

Unique Optical Technology (주)유니오텍

UNIOTECH

808nm VCSEL devices in Aesthetic medicine

VCSEL Applications in Aesthetic medicine

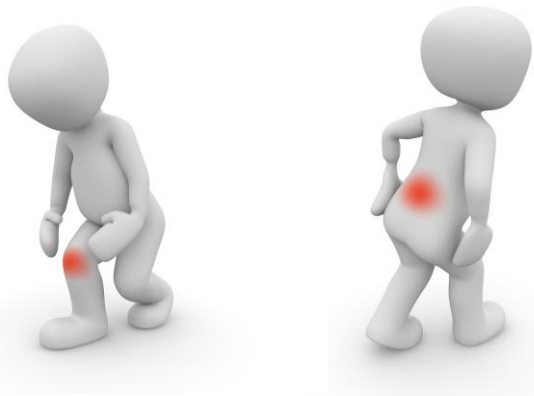


Hair removal

Potential Customers

- Philip
- Cosmeditech Innovations Ltd
- Syneron Medical Ltd.
- Sciton, Inc.
- Alma Lasers, Ltd.
- Cynosure, Inc.
- Cutera Inc.
- Lumenis Ltd.
- Lutronic Corp.
- Lynton Lasers Ltd.
- Solta Medical, Inc.
- Strata Skin Sciences, Inc.
- Hologic Inc(Cynosure)
- Apax Partners(Syneron Candela)
- Fosun Pharma (Sisram)
- XIO Group (Lumenis)
- Elen s.p.a
- Venus Concept (Canada)
- Miracle Laser Systems Inc
- Valeant Pharmaceuticals (Solta Medical Inc)
- Viora
- Fotona
- Sciton Inc
- Lynton Lasers Group
- Sharplight Technologies Ltd.

VCSEL Applications in Aesthetic medicine



Pain relief/ Photobiomodulation/ Low level laser therapy

Potential Customers

- THOR
- Vielight Inc
- Aspen Laser Systems, LLC
- IRRADIA AUSTRALIA
- Omega Laser Systems Ltd
- Respond system incorporated



VCSEL Applications in Aesthetic medicine



Hair growth/ Laser Comb

Potential Company

- HairMAX
- LESCOULTON
- iRestore
- Illumiflow
- Capillus
- NutraStim



Lasers Used in Wide Variety of Aesthetic Treatment

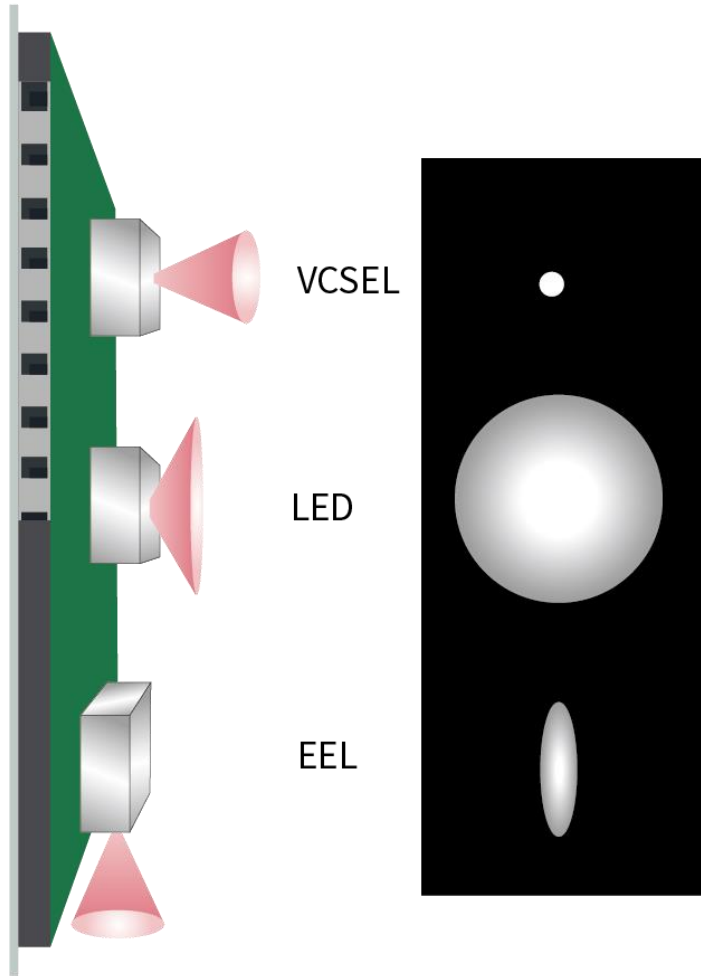
Hair
Removal

Pain
Relief

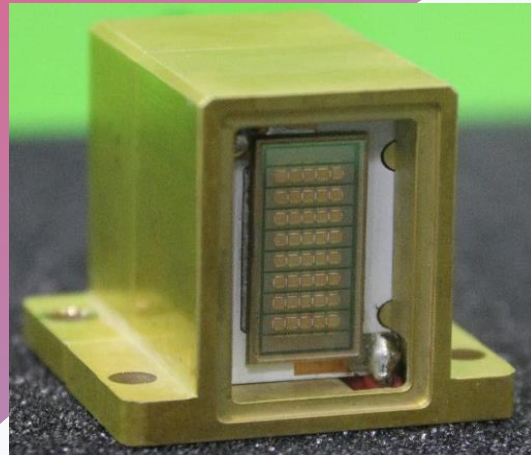
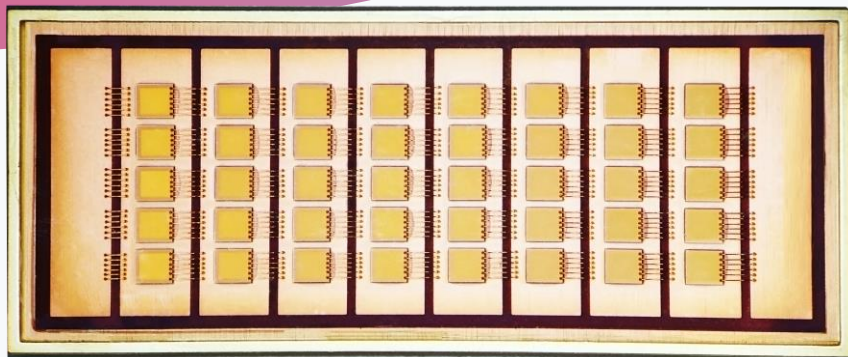
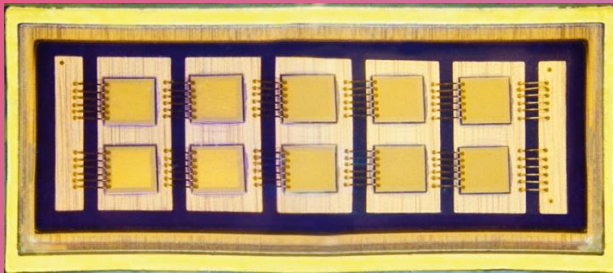
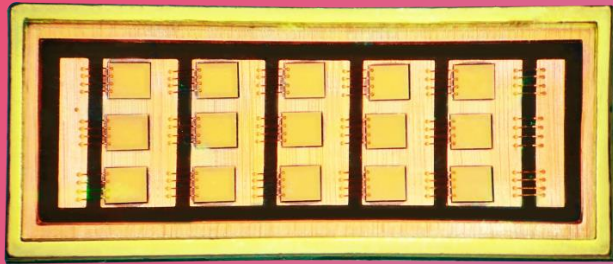
Hair
Growth



VCSEL (Vertical Cavity Surface Emitting Laser) Advantages



	VCSEL Vertical cavity surface emitting laser	EEL Edge emitting laser	LED Light emitting diode
Characteristics	Coherent	Coherent	Incoherent
Beam Shape	Circular	Elliptical	Circular
Wavelength drift	0.07nm/°C	0.3nm/°C	0.3nm/°C
Operating temperature	-40~125°C	-20~60°C	-20~80°C
Modulation Frequency	Very Fast	Normal	Low
PCE	30~40%	50~60%	10~30%
Lifetime	>50,000	~20,000	~50,000
Spectral width	<1nm	1~2nm	20~30nm
Beam Angle	<20°	~40°	180°
Power consumption	Low	Normal	High
Heat dissipation	Easy	Normal	Difficult
Spot processing	Easy	Difficult	Difficult



808nm VCSEL Diode

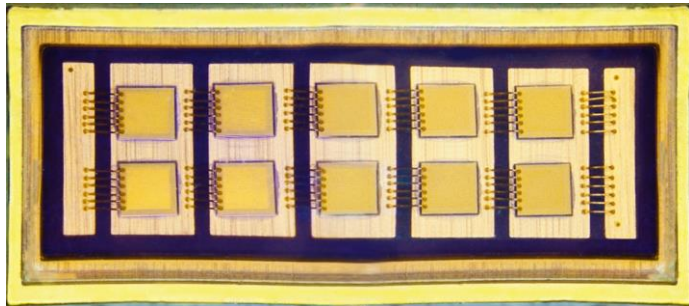
VCSEL for hair removal achieve
safer, excellent hair removal
effect and high stability.



Brightlaser VCSEL for hair removal

Used in portable hair removal devices

Wavelength: 808nm, Peak Optical Power: 50W/ 70W

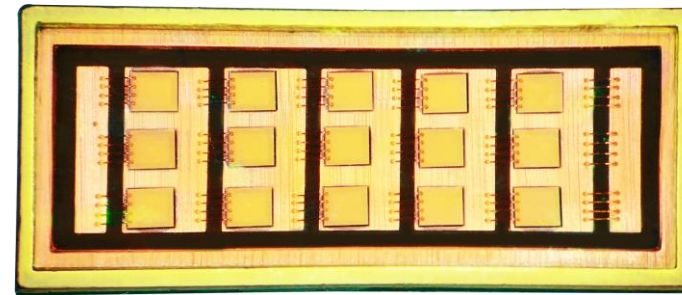


VD-0808I-050W-1V-2A0

VD-0808I-050W-6K-2A0



BRIGHTLASER



VD-0808I-070W-1V-2A0

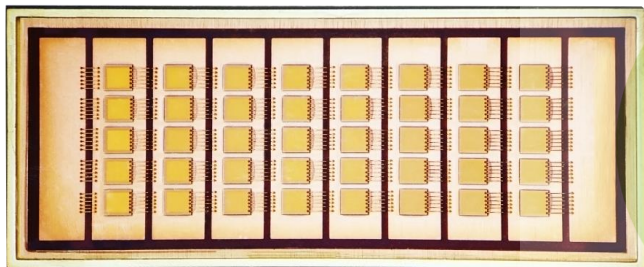
VD-0808I-070W-6K-2A0

The high power assembly can be customized according to customer needs and made into N in series and N in parallel circuit to realize various optical powers for product applications.

Brightlaser VCSEL for hair removal

Used in laser aesthetic medicine (such as photon hair removal device, freezing point laser hair removal device)

Wavelength: 808nm, Peak Optical Power: 200W-300W

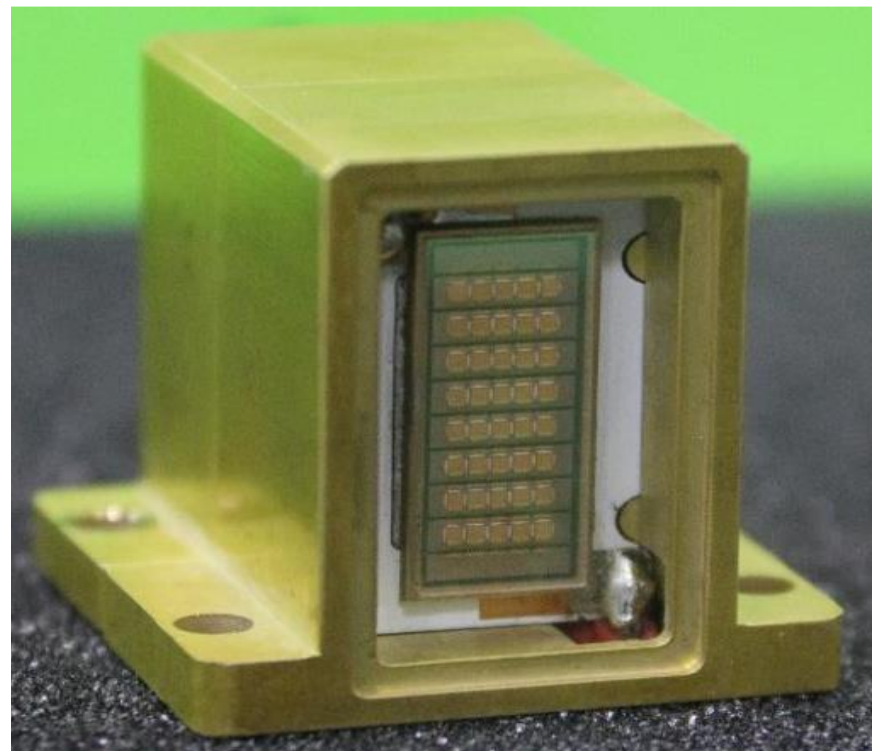
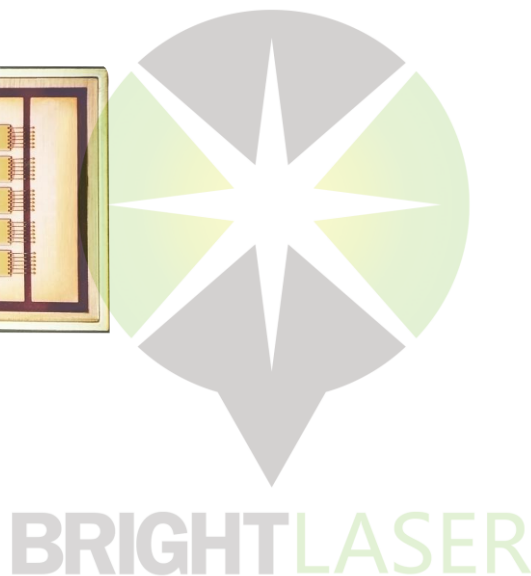


VD-0808I-200W-1W-2A0

VD-0808I-200W-6K-2A0

VD-0808I-300W-1W-2A0

VD-0808I-300W-6K-2A0



VD-0808I-200W-1W-2A0 + water-cooling case

VD-0808I-300W-1W-2A0 + water-cooling case

Principal for hair removal



680nm-980nm giving harmless to the skin

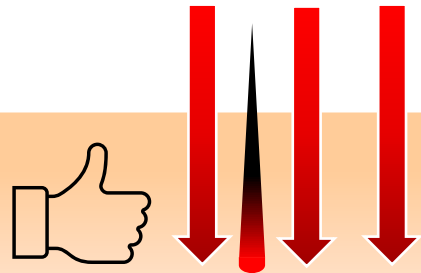
Short wavelength



absorbed by melanin and haemoglobin, damage the skin surface



Wavelength 680-980nm



Absorbed by hair follicles, suitable for hair removal



Brightlaser 808nm VCSEL Feature

808nm golden wavelength for hair removal, with a perfect balance of melanin absorption and deep penetration.

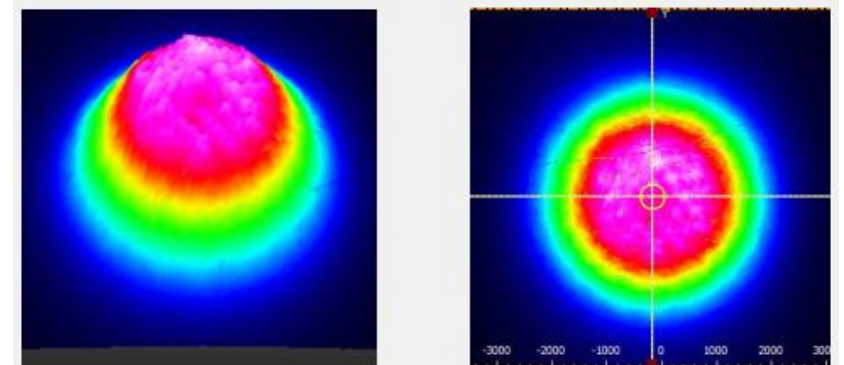
Fast and efficient, strong penetrating power, high safety, and can avoid damage to the skin caused by other wavelength of light.

Brightlaser VCSEL chip has high electro-optical conversion efficiency $PCE > 40\%$. It can drive in both continuous mode and pulse mode.






High energy density with small beam divergence.

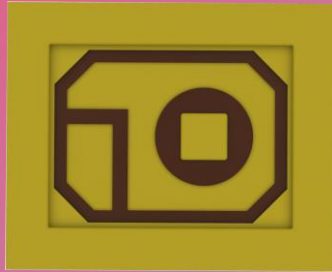
Good beam uniformity.

Cost-effective, reliable, long lifetime, easy to use.



Comparison of light sources of hair removal instrument

IPL	VCSEL
Weak penetration, weak energy and poor focus.	Good penetration, high intensity and more effective. 
A band of wavelength, including the wavelength cause cancer.	Specific single 808nm wavelength, which is golden wavelength for hair removal. 
More IPL treatment is required.	Less VCSEL treatments is required. 
people with darker skin may experience worse.	Most people feel less discomfort. 
Only suitable for lighter skin and darker hair.	Suitable for all skins and hair color. Safer to use. 



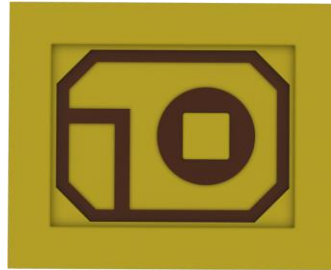
808nm VCSEL Diode

VCSEL for Pain relief shows good effect, low power consumption and better reliability.

Brightlaser VCSEL for Pain relief by Photobiomodulation

Used in Low level laser therapy and Pain relief devices

Wavelength: 808nm; Optical Power: 15-60mW



VD-0808I-015M-3A-2A0
VD-0808I-060M-3A-2A0



VD-0808I-015M-5I-2A0
VD-0808I-060M-5I-2A0

Brightlaser 808nm VCSEL Feature

808nm is the best combination of depth of penetration (low absorption), cellular interaction and energy transfer efficiency.

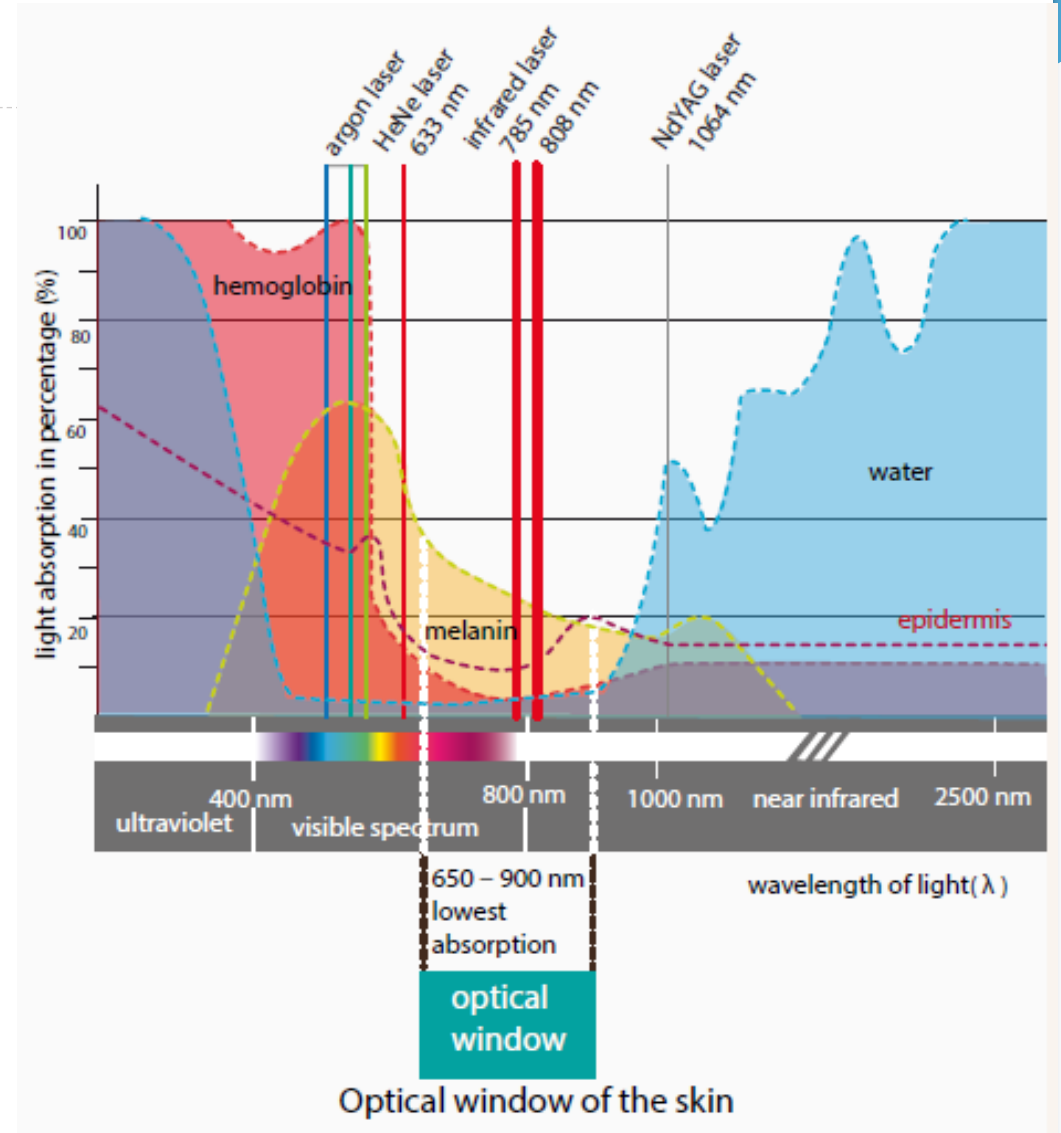
Strong penetrating power and safe.

Brightlaser VCSEL chip has high electro-optical conversion efficiency PCE>40%. It can drive in both continuous mode and pulse mode.

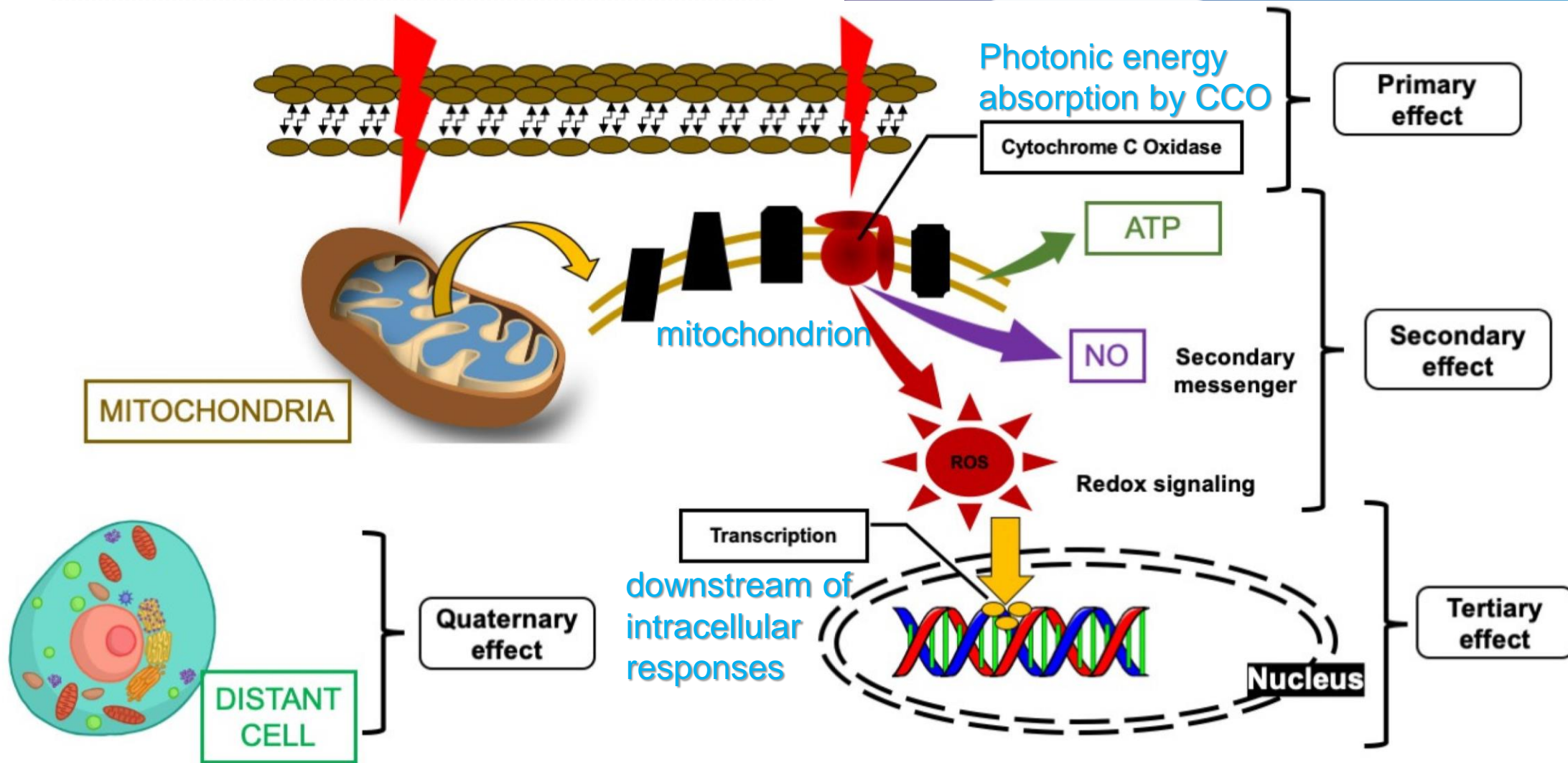
Less wavelength drift with temperature.

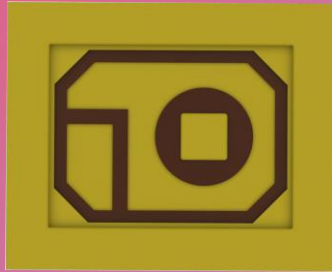
Good beam uniformity and high beam density.

Cost-effective, reliable, long lifetime, easy to use.



Principal for Pain relief





VD-0808I-015M-3A-2A0
VD-0808I-060M-3A-2A0



VD-0808I-015M-5I-2A0
VD-0808I-060M-5I-2A0

808nm VCSEL Diode

VCSEL for hair growth achieve
safer, low power consumption
and high reliability.



BRIGHTLASER

Principal for hair growth

Mechanism of hair growth is also by Photobiomodulation like Pain relief .

Several studies have shown that Laser Hair Growth Treatment with about 10-20 minutes at least 3-7 times per week for 3-6 months resulted a better scalp quality, hair-regrowth and higher hair density .



Composed by Hairverse, based on Source: Jimenez, J. J., Wikramanayake, T. C., Bergfeld, W., Hordinsky, M., Hickman, J. G., Hamblin, M. R., & Schachner, L. A. (2014). A – 12-beam laser comb, B – 9-beam laser comb.



사양서 다운로드는 www.uniotech.kr 로 방문하시면 됩니다.

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