

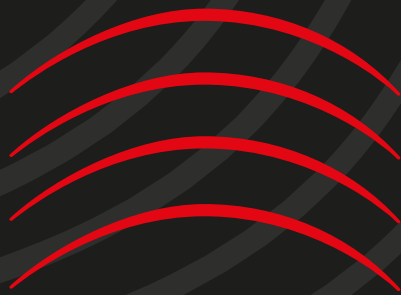
# FLAT TOP HANDPIECE

*AB* 2799

developped by:



GENOA  
UNIVERSITY



**MORE THAN A THERAPY TOOL**

[doctor-smile.com](http://doctor-smile.com)



The **Flat Top Handpiece AB2799** is an essential tool to obtain positive effects on the cell membrane and on the mitochondria, causing an improvement in wounds healing, tissue reparation and in preventing the tissue necrosis. **Photobiomodulation** effects guarantee relief during inflammations due to chronic diseases, with neuro-genic pain and with some neurological diseases. It can be applied in the treatment of large areas of the mouth and perioral region, after surgical interventions of extractive, implantological type, in the gingival treatments decontaminating and/or regenerative.

## WHY IT WORKS

Designed by **Prof. Alberico Benedicenti** of Genoa University in collaboration with **Doctor Smile**, the **Flat Top Handpiece AB2799** is a device capable of emitting a quantity of optimal energy and constant over a surface of 1 cm<sup>2</sup>, up to a distance of 105 cm from the area affected by the treatment, while maintaining the same beneficial effect. In this way the properties of the Diode laser so modulated, guarantee a further increase of ATP and of the synthesis proteins, promoting an anti-inflammatory and biostimulant action of cellular repair.\*

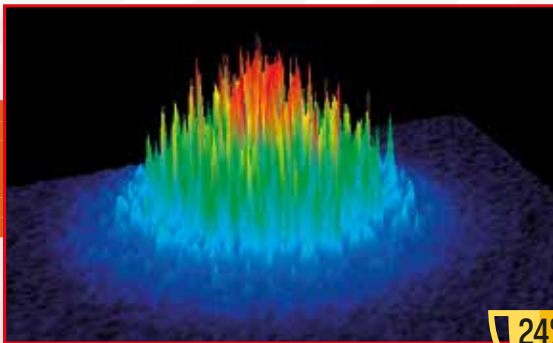
By adopting a special lens system, which allows a constant focusing of the laser beam, the **Flat Top Handpiece AB2799** enables to obtain the same energy density thanks to the constant focusing system. **The emission of the laser beam is therefore flat and not conical**, ensuring more infiltration into the tissues and a better result in therapies, completely removing potential operator faults.

\*Amaroli A, Ravera S., Parker S., Panfoli I., Benedicenti A., Benedicenti S., 2015b Photochem. Photobiol. 91(5), 1150-1155.

Amaroli A., Ravera S., Parker S., Panfoli I., Benedicenti A., Benedicenti S., (2016a) Laser Med. Sci. 31(4), 741-747.

Amaroli A., Ravera S., Parker S., Panfoli I., Benedicenti A., Benedicenti S., 2016c An 808-nm Diode Laser with a Flat-Top Handpiece Positively Photobiomodulates Mitochondria Activities. Photomed Laser Surg. 34(11), 564-571.

### DEFOCUSED HANDPIECE



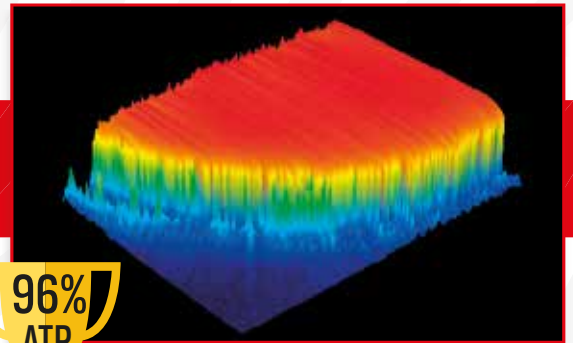
BEAM  
PROFILER  
IMAGES



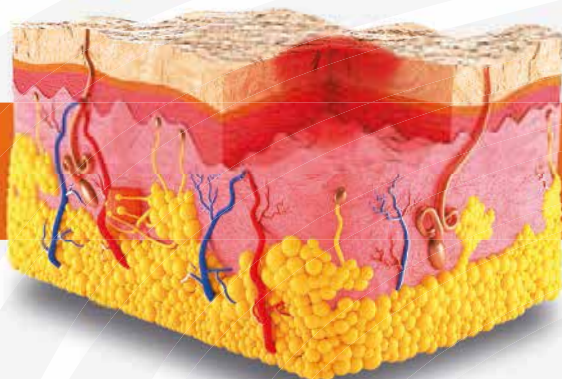
24%  
ATP

Difference  
of energy  
produced for  
the recovery  
of the cell

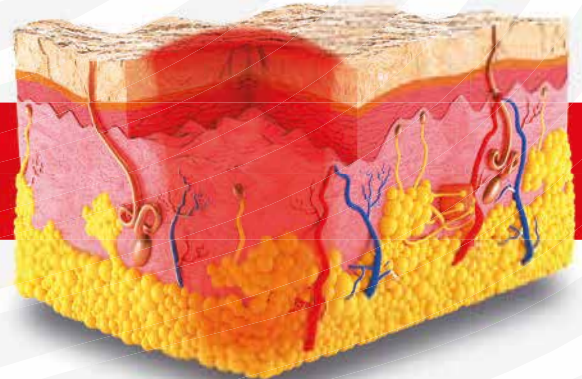
### FLAT TOP HANDPIECE



96%  
ATP



Irradiated  
energy  
density



Non-homogeneous energy density, **low tissue penetration**

Uniform energy density, **high tissue penetration**



# APPLICATION FIELDS IN DENTISTRY

The **Flat Top Handpiece AB2799** provides **non-invasive** treatment of the following diseases:

*Purulent gingivitis, hypertrophic gingivitis, serous gingivitis, ulcerative gingivitis, superficial marginal periodontitis, atrophic periodontitis, apical periodontitis, herpes simplex, stomatitis, foot-and-mouth, leukoplachia, lichen ruber planus, epulide, mycosis glossitis, angioma, bone demineralisation, crown lengthening (after Erbium laser gingivectomy), gingivectomy, deep caries treatment (after Erbium laser caries removal), dental fracture (after Erbium laser tooth reconstruction), exosts (after Erbium laser bone removal surgical treatment), bone regeneration with P.R.G.F., perimplantitis, surgical curettage and apicectomies, including teeth, crestal regenerations.*

## BIOLOGICAL EFFECTS

- ✓ Analgesic effect with increased production of endorphins
- ✓ Gate- Control (hyperpolarization of the cell membrane)
- ✓ Eutrophic effect (soft tissues and bones reconstruction from adult matrices cells)
- ✓ Antalgic effect with modification of membrane potentials of nociceptors and modification of chemical neuromediators
- ✓ Development of fibroblasts that change into myofibroblasts
- ✓ Transformation of prostaglandins in prostacyclins
- ✓ Action on the collagen of the conjunctive tissue
- ✓ Increase of the production of A.T.P.
- ✓ Activation of lymphatic peristalsis
- ✓ Anti-inflammatory action
- ✓ Block of free radicals





**Flat Top Handpiece AB2799** is a fundamental aid in the algic symptomatologies and in the resolution of inflammations.

## APPLICATION FIELDS IN PHYSIOTHERAPY

Arthrosis of the shoulder, scapulohumeral periarthritis, cervical arthrosis-dorsal-lumbar-sacral, intercostal pains, brachial lymphoedema, tennis elbow, elbow joint distortion, post-surgical edema, joint distortion Of the first finger, arthrosis of the fingers, Raynaud's disease, arthritis of the fingers, Acroparesthesia, knee osteoarthritis, knee joint distortion, tendinitis, Talalgia, trophic-varicose ulcer, sciatica, arthritis, osteoarthritis, distortion, astragal or calcaneare articulation.

## DIFFERENT APPLICATION FIELDS

Acne, Migraine, stiff neck, headache, Tinnithim, vasomotor rhinitis, trigeminal neuralgia, frontal headache, dizziness, paranasal and frontal sinusitis, pemphigus, ectodermal, squamous cell carcinoma, platicellular carcinoma.

## PROF. ALBERICO BENEDECENTI

Professor at Faculty of Medicine- University of Genova (Italy) from 1970.

He has been the director of human laser therapy and surgery center of IAHT (International Academy of High Tech).

Founding member of IAHT (International Academy of High Tech).

Author and co-author of 8 books on laser dentistry in Italian, English and Spanish, 280 publications (57 peer reviewed) in National and International journals.

Member or honorary member of 29 scientific societies in the field of laser therapy, surgery and high-tech.



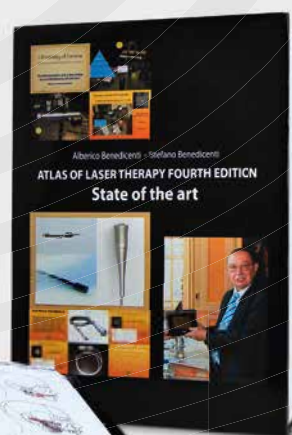
A pioneer in the use of laser in dentistry, he is the creator of the **Flat Top Handpiece AB2799**, in collaboration with Doctor Smile, in order to improve the application of laser technology in analgesic therapy and photobiomodulation.

Co-author with his son Stefano of the essential handbook "**Atlas of Laser Therapy**" to better know and study the several treatments in the cure of oral and extra-oral diseases with the use of Wiser diode laser.

developped by:




GENOA  
UNIVERSITY



ENGLISH  
VERSION

unique design of:



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