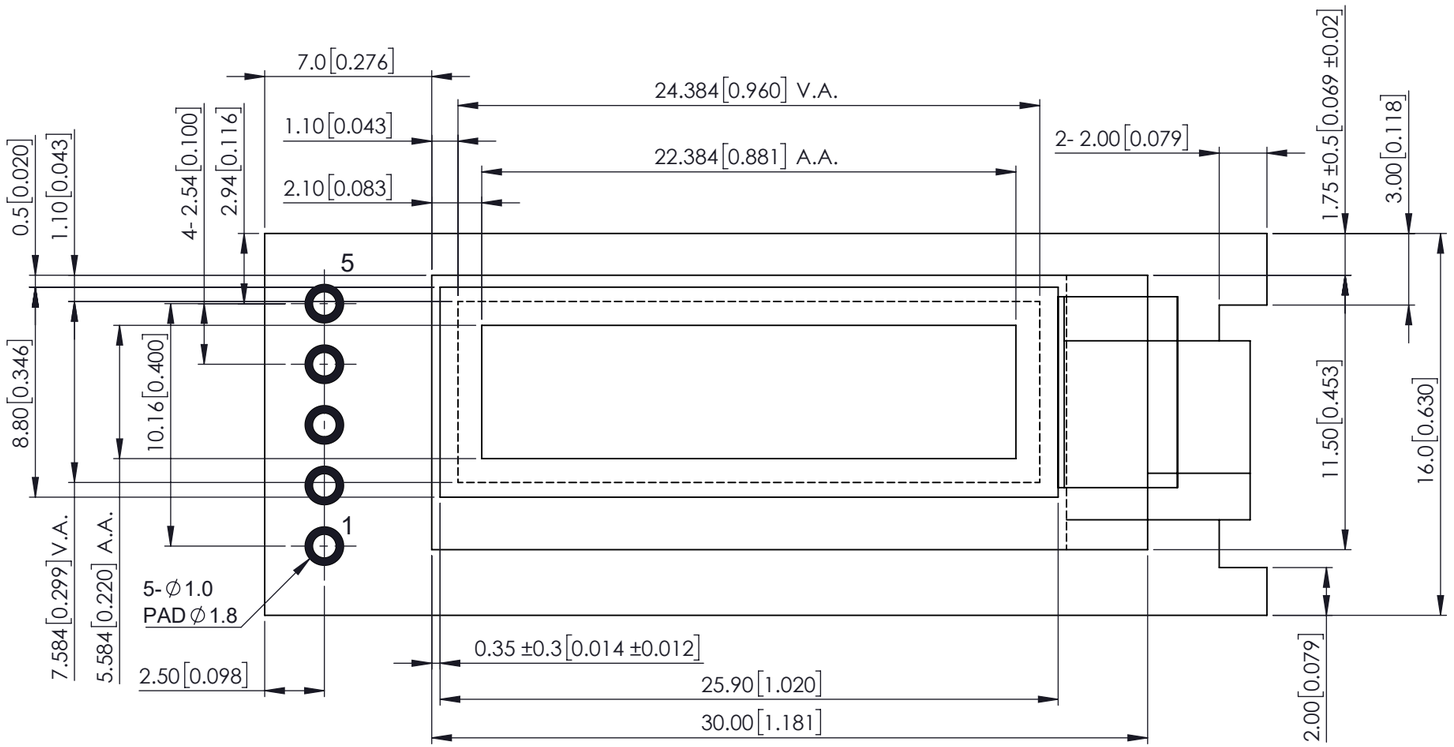
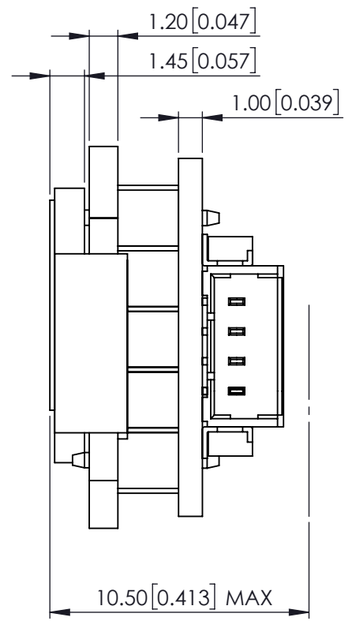
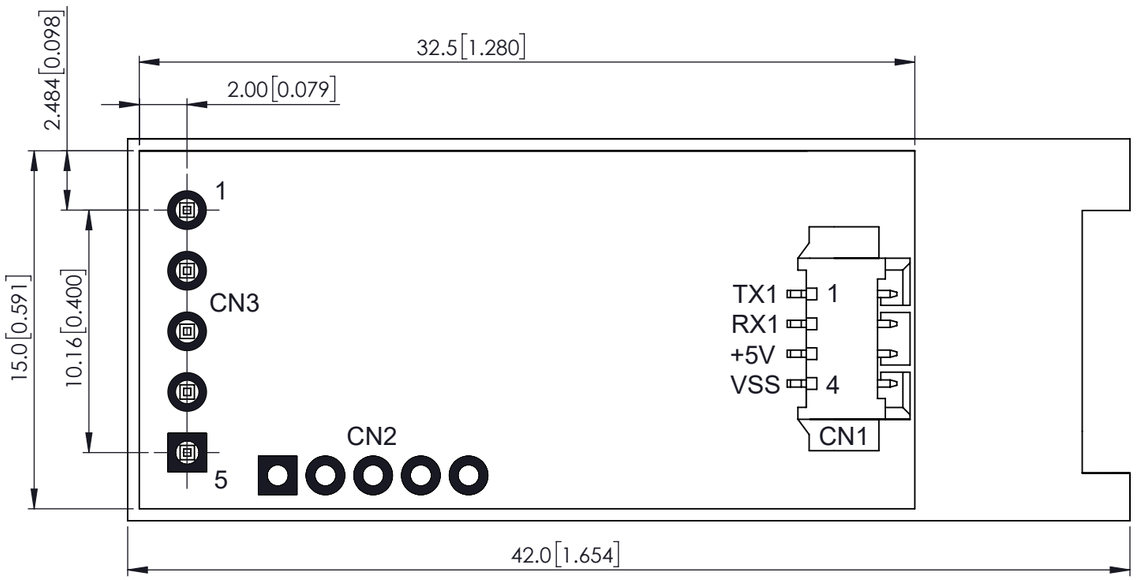
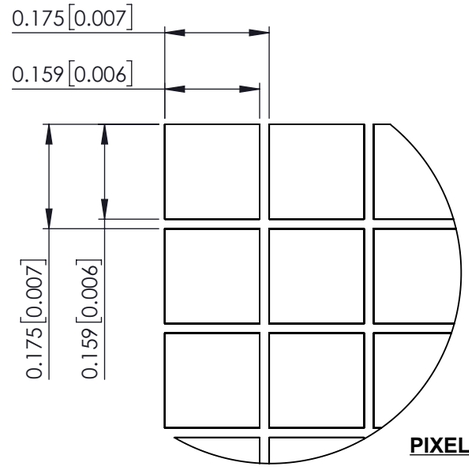
PART NUMBER	LOD-H12832GP-W-UR	REV	--









PIXEL DETAIL

*UNLESS OTHERWISE SPECIFIED TOLERANCES PER DECIMAL PRECISION ARE: X=±1 (±0.039), X.X=±0.5 (±0.020), X.XX=±0.25 (±0.010), X.XXX=±0.127 (±0.005). LEAD SIZE=±0.05 (±0.002), LEAD LENGTH=±0.75 (±0.030). MIN= $^{+\text{DECIMAL PRECISION}}_{-0.00}$ MAX.= $^{+0.00}_{-\text{DECIMAL PRECISION}}$

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42.0(L)*16.0(W)*10.5(H)mm, 0.91" 128x32 OLED ezDisplay, UART Interface.

****THE SPECIFICATIONS MAY CHANGE AT ANY TIME WITHOUT NOTICE DUE TO NEW MATERIALS OR PRODUCT IMPROVEMENT.****

DATE : 2018.03.16	DRAWN BY : C.C.
PAGE : 1 OF 6	CHKD BY : E.C.
SCALE : NTF	APRVD BY : G.Y.
UNIT : mm [INCH]	Pb

GENERAL SPECIFICATION

ITEM	DESCRIPTION
VIEWING AREA	24.384(W)mm×7.584(H)mm
MODULE SIZE	24.0(W)×16.0(H)×10.5max(D) mm
DOT SIZE	0.159(W)mm×0.159(H)mm
DOT PITCH	0.175(W)mm×0.175(H)mm
DISPLAY FORMAT	128 (W)×32 (H)
CONTROLLER INTERFACE	STM32F030C8T6 UART
ROM SELECTION	--
BUILT-IN	WITH DC/DC CONVERTER
OLED TYPE	OLED WHITE & BLACK
BACKLIGHT TYPE	OLED
REAR POLARIZER	REFLECTIVE
OLED COLOR	WHITE
TEMPERATURE RANGE	WIDE TEMP., 5V, SINGLE SUPPLY VOLTAGE
FRAME	BLACK

NOTE :
1. RoHS COMPLIANT.

CN1 PIN ASSIGNMENT

PIN NO.	PIN OUT	LEVEL	DESCRIPTION
1	TX1	H/L	SERIAL TRANSMIT SIGNAL
2	RX1	H/L	SERIAL RECEIVE SIGNAL
3	+5V	+5V	POWER SUPPLY VOLTAGE
4	VSS	0V	POWER SUPPLY GROUND

ABSOLUTE MAXIMUM RATING

(1) Electrical Absolute Ratings

ITEM	SYMBOL	MIN.	MAX.	UNIT	NOTE
POWER SUPPLY FOR LOGIC	V_{DD}-V_{SS}	-0.3	5.5	VOLT	1,2
INPUT VOLTAGE	V_I	-0.3	V_{DD}	VOLT	--
SUPPLY VOLTAGE FOR DISPLAY	V_{CC}	0	11.0	VOLT	2
LIFE TIME(120cd/m²)	--	10000	--	HOUR	--

Note 1 : All the above voltages are on the basis of “Vss” = 0V”.
Note 2 : When this module is used beyond the above absolute maximum ratings, permanent breakage of the module may occur.

(2) Environmental Absolute Maximum Ratings

ITEM	WIDE TEMPERATURE			
	OPERATING		STORAGE	
	MIN.	MAX.	MIN.	MAX.
AMBIENT TEMPERATURE	-40˚C	+70˚C	-40˚C	+80˚C
HUMIDITY (WITHOUT CONDENSATION)	SEE NOTE 4,5		SEE NOTE 3,4,6	

Note 3 : The defined temperature ranges do not include the polarizer. The maximum withstood Temperature of the polarizer should be 80℃.
Note 4 : Background color changes slightly depending on ambient temperature. This phenomenon is reversible.
Note 5 : Ta≤70℃: 75%RH max
Ta>70℃: absolute humidity must be lower than the humidity of 75%RH at 70℃
Note 6 : Ta at -30℃ will be <48hrs, at 80 ℃ will be <120hrs when humidity is higher than 70%.

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ELECTRICAL CHARACTERISTICS

ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
POWER SUPPLY FOR LOGIC	V_{DD}-V_{SS}	-	4.5	5.0	5.5	VOLT
SUPPLY VOLTAGE FOR DISPLAY	V_{CC}	DC/DC CONVERTERS	7.0	7.3	7.6	VOLT
INPUT VOLTAGE	V_{IL}	L LEVEL	0	-	0.2 V_{DD}	VOLT
	V_{IH}	H LEVEL	0.8 V_{DD}	-	V_{DD}	VOLT
OUTPUT VOLTAGE	V_{OL}	L LEVEL	0	-	0.1 V_{DD}	VOLT
	V_{OH}	H LEVEL	0.9 V_{DD}	-	V_{DD}	VOLT
OPERATING CURRENT	I_{DD}	V_{DD}=5V V_{CC}-V_{SS}=7.3V	28.0	33.0	38.0	mA

OPTICAL CHARACTERISTICS

ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
VIEW ANGLE RANGE	Φf (12 O'CLOCK)	--	--	85	--	DEGREE
	Φb (6 O'CLOCK)		--	85	--	
	Φl (9 O'CLOCK)		--	85	--	
	Φr (3 O'CLOCK)		--	85	--	
RISE TIME	Tr	--	--	--	300	mS
FALL TIME	Tf		--	--	300	
FRAME FREQUENCY	Frm		--	--	--	Hz
CONTRAST	Cr		10000	--	--	--
BRIGHTNESS	L	--	120	150	--	cd/m^2
PEAK EMISSION WAVELENGTH	C.I.E (WHITE)		X=0.25 Y=0.27	X=0.29 Y=0.31	X=0.33 Y=0.35	mm

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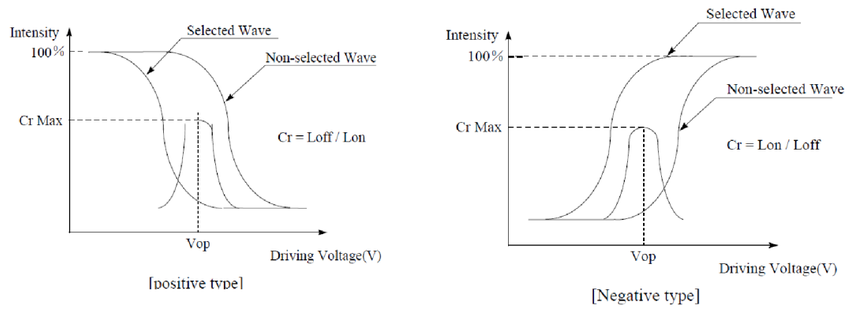
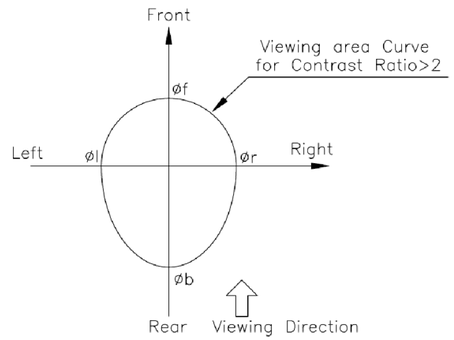
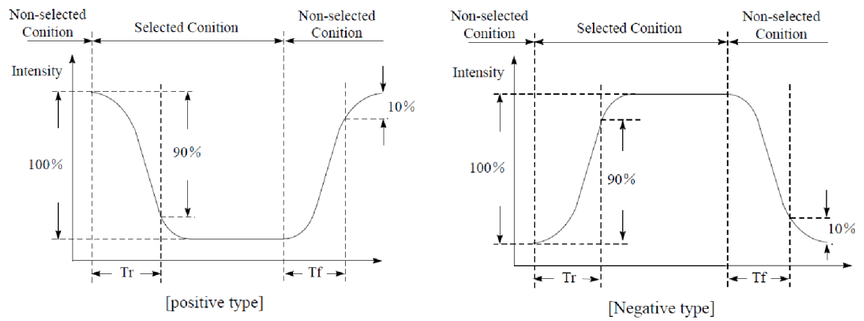
Definition of Operation Voltage (Vop)



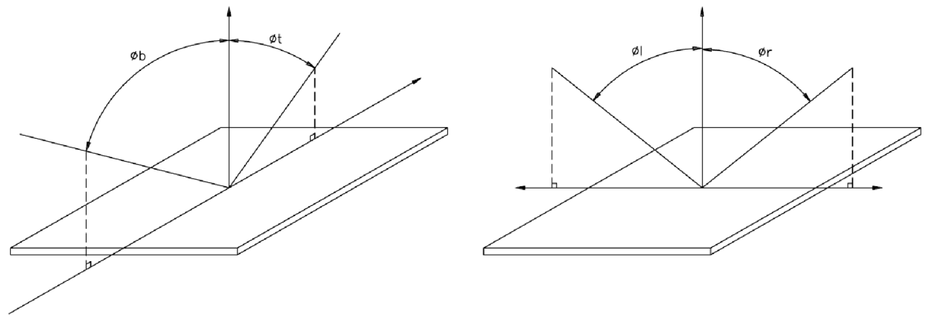
Definition of Viewing Direction



Definition of Response Time (Tr, Tf)



Definition of viewing angle



FUNCTIONAL SPECIFICATION

UART CONFIGURATION:

ITEM	SETTING VALUE
BAUD RATE	115200
DATA BIT	8
STOP BIT	1
PARITY BIT	NONE
FLOW CONTROL	NONE

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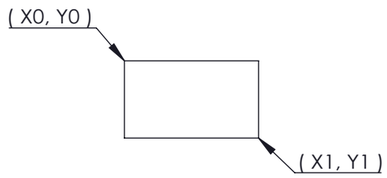
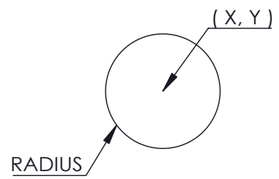
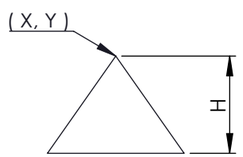
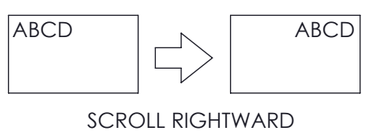
DIAGRAM	COMMAND*	EXAMPLE
	Write a 5X7 String	at**81**=(line,column,String) at**81**=(0,0,ABCD)
	Draw a Rectangle	at**91**=(X0 position,Y0 position,X1 position,Y1 position,**0 or 1**) at**91**=(0,0,55,7,1) : '1' positive mode
	Draw a Circle	at**94**=(X position,Y position,Radius,**0 or 1**) at**94**=(48,4,3,1) : '1' positive mode
	Draw a tip upward Triangle	at**96**=(X position,Y position,Height,**0 or 1**) at**96**=(48,1,3,1) : '1' positive mode
	Scroll the whole display rightward	at**d5**=(shif time in ms) at**d5**=(20)

* Please refer to detail commands on Lumex website: www.lumex.com/ezdisplay

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UNIT : mm [INCH]	Pb

ASCII code of 5X7 fonts and 8X16 fonts

Hex	Symbol	Hex	Symbol	Hex	Symbol
0x20		**0x40**	@	**0x60**	`
0x21	!	**0x41**	A	**0x61**	a
0x22	"	**0x42**	B	**0x62**	b
0x23	#	**0x43**	C	**0x63**	c
0x24	$	**0x44**	D	**0x64**	d
0x25	%	**0x45**	E	**0x65**	e
0x26	&	**0x46**	F	**0x66**	f
0x27		**0x47**	G	**0x67**	g
0x28	(	**0x48**	H	**0x68**	h
0x29	)	**0x49**	I	**0x69**	i
0x2a	*	**0x4a**	J	**0x6a**	j
0x2b	+	**0x4b**	K	**0x6b**	k
0x2c	,	**0x4c**	L	**0x6c**	l
0x2d	-	**0x4d**	M	**0x6d**	m
0x2e	.	**0x4e**	N	**0x6e**	n
0x2f		**0x4f**	O	**0x6f**	o
0x30	0	**0x50**	P	**0x70**	p
0x31	1	**0x51**	Q	**0x71**	q
0x32	2	**0x52**	R	**0x72**	r
0x33	3	**0x53**	S	**0x73**	s
0x34	4	**0x54**	T	**0x74**	t
0x35	5	**0x55**	U	**0x75**	u
0x36	6	**0x56**	V	**0x76**	v
0x37	7	**0x57**	W	**0x77**	w
0x38	8	**0x58**	X	**0x78**	x
0x39	9	**0x59**	Y	**0x79**	y
0x3a	:	**0x5a**	Z	**0x7a**	z
0x3b	;	**0x5b**	]	**0x7a**	{
0x3c	<	**0x5c**	\	**0x7a**	|
0x3d	=	**0x5d**	[	**0x7a**	}
0x3e	>	**0x5e**	^	**0x7a**	~
0x3f	?	**0x5f**	_	**0x7a**	<-

ASCII code of 16X16 fonts

Hex	Symbol
0x30	0
0x31	1
0x32	2
0x33	3
0x34	4
0x35	5
0x36	6
0x37	7
0x38	8
0x39	9

No. of 8X16 pattern

No.	Symbol
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

No. of 32X32 pattern

No.	Symbol
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	°C
11	°F
12	

No. of 8X8 pattern

No.	Symbol
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

No. of 16X16 pattern

No.	Symbol
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

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