



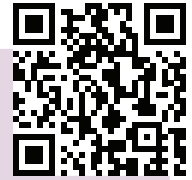
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2013
2014





BOLYMIN delivers Embedded System and Display products to markets all over the world. With more than 15 years dedication in professional manufacturing of display related products, **BOLYMIN** is now a well-established company in terms of design, manufacturing and quality assurance.

BOLYMIN je celosvětový dodávateľ Embedded systémů a displejů. Již více než 15 let s profesionálním nasazením vyrábí produkty, související s displeji. Bolymin je zárukou vysoké kvality.

BOLYMIN ist ein globaler Lieferant von Embedded-Systemen und Displays. Seit mehr als 15 Jahren produziert er mit professionellem Einsatz displaybezogene Produkte. Bolymin ist ein Garant für die Einhaltung der Herstellungs- und Designqualität.

A **BOLYMIN** a beágyazott rendszerek és kijelzők világszerte ismert gyártója. Már több mint 15 éve gyárt szakszzerűen kijelzőkkel összefüggő termékeket. A Bolymin garancia a jó minőségre és dizájnr.

BOLYMIN to globalny dostawca systemów embedded oraz wyciewielaczy. Już od ponad 15 lat produkuje profesjonalnie produkty związane z wyciewielaczami. Bolymin to gwarancja jakości produkcji i rozwoju.

BOLYMIN furnizează la nivel global produse incorporate de sistem și afișaj. Având peste 15 ani de experiență în producția profesională de produse de afișaj, Bolymin este în prezent o societate cu tradiție în proiectarea, producția și asigurarea calității.

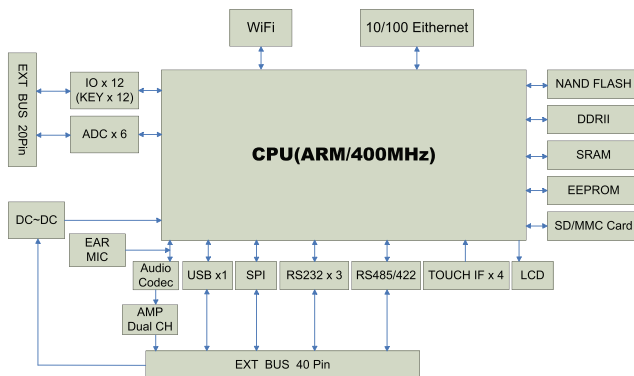
BOLYMIN je celosvetový dodávateľ Embedded systémov a displejov. Už viac ako 15 rokov s profesionálnym nasadením vyrába produkty súvisiace s displejmi. Bolymin je zárukou kvality výroby a dizajnu.

Bolymin's product offering spans across various application fields such as automotive electronics, medical instrument, security control, and industrial automation. Bolymin regards technology/business model innovation and customer-oriented service as two pillar stones to its sustainable growth. Bolymin displays feature an excellent price/performance ratio.

Why BOLYMIN?

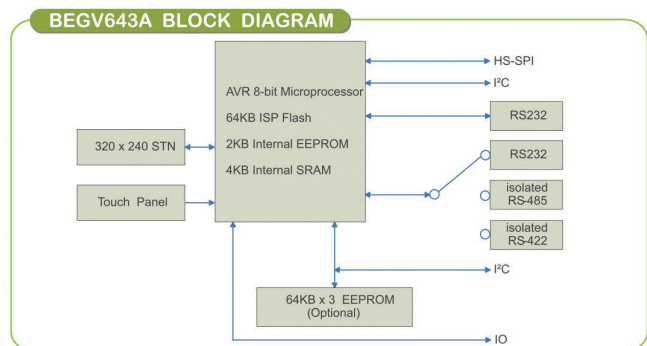
- excellent price/performance ratio
- wide portfolio
- stable and reliable delivery terms

BEGA 220



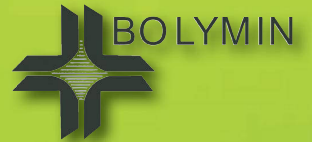
- 400MHz 32 bit RISC architecture, ARM926EJ CPU core
- 2GB NAND Flash / 64MB DDRII memory
- WINCE 5.0 OS
- LCD controller supporting RGB maximum 16M color at 24bpp
- On board 10 / 100Mbps high performance Ethernet with RJ45
- 1x Host USB / 1x Device USB
- 1x isolated RS485 / 422
- 3x RS232 / 1x SPI
- Audio codec with dual channels amplifiers
- 6x Channels ADC and one 4-wired touch panel
- 12 programmable IO
- 9V-28V DC requirement
- Dimension(WxHxD):195x110x25.7 mm

BEGV641 / BEGV643



- monochrome STN LCD display
- 320x240 - BEGV643/ 240x128 px - BEGV641
- universal display embedded modules
- powerful 8-bit AVR ATMEGA644P processor
- built-in in-system programmable 64 kB Flash/ 4 kB SRAM
- built-in 128 kB EEPROM available through I2C
- 1x RS232 and 1x isolated RS485/422/232
- high-speed SPI and I2C
- operation already from 3,3V
- built-in 4 wire resistive touch panel
- white LED backlight
- free SW utilities (drivers)

LCD/OLED modules



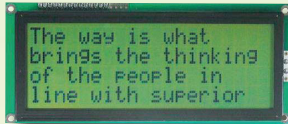
BC0802B



BC1602L



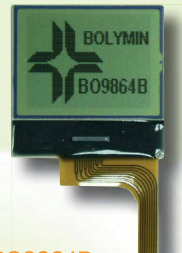
BC2002A



BC2004B



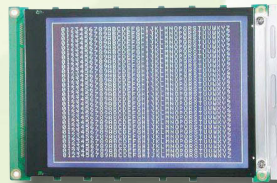
B012832A



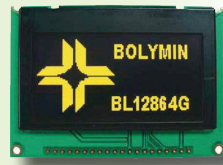
B09864B



BG12864A



BG320240F



BL12864G

Model	Format	Outline Size [mm]	View Area [mm]	Dot/Char size [mm]	Controller	Back Light	Touch Panel
BC0802B	8*2	40*20	36.3*13.9	3.12*5.01	KS0066	LED	-
BC1602L	16*2	68*26.8	61*19	2.96*6.68	KS0066	LED	-
BC2002A	20*2	116*37	85*18.6	3.20*5.55	KS0066	LED	-
BC2004B	20*4	146*62.5	123.5*43	4.84*9.22	KS0066	LED	-
B012832A	128*32	82*34	79*24.2	0.53*0.59	P C F 8 5 3 1	LED/EL	-
B09864B	98*64	34*34	31*22.5	0.26*0.31	ST7548i (I2C)	LED/EL	-
BG12864A	128*64	93*70	72*40	0.48*0.48	KS0107/0108	LED	NO
BG320240F	320*240	166.8*109	122*92	0.34*0.34	RA8835	CCFL	YES
BL12864G	128*64	76.65*52.7	60.0*32.5	0.40*0.40	5501303	OLED	-

TFT/ Embedded modules



BT3.5BACHB

Format: 480*234 (3.5")
 Outline Size: 83*60.5mm
 View Area: 72*50.6mm
 Back Light: LED
 Inputs: CVBS/S (NTSC/PAL)



BT104BBBACH352e

Format: 800*600 (10.4")
 Outline Size: 236*174.3mm
 View Area: 211.2*158.4mm
 Back Light: CCFL
 Inputs: CVBS (NTSC/PAL/SECAM), VGA



BEGA220

400MHz 32 bit RISC architecture
 ARM926EJ CPU core
 2GB NAND Flash / 64MB DDRII memory
 WINCE 5.0 OS
 Maximum 16M color at 24bpp
 On board 10 / 100Mbps Ethernet with RJ45
 1 x Host USB / 1 x Device USB
 1 x isolated RS485 / 422
 3 x RS232 / 1 x SPI
 Audio codec with dual channels amplifiers
 6 x Channels ADC, one 4-wired touch panel
 12 programmable IO
 Dimension(WxHxD):195x110x25.7 mm

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Displays for your applications



BOLYMIN delivers Embedded System and Display products to markets all over the world. With more than 15 years dedication in professional manufacturing of display related products. Bolymin is now a well-established company in terms of design, manufacturing and quality assurance.

CZ BOLYMIN je celosvětový dodávateľ Embedded systémů a displejů. Již více než 15 let s profesionálním nasazením vyrábí produkty, související s displeji. Bolymin je zárukou vysoké kvality.

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HU A BOLYMIN a beágyazott rendszerek és kijelzők világszerte ismert gyártója. Már több mint 15 éve gyárt szakemberrel készített termékeket. A Bolymin garancia a jó minőségre és dizájnr.

PL BOLYMIN to globalny dostawca systemów embedded oraz wyświetlaczy. Już od ponad 15 lat produkuje profesjonalnie produkty związane z wyświetlaczami. Bolymin to gwarancja jakości produkcji i rozwoju.

RO BOLYMIN furnizează la nivel global produse incorporate de sistem și afișaj. Având peste 15 ani de experiență în producția profesională de produse de afișaj, Bolymin este în prezent o societate cu tradiție în proiectarea, producția și asigurarea calității.

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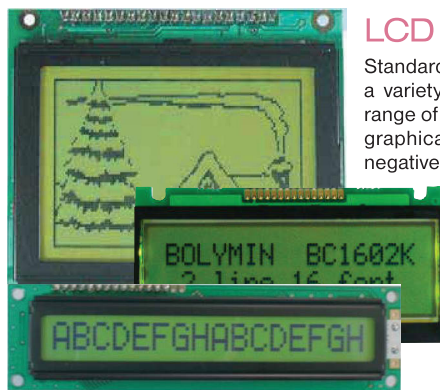
Bolymin's product offering spans across various application fields such as automotive electronics, medical instrument, security control, and industrial automation. Bolymin regards technology/business model innovation and customer-oriented service as two pillar stones to its sustainable growth. Bolymin displays feature an excellent price/performance ratio.

Why BOLYMIN?

- excellent price/performance ratio
- wide portfolio
- stable and reliable delivery terms

We can divide Bolymin displays in our offer into three main groups: character, graphic and graphic TFT modules.

- Character displays represent standard industrial line with 1-4 lines and 8-20 rows. Every character consists of a 4x8 or 5x10 dot matrix. Displays contain a standard serial interface and a character set memory, that's why a communication with them is very simple.
- Graphic displays are mainly specified by their resolution, e.g. 240x128 pixels. They contain a controller with a serial interface, thus the communication with a host microcontroller is easy. Graphic displays, as already their name says, enable to display any kind of graphic. This is possible thanks to an individual control of every pixel of the display.
- TFT modules are complete display modules ("monitors"). With the target device they can be connected by some of standard interfaces like CVBS, S-VHS, VGA.



LCD

Standardized LCD modules for a variety of applications. Wide range of sizes, backlight colors, graphical/character, positive/negative etc.

Available formats:

- 2x8, 1x16, 2x16, 4x16, 2x20, 4x20
- 128x64, 240x64, 320x240, 240x128
- many backlight types

Character sets:

- English/European
- English/Cyrillic
- English/Japanese

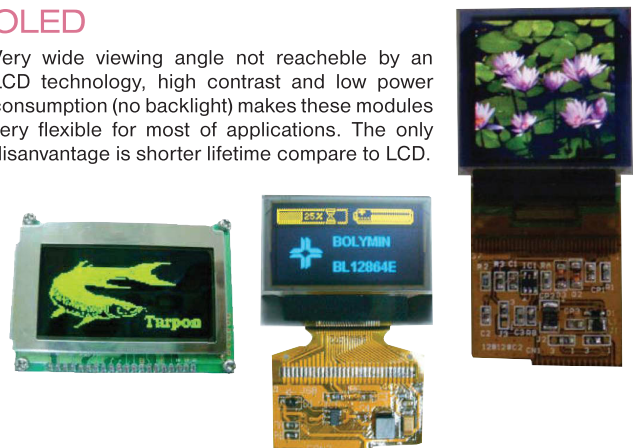
TFT

Full color modules with analog video input in different sizes 2.5", 3.5", 5.7" and 7.0". suitable for advertising purposes, as medical equipment, camera systems, etc.



OLED

Very wide viewing angle not reachable by an LCD technology, high contrast and low power consumption (no backlight) makes these modules very flexible for most of applications. The only disadvantage is shorter lifetime compare to LCD.



Numbering System for Bolymin LCD Modules

B	C	2004	A	Y	P	L	E	H	xxx
0	1	2	3	4	5	6	7	8	9

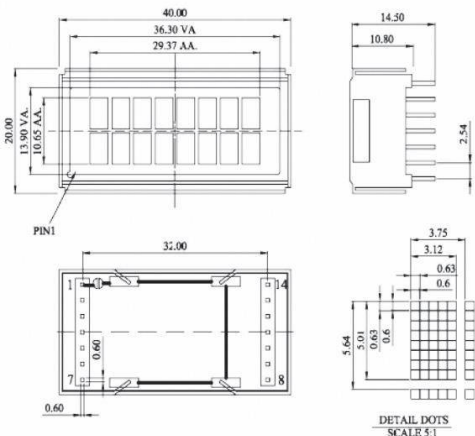
0	Brand	Bolymin	
1	Module Type	C= character type G= graphic type P= TAB/TCP type	O= COG type F= COF type L=OLED
2	Format	2002=20 characters, 2lines 12232= 122 x 32 dots	
3	Version No.	A type	
4	LCD Color	G=STN/gray Y=STN/yellow-green C=color STN	B=STN/blue F=FSTN T=TN
5	LCD Type	R=positive/reflective P=positive/transflective	M=positive/transmissive N=negative/transmissive
6	Backlight type/color	L=LED array/ yellow-green H=LED edge/white R=LED array/red G=LEDedge/yellow-green F=RGB K=LED edge/green	D=LED edge/blue E=EL/white B=EL/blue C=CCFL/white Y=LED Bottom/yellow O=LED array/orangr
7	CGRAM Font (applied only on character type)	J=English/Japanese Font E=English/European Font	C=English/Cyrillic Font H=English/Hebrew Font
8	View Angle/ Operating Temperature	B=Bottom/Normal Temperature H=Bottom/Wide Temperature	T=Top/Normal Temperature W=Top/Wide Temperature C=9H/Normal Temperature U=Bottom/Ultra wide Temperature
9	Special Code	3=3 volt logic power supply n=negative voltage for LCD xxx=to be assigned on data sheet	t=temperature compensation for LCD p=touch panel c=cable/connector

2x8 Characters



- alphanumeric LCD modules
- 2x8 characters
- yellow - green LED backlight
- BC 0802B YRNEH - without backlight
- - temperature range: -20°C to +70°C.

BC 0802B



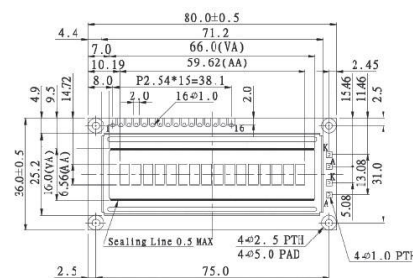
Module	Module Size (mm)	View Area (mm)	Character Size (mm)	Fonts
BC 0802B YPLEH	40x20	36,3x13,9	5,01x3,12	eng/european
BC 0802B YRNEH	40x20	36,3x13,9	5,01x3,12	eng/european

1x16 Characters

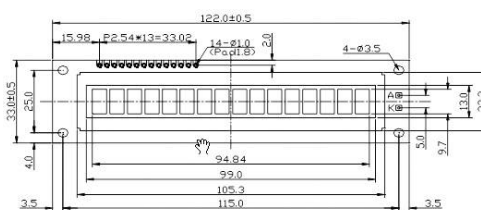


- alphanumeric LCD modules
- 1x16 characters
- green LED backlight
- temperature range -20°C to +70°C.

BC1601A



BC1601D

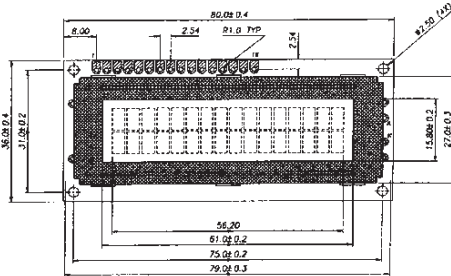


Module	Module Size (mm)	View Area (mm)	Character Size (mm)	Fonts
BC 1601A YPLEH	80x36	66x16	3,07x6,56	eng/european
BC 1601D YPLEH	122x33	99x13	4,84x9,7	eng/european

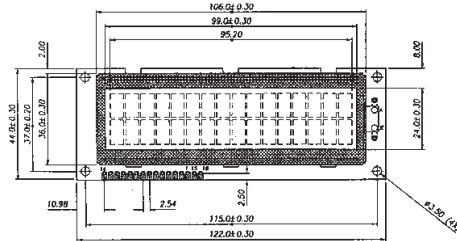
2x16 Characters

- alphanumeric LCD modules
- 2x16 characters
- BNHEH blue colour with white backlight (negative)
- FNHEH is black/white. Other models are with yellow/green LED backlight.
- Temperature range -20°C to +70°C.

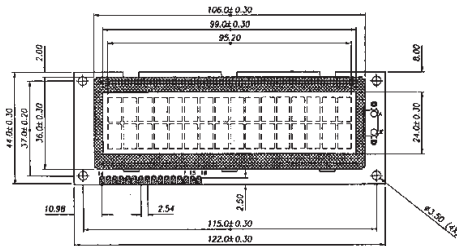
BC 1602A



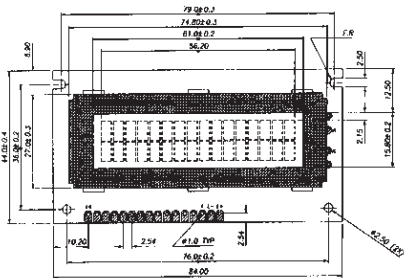
BC 1602E



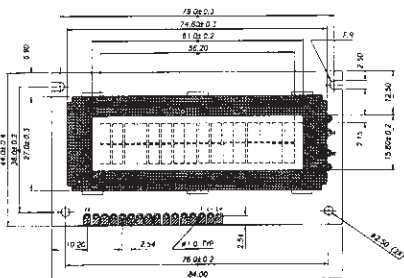
BC 1602E



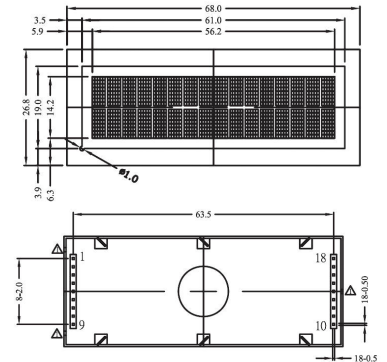
BC 1602H



BC1602H



BC1602L



with pin headers

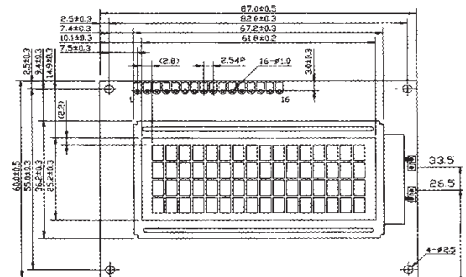
Module	Module Size (mm)	View. Area (mm)	Character Size (mm)	Fonts
BC 1602A BNHEH	80x36	66x16	2,96x5,56	eng/european
BC 1602A FNHEH	80x36	66x16	2,96x5,56	eng/european
BC 1602A YPLEH	80x36	66x16	2,96x5,56	eng/european
BC 1602A YPLCH	80x36	66x16	2,96x5,56	eng/cyrillic
BC 1602A YPLJH	80x36	66x16	2,96x5,56	eng/japan
BC 1602E BNHEH	122x44	99x24	4,84x9,66	eng/european
BC 1602E YPLEH	122x44	99x24	4,84x9,66	eng/european
BC 1602E YPLCH	122x44	99x24	4,84x9,66	eng/cyrillic
BC 1602H BNHEH	84x44	66x16	2,96x5,56	eng/european
BC 1602H FNHEH	84x44	66x16	2,96x5,56	eng/european
BC 1602H YPLEH	84x44	66x16	2,96x5,56	eng/european
BC 1602K YPGEH	59x29,3	52x15	2,54x4,67	eng/european
BC 1602L BNHEH	68x27	61x19	2,96x6,68	eng/european
BC 1602L YPLEH	68x27	61x19	2,96x6,68	eng/european

4x16 Characters



Alphanumeric LCD modules with 4x16 characters with yellow - green LED backlight. BC 1604A BNHEH is blue colour with white backlight (negative). Other models are with yellow - green LED backlight. Temperature range: -20°C to +70°C.

BC 1604A



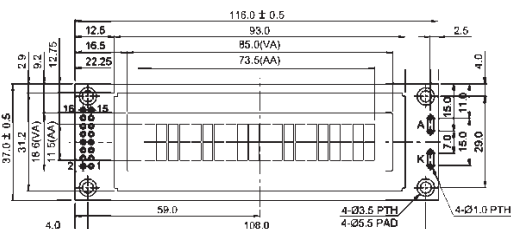
Type	Module Size (mm)	Viewing Area (mm)	Character Size (mm)	Fonts
BC 1604A BNHEH	87x60	62x26	4,75x2,95	eng/european
BC 1604A YPLEH	87x60	62x26	4,75x2,95	eng/european

2x20 Characters

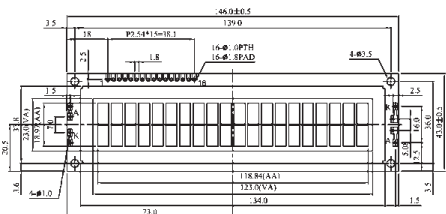


Alphanumeric LCD modules with 2x20 characters. BNHEH is blue colour with white backlight (negative, BC 2002B FNHEH is black / white (negative). Other models are with yellow - green LED backlight. Temperature range: -20°C to +70°C.

BC 2002A



BC 2002C



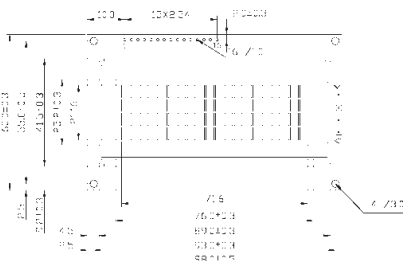
Type	Module Size (mm)	Viewing Area (mm)	Character Size (mm)	Fonts
BC 2002A BNHEH	116x37	85x19	5,55x3,2	eng/european
BC 2002A YPLEH	116x37	85x19	5,55x3,2	eng/european
BC 2002C BNHEH	146x43	123x23	9,22x4,84	eng/european
BC 2002C YPLEH	146x43	123x23	9,22x4,84	eng/european

4x20 Characters

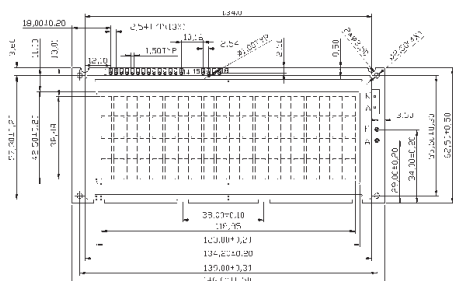


Alphanumeric LCD Modules with 4x20 characters. BNHEH is blue colour with white backlight (negative), BC 2004A FNHEH is black / white (negative). Other models are with yellow - green LED backlight. Temperature range: -20°C to +70°C.

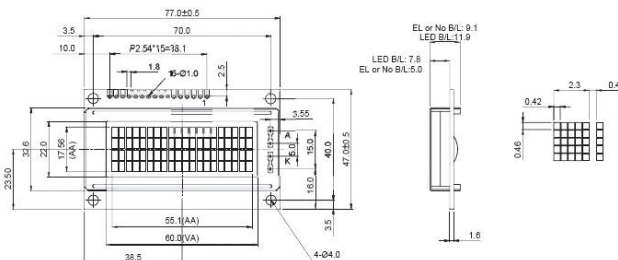
BC 2004A



BC 2004B



BC 2004D

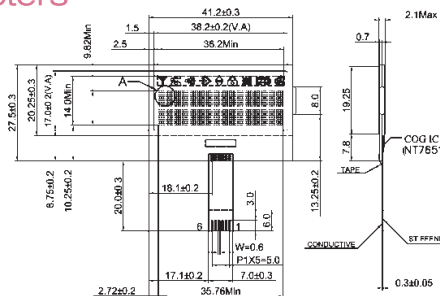


Type	Module Size (mm)	Viewing Area (mm)	Character Size (mm)	Fonts
BC 2004A BNHEH	98x60	77x25	4,75x2,95	eng/european
BC 2004A FNHEH	98x60	77x25	4,75x2,95	eng/european
BC 2004A YPLEH	98x60	77x25	4,75x2,95	eng/european
BC 2004B BNHEH	146x63	124x43	9,22x4,84	eng/european
BC 2004B YPLEH	146x63	124x43	9,22x4,84	eng/european
BC 2004D BNHEH	77x47	60x22	4,03x2,3	eng/european

Alphanumeric LCD Modules with FFC

2x16 Characters

BO 1602D



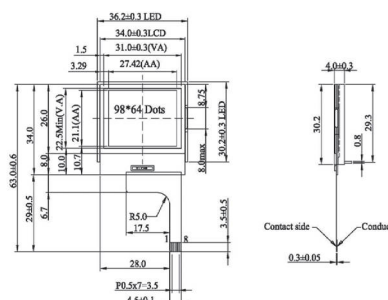
Alphanumeric LCD module with flex wire, 2x16 characters, fonts: eng/eur without backlight, COG package, 5x7 dots with cursor, icons. Built-in controller ST7032i + 3.3V single power supply, 1/16 duty cycle I2C Serial interface.

Type	Module Size (mm)	Viewing Area (mm)	Character Size (mm)	Temperature Range
BO 1602D GPNEB	41,2x27,5	38,2x17,0	4,56x1,86	0°C to +50°C

Graphic LCD Modules with FC

98x64 Dots

BO 9864B

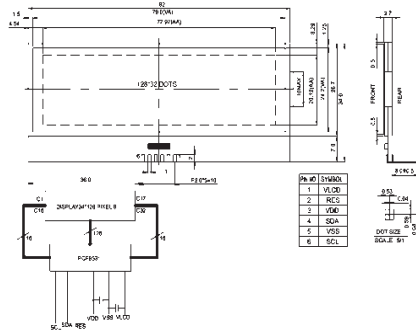


FTSN Transflective LCD, COG package. Built-in driver ST7548i, serial I2C data bus, 1/64 duty cycle, +3V power supply. With FPC and ZIF connector

Type	Module Size (mm)	Viewing Area (mm)	Dot Size (mm)	Temperature Range
BO 9864B FPNH	34x34	31,0x22,5	0,31x0,26	0°C to +50°C

128x32 Dots

BO 12832A

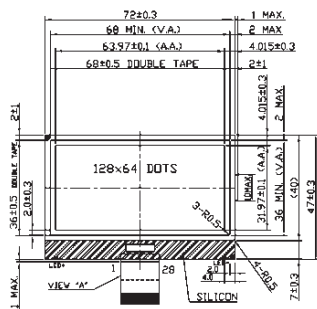


STN/gray
positive/transflective
without backlight
COG package
Built-in controller PCF8531
+5V power supply
1/32 duty cycle
I2C series interface

Type	Module Size (mm)	Viewing Area (mm)	Dot size (mm)	Temperature Range
BO 12832A GPNB	82x34	79x24	0,53x0,59	0°C to +50°C

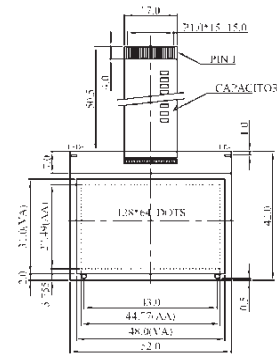
128x64 Dots

BO 12864B



COG package
Built-in controller SED1565
+5V power supply
1/64 duty cycle
+3V+5V single power supply
On chip LCD booster

BO 12864D



COG package
Built-in controller ST7541
+3V single power supply
1/64 duty cycle
On chip LCD booster
4-Gray scale

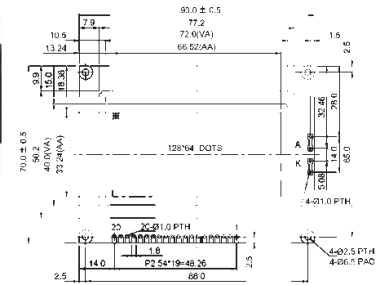
Type	Module Size (mm)	Viewing Area (mm)	Dot Size (mm)	Temperature Range
BO 12864B GPNB	72x47	68x36	0,47x0,47	0°C to +50°C
BO 12864D FPGH	52x42	48x31	0,4x0,32	-20°C to +70°C

Graphic LCD Modules

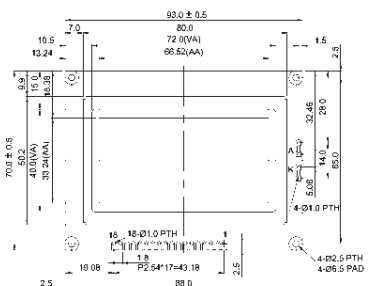
128x64 Dots

BG 12864A

Modules YPLH and FPGH are with yellow-green LED backlight, BNHH are with white LED backlight. Other modules are without backlight.
BO 12864B GPNB: I2C interface.

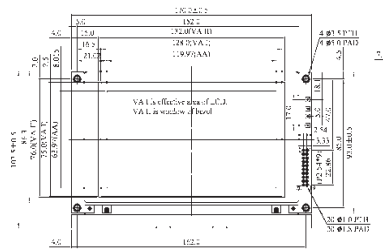


BG 12864D



Type	Module Size (mm)	Viewing Area (mm)	Dot Size (mm)	Temperature Range
BG 12864A BNHH	93x70	72x40	0,48x0,48	-20°C to +70°C
BG 12864A YPLH3n	93x70	72x40	0,48x0,48	-20°C to +70°C
BG 12864A YPLHn	93x70	72x40	0,48x0,48	-20°C to +70°C
BG 12864D BNHH	78x70	62x44	0,4x0,56	-20°C to +70°C
BG 12864D YPLHn	78x70	62x44	0,4x0,56	-20°C to +70°C

240x128 Dots



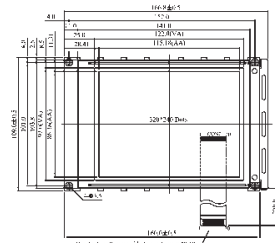
With CCFL white backlight, negative.

Type	Module Size (mm)	Viewing Area (mm)	Dot Size (mm)	Temperature Range
BG 240128A FNCHnt	170x104	132x76	0,47x0,47	-20°C to +70°C

320x240 Dots

CCFL white backlight, negative, touch panel.

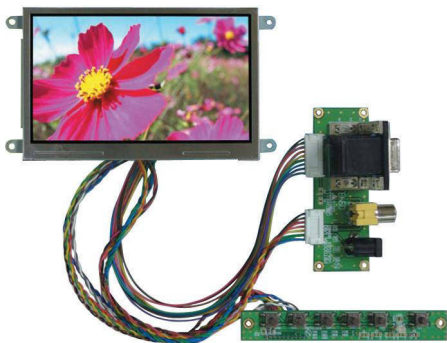
BG 320240F



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TFT Modules

4.3" BT043DCEAHH352a\$

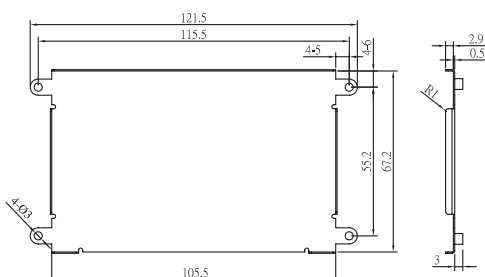


TFT-LCD

- 4.3 inch TFT LCD panel BT043DCNNH\$.
- View angle (U/D/L/R): 50/70/70/70
- Resolution: 480*(RGB)*272 (pixels), 0.066 (h) x 0.198 (v) mm dot pitch.
- Brightness (cd/m2): 400cd/m2 Typical.
- Contrast Ratio: 500:1.
- Active area: 95.04*53.856 mm.
- Dimension (W x H x T): 105.5*67.2*4.05 mm.

Video Board:

- Power Requirements: 12.0V DC±10%.
- Operating Temperature Range: -20 +70°C.
- Storage Temperature Range: -30 +80°C.
- Dimension (W x H x T): 76.9*63.9*14 mm.
- Keyboard: 6 Keys with OSD menu for image quality tuning supported.
- Multi-input: CVBS input, VGA input.
- Input impedance: 75Ω.
- Video system: NTSC/PAL/SECAM auto detection.



5" BT050BADAHH352e\$

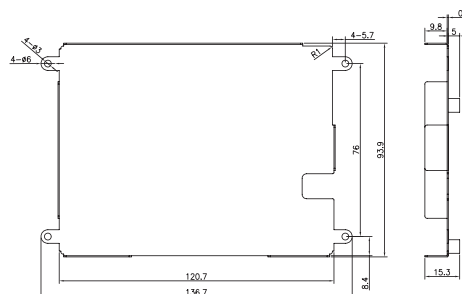


TFT-LCD

- 5.0 inch TFT LCD panel BT050BANNH\$.
- View angle (U/D/L/R): 40/55/60/60
- Resolution: 640*(RGB)*480 (pixels), 0.159 (h) x 0.156 (v) mm dot pitch.
- Brightness (cd/m2): 450cd/m2 Typical.
- Contrast Ratio: 400:1.
- Active area: 101.76*74.88 mm.
- Dimension (W x H x T): 102.7*92.8*12.5 mm.

Video Board:

- Power Requirements: 12.0V DC±10%.
- Operating Temperature Range: -20 +70°C.
- Storage Temperature Range: -30 +80°C.
- Dimension (W x H x T): 100.0*70.0*15 mm.
- Keyboard: 6 Keys with OSD menu for image quality tuning supported.
- Signal input: VGA input.
- Input impedance: 75Ω.



7" BT070DHBAAHH352e\$



TFT-LCD

- 7.0 inch TFT LCD panel BT070DHNNH\$.
- View angle (U/D/L/R): 60/70/70/70
- Resolution: 800*(RGB)*480 (pixels), 0.1905 (h) x 0.1905 (v) mm dot pitch.
- Brightness (cd/m2): 350cd/m2 Typical.
- Contrast Ratio: 400:1.
- Active area: 152.4*91.44 mm.
- Dimension (W x H x T): 165*104.44*5.2 mm.

Video Board:

- Power Requirements: 12.0V DC±10%.
- Operating Temperature Range: -20~ +70°C.
- Storage Temperature Range: -30~ +80°C.
- Dimension (W x H x T): 162*100*14 mm.
- Keyboard: 6 Keys with OSD menu for image quality tuning supported.
- Multi-input: CVBS input, VGA input.
- Input impedance: 75Ω.
- Video system: NTSC/PAL/SECAM auto detection.

