Sanitizer Gate

01 DESCRIPTION

Due to the spread of COVID-19 , The idea of our project is a “sanitizer gate” . Using Arduino and light components, the gate will spray the suitable amount of sanitizer on the passer when he cut off the passage of the laser beam that is reflecting successively on the mirrors and received by the LDR sensor

02 LIGHT

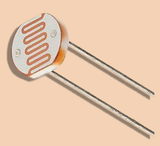
- **Laser diode**

WAVE LENGTH 650 nm

DIVERGANCE > 5 mRad

POWER > 5 mW

- **LDR**



AT 10 LUX

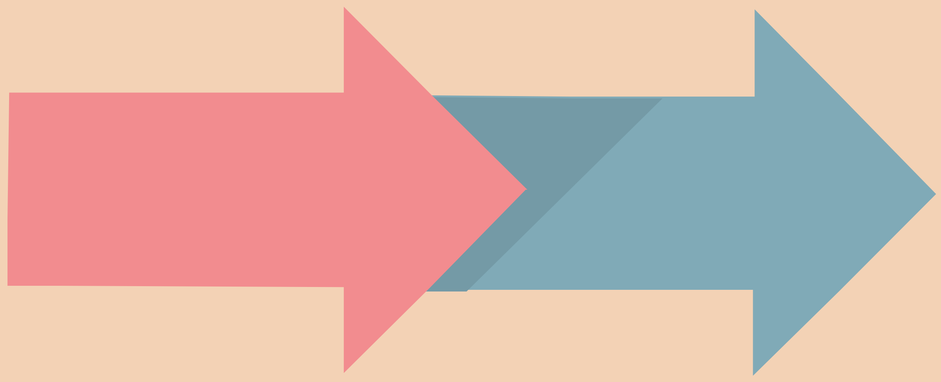
FLUORESCENT LIGHT

RESISTENCE 8-20 KΩ

ILLUMINATION 500 LUX

POWER 100 mW

03 INTERACTION



REFLECTION

laser will keep reflecting till it reaches the LDR sensor or interrupted by a skin tissue

LASER MIRRORS

are used in transmitting and manipulating laser lights

Dr: Sherif ELgohary

04 TISSUE

- As our project is a demo of sanitizer gate, The laser beam will mainly interact with skin of human .
- **Scattering :** The range of the scattering coefficients of skin was (9.68-11.71) mm-1 for λ = 650 nm.
- **Absorption :** the average value of the absorption coefficient of skin was 0.066 mm-1 for λ = 650 nm.

05 OPTICS

- Our project depends mainly on four objects on of them is optic part.
- We use **planer mirrors**

For reflecting laser beam many times
On each mirror until it reach LDR sensor

06 THEORY

- Reflection of light occurs when the waves encounter a surface or other boundary that does not absorb the energy of the radiation and bounces the waves away from the surface.

DIFFUSE REFLECTION

is produced by rough surfaces that tend to reflect light in all directions

SPECULAR REFLECTION

is defined as light reflected from a smooth surface at a definite angle