LCDs: On Display

No matter how thin, light, or fast your notebook, it's not worth a dime if you have a shoddy screen. Following in the footsteps of our hardware compadres (in the article "Flat-Out Brilliant," February 26), we tested the screen quality of nine notebook LCDs using the MURATest photometric test system from ELDIM, of Hérouville St. Clair, France. You'll be surprised at the differences among them.

EASY ON THE EYES

The eye-friendliest panel of the nine notebook LCDs was clearly the one on the Sony VAIO PCG-R505JSP. The image from the full-white image shows strong uniformity, with the brightness evenly distributed throughout the screen. Some small areas along the bottom edge were faintly dimmer, but not very noticeably. And, as seen in their uniformity screen images and test scores, the Dell and Gateway screens also showed excellent uniformity.

The Sony screen was clearly the brightest. The maximum reading on the image was nearly 180 nits—compared with the Dell and Gateway units, which maxed out at around 150 to 155 nits. This additional brightness also affected its brightness score: The Sony's 156 average nits was significantly greater than the IBM's 137 average nits. This extra brightness makes a difference in very bright lighting conditions or where there's a lot of glare.

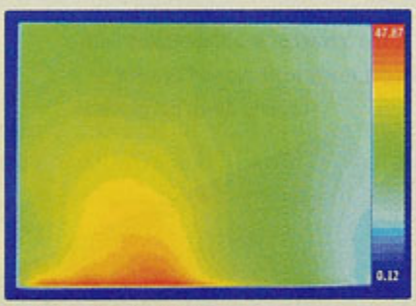
The Acer display was noticeably deficient—not nearly as bright as the Sony's, and the brightness was concentrated in the lower-left quadrant, which contributed to its poor uniformity score. The Fujitsu unit also had some uniformity problems on the full-white image, and the Compaq showed considerable light leakage in the bottom corners on the full-black screen (found at *www.pcmag.com*). The remainder of the displays scored well and showed similar results.

HOW WE TESTED

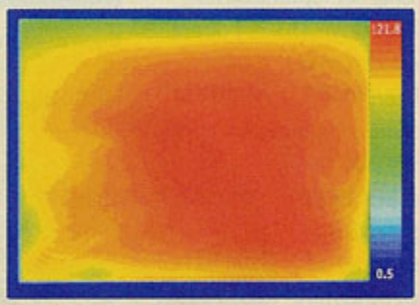
Using a temperature-controlled CCD matrix, the MURATest photometric test system measures the light emitted by the entire screen at one time. By measuring the light output of different images—a full-white image, a full-black image, and a checkerboard pattern—we were able to analyze the screens for brightness, uniformity, and contrast.

We reproduce the white-screen results below. Note that each image has its own scale, because the different panels showed varying maximum brightness. Keep in mind that the perception of brightness is logarithmic, which means that one display must be ten times as bright as another to be perceived as twice as bright. In other words, when you compare these brightnesses, a screen that has a measure of 150 nits (candelas per square meter) will seem brighter than one that measures 100 nits. But it won't look half again as bright; it may seem only 10 to 15 percent brighter.

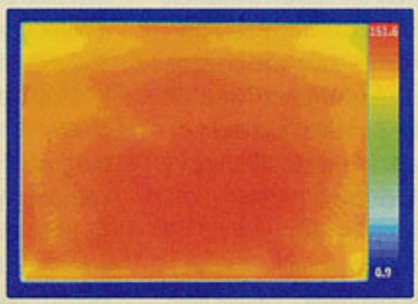
To see the relative brightness of these panels, look at the checkerboard patterns we posted on the Web (*www.pcmag.com*). The black images are also on the Web, so you can see whether there are any light leaks; this will be of particular interest if you plan to watch DVD movies on your notebook—and to be honest, who doesn't?—*Alfred Poor*



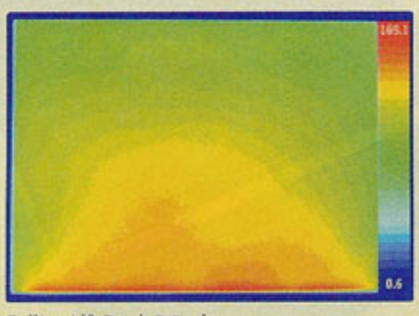
Acer TravelMate 364ECi



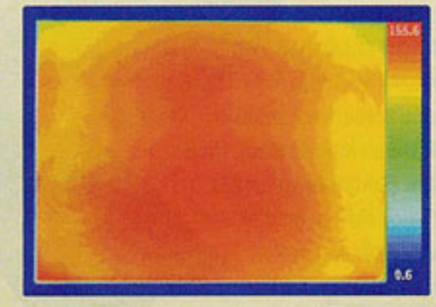
Compaq Evo N400c



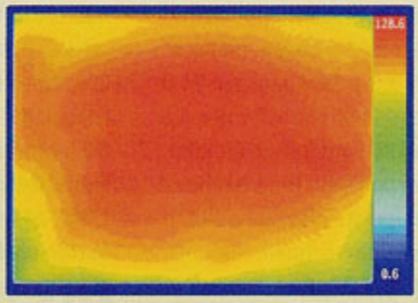
Dell Latitude C400



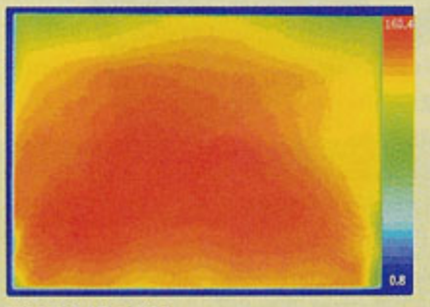
Fujitsu LifeBook S Series



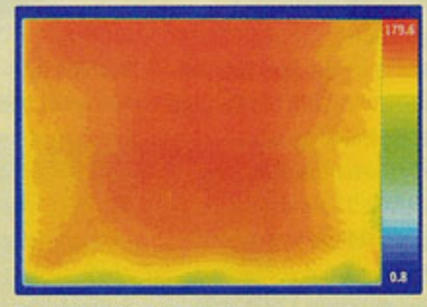
Gateway Solo 3450



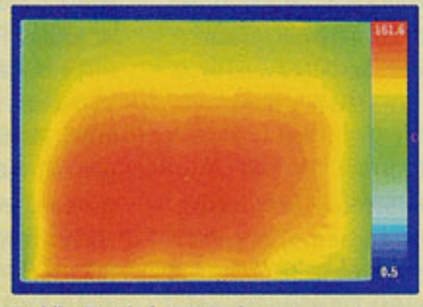
HP Omnibook 500



IBM ThinkPad X23



Sony VAIO PCG-R505JSP



Toshiba Portégé 4000 Series