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 brightness 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 techniques, 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.

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**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.

**Single chip DLP™ with DuArch™ architecture**

The Action! model three 1080 is based on projectiondesign’s patented DuArch™ illumination architecture. 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.

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**1920 x 1080 pixels give six times the screen size with the same perceived resolution.**
Patented DuArch™ dual architecture 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.

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.

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.

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.

The Sealed Optical Architecture 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.

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.
Introducing the world’s most advanced video processor.

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 DCD™ 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 multroom 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

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 multroom 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
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.

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.

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.

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.

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 lengths up to 25 meters are easily manageable. 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 supports 10-bit HDMI video, but uses DVI connectors for mechanical superiority. In addition to the DVI cable, an RS232 cable is required for control.

Usable cable length range at all DVI rates up to 1.65Gbps
Limit of cable length without active equalization at 1.65Gbps

Typical DVI cable gauge
DVI cable length in meters
### Technical Specifications

**Projector Unit**

- **Display Concept**: Single chip 0.95" 1080p LVDS DLP™ technology
- **1920 x 1080 Resolution (16:9 Wide Screen)**
- **Dutch™ 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 Faroudja
- **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/HD 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
- BNC x3, with support for analog video
- Various digital and analogue audio

**Cable Length 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

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### Available Projection Lenses and Screen Size Options

<table>
<thead>
<tr>
<th>Lens Type</th>
<th>Projection Ratio</th>
<th>Distance (m)</th>
<th>Distance (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN 11</td>
<td>Standard zoom</td>
<td>1.6 - 2.5</td>
<td>5.2 - 8.2</td>
</tr>
<tr>
<td>EN 12</td>
<td>Ultra wide angle</td>
<td>0.75 - 1</td>
<td>2.5 - 3.3</td>
</tr>
<tr>
<td>EN 13</td>
<td>Wide angle zoom</td>
<td>1.2 - 1.6</td>
<td>4.0 - 5.2</td>
</tr>
<tr>
<td>EN 14</td>
<td>Tele zoom</td>
<td>2.3 - 3.7</td>
<td>7.6 - 12.5</td>
</tr>
<tr>
<td>EN 15</td>
<td>Wide angle</td>
<td>1.1</td>
<td>3.5</td>
</tr>
<tr>
<td>EN 16</td>
<td>Long tele zoom</td>
<td>3.5 - 6.5</td>
<td>11.5 - 21.5</td>
</tr>
</tbody>
</table>

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