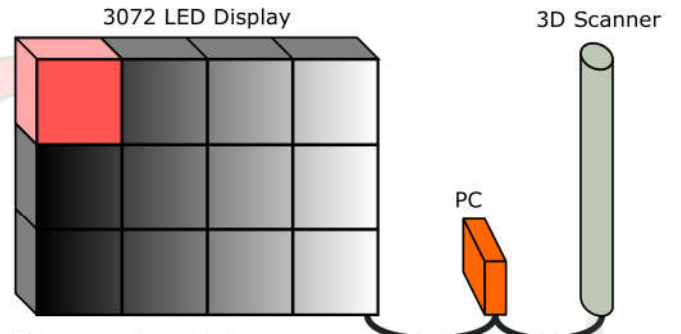
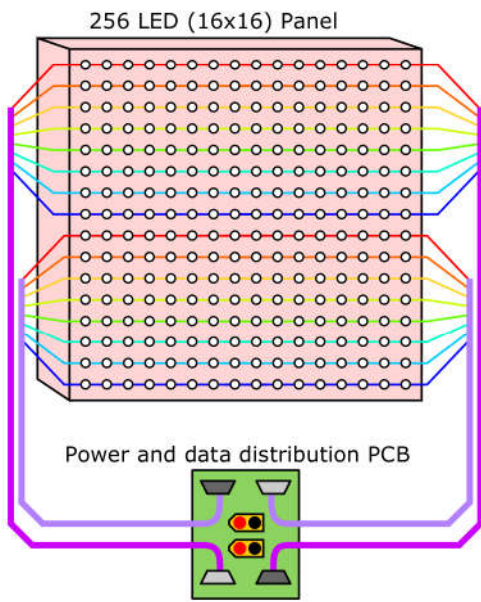


Lumina Labs' Virror



Conceptual Idea:

16x 2D scanners are combined into a 3D scanner. Paired with an LED display, they combine to produce an interactive LED installation.

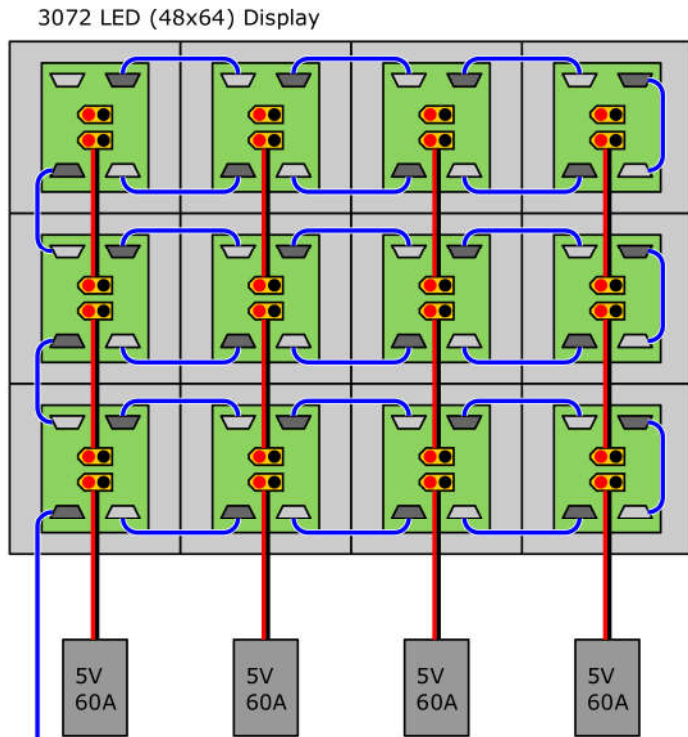
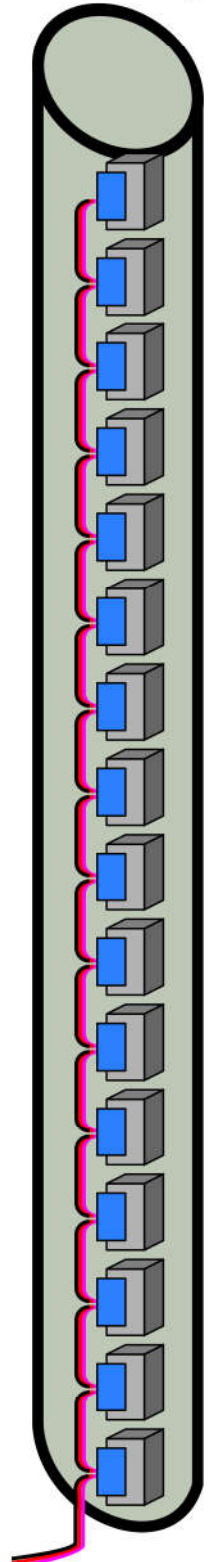
Scanner Assembly:

A 2D sensor has a light and detector to measure pulse 'time-of-flight'
 A sensor has a motor and two mirrors to sweep the light beam L/R
 Each sensor sweep captures 80 range soundings (measurement)
 Each measurement is 4-Bytes long, generating 2.2KB of data per second
 16 sensors generates 36KB/s or minimum 360kbaud
 3D scan generated from combining 2D horizontal slices

Data Path:

Sensor gathers data
 Data send over RS-232
 RS-232->TTL level converted
 Serial Data recv.(38,400)
 Forward by Arduino Nano
 Serial Data sent (500,000)
 TTL->RS-485 level converted
 Shared RS-485 network
 RS-485->TTL level converted
 Serial Data recv.(500,000)
 3D array data fused by Teensy
 Data set send over USB
 Data set guides LED frames
 LED data to teensy over USB
 Teensy sends 1-wire LED data
 LEDs produce video frames

Verticle Sensor Array



WS 1-wire (8x)

