

GAME TONIGHT

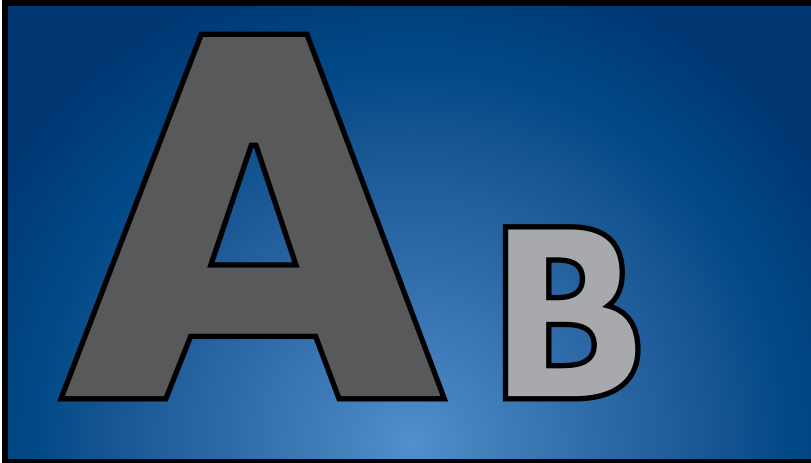
VIDEO DISPLAY CONTENT CREATION GUIDE

THIS GUIDE PROVIDES
CONTEXT FOR EFFECTIVE
DESIGN PRACTICES AS
THEY RELATE TO LED DISPLAY
GRAPHICS AND ANIMATIONS.

CONSIDER THESE GUIDELINES WHEN CREATING ARTWORK FOR LED DISPLAYS.

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**FIRST ELEMENT, FOLLOWED BY SECOND ELEMENT
VERY CLEAR ON WHAT IS MOST IMPORTANT**



FOUR CONFLICTING ELEMENTS, NOT CLEAR ON LEVEL OF IMPORTANCE

LAYOUT

HIERARCHY OF ELEMENTS ON SCREEN

- **VISUAL PRIORITIZATION OF THE MESSAGE**
- **DEFINE WHAT YOU WANT TO COMMUNICATE**
- **ENSURE MOTION DOES NOT INHIBIT READABILITY**

The most important principle for creating effective content is visual prioritization of the message, or hierarchy of communication.

People can't hear and understand four messages at once; they can't see and understand four messages at once, either. Define the items you want to communicate and prioritize each piece in order of importance.

LAYOUT

PRINT vs DIGITAL

- **PRIORITIZE FOR AN EFFECTIVE MESSAGE**
- **ELIMINATE UNNECESSARY ELEMENTS**
- **CROP IMAGES TO CREATE INTEREST**

A traditional print method is to put all of the information into one frame or piece of artwork. Digital displays can become overloaded with information, when people add every detail they can think of. Determine what is crucial and what elements can be eliminated while still effectively communicating the message.



As you create your digital content, think about what is most important, or what is the primary message. Once you decide the goal of your message, reduce your elements to the most important pieces of information (including both text and graphic elements).

To further help viewers, make the most important piece of information the largest and brightest.

TOO MANY DIFFERENT ELEMENTS TO FOCUS ON

CONFLICTING & OVERLAPPING IMAGES



ELIMINATED UNNECESSARY ELEMENTS

GREATER CONTRAST AND DROP SHADOWS INCREASE READABILITY





Easy to read

BOLD LETTERS, LIGHT COLORED TEXT WITH STROKES AND DROP SHADOW



Hard to read

THIN LETTERS, DARK COLORED TEXT

TYPOGRAPHY

ARRANGEMENT & APPEARANCE OF TYPE

- **USE LARGE, BOLD FONTS**
- **ADD STROKES OR OUTLINES TO LETTERS**
- **DROP SHADOWS HELP INCREASE CONTRAST**

The color, appearance and location of the letters can help to communicate the message. Large, bold fonts should be used to make it easier for your audience to read and comprehend the text from other elements on screen. Try various fonts to find the one that works best and is easiest to read in your layout.

TYPOGRAPHY

PRINT vs DIGITAL

- **AVOID SCRIPT AND UNUSUAL FONTS**
- **USE TWO FONTS OR FEWER IN EACH**
- **SHOW A SMALL NUMBER OF WORDS ON THE SCREEN AT ONE TIME**

Another difference between traditional print and digital media is that digital communication is more transient. The content moves at a pace beyond the viewer's control. To be most effective in a digital medium, spread the message out across several frames or screens in a sequence. This allows you to keep the text size large and quickly readable, compared to trying to fit the whole message into one frame.

TOO MANY DIFFERENT ELEMENTS TO FOCUS ON

TOO MANY DIFFERENT FONTS

USING SCRIPT AND DISPLAY FONTS

TEXT IS TOO SMALL



FRAME ONE



FRAME TWO



FRAME THREE



SPREAD THE CONTENT ACROSS MULTIPLE FRAMES. ONLY USE A FEW ELEMENTS IN EACH FRAME. USE EASY TO READ FONTS THAT HAVE A HIGH CONTRAST WITH THE BACKGROUND.

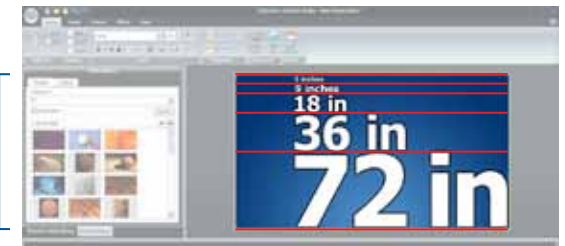
TEXT SIZE

POINTS DON'T EQUAL PIXELS

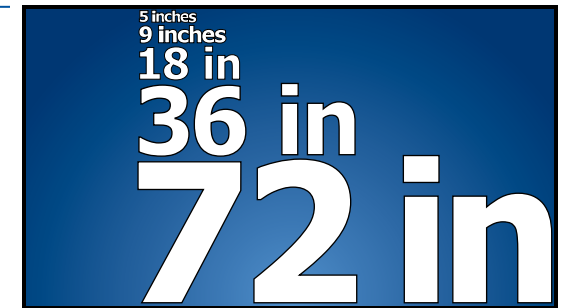
Note that a font's point size follows print standards. For example, an 8-point selection is smaller than a 24-point selection, but 8 points does not equal 8 pixels.

To determine the size of text, set the type on screen knowing that the height of your display in feet is equal to the height of your workspace on the monitor.

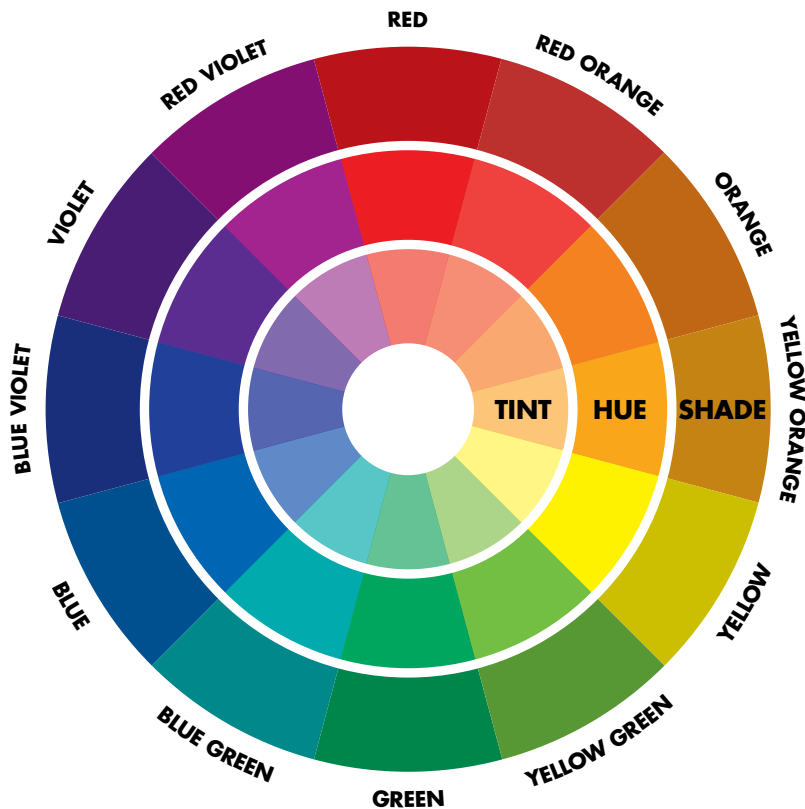
12 FEET TALL ON SCREEN



12 FEET TALL VIDEO DISPLAY



DISTANCE FROM DISPLAY (FEET)	MINIMUM TEXT HEIGHT (INCHES)
5 – 50	1 – 2
50 – 200	2 – 5
200 – 300	5 – 7
300 – 400	7 – 10
400 – 500	10 – 13
500 – 600	13 – 15
600 – 700	15 – 18



HUE: THE PURE COLOR

TINT: HUE WITH WHITE ADDED (LIGHTER COLOR, LESS SATURATED)

SHADE: HUE WITH BLACK ADDED (DARKER COLOR, MORE SATURATED)

**FOR DIGITAL DISPLAYS USE COLORS FROM THE HUE AND SHADE RINGS.
TINTS ARE LOW CONTRAST COLORS AND SHOULD BE AVOIDED.**

COLOR

COLORS INTERACT WITH EACH OTHER AND CREATE CONTRAST

- CONTENT NEEDS TO STAND OUT FROM THE BACKGROUND
- DARKER BACKGROUNDS ALLOW CONTENT TO STAND OUT
- CONTENT SHOULD BE BRIGHT AND USE SATURATED COLORS

Take full advantage of your display's color capability by using rich, vibrant colors. The color wheel shows a full range of colors. The saturated vibrant colors appear in the outer two rings. Pastels and low-contrast colors don't work well in digital displays and should be avoided.

COLOR

CONTRAST

Contrast is vital to your design because it helps the viewer distinguish between design elements, making the content more appealing and easier to read on the screen.

When contrasting images are featured on LED displays, colors appear more vibrant and images pop. For best contrast, use tonal contrast (or value difference) instead of only color difference.

Tonal contrast can be measured with Adobe® Photoshop® software. Simply convert your artwork to grayscale to see the difference.

COLOR



GRAYSCALE



HUES OF YELLOW AND DARK BLUE HAVE DIFFERENT TONAL VALUES. WHEN CONVERTED TO GRAYSCALE, THE CONTRAST IS EVIDENT.

COLOR

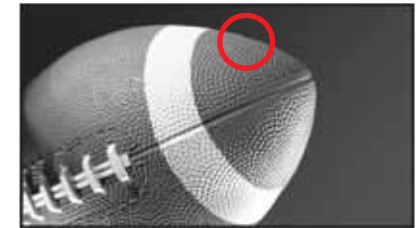


GRAYSCALE

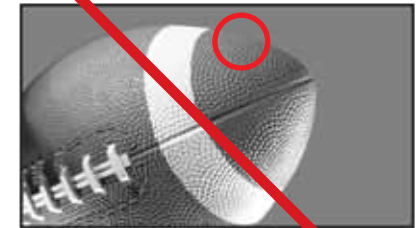


HUES OF RED AND GREEN HAVE THE SAME TONAL VALUE (BAD CONTRAST). THIS PRODUCES A DISCORD OR VIBRATING EFFECT, MAKING IT DIFFICULT TO DETERMINE THE TEXT FROM THE BACKGROUND. WHEN CONVERTED TO GRAYSCALE THERE IS ALMOST NO CONTRAST.

GOOD TONAL CONTRAST



POOR TONAL CONTRAST



AFTER TURNING THE CONTENT TO GRAYSCALE, CAN YOU STILL EASILY DISTINGUISH THE IMAGE OR TEXT?

ARTWORK

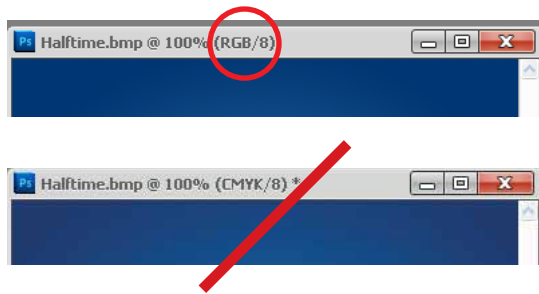
CONTENT DIMENSIONS

- **ARTWORK SIZED IN PIXELS, NOT INCHES OR FEET**

Content dimensions should equal the pixel resolution of the display the content is designed for, not the physical dimensions of the display. This will ensure that the file is adequately sized and the content does not appear distorted on the display.

COLOR MODE

Create and save content for digital displays in RGB (red, green & blue) color mode. This is the same mode as your TV or computer. CMYK (cyan, magenta, yellow & black) is used for high-resolution printing. You can check the color mode of artwork by looking at the title bar of the image in Adobe® Photoshop® software. The color mode is after the filename.



ANIMATIONS

Make sure motion does not get in the way of comprehension or readability. Hold text long enough for viewers to read and comprehend the message.

CONTENT LENGTH

Optimal length for a single message is 5 – 10 seconds. 5 – 10 seconds allows the message to be conveyed effectively to the greatest number of spectators before their attention is focused elsewhere.

LOOPING CONTENT

Content which is intended to be played continuously should loop or transition smoothly one time from end to beginning to provide a seamless loop for consecutive playback.

AVOID WHITE BACKGROUNDS

In digital displays white blends all colors and uses the most light. For that reason, white or very light colors may strain the eye—an undesired response. Even though Daktronics digital displays are fully capable of producing white and pastel colors, Daktronics does not recommend using them.

Take advantage of the display's vast color capability to choose colors that are attractive and pleasing to the eye.

A WHITE BACKGROUND ON A DIGITAL DISPLAY IS VERY DISTRACTING, ESPECIALLY DURING NIGHT TIME VIEWING

WHITE BACKGROUNDS WILL DROWN OUT THE MESSAGE, MAKING IT HARD TO READ



BLACK AND OTHER DARK COLORED BACKGROUNDS ARE EASIER TO READ



FILE FORMATS

FORMAT RECOMMENDATIONS

The control system is designed to support a wide variety of the most commonly used image, animation, and video file types. There are three levels of file support, they are outlined below. The chart details the support for common media file types. File types which are listed in boldface are recommended.

NATIVE PLAYER SUPPORT (NPS)

File types categorized as Native Player Support can be loaded directly onto a supporting digital media player for playback. No manipulation or conversion of these files is necessary.

CONTENT STUDIO SUPPORT (CSS)

File types categorized as Content Studio Support files can be imported into Content Studio for inclusion into media presentations and will be converted to a native player support file format when saved.

File types with an (*) notation are able to be opened and edited within Content Studio as opposed to importing them into a presentation.

NOT SUPPORTED (-)

File types not categorized as Native Player Support or Content Studio Support are not able to be played by a digital media player or imported into Content Studio without being converted into a supported file format.

To convert Not Supported files into a supported format, see the **Video File Conversion Appendix** in the Show Control manual, located in the help menu of Display Studio.

AVI	CSS
BMP	NPS, CSS
CMP	-
CUR	-
DIB	-
EPS	-
GIF	CSS
ICO	-
JPG	NPS, CSS
M2M	CSS*
MAC	-
MOV	-
MP4	CSS
MPG	CSS
PCD	-
PCM	-
PCT	-
PCX	-
PDF	-
PNG	NPS, CSS
PSD	CSS
RAS	-
SWF	NPS
TGA	NPS
TIF	NPS, CSS
VMPF	NPS, CSS*
VMPL 1.x	NPS
WMV	-

SUPPORT

VIDEO FILE SUPPORT

For further, more detailed information on video file support, including video file conversions and video codec compression settings see the **Video File Conversion Appendix** in the Show Control manual, located in the help menu of Display Studio.

Visit dakfiles for transcoding tools:

[HTTP://DAKFILES.DAKTRONICS.COM](http://dakfiles.daktronics.com)

Click on: Video_Products > Tools > VirtualDub

FOR MOV FILE CONVERSIONS:

Quicktime_VD_v0.2.0.0_bin.zip

FOR MPEG/MPG FILE CONVERSIONS:

MPEG2.zip

FOR WMV FILE CONVERSIONS:

vdub_wmv_plugin.zip

FILE NAMING

The file names for content files cannot exceed 32 characters.

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