NEWHAVEN DISPLAY INTERNATIONAL

User's Guide

C-29-1403F

VFD

(Vacuum Fluorescent Character Display Module)

For product support, contact

New haven Display International
2511 Technology Drive #101
E lgin , IL 601 24
Tel: (847) 8 44-8795 Fax: (847) 8 44-8796

October 31, 2006

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Vacuum Fluorescent Display Specification

PART NUMBER: C-29-1403F

FEATURES: 12 Digits, 5x7 Dot Matrix, with Icons – DVD / VCR Audio Player

APPLICATION: Character Display (*5x7 Dot Matrix*)

RATINGS: Below

Outer Dimensions	Panel Length	P.L.	118.2	mm
	Panel Height	P.H.	29.0	mm
	Panel Thickness	P.T.	6.5	mm
Leads	Lead Pitch	L.P.	2.0	mm
	Lead Out	-	SIL	
Character Size	Character Height	C.H.	6.6	mm
	Character Width	C.W.	4.1	mm

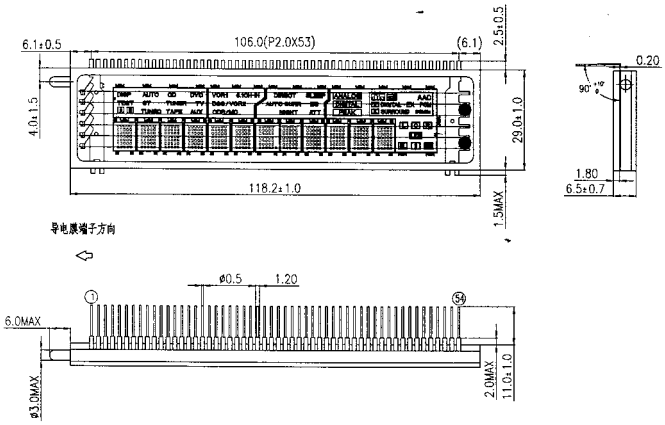
Item	Symbol	Min.	Recommended	Max.	Unit
Filament Voltage	Ef	4.1	5.0	5.0	Vac
Peak Grid Voltage	ec	-	29.0	32.0	Vp-p
Peak Anode Voltage	eb	-	29.0	32.0	Vp-p
Cut-off Bias	Ek	-	-	-	-
Duty Cycle	Du	-	1/15	-	-
Pulse Width	tp	-	100	-	uS
Operating Temperature	Topr	-40	-	+ 80	C
Storage Temperature	Tstg	-50	-	+ 85	C
Color of Illumination	Green / Red				

Electrical Characteristics

Item	Symbol	Test Condition	Min.	Typical	Max.	Unit
Filament Current	If	Ef = 4.5 Vac	146.0	162.0	178.0	mAac
	-	eb = ec = 0	-	-	-	-
Anode Current	ib/1G~12G	Ef = 4.5 Vac	-	5.0	10.0	mAp-p
	ib/13G	eb = 29.0 Vp-p	-	28.0	56.0	mAp-p
	ib/14G	ec = 29.0 Vp-p	-	20.0	40.0	mAp-p
	-	Du = 1/15	-	-	-	mAp-p
	-	tp = 100 uS	-	-	-	mAp-p
Grid Current	ic/1G~12G		-	4.0	8.0	mAp-p
	ic/13G		-	25.0	50.0	mAp-p
	ic/14G		-	20.0	40.0	mAp-p
	-		-	-	-	mAp-p
	-		-	-	-	mAp-p
Luminance	L(G)		350 (102)	700 (204)	-	cd/m^2 (fL)
	L(R)		35 (10)	70 (20)		cd/m^2 (fL)
	-		- -	- -		cd/m^2 (fL)
Luminance Ratio	Lmin/Lmax		50	-	-	%
Grid Cut-off Voltage	Ecco	Ef = 4.5 Vac Eb = 29.0 Vdc	-6.0	-	-	Vdc
Anode Cut-off Voltage	Ebco	Ef = 4.5 Vac ec = 29.0 Vp-p Du = 1/15 tp = 100 uS	-6.0	-	-	Vdc

Drive Mode: Dynamic state

附图 1：外形图 Outline Drawing (Unit:mm)

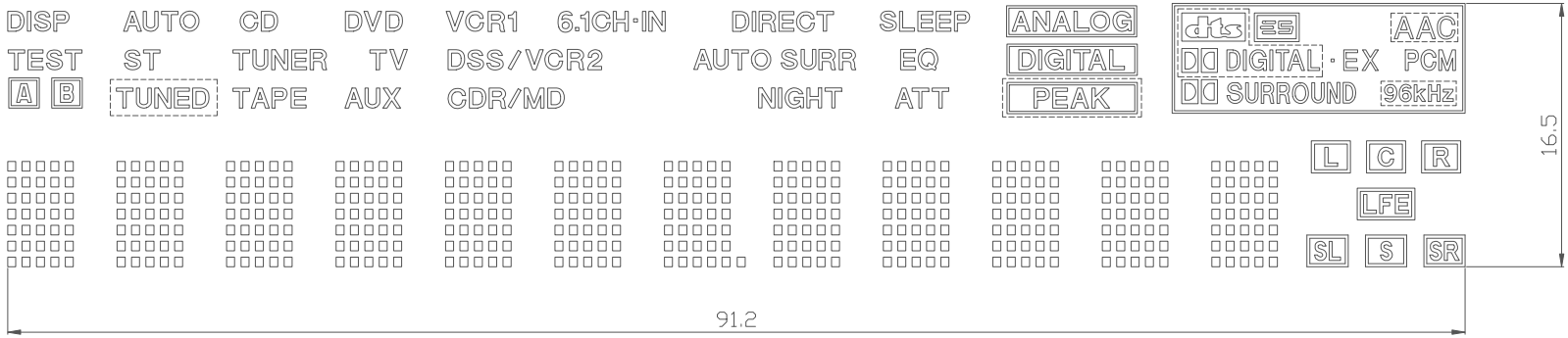


管脚连接 (PIN CONNECTION)

端子序号 (PIN NO.)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
连接 (CONNECTION)	F	F	P36	P35	P34	P33	P32	P31	P30	P29	P28	P27	P26	P25	P24
端子序号 (PIN NO.)	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
连接 (CONNECTION)	P23	P22	P21	P20	P19	P18	P17	P16	P15	P14	P13	P12	P11	P10	P9
端子序号 (PIN NO.)	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
连接 (CONNECTION)	P8	P7	P6	P5	P4	P3	P2	P1	14G	13G	12G	11G	10G	9G	8G
端子序号 (PIN NO.)	46	47	48	49	50	51	52	53	54						
连接 (CONNECTION)	7G	6G	5G	4G	3G	2G	1G	F	F						

注：F: 灯丝 (Filament) P: 阳极 (Anode) G: 栅极 (Grid) NX: 无外接脚(No extended pin) NP: 无引出脚 (No pin)

附图 2：显示内容Display Pattern

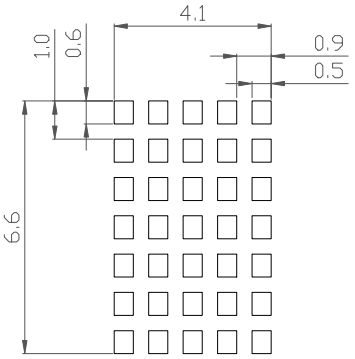


显示颜色(Color of illumination)

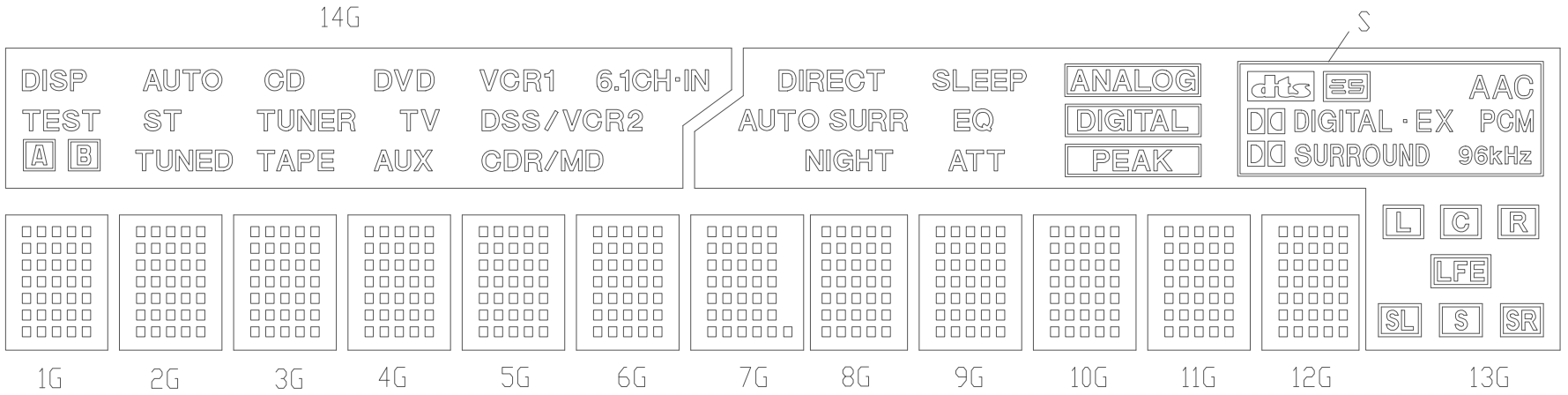
红橙色(Reddish Orange:x=0.627,y=0.371)：—— —— —— —— 虚线中图形(Within dotted lines)

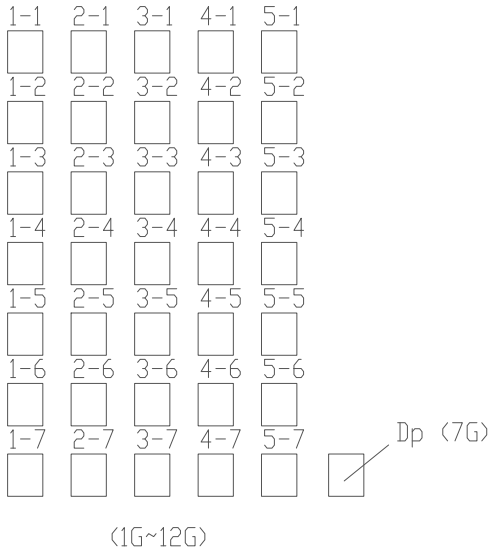
绿色(Green:x=0.250,y=0.440)：—— —— —— —— 其余(Alll other graphics)

阴体字(Negative Patterns)：



附图 3：栅网分割 Grid Assignment





附图 4：阳极连接 Anode Connection

	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	12G	13G	14G
P1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1		CDR/MD
P2	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1		AUX
P3	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1		TAPE
P4	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1		TUNED
P5	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1		B
P6	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2		A
P7	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2		TEST
P8	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2		ST
P9	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2		TUNER
P10	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2		TV
P11	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3		DSS/VCR2
P12	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	ATT	DISP
P13	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	NIGHT	AUTO
P14	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	EQ	CD
P15	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	AUTOSURR	DVD
P16	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	SLEEP	VCR1
P17	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	DIRECT	6.1CH-IN
P18	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	PEAK	
P19	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	DIGITAL	
P20	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4	ANALOG	
P21	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	L	
P22	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5	C	
P23	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	R	
P24	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	LFE	
P25	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	SR	
P26	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	S	
P27	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	SL	
P28	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6	DD SURROUND	
P29	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	96kHz	
P30	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	DD DIGITAL	
P31	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	-EX	
P32	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7	PCM	
P33	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7	dts	
P34	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	ES	
P35	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	AAC	
P36							Dp						S	