



QLIR07E3BU-196
(3535 90D IR LEDs)



Product Outline:

QLIR07E3BU-196 series are 3535 IR LEDs bring high performance and quality. The LED provide perfect optical solution with various field angles 90 degrees and low thermal resistance with advanced package methodology.

Features:

- High brightness output @ 1000mA,
- View angel with 90 degrees
- Package Dimension = 3.5mmX3.5mmX2.0mm
- Low thermal resistance : 10°C/W
- RoHS compliant
- Custom Bin available upon special request

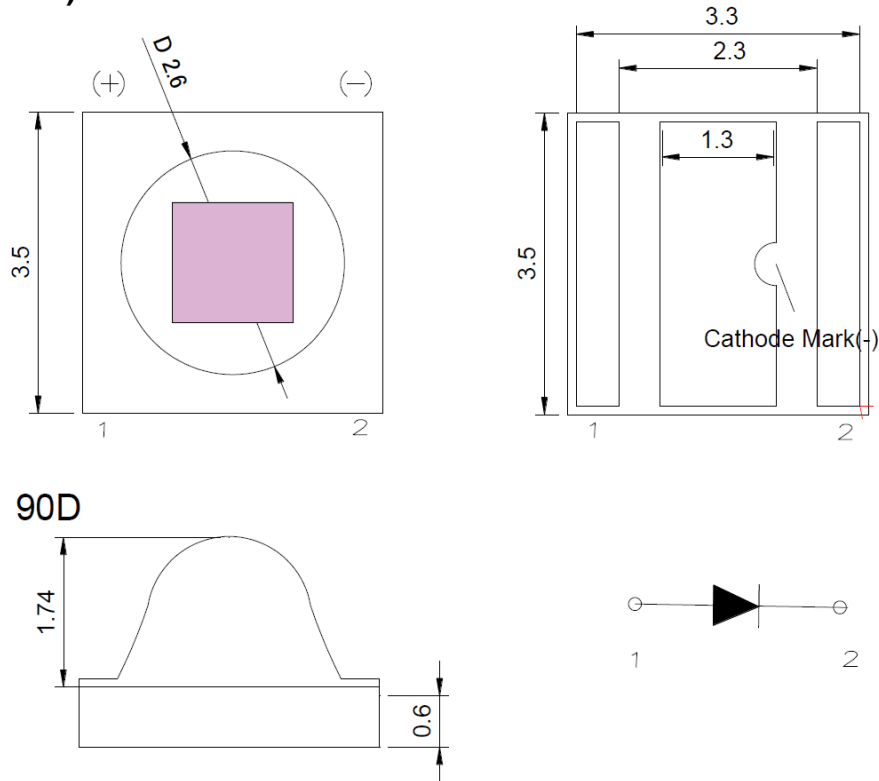
Application:

- Machine vision system
- Security
- IP cam
- Baby cam
- Surveillance system
- General purpose indicator application

Compliance and Certification:



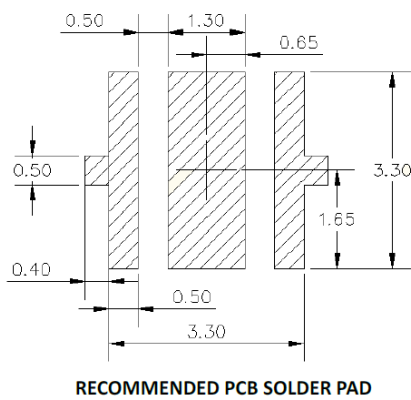
Mechanical Property: (Dimension)



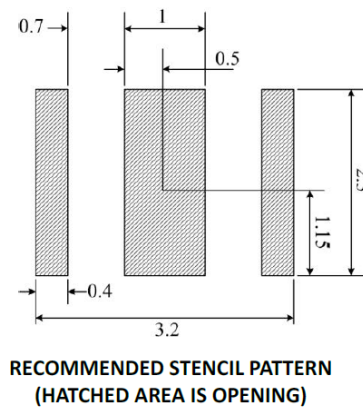
1. All dimensions are in millimeters.
2. Tolerance is ± 0.05 mm unless otherwise specified.

Recommended Solder footprint:

Recommended PCB solder pad:



Recommended stencil pattern:



Electrical / Optical Characteristic

(T=25 °C)

Product	Color	I _F (mA)	V _F (V)		Wavelength nm	Radiometric power (mW)	
			Typ.	max		min	typ.
QLIR07E3BU-196	IR	350	1.8	2.4	750~770	200	300

*Tolerance = +/- 10%

Absolute Maximum Rating

(T=25 °C)

Part #	P _d (mW)	I _F (mA)	I _{FP} (mA)*	V _R (V)	T _J (°C)	TOP (°C)	T _{ST} (°C)	T _{SOL} (°C)**	R _{th(J-S)} (C/W)***
QLIR07E3BU-196	2500	1000	1500	-3	115	-40 – 85	-40 - 120	260	10

*Duty D=0.01s duty 1/10

** IR Reflow for no more than 10 sec @ 260 °C

*** Junction to substrate

 NOTE: When operation on maximum current , T_j must be kept below 100 °C

Dominate Wavelength (nm) Bin:

Wd (nm) @ 350mA			
Code name	Min.	Max.	Unit
R750A	750	770	nm

Measurement tolerance is +/- 2nm

Forward Voltage (V_F) Bin:

VF Rank @ 350mA			
Code name	Low	High	Unit
L4	1.4	1.8	V
P4	1.8	2.2	

The forward voltage tolerance is ± 0.1V



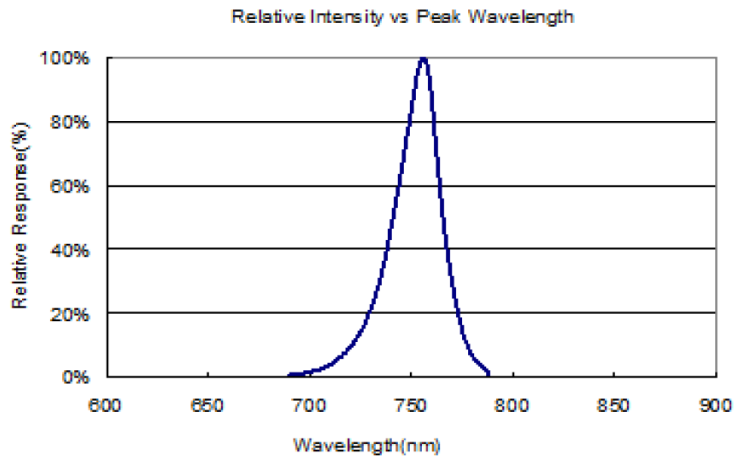
Radiometric power Bin:

Rank @ 350mA (mW)			
Code name	Low	High	Unit
N020	200	250	mW
N025	250	300	
N030	300	350	

luminous flux tolerance is $\pm 10\%$

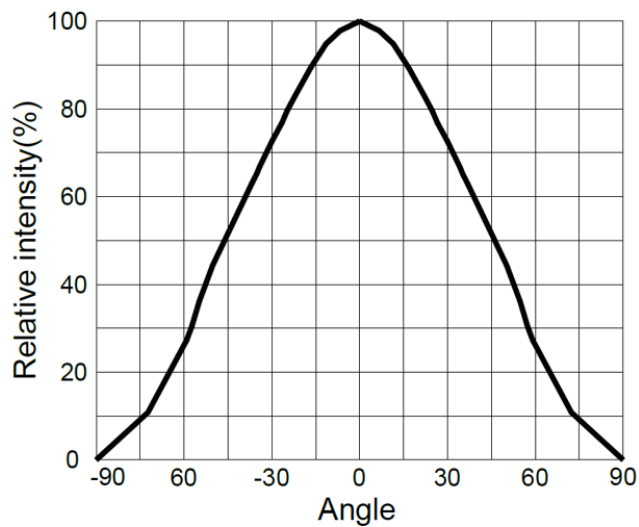
Characteristic Curves

(1) Color Spectrum



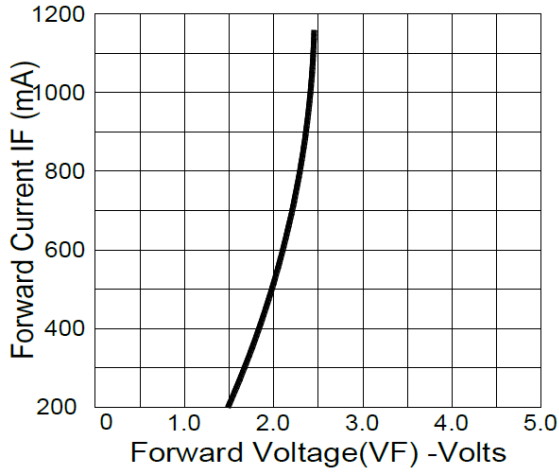
(2). Typical Representative Spatial Radiation Pattern

Beam Angle 90D

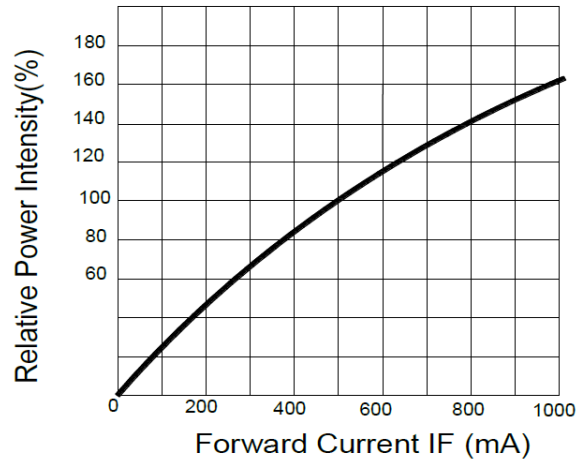


(3). Forward Current Characteristics

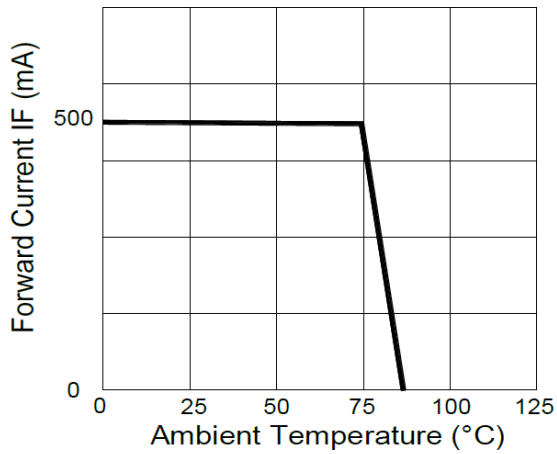
Forward Current VS. Forward Voltage



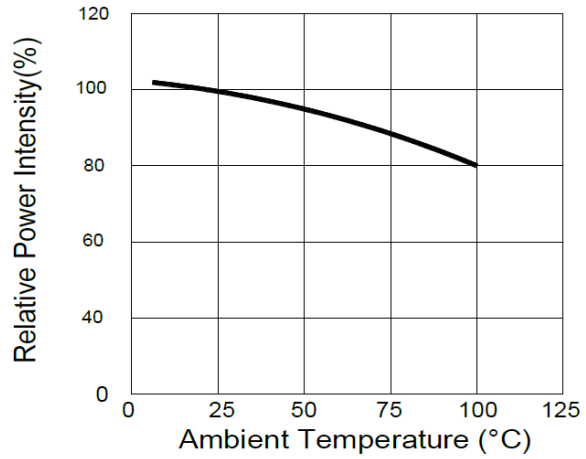
Luminous Intensity VS. Forward Current



Forward Current VS. Ambient Temperature



Radiant Power VS. Ambient Temperature



■ Reliability test:

No	Item	Condition	Time/Cycle	Sample size
1	Steady State Operating Life of Room Temperature	25°C Operating	1000 Hrs	20 pcs
2	Steady State Operating Life of Low Temperature -40°C	-40°C Operating	1000 Hrs	20 pcs
3	Steady State Operating Life of Low Temperature 60°C	60°C Operating	1000 Hrs	20 pcs
4	Steady State Operating Life of Low Temperature 85°C	85°C Operating	1000 Hrs	20 pcs
5	Low temperature storage -40°C	-40°C Storage	1000 Hrs	20 pcs
6	High temperature storage 100°C	100°C Storage	1000 Hrs	20 pcs
7	Steady State Operating Life of High Humidity Heat 85°C 85%	85°C/85% Operating	1000 Hrs	20 pcs
8	Steady State Pulse Operating Life Condition	25°C 10Hz duty=1/10 Operating	200 Cycle	20 pcs
9	Resistance to soldering heat on PCB (JEDEC MSL3)	pre-store@60°C, 60%RH for 52hrs Tslid max.=260 10sec	3 Times	20 pcs
10	Heat Cycle Test (JEDEC MRC)	25°C~65°C~-10°C, 90%RH, 24hr/1cycle	10 Cycle	20 pcs
11	Thermal shock	-40°C/ 30minr~ 5minr~125°C /30min	100 Cycle	20 pcs

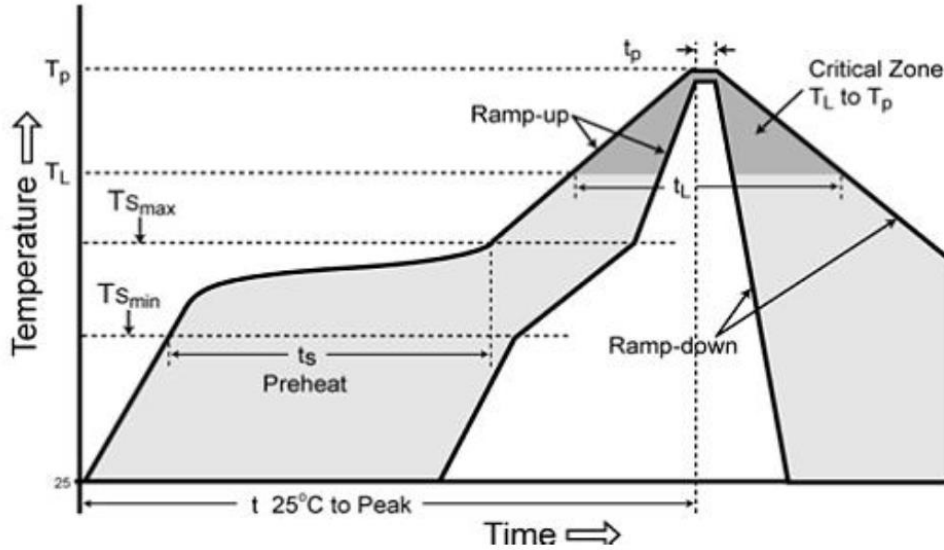
■ Judgment Criteria:

Item	Symbol	Test Condition	Judgment Criteria
Forward Voltage	Vf	350 mA	$\Delta Vf < 10\%$
Luminous Flux	Iv	350 mA	$\Delta Iv < 30\%$



Solder Profile:

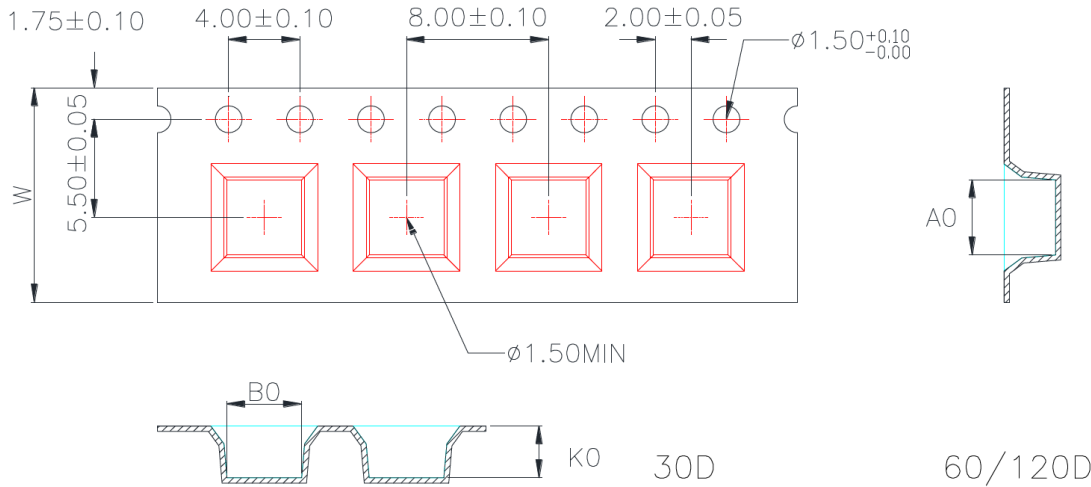
-The recommended reflow soldering profile is as follows (temperatures indicated are as measured on the surface of the LED resin):



Profile Feature	Pb-Free Assembly
Average ramp-up rate (TL to TP)	3°C/second max.
Preheat	
Temperature Min (Tsmmin)	150°C
Temperature Max (Tsmmax)	200°C
Time (min to max) (ts)	60-180 seconds
Time maintained above:	
Temperature (TL)	217°C
Time (tL)	60-150 seconds
Peak/Classification Temperature (Tp)	240°C
Time within 5°C of actual Peak Temperature (tp)	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

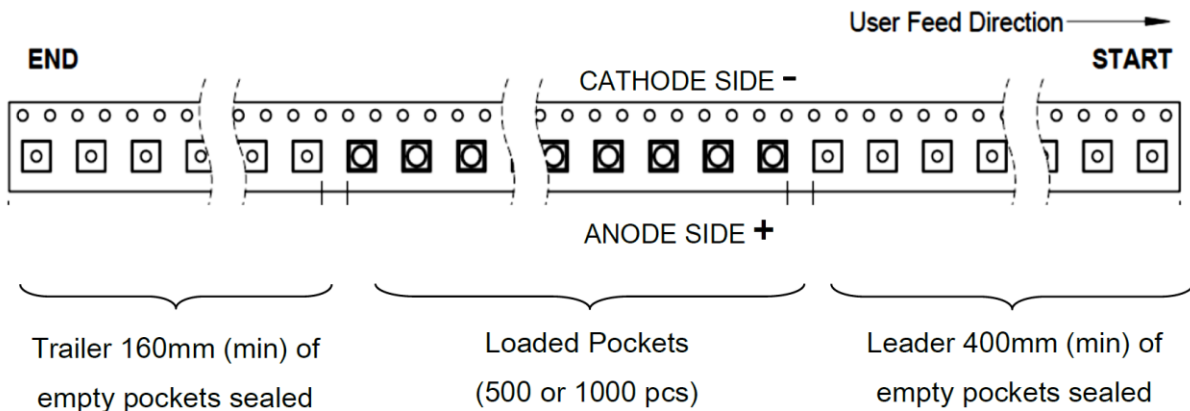


Taping & Packing:



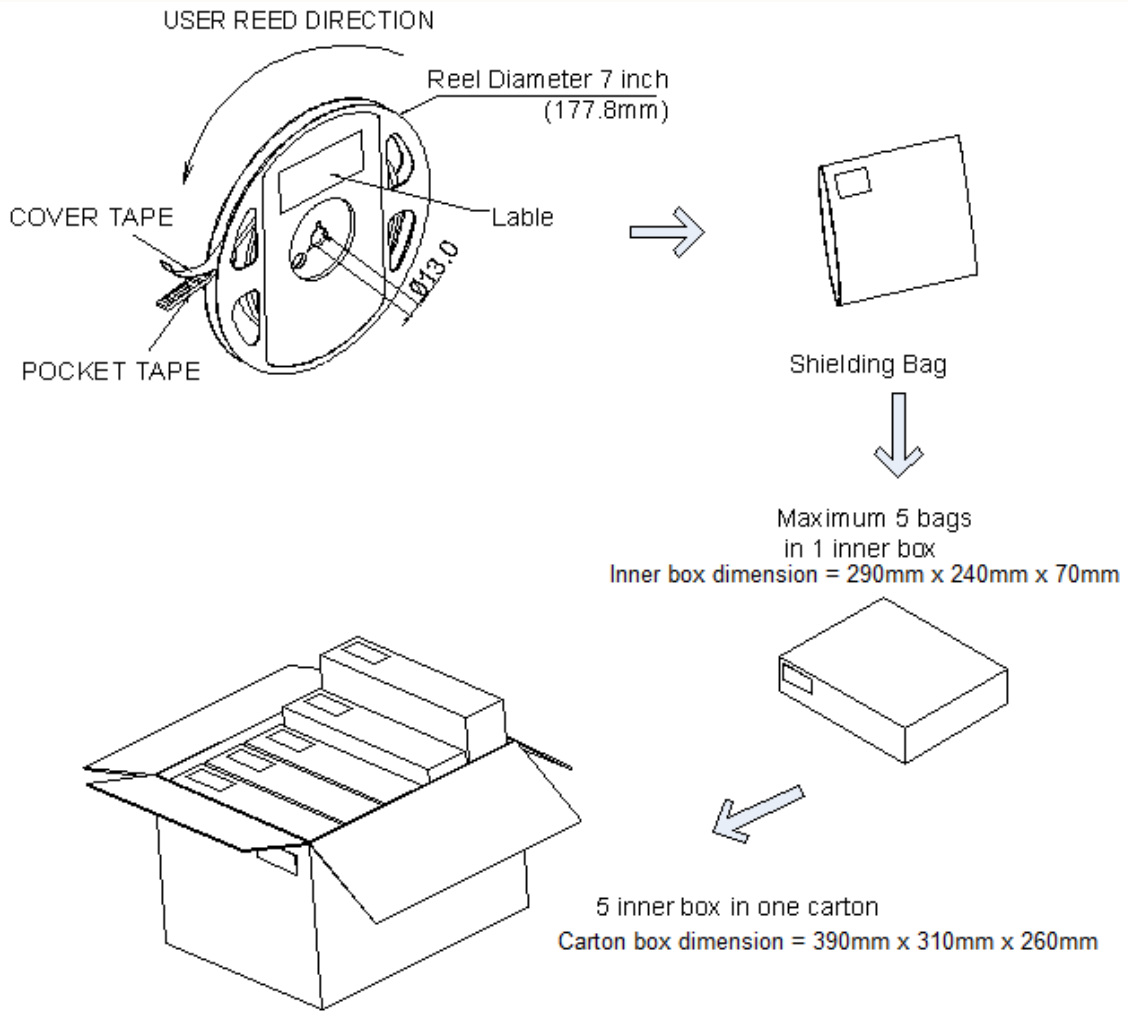
1. 10 sprocket hole pitch cumulative tolerance ± 0.20 .
2. Carrier camber is within 1 mm in 250 mm.
3. Material : Black Conductive Polystyrene Alloy.
4. All dimensions meet EIA-481-D requirements.
5. Thickness : 0.30 ± 0.05 mm.
6. Packing length per 22 " reel : 62.5 Meters(1:3).
7. Component load per 7" reel : 400~1000 pcs.

	30D	60/120D
W	12.00±0.30	12.00±0.30
A0	4.20±0.10	4.20±0.10
B0	4.20±0.10	4.20±0.10
K0	3.50±0.10	2.90±0.10






Unit : mm





Labeling

 Quantity: XXXX		 Quelighting P/N: XXXXXX		 Lot number: XXXXX	
Iv Bin: XX	Color Bin: XX	Vf Bin: XX	Date Code: XXXX		

Ordering Information:

Part #	Multiple Quantities	Quantity per Reel
QLIR07E3BU-196		500/1000 pcs

Revision History:

Revision Date:	Changes:	Version #:
05-15-2018	Initial release	1.0

