

## The Problem

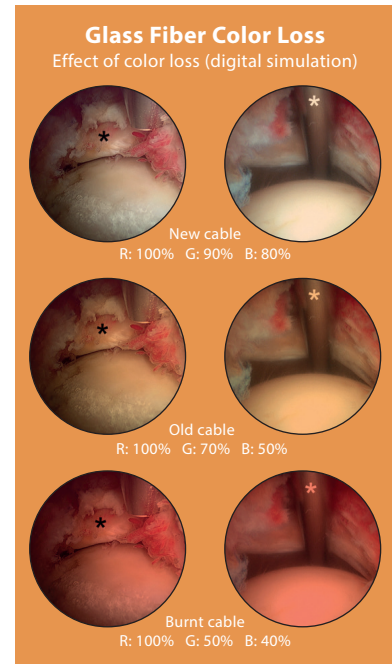
### Low Light Transmission and Contrast in damaged Light Guide Cables & Endoscopes reaching the OR

Minimally Invasive Surgeries (MIS) depend heavily on dedicated medical instruments and devices such as light guide cables and endoscopes to successfully perform procedures. During MIS procedures, it is crucial for the surgeon to have good visibility. Damaged cables and endoscopes often produce low light transmission and/or low contrast due to the composition of the light transmitted.

Without objective quality inspections at the CSSD, defective medical equipment such as light guide cables and endoscopes are able to reach the OR every day, endangering Patient Safety more often than is acceptable<sup>1-3</sup>.

**References/Bibliography**

- <sup>1</sup> S. Courdier, O. Garbin. Equipment Failure: Causes and Consequences in Endoscopic Gynecologic Surgery. January 2009.
- <sup>2</sup> H. Yasuhara, K. Fukatsu. Prevention of medical accidents caused by defective surgical instruments. February 2012.
- <sup>3</sup> J. J. Jung, A. Kashfi. Characterization of device-related interruptions in minimally invasive surgery: need for intraoperative data and effective mitigation strategies. March 2019.



## The Solution

### Fast and objective Light Transmission and Light Spectrum measurements of Light Guide Cables and Endoscopes.

The MedZense LG20-e is a universal light transmission testing solution supporting all major fittings of light guide cables and endoscopes with a diameter up to 10mm. It is the first light transmission testing solution allowing hospitals to objectively and efficiently assess the light transmittance quality across the visible light spectrum.

This allows the CSSD to identify which component of the endoscopic system is not performing. Where traditionally the light guide cables are often blamed for bad light, our experience shows that the light transmission of endoscopes is frequently deteriorated.

Regularly testing your light guide cables and endoscopes prevents low quality medical instruments reaching the OR, resulting in better light and contrast for the surgeon and ultimately decreasing patient risks, delays and costs.



### The Benefits

- + Objective quantitative quality measures for light guide cables and endoscopes
- + Increased quality of MIS instruments used in procedures, improving patient safety
- + All major types of fittings are supported
- + Test light transmission across the full visible light spectrum
- + Test rigid endoscopes with a diameter between 2.7mm and 10mm
- + Easy to use ergonomics
- + Adjustable acceptance and rejection criteria
- + Designed and engineered in the Netherlands

### Unique feature: ENDOEYE measurement

The optional ENDOEYE testing feature allows you to test the light transmission of your ENDOEYE video laparoscopes. Our field research shows that the light transmittance of ENDOEYE video laparoscopes deteriorates significantly over time.

### The System

The MedZense LG20-e can be connected via USB to the MedZense IQM (Instrument Quality Management) Platform to collect and analyze the test results on instrument level.

The MedZense IQM Platform consists of: MedZense IQM Software, including the Web App & Test Client  
Connects to up to two testing devices  
More devices can be connected upon request

Devices integrated in the MedZense IQM Platform:  
MedZense LG20-e  
Datamatrix Scanner  
Diateg Professional (Coming Soon)

