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Wolf Cinema – High Fidelity Film™

History and Market Summary

Wolf Cinema was founded by parent company SUMIKO in January of 2008, and released their first line of home cinema projectors nine months later. SUMIKO has been in business since 1973, with stable ownership [general partners Donald Brody and John Hunter have actively managed it since 1995]*. During these years the company grew over 1,000 percent and enjoys a strong reputation with dealers, sales partners, magazines and customers around the world. Wolf Cinema successfully split off from SUMIKO in 2011 and is now a wholly-owned, separate organization and is still operated by its founders in Berkeley, CA.

Wolf Cinema is positioned at the pinnacle of the front projection video market. Our team delivers advanced solutions that produce the highest quality imagery coupled with some of the most dedicated in-field service and partner support in the industry. Wolf Cinema has succeeded in spite of launching into one of the toughest economies in memory, and continues to expand with an exciting array of new products every year – all strongly endorsed by our valued home theater enthusiasts around the world.

Of our two primary missions – performance and reliability, the latter may be the most difficult to achieve but the most appreciated by end-users and dealers alike. No matter how fantastic an image may appear, if the projector is not working the result is a stressed service team and a deeply unsatisfied customer. Wolf Cinema projectors enjoy an enviable reputation for rugged, bulletproof reliability due to extensive and proprietary engineering [techniques that others often fail to apply to their solutions].

Market Scope Overview

The front projection home theater market is best understood by breaking it into three price categories: below \$5,000, between \$5,000 and \$10,000 and above \$10,000. The segment below \$5,000 is a commoditized, largely unprofitable landscape for prime manufacturers and is dominated by manufacturers bent on executing the timeworn cliché of obtaining market share at the expense of profitability.

Above \$5,000 retail is where the bulk of the business and, hence, our competition lies. We compete successfully with brands such as Planar/Runco, DPI and Sim2 – in addition to some of the better known Japanese and Korean brands. While the total front projection market can be measured in hundreds of millions of dollars, research indicates a step-up North American sales channel aggregating around \$80M [ignoring the largely unprofitable segment priced below \$5,000 retail]. The rest of the world combined aggregates to an additional \$30M in the higher-end class of goods.

** Note: SUMIKO was acquired in 2011 by Fine Sounds SpA Italy; our two founders retain positions within the new organization and are members of the FS Board of Directors. Both Wolf Cinema and REL subwoofer business units were excluded from that sale and are retained by Messrs. Brody and Hunter.*

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Between \$5K and \$20K, life begins to be interesting for specialty video manufacturers such as Wolf. In the 3rd quarter of 2011, Wolf Cinema launched a new \$15,000 three-chip projection solution, the SDC-15 aka “CUB” – a platform that provides for superior image quality as well as vastly simplified installation capabilities. This successful model was followed up in early 2012 with a feature-laden \$10,000 retail edition, and by early 2013 two new entry-level models were released in the company’s new GrayWolf™ series. The popularly priced SDC models have helped us acquire significant new dealer partnerships and, consequently, increased revenue. Additional follow-on models are being readied for market release in late 2013/early 2014.

Above the entry level tier, Wolf is well positioned with its Reference grade, xenon-lamped projectors. These unique solutions have made inroads into a market dominated for the past four years by larger, more established rivals. While the total market for such projectors— those priced above \$50,000 like the Wolf DCX and REF series, able to fill screens as large as 20-ft wide — is admittedly modest, our success in this category has helped define our company’s leadership presence. Wolf Cinema has carved out an enviable reputation for quality in imagery and with stable, cool running platforms optimized for large theater screens. These are often hidden installations, projectors tucked well out of sight— a huge competitive advantage in the luxury home theater market.

Between the entry level priced market and the rarefied “uber” projector segment lies a number of important mid-market tiers. One are is dominated by LED projectors due to their compact size, relative cool running and long operating life; this segment is typically priced between \$10K and \$30K. Our LED projector is competitively priced at \$20,000 and provides Wolf a solid footing in this class. The next segment between \$25K and \$65K retail typically features UHP lamped, three-chip light engines to accommodate larger 12-ft to 18 ft-wide home theater screens. Higher density chip sets [4K, also called Ultra HD] and true 4K sources will soon be available, rendering even more image detail, sharpness and increased depth of field. Wolf anticipates being able to keep pace with advancements across all categories, working with the latest generation of digital chip sets and light sources.

As of February 2011, Wolf Cinema was named by a major Japanese Tier One vendor to be supplied with its 3-chip LCoS [Liquid Crystal on Silicon] light engines. This is in addition to our current engines using Texas Instruments DLP® micro mirror digital technologies. This new relationship will allow significant new marketing and product benefits for us, especially in the critical \$8K-\$15K market segment, with excellent 2D and 3D capabilities embodied within these solutions.

Product Distribution: Cleanliness is Next to Godliness

Wolf Cinema enjoys some of the best relationships in the video landscape. We only sell direct to dealers and do not sell to anyone conducting business via Internet channels, nor via difficult-to-manage third party distributors. This tight control over the channel enables Wolf dealers everywhere to succeed with higher performing solutions, across multiple price tiers.

Necessary for succeeding in business at any time, this facet has become much more critical in today’s leaner market conditions. Wolf’s overall goals are consistent with this approach of controlled distribution – since Wolf intends to grow organically at each phase and has no need to chase market share for its own sake. By the end of the next three year time horizon, Wolf will be able to enjoy expanded sales volumes and with many new partnerships around the world.

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We know that chasing market share remains inherently unprofitable, a drive that is clearly irrational for most video companies. The ability to say “no” is a rare commodity in the video realm and while there will certainly be larger companies than Wolf, lessons learned from other self-defining enterprises such as Southwest Airlines comes to mind: Southwest never set out to be the biggest, merely the best. In a year in which its two largest video competitors have posted seven-figure losses, it is quite possible that Wolf has already accomplished this intermediate goal. Wolf has been profitable since late 2011 and will remain so for the foreseeable future. Wolf’s senior management understands Wolf’s role to be that of a solid provider of extraordinary products, destined to help guide its dealers, distributors and customers through the shoals of video “fashion” to the calmer waters of lasting value.

Reliability and Film-like Imagery: The Twin Keys to Wolf’s Success

Inherent product reliability is a key to Wolf Cinema’s ongoing success story. We focus our engineering resources on total product reliability and support that effort in all our pre- and post-sale activities. Our obsession for reliability lies in understanding our two prime constituencies: the end-user consumer as well as the re-seller/custom installer. Wolf Cinema solutions meet both their needs.

Neither the dealer nor customer has ANY tolerance for products that are unstable or unreliable, although for slightly different reasons. Naturally, the end-user wants a great looking, stable reliable platform (no one wants to fire up the system in front of friends and family, only to be let down by a defective projector). And the dealer or custom installer has no interest in products that frustrate their wealthy clientele and dilutes profitability, with endless return service visits to the client’s home.

While no product comprised of thousands of circuits and with such technical complexity can ever be totally trouble-free, Wolf’s early careful investigation into thermal effects on the longevity of projectors has paid dividends for installers and customers alike. Ultimately, ALL projector failures can be traced to result of thermal influences, with individual component failures occurring at the weakest link in the entire system.

Run Cool, Run Long

Starting in 2007, exhaustive testing was carried out over a period of fifteen months to determine the best way to deal with the real world projection installation challenges. Wolf Cinema’s Reference DCX series were the initial result of that effort. These solutions were ground-breaking and were the first high-output, professional xenon-lamped home cinema projectors created and conceived around successful thermal management chassis design work.

Our engineers overcame the combination of high heat, low airflow AND restricted installation space environments. This is commonly experienced when a projector is tucked away in an enclosure on a ceiling, in a projection lift or in an unused closet space. Wolf Cinema’s Reference projectors are constructed around a sealed enclosure that forces large volumes of pressurized air (typically cooled by being pulled from the conditioned space of the theater itself) into the projector where it is routed over ALL major heat generating components. This is unique and far

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more advanced than other designs that pull air over the lamp assembly only. Keeping the entire unit running cool provides for a long and stable life. To date, no Wolf Reference projector has experienced in-field thermal failures.

This research was subsequently applied to our DCL-200 Series LED projector design. This projector, while running significantly cooler than a large Xenon-lamped projector by design, also has low level components that are subject to the same challenges in thermo-dynamics. Careful optimization of internal fan speeds, as well as liquid cooling of the LED emitter assembly allowed Wolf to offer a product that runs very cool and withstands the rigors of the most challenging consumer home theater environments.

In the past two+ years Wolf Cinema launched four new stereoscopic (3D) projectors at very popular price points. Again, special attention to chassis cooling and air flow management was undertaken to insure long projector and extended lamp life.

Let There Be Light

While reliability is a touchstone of Wolf Cinema, what excites and impassions our staff is the ability to create images that are breathtakingly “filmic,” with correct colors and with sufficient light output to be used on very large screens in the home theater environment. Such efforts led one critic to comment, “The [Reference Series] DCX-1000i puts out a beam of light so intense you’re almost tempted to try to light a cigar in it (Sound and Vision 2009 Best Video Products Award).” Beautiful, sharp, bright and uniform images with accurate deep black levels are the hallmarks of every Wolf Cinema projector.

Xenon and LED light sources both provide natural, realistic colors. Xenon lamps are the only high output light source capable of recreating all the colors present in natural sunlight. LEDs are similarly capable of an extremely accurate color space as properly harnessed by the Wolf Cinema engineering team. Even corrected filters and accurate gamut calibrations on our UHP-lamped entry level 3D projectors astonish first time audiences. One novel mid-tier system solution now available from Wolf Cinema incorporates four color primaries [RGB and Y-yellow] to expand the color gamut while increasing light output to 7000 ANSI – the perfect solution for larger home theater screens but available at approximately ½ the price of a Reference series light engine!

Natural vibrant colors thrill viewers and a Wolf Cinema projector bears only faint resemblance to the often bleached, washed out, inaccurate colors as presented by many lesser projectors.

Black Bars are for Jails

Ever watch a DVD or Blu-ray of your favorite epic movie and experienced “black horizontal bars” at the top and bottom of your screen (hint: this is particularly true of with a plasma or similar fixed pixel 16/9 television set)? In fact, the irony is that using conventional design approaches, the more epic and sweeping the movie’s director wants you to experience, the less of the drama you will experience. That’s because cinema directors employ a technique known as wide aspect ratio filmmaking to increase the scale of a movie. The larger the scope of the movie, typically the larger the aspect ratio the director employs. Importantly, television high definition viewing is

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limited to a native 1.78:1 (16x9) aspect ratio while large scale film movies frequently go as wide as 2.40:1. But when a 2.40:1 aspect ratio movie is shown on a normal flat panel television, the television can't actually become wider. All that can be done is to position the image within the available screen width, resulting in approximately 1/3 of the screen not being used for the movie and the resultant black bars, top-and-bottom.

Conventional projectors suffer from the same problem, although with the addition of expensive anamorphic lens assemblies they can reproduce two aspect ratios. Wolf Cinema projectors can reproduce dozens.

Wolf Cinema Reference projectors (DCX and REF series) use a technique borrowed from professional digital cinemas, whereby the image is precisely zoomed and focused to correctly fill the entire screen height and width. We call our technique VariScope™: up to 99 system memories are made available and tied into the precision cinema optics, so that all the most popular TV and film aspect ratios, ex: 1.33, 1.78, 1.85, 2.20, 2.35 and 2.40:1 are all available at the simple touch of a button... and without deploying an expensive, external anamorphic lens.

We now offer our built-in VariScope solution (with multiple aspect ratio memories) on our latest generation of 2D/3D projectors, the models SDC-8, SDC-10, SDC-12 and SDC-15. All have been quite successful in delivering the promise of ultra-wide-screen viewing at a very modest cost.

3D Funnies

Wolf Cinema continues to deliver the latest technologies, of which 3D image viewing is but one of the new and exciting frontiers.

Since the 1950's audiences have been thrilled by the illusion of images "floating" in front of their very eyes. The evolution to more advanced stereoscopic (3D) viewing techniques has made this a must-have feature in today's ultimate home theater. More and more feature films, including live action and animated movies, are being released in both 2D and 3D imaging capabilities. Wolf Cinema now boasts multiple 3D projection solutions, starting as low as \$8,000 MSRP, that deliver the exciting, immersive 3D experience on very large home theater screens.

Wolf Cinema's Future

The future of Wolf Cinema's projection systems has never been brighter.

High performance projectors, coupled with advanced screen technologies and powerful multi-channel audio systems, are delivering on the home theater promise. Some even feel that their home theater system rivals, if not exceeds, the overall experiences achieved from today's Multiplex Cinema complexes.

And ultimately that's our goal – to provide the finest, most enjoyable cinematic thrills right in the comfort of your very own home.