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Video Deflection Technology

# The Future Of **Vibration Analysis** has arrived



**DragonVision™** Video Deflection Technology is a Vibration Analysis software that tracks very small movements within ordinary video recordings. Through complex algorithms, DragonVision™ compares each one of the frames of the video looking for microscopic movements of specific points.



**DragonVision™** can detect thousands of vibration points in a single video. Thus, making it an ideal tool for various types of vibration analysis that would otherwise take a long time to complete.

# “Do I need a special video camera?”



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Any camera works for **DragonVision™** although, the better the quality of the recording, the better the results. In fact, tests made with a camera of an iPhone XS with slow motion recordings at 1 meter of distance showed a resolution in amplitude of 0.1 thousandths of an inch (2.54 microns) and 120 Hz frequency (7,200 CPM). Which is very useful for 95% of common machines.

## The Looking Glass Technique

Incredible as it may seem, machine and structural vibration (or at least a large part of it) can be detected in a video recording with incredible resolution. And with this technique you can do it.

Our unique video analysis algorithms make it possible to detect and convert micro-movements into thousands of reliable vibration signals from just one video.

This new technique, named **The Looking Glass** Technique, saves a huge amount of man-hours in studies that were even impossible before.

# What kind of failures can I detect using The Looking Glass Technique?

There are many failures that can be detected with this technique. Mainly those relate to low frequencies and phase.

For example:

- ~Imbalance
- ~Misalignment
- ~Mechanical Looseness
- ~Bent Shaft
- ~Eccentricity
- ~Resonance
- ~Natural Frequencies (by Bump Test)
- ~Electrical Noise



**DragonVision™** incorporates an anti-aliasing filter that uses cross-channel comparison. In this way, nonexistent frequencies produced by the Aliasing phenomenon due to the low sampling rate of video cameras are eliminated from the FFT.

Dragon Vision incorporates a calibration method that relies on a traditional accelerometer, where it analyzes the spectra and eliminates the frequencies caused by the Aliasing effect.



# Where can I find DragonVision



## Technical Specifications

<b>Sample Rate</b>	<b>As Defined by Camera Selection:</b> Resolution Resolution	
<b>Frequency Range</b>	<b>As Defined by Camera Selection:</b> Full HD Resolution	<b>iPhone 8 &amp; above</b> 240fps at Full HD <b>Phantom v2640</b> 12500fps at Full HD
<b>Minimum Displacement</b>	0.1 Mils at 3.3ft / 2.54 Microns at 1 Meter	<b>iPhone 8 &amp; above</b> 7200RPM fMax
<b>Video Deflection Factor</b>	1X to Infinite Maximum	<b>Phantom v2640</b> 350,000RPM fMax
<b>Background Vibration Isolation</b>	Cross Channel Anti-Aliasing Filter & Frame/Region Stabilization	
<b>Calibration Methods</b>	Embedded FFT Using DigivibeMX or WISER Vibe ANL file (Highest Accuracy NIST Traceable). RMS Value using any Accelerometer output (3rd Party Calibration). Distance Method measures the distance between any two points within the video frame (Distance Calibration).	
<b>Export Type</b>	MP4 HD - Animated GIF	
<b>Annotation Methods</b>	Labeled Balloons with Custom Text	
<b>Playback &amp; Export Speeds</b>	1/10th to Infinite Maximum	
<b>Export Options</b>	Export Amplified, Motion Detection and Target Points, and Full Export Capabilities following Import to DigivibeMX.	
<b>Supported Languages</b>	Spanish, English, German, Italian, French, Portuguese, Russian and Chinese.	
<b>Analysis Tools</b>	Bandpass, Highpass, LowPass, & Bandstop of Time Waveform and Video, Time Waveform, FFT, Orbits, Phase Analysis, Harmonics, Sidebands, Decibels and Full Analysis Integration with DigivibeMX Analysis Software through Export/Import.	

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