

# The “LCD” That Comes After the LCD—Aiming for the Ultimate in Energy Efficiency and Minimal Resource Use

## The Ever-Evolving, Advanced Environmental Performance of the AQUOS LCD TV

Sharp has been working to evolve liquid crystal displays (LCDs) and develop new applications for them ever since commercializing the world’s first practical application for an LCD as the display device in a compact electronic calculator in 1973. Features such as light weight, thin profile, and energy efficiency inherent to LCDs led to their widespread use, initially in mobile devices. Ultimately, the LCD TV emerged from this evolution, first from monochrome alphanumeric displays to graphics displays, and then to color-capable, full-motion video, high-resolution, and large-screen displays. In January 2001, the AQUOS made its debut as a television befitting the century of the environment.

The AQUOS exemplifies Sharp’s Super Green Product concept and symbolizes Sharp’s attitude toward environmentally conscious product design.

Compared to CRT TVs, it delivers the performance one would expect from an LCD TV, namely, energy efficiency, low resource utilization with a thin profile and light weight, and long life with a backlight lasting approximately 60,000 hours<sup>\*1</sup>, as well as making use of green materials wherever possible.

Looking ahead to a low-carbon society becoming a reality, and at a time when energy efficiency in consumer electronics is increasing in importance, Sharp has year after year consistently improved the energy-saving performance of the AQUOS (see below).

<sup>\*1</sup> A measure of the time until screen brightness declines by half under continuous viewing in a room at 25°C with screen brightness in Normal mode.



Prototype LCD TV (computer-generated graphic)

## Prototype LCD TV Featuring High Resolution, Super-Thin Profile, and Advanced Environmental Performance

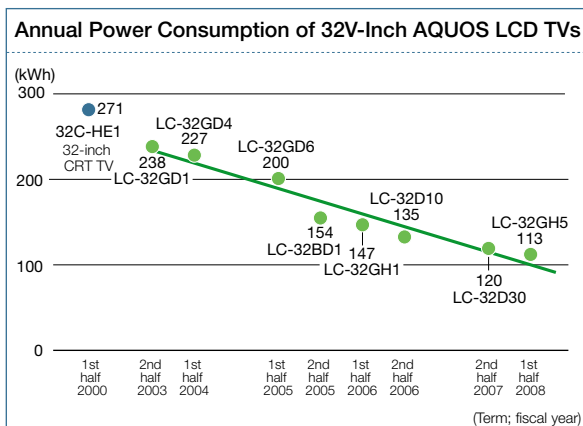
In August 2007, Sharp brought together the essence of its LCD technologies accumulated over long years of experience in this field and announced a prototype LCD TV that far surpassed existing models in terms of image quality, thinness, and environmental performance. This prototype features a design with unprecedented, exceptional levels of performance, including a thickness of 20 to 29 mm, contrast ratio of 100,000:1<sup>\*2</sup>, color reproducibility of 150% of the NTSC color gamut<sup>\*3</sup>, power consumption of 140 kWh/year, and weight of 25 kg, all in a 50-inch class TV.

In addition to its superb image quality, the impact of a thickness of just 20 mm and power consumption of about one-half of existing LCD TVs was huge, and this development has significantly expanded the potential for energy efficiency and lower resource utilization in LCD TVs. If this prototype were to become available as a commercial product, replacing a conventional 32-inch CRT TV with this LCD TV in the 50-inch class would cut power consumption by roughly half.

Sharp will push ahead to reduce power consumption in all its products, particularly LCD TVs, through technological innovations, and contribute to the achievement of a low-carbon society.

<sup>\*2</sup> Indicates the brightness ratio between the darkest black and the whitest white on the screen (with the figure for black set at “1”). The higher this value, the more vivid and vibrant colors appear, and the clearer and more detailed the image quality on the screen.

<sup>\*3</sup> A numeric value indicating the percentage of area of the NTSC color spectrum that can be reproduced. The higher this value, the more vivid the primary colors (red, green, and blue) that can be reproduced.



## Superb Image Quality and a Super-Thin Profile with Far and Away the Lowest Power Consumption

In developing this new LCD TV, what we valued most was image quality. The public reaction to the super-thin profile was huge, but that is a feature we adopted more to make the beauty of the screen stand out. Along with superb image quality, we consistently sought to achieve power consumption that was far and away the lowest, even with a large screen.

I think this new LCD TV, which delivers outstanding energy efficiency, that is, power consumption about half that of a CRT TV, even with a screen twice as large, is a product that can contribute to the betterment of society.



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