



Truly lifelike 3D™  ...without the glasses.

SoliddD Imagery: FAQ

SoliddD provides the underlying, patent-pending technologies and processes for its superior-quality, truly lifelike™ autostereo (glasses-free) imagery. We go so far beyond previous attempts at autostereo, imagery created with our technology deserves a different name. We call it *SoliddD imagery*. This FAQ answers the most common questions regarding SoliddD imagery.



Technical

What kinds of displays or printing can work with SoliddD imagery?

SoliddD images are already being produced for still photos, and the technology is available for licensing to manufacturers of motion-video LED modules, LCD panels of all sizes, OLED panels, and laser projectors. They can be used as posters and billboards, designed for promotional media such as wrapping or boxes, published in magazines and books, and used as full-motion video for TV, movies, and gaming.

What are the minimum and maximum distances from the SoliddD image? Can the image be viewed from a range of distances?

There are no minimum or maximum distances from the display, as it can be “tuned” for any distance. Once a specific display has been aimed at a viewing range, it will then have defined minimum and maximum viewing distances. For example, an image that is tuned for an ideal viewing distance of eight feet will look best between the distances of four feet and 15 feet. At closer than the minimum, it becomes hard to converge one’s eyes on the image. At farther than the maximum, the image will not have as much depth—though it will still look 3D if you move your viewing location slightly. This is a product of human perception—as distances get farther, people do not perceive normal depth and objects become flattened. This becomes particularly apparent at viewing distances longer than 30 feet. SoliddD systems are, however, capable of showing stereo depth at much greater distances than 30 feet; they can be “tuned” for viewing distances of hundreds of feet.

Can SoliddD imagery be viewed from a range of angles, or only one fixed position?

Each SoliddD image can be viewed from a wide range of positions. The range that shows the best view, commonly called a “sweet spot,”—is typically 120-170 degrees of horizontal movement. This is far larger than most 3D technologies, and hardly a “spot.”

SoliddD images have a very wide vertical viewing range, with no significant change to the perceived 3D effect.

Technical

How much depth can a SoliDDD image show?

Maximum depth is related to the size of the sweet spot needed, the viewing distance, the thickness of the medium, and the number of views.

In practical terms, for a TV, maximum depth is about six feet in full focus. For a billboard it could be hundreds of feet. For a book, smartphone, or laptop display, it would be about two feet. In each case, half of the depth would be negative parallax (the amount the picture projects in front of the image plane) and half would be positive parallax (the amount the picture projects back, behind the image plane).

For those occasions when it is appropriate for a depicted object to go out of focus (such as when a ball is thrown forward at the viewer), greater depth in partial focus is easily achieved. Focal tolerances are so great, however, that most viewers will believe objects are in focus at greater depths than those discussed here.

Does the viewing distance affect the possible size and area of the SoliDDD image? Could you do wall-size displays that are viewed up close? Very small images meant to be seen in stereo from far away?

It would be easy to do a wall-sized display to be viewed up close. Small SoliDDD imagery seen from far away will look small, so demand for that effect is likely to be minimal. A SoliDDD image meant to be seen in stereo from far away should probably be large (such as a billboard).

Billboards may also be designed to combine optimum viewing distances. Take, for example, a billboard that is 14 feet high, with its lowest edge near the ground, and placed next to a sidewalk. The upper section of the billboard is tuned for 50 feet, for those looking at the billboard from across the street. The bottom imagery is tuned closer (2-4 feet) with the ability to see around objects as you move past. Either kind of imagery could also be tuned to have many views to create motion (such as a character with depth walking alongside the viewer).

What are the minimum and maximum sizes possible?

There are no practical limitations to the size of the SoliDDD image, aside from those of the available manufacturing techniques for 2D static and moving image displays.

Do different people at different angles see the same thing?

Yes, but from a different visual perspective, just like when two people look at a real object.

Is it possible to have "off screen" content (e.g., can a SoliDDD image act like a window by displaying shifting content at the margins to act like a window as you walk past it)?

Yes.

How sturdy is the technology?

SoliDDD images are solid! They are very sturdy and use the same protection as current 2D signs and LED displays. Extremely bright sunlight can fade photographs both in normal 2D imagery and in SoliDDD's 3D technology. As with normal photos, UV filtering protects against such fading.

What would be needed to allow for outdoor use and protection from the elements in extreme weather conditions?

UV filtering and glass and acrylic covers.

Can SoliDDD images be used to create an autostereo 3D cave, cube, column, sphere, or domed ceiling?

Yes.

Would this be done by juxtaposing flat-panel screens or can the screens be curved without distorting the image?

Both ways are possible for both static and moving images.

How are SoliDDD images produced? To what extent does this process differ from production of 2D images and video, two-view (left and right) 3D images meant to be viewed with special glasses?

It is easy to generate SoliDDD images using computer generated imagery (CGI). 3D elements can be produced in the normal way for CGI with minimal consultation with SoliDDD. Multiple views of the underlying image can then be generated. Photography from life requires either multiple views of an object from a single camera or multiple cameras taking multiple views of live action. Existing 3D photography recorded as left and right images with parallax differences requires a conversion, either through SoliDDD or a third-party, to assure the correct output format. Conversion of existing 2D and left-right 3D photography to SoliDDD imagery can be more or less effective depending on the information in the source material.

SoliDDD conversion software will soon be available.

How are SoliDDD images projected or displayed? Are there differences for front lighting and backlighting?

For static images, the technology can take advantage of backlighting or a reflective coating (for lighting from above, below, or from the sides).

It is possible to combine still and moving images in the same SoliDDD image display?

Yes.



Operational

What is the structure of a project team to produce a final product?

SoliDDD licenses its technologies to others who design and build displays. We provide reference designs and consultation to our licensees. Several manufacturers are prepared to produce lens materials based on SoliDDD's technology. Digital Factory is among the manufacturers licensed to produce enclosures to our specifications.

How easy is it to change the SoliDDD image in a static display? Can you just place a new image behind existing lenses or does a completely new display have to be built again from scratch?

It's simple, in either of two ways:

- The SoliDDD image graphic is printed on the back of the lensing or permanently laminated to it, and always handled as a package. This is the way we suggest producing a one-time display, or images for publication.
- The graphic and the lensing are two separate pieces. The lensing is maintained in a box or other structure while the graphic behind the lensing is replaceable. Our patent-pending system assures the required high level of accurate positioning for this to work. This is the most economical way to supply a series of 3D autostereo SoliDDD pictures to a fixed location, such as a billboard or a seasonally-based wall in a retail outlet. Ads and other displays can thus easily be changed for each ad flight or seasonal change in promotions.



●●●●● Market

What differentiates SoliDDD images from other glasses-free 3D available?

SoliDDD delivers the best glasses-free 3D experience available, whether static or moving image (direct-view or projection), with vastly greater depth, wider angle of view, and overall image quality.

*Take the next step. Talk with us directly, or have your advertising/
marketing agency contact us.*

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