

# Digital AcuBlade™

Scanning Micromanipulator

Unprecedented Precision. Reproducible Results.●



When the goal is to treat the pathology within the organ with maximum control, while minimizing adjacent healthy tissue damage and preserving organ functionality, the [Digital AcuBlade micromanipulator](#) is an indispensable tool that can be used to precisely incise, excise or ablate tissue, reducing the risk of complication and increase the quality of life.

The [Digital AcuBlade micromanipulator](#) takes the performance of Line-of-site CO<sub>2</sub> laser articulated arm, to a whole new sphere of precision and tissue management.

Virtually char-free laser delivery to ensure clean excisional margins.

Reproducible tissue effect  
Preset parameters customized to the treated tissue and patient anatomy.

Operating room compatibility  
Widespread adaptability among operating microscopes further enhances Digital AcuBlade's position as the benchmark tool in Otolaryngology operating rooms.

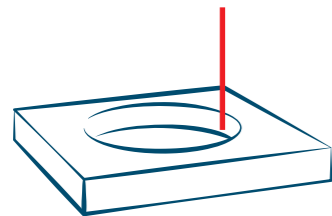


Maximum control, as the incision's shape, length, depth, and orientation are easily adjusted by the surgeon.

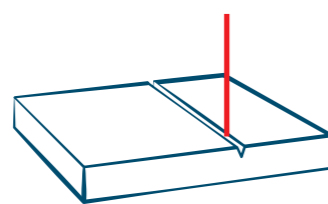
The rapid scanning movement may reduce the procedure time compared with conventional CO<sub>2</sub> laser microsurgery, as reported by surgeons worldwide.

Minimal heat buildup in tissue equates to accelerated healing time with fewer post-operative complications.

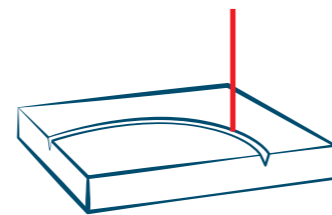
The software has preset parameters which can be easily customized to meet surgeon's specific needs such as preferred incision depth and ablation size. Thus, allowing to operate on delicate vibratory structures without injuring the vocal ligaments and with minimal negative effect on the voice.



Circular Ablation



Linear and curved Incision & Ablation



## Microdissection of a vocal cord lesion using the Digital AcuBlade



BEFORE



DURING



AFTER

Photos courtesy of Marc Remacle, M.D., PhD.

### Risk Information

CO<sub>2</sub> lasers (10.6 μm wavelength) are intended solely for use by trained physicians. Incorrect treatment settings or misuse of the technology can present risk of serious injury to patient and operating personnel.

The use of Lumenis CO<sub>2</sub> laser is contraindicated where a clinical procedure is limited by anesthesia requirements, site access, or other general operative considerations. Risks may include excessive thermal injury and infection. Read and understand the CO<sub>2</sub> systems and accessories operator manuals for a complete list of intended use, contraindications and risks.

*"I've used lasers for 30 years, primarily CO<sub>2</sub> lasers. I find the Digital AcuBlade offers a game changing technology by providing precise control and automatic treatment of large areas on the vocal cords in shapes of lines and circles that conform to the anatomy in a much faster and precise technique than can be done with hand control of the micromanipulator".*

Mark Courey, M.D., Professor, University of California, San Francisco Otolaryngology – Head and Neck Surgery Director, Division of Laryngology

### Digital AcuBlade Specifications

Digital AcuBlade is compatible with UltraPulse® DUO, UltraPulse SurgiTouch, AcuPulse™ DUO and AcuPulse SurgiTouch laser systems.

<b>Device name</b>	Digital AcuBlade Scanning Micromanipulator Comprised of: <ul style="list-style-type: none"> <li>· AcuSpot 712, 712-L or 712-Z micromanipulator</li> <li>· Microswitch installation onto AcuSpot joystick (for line scan rotation)</li> <li>· SurgiTouch Scanner</li> </ul>
<b>Compatible wavelengths</b>	Treatment beam: 10.6 μm (nominal); Aiming beam: 635nm (nominal)
<b>SurgiTouch Scanner compatibility</b>	Compatible with the SurgiTouch scanner. <ul style="list-style-type: none"> <li>· Without joystick modification: circle and line shapes are available for ablation.</li> <li>· With joystick modification: straight and curved line scans are available and can be rotated 360 degrees. Line scan function mimics that of a scalpel blade for incision.</li> </ul>
<b>Laser parameters</b>	Application-guided SurgiTouch user interface. User selects scanning parameters: shape (circle, straight, curved lines), size (mm) and depth (number of scanner passes). Laser displays recommended starting Laser Power (Watts), which user is free to adjust. Energy per pulse is controlled by the laser system.
<b>Beam control</b>	Scanning application onto tissue is guided by SurgiTouch operating system while user guides the joystick. Joystick, magnification 10:1, adjustable tension, autoclavable handle
<b>Working distance</b>	AcuSpot micromanipulator: continuously variable 200mm to 400mm Digital AcuBlade working distances are 250 mm, 300 mm, 350 mm and 400 mm depending on the selected application.
<b>Microscope Compatibility</b>	Compatible with common 3 <sup>rd</sup> party surgical microscopes. Additional mounting hardware may be required. See your Lumenis representative for further information.

## References

### Larynx

1. Mannelli, G., G. Meccariello, A. Deganello, V. Maio, D. Massi and O. Gallo (2014). "Impact of low-thermal-injury devices on margin status in laryngeal cancer. An experimental ex vivo study." Oral Oncol 50(1): 32-39.
2. Mendelsohn, A. H., D. Kiagiadaki, G. Lawson and M. Remacle (2015). "CO<sub>2</sub> laser cordectomy for glottic squamous cell carcinoma involving the anterior commissure: voice and oncologic outcomes." Eur Arch Otorhinolaryngol 272(2): 413-418.
3. Remacle, M., G. Lawson, M. C. Nollevaux and M. Delos (2008). "Current state of scanning micromanipulator applications with the carbon dioxide laser." Ann Otol Rhinol Laryngol 117(4): 239-244.
4. To, K., A. Qureishi, S. Mortimore and M. De (2015). "The role of primary transoral laser microsurgery in laryngeal cancer: a retrospective study." Clin Otolaryngol 40(5): 449-455.
5. Fiorelli, A., S. Mazzone, A. Mazzone and M. Santini (2013). "The digital AcuBlade laser system to remove huge vocal fold granulations following subglottic airway stent." Interact Cardiovasc Thorac Surg 17(3): 591-593.

### Tonsils

6. Remacle, M., J. Keghian, G. Lawson and J. Jamart (2003). "Carbon-dioxide laser-assisted tonsil ablation for adults with chronic tonsillitis: a 6-month follow-up study." Eur Arch Otorhinolaryngol 260(8): 456-459.

### Oropharynx

7. Jerjes, W., Z. Hamdoon and C. Hopper (2012). "CO<sub>2</sub> lasers in the management of potentially malignant and malignant oral disorders." Head Neck Oncol 4: 17.

### Airway

8. Fiorelli, A., S. Mazzone, G. Costa and M. Santini (2016). "Endoscopic treatment of idiopathic subglottic stenosis with digital AcuBlade robotic microsurgery system." Clin Respir J.

*"Digital AcuBlade is indispensable for providing optimal oncological outcomes as well as superior functional results after TLM for the treatment of larynx cancer. "*

Floyd Chris Holsinger, M.D., Associate Professor, Department of Surgery,  
Division of Surgery, The University of Texas MD Anderson Cancer Center, Houston, TX



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