

A cutting edge integrated contact lens care and monitoring system, combining personalised app driven lens information and a smart connected designer lens case - IBall

How do you respond to something you can't see? Something that is dangerous, something that can cause long term impact to your vision, your primary sense. Wouldn't you want to know about it? Wouldn't you want to fix it?

When looking into the main reasons for contact lens drop out rates, the theme of discomfort kept appearing. This is primarily caused by inflammatory complications. Without even realising it, contact lens wearers are increasing these infection rates. The risk is cumulative, it needs to be taken seriously.

Biofilm growing on the inside of lens cases is this invisible threat. Biofilm is a growing collection of free floating micro-organisms that easily adhere to the inside of contact lens cases. This could include the super bug, Staphylococcus aureus. A question you might have is, would the disinfectant solution eliminate this? The answer is no. In fact all biofilm build up can directly transfer and grow on contact lenses themselves. The other significant factor that this design addresses, is managing poor maintenance and hygiene regimes.

This product has the potential to transform the contact lens industry and dramatically reduce the factors leading to drop outs.

This product is the IBALL, the Intelligent Biofilm Averse Lens Log.

All components of the case that come in contact with the lens are either disposable or made from biofilm resistant material. Using new technology developed by the University of NSW to ensure superior protection against microbial biofilms. The biofilm resistant dome on the plate above the compressible honeycomb matrix will ensure the lens is always facing the right way for insertion, which is a common problem for many wearers.

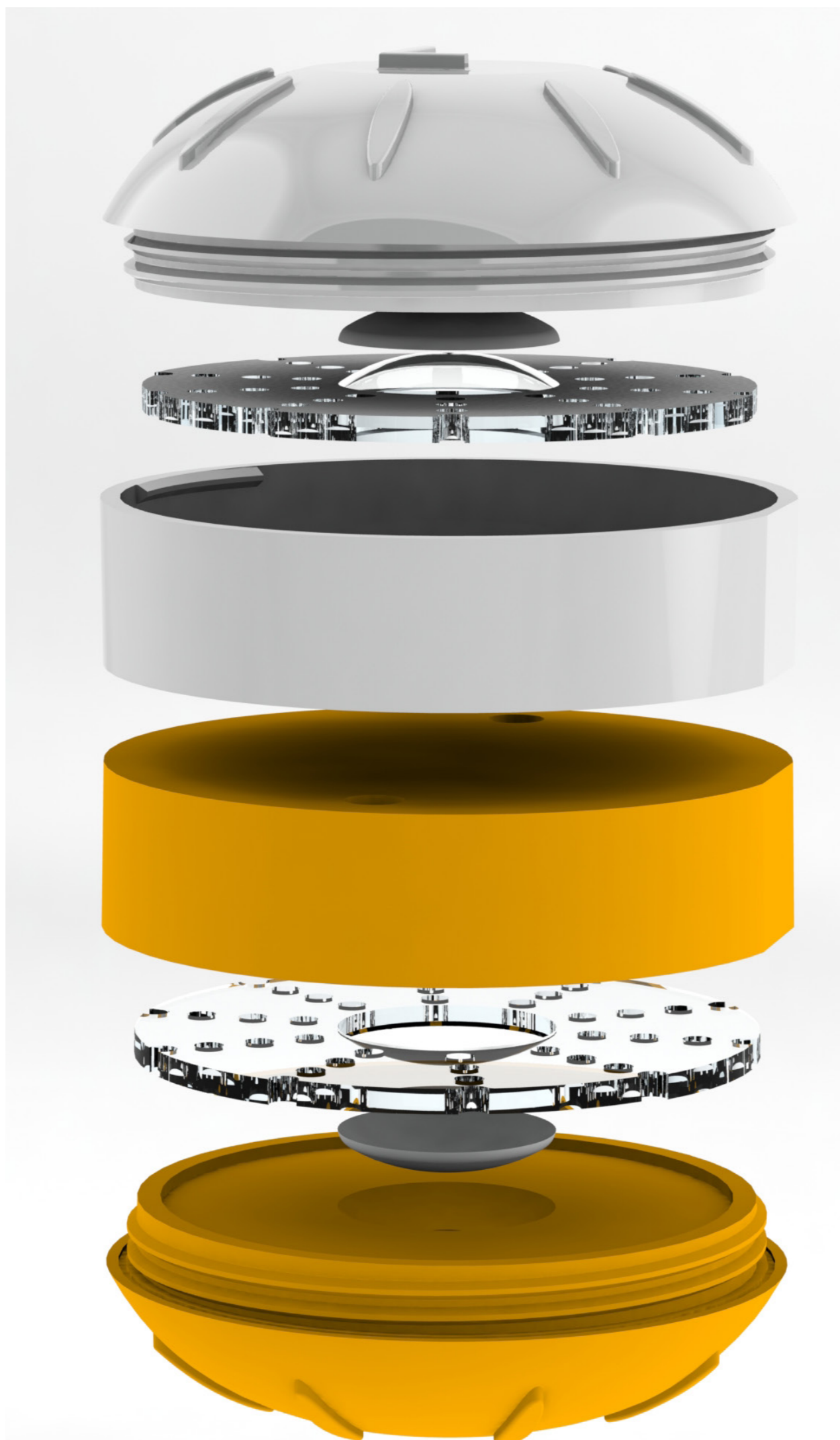
The internal mechanism gently holds the lens between the top of the honeycomb and the twisting lens cap. When the cap is rotated to open or close a gentle friction based cleaning action is applied. This action to close and open the lens cap doubles as the cleaning action, and replicates the recommended cleaning procedure with rubbing the lens on the palm of the hand. The medical grade silicon on the underside of the cap is secured in place with medical grade adhesive.

Daily wear time tracking is monitored using a reed switch on the underside of the dome. When the lid is closed and the honeycomb is compressed, the solution is displaced to completely submerge the lens. The switch will enable the system to flag when the lenses are removed and been in use for an unacceptable length of time. For example if the user has fallen asleep with their lenses in, their mobile device will notify them to remove their lenses, putting them back in the case before sleeping.

It is common practice for wearers to continue to wear lenses past their recommended use life. This increases the risk of infections and can lead to lens discomfort. The IBALL logs lens age using data from the reed switch to calculate days worn, notifying the wearer when it is time to replace.



IBALL



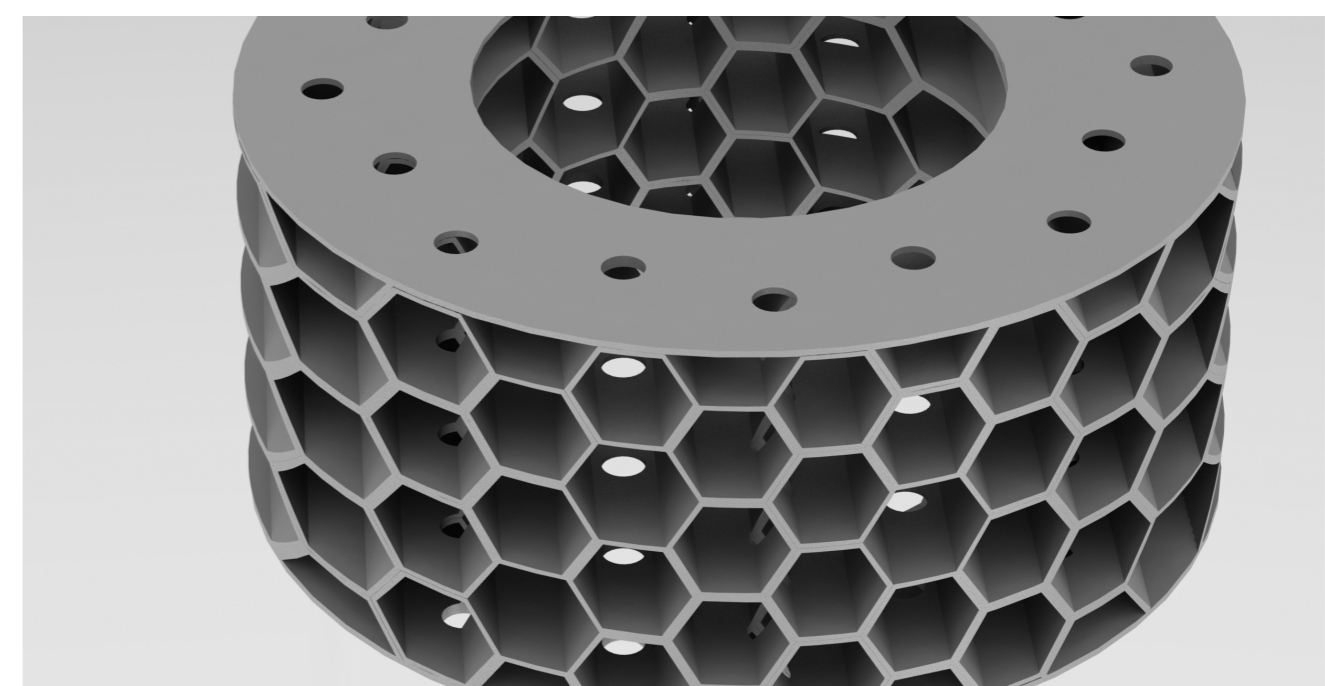
EXPLODED VIEW



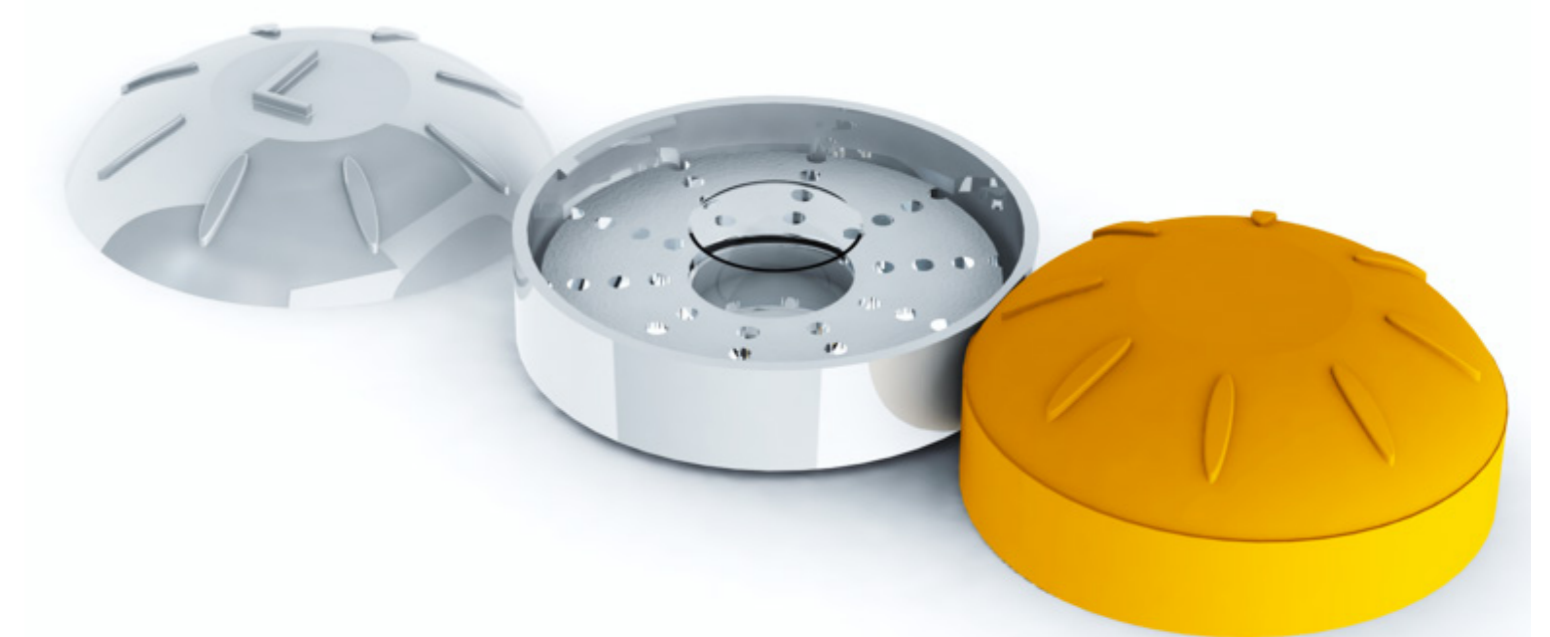
CONTACT LENS



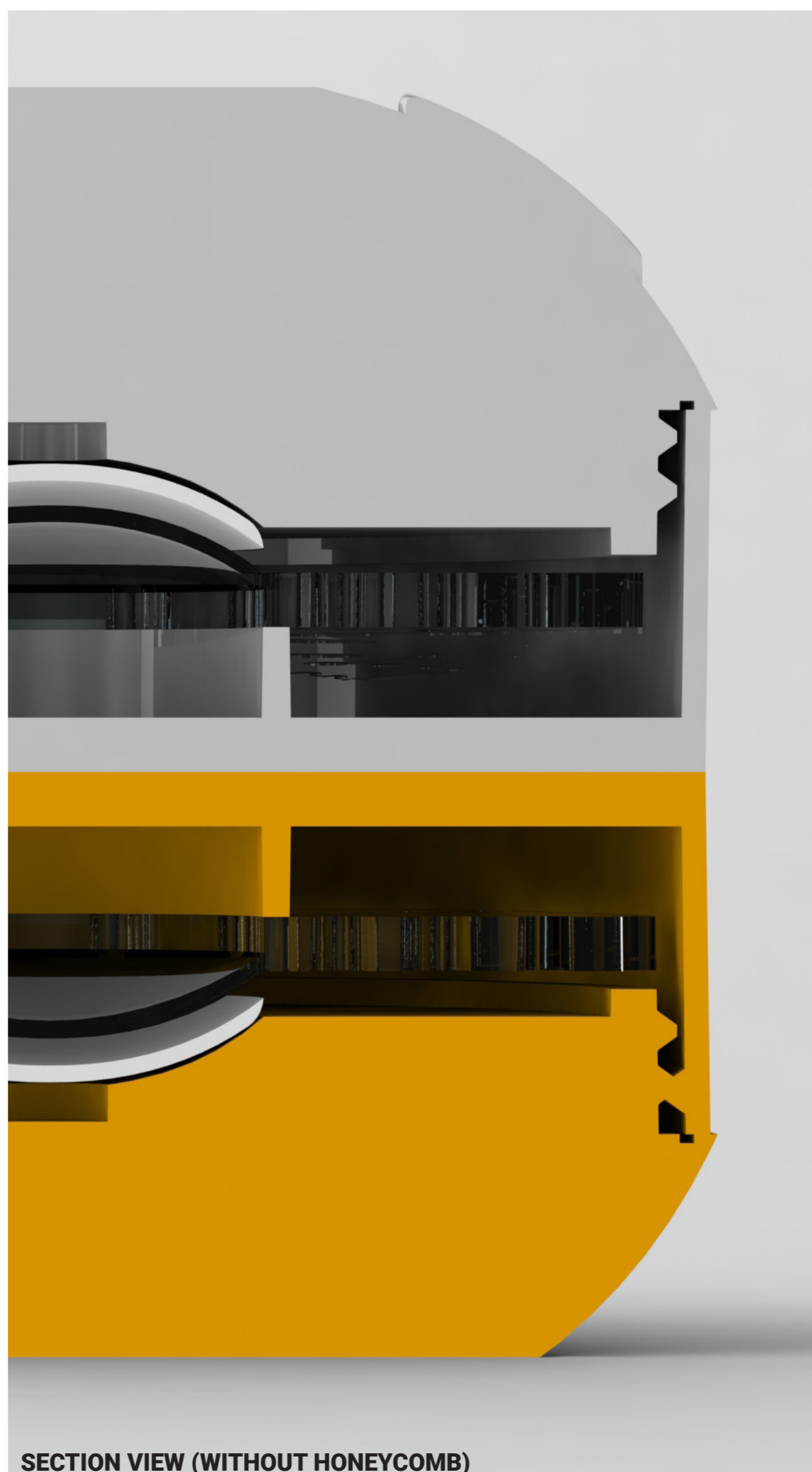
CASE FLATENS OUT



HONEYCOMB COMPRESSIBLE MATERIAL



CASE OPEN WITH CONTACT LENS



SECTION VIEW (WITHOUT HONEYCOMB)

