

## Index

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Here is a list of the major topics in the 3Deep Help system. Choose any subject and click on it to jump to the appropriate help screen. Use the Search command to locate other topics, including instructions for configuring 3Deep to work with specific graphics applications.

[How It Works](#)

[3Deep Control Panel](#)

[Brightness Adjustment](#)

[Monitor Gamma](#)

[Black Point Measurement](#)

[Color Reference Card](#)

[White Point Measurement](#)

[Saving your monitor's data](#)

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### *Topics to Read First*

[For Best Results](#)

[Answers - Right and Wrong](#)

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### *Messages/Warnings*

[High Black Point Value](#)

[Exit Warning](#)

[Resolution Too High for Monitor](#)

[Unusually High Gamma Warning](#)

[Disclaimer](#)

For Help on Help, Press F1

## **Navigating 3Deep**

Navigating through 3Deep is easy, especially if you use a mouse. If you don't have a mouse, use the Tab key to move forward and Shift+Tab to move backward to the button, listing, or color square you want. Once you've highlighted your choice, hit Enter.

## How It Works

3Deep ensures that your monitor displays 3D games with accurate lighting and shading ([gamma](#)). It delivers the exact game environment that the game developer intended you to experience. It will work with any game that defines accurate gamma and across platforms and video cards.

Using 3Deep you make a series of choices about colors displayed on-screen, 3Deep then uses this information to characterize your monitor so that it knows what gamma adjustments are necessary during game time.

3Deep communicates with the game and sets a precise combination of red, green and blue (primary colors) gamma values as needed to display perfect 3D imagery.

Since the calibration choices you make are subjective judgments, 3Deep may not be as precise as the more expensive devices (colorimeters and densitometers) used by some graphics professionals. However, 3Deep is highly accurate *and* is able to communicate with 3D games making significant improvements in matching what you see on your monitor to what the game developer intended.

You should re-run 3Deep calibration whenever you change the settings on your display.

## Brightness Adjustment

The objective of this screen is to adjust the brightness (☼) control on your monitor so that the black displayed is a nice deep, dark black, without a faint aura. But, don't make your monitor so dark that colors or whites are gray and muted. Both black and white should look crisp.

Please be careful to only adjust the brightness (☼) control. The contrast (☼) control should remain at its brightest setting for now.

If your on-screen brightness control partly conceals the 3Deep image, you can shrink the display size of your monitor slightly so that there is a black border surrounding the active area. Make this border a deep, dark black, without a faint aura.

## Monitor Gamma

The objective of this screen is to determine which square looks most similar to the background. Pick the spot where you feel the match is best. You can also choose a spot between two boxes. (Minor errors will not be significant.)

Try to unfocus your eyes by squinting or removing your glasses, if you wear them, to sense an overall tone and not to notice the colored stripes. It may help to back away from the screen rather than examining it too closely.

The path through the display looks like this:



3Deep uses the information from this screen to measure the monitor's [gamma](#) for each primary color. Gamma is a measure of the relationship between the brightness of the color you see on your screen and the amount of voltage the system is feeding to the monitor.



## Color Reference Card

Turn on your room lights as brightly as possible for the next two steps of 3Deep calibration. After the process is complete, you can return your lighting to its normal state.

You should now remove the Color Reference Card (the blue thing with the holes) from its white cardboard backing and adhere it to the face of your monitor in the space indicated. If the card won't adhere to the screen, rub your hand over it to smooth out any bubbles. If it still won't adhere, ensure that your monitor is clean and free of dust. Also, clean the back of the clear vinyl with alcohol.

Some rooms have mixed lighting or varying amounts of sunshine during the day. A single type of bright illumination will yield best results, so adjust your ambient lighting accordingly. Due to variations in daylight over the course of the day, it is best not to use natural light, even if that is the light you normally work under. Close your window shades, if possible, and bring an extra lamp of the appropriate type to your workspace. You can return to your normal lighting after this step.

Turn the contrast (☛) control all the way down, then slowly up. Find a setting where the brightness of both the Color Reference Card and the screen seem about the same. (Try to match *brightness*, not hue or saturation). Focus on both edges of the card simultaneously, not on the holes. There is no right answer; just do your best. If the card is too dark to match the monitor, bring a lamp of the appropriate type closer to the face of the monitor.

**Warning:** Be careful not to change the setting of the brightness (☼) control when you adjust the contrast (☛) control. If you do so accidentally, you will need to re-run 3Deep from the beginning.

## Saving Monitor Data

3Deep is now saving the information it has gathered about your monitor. Remove the Color Reference Card from your screen, and adjust your contrast (●) control to a comfortable level.

At this time you can also return your room lighting to its usual state, if necessary.

**Warning:** Do not change your brightness (☼) control again. If you do, your gamma correction will be inaccurate.

## High Black Point Value

You have chosen a value that is very high. This may mean that your brightness (☼) control is set too low. If you do not increase it, the number of colors your monitor can display (its dynamic range) will be reduced. For the best viewing results with your monitor, choose the Reset button in this warning dialog box to return to the Brightness Adjustment screen. Increase the brightness setting of your monitor so that the white is a crisp, clean white, not straying into gray. Then proceed with 3Deep calibration.

## **Exit Warning**

If this warning appears, you have tried to leave 3Deep before the calibration has been completed. If you quit now, all the data gathered will be thrown away, and you will have to start over.

## Disclaimer

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## For Best Results

Here is a collection of tips and warnings that will help 3Deep give you the best 3D lighting and shading effects on your monitor.

Let your monitor **warm up** for at least 30 minutes before beginning the calibration. This process allows the colors to stabilize.

Run 3Deep at least twice a year for best results.

If you have a **third-party monitor calibration** system installed (e.g., EFiColor, AGFA FotoTune, or another), use either that system or 3Deep. **Do not use both calibration systems.** Using both systems will miscalibrate the monitor. Search 3Deep [Help](#) for instructions for your application.

If your monitor has some type of color adjustment controls, adjust them to your liking first, **before running 3Deep.**

If your monitor has a [degauss button](#) press it before you calibrate. If you don't have one, then your monitor has an automatic degauss cycle that works when you turn your monitor off and then on again, even if there is no outward indication of it.

Some work environments have **more than one type of light.** A single type of light will yield the best results, especially during the last two steps of 3Deep calibration, in which you adhere the [Color Reference Card](#) to the screen. At these steps, adjust your room lighting as described in the linked Help topic to get the best results. After completing all of 3Deep's color choices, you can return to normal room lighting.

## White Point Measurement

Choose the square where the color on the screen best matches the color on the [Color Reference Card](#). Try to consider only color (hue), not brightness or saturation. If none of the squares seem to match the card, bring a lamp of the appropriate type closer to your workspace and make sure the Color Reference Card is brightly illuminated. If the pointer is hard to see behind the card, use the arrow along the edges of the card to point at your selection.

You must choose a specific spot; however, it's OK if the color match isn't exact.

This measurement helps 3Deep determine the [white point](#) of your monitor, that state in which the three primary colors are balanced to produce a neutral white.

## Additive Color

The method used by your monitor to form colors is called the "additive method." Additive color is the addition (sum) of red, green and blue "lights." On the screen of the monitor you will find either microscopic dots or rectangles of red, green, and blue phosphors. (Phosphors convert the stream of electrons aimed at the screen to red, green, or blue light.) At a distance, your eye adds the light from the little red, green, and blue dots into colors depending on the intensity of the individual red, green, and blue phosphors.

For the skeptic: take a magnifying glass and look at the various colors on your monitor. You will notice that **all** colors are combinations of red, green, and blue light.

## **Answers - Right and Wrong**

3Deep assumes that you read and follow the instructions on screen. If this assumption is true, you will notice a significant improvement in the way 3D games are displayed after calibrating your monitor with 3Deep. Assuming you do your best and perform the tasks on **every screen**, there are no wrong answers.

3Deep measures the color on-screen as you see it. This will always be "right" by definition if you perform every task requested to the best of your ability.

### **Regarding users who are partially color blind:**

There is no evidence that 3Deep will provide an accurate color match for people with various types of color blindness. But it is clear, if you carefully follow the instructions on screen, even if your color eyesight is imperfect, the output will be tailored to account for the colors you see and report to 3Deep.

## **Black Point Cutoff**

The black point cutoff of your display is the amount of video signal just before you begin to see color on screen. By telling 3Deep the faintest color patch you see on-screen, you will determine the amount of video signal which looks black versus that amount of video signal where the color is visible.

The black point cutoff changes when you change your brightness (☉) control. So once you set this control with 3Deep, don't change it again without recalibrating your monitor with 3Deep.

## Gamma

Gamma is a measure of the relationship between the brightness of the color you see on your screen and the amount of voltage the computer is feeding to the monitor.

The [3Deep Control Panel](#) allows you to tweak your game's gamma according to your preference.

For games that don't support 3Deep (because they don't specify accurate gamma) there is also an option for 'Default System Gamma'. This sets your system to a gamma level that seems to be preferable for many 3D games.

## **Copyrights**

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## Technical Support

Please refer to the [Troubleshooting](#) sections of your manual and this Help file, or click on the [Search](#) button in these Help screens, to find answers to common questions.

For other questions, contact Sonnetech via telephone, fax, or internet:

Internet:	<a href="http://www.colorific.com/3deep">http://www.colorific.com/3deep</a>
Voice only:	(415) 957-0152
Fax:	(415) 957-9942
E-mail:	<a href="mailto:info@colorific.com">info@colorific.com</a>

## **Uninstalling 3Deep**

To uninstall 3Deep, click the Windows' Start button and choose Settings/Control Panel. When the Control Panel window opens, double-click on Add/Remove Programs. Highlight 3Deep in the list of programs, then click the Add/Remove button.

## **Degauss Button**

To degauss means to demagnetize.

The color purity of your monitor can be affected by magnetic fields in your work environment. By degaussing, you negate these effects and restore the color balance of your monitor. Many monitors do not have a degauss option because they degauss automatically each time they are turned on.

An interesting fact for trivia fans: When many monitors are color balanced in the factory, they are done so with the monitor facing east.

## **Resolution Too High for Monitor**

3Deep displays carefully calculated test patterns based on the size of your display and the resolution selected by your Windows video driver.

Each monitor is designed with a certain dot spacing, called the monitor "dot pitch." Often the dot pitch of a monitor is .31mm, .28mm, or even as small as .26mm. Smaller is not necessarily better for all applications.

If the resolution selected by your Windows video driver is so high that your video card might be trying to draw dots that are smaller than the dot pitch of the monitor, then 3Deep will display a warning.

If you choose to ignore this warning, you may find that 3Deep's test patterns on screen are incorrect. This will mean that 3Deep will not work properly. We suggest that you quit 3Deep, choose a lower resolution for your video card, and recalibrate. Then, if you desire, you can change back to the higher resolution. 3Deep will remain on, unless you turn it off.

By the way, choosing a lower resolution may also improve the focus of your monitor for all applications, not just 3Deep. If your video driver is trying to address more dots than actually exist on screen, image quality is less than the best your monitor can provide.

## Unusually High Gamma Warning

Your task at this screen is to pick the colored square that disappears into the background. If you receive this warning message, it means that the gamma your monitor is displaying is very high relative to its factory settings.

The usual cause for this problem is a setting in the video driver. Many video card control programs have a selection called "Gamma." This gamma selection lets you select the gamma curve to use for your display. (Or, some video cards have hardware-based colorimeters which automatically set the gamma for your display.)

If you receive this warning message, your video card has set the gamma to an unusually high level. Use your video card control software and find the "Gamma Control." **After selecting that control, reset your gamma to 1.8.** See the manual accompanying your video card for instructions about how to do this.

If your video card does not have some way to reset the gamma, then you should select the "Continue" button in this warning box. 3Deep will try to color match between screen and printer as best it can given the unusually high gamma in your computer's video subsystem.

## **Color Controls on the Monitor**

Some monitors have color controls on their control panels. If you like to use these controls make your adjustments before running 3Deep.

## **Remove Reference Card**

You should now remove the 3Deep Color Reference Card from your screen. Choose "Continue" to save the information that was collected about your monitor.

Adhere the 3Deep Color Reference Card to its white cardboard backing and store it for future calibrations. The cardboard backing protects the card so that it will adhere to your screen easily. If it becomes dirty and will not adhere, clean the back of the card with rubbing alcohol.

At this time you can also return your room lighting to its usual state, if necessary, and adjust the Contrast control on your monitor to a comfortable level. However, DO NOT change the monitor's brightness control. If you do gamma correction will be less accurate.

## **Sixteen Color Notice**

Windows was intended to be run in 256 color mode on your PC, not 16 color VGA mode.

3Deep cannot run in 16-color mode. To change to a different color mode, click on Windows's Start button and choose Settings/Control Panel. When the Control Panel window opens, double-click on the Display icon. Click on the Settings tab and choose 256 colors (or higher) from the Color Palette list. 3Deep will then run fine.

## **3Deep Control Panel**

To access the 3Deep Control Panel, open the Control Panel from the Settings group in Window's Start menu and click on the 3Deep icon, or right click on your desktop and select the Properties menu to launch the Display Properties dialog where the 3Deep Control Panel can easily be found.

### **TWEAK**

The 3Deep Control Panel allows you to tweak your display's gamma according to your preference. Perhaps you like your games a little lighter or darker than they were intended to be. That's your decision! Move the 'Tweak' slider and watch the gamma change in the 'After' section of the graphic image.

### **DEFAULT SYSTEM GAMMA**

For games that don't support 3Deep (because they don't specify accurate gamma) there is an option for 'Default System Gamma'. This sets your system to a gamma level that seems to be an improvement for many 3D games\*.

### **CALIBRATE**

The 'Calibrate' button allows you to rerun the 3Deep calibration. You'll want to do this if you fiddle with your monitor controls after you ran 3Deep calibration. It's a good idea to run it every six months or so just for a tune-up.

### **HELP**

The "Help" button within the Control Panel is a handy way to access 3Deep Help screens.

\* If your game just doesn't look right ask your game developer if they support downloadable gamma ramp. This is what is needed for accurate gamma display in your 3D games. Perhaps they have a patch for your game that enables gamma correction.

## Room Lighting Selection

At this screen, you must inform 3Deep about the current room lighting. This lighting selection only relates to the lighting now, while you are running 3Deep. After you finish running 3Deep, you can adjust your room lighting when necessary.

If your current room lighting is of the fluorescent type, you must determine if you have Cool White Fluorescent lights (the most common type) or Daylight Fluorescent lights (these have a bluer tone than regular fluorescent). **Look on the light itself for a marking. If you don't see any, choose Cool White since that is the most common type.**

## Gamma Ramp Notice

Windows includes a feature called DDIGammaRamp. Many video cards support this feature of Windows. If your video card and driver *do* support it, then 3Deep can provide you with the ability to change the [white point](#) and [Gamma](#) of your monitor to optimize it for various tasks. If you do not have this functionality, then your currently installed video card or it's driver does *not* support this feature.

Contact your video card maker and request their updated video driver. Often the newer drivers support this feature.

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***See Also***

[Contact Your Video Card Manufacturer](#)

## Contact Your Video Card Manufacturer

If you receive a warning message about your video card not supporting "[DDIGammaRamp](#)" make sure you have the latest video card driver.

Many video card makers and computer makers have websites, from which the latest video card drivers can be downloaded. If you do not have internet access, check the manual that came with your video card or system for driver update information.

## **Monitor Already Corrected**

Your monitor is already being color-corrected by Colorific. In order to recalibrate, Colorific will now turn off all monitor color correction.

## Troubleshooting

Troubleshooting tips can be found by using the Search command to find topics that relate to your question. Please scan help file topics before contacting [Sonnetech Technical Support](#).

## **White Point**

The color displayed on the monitor with max amounts of red, green, and blue light is called the "white point." In actuality, monitor "white" is not white at all; it varies from yellow to blue. In the real world you are not aware of the "color" of white because your visual system constantly adapts.

