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projectiondesign ACTION! model three 1080

with crystalio® II

PICTURE BY DLP A TEXAS INSTRUMENTS TECHNOLOGY · REALCOLOR · HD ready · VXP BY GENNUM · dvi digital visual interface · uhp ULTRA HIGH PERFORMANCE · DCDi by FAROUDJA

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HIGH PERFORMANCE PROJECTORS™

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The new reference in home cinema.

introducing true HDTV 1080p single chip DLP™ front projection

Action! model three 1080

The projectiondesign Action! model three 1080 is the world's first true HDTV single chip DLP™ front projector, using the new 0.95" 1080p DMD™ by Texas Instruments®. It shows true, uncompressed, unaltered 1920 x 1080 resolution HDTV like no other projector.

1080p - more detail, better dynamics, better quality

1920 x 1080 - true, uncompressed HDTV resolution - gives hugely improved image quality and more lifelike images through more detail and better dynamics over any other resolution and standard. With a given screen size, the Action! model three 1080 can reproduce more than double the information and detail reproduced by a 720p projector, and up to six times the detail of regular SDTV material. An increase in image quality that everyone can appreciate.

1920 x 1080 pixels give six times the screen size with the same perceived resolution.

More brightness enables larger screens..

Most HDTV resolution projectors have very low brightness levels when properly calibrated, and are unable to fill a decently sized screen with the brighntess level desired, let alone what is recommended by the SMPTE. Not so with the Action! model three 1080. It's unique two-lamp complement can provide up to six times more brightness than some of the competition, which means screen size can be increased similarly with the same realized and perceived brightness level!

..and higher true optical contrast

With higher brightness levels available, more can be used to turn into true optical contrast. Unlike most competing projectors that are using dynamic contrast enhancement teqniques, the Action! model three 1080 uses pure optical contrast to achieve truly dynamic imaging. Where dynamic enhancements may look good on paper with massive contrast numbers, and impressive with viewers at first, true optical contrast does not give white crush and loss of detail in the incoming signal, and always stays true to the calibrated grey scale tracking.

Single chip DLP™ with DuArch™ architechture

The Action! model three 1080 is based on projectiondesign's patented DuArch™ illumination architechture. Using two lamps, two colour wheels and dual light formatters, it offers outstanding single chip DLP™ performance. It surpasses all other single chip front projectors in optical performance, featuring a wider head room than any other competing projector, with up to 7500 : 1 true optical contrast, and completely configurable brightness output. The model three 1080 uses Texas Instruments® new SLR - Spoke Light Recapture - a part of the BrilliantColor™ technology - to dramatically improve colour reproduction, especially in secondary colours.

Dual colour wheels use NDG (Neutral Density Green) technology to increase visual colour resolution in green, creating a higher bit-resolution image, dramatically reducing low level dithering artefacts.

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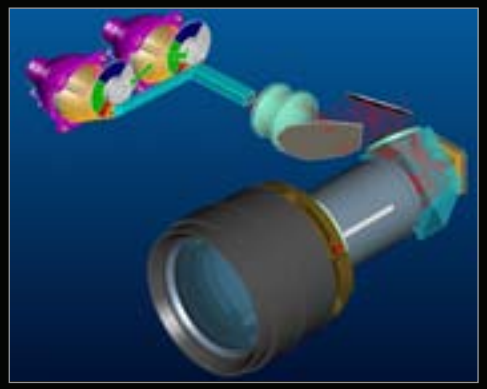


Patented DuArch™ dual architechture technology uses two lamps, dual colour wheels and dual light formatter paths for the most efficient and highest performance single chip DLP™ projection engine ever created.

The Sealed Optical Architechture molded magnesium engine ensures a stable and reliable chassis for the optics. With a high precision CNC machined mechanical interface to the projection lens, optimum focus is ensured at all times.

High performance optics

A range of six lenses is available. From ultra wide angle at 0.75 : 1, designed for rear projection, to the super tele zoom at 3.7 - 6.5 : 1 ratio. All lenses use special LD (Low Dispersion) glass, and aspherical lens elements manufactured to the highest possible standards, with very high precision CNC-machined mechanical interfaces. All lenses feature lens shift both horizontally and vertically to aid in installation without having to introduce digital distortion and reduction of detail through the use of digital keystone adjustment.

The precision projection lenses feature LD (Low Dispersion) glass and aspherical lens elements to resolve the finer detail of a 1920 x 1080 HDTV image. High microcontrast provides an incredible image quality.

Infinitely adjustable output brightness

To match the Action! model three 1080 to any desired on-screen brightness, each lamp's power is individually adjustable, in addition to adjusting illumination apertures with extremely high precision. This gives an infinitely adjustable brightness, up to as high as 2500 ANSI lumens, enough for even the largest screens.

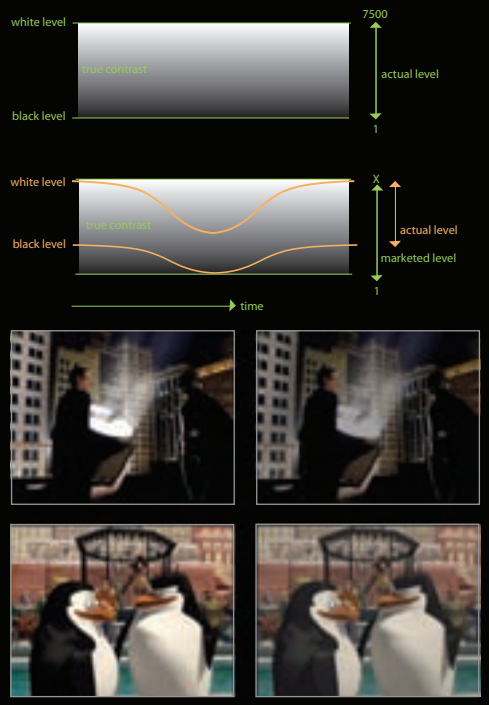
RealColor colour management suite

Our proprietary RealColor colour management suite ensures perfect colour and grey scale reproduction, and allows an easy and accurate way to setting up. Each single projector is individually calibrated during the final test phase, recording actual performance, with colour gamut and saturation, as well as electrical properties. This is then applied to the incoming signal, in order to display any format correctly. Each unit comes calibrated to a perfect D65 white point.

REALCOLOR

True optical contrast vs sequential contrast

True optical contrast will always have full white level and full black level available with any picture content. A torch pointing at the camera in a dark environment will have true, intense, white light, at the same time as the dark areas will be just that. Sequential - or dynamically enhanced contrast - on the other hand, will control the output of the projector based on image content. Only with bright content pictures will the projector have intensive brightness. The dark environment may be dark, but the torch will look more like a candle, as it will not have an intensive output. With mixed exposure scenes, a projector with dynamic contrast enhancement will have neither bright, nor dark images, whereas true optical contrast will have maximum available contrast at all times, providing a much more dynamic image. Some projectors try to overcome problems with varying output levels by electronically compensating for it. This leads to severe loss of detail, especially in bright parts of the frame with mixed and low exposure scenes.



Top: Intensive white and deep black in the same picture with true optical contrast - deep black, but reduced whites with dynamic contrast.
Bottom: Deep black and intensive highs with true optical contrast - flat and compressed dynamics with dynamic contrast.

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Introducing the world's most advanced video processor.

crystalio® II VXP™ BY GENNUM

Broadcast quality processing

Gennum's new Visal Excellence Processing™ - VXP - image processor offers revolutionary improvements over today's existing solutions by integrating fourth generation broadcast quality algorithms. The Crystalio II features custom software and control interfaces exclusive to projectiondesign.

Uncompromised video deinterlacing

- Content adaptive, per-pixel processing of all HDTV and SDTV video signals
- Multi-directional edge adaptive processing
- Robust inverse 3:2 and 2:2 processing of film-based inputs (inverse telecine)
- Bad edit correction
- Dual de-interlacer architecture for SDTV material allows choice of VXP by Gennum and DCDi™ by Faroudja®

Worldbeating image processing and scaling

True 10-bit 4:4:4 broadcast-grade processing delivering the world's most advanced and flexible image processor

Content adaptive 3D noise reduction and detail enhancement

10-bit gamma correction with user-customizable gamma curve Sub-pixel Y/C delay calibration

Chroma Upsampling Error (CUE) compensation

Tearless frame rate conversion including cadence lock to 48Hz and 72Hz for film sources providing ultra-smooth playback

3D/2D 5-line (5H) adaptive comb and chroma trap filter for both PAL and NTSC signals

Video and audio circuits clocked by 1ppm low jitter TCXO

UltraAR™ supports virtually any image aspect ratio and display aspect ratio

Non-linear stretching to display 4:3 image on 16:9 display

Support for all resolutions up to 1920x1200

Absolute control

Alpha-blended OSD (on screen display) offers intuitive and friendly setup and control

DynamicVP™ dynamically changes image processing settings and output format/timing/configuration to match the input format

Internally generated test patterns to ensure 1:1 pixel mapping

10 user-customizable independent picture control profiles for each input

24 user-customizable macros for quick access to the most frequently used features

Backlit remote, powerful OSD and front panel operation make control easy in any environment

RS232 for connecting 3rd party control systems

Infrared In/Out for multiroom remote control
CCF file of discrete IR codes is available for easy integration of 3rd party programmable remotes

High quality connectors and interfaces

Broadcast-grade BNC connectors used for all analog and SDI video inputs and outputs

Four HDMI inputs and two HDMI outputs support HDCP and embedded audio

Two SDI inputs with HDTV support allowing the highest quality HD signal transport

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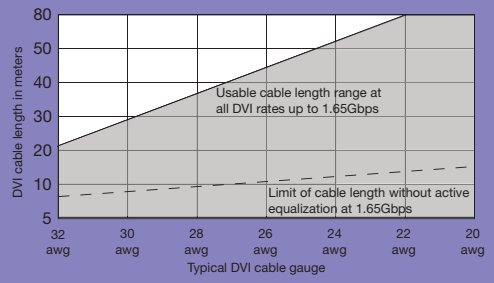
High performance single link connection.

The Action! model three 1080 connects to the Crystalio II video processor using a totally unique concept and technology. A self adapting digital line driver enables use of standard, high gauge digital cables without loss of quality. No special design interface cable is required, and lenghts up to 25 meters are easily managable. The self adapting nature of the interface eases installation. There is no manual balancing or equalisation needed. Everything is just plug and play. The digital cable interface suppoerts 10-bit HDMI video, but uses DVI connectors for mechanical superiority. In addition to the DVI cable, an RS232 cable is required for control.



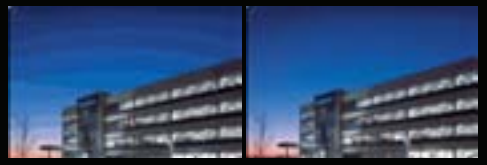
TruMotionHD™ - Gennum's TruMotionHD™ de-interlacing algorithm is unique in its ability to perform pixel based motion adaptive de-interlacing with automatic 3:2 and 2:2 pull-down on both HDTV and SDTV formats. Gennum's TruMotionHD™ de-interlacing technology supports fully adaptive 1080i to 1080p de-interlacing

TruMotionHD™ processing performs robust film mode detection and avoids anti-aliasing, as well as pixel adaptive 1080i to 1080p de-interlacing to maintain image sharpness and detail.

FineEdge™ - advanced directional interpolation algorithm eliminates "jaggy" artefacts found in traditional de-interlacing solutions. FineEdge™ processing maintains overall image sharpness and detail. FineEdge™ processing is applied to both SDTV and HDTV sources for optimal image quality.

FineEdge™ de-interlacing eliminates jaggy artefacts, introduced by traditional video processors.

RealityExpansion™ - Gennum VXP™ technology adopts a full 10-bit video processing architecture to deliver eye catching and realistic imagery. Traditional "banding artefacts" are eliminated and images appear smooth and natural.



Traditional processors lack true 10-bit processing. Banding artefacts are introduced. RealityExpansion™ delivers true 10-bit processing delivering natural and realistic imagery.

FidelityEngine™ - image enhancements for removal of unwanted noise and improved detail and uncompromised image quality. Unlike traditional processing algorithms, FidelityEngine™ processing can be applied to both SDTV and HDTV sources!

FidelityEngine™ reduses unwanted image noise for improved detail, and a more film like image.

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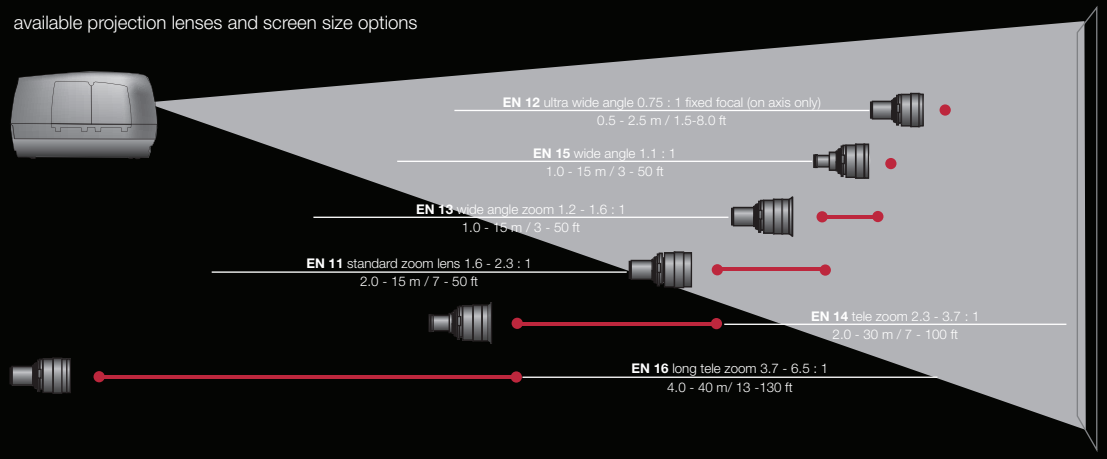
technical specifications	projector unit
display concept	single chip 0.95" 1080p LVDS DLP™ technology 1920 x 1080 resolution (16:9 wide screen) DuArch™ patented illumination architecture dual 7-segment, 5-speed RGBRGBG (NDG) colour wheels
brightness	continuously adjustable 500 - 2500 ANSI lumens
true optical contrast	7500 : 1 (at small aperture setting)
lens aperture control	fully continuous aperture control for all lenses
optical lens shift	vertical: +/- 110% horizontal: +/- 90%
lamp	250W UHP™ x 2, continuously variable power
lamp life	8000 hrs (max) typical in low power setting (2000 hours min typ)
weight	12.6 kg / 27.8 lbs plus lens
dimensions (w x d x h)	510 x 376 x 223 mm / 20.0" x 14.8" x 8.8"

	crystalio II video processing unit
video processing	VXP™ by Gennum or DCDi™ by Faroujda 3:2 and 2:2 inverse telecine
inputs	HDMI (HDCP) x4, with support for embedded digital audio HD-SDI x2 SDTV YPbPr component video inputs x 2, each can be configured as RGBS or 2 composite + 1 S-video SD/ED/HDTV YPbPr component video inputs x 2, one of them can also be configured as RGBHV or RGBS various digital and analogue audio
input formats	accepts virtually any video format, up to 1920 x 1200 resolution
outputs	HDMI (HDCP) x2, BNC x5, configured as RGBHV/RGBS or YPbPr
cable lenght supported	up to 25m / 75 ft
control	10BaseT LAN, USB, RS232,
dimensions (w x d x h)	438 x 348 x 98 mm / 17.2" x 13.7" x 3.9"
weight	9 kg / 19.8 lbs
supplied accessories	IR remote control, 19" rack mount ears for processor, product documentation

available projection lenses and screen size options



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