



# User's Guide

# D0220LD-48-4002F

# VFD- **RoHS Compliant**

(Vacuum Fluorescent Display Module)

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For product support, contact

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# Vacuum Fluorescent Display Specification

**PART NUMBER:** D0220LD-48-4002F

**FEATURES:** 2 Row x 20 Digits, 5x7 Dot Matrix with Decimal, Comma, Carrot - P.O.S

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

**RATINGS:** Below

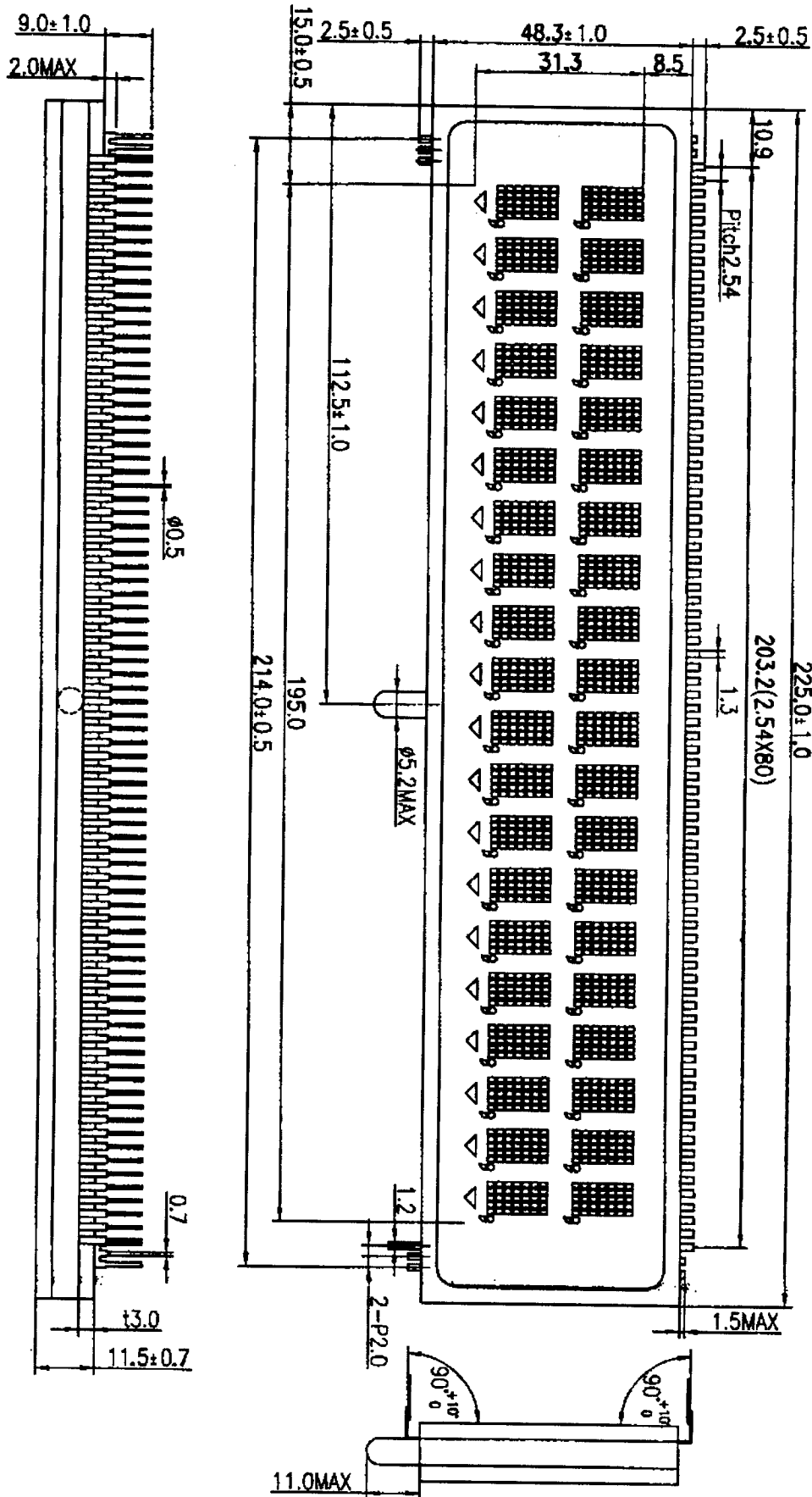
<b>Outer Dimensions</b>	Panel Length	P.L.	225.0	mm	
	Panel Height	P.H.	48.3	mm	
	Panel Thickness	P.T.	11.5	mm	
<b>Leads</b>	Lead Pitch	L.P.	2.54	mm	
	Lead Out	-	SIL		
<b>Character Size</b>	Character Height	C.H.	11.2	mm	
	Character Width	C.W.	6.1	mm	
<b>Item</b>	<b>Symbol</b>	<b>Min.</b>	<b>Recommended</b>	<b>Max.</b>	<b>Unit</b>
<b>Filament Voltage</b>	Ef	7.6	8.4	9.2	Vac
<b>Peak Grid Voltage</b>	ec	-	45.0	54.0	Vp-p
<b>Peak Anode Voltage</b>	eb	-	45.0	54.0	Vp-p
-	-	-	-	-	-
<b>Duty Cycle</b>	Du	-	1/ 50	-	-
<b>Pulse Width</b>	tp	-	80	-	uS
<b>Operating Temperature</b>	Topr	-40	-	+ 85	C
<b>Storage Temperature</b>	Tstg	-55	-	+ 85	C
<b>Color of Illumination</b>	Green				

**Electrical  
Characteristics**

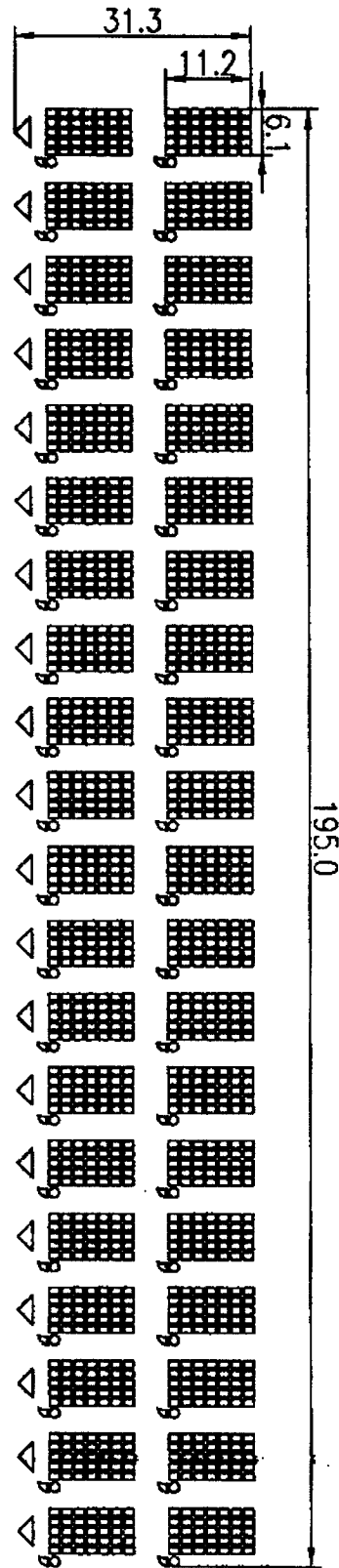
Item	Symbol	Test Condition	Min.	Typical	Max.	Unit
<b>Filament Current</b>	if	Ef = 8.4 Vac	270.0	300.0	330.0	mAac
	-	eb = ec = 0	-	-	-	-
<b>Anode Current</b>	ib/1~20G	Ef = 8.4 Vac eb = 45.0 Vp-p ec = 45.0 Vp-p Du = 1/50	-	17.0	29.0	mAdc
	ib/21~40G		-	18.0	30.0	mAdc
	-		-	-	-	mAdc
	-		-	-	-	mAdc
	-		-	-	-	mAdc
<b>Grid Current</b>	ic/1~20G		-	15.0	25.0	mAdc
	ic/21~40G		-	16.0	26.0	mAdc
	-		-	-	-	mAdc
	-		-	-	-	mAdc
	-		-	-	-	mAdc
<b>Luminance</b>	L(G)		400	850	-	cd/m <sup>2</sup>
	-		(117)	(248)	-	fL
<b>Luminance Ratio</b>	Lmin/Lmax		50	-	-	%
<b>Grid Cut-off Voltage</b>	Ecco	Ef = 8.4 Vac Eb = 45.0 Vdc	-9.0	-	-	Vdc
<b>Anode Cut-off Voltage</b>	Ebco	Ef = 8.4 Vac ec = 45.0 Vp-p Du = 1/50	-6.0	-	-	Vdc

Drive Mode is Dynamic State.

Outline Drawing (Unit : mm)



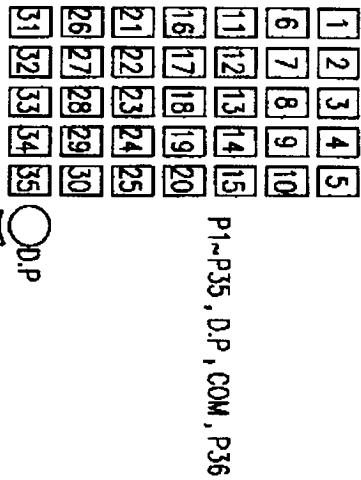
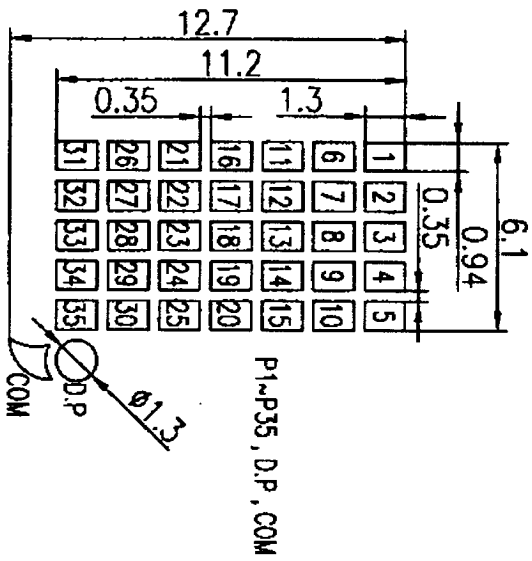
# Display Pattern and Grid Assignment



Color : Green

G20	G19	G18	G17	G16	G15	G14	G13	G12	G11	G10	G9	G8	G7	G6	G5	G4	G3	G2	G1
G40	G39	G38	G37	G36	G35	G34	G33	G32	G31	G30	G29	G28	G27	G26	G25	G24	G23	G22	G21

Segment Designation



Pin Assignment

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Assignment	F	G21	G22	G23	G24	G25	G26	G27	G28	G29	G30	G31	G32	G33	G34	G35	G36	G37	G38	G39	
Pin No.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
Assignment	G40	G20	G19	G18	G17	G16	G15	G14	G13	G12	G11	G10	G9	G8	G7	G6	G5	G4	G3	G2	NC
Pin No.	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	
Assignment	G1	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	
Pin No.	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	
Assignment	P20	P21	P22	P23	P24	P25	P26	P27	P28	P29	P30	P31	P32	P33	P34	P35	D.P	COM	P36	F	

F : Filament    NC : No Connection    G : Grid    P : Anode