

BUILDING SIGN CABINETS

Steel and aluminum

sign cabinets—or “cans” or “box signs,” as some builders call them—are to the sign industry what the wheel is to Detroit. They are standard fare that looks simple but that are actually compiled from a myriad of specs, each with a different application.

And like wheels, sizes of sign cabinets vary in all three dimensions: height, width, and depth. And maybe everything about these signs comes in threes, because the sign cabinet lighting is electrified with either neon, incandescent, and fluorescent components.

With the decreasing use of incandescents in today’s sign lighting, we can now add a fourth lighting source to sign cabinetry: LED.



Sizing Things Up

Typically sign makers buy or build cabinets made from steel or aluminum—the better ones with extruded aluminum into which they fit the sign faces. These are welded boxes constructed to meet UL approval for use with electrical components to run some form of internal illumination (traditionally fluorescent).

Some sign cabinet builders use an automotive paint to coat their cabinet boxes, because they like the extra-durable, all-weather resistance. But any experienced cabinet builder can confirm that a weather-resistant paint can take what the elements throw at its surface just as well as an auto paint (and usually for less money).

The sign cabinet holds either a single- or double-face design lit from the inside. With the hinged design, the sign face swings open to change the message; in the slide face design, the acrylic message boards slide in and out along the channels in the frame.

The message face, often made up of an acrylic, reacts to the internal heat built up as the sign's electronics operate. Thus heat dissipation has a lot to do with the dimensions of the "can."

Traditional cabinet design has to accommodate heavy electrical equipment like ballasts, light mounts and braces, wire conduit, and the affiliated hardware used to assemble, clip, and tie-offs. But that changes with LED.

Shedding New Light

"LEDs offer a thinner, lighter weight solution, allowing the opportunity for thinner cabinets and signs [that can] be easily installed in obscure places," says Jill Bonilla, marketing manager at SloanLED (www.sloanled.com) in

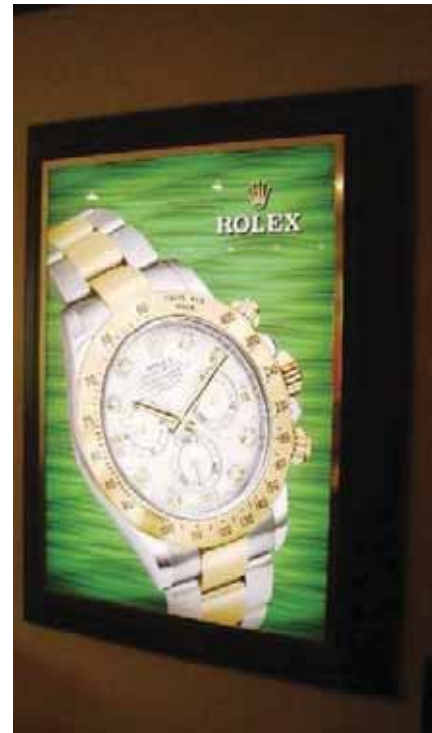


PHOTO COURTESY OF LED CONCEPTS (WWW.LEDCONCEPTS.COM) SANTA ANA, CALIFORNIA.

Ventura, California.

Dave Brazzel of Brazz Specialties (www.gobrazz.com) in Denver, Colorado says, "Construction of the LED cabinet structure is the same as a fluorescent cabinet, but the depths might be a little shallower as the need for a precise distance between the lamp ends is no longer necessary.

LED lighting works well enough, but the depth of the cabinets in which the builder places the LED lights will have a huge impact on the light that is transmitted through the face, in particular, the brightness. After all, LEDs are low-power lamps that operate in groups to give off an illumination.

"Start by determining the row spacing for your layout," says Jeff Nall, systems manager of Specialty LED Installation at GE Lumination (www.lumination.com). "If

your [Tetra PowerStrip tubes] will be less than six inches from the sign face, space your rows ten inches apart. If your LED system will be six inches or more from the face, space your rows twelve inches apart.

"Find the position for the center row and then work out from the center at ten- or twelve-inch increments. That approach will give you even lighting throughout the sign."

According to Tom Kerley, owner of Kerley Signs (www.kerleysigns.com) in Landover, Maryland, light decreases with the square of the distance. "So a sign face with the LEDs five or less inches away would be okay, but at ten inches back, the light on the face is 75 percent less," he says.

The structural design of the can also affects light refraction in the can. "Sign fabricators who use extrusions are used to the common single cabinet depths of

six to ten inches and double-face depths of ten to twelve inches,” says Brazzell. “The depths were set to accommodate the space needed from the sign face to the fluorescent tube. The closer the tube, the more shadowing can occur.”

Price Points

One of the points driven home by LED suppliers is that the technology boasts a long life, which makes them ideal for hard-to-reach locations because of the reduced maintenance needs.

The builders who promote LED illumination though understand the initial cost to install it slows down any sign owner’s decision process. Price shock almost sets in, according to some sign builders who talk about the cost of LED illumination for signs. “Yes the cost of the LEDs will be much greater than using fluorescent lamps and ballasts. But the labor cost to install the lighting in the cabinet will be much less with LEDs,” says Kerley.

Kerley goes a little further and gives a comparison of fluorescent and LED lighting. “Venbright LEDs from Ventex are pretty efficient to light a 4-by-8-foot cabinet, and they’ll use 110 watts of electricity, which is billed per hour of usage [and] equals 1 kilowatt which is a 1,000 watts and can run about .13 per kilowatt per hour. Powered at 10 hours a day, 365 days a year, it will cost about \$60 a year.

“A fluorescent-lit cabinet using an electronic ballast with 4 T-12 DHO lamps will use 288 watts powered at 10 hours a day, 365 days a year, will cost about \$150 a year. A fluorescent-lit cabinet using a standard ballast with 4 T-12 DHO lamps will use 468 watts.”

Larger Than Printed Life

At SGIA Expo 2010 in Las Vegas, digital photo-realist artist Bert Monroy was on-hand for the unveiling of his latest work at the Epson booth, a 25-by-5-foot, hyper-realistic digital painting titled *Times Square* (a few weeks before its Big Apple premiere at the PhotoPlus Expo show).

Four years in the making and built pixel-by-pixel using Adobe® Photoshop® and Adobe Illustrator®, Monroy’s heavily detailed, panoramic image features more than 750,000 Photoshop layers of real people and places in the Times Square area of New York City. In fact, the people presented in the image are likenesses of Monroy’s family and friends, as well as scores of luminaries from the imaging industry.

The massive backlit mural was printed with the Epson Stylus Pro 11880 sixty-four-inch printer onto Epson DisplayTrans Backlight Media. “This is the first time I’ve shown my work in this way, and it’s really exciting to see how well the piece comes to life when illuminated on Epson’s DisplayTrans,” said Monroy.



The idea that a sign owner saves enough money in illumination expense the first year of a sign’s operation draws customers to LED lighting like moths to a candle flame. “When I showed my customer that he’d save \$5,000 in the first

year with his new sign cabinet lit with LEDs, he didn’t believe me, but he tried it anyway,” says Keith Linare of Sign-A-Rama (www.northshoresignarama.com) in Danvers, Massachusetts. “Sure enough; he saved that—and a little more.”