

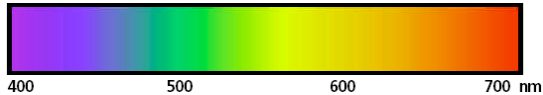
## Spectra FAQ's

### What is caries?

Destruction of dental hard tissue caused by lactic acid producing bacteria

### What is fluorescence?

Emission of visible light.



Fluorescence procedures are based on illustrating certain fluorescence substances like porphyrins, which grow in bacterial populated areas. When the area is stimulated with light of a certain wavelength, the molecules absorb the light energy and release part of the light energy with a different wavelength.

When porphyrins are stimulated with a light wavelength of 405 nm, they glow red whereas sound enamel glows green.

### What are porphyrins?

Porphyrins are produced by some of the bacterial species that are present in the oral cavity.

Porphyrins are special metabolites of cariogenic bacteria. They can be found in the Streptococcus Mutant.

### What is Spectra?

Spectra is a lightweight handpiece used as an aid for detecting caries, especially early stage enamel caries and hard-to-detect fissure caries after professional oral cleaning.

### How does it work?

The Spectra handpiece has a high resolution, high sensitivity, auto-exposure controlled CCD sensor, a high performance lens system and special LED lamps that emit blue-violet light at a wavelength of 405nm. Light of this particular wavelength causes porphyrins caries producing bacteria to fluoresce. When used with the supplied 10mm distance spacer, the fixed focus lens brings all objects within the area of interest in focus enabling it to identify plaque and potential carious lesions. Caries fluoresce red whereas healthy enamel in contrast fluoresces green.

### How do I prepare for an examination?

Follow the steps below to prepare for caries examination:

1. Install a new infection control sheath on the handpiece.
2. Install the distance spacer which has been disinfected, cleaned and autoclaved over the handpiece lens tip. This spacer helps to block out stray light and to maintain an appropriate steady distance between the lens tip and the tooth surface to be examined.
3. Perform a professional cleaning to remove dirt and meal deposits, dental tartar, plaque detection agents and preventative materials such as fluor-paste that can interfere with caries detection.
4. Remove any residual polishing paste using an air/water syringe.
5. Allow the teeth to dry.

### Can I save the images?

Yes, fluorescence images can be stored in a patient's database, so that the patient's oral hygiene can be tracked over time. The images allow the dentists to easily explain the clinical situation and the required treatment plan to the patient. Therefore Spectra is an excellent tool to promote better oral hygiene to patients and motivate them to carry out a professional tooth cleaning.

### How do I capture images with Spectra?

Each keypad button provides the Spectra Handpiece fingertip control over the PC imaging software via the USB Umbilical.

### Top Keypad Button:

Press this button to toggle between live and frozen images. While operating the system in caries mode, the imaging software will highlight the areas of the tooth with potential carious lesions on the frozen image.

**Bottom Keypad Button:** Momentarily press this button to toggle the system between different modes. Press and hold this button for at least 3 seconds to save a frozen image and to return to a live image.

**What do the colors and numbers in the image mean?**



Displayed Color	Green	Blue	Red	Orange	Yellow
Examine for	sound enamel	initial caries, start of enamel caries	deep enamel caries	Dentin caries	deep dentine caries
Caries Activity Scale	> 3	1	1.5	2.0	2.5

**Caries mode** is used to detect caries. This is done by making a live inspection of the mouth after the teeth have been cleaned and then freezing the image in an area of interest to analyze it for caries activity. The imaging software highlights the extent of potential carious lesions found in the frozen image using the color and number scales shown in the figure below. This information together with results of visual and x-ray image inspections can be used to locate any caries and to formulate an appropriate treatment plan.

**Do I have to calibrate Spectra?**

No, it's self-calibrating.

**What are the computer requirements for Spectra?**

- CPU Speed: Pentium-4, 2 GHz or higher
- Operating System: Windows 2000 Professional for an Intel 32-bit processor with Service Pack 4, and the KB 820759 update or later or \* Windows XP Professional for an Intel 32-bit processor with Service Pack 1 and the KB 822603 update or later.
- Application Software: Authorized Imaging software application installed such as VISIX.
- System RAM: 256 MB
- CD ROM Drive: 24X or higher
- Monitor: SVGA 17" with 800 x 600 resolution or higher
- Video Display Adapter: 16 MB video card with 800 x 600 pixel resolution and 32-bit color
- USB Port: Must be USB 2.0 high speed, high power port

**What imaging software do I need to operate Spectra?**

Spectra is shipped with a Spectra only version of Visix. If you currently have Visix you will be able to install this software to allow for Spectra to be used along with ScanX, Accent, or Acclaim. For the office without Visix, this will allow for control of the Spectra only.

**Can the Spectra only version of Visix be integrated into my existing practice management program?**

Visix, both the full version and Spectra only version, contain VisixLink which provides a bridge to over 30 practice management systems. Please go to

[http://www.airtechniques.com/images/UploadedPhotos/Visix\\_supported\\_bridges\\_12\\_04\\_06.pdf](http://www.airtechniques.com/images/UploadedPhotos/Visix_supported_bridges_12_04_06.pdf) to download a list of compatible practice management systems.

### **How do I install Spectra?**

Installing Spectra is as simple as making the necessary connections of the USB Umbilical between a PC and the Spectra Handpiece. An authorized imaging software application such as VISIX must also be installed on the PC to allow operation of Spectra. *(please refer to the owner's manual for detailed setup instructions)*

### **How do I clean Spectra?**

Clean each component of the Spectra System as necessary by performing the following procedures.

1. Spectra Handpiece - Following every patient use, remove the infection control sheath from the handpiece and dispose of in accordance with local regulations. The Spectra Handpiece can be wiped clean and disinfected with any non-corrosive surface disinfectant such as Birex® se.
2. Handpiece Window Lens - Remove debris or spots from lens window by cleaning with alcohol and cotton swabs.
3. Distance Spacers - Steam sterilize in an autoclave at 134° C for at least 3 minutes.

### **How much does Spectra cost?**

Suggested retail price: \$4995.00

### **What is included Spectra?**

Spectra Handpiece, Visix for Spectra Software (5 users), 50 Infection Control Sheaths, 10 Positioning Spacers, 1 USB Cable, and 1 Chairside Handpiece Holder

### **What is the warranty?**

Spectra is warranted to be free from defects in material and workmanship from the date of installation for a period of 3 years.