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NEWHAVEN DISPLAY INTERNATIONAL

User's Guide

D0120SD-20-2004F

VFD- RoHS Compliant

(Vacuum Fluorescent Display Module)

For product support, contact

Newhaven Display International
2511 Technology Drive, #101
Elgin, IL 60124
Tel: (847) 844-8795 Fax: (847) 844-8796

February 27, 2008

NEWHAVEN DISPLAY INTERNATIONAL

October 31, 2006

Vacuum Fluorescent Display Specification

PART NUMBER: D0120SD-20-2004F

FEATURES: 1 Row x 20 Digits, 5x7 Dot Matrix

APPLICATION: Character Display (DotMatrix)

RATINGS: Below

Outer Dimensions	Panel Length	P.L.	115.7	mm
	Panel Height	P.H.	20.5	mm
	Panel Thickness	P.T.	6.5	mm
Leads	Lead Pitch	L.P.	1.78	mm
	Lead Out	-	SIL	
Character Size	Character Height	C.H.	4.9	mm
	Character Width	C.W.	3.4	mm

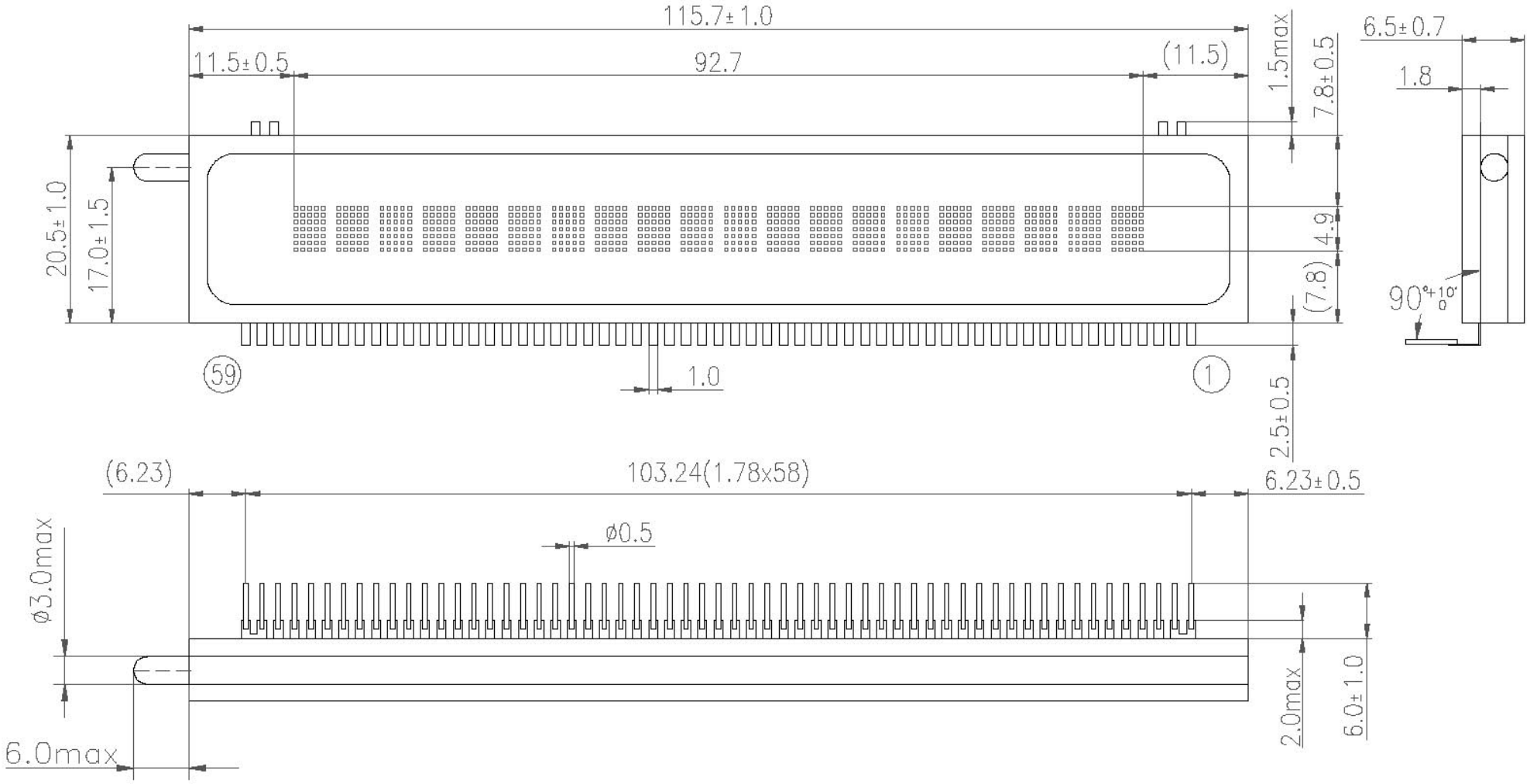
Item	Symbol	Min.	Recommended	Max.	Unit
Filament Voltage	Ef	4.1	4.5	5.0	Vac
Peak Grid Voltage	ec	-	36.0	40.0	Vp-p
Peak Anode Voltage	eb	-	36.0	40.0	Vp-p
-	-	-	-	-	-
Duty Cycle	Du	-	1/23	-	-
Pulse Width	tp	-	100	-	uS
Operating Temperature	Topr	-40	-	+ 85	C
Storage Temperature	Tstg	-50	-	+ 95	C
Color of Illumination	Green				

Electrical Characteristics

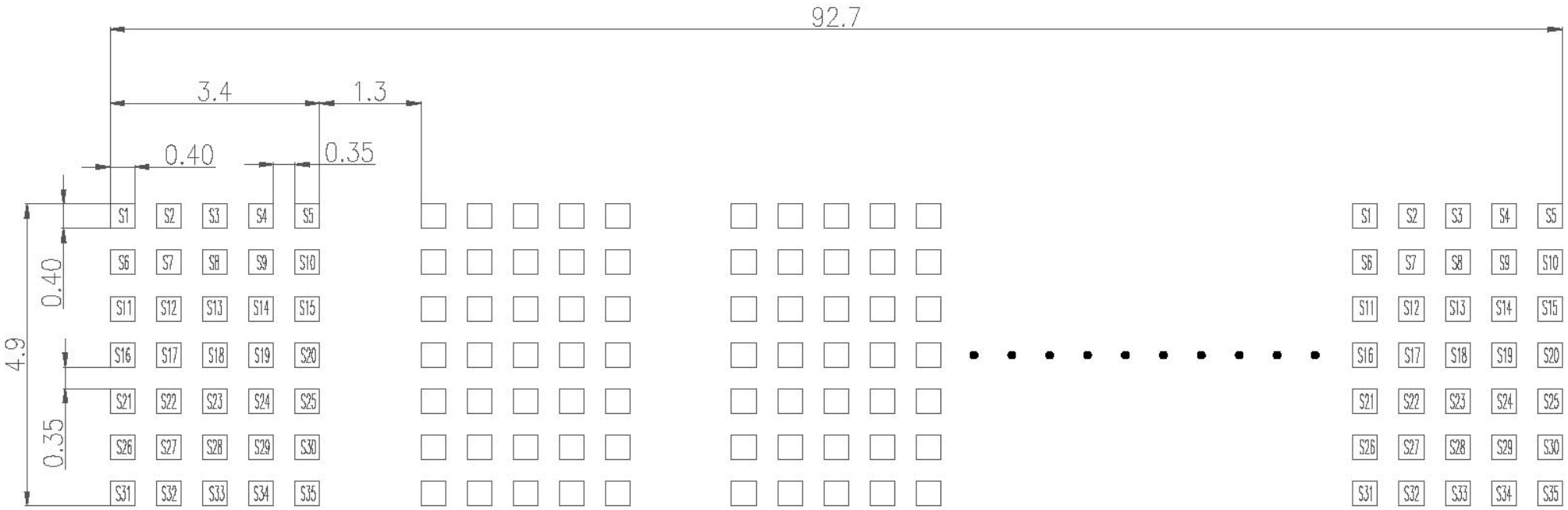
Item	Symbol	Test Condition	Min.	Typical	Max.	Unit
Filament Current	If	Ef = 4.5 Vac	74.0	82.0	90.0	mAac
	-	eb = ec = 0	-	-	-	-
Anode Current	ib/1G~20G	Ef = 4.5 Vac	-	3.5	7.0	mAp-p
	-	eb = 36.0 Vp-p	-	-	-	mAp-p
	-	ec = 36.0 Vp-p	-	-	-	mAp-p
	-	Du = 1/23	-	-	-	mAp-p
	-	tp = 100 uS	-	-	-	mAp-p
Grid Current	ic/1G~20G		-	3.5	7.0	mAp-p
	-		-	-	-	mAp-p
	-		-	-	-	mAp-p
	-		-	-	-	mAp-p
	-		-	-	-	mAp-p
Luminance	L(G)		350	700	-	cd/m^2
	-		(102)	(204)		fL
Luminance Ratio	Lmin/Lmax		50	-	-	%
Grid Cut-off Voltage	Ecco	Ef = 4.5 Vac Eb = 36.0 Vdc	-5.0	-	-	Vdc
Anode Cut-off Voltage	Ebco	Ef = 4.5 Vac ec = 36.0 Vp-p Du = 1/23 tp = 100 uS	-5.0	-	-	Vdc

Drive mode: Dynamic State

1: Outline drawing (Unit:mm)

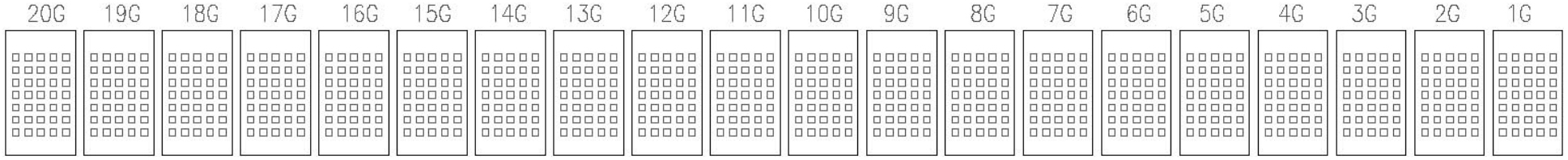


2: Display Pattern



Green: All (X=0.250, Y=0.440)

3: Anode Connection & Grid Assignment



PIN CONNECTIONS

Pin Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Connection	F	F	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15	S16	S17	S18	S19	S20	S21	S22	S23	S24	S25	S26
Pin Number	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
Connection	S27	S28	S29	S30	S31	S32	S33	S34	S35	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	12G	13G	14G	15G	16G	17G	18G	19G
Pin Number	57	58	59																									
Connection	20G	F	F																									

NOTE: F: Filament G: Grid NP: No Pin NC: No Connection