

EyeRIS Measurement Accuracy

Comparison of measurements in Solidworks to a 3D printed model imaged with the R26 camera.

“Ground Truth” 3D model

A small “crown” with pillars of different heights and locations around a central point was designed in fusion 360. To help aid point picking in the model, a chamfer was applied to take the radius down from 4.92 mm to 1 mm. Four copies of the model were printed on a Creality ender3 printer and setup at different 3D positions in the FOV of the camera as shown below

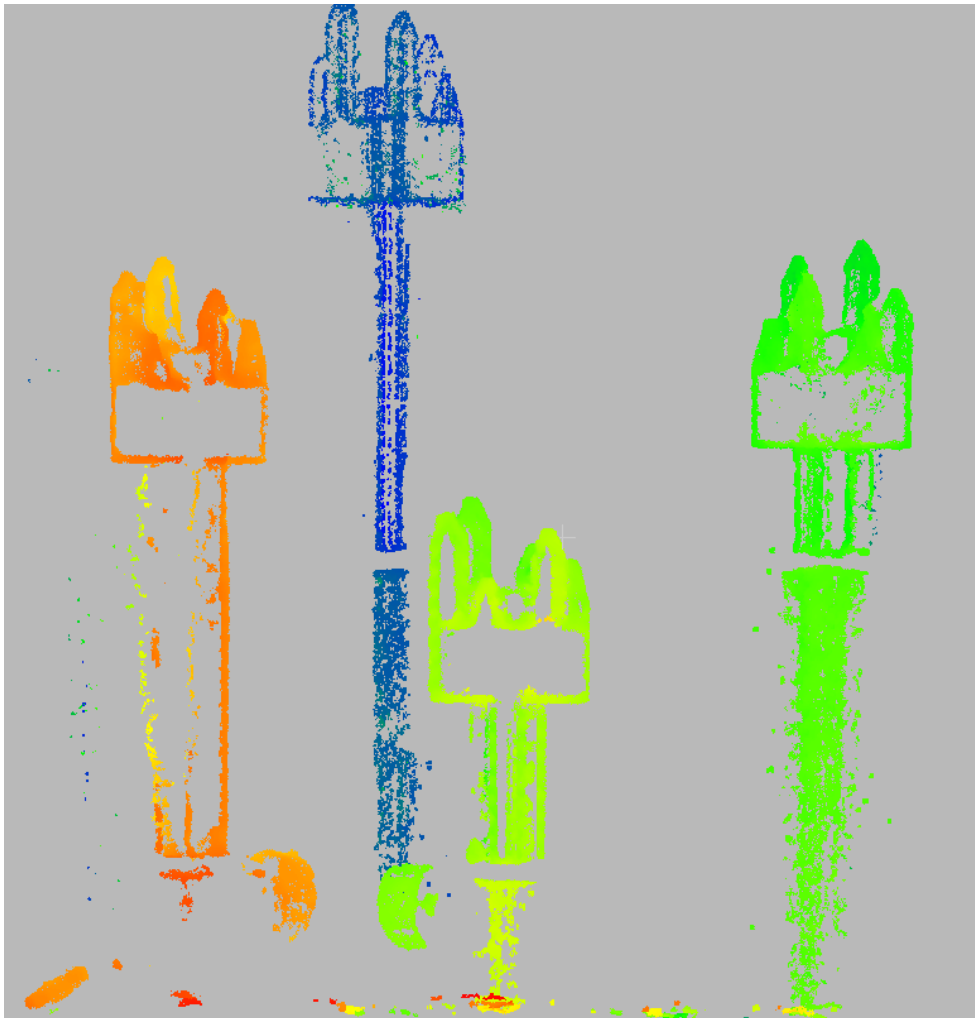


Figure 1: Scene with four targets distributed in x, y, and z.

Point cloud measurements at different positions in the FOV

Positions on the model were measured in Solidworks and matching positions in the point cloud were measured using Cloud Compare. Since the selection of points in the cloud is subjective, an effort was made to consistently pick points with similar appearance in the cloud. The first row of the table shows the model and the next three rows show the measurements for each 3D print.

