

CASE STUDY

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DOLBY LABORATORIES CAPTURES INTRICATE DETAILS AND STRIKING IMAGERY



Scene from the music video B Sweet

WHEN IT'S TOO FAST TO SEE, AND TOO IMPORTANT NOT TO®

DOLBY LABORATORIES UTILIZES VISION RESEARCH'S PHANTOM® HD GOLD TO CAPTURE INTRICATE DETAILS AND STRIKING IMAGERY FOR ANDREW TINKER'S MUSIC VIDEO, *B SWEET*

Since its inception a quarter of a century ago, the music video has become a cultural phenomenon and a powerful means of creative expression for some of the most iconic stars in the entertainment industry – not only performers such as Madonna and Michael Jackson but also directors like Martin Scorsese and John Landis. And now, with the use of high-speed digital imaging, the capabilities for music videos enter a new dimension. Viewers can experience image quality like never before, an unparalleled look at motion and details otherwise invisible to the human eye. Intricacies that often go unnoticed, like individual rain drops splashing on a flower petal or the ripple of water from a

"I had followed Vision Research's work for the past few years, and had been interested in trying their innovations first-hand for a while. This music video provided us with the perfect opportunity to do so. The Phantom HD Gold was the obvious choice for us, as it is truly outstanding in its ability to capture ultra slow-motion video and bring my creative vision to life. It was incredibly important to our team that we create a video that would be visually striking for our audience. This camera's versatility, dynamic range, and high-speed functionality surpassed our expectations."

– Richard Krause,
Audio/Visual Designer
Dolby Laboratories

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Scene from the music video *B Sweet*

swimmer's gliding stroke, come to life with slow motion. Now filmmakers can truly push the boundaries of storytelling and present audiences with breathtaking and provocative imagery.

Dolby Laboratories, a market leader in audio innovation, has specialized in enhancing and intensifying the entertainment experience since the 1960s. Its technologies have been a pivotal force in the advancement of audio technology in numerous arenas, including cinema, broadcast television, and recording studios.

While it is best known for high-quality audio and surround sound technology, Dolby recognizes the importance of high-quality video as an important element in the overall entertainment experience. The company recently used the Vision Research Phantom HD Gold camera to capture high-speed scenes and quick action shots for singer-songwriter Andrew Tinker's new music video *B Sweet*.

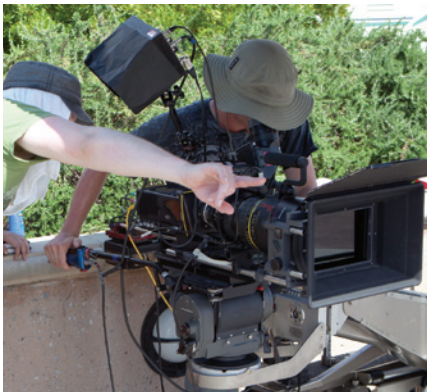
Tinker, a founding member of the Polyphonic Spree and now a solo artist, is based in North Texas, and the filming of *B Sweet* took place on the shores of Lake Ray Hubbard. The video's vibrant color schemes and creative props demanded high-definition, slow-motion capabilities to fully capture the essence of the story for audiences. To complement these visuals, Dolby created special 5.1- and 7.1-channel Dolby[®] surround sound mixes of the video.

The Phantom HD Gold is the step-up model to the Phantom HD, which created a new standard in the world of video production with its ability to capture stunning slow-motion images at speeds of more than 1,000 frames-per-second in full high-definition. The Phantom HD quickly became the *de facto* solution for slow-motion effects in high-visibility productions, commercials, music videos and award-winning blockbuster movies. Unveiled in 2009, the Phantom HD Gold's enhanced image quality and performance, digital cinema optimized imaging sensor, and exceptional software have truly set the camera apart from any other high-speed digital video solution on the market today.

"I had followed Vision Research's work for the past few years, and had been interested in trying their innovations first-hand for a while," said Richard Krause, Audio/Visual Designer, Dolby Laboratories. "This music video provided us with the perfect opportunity to do so. The Phantom HD Gold was the obvious choice for us, as it is truly outstanding in its ability to capture ultra slow-motion video and bring my creative vision to life. It was incredibly important to our team that we create a video that would be visually striking for our audience. This camera's versatility, dynamic range, and high-speed functionality surpassed our expectations."

“Thanks to the camera’s extensive memory capabilities and enhanced work flow, the shoot went amazingly well. Given our tight time constraints, the camera was invaluable as it provided us with uninterrupted filming. We were able to download the cines and edit the footage offline, rather than spend precious filming time transferring data off the camera. Although this was my first experience shooting with the Phantom HD Gold, I will certainly employ it for future shoots. I cannot imagine achieving this level of immersion, precision, and intensity in a video without it.”

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Phantom HD Gold
Digital High-speed Camera

Creative Flexibility and Limitless Control

Recording in ultra slow motion requires significantly higher frame rates than normal cinematic cameras produce. While most cinematic cameras use a standard exposure rate of 24 frames per second (fps), the Dolby team made the most of the advanced high-speed capabilities of the Phantom HD Gold, which can record at any frame rate from 5 to 1,000 fps in increments of one frame-per-second at HD resolution. The camera’s CMOS sensor also allows selection of continuously variable shutter speeds down to (1/100,000 second). Radically adjustable frame rates create seamless control of duration, time, and speed, enhancing storytelling elements and capabilities through crisp imagery and fluid movements.

The Phantom HD’s ability to create breathtaking special effects by controlling frame rate and exposure time in fine increments allowed the Dolby team to realize their creative vision. Dramatic umbrella twirls captured by the HD GOLD added pops of color, depth, and new hyper-detailed movement to scenes. The camera captured water movement utilizing its slow-motion capabilities to transform the video’s water fountain into a shower of individual water beads, adding unique cinematic illusions and enhancing the video’s captivating storyline.

“The overall vision I had for the video required extremely fast frame rates and exceptional depth of field,” said Krause. “Many of the scene’s elements – confetti, bright balloons, and multi-colored rainbow cake – were dependent on this technology to be impactful. I essentially had total control over all of the looks I wanted to achieve with my footage.”

Recording of the music video took place over several overcast days, which would have posed lighting difficulties had it not been for the Phantom’s CMOS sensor. All of Vision Research’s digital cameras utilize the company’s proprietary CMOS sensors, which have been exclusively designed for high-speed use to balance sensitivity, speed, and resolution. Unlike a CCD sensor, CMOS will not “bloom” (creating fringes of light around very bright objects in an image), and are totally immune from multi-panel imaging artifacts associated with many older-generation high-speed sensors. When operating the camera at high frame rates, a substantial amount of light is required to adequately expose images. With the additional use of three 18k lights to capture scenes, the CMOS sensor awarded the production crew complete control over drab outdoor weather conditions.

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Versatility

As is often the case in the film and video production industry, Dolby was under an extremely tight deadline to complete wrap-up for *B Sweet*. With only three days to execute a very detailed shoot, Krause recognized the need to capture a substantial amount of footage for proper editing. To accomplish this, Dolby utilized Vision Research's acclaimed CineMag™ interface, which is fully compatible with the Phantom HD Gold. Enhancing the high-speed imaging work flow, CineMag is a hot-swappable memory magazine that enabled the video production team to record 490 fps at 1920 x 1080 directly to the magazine, allowing very long recording times. The high-speed footage – also known as “cines” – stored on the CineMag was viewed, trimmed, played over video, and saved to hard disk using Vision Research's 10 GbE CineStation™.

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To view Andrew Tinker's music video, *B Sweet*, please visit <http://vimeo.com/14225706>.

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About Vision Research:

Vision Research designs and manufactures high-speed digital imaging systems used in applications including defense, automotive, engineering, science, medical research, industrial manufacturing and packaging, sports and entertainment, and digital cinematography for television and movie production.

The Wayne, N.J.-based company prides itself on the sensitivity, high-resolution and image quality produced by its systems, robust software interfaces, and reliability and versatility of its camera family – all which continue to stand as benchmarks for the high-speed digital imaging industry.

Vision Research digital high-speed cameras add a new dimension to the sense of sight, allowing the user to see details of an event *when it's too fast to see, and too important not to*[®]. For additional information regarding Vision Research, please visit www.visionresearch.com.

Vision Research is a business unit of the Materials Analysis Division of AMETEK Inc., a leading global manufacturer of electronic instruments and electromechanical devices.



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Disclaimer: VRI has not independently verified the accuracy of all claims in this case study and is not responsible for any factual errors.

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Customers are also advised that some models of AMETEK Vision Research's digital high-speed cameras may require a license from the U.S. Department of Commerce to be: (1) exported from the United States; (2) transferred to a foreign person in the United States; or (3) re-exported to a third country. Interested parties should contact the U.S. Department of Commerce to determine if an export or a re-export license is required for their specific transaction.