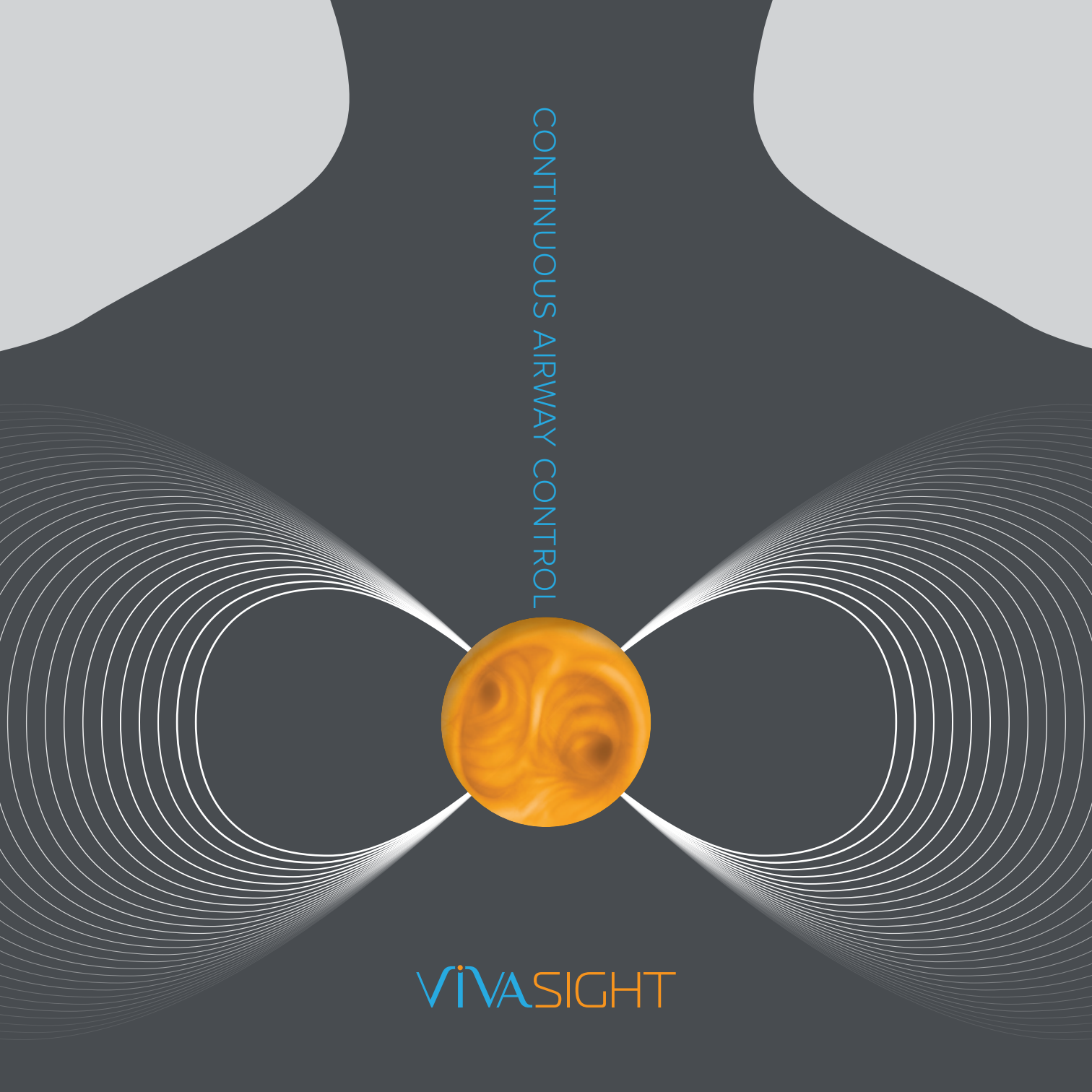


CONTINUOUS AIRWAY CONTROL

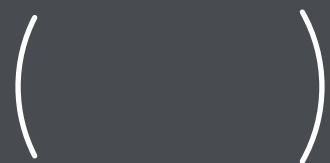
VIVASIGHT



## VIVASIGHT for Lung Isolation

ETView and its VivaSight portfolio provide the surgical team with next-generation airway management products required for a range of lung isolation procedures.

See the possibilities when you use the VivaSight product portfolio of fully integrated imaging/ventilation systems.



### PRECISION

Enables accurate placement with unparalleled control



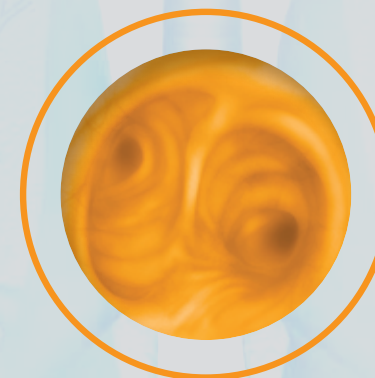
### CONTINUOUS VIEW

Provides visual assurance during intubation<sup>5,6</sup>



### CONFIDENCE

Facilitates fast, efficient intubation



# Intubation and airway management during lung isolation procedures present a series of challenges for even the most experienced surgical team.

Operator skill level, patient condition, and anatomy all contribute to difficult intubations. Multiple intubation attempts are often required to achieve proper endotracheal tube (ET) placement.<sup>1</sup> Such attempts may result in inadequate ventilation, damage to soft tissue and vocal cords, and possible aspiration.<sup>2</sup>

For many lung isolation procedures, placing a single-lumen tube with a bronchial blocker or a double-lumen tube (DLT) requires the use of a bronchoscope to confirm – and reconfirm – the correct position within the trachea.<sup>1</sup>

Bronchoscopes, susceptible to mechanical damage from handling during normal use (and subsequent expensive repair costs), do not provide continuous visualization and **may even obscure the airway** when used with an ET. Additionally, intraoperative ET displacement, bronchial blocker dislocation, or other airway adverse events may occur unexpectedly, requiring immediate intervention.<sup>3</sup>

*A US review of 1,175 anesthetic-related closed malpractice claims suggested that most negative outcomes could have been prevented with better monitoring.<sup>4,5</sup>*

VIVASIGHT<sup>SL</sup> (Single-Lumen tube) and VIVASIGHT<sup>DL</sup> (Double-Lumen tube) are fully integrated imaging/ventilation systems available to the anesthesiologist that allow continuous airway visualization and ventilation for accurate placement and constant airway control. Using VivaSight does not require any modifications to the standard intubation procedure.

With uninterrupted observation of the trachea, carina, the open right bronchi, and the blocked left bronchi, VivaSight's position can be verified easily, overcoming current placement and monitoring limitations and improving the quality of airway management.

Continuous visualization also allows for immediate corrective action if displacement of a bronchial blocker occurs during surgical maneuvers. Real-time airway monitoring permits rapid removal of accumulating secretions.



## The benefits of the VivaSight products are clear.

- Provide continuous visualization and monitoring for accurate positioning and precise placement
- Promote fast intubation and more efficient placement
- Enable intraoperative repositioning of VivaSight-SL or bronchial blocker, as required throughout the procedure
- Allow for airway management in real time

# VIVASIGHTSL

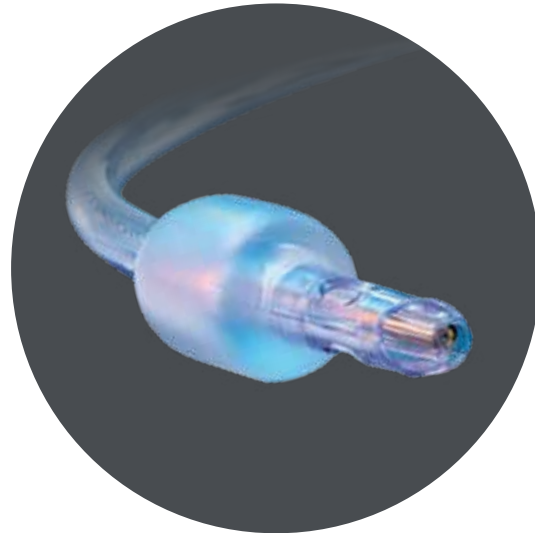
## *Continuous airway visualization and unparalleled control for improved airway management*

VivaSight-SL is a sterile, single-use, single-lumen airway tube with an integrated high-resolution imaging camera. VivaSight-SL permits continuous, real-time images of tube position and more. VivaSight-SL has been shown to be effective when used with bronchial blockers. It presents the ideal device for guaranteeing endobronchial blocker placement.<sup>6</sup> It can be used to visualize the vocal cords and trachea and to provide continuous observation of the carina.

VivaSight-SL provides total airway management control during every phase of thoracic surgical procedures requiring lung isolation.

### **VivaSight-SL verifies bronchial blocker position.<sup>5,6</sup>**

- VivaSight-SL provides complete airway visualization during lung isolation.
- VivaSight-SL facilitates immediate detection of complications due to blocker displacement caused by patient repositioning, enabling the anesthesiologist to prevent complications before they occur.
- VivaSight-SL enables airway visualization for surgical team members through the use of optional VivaSight-compatible handheld or surgical suite monitors.
- VivaSight-SL incorporates a unique hydrophobic, lipophobic coating that reduces the incidence of obscured vision due to fogging or secretions.
- VivaSight-SL possesses an integrated flushing system that allows for rapid and efficient camera lens cleaning in situ.



Available in the VivaSight Pack: VivaSight-SL packed together with VivaSight-EB.

SL clearance/certification: FDA, CE (MDD 93/42/EEC), ISO 9001:2000, ISO 13485:2003

For information about using VivaSight-SL with specific bronchial blockers, contact your ETView representative.

# VIVASIGHTEB

## *Part of a complete airway management solution*

VivaSight-EB is used in conjunction with the patented VivaSight-SL, single-lumen ventilation tube with an integrated high-resolution video imaging system.

VivaSight-EB is employed with an endotracheal tube when used in combination with a fiberoptic bronchoscope to block the right or left lung for thoracic surgical procedures requiring lung isolation.

### **The VivaSight-EB Advantages**

- A complete airway management solution when used with VivaSight-SL
- Compatible with standard fiberoptic bronchoscopes



Available in the VivaSight Pack: VivaSight-EB and VivaSight-SL packed together.

EB clearance/certification: FDA, CE (MDD 93/42/EEC), ISO 9001:2000, ISO 13485:2003

## *Accurate positioning and continuous control overcome the limitations of current procedures with a bronchoscope*

VivaSight-DL is the world's first sterile, single-use, double-lumen airway tube with an integrated high-resolution camera. VivaSight-DL overcomes the placement and positioning challenges of current DLTs. Studies suggest that DLTs indicated for thoracic surgeries requiring lung isolation are difficult to pass through the pharynx and larynx.<sup>7</sup>

Clinical evidence indicates that auscultation alone is unreliable for confirmation of proper DLT placement, requiring flexible fiberoptic bronchoscopy, which has been shown to increase the success rate and possibly reduce the incidence of complications during the placement of left-sided DLTs.<sup>7,8</sup>

## **The FDA- and CE-cleared VivaSight-DL provides the surgical team with outstanding capabilities in airway management.**

- VivaSight-DL reduces the need for a bronchoscope during tube placement and subsequent airway monitoring.
- VivaSight-DL incorporates a unique hydrophobic, lipophobic coating that reduces the incidence of obscured vision due to fogging or secretions.
- VivaSight-DL possesses an integrated flushing system that allows for rapid and efficient camera lens cleaning in situ.

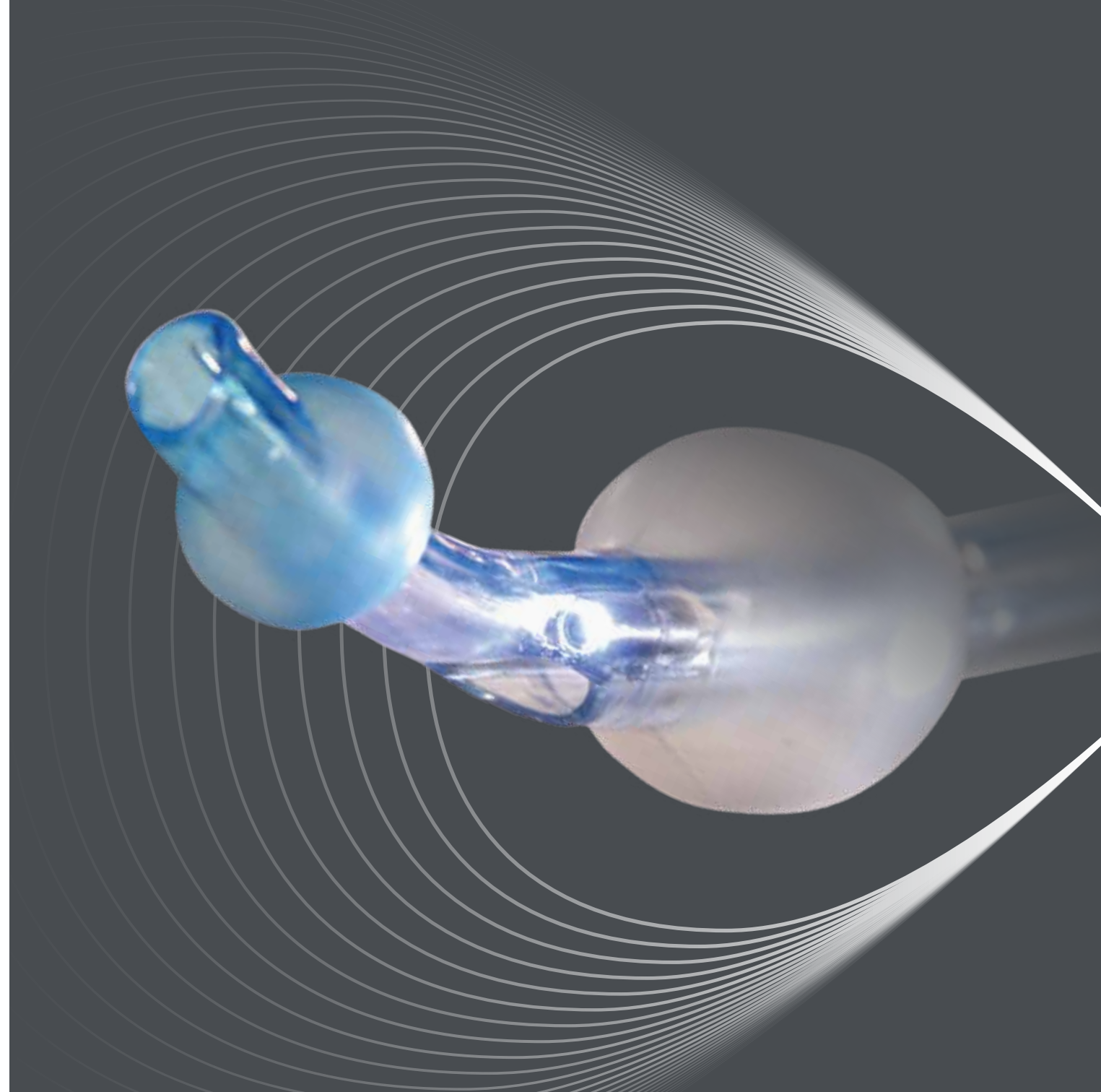
DL clearance/certification: FDA, CE (MDD 93/42/EEC), ISO 9001:2000, ISO 13485:2003



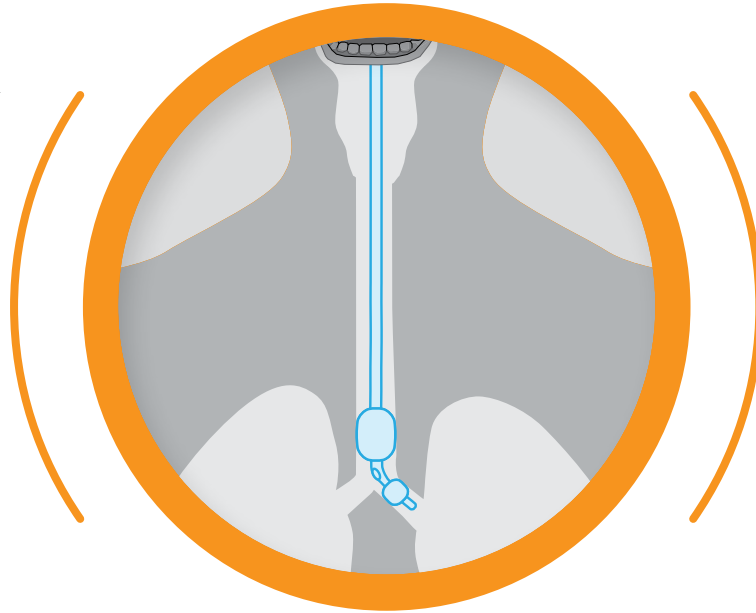
## **VivaSight-SL & VivaSight-DL Advantages**

- Provide visual assurance during intubation<sup>5,6</sup>
- Facilitate fast and efficient intubations
- Allow for detecting and monitoring of accumulating intraoperative secretions
- Do not interfere with or compromise patient ventilation while providing continuous airway imaging

VivaSight: The only platform that allows for continuous, real-time management of the airway.



Clinical literature suggests the use of single- and double-lumen tubes for a variety of lung isolation procedures.



## Technical Specifications

### General

**Usage:** Single-use only

**Pack:** Supplied individually packaged, ETO-sterilized

**VivaSight-SL:** Shipped in quantities of 10 units per box

**VivaSight-DL:** Shipped in quantities of 1 unit per box

**Shelf life:** 24 months

### Electrical

**Power:** 55 mA ±5 mA @ DC 5 V

**Max. current:** 60 mA

**Interface connectors:** 5-pin mini USB A

### Materials

**Tube:** Medical-grade PVC; additional injection port for rinsing camera optics

**Cuff:** Medical-grade PVC, high volume, low pressure

**Tube hardness:** 85 (Shore A)

### Camera

**Image sensor:** CMOS

**Resolution:** CIF 320 x 240 (76,800 pixels)

**Scan mode:** Progressive

**Depth of field:** 12-60 mm

**Field of view:** ~85° diagonal

**Image sensitivity:** 0.7 V (lux x sec)

### Light Source

**LEDs:** 2 white

**LED power:** 1 mW = 1 lm

### Video

**Mode:** NTSC/PAL

**Signal:** Composite video baseband signal (CVBS); direct interface with DVR/VCR/TV supporting NTSC-CVBS

Procedure	VivaSight-SL + EB	VivaSight-DL
Critically ill intubated patient requiring lung isolation <sup>6</sup>	‡	
Difficult airway for lung isolation procedures <sup>6</sup>	‡	
Esophageal surgery <sup>1</sup>		‡
Left bronchus-distorted anatomy <sup>6</sup>	‡	
Lobectomy <sup>1,6</sup>		‡
Lung biopsy <sup>1</sup>	‡	
Lung wedge resection <sup>1</sup>	‡	‡
Majority of left/right thoracic surgical procedures <sup>8</sup>		‡
Nasotracheal intubation <sup>6</sup>	‡	
Selective lobar blockage <sup>6</sup>	‡	
Small bronchus <sup>6</sup>	‡	

VivaSight Model	SL 7 mm	SL 7.5 mm	SL 8 mm	DL 37 Fr*
Number	TVT70100	TVT75105	TVT80110	DLVT37L
ID (mm)	7.0	7.5	8.0	4.2 (effective)
OD (mm)	10.0	10.5	11.0	11.5 (bronchial)
Length (+2/-0 mm)	312	323	323	—

Accessories	Model No.	Quantity Per Box
VivaSight Direct RCA cable for external monitors	SA00013	1
VivaSight Max 7" LCD monitor	SA00014	1
VivaSight Mini 3.6" battery-operated LCD monitor	SA00015	1

\*Left-sided

VivaSight, VivaSight-SL, VivaSight-DL, VivaSight-EB, and other VivaSight products are the registered trademark of ETVision Medical Ltd.

The **VIVASIGHT** portfolio provides continuous airway monitoring with uninterrupted visualization during lung isolation procedures.

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**Caution: Federal (US) law restricts this device to sale by or on the order of a licensed healthcare practitioner.**

VivaSight products clearance/certification: FDA, CE (MDD 93/42/EEC), ISO 9001:2000, ISO 13485:2003  
ETView products are extensively protected by both US and international patents, both issued and pending.  
Europe: EP15551277 // China: ZL200380101369.1 // India: 207888 // Korea: 10-1060944  
Patents pending in Canada, United States, Japan, and Australia

**References** **1.** Campos, JV, Hallam EA, Van Natta T, et al. 2006. Comparison of double-lumen endotracheal tube, Univent torque control blocker, and Arndt Wire-guided Endobronchial Blocker. *Anesthesiology* 104:261-266. **2.** Narayanaswamy M, McRae K, Slinger P, et al. 2009. Choosing a lung isolation device for thoracic surgery: a randomized trial of three bronchial blockers versus double-lumen tubes. *Anesthesia & Analgesia* 108:1097-1101. **3.** Watson CB. 2009. Lung isolation for surgery: state of the art. *Anesth News Guide Airway Management* 75-79. **4.** Tinker JH, Dull DL, Caplan RA, Ward RJ, Cheney FW. 1989. Role of monitoring devices in prevention of anesthetic mishaps: a closed claims analysis. *Anesthesiology* 71:541-546. **5.** Barak M, Putilov V, Meretyk S, Halachmi S. 2010. ETView tracheoscopic ventilation tube for surveillance after tube position in patients undergoing percutaneous nephrolithotomy. *British Journal of Anaesthesia* 104:501-504. **6.** Giglio M, Oreste D, Oreste N. 2009. Usefulness of ETView TVT endotracheal tube for correct positioning of bronchial blockers in left lobectomy: an easy and safe combination. *Minerva Anestesiologica* 75 (Supp. 1 to No. 7-8):1-4. **7.** Watson, CB. 2009. Lung isolation for surgery: state of the art. *Anesthesiology News Guide to Airway Management* 82. **8.** Campos, JH. 2002. Current techniques for perioperative lung isolation in adults. *Anesthesiology* 97:1295-1296.