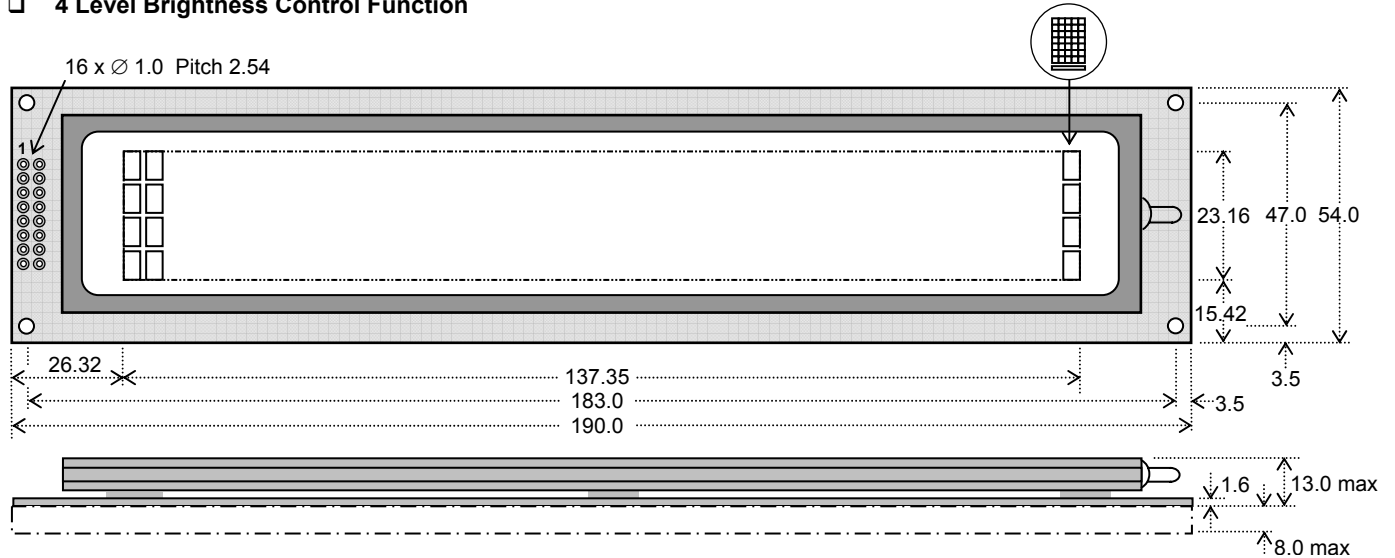


# 5X7 Dot Character VFD Module

# CU40045-UW1J

- ❑ 4 X 40 Characters 5mm High
- ❑ LCD Compatible Design
- ❑ Wide Operating Temp -40°C to +85°C
- ❑ Single 5V Supply with Power Save Mode
- ❑ High Brightness Blue Green Display
- ❑ Selectable 4/8 bit M68 Interface
- ❑ ASCII + Extended Character Font
- ❑ 8 User Definable Character RAM
- ❑ 4 Level Brightness Control Function

The module includes the Vacuum Fluorescent Display glass, driver and micro-controller ICs with refresh RAM, character generator and interface logic. The high speed 8 bit parallel interface is 5V CMOS compatible suitable for connection to a host CPU bus. Brightness control and power save functions are provided. Please call for a full data sheet.



Dimensions in mm & subject to tolerances. Mounting holes 3.5mm dia.

## ELECTRICAL SPECIFICATION

Parameter	Symbol	Value	Condition
Power Supply Voltage	V <sub>CC</sub>	5.0VDC +/- 5%	GND=0V
Power Supply Current	I <sub>CC</sub>	520mADC typ.	V <sub>CC</sub> =5V
Logic High Input	V <sub>IH</sub>	V <sub>SS</sub> +2.0VDC min.	V <sub>CC</sub> =5V
Logic Low Input	V <sub>IL</sub>	V <sub>SS</sub> +0.8VDC max.	V <sub>CC</sub> =5V
Logic High Output	V <sub>OH</sub>	V <sub>CC</sub> -0.8VDC min.	I <sub>OH</sub> = -4.0mA
Logic Low Output	V <sub>OL</sub>	0.6VDC max.	I <sub>OL</sub> =4.0mA

The power on rise time should be less than 50ms. The inrush current at power on can be 2 x I<sub>CC</sub>. The I<sub>CC</sub> current is 10mA maximum while in power save mode.

## OPTICAL and ENVIRONMENTAL SPECIFICATIONS

Parameter	Value
Character Size/Pitch (XxY mm)	2.07 x 4.89/3.47 x 6.09
Dot Size/Pitch (XxY mm)	0.29 x 0.48/0.44 x 0.63
Luminance	1000 cd/m <sup>2</sup> Typ.
Colour of Illumination	Green (Filter for more colours)
Operating Temperature	-40°C to +85°C
Storage Temperature	-50°C to +85°C
Operating Humidity (non condensing)	20 to 80% RH @ 25°C

## SOFTWARE COMMANDS

Instruction	R/W	RS	D0-D7
Clear Display	L	L	01H
Cursor Return Home	L	L	02H-03H
Entry Mode Set	L	L	04H-07H
Display ON/OFF	L	L	08H-0FH
Cursor/Display Shift	L	L	10H-1FH
Function Set	L	L	20H-3FH
Brightness Set	L	H	00H-03H
Set CG RAM Addr.	L	L	40H-7FH
Set DD RAM Addr.	L	L	80H-E7H
Read BUSY/Addr.	H	L	00H-FFH
Write Data to RAM	L	H	00H-FFH
Read Data from RAM	H	H	00H-FFH

## PIN CONNECTIONS

Pin	Sig	Pin	Sig
1	D7	2	D6
3	D5	4	D4
5	D3	6	D2
7	D1	8	D0
9	E1	10	R/W
11	RS	12	NC
13	GND	14	V <sub>CC</sub>
15	E2	16	NC

## TIMING PARAMETERS (min)

(E)nable Cycle Time	500ns
(E)nable Pulse Width	230ns
Hold after (E)nable	10ns

## CHARACTER FONT

Hex	00	10	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
00			0	0	P	\	P	A	F	-	9	3	0	P		
01			!	!	A	Q	a	a	a	a	a	a	a	a	a	a
02			"	"	B	R	b	r	Δ	E	r	ι	υ	×	β	θ
03			#	#	C	S	s	c	s	Δ	R	ι	υ	×	β	θ
04			\$	\$	4	D	T	t	a	#	\	I	I	†	H	Ω
05			%	%	5	E	U	u	e	U	E	o	.	†	†	†
06			&	&	6	F	V	v	f	v	o	+	†	†	†	†
07			'	'	7	G	W	w	g	w	o	o	†	†	†	†
08			(	(	8	H	X	x	h	x	o	o	†	†	†	†
09			)	)	9	I	Y	y	i	y	o	o	†	†	†	†
0A			*	*	J	Z	z	j	z	o	o	o	†	†	†	†
0B			+	+	K	K	k	k	o	o	o	o	†	†	†	†
0C			,	,	L	L	l	l	o	o	o	o	†	†	†	†
0D			-	-	=	M	M	m	m	o	o	o	o	†	†	†
0E			.	.	>	N	N	n	n	o	o	o	o	†	†	†
0F			/	/	?	0	0	o	o	o	o	o	o	†	†	†

## JUMPER LINKS

If pads JP2.2 and JP2.3 are linked for no longer than 10us module will be reset. If pads JP2.1 and JP2.2 are linked Pin 12 of CN1 = /Reset.

## CONTACT

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Subject to change without notice.  
 IUK Doc Ref: 38230 Iss:2 10July2008

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