

# Philips Research reveals ultra-thin backlight technology for TVs

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In the Future Zone of this year's IFA trade fair in Berlin, Philips Research will demonstrate its thinnest 32" liquid crystal display (LCD) prototype on show. With a 1mm light guide, Philips Research has created a display prototype of only 8mm. When incorporated into a TV set, Philips expects that this ultra-thin LCD will tap into consumers' desire to easily hang their flat-screen TVs on the wall – just as they would do with a painting.

The ultra-thin backlight technology reflects the general design trend and enables consumers to use their TV as a piece of art rather than a piece of

electronics. People want to be able to hang their TVs on the walls, just as if they were paintings.

The latest product developments enabled the launch of Essence, a stylish 42" slim display that is only 38mm thick. Now, the backlight technology of Philips Research takes it a step further and brings the ultra-thin trend to a next level.

“At just 8mm thick, our ultra-thin display concept will enable the thinnest 32" LCD-TV,” says Fred Boekhorst, Senior Vice-President Philips Research and Program Manager Lifestyle. “Our concept is also very light – around 5 kg – enabling a 32" LCD-TV that is around 10 kg lighter than existing comparable TV sets. As a result, hanging such an LCD-TV becomes simple and easy.”

Philips Research has based this ultra-thin design on its extensive expertise in optical design and backlighting technology. The novel technology involves a very thin light guide plate illuminated from the top and bottom by high-power, energy-efficient LEDs.

Using Philips’ patented light in-coupling structure and a fine-tuned out-coupling pattern, light can be distributed over the whole display area in a uniform fashion.

“We’ve managed to cut the size of the light guide – which is the thickest part of an LCD – from around 25mm to just 1mm,” says Boekhorst. “Hence, the thickest part of the display has now become one of the thinnest parts, even thinner than the LC panel. This has been key in achieving the sleek ultra-thin design.”

Source: Philips

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