

4K digital cinema

r e d e f i n i n g t h e c i n e m a e x p e r i e n c e



4K makes
an impact
in Hollywood

❖ Spiderman 3 is given a 4K release

Sony has announced support from major motion picture studios and the creative community for its SXRD 4K technology, following a recent successful side-by-side assessment with 2K technology for digital projection.

The Entertainment Technology Center's Technical Advisory Board held the assessment at the Digital Cinema Lab in Hollywood. It was the first public side-by-side evaluation of 4K and 2K technologies.

The result of the three-day test proved Sony's technical prowess. The SRX-R110 4K projector, which was designed for compliance with Digital Cinema Initiatives specifications, met or exceeded every point relevant to DCI projector requirements for theatrical exhibition, including colour gamut, brightness and general performance.

Following the assessments, 20th Century Fox, Warner Bros. Studios, Paramount Pictures and Sony Pictures Entertainment have all expressed approval of SXRD 4K projection technology, which was

“The industry has made its assessment and voiced its support. We're more confident than ever that 4K will shape the future of digital cinema.”

Mark Clowes, Sony Professional Solutions Europe

designed to meet all DCI requirements, for exhibition of their content in commercial theatres.

“Having satisfied current DCI projection requirements during these assessments, Sony remains committed to complying with every aspect of the DCI's specifications in the ongoing development of its digital cinema technologies,” said Mark Clowes, marketing manager, D-Cinema, Sony Professional Solutions Europe. **CONTINUED ON P.02**

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inside

Casino Royale
grades with 4K



London post house
Framestore CFC used
FilmLight's grading
system with the SXRD 4K
projector for the Bond
blockbuster Casino Royale.

STORY ON P.02



Sony launches two new 4K projection systems for cinema

Next generation SXRD
4K projection solutions for
large screen commercial
cinema theatres.

STORY ON P.03



4K digital cinema



Reflected glory: Spiderman 3

CONTINUED FROM P.01

"These assessments accomplished two very specific goals. One was to determine if both SXR and DLP projection systems supported proper image exhibition for studio motion picture releases; another was to test both systems' compliance with DCI technical measurement specifications for colour, convergence and uniformity."

European cinema owners will be able to see the capabilities of the latest Sony SXR 4K technology when it launches its latest high brightness projector in London in early 2007. The SXR 4K digital technologies range includes three projectors, a playback

system, a screen management system and a secure enclosure that meets FIPS/140 security requirements.

"The successful results of these assessments come at a critical time both in the growth of SXR 4K technology and digital cinema itself," continues Clowes. "Our product line is comprehensive, exhibitors are continually embracing digital projection and consumers are gaining an improved and more dynamic theatre experience. Now the industry has made its assessment and voiced its support. We're more confident than ever that 4K will shape the future of digital cinema."

Seeing is believing

❖ Once consumers see 4K in action, they'll never want to go back, predicts Andrew Johnston of FilmLight

Czech independent post production facility ACE has become the latest company to install a Baselight high performance colour grading system from FilmLight. ACE, which is based in Prague, installed the Baselight with a Sony SRX-R110CE 4K projector in March.

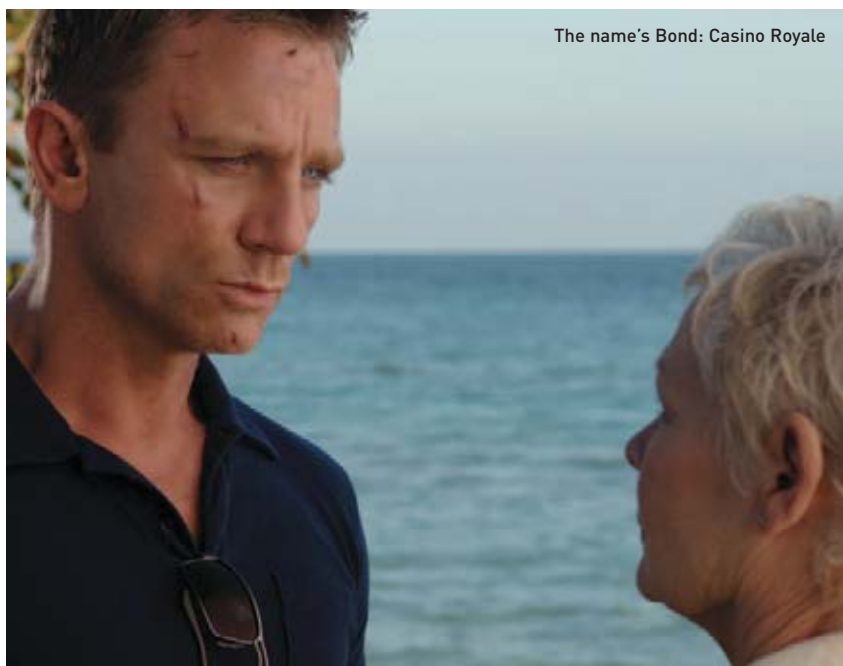
FilmLight systems have been installed throughout Europe and were recently used on the latest James Bond blockbuster movie, Casino Royale, at London based VFX facility, Framestore CFC.

Framestore CFC, which was also responsible for the new title sequence, was approached by EON Productions following an earlier collaboration to create the titles for the 007 movie, Die Another Day.

The entire movie was scanned on FilmLight's Northlight, with the master grade on Baselight EIGHT, FilmLight's highest performance colour grading system for theatre grading environments that need real-time power.

4K represents a four-fold improvement in resolution compared to standard 2K projection, allowing FilmLight and its clients to work at an astonishing level of detail during post production.

FilmLight marketing director, Andrew Johnston, says his customers are stunned by the quality of the images. "They can't believe how easy it is to re-rack the image and zoom in and not lose detail and clarity," Johnston says. "It's just a no-brainer to work with 4K if you can."



The name's Bond: Casino Royale

"It's just a no-brainer to work with 4K if you can. The more that people see and experience 4K, the more they'll demand that quality as part of their movie-going experience."

**Andrew Johnston,
FilmLight**

Johnston is confident that 4K technology will be universally adopted once audiences start to see the difference. "The interesting thing is, where's the demand going to come from, and it's going to come from people experiencing it and never wanting to go back. And I think the more that people see 4K and experience it, in the right projection environment, with the right content, the more they will start demanding that sort of quality as part of their movie-going experience."

There are currently 60 4K projectors around the world, but that number is set to grow. FilmLight has one in its Soho studio, as a showcase for clients.

Head of support, Jacqui Loran, says, "When people first come for the demo and they see the 4K projector they're amazed at the detail they're going to see in the image. I think the larger grading houses will probably move towards the 4K projector after what they've seen here — just because it is so impressive. It's definitely brought people in."

Curtain rises on new SXR D 4K projectors

❖ Sony unveils its latest addition to the 4K range aimed at commercial cinema theatres

Sony has expanded its range of CineAlta 4K digital cinema projection solutions with the unveiling of two new projectors to offer exhibitors a comprehensive range of digital cinema options.

The SRX-R220 is a new High Brightness projector developed to display the highest quality 4K and 2K content on large screens up to 20 metres wide. The projector was successfully demonstrated as a prototype in 2006 during industry screenings of *The Da Vinci Code*.

The second new projector, the SRX-R210, is a 10,000 ANSI lumen projector capable of displaying 4K and 2K content on screens approximately 15 metres wide.

The SRX-R220 and SRX-R210 utilise Sony's outstanding SXR D 4K image technology and incorporate many design elements of Sony's successful first-generation systems but add several new features such as utilising a single Xenon lamp for cost effective operation, keystone masking for standard and curved screens and an integrated secure enclosure for the playback system.

"The SRX-R220 and SRX-R210 have been developed after extensive consultation with the industry and address cinema owners' needs to project movies at the highest on-screen resolution, giving viewers the best possible movie-going experience," says Richard Lewis, chief engineer, Sony Professional Solutions Europe.

The SRX-R220 and SRX-R210 are designed to be compliant with the Digital Cinema Initiatives specifications. The projector housing is designed to meet FIPS 140/2 security requirements and features a built-

"We have designed the whole system to be as flexible as possible."

Richard Lewis, Sony Professional Solutions Europe



New Sony SXR D 4K projection solution

in rack space for Sony's LMT-100 Media Block and attached RAID storage unit. Sony is the only manufacturer able to offer the entire digital projection system and it equally handles 4K and 2K movie files with the 2K material being up-converted by the projector. Alternatively the projectors can utilise compatible servers from other manufacturers.

Sony has also launched a Screen Management System (SMS) to control the entire system.

"We have designed the whole system to be as flexible as possible and make it easy to install, operate and maintain," says Lewis. "For example, it is designed to fit in standard projection booths with standard window clearance, and can be operated in the same booth, side-by-side, with film projectors."

The new projectors will be released in early summer 2007.

Norway surges ahead in 4K digital cinema

❖ Cinemas upgrade to 4K

Norway is leading the world in the development of 4K digital cinema, with four SXR D 4K projection systems installed in three of the country's main cities, part of a major trial of D-Cinema by the NORDIC (Norway's Digital Interoperability in Cinemas) project.

Trondheim Kino and the Norwegian Film Institute, which holds the national archive, purchased the first SRX-R110CE projectors in Europe last year and are now extending this support by up-grading them to full CineAlta 4K cinema specification.

The upgrade includes the purchase of a Sony server capable of replaying both 4K and 2K movie files, as well as a security enclosure.

Bergen cinema has also ordered a full CineAlta 4K system in order to investigate the benefits of 4K quality.

Much of the digital cinema activity in Norway is supported by Unique Promotions who are taking a leading role in as participants in the NORDIC project, which is already testing cinema systems from several equipment manufacturers. "Unique are committed to investigating every aspect of digital cinema and supporting exhibitors to provide audiences with the best entertainment possible" says David Spilde, CEO at Unique.

The NORDIC project is being co-ordinated by Professor Andrew Perkis of the Norwegian University of Science and Technology (NTNU) in Trondheim. He says the SXR D 4K projectors are proving successful. "We are very happy with the 4K projectors. Even 2K material shown on the 4K projector is better than 2K material shown on a 2K projector," Perkis says.



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Odeon/UCI cinemas trial 4K in the UK

❖ New movies, including De Niro's *The Good Shepherd* and Jim Carrey's *The Number 23*, are to be screened in 4K

Britain's largest cinema chain, Odeon/UCI cinemas, is testing the Sony 4K projector as part of its assessment of the latest digital technology.

Given that several US studios already release 4K versions of movies, Odeon/UCI can see that the superior 4K might give it an edge, distinguishing its screenings from other cinema chains.

Odeon/UCI has already done a brief test of the 4K projector at its high profile Leicester Square venue. It is now testing the 4K, alongside the 2K option and 35mm projectors at its nine-screen complex in Guildford. It has installed three 4K units, which have been in situ since March 2007, and will be tested over the space of three months. According to Gerald C Buckle, the digital development manager for Odeon/UCI, "There are various ways to look at the 4K proposition. On the one hand, once every screen is digital, then being 4K will be a difference. The advantage of 4K is its resolution; the picture quality is meant to be far better. We want to see if the difference is substantial."

"Clearly the technology is an important part of digital and going digital, not least because the investment in equipment is substantial. We need to make sure we're buying the right boxes and the 4K units are an option to consider."

The first releases likely to hit the Guildford screens in March will be Robert de Niro's *The Good Shepherd* and Jim Carrey in *The Number 23*.



"The advantages of 4K are resolution, the picture quality is meant to be far better. The action stuff is where the benefits are definitely visible"

Gerald C Buckle, Odeon/UCI

Some genres arguably benefit more from the higher resolution. "The action stuff is where the benefits are definitely visible," says Buckle. Odeon/UCI will be looking for consumer reaction to 4K, before it makes any decisions about the future.

Odeon/UCI, one of the world's leading cinema exhibition groups, has a history of innovation and development. Currently owned by the UK private equity firm Terra Firma Capital Partners, it is investing substantial funds to ensure that Odeon continues to be at the leading edge of cinema, both in the UK and worldwide.

Worldscreen shows 4K at Berlinale

❖ Fraunhofer presents 4K workflow with help of SXR projector



Results of the 4K production workflow were shown at the Berlinale in February, when researchers and industry partners presented the results of the EU WorldScreen project.

"The shooting of a single scene generates somewhere between 200-500 GBs of data," explains project coordinator Siegfried Foessel of the Fraunhofer IIS. It takes a lot of time and effort to save, process, distribute and archive this data. The objective of this project is to optimize the digital cinema production workflow.

A key part of the presentation saw a variety of content – ranging from cinema commercials, trailers and clips to feature films – displayed by an SXR 4K projector, arranged by T-Systems.

"We wanted to the audience to see the 2K to 4K interpolation works and Sony has one of the only projectors capable of 4K," says Foessel.

The demonstration showed how it is possible to extract 2K layers out of a 4K cinema package in real time, decode the 2K layer and send it to the projector for upconversion to 4K.



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