VISION

AUGMENTED REALITY + ATHLETE TRAINING

A vision in Nike developing an advanced training equipment set to enhance young athletes training effectiveness.

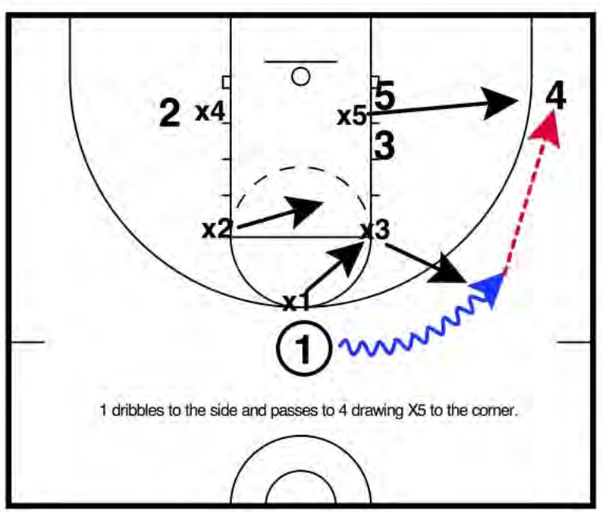
MICHAEL YAN

Phase 1

Concept Development

Problem

Team sports playbook are complicated.



What if athlete can see the guide on the court ?

For Strategic Team Sports

BASKETBALL

- Shooting Form
- Dribbling Control
- Passing Accuracy
- Playbook
- Virtual Obstacles/ Defenders

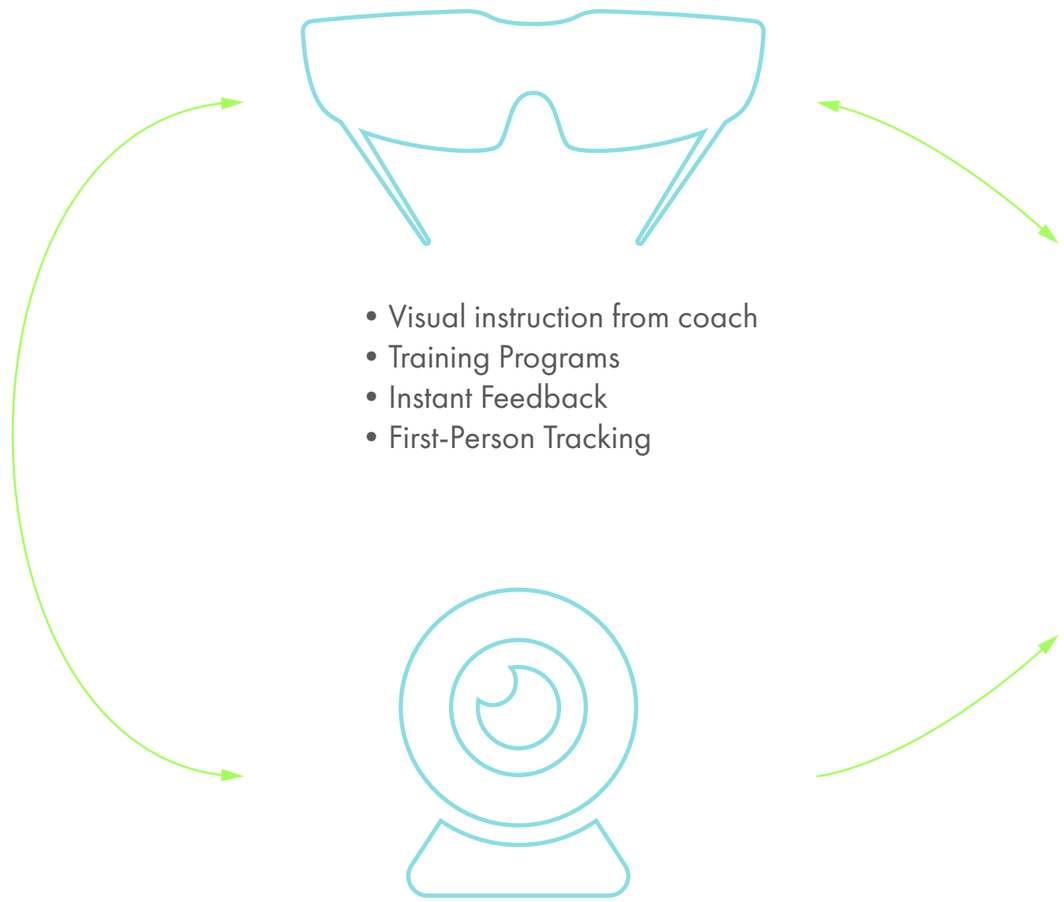
FOOTBALL

- Passing Form
- Playbook
- Virtual Obstacles/ Defenders

BASEBALL

- Accuracy
- Hitting Form
- Communication

System



- Visual instruction from coach
- Training Programs
- Instant Feedback
- First-Person Tracking

- Data Analysis
- Communication from Coach
- Video Replay

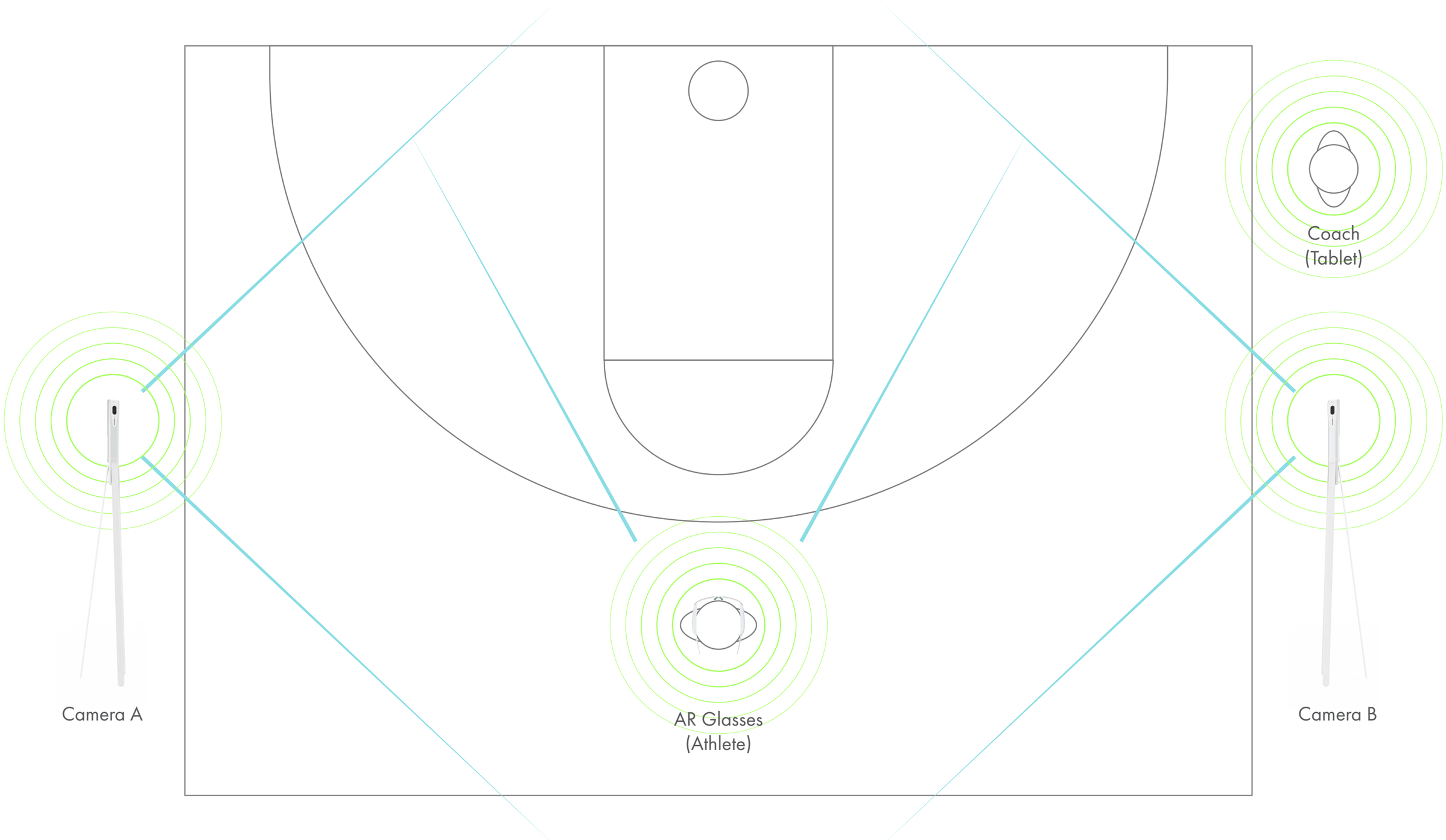
- Motion Tracking
- Data Collecting

The Nike Vision set

AR Glasses

Motion Tracking Cameras (L+R)

Scenario



Nike Sport Research Lab

Nike has been an innovative company ever since it founded. It invests in innovating new design and utilizes data science as a huge part of the process.

HIGH SCHOOL

COLLEGE

PROFESSIONAL

Since high school athletes are still new to the sports that they don't have much training and game experience. They can be really beneficial by using Nike AR Pro but it is not limited to high school athletes.

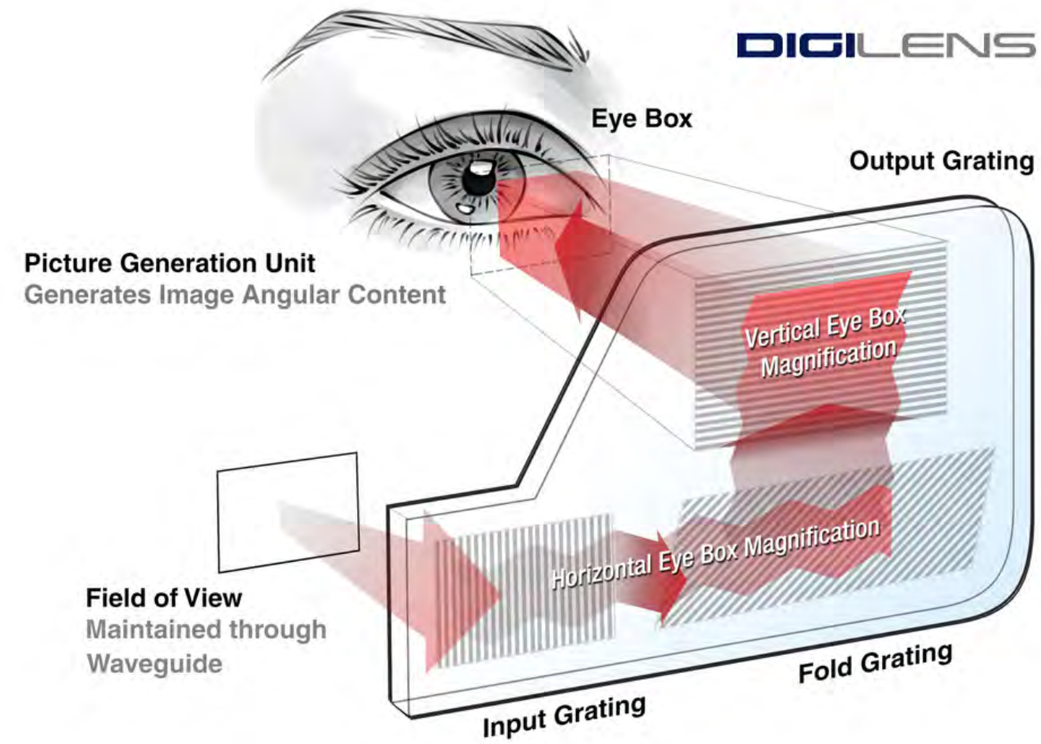
Phase 2

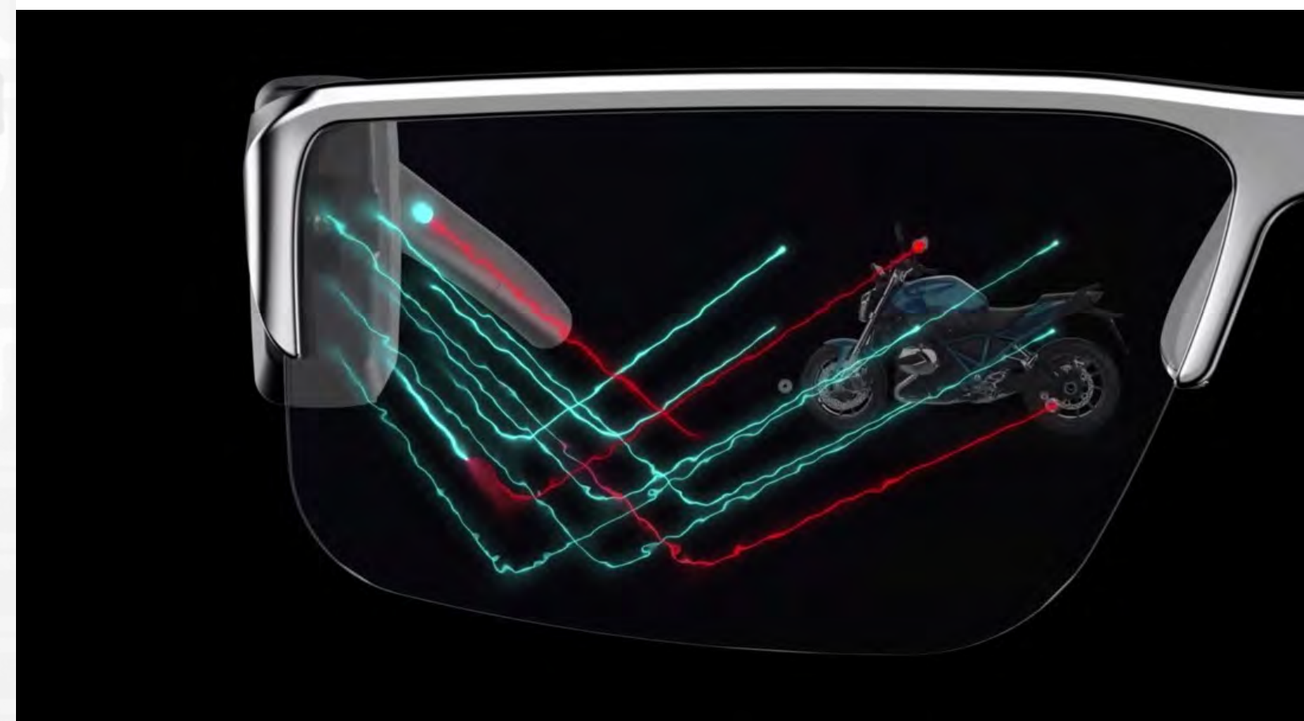
Technical Development

LUMUS

Reflective Waveguide

Lumus AR displays are based on a patented reflective waveguide technology enabling projected light to travel through a transparent lens. When light reaches user's field of view, the partially reflective surfaces embedded in the lens project all colors at once creating a bright, large & crystal-clear image

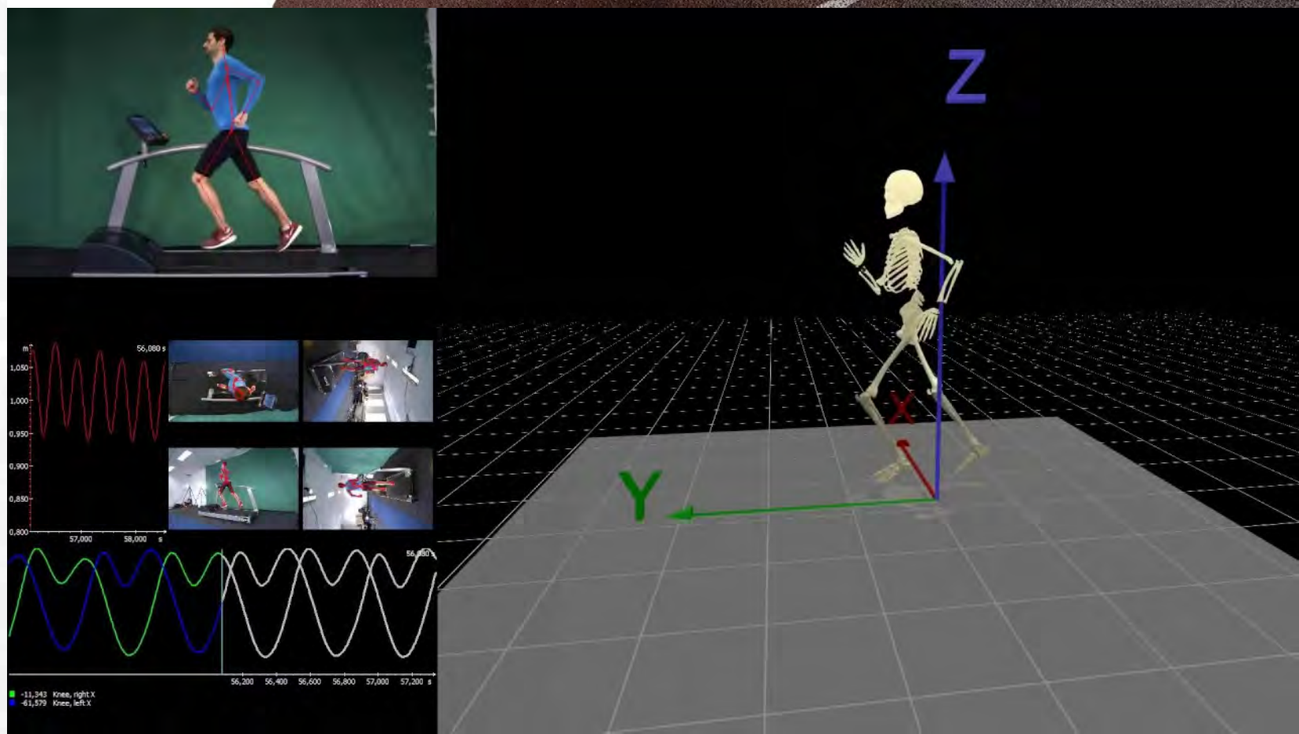




simi
reality motion systems

Markerless Motion Capture

SIMI® manufactures high-end image-based Motion Capture and Analysis Systems for movement and behavior analysis.



AR Glasses - Component package

Lumus OE Maximus + Camera

estimated

3.7v 120mah Battery

4.2 mm 32.5 mm 12.5 mm

K 15 S - 8 OHM General Purpose Speaker

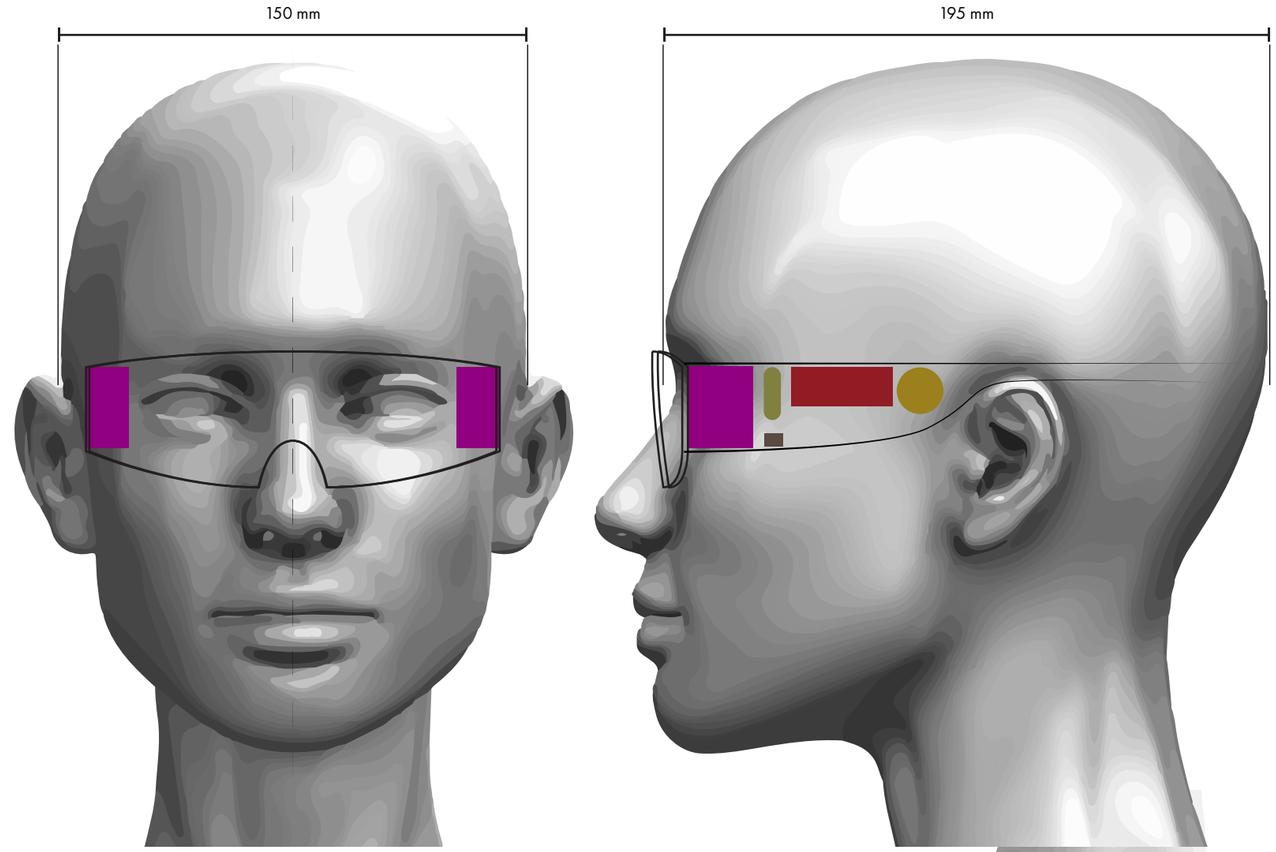
4 mm 15 mm

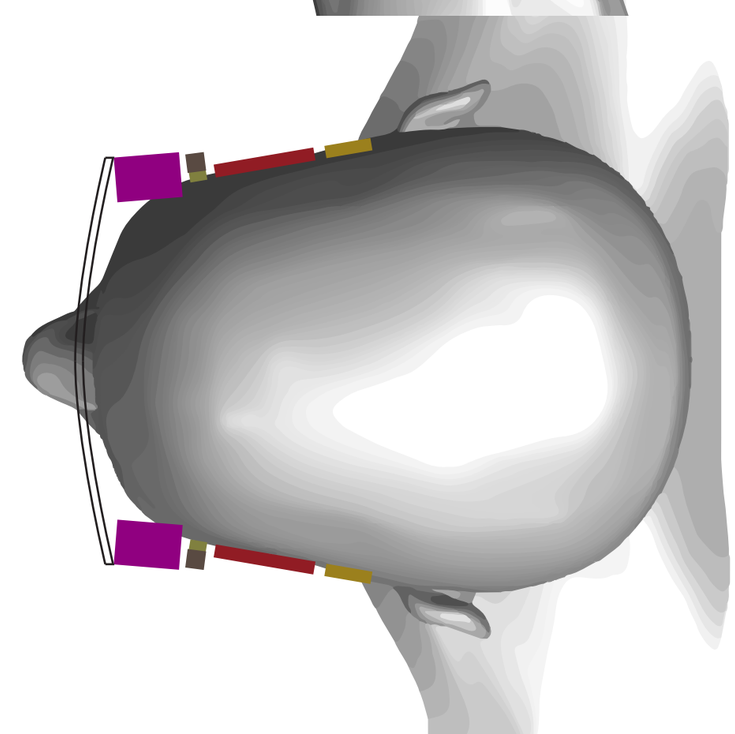
Magnet Charger Pin

3.5 mm 17 mm

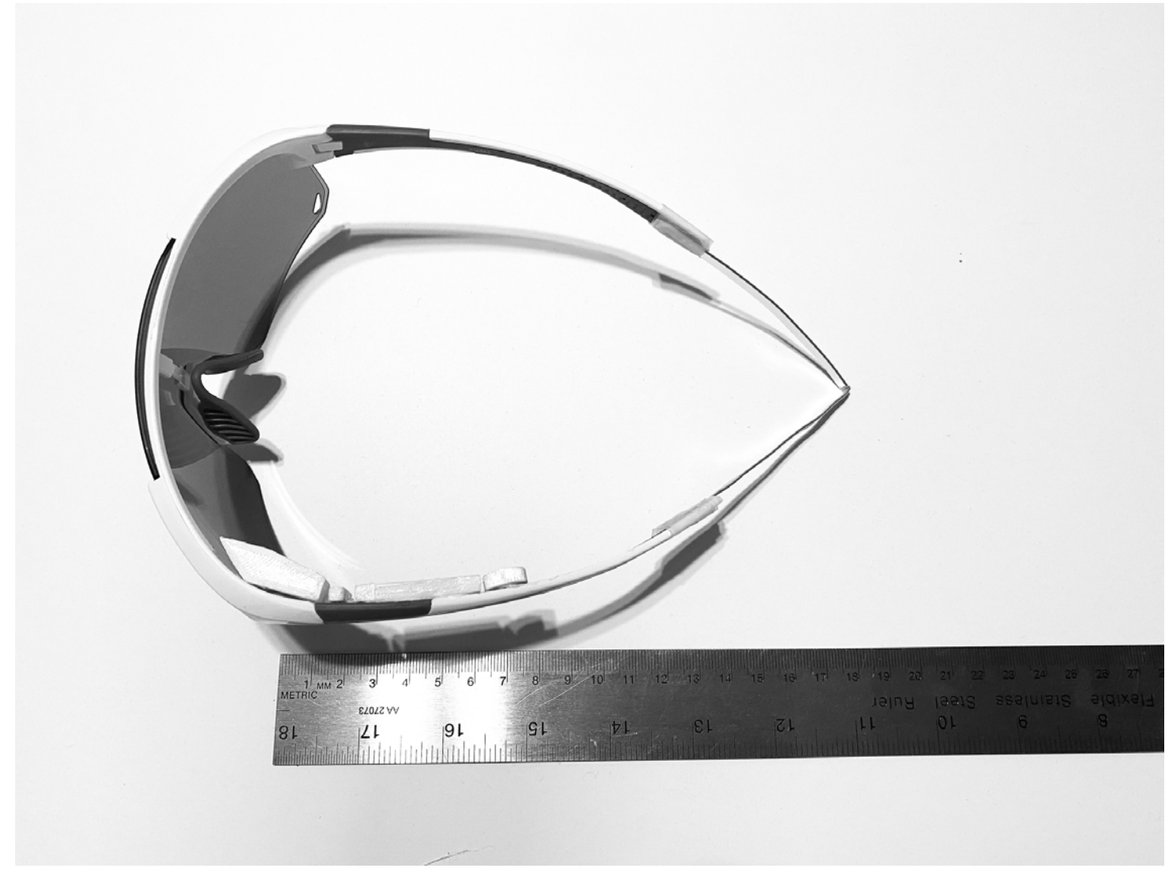
On/Off Pairing Button

4.3 mm 6 mm 6 mm





Size and Ergonomic study



3D printed for size study

Phase 3

Form developemnt

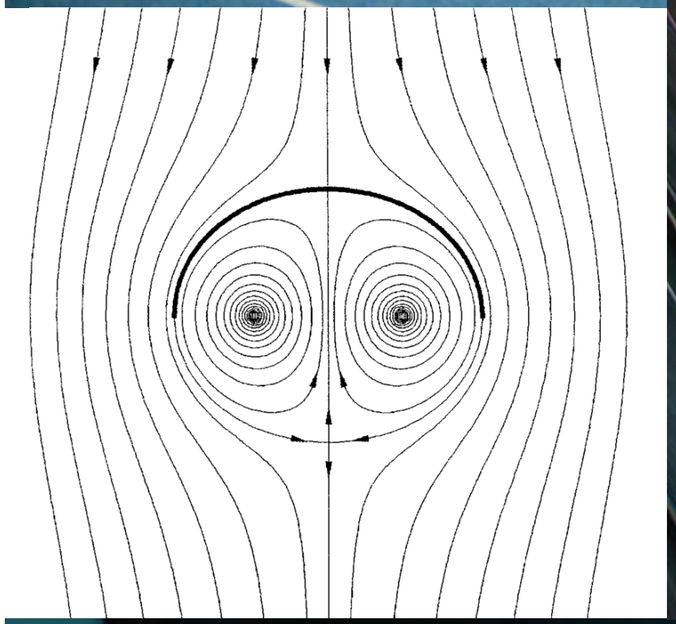
Nike Product Form Language

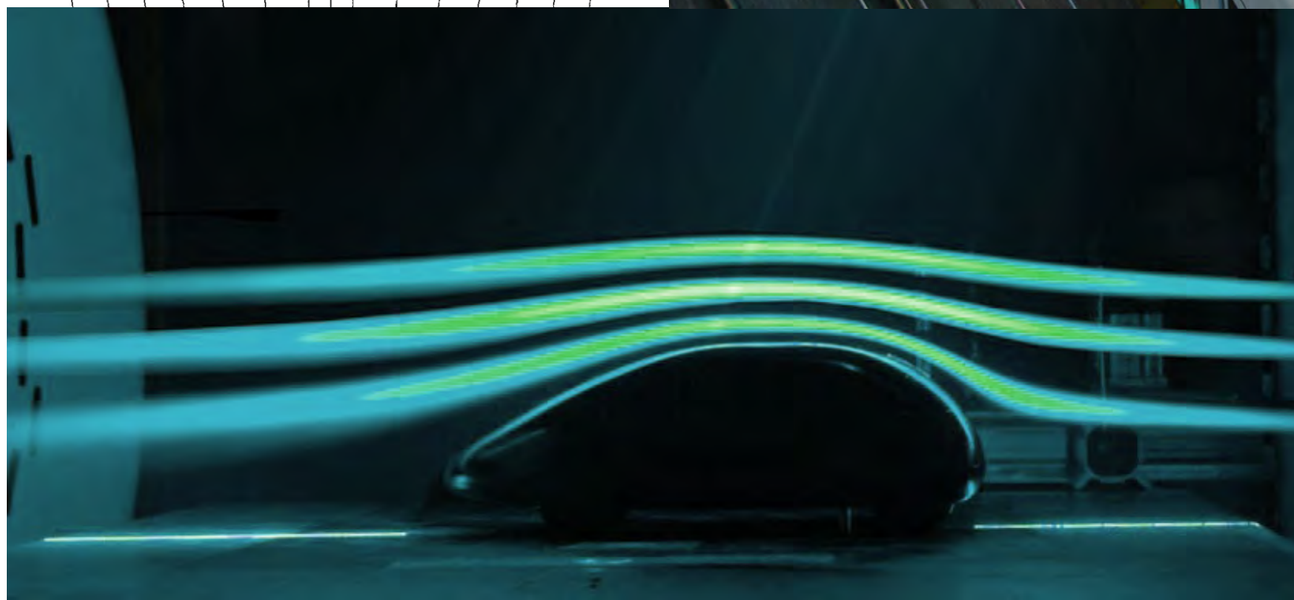
Keywords

Simplicity
Smooth
Motion

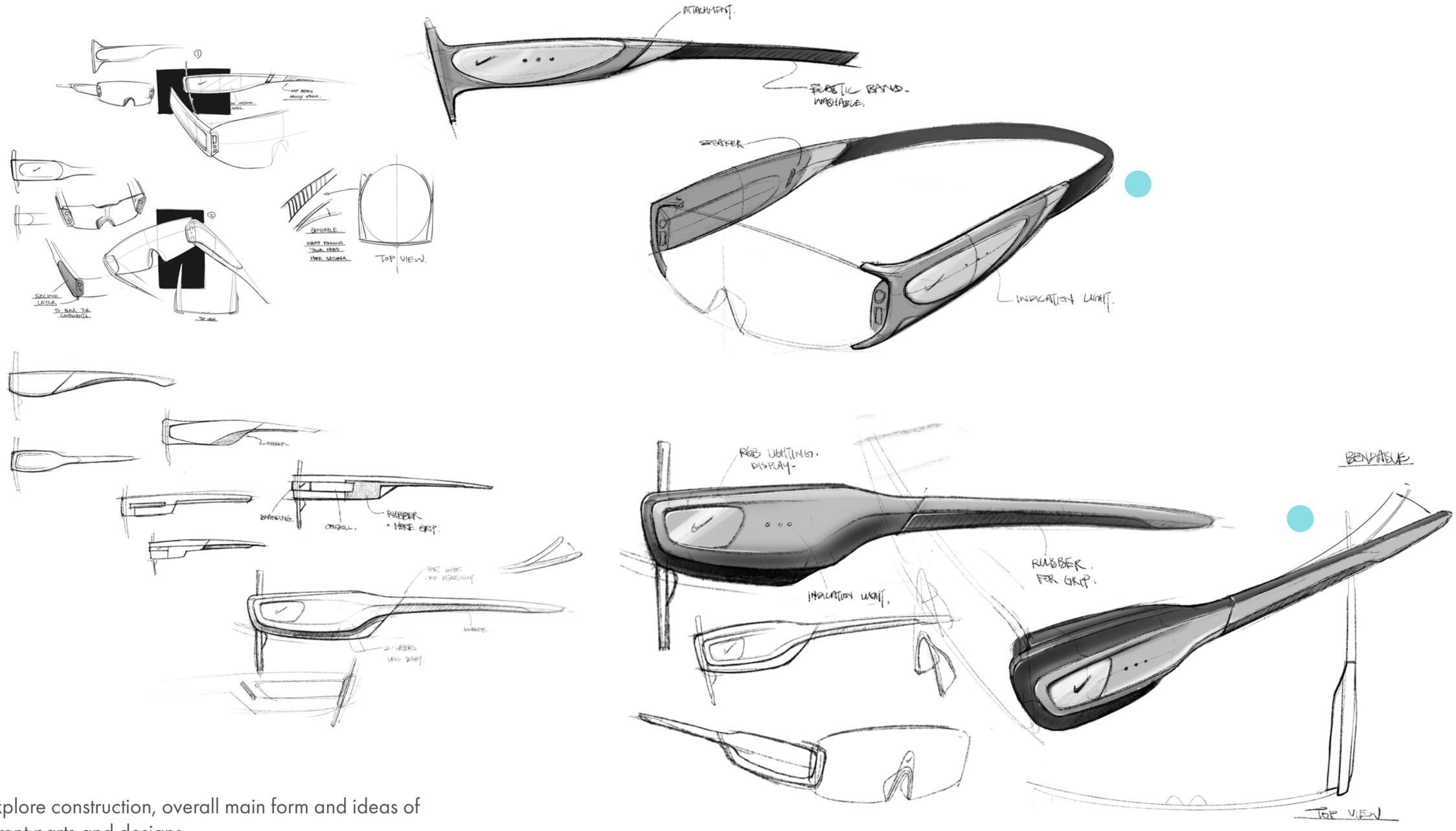
Streamline

Keywords
Speed
Flow
Wrapping



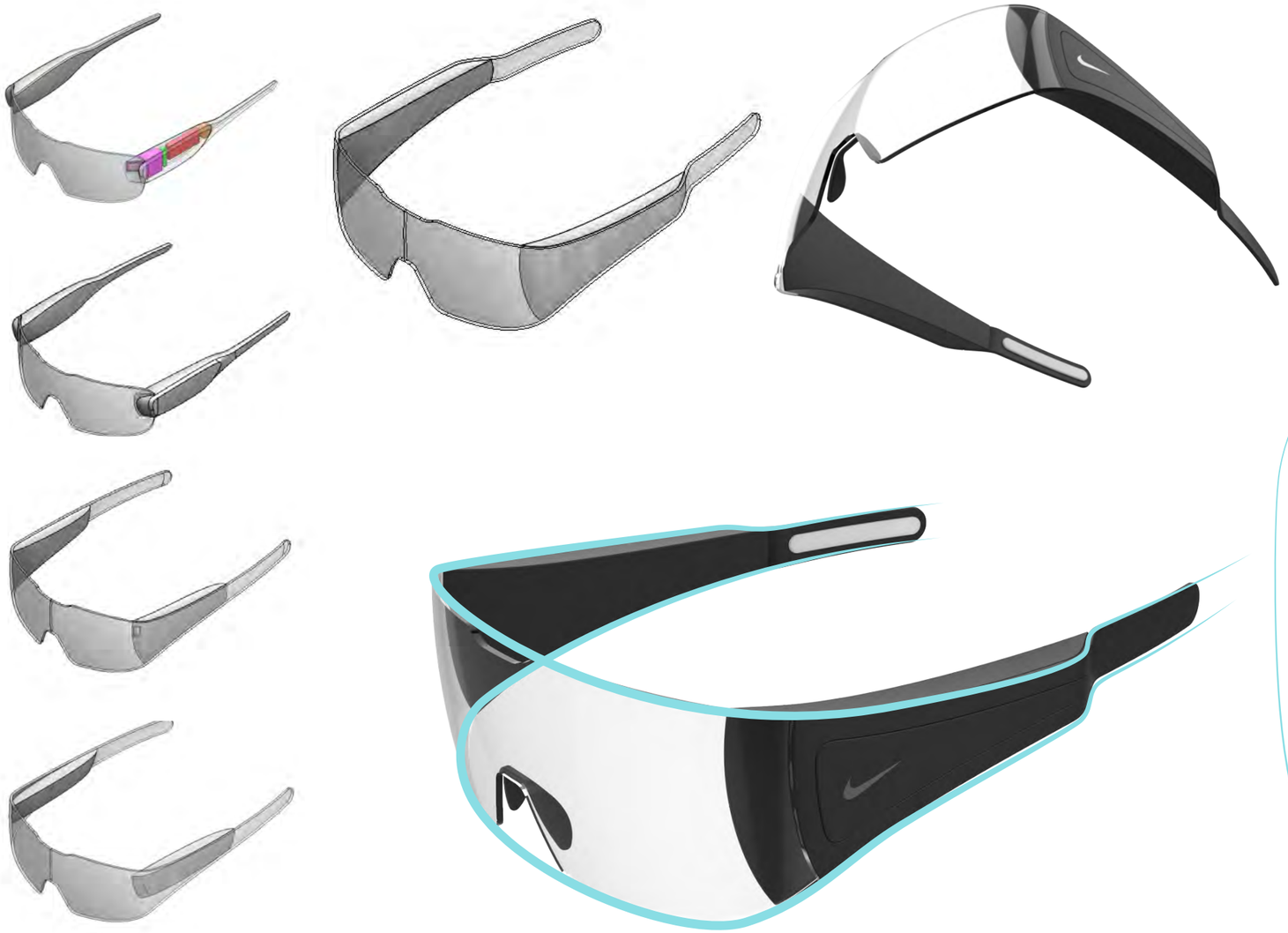


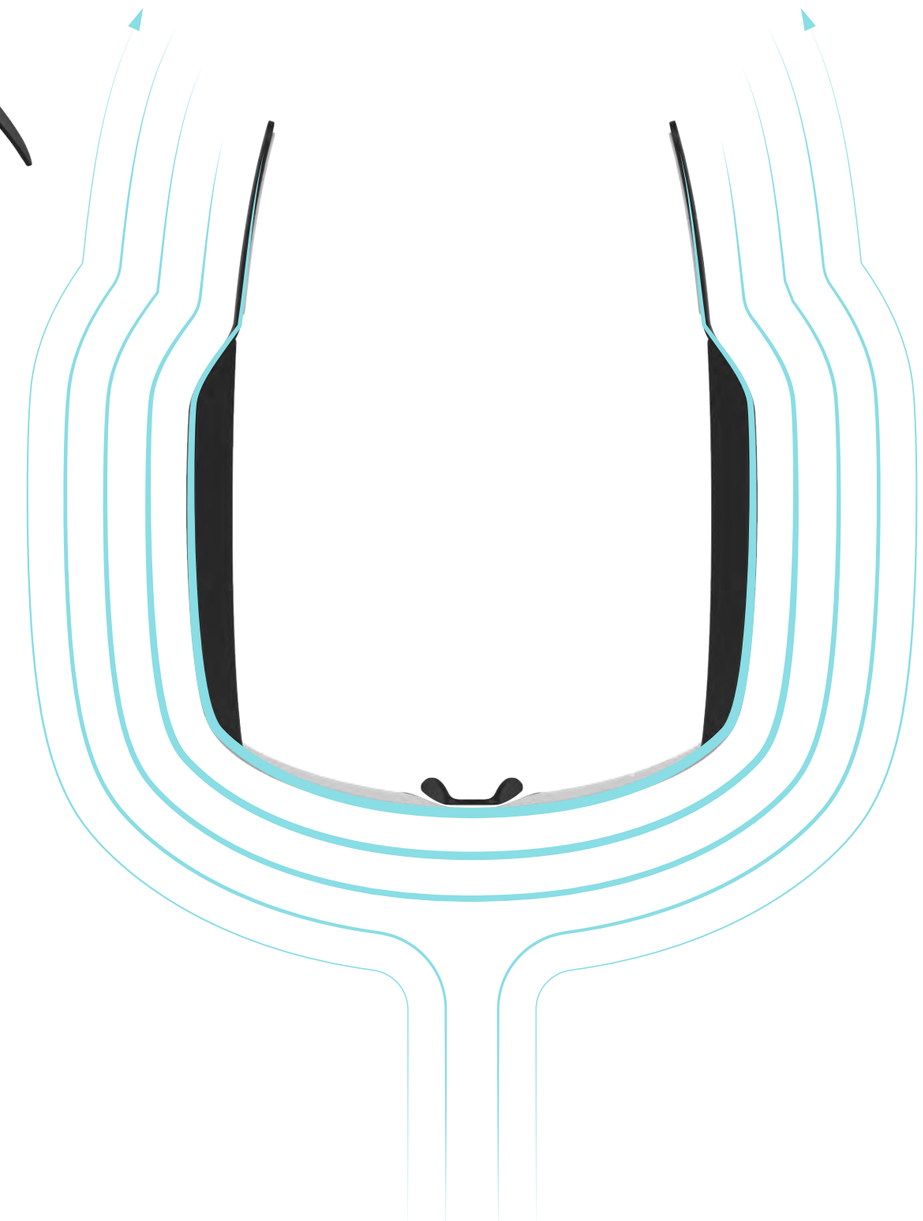
Main form ideation



• Explore construction, overall main form and ideas of different parts and designs.

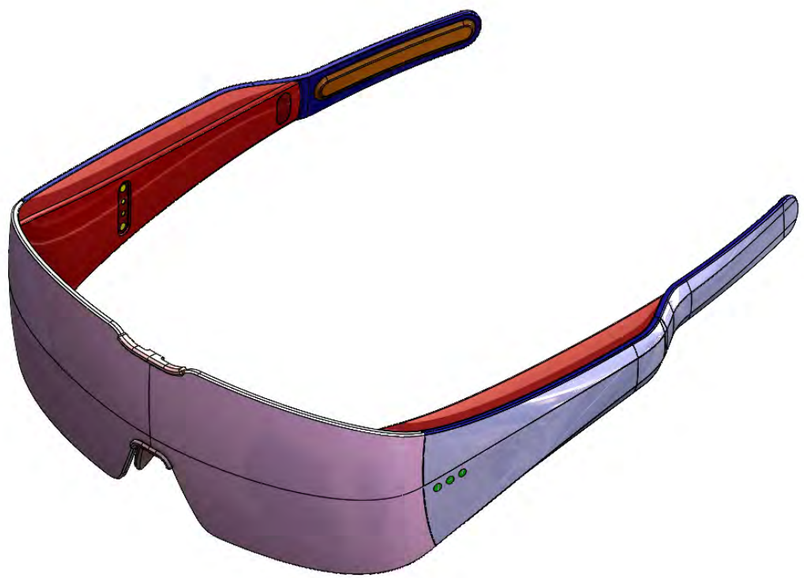
Main form





- Translate 2D sketch to 3D CAD model. Trying out different iterations.
- Final direction is a stream line design, the outline wrap around the two main compartments and look as one.

Surfacing



- Breaking down the mass of the side profile.
- Final design has two bone line on top and bottom to capture highlight and shadow.

3D print test

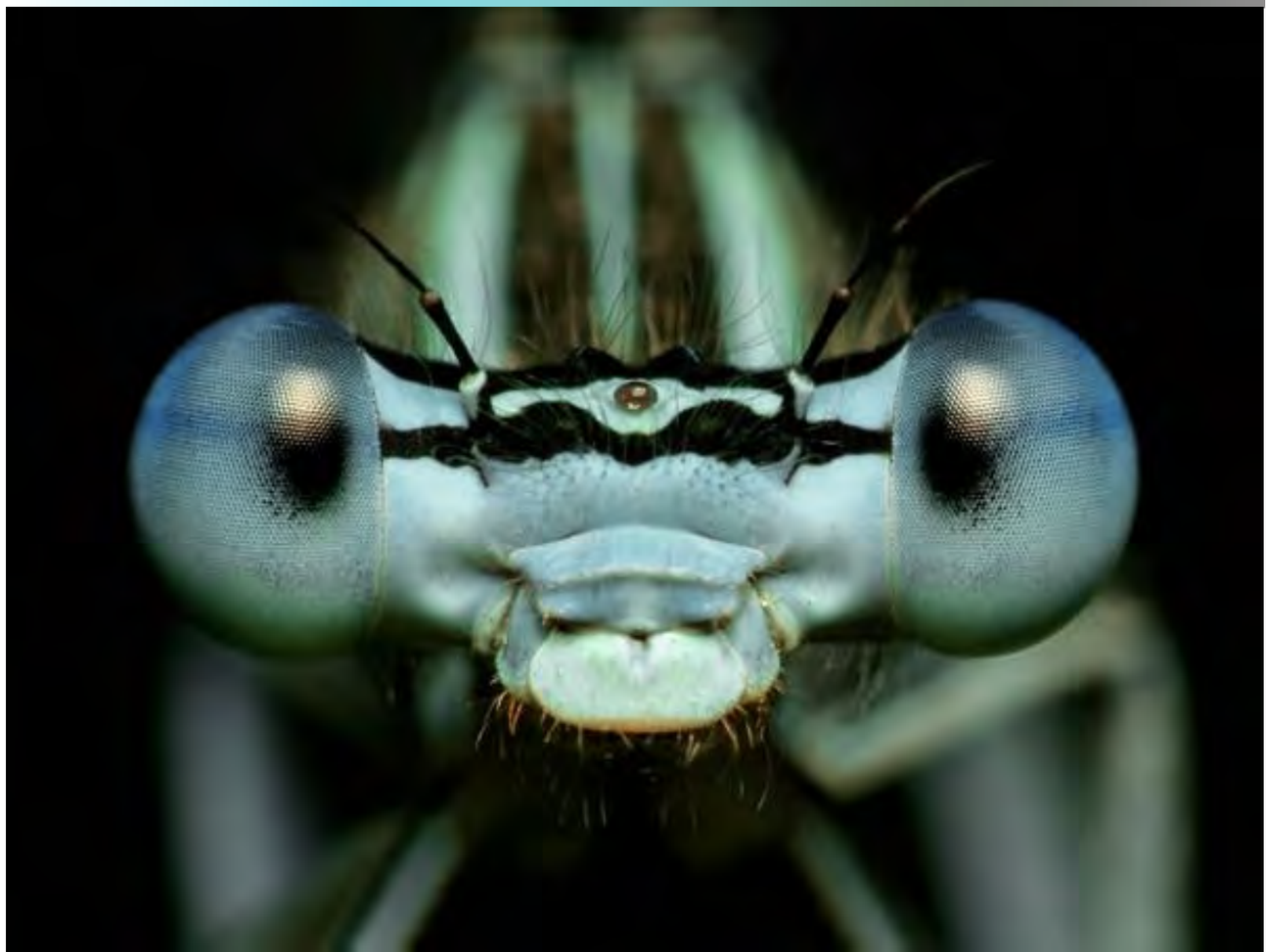
Phase 4

CMF

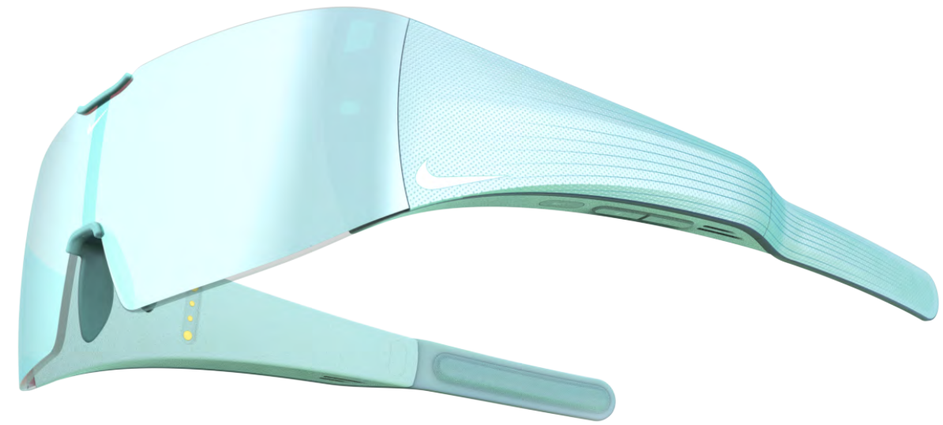
Dragonfly

Keywords
Reflective
Microtexture
Blend of colors

Dragonfly has the best motion vision among all creature. Its 30,000 Facets compound eye provide it the best vision to move quick and react.



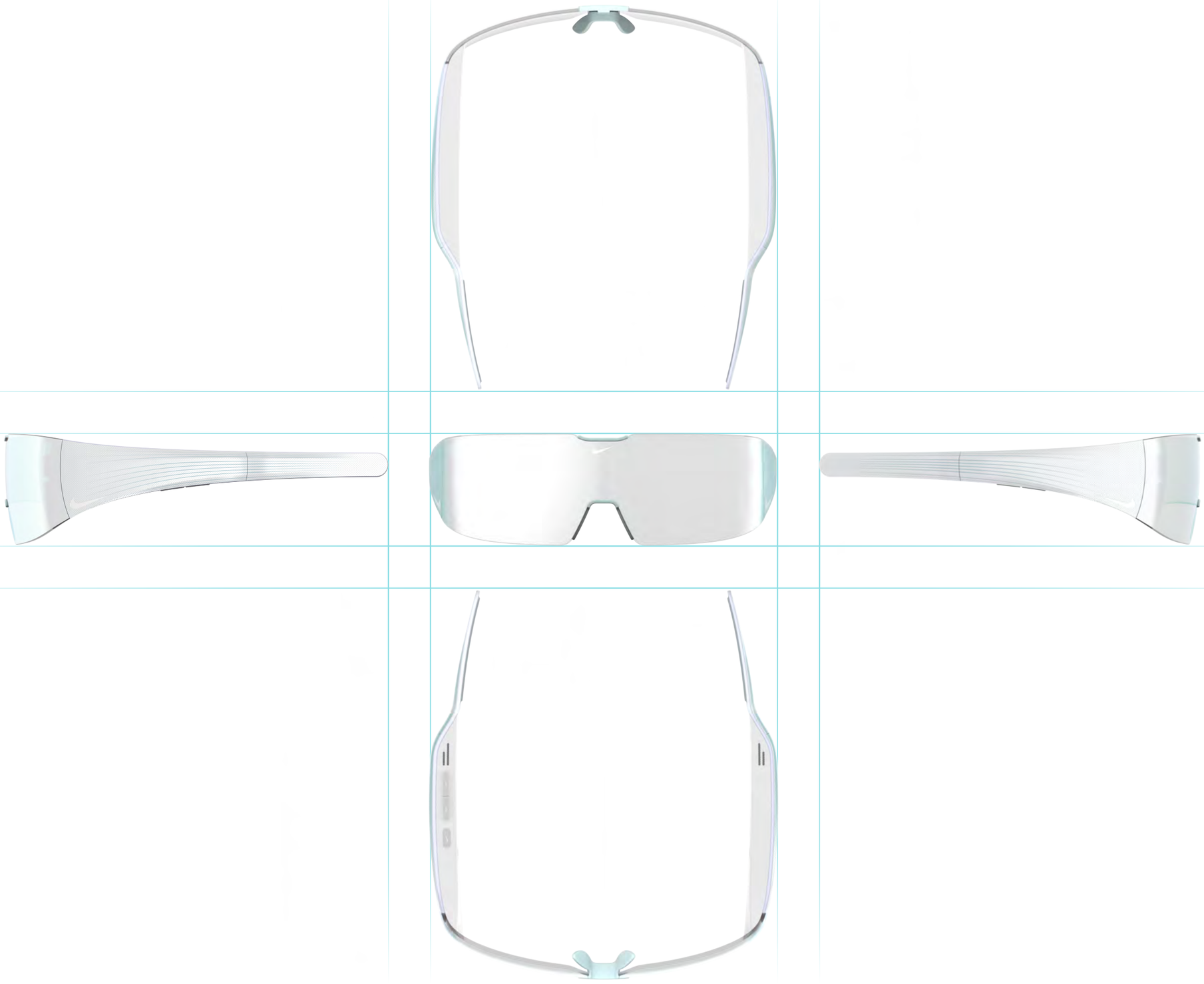
Mercury



Dragonfly

UCLA

Candy



Exploded view

1. Waveguide Lens
- Shatter resistant Polycarbonate
- UV reflective coating

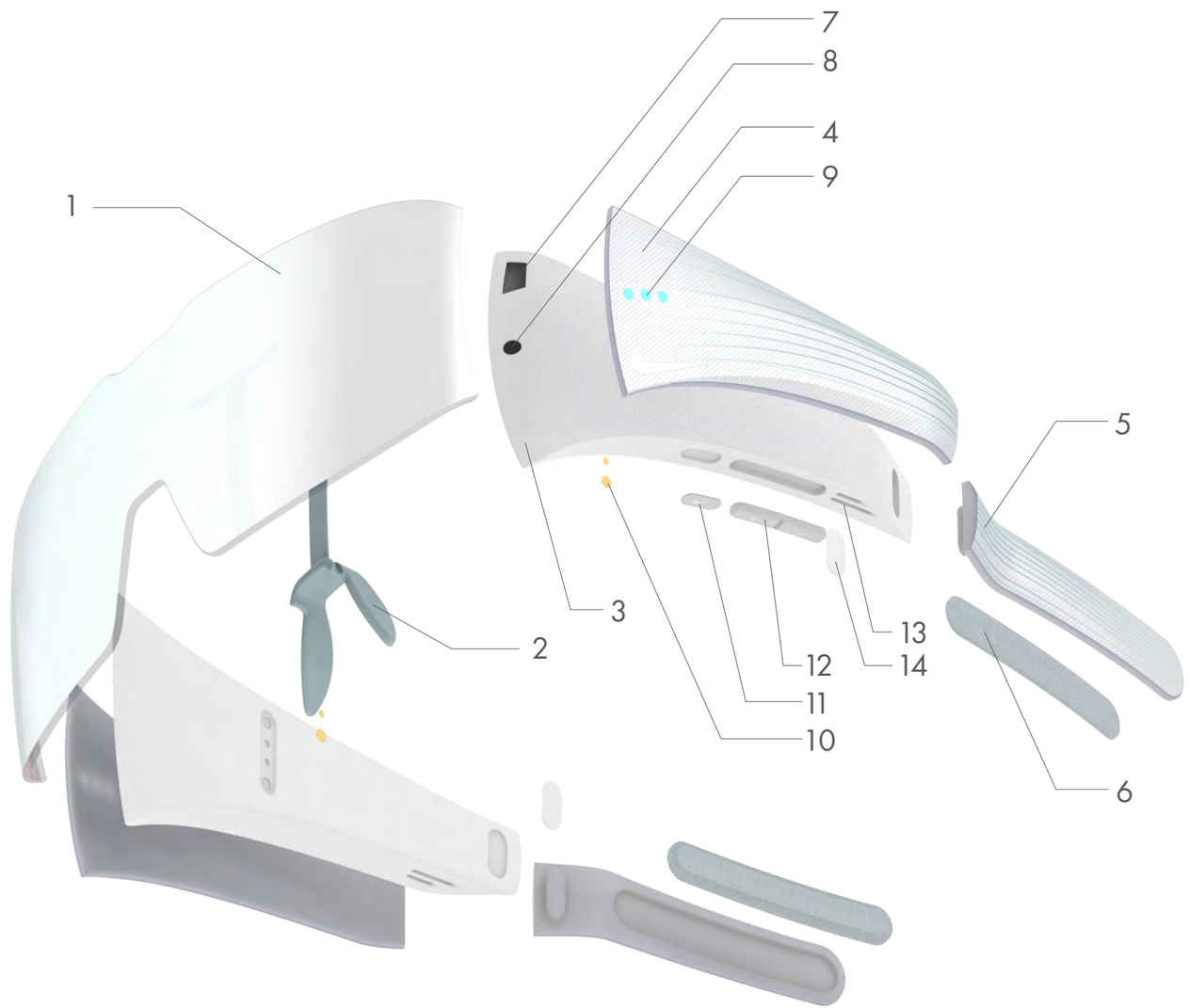
2. Nose pads
- Metal stucture
- Silicone coated

3. Main compartment
- Textured thermo plastic rubber

4. Main compartment cover
- Thermo plastic rubber
- UV reflective coating
- Micro texture
- Fading graphic

5. Temple attachment
- Thermo plastic rubber
- UV reflective coating
- Micro texture
- Fading graphic

6. Temple padding
- Bending mechanism
- Wrapped with anti-wicking Lycra



7. Display window

8. Camera

9. Indication LED

10. Charging pins

11. Switch + Pairing button

12. Volumn buttons

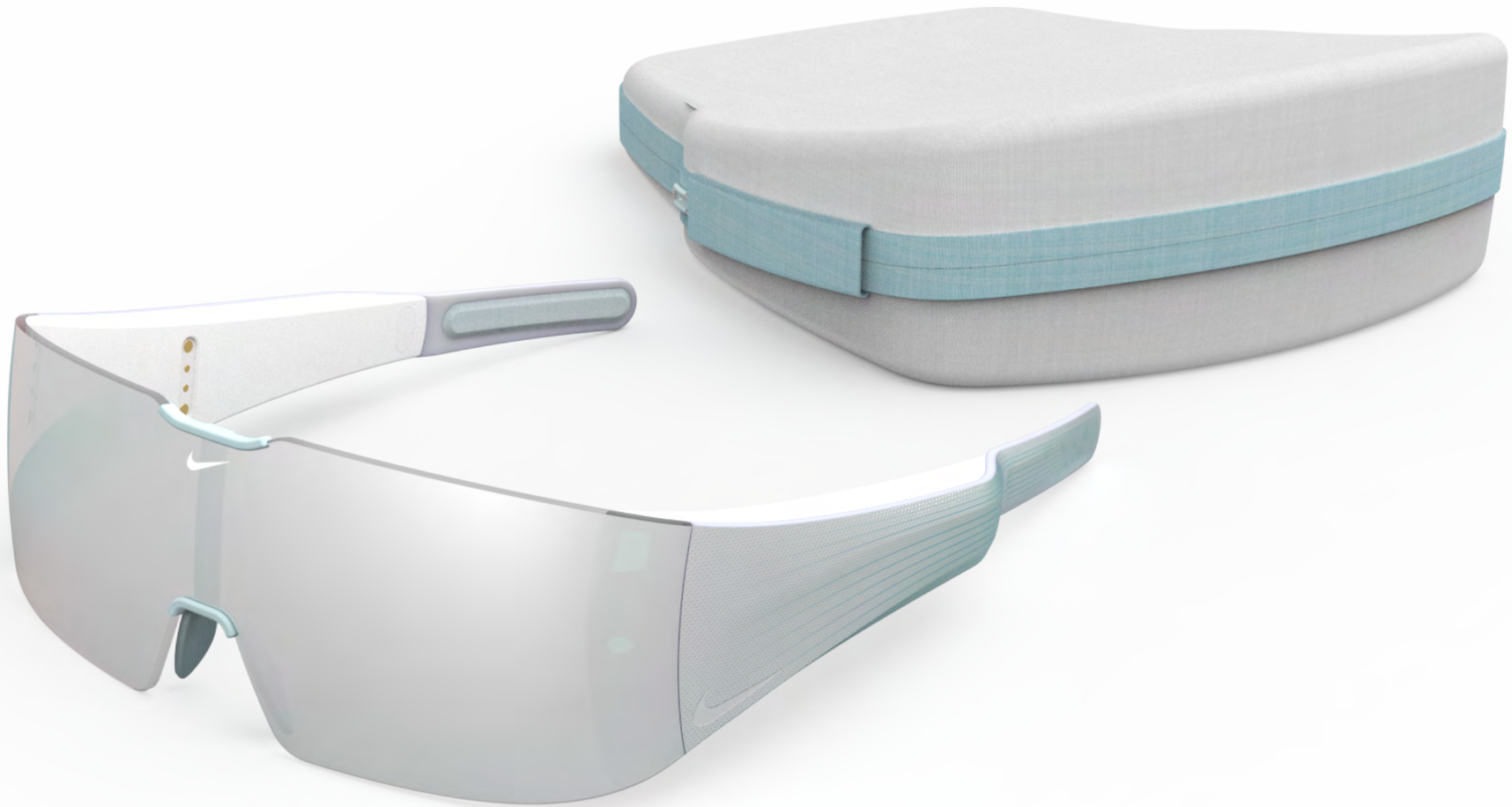
13. Speaker grill

14. Temple release button

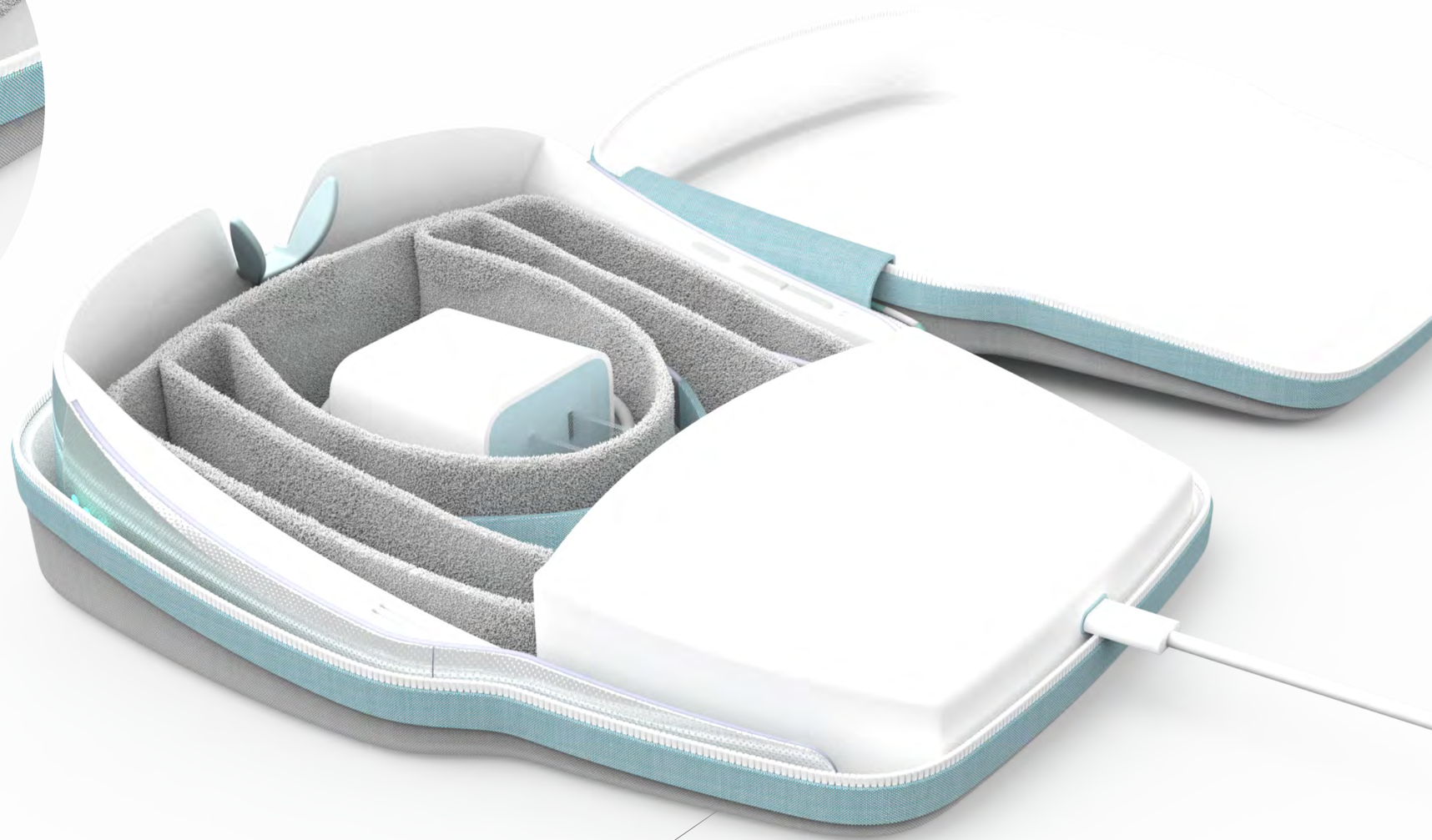
Phase 5

Final Design

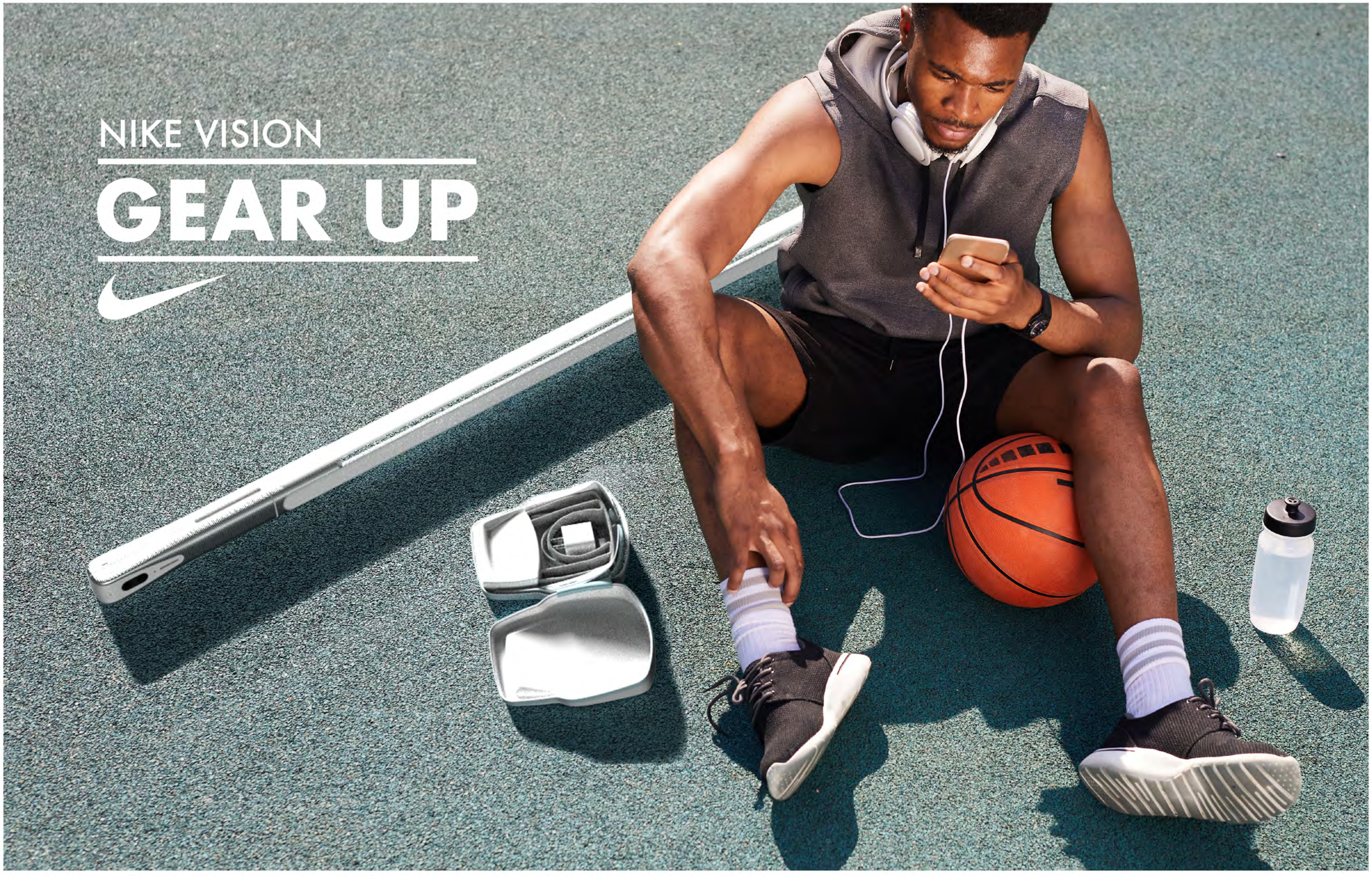
AR PRO Glasses case



Magnetic charging pins
it snaps to the glasses when glasses are put in the case



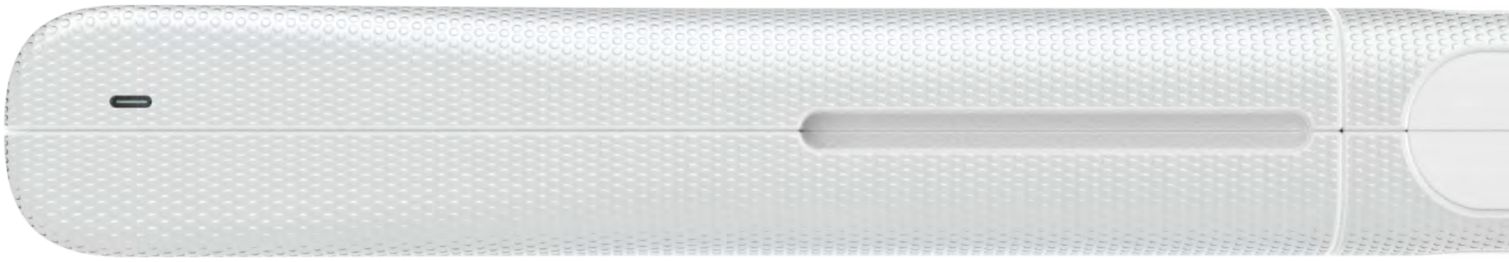
Portable charging case
User can charge the glasses any time, any where.

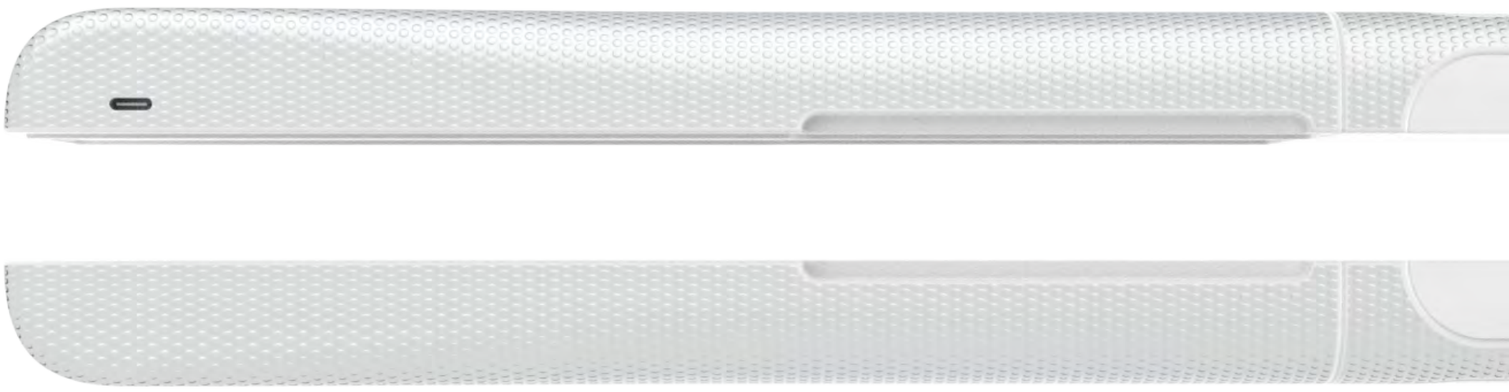

NIKE VISION
GEAR UP

Motion Tracking Cameras

Motion Camera
Double cameras for wide angle imagery

Anti-Slip Surface
Rubber coated + gripping pattern





Magnet Attachment
Two cameras will be auto oriented into the groove.

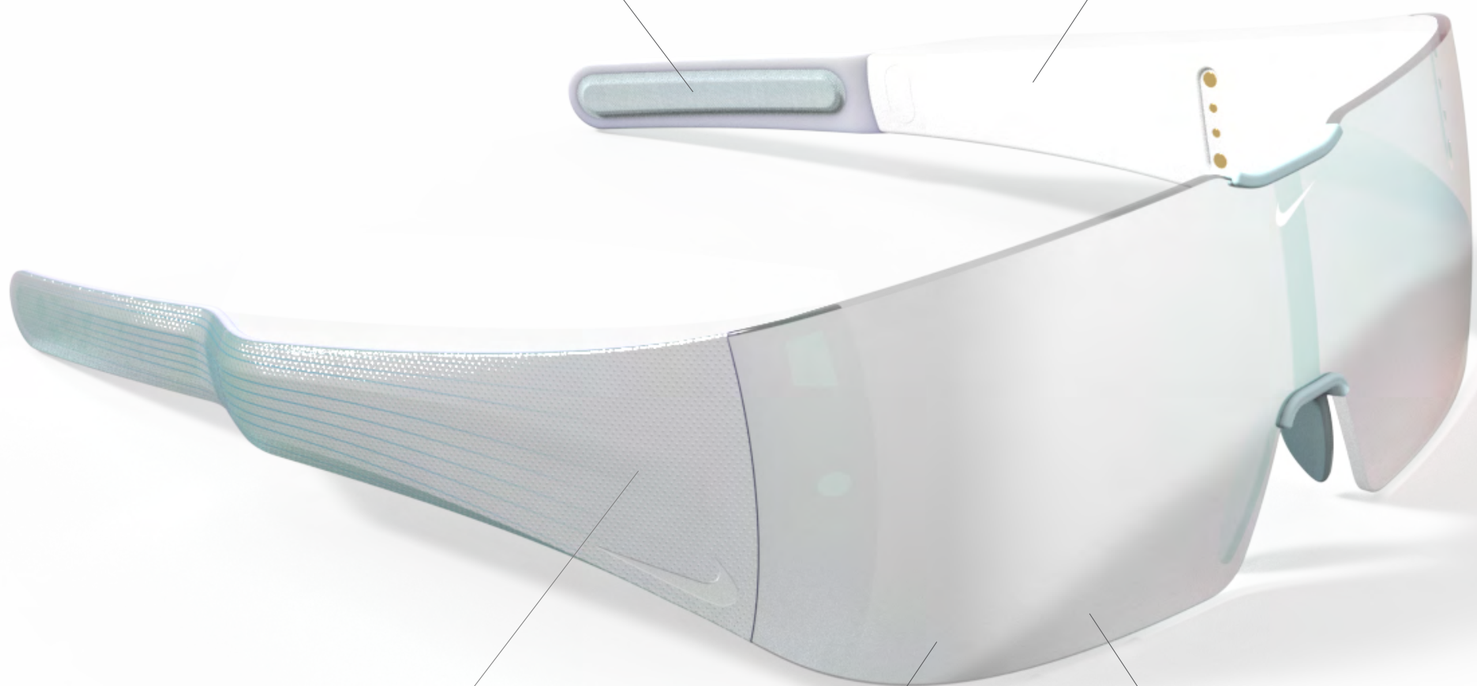
Connected
Two cameras are connected when put together. Charge and share data as one unit.


2021
I GOT THE VISION
NIKE VISION

Vision AR Glasses

Anti-wicking Lycra
Wrapping on bending mechanism

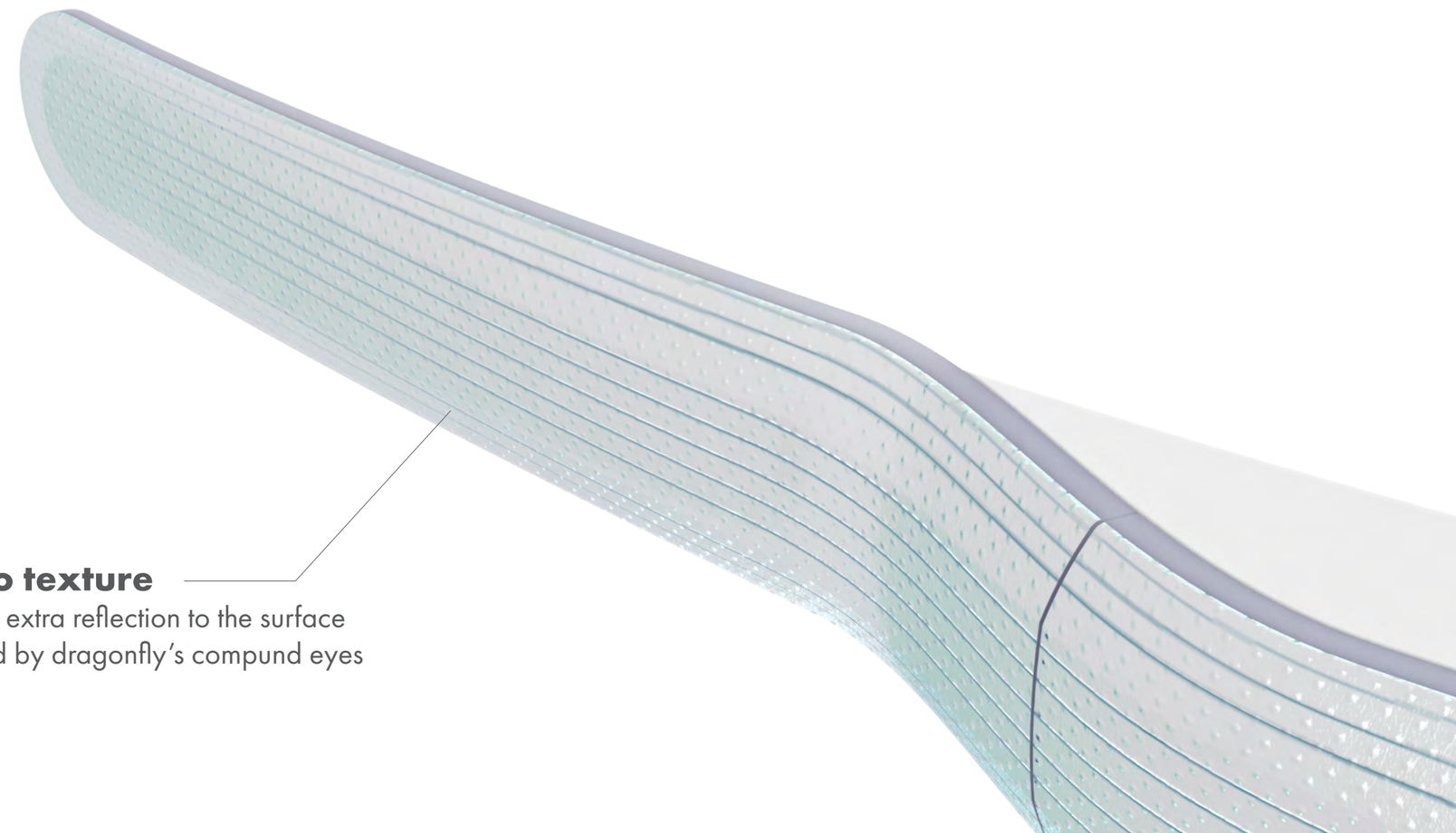
Thermo Plastic Rubber
Soft to the touch and adding extra grip



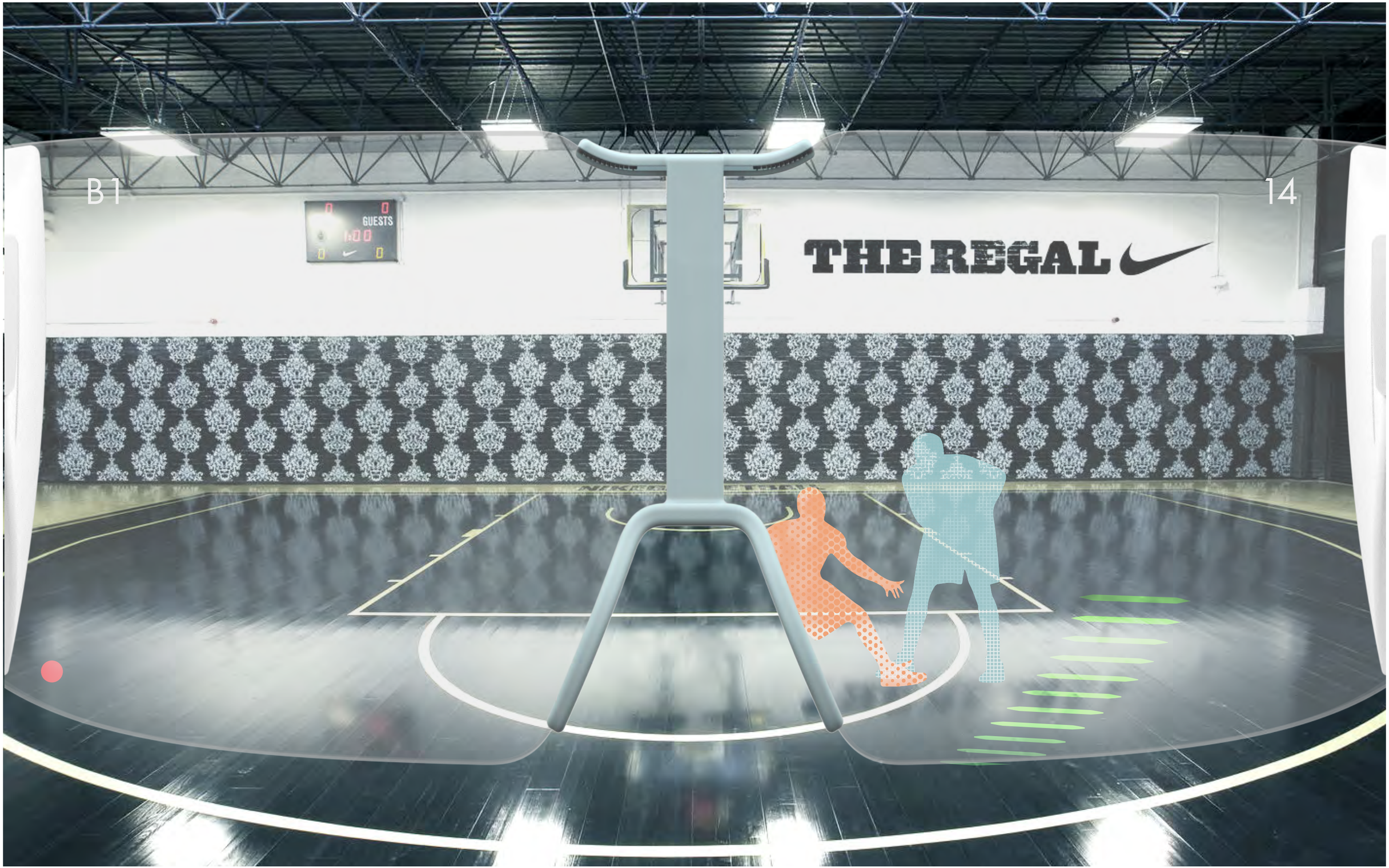
UV Reflective coating (exterior)
Reflect different color based on the light source position.
Hidden hardware behind the lens

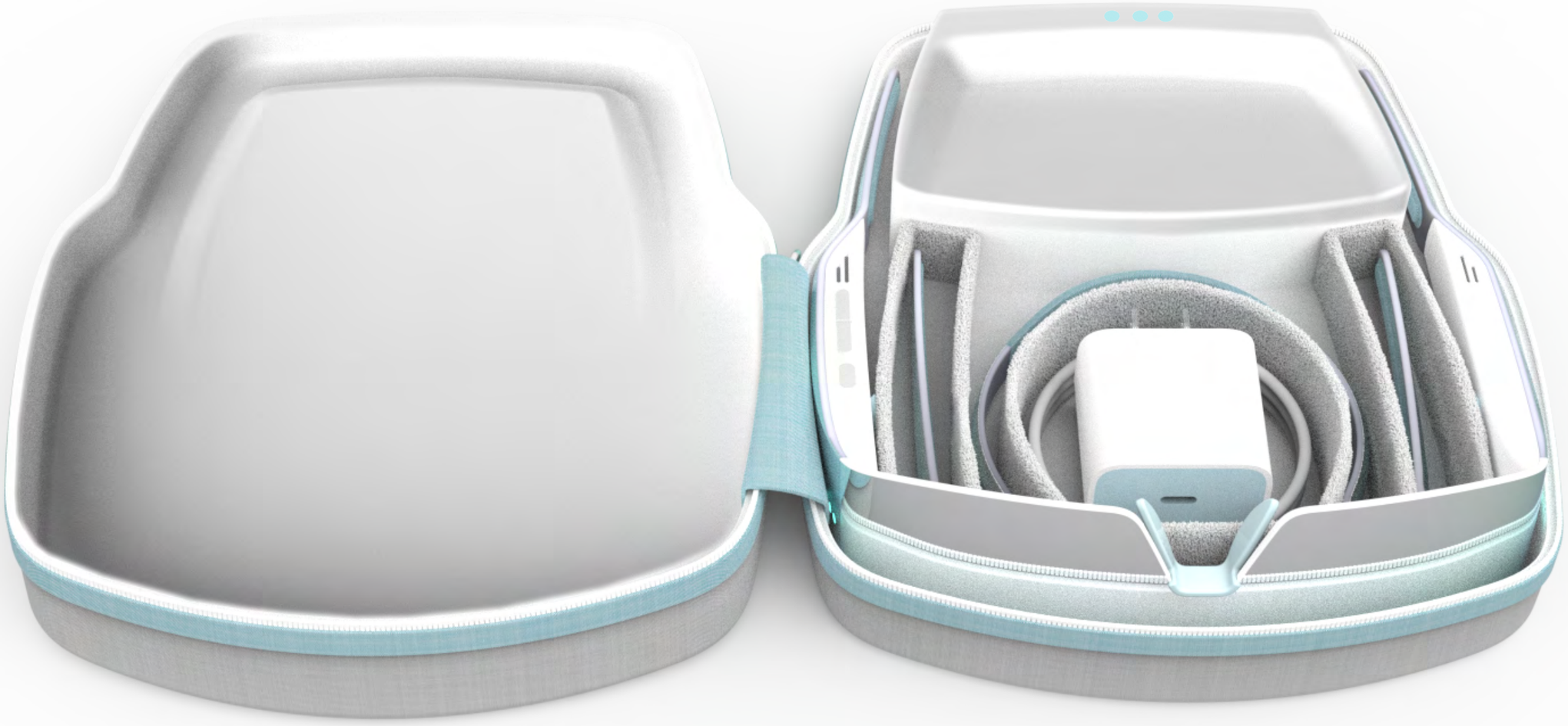
Waveguide Lens
Shatter resistant Polycarbonate

Fading graphic line
Following the bone line and fade with the surface
Capture the motion of speed



Micro texture
adding extra reflection to the surface
inspired by dragonfly's compund eyes


B1
14
GUESTS
THE REGAL




NIKE VISION