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PRELIMINARY DATA SHEET

TFT Color LCD Module **BE104-6448V01-HB**

**264mm (10,4 inch) High Brightness Liquid Crystal Display, 640 x 480 pixels,
262.144 colors. 1200 cd/m², luminance adjustable 0% ... 100%**

FEATURES

- high brightness 1200 cd/m²
- adjustable luminance 0 – 100%
- LED backlight
- replaceable backlight
- 6 Bit digital RGB signals
- mounting holes compatible to LG104V03
- long life span
- compact
- low power consumption
- extreme wide viewing angle
- shock resistant
- no EMI problems using low voltage version



DESCRIPTION

The BE104-6448V01-HB is a TFT (thin film transistor) active matrix color liquid crystal display (LCD) with a built in LED backlight system for very high luminance. It is a 26,4cm (10,4") diagonal LCD, the viewing area contains 640x480 pixels. The BE104-6448V01-HB can display 262.144 colors with a adjustable luminance up to 12800cd/m².

This LCD is based on a standard LG LCD LB104V03. All electric data, except the backlight data, are directly compatible with the origin LG LCD. Also the mounting holes are directly compatible, so that no mechanical adaption is required, only the depth is thicker than the origin.

The BE104-6448V01-HB is available in two LED – backlight versions. For the low voltage version you need an adjustable power supply 36VDC max., like BE300LV. There you have no EMI problems, because no high voltage devices are required.

The high voltage LCD version needs the high voltage backlight converter BE120HV03.

Both versions have a dimming range between 0 and 100%.

As another benefit of the BE104-6448V01-HB is the extreme wide viewing angle range up to 80° in each direction

APPLICATIONS

- Outdoor terminals
- Automotive
- Rail vehicles
- Marine and yachting
- Military
- Aircraft
- EMI sensitive applications

**GENERAL SPECIFICATIONS**

Item	Specification	Unit
Modul size	238,5 (H) x 180 (V) x 58 (D)	mm
Display area	211,2 (H) x 158,4 (V)	mm
Screen size	264,2	mm
Number of pixels	640 (H) x 480 (V)	-
Pixel pitch	0,33 x 0,33	mm
Dot pitch	0,11 x 0,11	mm
Pixel arrangement	RGB vertical stripes	-
Luminance	1200 (typ.)	Cd/m ²
Contrast ratio	1 : 250 (typ.)	-
Display operating mode	Transmissiv mode, normally white	-
Power consumption	32 (typ)	W
Color depth	6 Bit	-
Display colors	262.144	-
Weight	Tbd	g
Surface Treatment	Hard coating (3H), anti glare treatment of the front polarizer	-

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min.	Max.	Unit	Remarks
Supply voltage LCD	V _{CC}	-0,3	4,0	V _{DC}	
Supply voltage backlight	V _{CCB}	-0,3	20,0	V _{DC}	Using BE300LV or BE120HV03 (1)
Storage temperature	T _{ST}	-20	+60	°C	
Operating temperature	T _{OP}	0	+50	°C	
Humidity	RH	0	90	%	No condensation

Note 1. alternative (only low voltage LCD version): backlight directly connected to DC–power supply, -0,3 - 36,8V_{DC}

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Min.	Typ.	Max.	Unit	Remarks
Supply voltage LCD	V _{CC}	3,0	3,3	3,8	V _{DC}	
Supply voltage backlight	V _{CCB}	9,0	12,0	20,0	V _{DC}	Using BE300LV or BE120HV03 (1)
Supply current LCD	I _{CC}		240		mA	V _{CC} = 3,3 V
Supply current Backlight	I _{CCB}		2100		mA	1200 cd/m ² (typ.)

Note 1. alternative (only low voltage LCD version): backlight directly connected to DC–power supply, 25,0 - 36,0V_{DC}

INTERFACE CONNECTION

This LCD employs two interface connectors, a 30 pin connector used for the module electronics (interface signals, power supply LCD) interface, the other for the backlight.

The LCD electronics interface connector is a model KN10G-30S-1H manufactured by HIROSE ELECTRIC CO Ltd, mating connector is FI-X30M manufactured by JAE.



Pin configuration interface connector

Pin No.	Symbol	Function	Pin No.	Symbol	Function
1	GND	Ground	16	GND	Ground
2	VCC	Power 3,3V	17	G0	Green data (LSB)
3	VCC	Power 3,3V	18	G1	Green data
4	GND	Ground	19	G2	Green data
5	DLCK	Data Clock	20	G3	Green data
6	DTMG	Data Enable	21	G4	Green data
7	VSYNC	Vertical sync	22	G5	Green data (MSB)
8	HSYNC	Horizontal sync	23	GND	Ground
9	GND	Ground	24	B0	Blue data (LSB)
10	R0	Red data (LSB)	25	B1	Blue data
11	R1	Red data	26	B2	Blue data
12	R2	Red data	27	B3	Blue data
13	R3	Red data	28	B4	Blue data
14	R4	Red data	29	B5	Blue data (MSB)
15	R5	Red data (MSB)	30	GND	Ground

The backlight connector is a 6 pin connector DIN41651 manufactured by Harting model 0918.5066324.

Pin configuration backlight connector

Pin No.	Symbol	Function	Pin No.	Symbol	Function
1	GND	Ground	4	HV	High voltage
2	HV	High voltage	5	GND	Ground
3	HV	High voltage	6	GND	Ground

For other information about the origin LG-LCD like signal timing, color input data reference, power sequence see the LG data sheet for LB104V03 on LG-Philips homepage.

MECHANICAL CHARACTERISTICS

The case of the backlight is a complete closed aluminium box for minimum EMI problems, good heat exchange and best mechanical stability. The mounting holes are the same like by the origin LG – LCD so that no changes for mounting are necessary.

Outline Dimension	Horizontal	238,5 mm
	Vertical	180,0 mm
	Depth (only one side)	58,0 mm
Bezel Area	Horizontal	215,6 mm
	Vertical	163,0 mm
Active Display Area	Horizontal	211,2 mm
	Vertical	158,4 mm
Weight	tbd	
Surface Treatment	Anti reflection treatment of the front polarizer	

