Sunlight Readable Open Frame Kit with LED Backlight

6.4" High Brightness 1400 nit LCD kit w/LED Backlight (Model: LOPH0640-Kit-LED)

LOPH0640-Kit-LED is a 6.4" sunlight readable LCD module with an LED backlight. The module consists of a Sharp LQ064V3DG01 TFT color LCD panel and the VHB (very high brightness) LED backlight with an LED strip lamp.

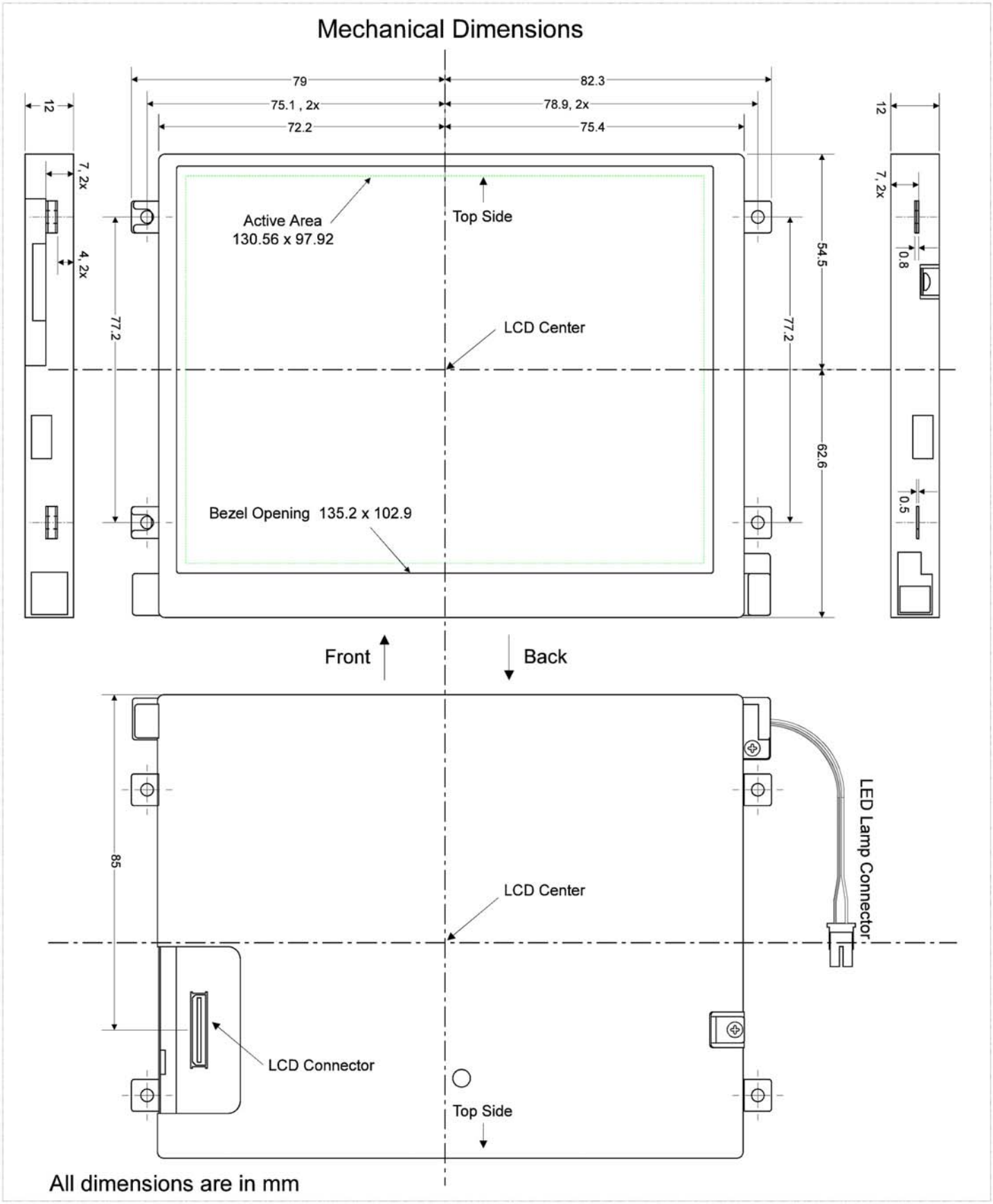
The LOPH0640-Kit-LED LCD module displays a VGA (640 x 480) image. At a backlight power of about 5 Watts, the screen luminance reaches 1,400 Cd/m2. At this brightness level, the image displayed on the screen is highly readable under bright ambient lighting including direct outdoor sunlight. With the LD200A LED driving board, the screen luminance can be adjusted down to about 70 Cd/m2. For night display viewing that may require even lower brightness, a PWM dimming LED driving board should be used.

Specifications:

Parameters	Typical Value	Units	Conditions
LCD Screen Luminance	1400	Cd/m2	LCD in ON state (normally Black)
Luminance Uniformity	20% or better		Note 3
Backlight Power Consumption	5	Watts	Including driver board losses
LCD Contrast Ratio	~ 560:1		At the optimum viewing direction
	~ 500:1		At the viewing direction ⊥ to LCD
Typical Viewing Angles			
3:00 to 9:00 directions	± 60	Degrees	Contrast ratio ≥ 5
9:00 direction	60	Degrees	Contrast ratio ≥ 5
6:00 direction	40	Degrees	Contrast ratio ≥ 5
LCD Screen Chromaticity (x, y)			
White	(0.303, 0.346)		Measured at the normal direction
Red	(0.578, 0.351)		Measured at the normal direction
Green	(0.318, 0.609)		Measured at the normal direction
Blue	(0.142, 0.116)		Measured at the normal direction
LCD Module Weight	270	Grams	

Note 1: Please refer to Sharp LQ064V3DG01 LCD data sheets for detailed LCD electrical specifications and general precautions.
Note 2: All data is measured at 25o C ± 2oC ambient temperature.
Note 3: Uniformity = (Lmax - Lmin) / (Lmax + Lmin) where Lmax (Lmin) is the maximum (minimum) luminance measured using a 10 mm diameter meter aperture over the LCD active area, except the last 10 mm area from the edges.

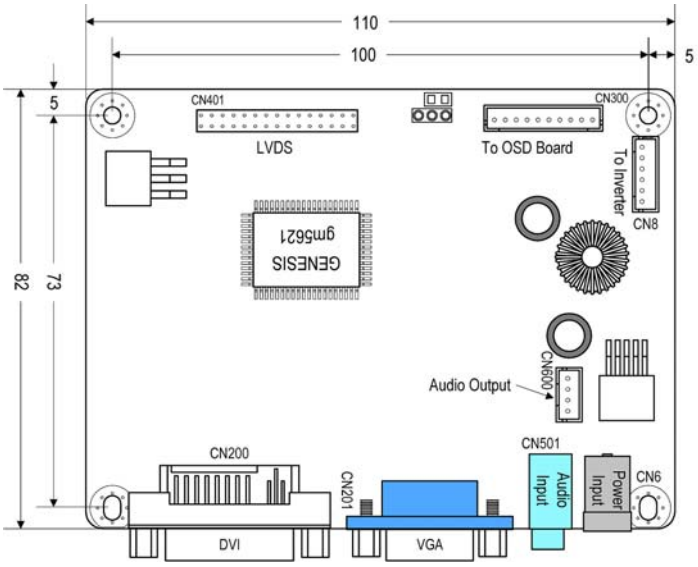
LOPH0640-Kit-LED Mechanical Drawings

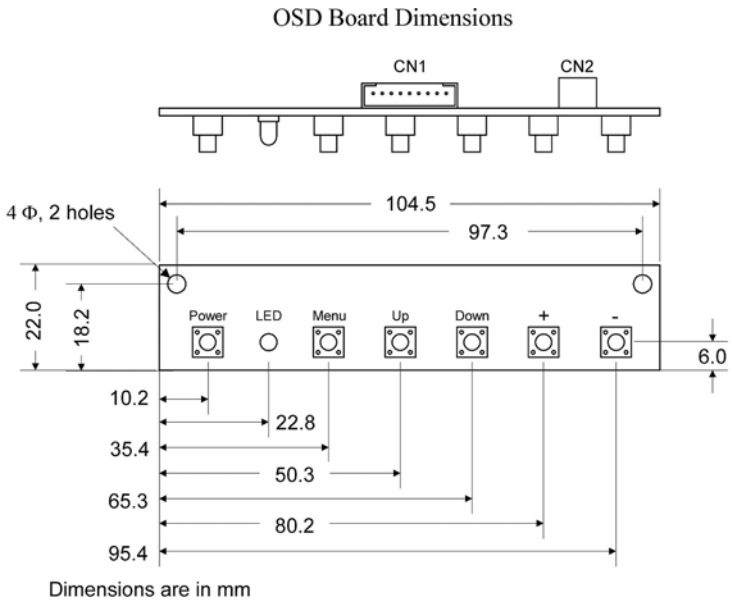


Controller Board MG21

MG21 is a compact size LCD controller with analog RGB (VGA) and DVI inputs. It uses the Genesis gm5621 chip and supports TFT LCD modules up to SXGA (1,280 x 1,024) native resolutions (1.31 MPixels) with 16,777,216 colors.

For video inputs beyond the SXGA (1280 x 1024) resolution, the MG21 down scales the input video to the native resolution of the LCD, and then displays the image over the screen. It supports video input all the way to WUXGA (1920 x 1200).





LED Driver LD200A

LD200A is a compact size, high efficiency LED driver board that operates the LED backlights in iTech 8.4" to 12.1" VHB (very high brightness) LCD modules. It can drive up to two LED strips with a maximum power of about 6 Watts per strip.

The LD200A operates at a 12V DC input voltage. The LCD screen brightness is controlled with a DC voltage that is in the same range as the dimming voltage(Vd) used in iTech Inverters. As a result, our standard dimming control circuits such as the ambient light sensor PS200 and the DP064 Digipot work seamlessly with the LD200A. Also, the brightness control LUT (look up table) in the BIOS code of iTech MG22 and MG21 LCD controller card work very well with the LD200A.