

## The adventure

The idea of QLF aroused in the mind of Elbert de Josselin de Jong, a Dutch physicist and co-founder of Inspektor Research Systems. He was curious about the origin and effects of dental caries, as the disease has a significant influence on oral and general health. "If we are able to spot incipient caries in a very early stage, we can make people healthier and happier during their life, whilst saving billions."

He dedicated his life to developing a technology that allows for early detection and analysis of dental anomalies: Quantitative Light Induced Fluorescence (QLF™), now the golden standard for measurements in dental scientific and R&D institutes. With more than 400 scientific articles the technology is profoundly validated.

Over time Inspektor has gathered an international team of dental, medical and scientific professionals, working together in companies located in The Netherlands, South-Korea and the USA. These strong alliances of people and companies have led to the development of a range of novel diagnostic devices for the clinical and research markets, now ready for production and sales.

"We are helping to combat oral diseases by providing researchers, oral care professionals and consumers with highly sensitive and specific diagnostic tools, enabling early detection and monitoring of oral anomalies, fuelling better oral hygiene, effective prevention and accelerating the shift from cure to care."

## Social responsibility

We feel it as our social responsibility to ensure that QLF™ technology will be offered to consumers and care professionals for supporting effective disease prevention and reduce the incidence of caries in the world.

### Advantages to the dental professional:

- QLF™ provides an objective, longitudinal, quantitative oral health assessment method, improving the quality of care and facilitating the development of patient oriented preventive care programs
- QLF™ Strongly improves patient communication
- QLF™ helps to calibrate the members of the team and greatly facilitates peer-reviewed consultation
- QLF™ can be used as indication for X-Rays to support the ALARA principle (As Low As Reasonable Achievable) to minimise the exposure of patients and staff to harmful radiation
- QLF™ protocolled use allows for monitoring the effects of a customized care program and documents the efficacy of preventive actions
- QLF™ makes delivered care more transparent.



### Advantages to the patient:

- Better understanding of oral health processes and hygiene efficacy efforts
- Easily comprehensible feedback by clear QLF™ images and quantified data
- Faster treatment plan acceptance
- Easy self-check and check of family members regarding oral hygiene effectiveness. Bright orange-red areas that cannot be brushed away are a clear indication to contact a dental professional for health assessment.

The logo for Qraycam pro features a stylized blue 'Q' with a white dot, followed by the text 'raycam' in a grey sans-serif font and 'pro' in a bold orange sans-serif font.



## Inspektor Research Systems

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The logo for QLF™ technology features the text 'QLF™' in a large, bold, blue font, with 'technology' in a smaller, orange font below it.

The logo for AIOBIO features the text 'AIOBIO' in a bold, blue, sans-serif font.

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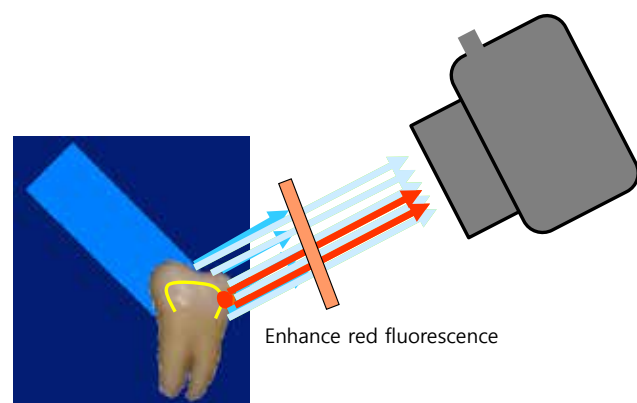
# The new Qraycam Pro

## Guiding oral health



guiding health assessment with fluorescence solutions.

**Quantitative Light-Induced Fluorescence (QLF)** raises the visual contrast between sound and pathogenic tissue in the oral cavity. It is based on the fact that various (organic) substances in the mouth absorb light of a certain wavelength and then re-emit the absorbed energy at a different wavelength. By filtering away the illuminating light the fluorescent or QLF™ image is obtained. In these images de-mineralized areas (e.g. white spots) show up as dark-spots, where loss of fluorescence correlates with mineral loss. Areas covered with porphyrins, generated by (anaerobic) cariogenic bacterial activity, show up brightly red/orange. These effects can be observed visually, analysed and quantified by proprietary software and documented digitally.



**QLF™ technology**

- Illuminates the dentition with blue light at a peak-frequency of 405nm
- Discloses cariogenic bacterial activity by fluorescent light and a filter instead of disclosing agents
- Supports early detection of oral anomalies
- Quantifies the presence of mature plaque, caries, calculus and tooth cracks
- Allows quantitative and longitudinal monitoring of demineralization and remineralisation processes
- Provides an objective measure for caries risk
- Provides innovative solutions for prevention, treatment and treatment evaluation
- Strongly improves patient compliance
- Is endorsed by the Dutch Healthcare Authority
- Is profoundly validated (>400 scientific articles)
- Is a completely safe optical technology, without harmful radiation

**QLF™ Capturing Devices**

QLF™ capturing devices are used by Q-Ray™ software to acquire QLF™ and white light images. For the demanding professional and researcher the Qraycam™ Pro is the device of choice. The Qraypen™ is a versatile intra-oral camera that is ideal for zooming in on specific tooth surfaces.

**Qraycam™ Pro, Guiding Oral Health**

High resolution, elegant and practical designed lightweight, handheld and autofocus QLF™ camera. Superior optics. For fast capturing of QLF™ and white light images. Full control over all the imaging options. Suitable for clinical and in vitro research. Simple, save, clean, efficient and direct.



**Qraypen C™**

Elegant and lightweight intra-oral caries diagnosis device with autozoom function. Fast capturing of QLF™ and white light images. Also ideal for inspection of individual element on cracks and fissures.



**Qray-Wblock**

**W-Block™**  
Intra oral camera position guide for making stable and reproducible images

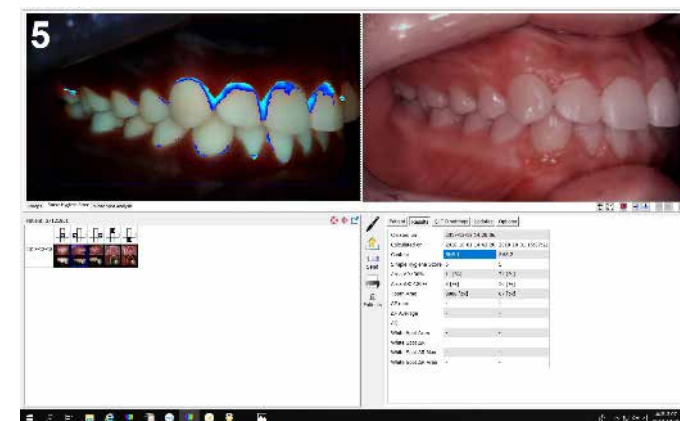


**Q-Ray™ Clinical software**

The Q-Ray™ clinical software suite releases the full power of the QLF™ capturing devices. With Q-Ray™ the dental professional organizes his QLF™ results in a natural way as part of the daily routine. Images and analysis results, such as demin percentages and the proprietary Simple Hygiene Score™ are stored easily and efficiently. Q-Ray™ makes these data available on every PC or laptop connected to your clinical network. Q-Ray™ helps to share the results and findings with patients. This enhances patient compliance. Q-Ray™ saves time and facilitates your work as a healthcare professional.

**Simple Hygiene Score**

Detect cariogenic biofilm by red discolorations, then touch the simple hygiene score tap and the result of score 0-5 is automatically displayed. Patient's oral hygiene management can be recorded in the clinical history.



**C4™ Research software**

The C4™ research software is intended to be used for the capture, storage, retrieval and analysis of sets of QLF™ and white light images (image sets) of dental tissue in vitro, in situ or in vivo. C4™ features proven and experimental analysis algorithms some of which are improved versions of the proven algorithms used in the software of the Inspektor™ Pro which was approved by the American FDA and the ADA. These algorithms provide various values such as  $\Delta F$ ,  $\Delta F_{max}$  and  $\Delta F_{Area}$  and  $\Delta R$ ,  $\Delta R_{max}$ ,  $\Delta R_{Area}$ ,  $SPS^{TM}1$ . The intended use of these values is to provide researchers objective measures about the fluorescent response of tissue in or from the oral cavity. C4™ is designed to be used stand-alone, optionally in combination with a QLF™ input device such as the QLF-D Bi-luminator™ or the Qraycam Pro™

**White Spot Measurement**

Analyse early caries or demineralized enamel in quantified result of delta F and delta R score. These scores indicate the degree of demineralization as well as biofilm activity.



**Qrayview dual™**

Ultralight handheld device for quick and easy inspection of biofilm. Carries a strong QLF™ and a curing light source and comes with glasses that carry the dichroic QLF™ filter



**Qscan plus™**

**Qscan plus™**  
Easy to use and safe Biofilm self-tester, an effective Oral Hygiene Monitoring Assistant