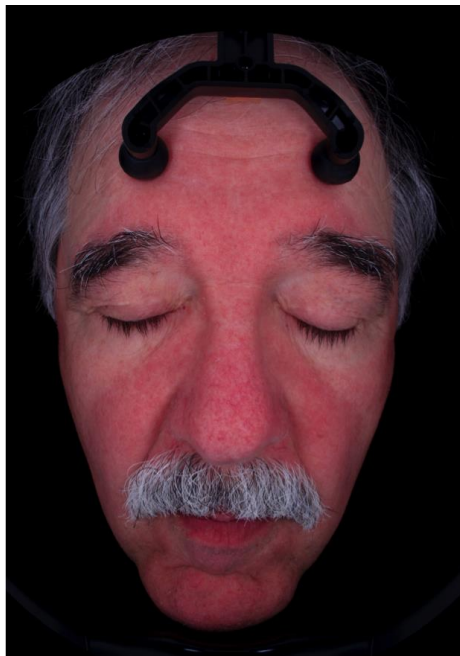
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Facial erythema



Pre



Post



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Scar



Pre



Post



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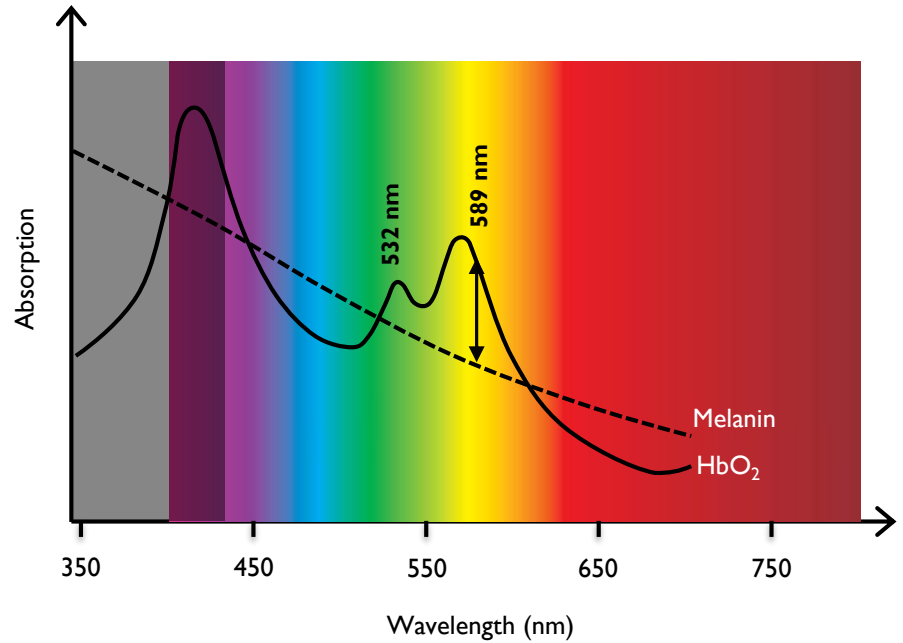
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Why ADVATx over 532/KTP lasers?



- Higher absorption in HbO₂
- Less melanin absorption
- Greater therapeutic window
 - Inherently safer
 - More "forgiving"



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Why ADVATx over PDL?



⦿ PDL:

- Very short pulse width: causes purpura
 - Necessary for PWS
 - Not acceptable for cosmetic applications
- “Non Purpura” settings
 - 40ms max pulse durations
 - Making the case that longer is better
- Expensive
- Toxic consumables
 - Cost
 - Environmental concerns
- Heavy on maintenance:
 - Replacement of dye kits, flash lamps etc.



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Technical facts

Name	ADVATx™
Technology	Solid-state (crystal)
Wavelength	589 nm & 1319 nm
Spot size	1 mm
Scanner	1x1 mm to 10x10 mm
Fluence	5 J/cm ² – 60 J/cm ²
Weight	80 kg
Consumables	None
Supply voltage	120-240 Vac
Certifications	CE mark & FDA 510 (k)



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Does size really matter?

- Debunking the spot size myth



➤ Spot size/depth:

- Matters only for deep-seated targets (hair, etc.)
- With 589nm, ADVATx targets superficial targets
 - Spot size not a significant issue
 - Proven by opinion paper

Penetration of Light in Tissue as
a function of Beam Diameter
Pr. Serge Mordon, Lille

➤ Scanner allows for treatment of large areas

- Fastest scanner in the industry
- Multiple patterns
 - More adaptable
 - Better conforms to lesion



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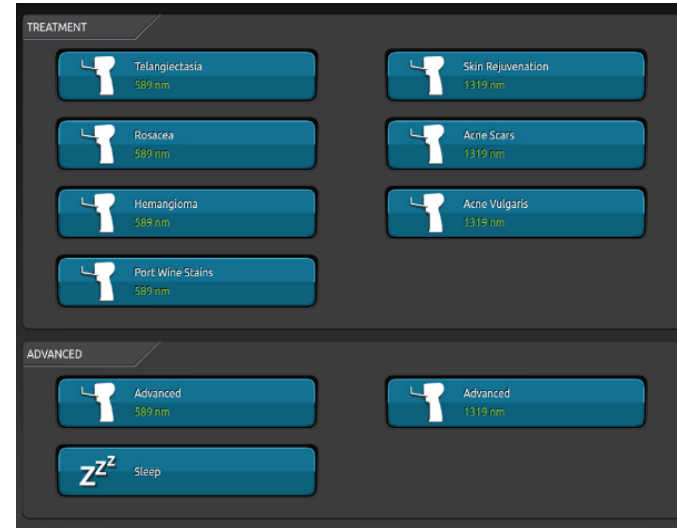
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Intuitive UI



- ADVATx was designed to simplify the user experience
 - Pre-set parameters based on:
 - Indication
 - Skin type
 - Fluence, pulse duration and scan patterns auto-set
 - Suggested starting points
 - Easily modified
 - Safely delegate to a qualified technician
 - Advanced Mode
 - Parameters set by the practitioner



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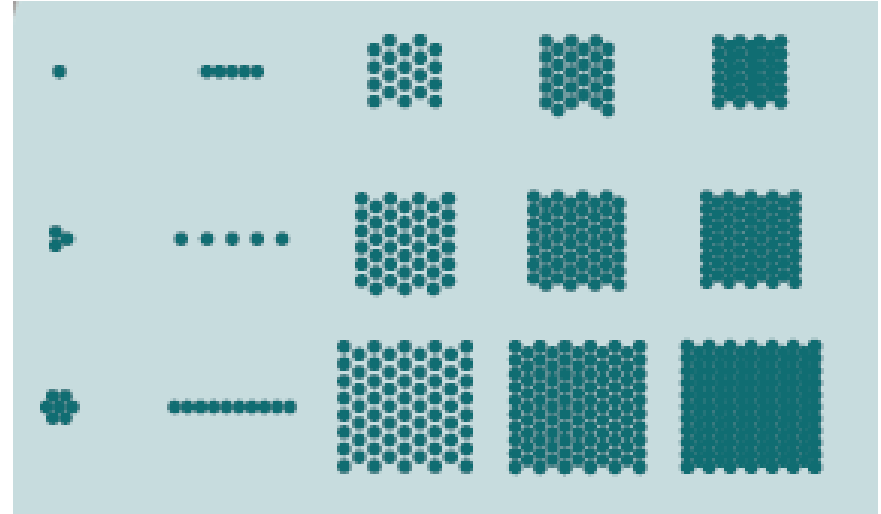


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Delivery Mechanism

- Scanner hand piece delivering either 589 or 1319nm
 - No need to change hand pieces
 - Ergonomic
 - Light weight
- Multiple patterns/options
 - Single Spot 1 mm
 - Circle Patterns – 3 and 7 spot
 - Enlarged “spot size” to 2 and 3 mm respectively
 - Line Patterns – 3, 5 and 10
 - Rapid blanching of linear veins
 - “Painting”
 - Square Patterns – 5x5, 7x7 and 10x10
 - Treating larger areas
- Repetition Mode
 - User defined as Off or every .25 or .50 seconds
 - Decreased treatment time



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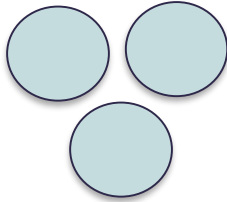
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Delivery Mechanism

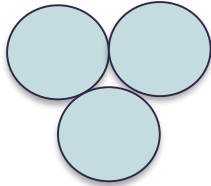
← Pattern Density

- Spaced (0.4 mm)



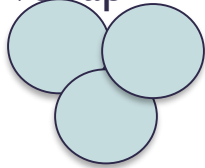
- Fill out factor $\approx 50\%$

- Touch



- Fill out factor $\approx 70\%$

- Overlap – 15% overlap per scan

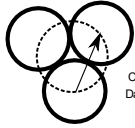


- Fill out factor $\approx 85\%$

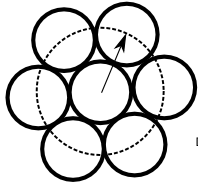


Delivery Mechanism

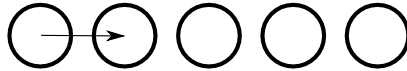
← Pattern Density



C-C distance ~1,03 mm
Dashed circle diameter 1,19 mm



C-C distance ~1,03 mm
Dashed circle diameter 2,06 mm



C-C distance ~2,06 mm



C-C distance ~1,03 mm



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Why an ADVATx?

- Solid state
 - Inherently reliable
 - No consumables
 - No flash lamps to replace
- Long pulse (ms range)
 - Selective photocoagulator
 - Non-purpuric
- 589 nm
 - Effective
 - Greater therapeutic window than 532 nm and 577 nm
- Dual 589/1319 nm
 - Combination treatments
 - Inflammatory acne
 - Scars



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