



XP Dynamis

Teknoloji ve Uygulamalar

Komple Anti-Aging Tedavileri

Estetik;

- Kalıcı epilasyon
- Vasküler lezyonlar
- Akne ve Akne İzi Revizyonu
- Non-ablatif cilt yenileme
- Onikomikoz
- Rozasea
- Telenjektazi

Cerrahi;

- Laser Lipoliz
- Hydrosis Tedavisi
- Endavasküler Laser Tedavisi

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Nd:YAG

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Neden Nd:YAG Laser

1. Penetrasyon derinliği
2. Güvenilirlik
3. Güvenlilik

Nd:YAG dalga boyu derinlemesine ısıtma için ideal laserdir.

[May 2010]

Laser and Health Academy
Review

Laser and Health Academy Review
Vol. 2010, May; www.laserandhealth.com

The Dynamis Line Nd:YAG Lasers

Content:

I. INTRODUCING THE DYNAMIS LINE OF Nd:YAG LASERS.....	30
Key features.....	30
Key documents.....	30
Technical specifications.....	30
II. Nd:YAG THE LASER OF CHOICE FOR HEATING TARGETS IN DEEPER SKIN LAYERS.....	31
Laser tissue interaction and thermal relaxation time.....	31
Nd:YAG compared to other wavelengths.....	32
Dynamis Nd:YAG laser.....	35
III. FOTONA TECHNOLOGY.....	34
Fotona VSP (Variable Square Pulse) Technology.....	34
Fotona EFC (Energy Feedback Control) Technology.....	34
Fotona SOE (Scanner Optimized Efficacy) Technology.....	35
IV. PULSE OPERATION MODE IN PRACTICE.....	35
R31 – Gaussian beam profile handpiece.....	35
R33 – Top hat profile handpiece.....	35
Pulse mode pre-sets.....	36
Pulse mode Nd:YAG clinical experience.....	37
V. SCANNER OPERATION MODE IN PRACTICE.....	38
S11 – Scanner for precision and velocity.....	38
Scanner mode pre-sets.....	40
VI. QCW OPERATION MODE IN PRACTICE.....	44
R27 – QCW handpiece.....	44
QCW clinical experience.....	45
VII. CONCLUSIONS.....	46
VIII. REFERENCES.....	47

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Dynamis Nd:YAG laser

- Extrem peak gücü
- Output gücünde stabilite
- Pulsed ve QCW
- Optimize tarayıcı kullanımı

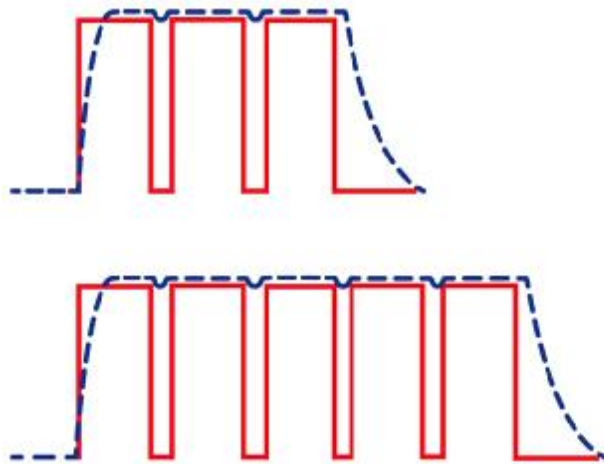
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Nd:YAG Pulse Spesifikasyonları

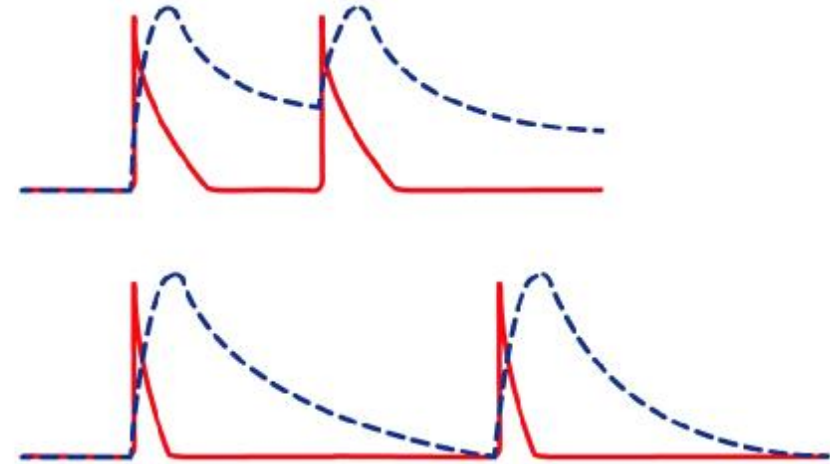
Pulse genliđi :	0,1 - 50 ms
Frekans aralıđı :	0,5 - 100 Hz
Enerji:	0,3 - 50 J
Max. Güç ayarı :	80 W
Peak gücü:	19 kW

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VSP9 Technology –long pulse (uzun atım)



Fotona VSP Long Pulse



Siradan "Long Pulse"

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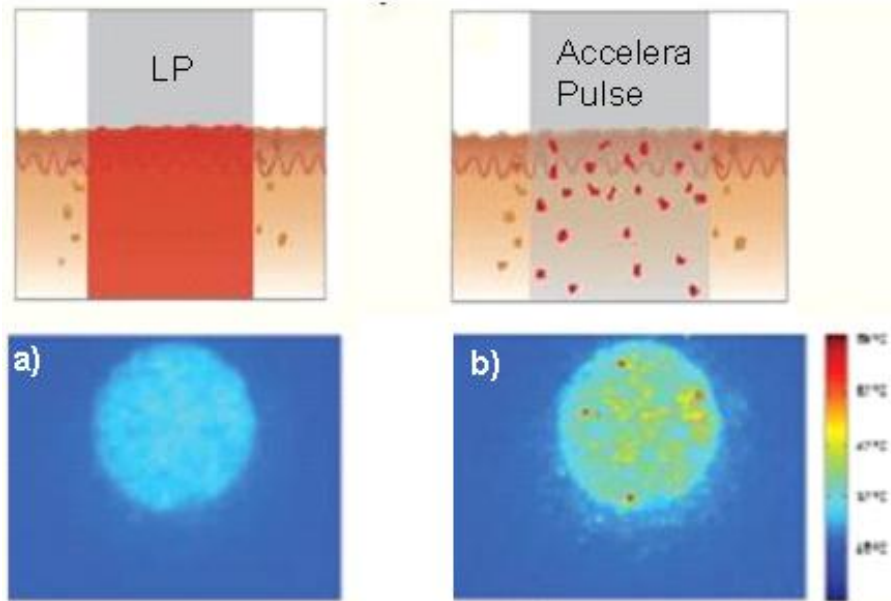
Laser-doku etkileşimi: Bilimsel Makaleler

- ➔ **Novel Laser Therapy in Treatment of Onychomycosis**
Jasmina Kozarev, Zdenko Vizintin
- High Fluence, High Beam Quality Q-Switched Nd:YAG Laser with Optoflex Delivery System for Treating Benign Pigmented Lesions and Tattoos**
Matjaz Lukac, Zdenko Vizintin, Marko Kazic, Tom Sult
- ➔ **Saphenous Vein Occlusion by Endovenous Laser Ablation (EVLA) with a 1064 nm VSP Nd:YAG Laser**
Andrej Sikovec
- ➔ **QCW Pulsed Nd:YAG 1064 nm Laser Lipolysis**
Matjaz Lukac, Zdenko Vizintin, Janez Zabkar, Samo Pirnat
- ➔ **Beyond Customary Paradigm: FRAC3® Nd:YAG Laser Hair Removal**
Matjaz Lukac, Martin Gorjan, Janez Zabkar, Ladislav Grad, Zdenko Vizintin
- ➔ **Parameters for the New FRAC3® Nd:YAG Laser Skin Treatment Modality**
Matjaz Lukac, Tom Sult, Janez Zabkar, Martin Gorjan, Zdenko Vizintin
- Ablation and Thermal Depths in VSP Er:YAG Laser Skin Resurfacing**
Matjaz Lukac, Tadej Perhavec, Karolj Nemes, Uros Ahcan



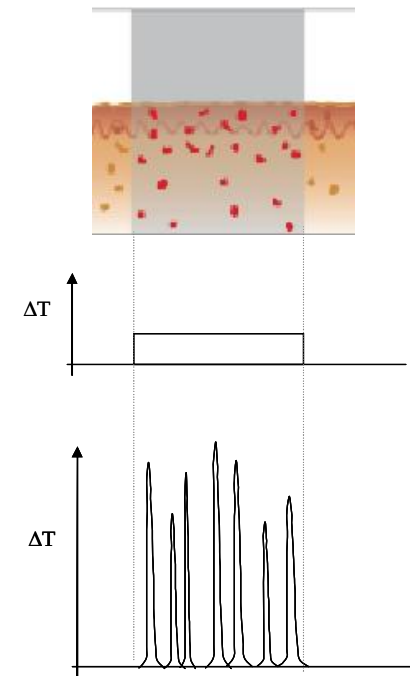
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Homojen Selektif Fototermolize Karşı



a) Long duration, low power laser pulse

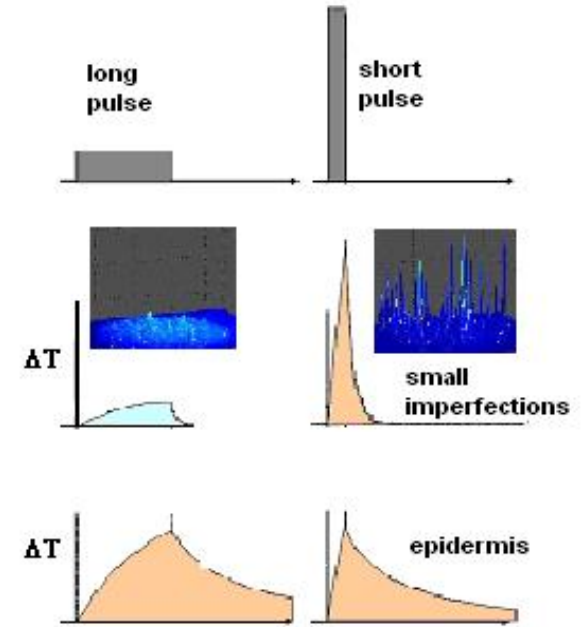
b) Short duration, high power FRAC3 laser pulse



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Epidermal güvenlik incelemesi

1. Yeni arařtırmalar göstermiřtir ki cilt TRT deęeri 10 ms'e kadar deęil, fakat 100 ms'e kadardır.
2. Epidermal güvenlik için fluans eřięi mümkün olduęunca düşük tutulmalıdır.
3. Hedef zarar eřięi (fluence) kısa atımlarla düşürülebilir.
4. Yeni yaklařım J.LAHA dergisinde açıklanmıřtır.



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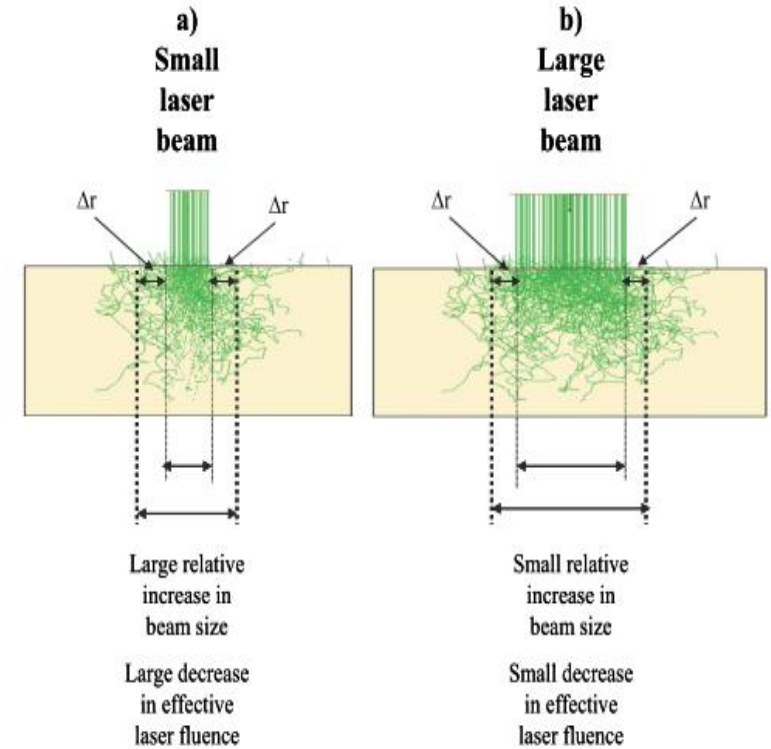
Spot Boyutu İncelemesi

1. Saçılma etkisi.
2. Saçılma etkisini kompanse edebilmek için fluans (9 vs 3 mm spot boyutu – factor 1,6) ayarlanmalıdır

Ya da

aynı klinik sonuç için aynı fluans değerinde pulse süresi azaltılmalıdır.

Bakınız J.LAHA, 2010,1.



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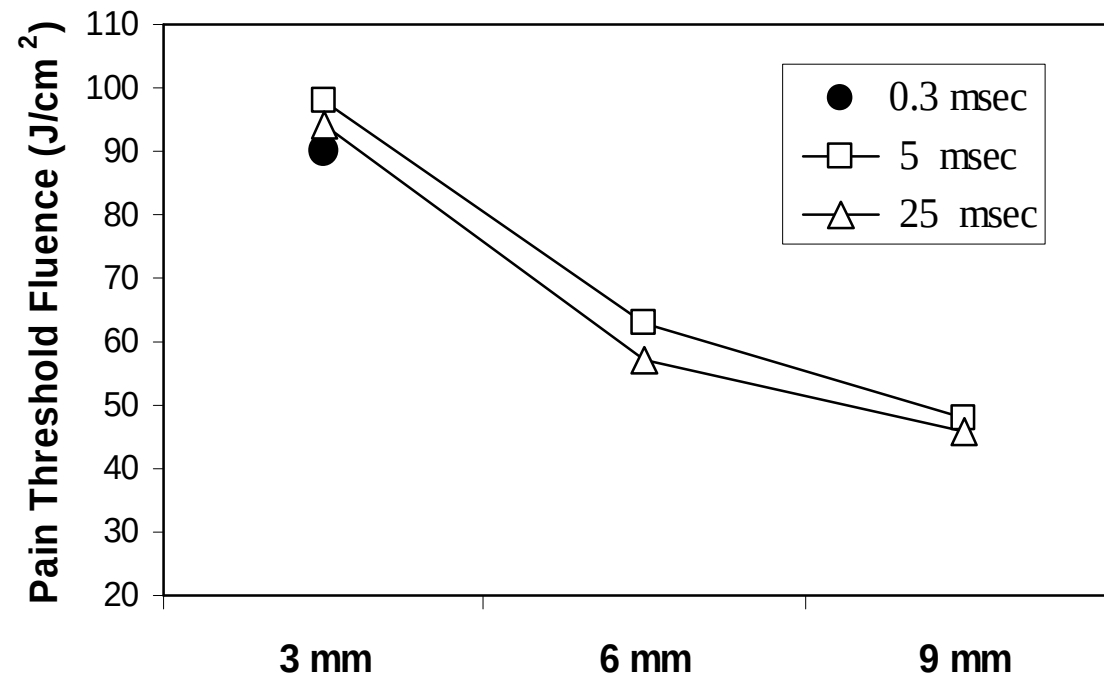
Cilt derinliği (scattering/saçılma) incelemesi

Spot size	3 mm	6 mm	9 mm	12 mm	15 mm	20 mm
Effective fluence relative to the effective fluence at 9 mm	62%	88%	100%	107%	112%	117%

Ref: Lukac et al, Beyond Customary Paradigm : FRAC3 ® Nd:YAG Laser Hair Removal, J of LAHA 2010, 1, 35-46.

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Hasta konforu faktörü



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Laser Epilasyonda Yeni Yaklaşım

Hair removal treatment regime	Fluence	Pulse duration	Spotsize	Hair removal efficacy	Pain
Standard	55 J/cm ²	15-25 ms	9 mm	1	2
FRAC3®	55 J/cm ²	1 ms	3 mm	2.2	1

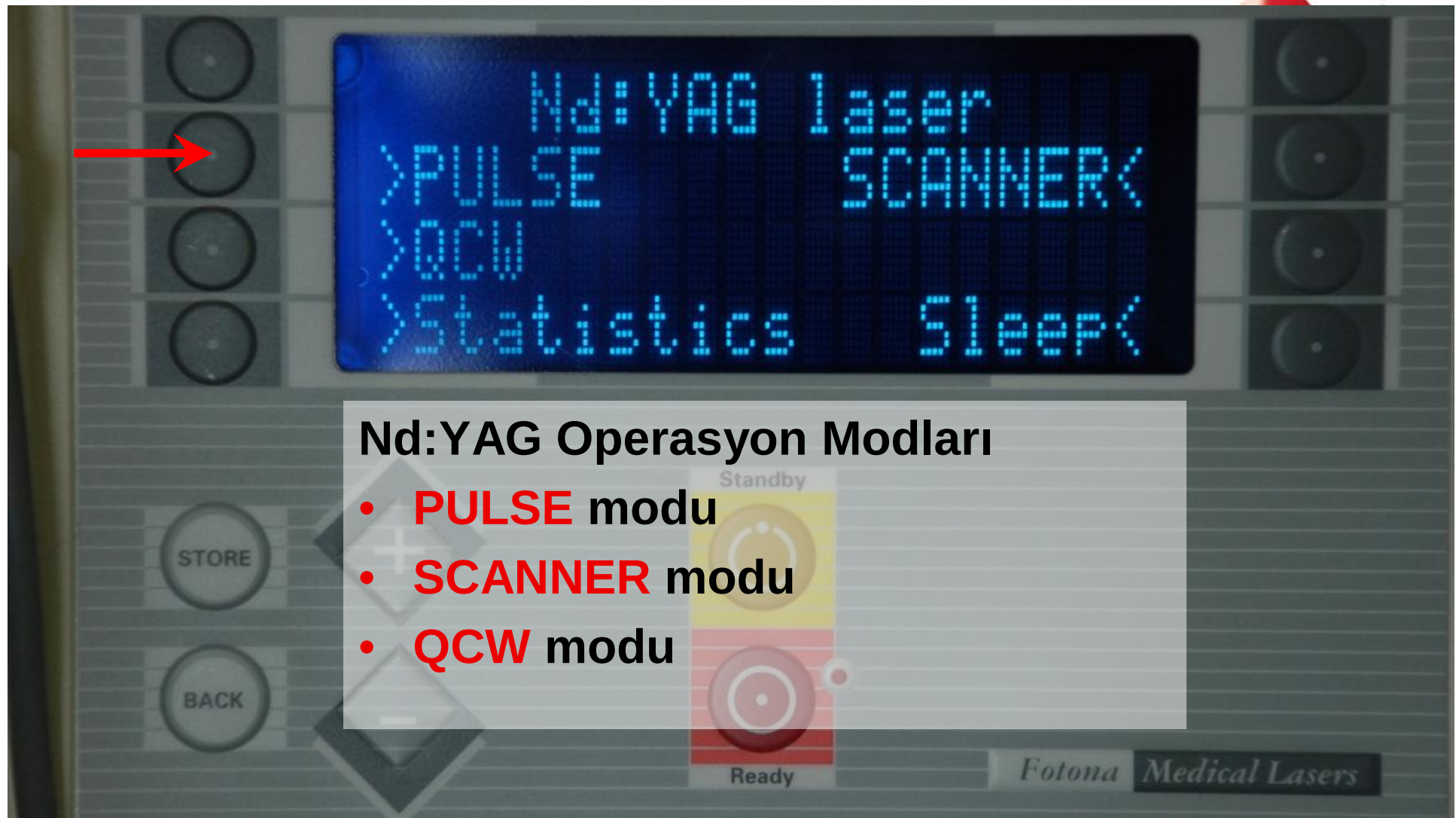
Ref: Lukac et al, Beyond Customary Paradigm : FRAC3 ® Nd:YAG Laser Hair Removal, J of LAHA 2010, 1, 35-46.

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Klinik rehberler – Laser Epilasyon

Treatment Modality:		<i>FRAC3® Hair Removal</i>		
Laser System		Fotona Dynamis		
Laser wavelength		Nd:YAG (1064 nm)		
User Interface Mode:		Pulse (Accelera)		
Utilized handpieces:		S11 scanner		
	Spot size (mm)	Pulsewidth (ms)	Fluence (J/cm²)	Frequency (Hz)
Skin group A	3	0.3- 5.0 msec	<55	15
Skin group B	3	0.3 - 5.0 msec	<35	20
Skin group C	3	0.3 - 5.0 msec	<25	25

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Nd:YAG Operasyon Modlari

- **PULSE** modu
- **SCANNER** modu
- **QCW** modu

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MEMORIES

Handpiece

Fluence/Energy

Frequency

>M NdPULSE PK
>R33 FRAC3
>20 J/cm2 2 mm
>1.0 Hz 0.1 ns

PERSONAL

Frac3 Gösterges

Spot size

Duration

STORE

BACK

Standby

Ready

Fotona Medical Lasers

NEW

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SP Dinamis

**Nd:YAG
Pulse Uygulama
Modu**

R31A- Gaussian ışın profili

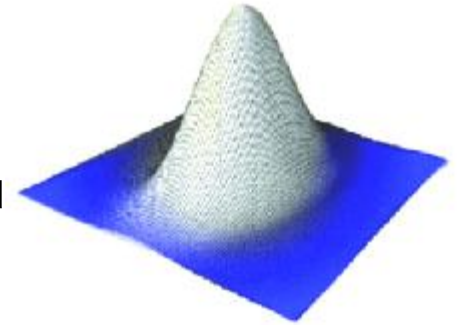


Tedavi ışını spot büyüklükleri: 2 - 10 mm in
1 mm aralıklarla

Uygulanan kısım tipi: Tip B

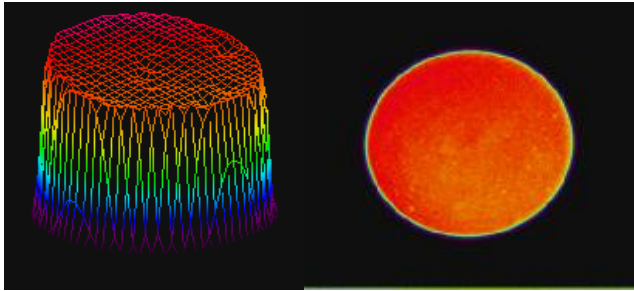
Sterilizasyon: Otoklavda sterilizasyona uygu
(sadece handpiece spacer'ı)

Uyumlu ışın iletimi: 940 μ m core fiber
NA=0.22 ile



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R33 – Top hat profili



Spot boyutu: 2, 3, 4, 5, 6, 7, 8, 9 ve 10 mm boyutlarında spotlar için değiştirilebilen optikler

Sterilizasyon: Otoklavda sterilizasyona uygun (sadece handpiece spacer'ı)

Uyumlu ışın iletimi: 940 μ m core fiber with NA=0.22

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Klinik Kullanımı

- **Laser epilasyon**
- **Vasküler Lezyonlar**
- **Akne**
- **Tırnak Mantarı Enfeksiyonu**



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Pulse modu hafızası

	Pulse Width (ms)	Freq (Hz)	Fluence (J/cm2)	HP	Spot Size (mm)
RedVein	10	1,5	200	R33	2
BluVein	30	1,5	120	R33	4
HairLow	50	2,6	30	R33	9
HairHi	15	2	50	R33	9
Tight	50	2,6	30	R33	9
HiTight	15	2	50	R33	9
Acne	25	1	40	R33	4
Nails	35	1	40	R33	4



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SP Dynamis

**Nd:YAG
Scanner Uygulama
Modu**

S11 - Spesifikasyonları



Spot boyutu 3 mm, (opt. 6 mm ve 9 mm)

Scan pattern X ve Y doğrultusunda ayarlanabilir
(çizgi, kare, dikdörtgen, tek spot)

Scanning taramaları

SE – Sequential

OP – OPTimal

PR – PaRtial

Maximum scan alanı (yaklaşık) 42.00 cm²

Overlap: 13 %, 20 % ve 30 %

Optik fiber 940 um çap ile

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S11- İç ve dış optikler

6 mm scanner
inlet optics

9 mm scanner
inlet optics

Removable outlet
protective window

3 mm scanner
inlet optics

3 mm scanner
outlet lens



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Klinik Uygulama

- FRAC 3
- Laser Epilasyon
- Akne
- Cilt Sıkılaştırma



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Full face non-ablatif cilt rejuvenasyonu Fotona Nd:YAG Frac3 ile



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24 Scanner modu hafızası

	Pulse Width (ms)	Freq (Hz)	Fluence (J/cm2)	HP	Spot Size (mm)
Frac3	0,1	50	15	S-11	3
HiFrac3	0,3	20	35	S-11	3
HairLow	50	5,5	50	S-11	3
HairMed	30	6,5	60	S-11	3
HairHi	15	6	70	S-11	3
Hair XX	1	5	90	S-11	3
Acne	25	7	50	S-11	3
Rosacea	25	8	35	S-11	3

	Pulse Width (ms)	Freq (Hz)	Fluence (J/cm2)	HP	Spot Size (mm)
HairLow	50	3,6	40	S-11	6
HairMed	30	3,4	50	S-11	6
HairHi	15	3,2	60	S-11	6
HairMax	5	3,2	70	S-11	6
Tight	50	4	30	S-11	6
HiTight	15	3,6	60	S-11	6
Acne	25	3,8	40	S-11	6
Celulit	30	3,4	50	S-11	6

	Pulse Width (ms)	Freq (Hz)	Fluence (J/cm2)	HP	Spot Size (mm)
HairLow	50	2,6	30	S-11	9
HairMed	30	2,4	40	S-11	9
HairHi	15	2	50	S-11	9
HairMax	5	1,7	60	S-11	9
Tight	50	2,6	30	S-11	9
HiTight	15	2	50	S-11	9
Acne	25	2,8	30	S-11	9
Celulit	30	2,4	40	S-11	9



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SP Dynamics

**Nd:YAG
QCW Uygulama
Modu**



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HAFIZA

Güç

Frekans

Süre

>M Nd:YAG CW P<
>10.00 W 600 um<
>20 Hz 0.6 ns<
>40 s 0.00 J<

PERSONAL

Opt.Fiber

Pulse süresi

Doz

STORE

BACK

Standby

Ready

Fotona Medical Lasers



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Nd:YAG QCW Spesifikasyonları

Pulse genliđi : 0.1, 0.3, 0.6, 1.0, 2.0 ms

Frekans aralıđı : 0.5Hz - 100Hz

Min. Güç ayarı : 0.15 W (0.5Hz and 0.3J)

Max. Güç ayarı : 30 W (600 μ m fiber)

80 W (1000 μ m fiber)

Fiber çapı : 600 ya da 1000 μ m

Uygulama süresi : 0 - 999 s

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R27

Çalışma mesafesi: kontakt halde

Sterilizasyon: Otoklavda sterilizasyona uygundur

Biocompatibility: NAMSA – VI Sınıfı (USP) – açık fiber



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QCW modu hafızası

	Pulse Width (ms)	Freq (Hz)	Power (W)	Delivery system
Lipo	0,3	50	10	600 um
Hi_Lipo	0,3	50	20	600 um
EVLA	0,3	100	16	600 um
Hi_EVLA	0,3	100	25	600 um
SurgLow	0,3	17	2	600 um
SurgMed	0,3	50	10	600 um
SurgHi	0,3	50	20	600 um
SurgMax	0,6	40	30	600 um



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Klinik Kullanımı

- Lipolysis
- EVLA
(Endovasküler Laser Uygulamaları)



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