palet

Color Meter

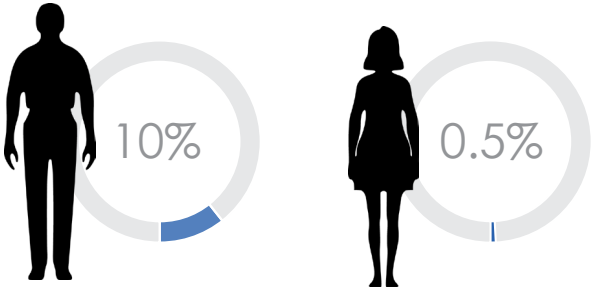
Palet is a public device designed for people affected by color blindness. It can be installed in fitting rooms to help improve the clothing shopping experience and help people with color blindness feel more independent. Just because someone is color blind doesn't mean they should limit their look.

PROBLEM STATEMENT

Shopping for clothes can be difficult for anyone, imagine this experience as an individual affected by color blindness. Everyone's wardrobe begins at the store, people affected by color blindness are no exception. However, people with color blindness often require assistance when selecting clothing to reduce the risk off making mistake. They either have to ask about anything they want to buy or inadvertently wind up adding clash to their wardrobe. Eventually, they learn how to be safe dressers buying white shirts, charcoal suits, and black trousers to eliminate guesswork. Just because someone is color blind doesn't mean they should limit their look.

SECONDARY RESEARCH

How many people are suffering color blindness?

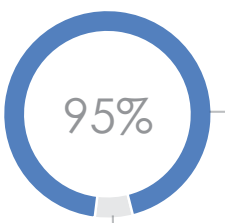


7% -10%of men and 0.5% of women are affected

How they see the world differently?

95% are Deuteranopia or Protanopia, commonly known as Red-Green color blind.

Tritanopia, often referred to as blue yellow color blindness and totally color blind are very rare.



Normal vision

Protanopia

Deuteranopia

Tritanopia

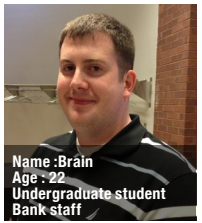
INTERVIEWS

Need
- unsaturated colors are so boring to her that she always prefer to buy very colorful clothes

Painpoints
- be afraid of making mistakes
- always hesitate for a long time to make a decision

Solution
- arrange clothes in rainbow colors

Limitation
- always need to check with her friend
- have problem with small pattern print



Need
- dressing for work

Painpoints
- terrible with matching ties with shirts

Solution
- always shop with family
- buy black and white clothes to be safe
- when organizing the closet put red and green on two ends and put the color he can recognize in the middle

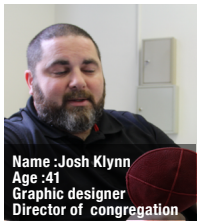
Limitation
- do not shop if his family is not available
- need help from roommates to organize the closet

Need
dressing for work

Painpoints
- clothes comes with plaid patterns or very thin stripes that all blend together into a mish-mash of colors
- borderline colors like blue-purple or red-purple.
- can not tell color from far away, look really close

Solution
- shop with wife
- choose very safe color like blue

Limitation
- after they have a kid her one of them always need to stay at home so sometime he has to shop alone



Need
- dressing for work

Painpoints
- do not enjoy shopping at all only, go shopping only when necessary
- have problem with small plaid

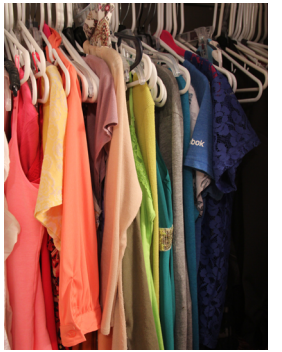
Solution
- go to store with good salesman
- only but neutral colors and primary colors
- use cell phone App

Limitation
- the App is not very accurate

OBSERVATIONS

easily decide on the style but hesitating about the color for a long time

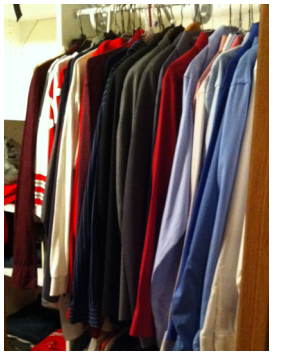
unorganized display worse the situation



Elysia has many bright color clothes and arranged them in rainbow color order

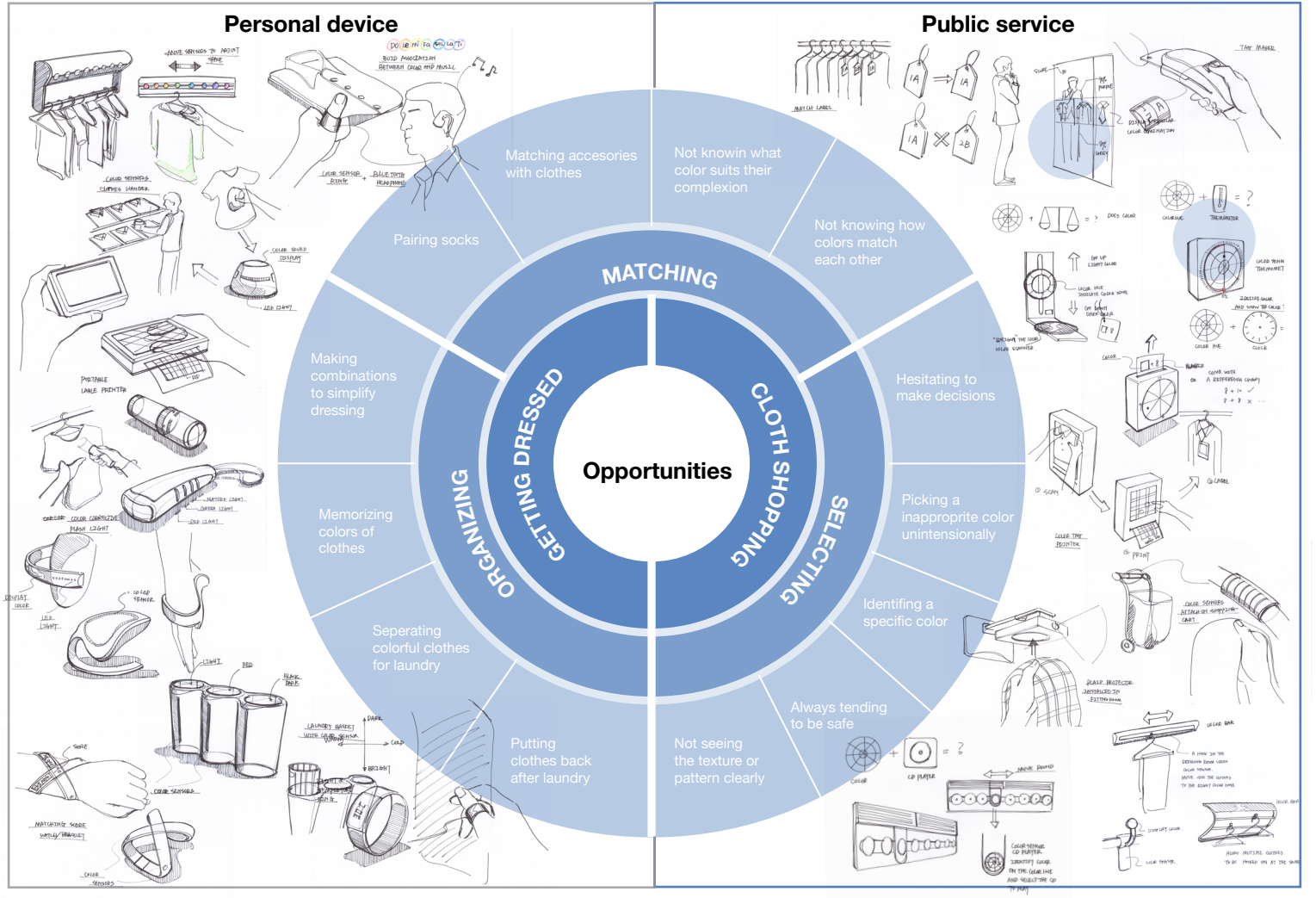
It is hard for Alan to choose ties with plaid patterns or very thin stripes

This is how close Alan observes!



Alan has many clothes with neutral and primary colors

CONCEPT IDEATION



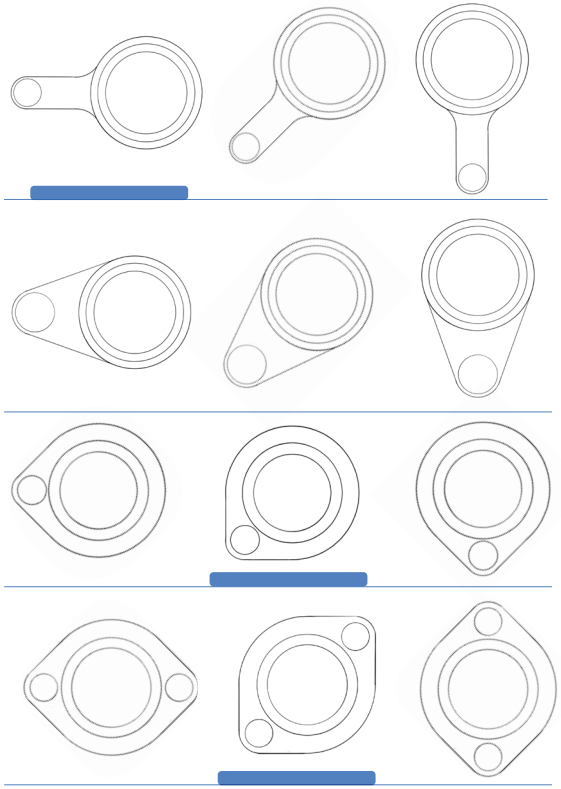
HOW TO "TRANSLATE"COLOR?

number
name
music
temperature
brightness
emotion

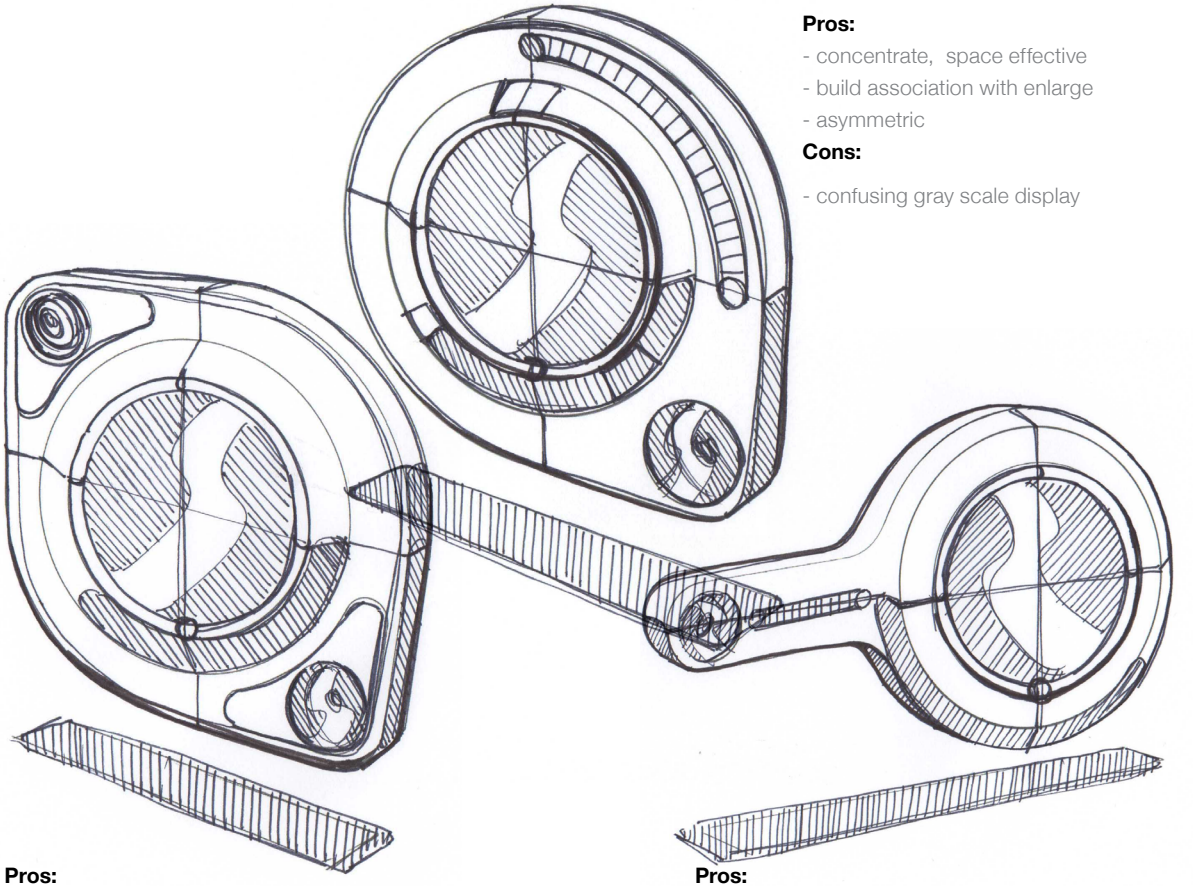
WHERE TO APPLY?

wardrobe
shopping cart
dressing room
hanger
laundry bag
mirror
clothes
price tag
hand hold

CONCEPT REFINEMENT



I did a quick ideation of the silhouette first. I chose several simple shapes has some connection with the idea of enlarge and zoom in. And then get more varieties by rotating them. I picked three to move on.



Pros:
- concentrate, space effective
- build association with enlarge
- asymmetric

Cons:
- confusing gray scale display

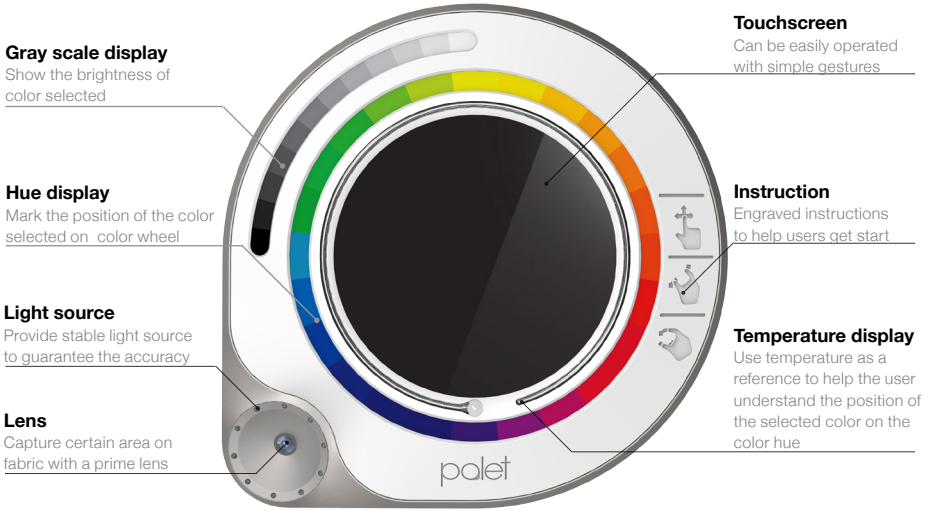
Pros:
- concentrate, space effective
- build association with zoom in and zoom out
- balance

Cons:
- confusing gray scale display

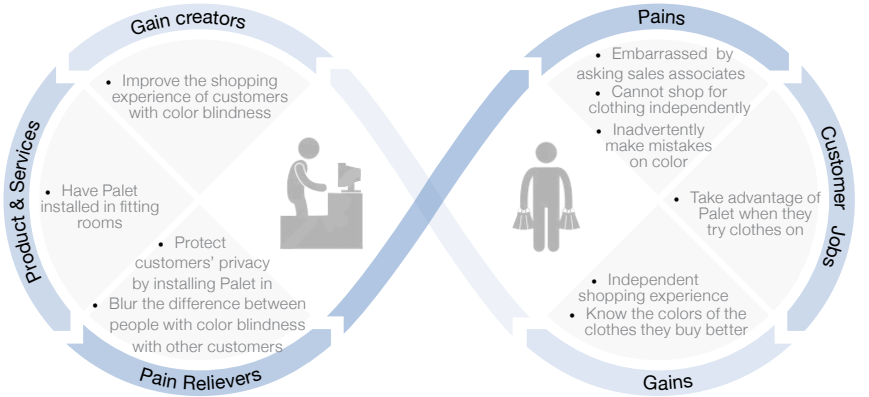
Pros:
- work as an icon
- build association with magnifying glass

Cons:
- not very space effective
- too literary

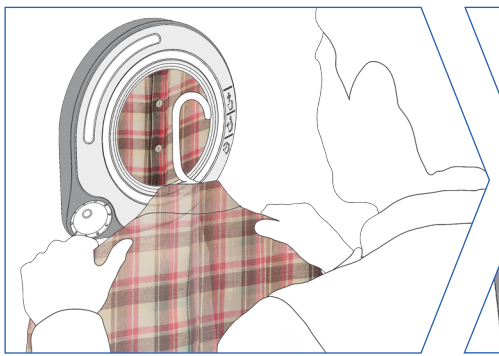
FINAL CONCEPT



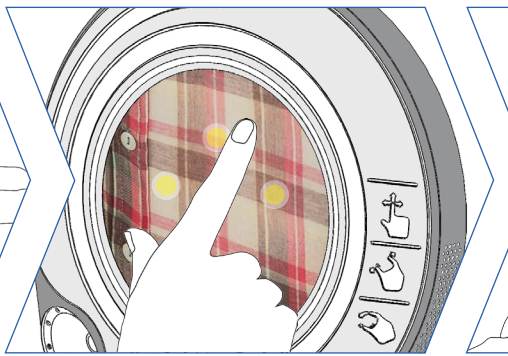
value proposition map



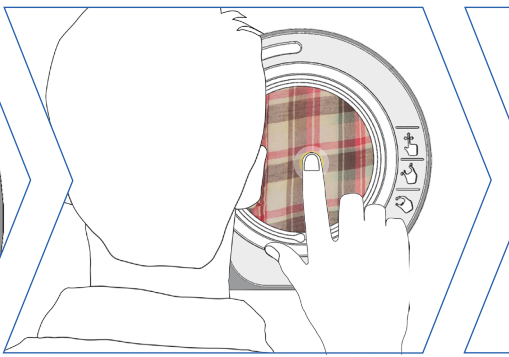
Palet is designed to help people with color blindness to improve their clothing shopping experience. The retail stores can have Palet installed in their fitting rooms with very low cost but attract more customers and gain public praise. In this way Palet encourages a positive relationship between the retail stores and customers.



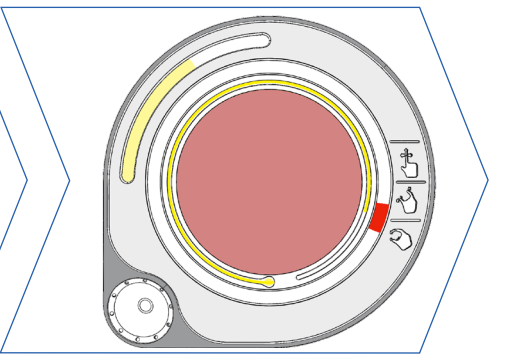
If the user finds the color or pattern of clothes confusing, they can bring it to the fitting room. Clicking on the touch screen starts the automatic shot process. Place the clothes in front of the lens until captures a picture.



Following the instructions engraved on Palet, move around, zoom in, or rotate the picture. When identifying a trouble area, leave your finger there for a second. Palet will highlight different colors that the user's color blindness might prevent from sight.

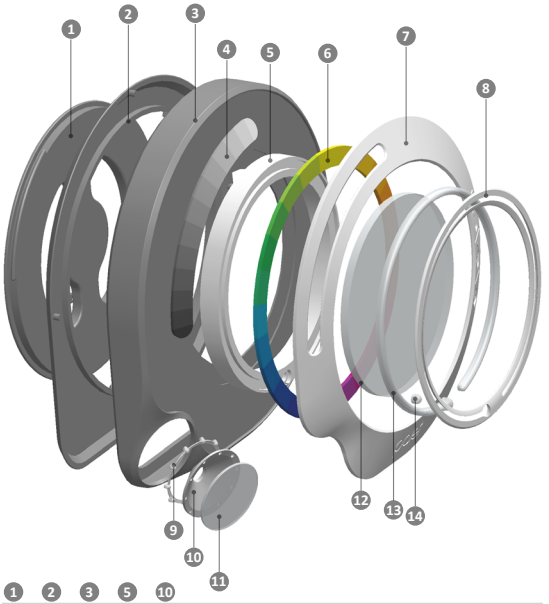


Choose a color you want to see further by clicking on one of the highlighted dots.



Palet will enlarge the color dot to full screen, meanwhile it will find the position of this color on the color wheel with a temperature reference. The brightness of this color is shown on the grayscale bar.

SHOP PLAN



1 2 3 5 10

Option 1: lower resolution 3D printing+spray paint

Option 2: CNC cut + spray paint

7 8

Option 1: SLA 3D printing + casting

Option 2: SLA 3D printing + spray paint

13

Option 1: clear SLA 3D printing

Option 2: SLA 3D printing + casting

4 6

Option 1: color print decal + laser cut 1/8 in Acrylic board

Option 2: color print on clear paper

11

Option 1: laser cut 1/8 in Acrylic board

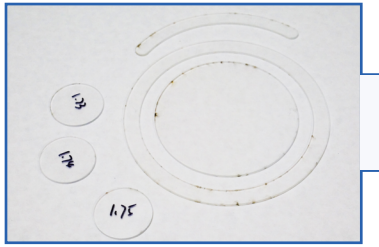
Option 2: 3D printing + clear casting

12

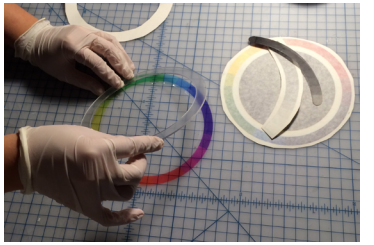
Option 1: laser cut 1/8 in Acrylic board + car film

Option 2: LCD screen

FABRICATE

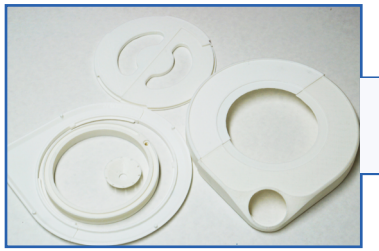


Laser cut pieces

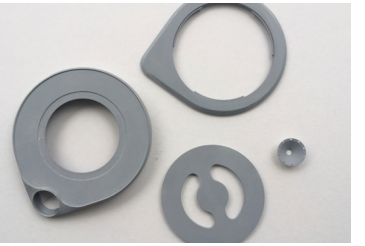


Paste decal on the color ring and the gray scale bar

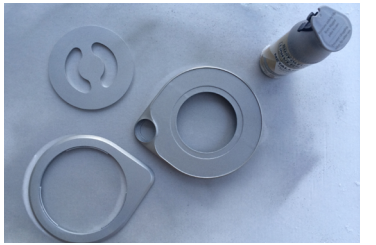
Paste car film on pre-cut acrylic piece to fake LCD screen



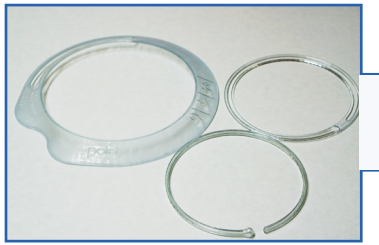
3D printing pieces



Painted with primer, sanded, filled and apply secondary/final primer coat.



Painted with metallic spray paint



Clear SLA printing pieces

Prepare silicone mold for casting

Achieved a qualified piece after many attempts

APPEARANCE MODEL