

SPECIFICATION

Customer : _____

Customer's Model No. : _____

Model No. : **FI310**

Area Imager Fixed-mount bar code scanner

Date : _____

Spec. Version & Revision Date: V01 2014.02.27

Received/Approved by

CHAMPTEK[®]

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Revision History

Version	Date	Context
V00	2013.06.05	Golden release
V01	2014.02.27	Gary release

TABLE OF CONTENTS

A. General Description.....	1
B. Physical Characteristics	2
C. Electrical Characteristics	4
D. Performance	4
E. Reading Range.....	5
F. Readable Symbologies.....	8
G. Environmental.....	9
H. Reliability.....	9
I. Pin Assignment	10

A. General Description

The FI310 is equipped with ultra-compact high performance 2D area imager bar code scanning engine, ideal for OEM applications in devices including POS, medical devices, kiosks, lottery terminals and access control devices, a stand option can be ordered to facilitate desktop hand-free reading options.

The FI310 supports with up to 500mm reading depth of 1D and 2D bar codes, scan rate is up to 120 scans per second in linear emulation and 60 images per second in 2D area mode. It combines decode speed with unmatched motion tolerance to deliver an easy to use scanner with aggressive performance and offers uncompromised performance on current linear barcodes' applications, it can emulate the operation as a linear imagers with scan rates up to 120 scans per second when decodes linear barcodes, which is more than three times faster than traditional 2-D imagers.

Everything has been done to simplify the integration of the FI310, compact size, multiple mounting possibilities and multiple interfaces selection, such as standard RS232 & USB-HID and USB Virtual COM port.

The FI310 is built to match the most demanding scanning requirements, providing consistent scanning performance in total darkness to full sunshine and over a large temperature range.



B. Physical Characteristics

Weight

Body weight	Approx. 3 oz (85 g)
Cable weight(USB)	Approx. 4.24 oz (120 g)

Material Polycarbonate

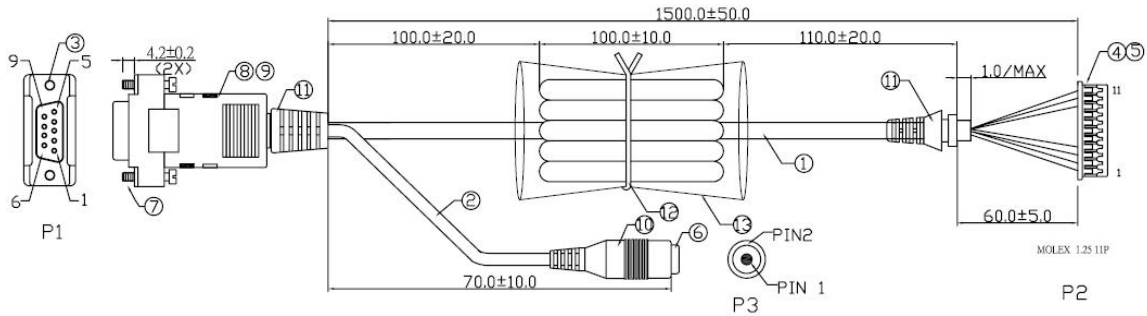
Cable Length 5FT. (150cm)

Dimension 56 mm W x 69 mm D x 27.7 mm H

1) Cable drawing

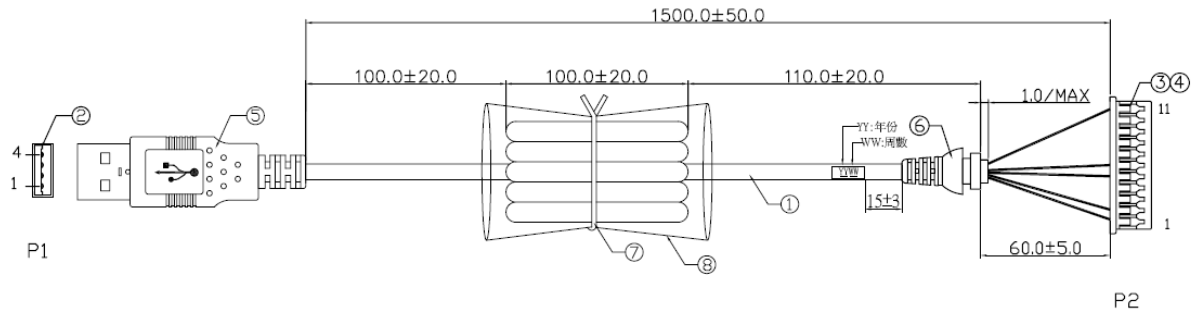
Unit : mm

(1)RS232



Pin Item					Description
P1	Color	P2	Color	P3	
9	Red	2	Red	1	VCC, +5V
3	Yellow	4			RXD
2	Orange	3			TXD
5	Brown	1	Brown	2	GND
8	Green	9			RTS
7	Blue	10			CTS
steel casing	wire-winding	11			SHIELDING

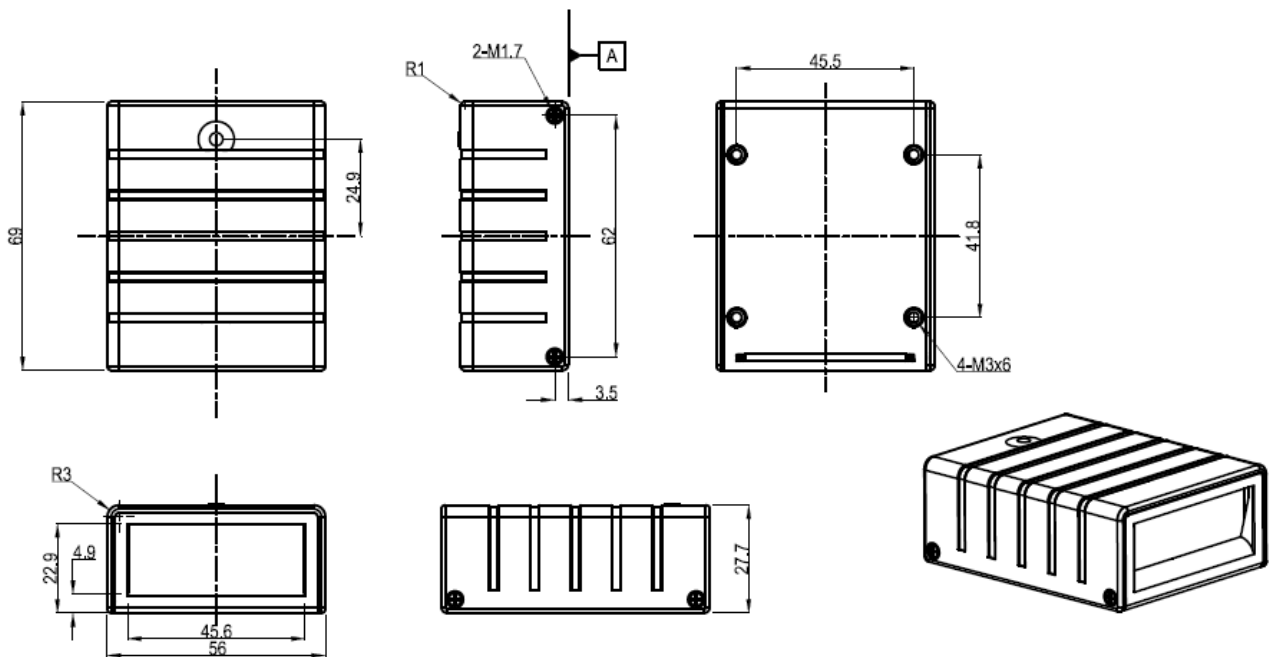
(2) USB(Virtual COM port)



Pin Item			Description
P1	Color	P2	
1	Red	2	VCC
2	Blue	6	D-
3	Green	5	D+
4	Brown	1	GND
steel casing	wire-winding	11	SHIELDING

2) Mechanical drawing

Unit : mm

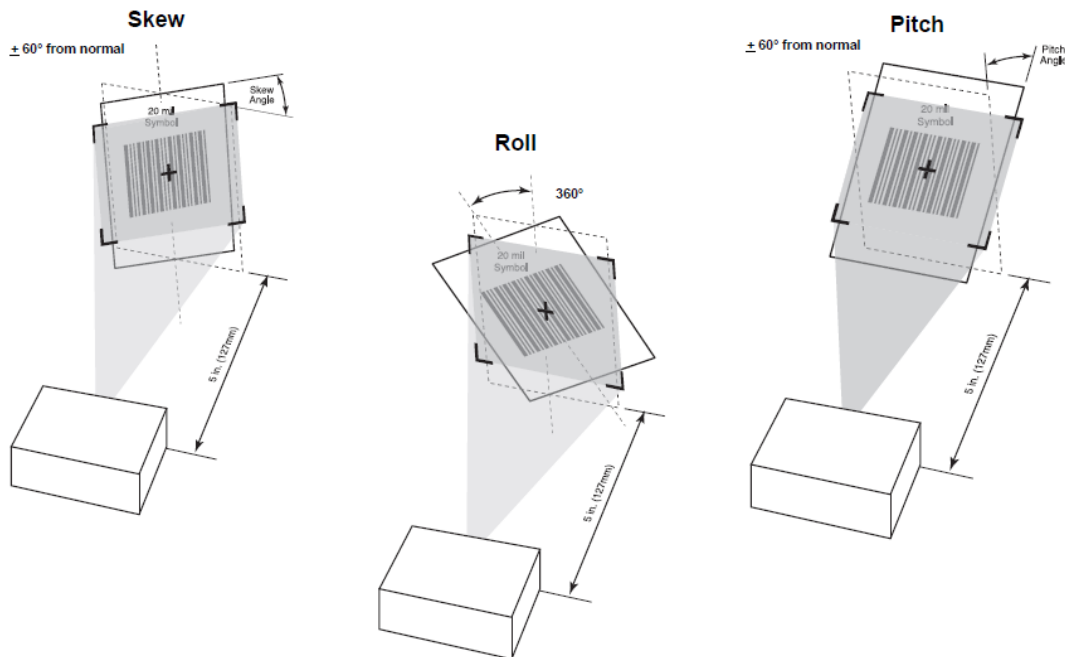


C. Electrical Characteristics

Interface	RS232	USB-HID (or Virtual COM port)
	DC Adaptor	USB Power
Supply Voltage	DC +5V±5%	
Current Draw	±10%	
Power On (Typ.)	800mA	800mA
Stand by (Typ.)	80mA	80mA
Operation (Typ.)	270mA	270mA

D. Performance

Light source	Visible red light 625nm LED
Resolution	752 (H) x 480 (V) pixels Horizontal - 40°, Vertical - 25°
Pitch	±60° (from front to back)
Skew	±60° (from plane parallel to symbol (side-to-side))
Roll	360°
Interface	RS-232, USB (HID KBW or Virtual comport)
Indicators	Good read beep



E. Reading Range

The following table summarizes the reading distance for the specified codes with both the wide area field and the high density field enabled and active for decoding.

Focus Range	Near	Far
5.0 mil Code 39	1.9 in./4.7 cm	7.7 in./19.4 cm
20 mil Code 39	Field of view limited	24.0 in./60.9 cm
6.67 mil PDF417	2.7 in./6.8 cm	7.0in./17.9 cm
15 mil PDF417	Field of view limited	13.2 in./33.5 cm
10 mil Datamatrix	Field of view limited	8.3 in./21.0 cm
13 mil 100% UPC	2.8 in./7.2 cm	16.8 in./42.4 cm

Code Type	Density	Bar Code Description	Range	Typical		Guaranteed	
				Inch	cm	Inch	cm
Code 39	3 mil	STI3025	Near	2.5	6.5	2.9	7.4
			Far	4.9	12.5	4.3	10.9
	4 mil	STI4026	Near	1.9	4.9	2.3	5.7
			Far	7.2	18.3	6.9	17.5
	5 mil	ABCDEFGH	Near	1.5	3.8	1.9	4.7
			Far	8.2	20.8	7.7	19.4
	7.5 mil	ABCDEF	Near	Note 1			
			Far	11.3	28.6	10.9	27.6
	10 mil	ABCDE	Near	Note 1			
			Far	14.3	36.3	13.2	33.6
	20 mil	123	Near	Note 1			
			Far	25.8	65.6	24.0	60.9
60% UPC	7.8 mil	12345678905	Near	1.1	2.9	1.5	3.8
			Far	10.5	26.6	9.5	24.2
80% UPC	10.4 mil	12345678905	Near	1.5	3.8	2.2	5.7
			Far	13.3	33.8	12.3	31.1
100% UPC	13 mil	12345678905	Near	1.9	4.9	2.8	7.2
			Far	17.5	44.4	16.8	42.6

Note 1: Near distance is Field of View (FOV) limited.

Code Type	Density	Bar Code Description	Range	Typical		Guaranteed		
				Inch	cm	Inch	cm	
Code 128	5 mil	C128 MOT	Near	2.1	5.3	2.4	6.1	
			Far	6.2	15.7	5.7	14.4	
	20 mil	20MIL C128	Near	Note 1				
			Far	23.3	59.1	21.2	54.0	
I 2 of 5	10 mil	1234567897	Near	Note 1				
			Far	14.3	36.4	13.7	34.9	
PDF417	5 mil	x.005y.0150	Near	3.1	7.8	3.5	8.9	
			Far	5.5	13.9	5.0	12.8	
	6.67 mil	x.0066y.0200	Near	2.2	5.5	2.7	6.8	
			Far	7.5	19.1	7.0	17.9	
	10 mil	x.0100y.0300	Near	Note 1				
			Far	10.3	26.1	9.8	25.0	
	15 mil	x.0150y.0450	Near	Note 1				
			Far	14.4	36.6	13.2	33.5	
	Datamatrix	5 mil	1234567890 (6 times)	Near	3.4	8.6	3.7	9.5
				Far	4.3	10.9	3.5	8.8
7.5 mil		1234567890 (6 times)	Near	2.4	6.1	2.9	7.4	
			Far	6.8	17.3	6.2	15.8	
10 mil		1234567890 (6 times)	Near	Note 1				
			Far	8.9	22.7	8.3	21.0	
15 mil		1234567890 (6 times)	Near	Note 1				
			Far	12.1	30.6	11.5	29.3	
QR Code	10 mil	1234567890 (6 times)	Near	Note 1				
			Far	7.4	18.8	6.9	17.7	

Note 1: Near distance is Field of View (FOV) limited.

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			Far	12.1	30.6	11.5	29.3	
QR Code	10 mil	1234567890 (6 times)	Near	Note 1				
			Far	7.4	18.8	6.9	17.7	

Note 1: Near distance is Field of View (FOV) limited.

F. Readable Symbolologies

1D Symbolologies	Readable	Default Enable
EAN/UPC	V	V
UCC/EAN128	V	V
ISBN	V	
ISBT	V	
Code 11	V	
Code 39	V	V
Code 93/93i	V	
Code 128	V	V
Interleaved	V	
Matrix	V	V
Instustrial	V	
Standard 2 of 5	V	
Codabar	V	
MSI	V	
Plessey	V	
Telepen	V	
Postal codes	V	
GS1 DataBar	V	V

2D Symbolologies	Readable	Default Enable
Data Matrix	V	V
Data Matrix Inverse	V	
PDF 417	V	V
Micro PDF 417	V	
Maxicode	V	
QR code	V	V
QR code Inverse	V	
Aztec (& Inverse)	V	V
EAN.UCC composite	V	
MicroQR code	V	V

G. Environmental

Operating Temp.	-20°C to 60°C (-4°F to 144°F)
Storage Temp.	-30°C to 70°C (-22°F to 158°F)
Relative Humidity	5% to 95% (Non-condensing)
Ambient light	Works in any lighting conditions from 0 to 100,000 lux

H. Reliability

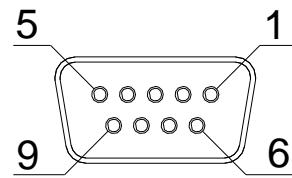
Life Time	
MTBF(Calculated)	50,000 hours
Thermal Shock	
High Temp.	50 °C (122 °F)
Low Temp.	-20 °C (-4 °F)
Cycle time	30 minutes for high temp. , 30 minutes for low temp.
Cycles	24 cycles
Mechanical Shock	2000 G, 0.7 ms, half sinus, 3 axes
Vibration	8 G r.m.s., from 10 to 500 Hz, 2 hours per axis, 3 axes

I. Pin Assignment

(a)RS232 Interface

DB 9 Female

Pin No.	Function
2	TXD
3	RXD
5	GND
7	CTS
8	RTS
9	Vcc/+5V
Power Lead	Vcc/+5V



(b)USB Interface

USB A Type Male

Pin No.	Function
1	Vcc
2	D-
3	D+
4	GND

