

# Clarity

**A family of creation and playout graphics products, offering the highest levels of graphics sophistication from a single rack mounted device.**

Clarity™ is Pixel Power's family of SD/HD creation and playout graphics products, offering the highest levels of graphics sophistication from a single device. The range offers a set of scalable products and options to meet every broadcasting need and budget.

Clarity products are ideal for live graphics applications in the studio, mobile OB trucks and other venues. With full real-time preview during creation, the Clarity family offers the ultimate solution for graphics preparation and playout.

## Key Benefits

### Reduced graphics creation costs

A highly intuitive and powerful graphics template creation interface enables rapid development of sophisticated 2D and 3D animated graphics. Complex templates containing video, graphics, text and data can be built in minimal time and easily re-used, saving both time and money.

### Accomplished all-rounder

Every Clarity system is a complete graphics creation and playout environment, allowing everything to be accomplished from one device. Add support for HD and SD playout, on single or dual output channels, and it's clear that a Clarity system has the flexibility

to support a host of applications including live studio production, news, channel branding and outside broadcasts.

### Brilliant live graphics

Optimised for the real-time creation, preview and playout of graphics, Clarity systems allow all the elements of a template - video, graphics, text, data - to be updated dynamically during live playout. Sophisticated and unique graphics every time, with no complex and lengthy pre-production.

### Assured 24/7 system reliability

All our graphics processing platforms are designed and tested in-house, ensuring the highest possible build quality whilst avoiding many of the compromises incurred by using multiple suppliers and third-party graphics cards. All our software is based on a set of core modules deployed across the product range, ensuring a robust foundation. This hardware/software combination has been proven in the field by thousands of channels from major broadcasters over many years. Every platform in the range is backed by a comprehensive 15 month platform warranty.



## Variants - keeping it simple

# Variants

The Clarity family offers a range of scalable products and options to meet every broadcasting need and budget.

### Base

Advanced graphics system supporting 2D text and animations, clocks, tickers, optional 2D DVE.

### Clips

Powerful graphics system supporting 2D text and animations, clocks, tickers, 2D DVE, multi-channel video and audio clip playback.

### 3D

Sophisticated graphics system supporting 2D text and animations, clocks, tickers, 2D DVE, video and audio clip playback, 3D text and animations, 3D model clip playback, 3D text and animations, 3D model import, 3D model live texture mapping, 3D DVE.

### Audio Capabilities

Pixel Power production and transmission systems enable a range of sophisticated and flexible audio features to be integrated into the workflow, without the need for additional devices, saving space, cost and time.

#### Synchronise and trigger

Multiple audio and video elements can be synchronised and triggered during playback to create a rich experience, thus enhancing broadcast programming.

#### Duck, mute and mix

Discrete and embedded audio, including 5.1 and Dolby encoded, can be ducked, muted or mixed, enabling insertion of voice-overs and multi-lingual audio.

#### Control and concatenate

Audio clip concatenation and playback can be controlled independently from graphics, locally or via automation, to create dynamic automated announcements during or between programming.

**3D**  
3D model live texture mapping

**Base**  
Multiple 2D animated tickers with live update of data from a number of different sources

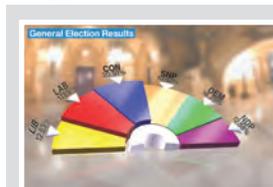
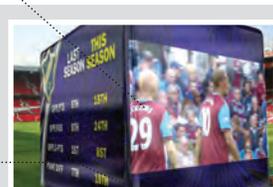
**3D**  
Complex 3D graphics can be created easily and animated with precision and flair

**3D**  
3D DVE effects enhance branding and promos, making them stand out from the crowd

**3D**  
Complex models can be imported from specialist 3D systems (including Autodesk 3DS) or readily available model libraries

**Base**  
2D Logos can be created and inserted easily and then animated using a selection of "canned" real-time effects

**Clips**  
Audio and video clips can be played back from the internal clip store to enhance channel branding and promotion



LIVE SPORTS

LIVE NEWS,  
WEATHER AND  
ELECTIONS

AUTOMATED  
PROMOTION AND  
BRANDING

# Key Features - rich, relevant functionality

# Features

Clarity's feature rich functionality ensures that operators have the tools to create outstanding and captivating graphics.



Clip and 3D variants feature two clip players. Each clip player has a separate video and key channel with each channel having independent 2D DVE's that can play clips seamlessly back to back.

## Clip Players

## Creation GUI

The creation GUI provides the template designer with a powerful set of easy to use tools presented as a set of dockable windows allowing the GUI to be tailored to the task in hand, saving time and reducing complexity. Less frequently used tools can be stored as tabs within windows that activate when the mouse is hovered over them, providing a clear and uncluttered workspace. Users can store their own workspace configurations and load them at start-up.

Our sophisticated yet easy to use data field manager allows data representing text, images and video within a template to be connected to external data sources for automatic updating on-air. Financial data, new ticker data and sports results can all be updated in real-time. Manual entry is not forgotten either; to prevent update errors on-air, template data fields can be restricted to a context relevant set of values during the creation process. The operator then need only select the appropriate value for the named field from a simple drop-down list.

## Dynamic Data Integration

## 3D Animation

In addition to a wide range of pre-configured animations, custom keyframed animations are easy to create on the timeline. 3D objects can be animated by dragging them along a user defined spline, with precise control of the exact dynamics along the path. Complex 3D animated models can be imported from other packages and added to the timeline.

Live SDI input sources can be mapped to object surfaces and then subjected to real-time 2D or 3D DVE, permitting the creation of squeeze backs and other effects. Video clips or graphics animations can be updated live on-air, fully supporting sports, news and shopping channels.

## Live Sources

## Automated Transition Logic (ATL)

The creation of embedded scripts within templates brings the power of standard JavaScript to graphics templates. The built-in editor enables dynamic templates to be created whose data, graphics or animations can update automatically in response to changes within the template. This makes complex animations easy - for example resizing and moving a branding logo if a lower third is on-air or changing the size, shape and color of a bar graph as the data changes.

Creating compelling 3D graphics requires textures and effects to be blended together onto object surfaces. A materials palette allows designers to create materials and edit their properties and then drag-and-drop the new material onto any object in the template. Objects using the same material are automatically updated and the material may be stored for future use in a library. Properties can range from a live input to a texture or image and multiple blend modes allow complex materials to be created.

## 3D Materials

## Automation API

Control of Clarity graphics from third-party applications or systems is provided using an XML-based graphics automation protocol. Accessing this protocol through a COM-based API allows control using a wide range of programming languages, such as Visual Basic or C#. Ease of system integration is ensured through widespread support from automation system vendors for our XML protocol, coupled with our own support of the industry standard legacy RS232 intelligent interface protocol.

Clarity systems eliminate the need for additional audio hardware. Templates can contain multiple audio objects that can be added to the animation timeline and synchronised with video or graphics objects, supporting accurate voice-overs and sound effects. System hardware supports de-embedding, decoding and multi-stage mixing of stereo and multi-channel audio, outputting the result as either discrete AES or embedded audio. Optional internal Dolby modules enable decoding and encoding of Dolby E or AC3.

## Audio and Voice-overs

## Stereoscopic 3D output

Create stereographic templates easily using the same tools and workflow as planoscopic creation. Preview graphics in 3D during the creation process and output as either single frame compatible or dual channel separate left and right eye formats. Real-time adjustment of depth and position allows operators to optimise the stereoscopic effect during transmission.

## Options

All Clarity graphics systems support a comprehensive range of hardware and software options, allowing each system to be tailored to specific needs. Hardware options provide support for Dolby E encoding/decoding, an internal time code reader and custom RapidRecall keypad. Software options allow incremental addition of features such as subtitling, 2D Cell animations, DVE, clocks, internal DSK and many more.

## One platform - many applications

# Applications

Clarity graphics systems are flexible enough to support all the varied needs of live production - in the studio, at the game or in the OB truck.

### In the studio



For news and live studio events, such as quizzes and game shows, sophisticated and highly dynamic 3D graphics are a key ingredient. Clarity's powerful 3D creation interface

and toolset allows complex data driven 3D animations with realistic lighting and effects to be easily created. 3D objects in a variety of file formats can be imported and live sources mapped onto surfaces. Our client-server solution integrates our graphics systems with MOS newsroom automation systems including Avid iNews® and AP ENPS®

Automated Transition Logic (ATL) enables complex animation sequences to be created using powerful in-template scripting, without the need to create many complex interlinked timelines. To avoid errors during playout, simple operation is vital when dealing with complex graphics.

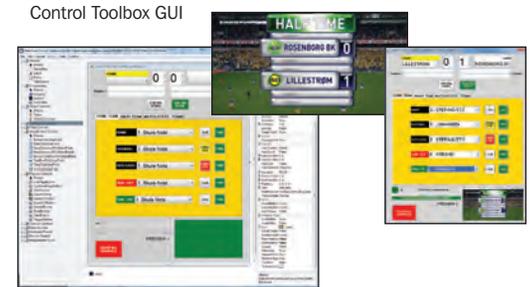


### At the game

For sporting events, creating compelling, informative and up-to-the minute visual information is at the heart of spectator satisfaction. Clarity's API enables interfacing to live event data and statistics, to create leader boards, results tickers and team profiles. Relevant data driven graphics including animated clocks and timers can be produced for both in-venue signage and for broadcast transmission.



Operators may choose to control the playout from a dedicated interface created using Control Toolbox or utilise the built-in Playout Controls window. This window allows the playout sequence of template pages and triggering of animation sequences to be controlled by direct entry of the page number on the keyboard or via a dedicated custom keypad when limited space is available.



### In the OB truck



Increasing demand for live content is being met by growing numbers of sophisticated OB trucks. To meet viewer expectations and to avoid incurring additional production costs every facet - including the graphics - must be of the highest quality. Clarity systems offer 'best of breed' graphics and are available in a compact 2RU form factor to maximise performance and minimise space. Clarity's new, high performance cooling system significantly reduces noise, and its integrated display panel provides clear visibility of status - both highly useful in the confines of a typical OB truck.

