

PROTO

Digital Content Creation Guide

Overview

Proto's holographic illusion is based on the use of forced perspective – aligning 2D video to the proportions of the 3D box (shadows, floors, lighting, depth, viewing angles, etc.).

To help deconstruct what is used to create the 3D illusion from a 2D video feed, please see below for sample files of various types of 3D objects and people within a Proto.

Example Files: https://www.dropbox.com/sh/Opztjtdgt9dbjgo/AADyPPJUMArSi_bw10HUE5KXa?dl=0

For digital production setups, we strive to base everything off of a real-world setup. Thus, we use our physical production setup as a starting point. We use an 85mm lens on a full frame sensor (rotated for a vertical orientation) and bump it up to 115mm if we're creating something abnormally deep on the z-axis that needs some compressing.

Negative space around a character or object helps visually place the item within the Proto – anything that clips the edges of the frame tends to break the 3D effect and flatten out the image. Playing full screen video removes the 3D illusion entirely, turning the Proto into a large vertical television.

The nature of our transparent LCD causes white to become completely transparent (similar to wearing a green shirt on a greenscreen). We get around this by using colors or gradient backgrounds that turn the transparent areas into negative space, making the white areas look as they were designed. The colored background makes it look like the backlight LEDs within the box have changed to that color.

For lighting, we use a large, diffused, off-axis light source to cast a shadow on the back wall. This is key to anchoring any object within the box. However, we use the shadowing with a combination of additional lights to bring objects/animations to life. HDRI maps, edge lights, and solids for reflections all help if you have something like a piece of jewelry that needs to catch reflections to look real. If your object/subject interacts with the floor plane, adding a reflection between the subject and the camera helps anchor the object in z-depth (and adds to the illusion).

Depth of Field (DOF) shouldn't be used, as we're trying to mimic what we would visually see in real life.

These are our general starting guidelines that can be followed, bent, or broken depending what works best for the creative being made.

Current Delivery Specs for Proto Cloud are:

2160 x 3840 (Vertical 9x16) @ 29.97/30 or 59.94/60 FPS

MP4 H264 at 35-45 Mbps

Stereo AAC 320 Kbps 48k