

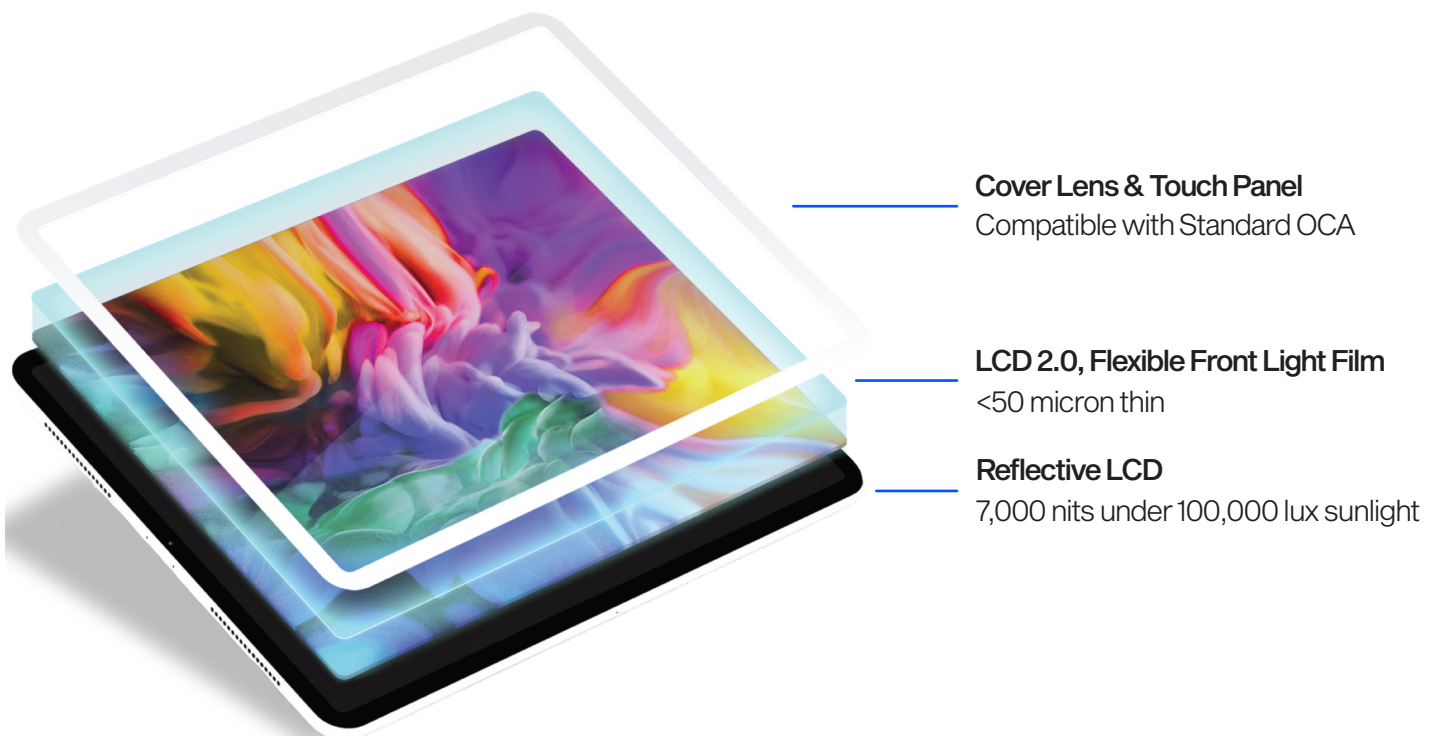
What is **LCD 2.0**?

Whether you're sitting in your living room or driving in your car, odds are you're surrounded by backlit LCD displays. From smartwatches to tablets, we're so used to adjusting our display brightness and strategically recharging devices throughout the day that most of us don't stop to ask what comes next.

The answer is LCD 2.0, and it's a key component in reaching the next level of user experience in display for consumer, educational, industrial, and medical devices.

This update of the liquid crystal display that's been dominant in the market over the past 20 years is a frontlit reflective LCD module that emits less intense blue light and requires less power than the backlit models we're used to. It's the future of display on everything from wearable devices to billboards, and the arrival of this technology is great news for consumers and engineers.

Components of **LCD 2.0**



The Next Generation of Display is Frontlit Reflective, Low Power LCD

You may already be familiar with the story of LCD: this technology emerged from an RCA lab in 1964 and changed the way we interact with moving images forever.

While LCD technology has evolved since the 1980's, the liquid crystal behind the smaller pixels is the same technology. [Backlight technology](#) has evolved to provide a wider gamut of colors and thinner dimensional specs, but we haven't seen any significant development in the way the light is transmitted until now.

And consumers in all verticals are ready for a display upgrade. While there are fine workarounds for recharging laptops and other display-dependent devices on the go, the solution for today's consumers' biggest complaints isn't just about the development of better, longer lasting batteries.

What's next is a new generation low power LCD that is adaptable, light, and viewable in any environment for a user experience so subtly superior, you forget you ever had to hold your hand over your smartwatch to check the time.

What Consumers Appreciate about Lower Power LCD Tech

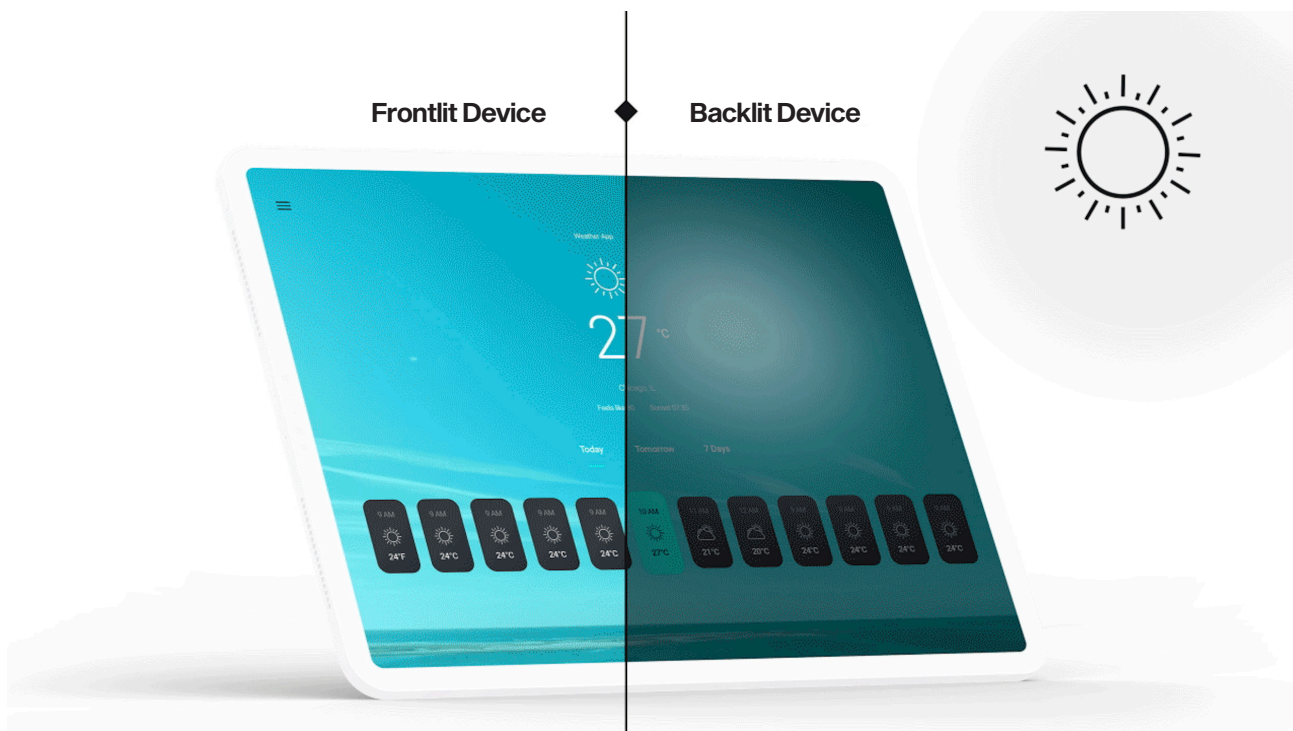
[LCD 2.0's front light display](#) combines the power of reflective LCD and any ambient light to reduce the strain on consumer's eyes and device batteries.

What would you do today if you had to use your laptop in bright sunlight? Increase the brightness of your display and drain the battery faster. What if you can't see your smartphone's navigation app while driving on a sunny afternoon? It's the same story: increasing brightness

and emptying your battery.

Instead, Azumo's LCD 2.0 technology delivers a high performance display without the negative trade-offs that plague consumers using traditional LCD and e-reader technology.

- Frontlit reflective LCD modules are easier on the eyes than traditional LCDs because they emit softer light emissions (and [less blue light](#)).
- LCD 2.0 is viewable in any light, including bright sun.
- A powerful, but low power LCD that won't drain the batteries on your mobile device. LCD 2.0 consumes 10x less power than traditional LCD technology.



Even better, these benefits combine the best of LCD & e-paper displays. Consider the last e-reader you used. [E Ink's ACeP e-reader](#) takes 2.8 seconds each time you refresh the screen. Azumo's latest Sharp demo takes 1/30th of a second to do the same task. This is why LCD 2.0 can do video and e-paper can't.

The Benefits of Frontlit Reflective LCD Modules for Engineers

The benefits of layering an ultra-thin LED light panel onto a reflective LCD translate for engineers are not so different from the qualities consumers appreciate:

- 1. Visible in any light.** Because LCD 2.0 modules are visible in all environments and lighting conditions, these displays are readable in ambient light, including bright sunlight, as well as low light environments.
- 2. Low power LCD means lower power requirements.** LCD 2.0 requires a tenth of the power you'd need to operate traditional LCD technology, which is great news from a design point-of-view.
- 3. Enhanced display clarity. Particularly for color displays,** the front light increases the color gamut 3x as compared to traditional lighting methods.
- 4. Better for eye health.** Thanks to softer light emissions, you won't have to take into account the public's concerns over intense, long-term blue light exposure.
- 5. Light and flexible.** Unlike the clunky backlight panels of the past, LCD 2.0 is light and thin, which helps reduce the overall device weight.
- 6. Drop-in ready.** Manufacturers can easily install Azumo's LCD 2.0 reflective frontlit display module into their products using the same LCD drivers they're used to.



The Next Generation of Display Technology **Puts Visibility First**

As smart, integrated technology increases its presence in our homes, in our vehicles, and on our bodies, there's a renewed imperative for better visibility, [indoors or outdoors](#), without sacrificing battery life or overall performance.

By making use of the ambient light in any environment and enabling [Memory-in-Pixel technology](#), Azumo's frontlit reflective LCD module is a critical component for engineers designing where our personal and public technology goes next.

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