



QLSP07WXU-175
(3535 5W White LED)



Product Outline:

QLSP07WXU-175 is a High Power LED with high performance and quality of light to wide range of lighting application. The lighting application such as cation light, decoration light, signal, specific industrial and commercial lighting.

Features:

- High brightness output @ 350mA,
- High driving current to 1500mA
- Ceramic substrate
- Ra 70
- Package Dimension = 3.5mmX3.5mmX2.2mm
- Low thermal resistance : < 6°C/W
- ESD protection up to 8KV
- RoHS compliant
- Custom Bin available upon special request

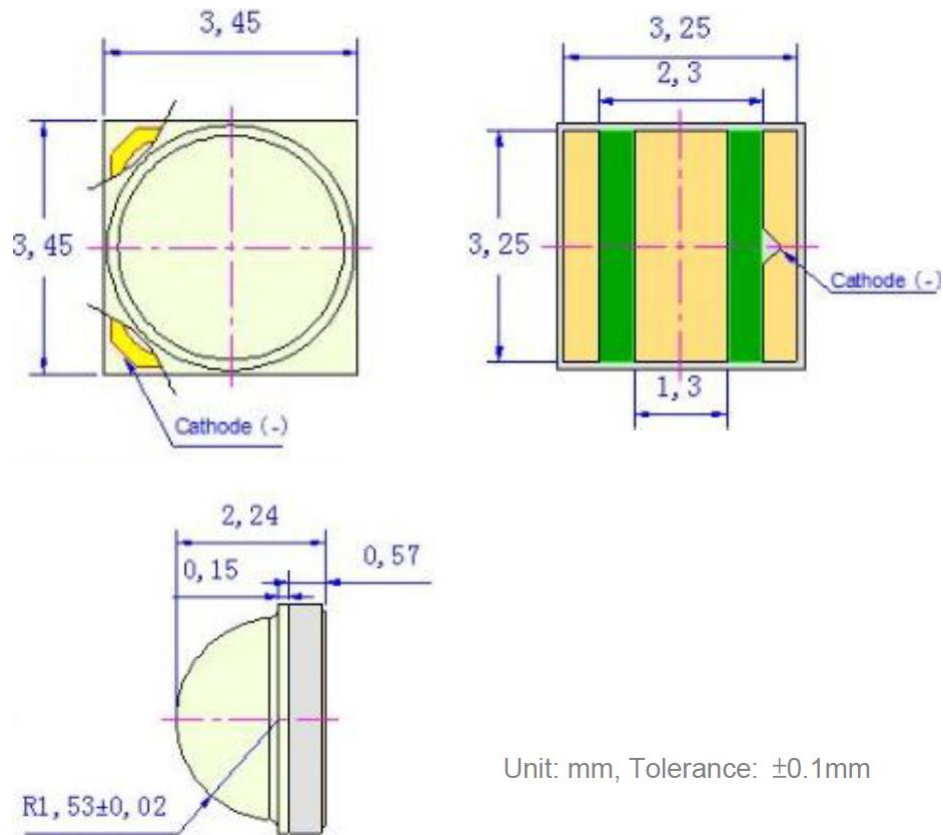
Application:

- Architecture Lighting
- Garden Lighting
- Indoor Lighting
- Outdoor Lighting
- Aquarium light
- Horticulture lighting for multilayer cultivation

Compliance and Certification:

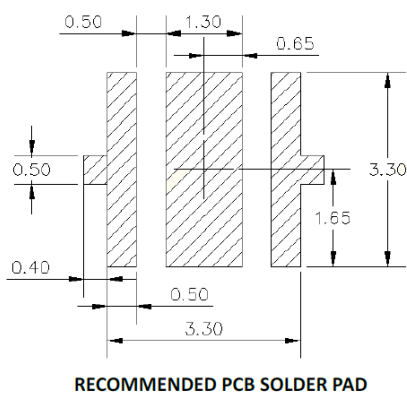


Mechanical Property: (Dimension)

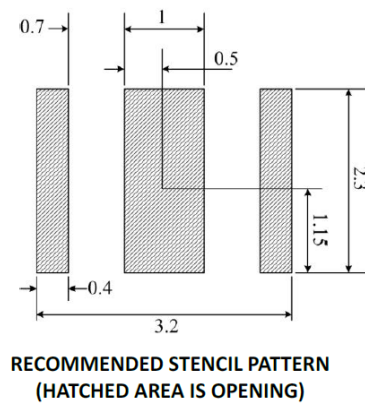


Recommended Solder footprint:

Recommended PCB solder pad:



Recommended stencil pattern:



Electrical / Optical Characteristic

(T=25 °C)

Product	Color	I _F (mA)	V _F (V)		CCT	Luminous Flux(lm)		Refer @ 700mA Typ.(lm)
			Typ.	max	Typ	min	typ.	
QLSP07WWU-XXX	Warm White	350	2.9	3.4	3000K	140	150	255
QLSP07WNU-XXX	Neutral White	350	2.9	3.4	4000K	140	150	255
QLSP07WPU-XXX	Pure White	350	2.9	3.4	5000K	160	170	290
QLSP07W1CU-XXX	Cold White	350	2.9	3.4	5700K	160	170	290
QLSP07W2CU-XXX	Cold White	350	2.9	3.4	6500K	160	170	290

*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 _{SO L} (°C)**	R _{th(J-S)} (C/W)***
QLSP07WXU	5400	1500	2000	5	150	-40 – 85	-40 - 100	240	4

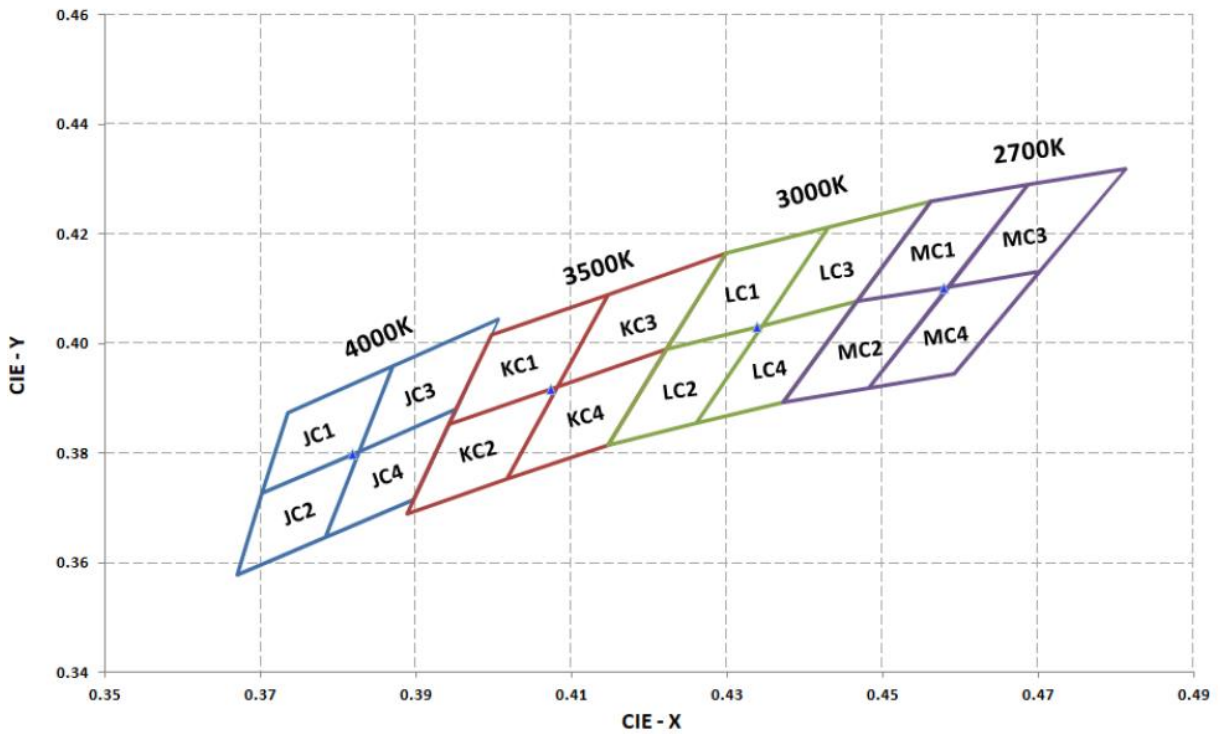
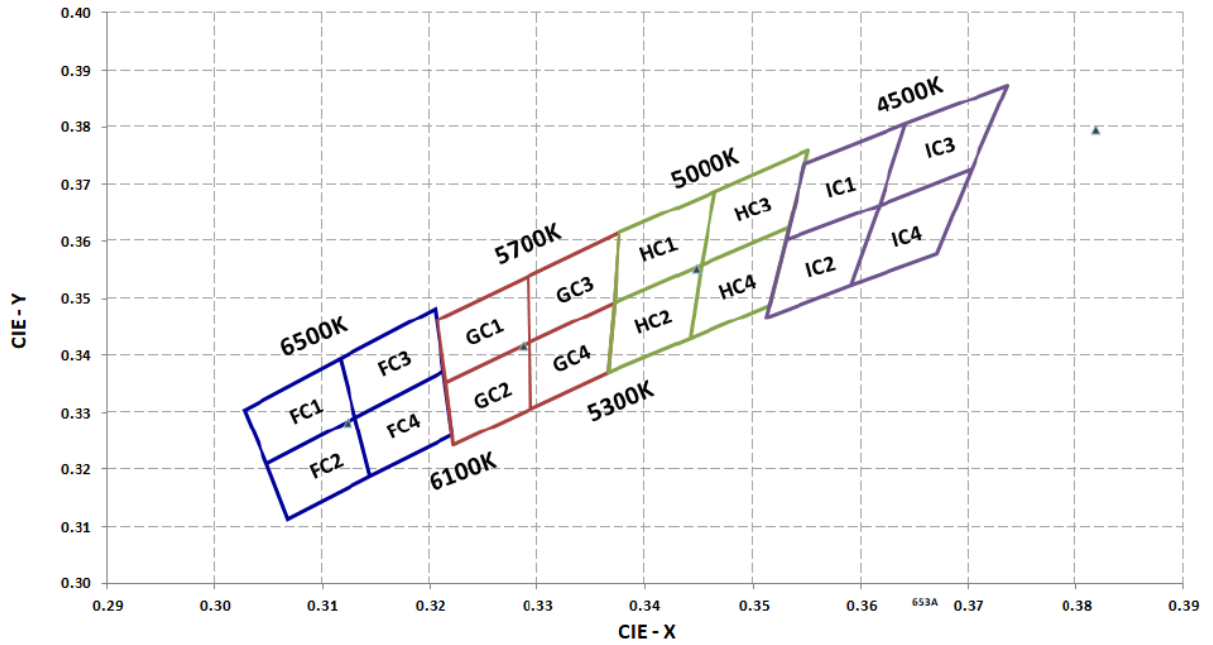
*Duty 1/10 @ 10Khz

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

*** Junction to substrate



White Binning



Forward Voltage (V_F) Bin:

VF Rank @ 350mA (V)		
Code name	Low	High
01	2.8	3.0
23	3.0	3.2
45	3.2	3.4

The forward voltage tolerance is $\pm 0.1V$

Luminous Flux Bin:

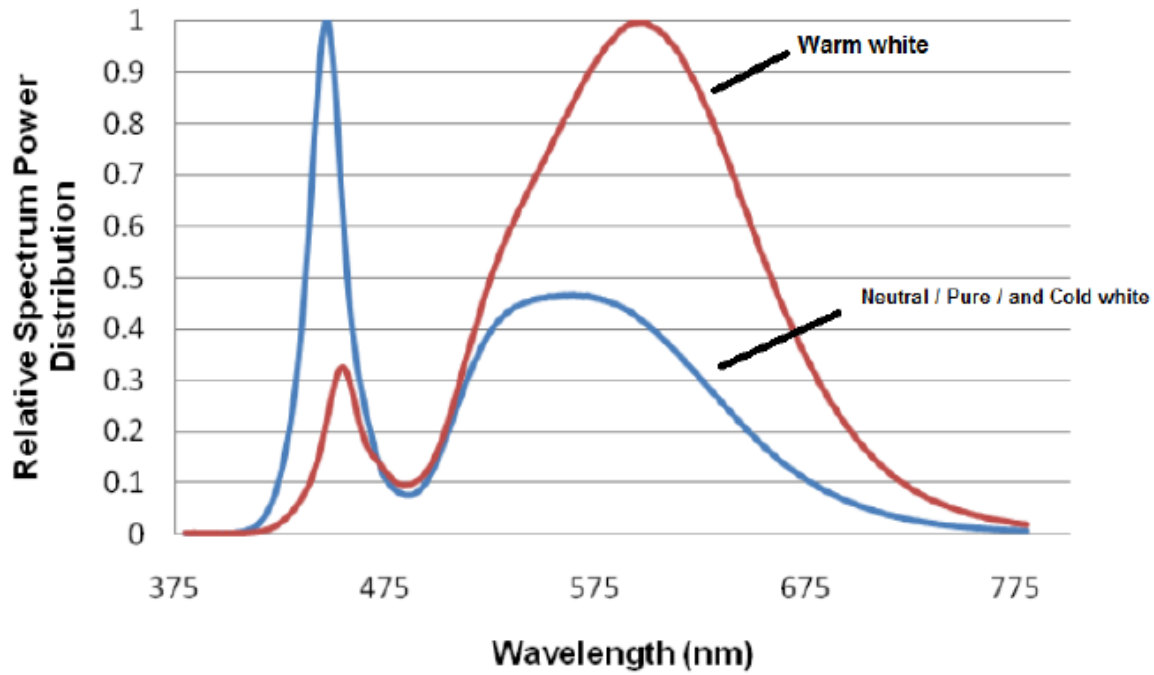
Rank @350mA (lm)		
Code name	Low	High
Q19	140	150
Q29	150	160
Q39	160	170
Q49	170	180
Q59	180	190

luminous flux tolerance is $\pm 7\%$

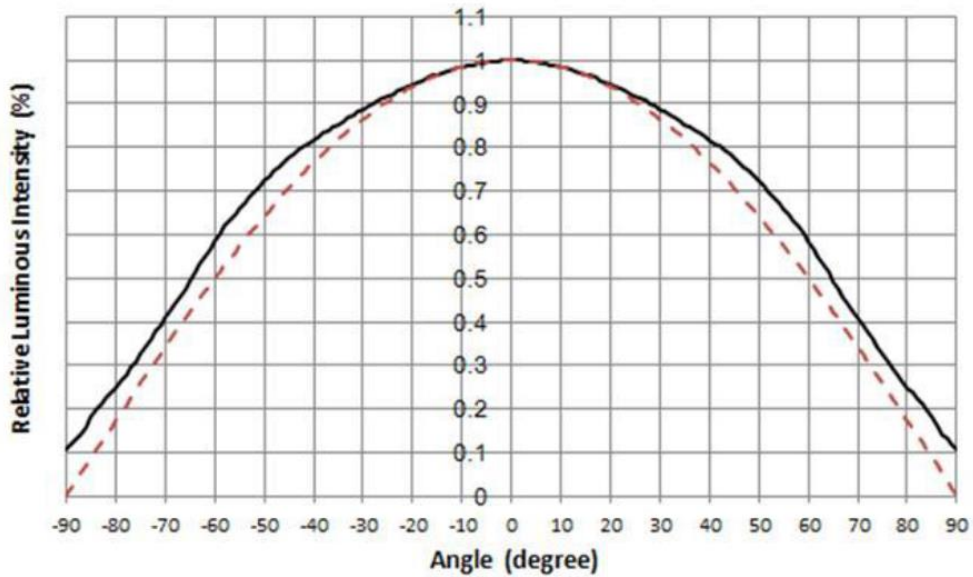


Characteristic Curves

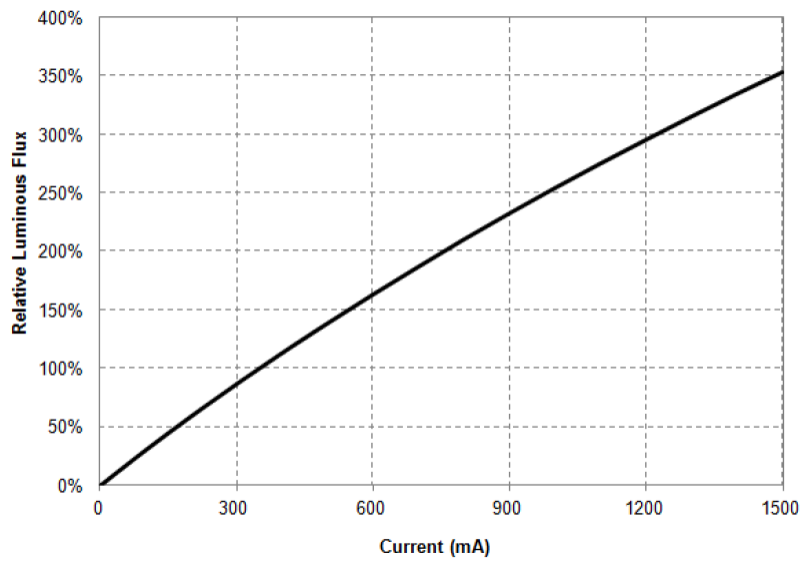
(1) Color Spectrum



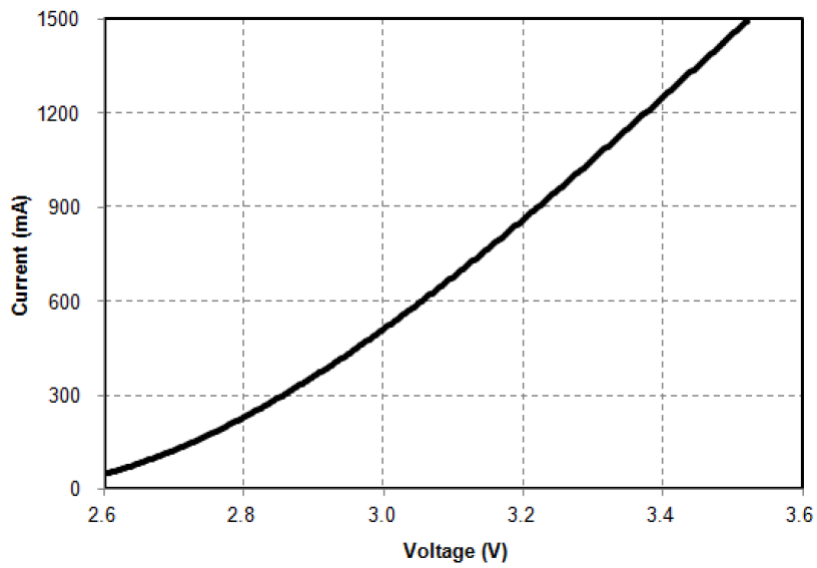
(2). Typical Representative Spatial Radiation Pattern



(3). Forward Current Characteristics



(4). Forward Current vs Forward Voltage



■ 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 60°C 90%	60°C/90% 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/ 20minr~ 5minr~100°C /20min	300 Cycle	20 pcs

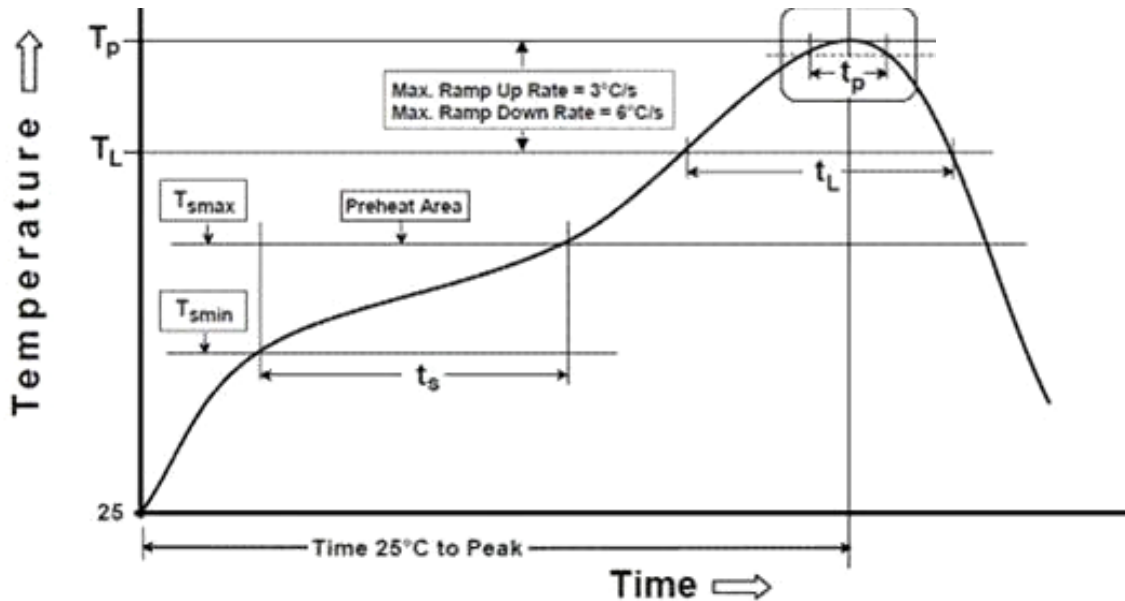
■ Judgment Criteria:

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



Solder Profile:

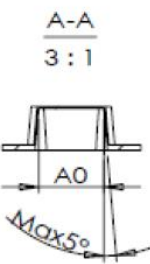
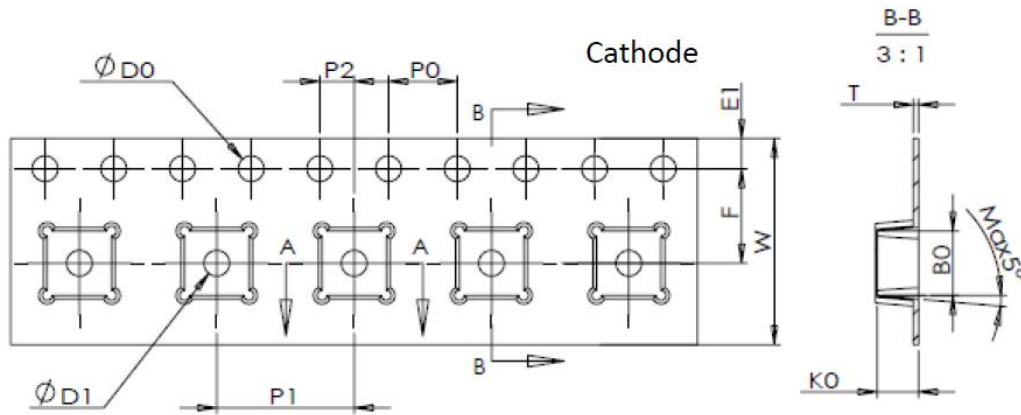
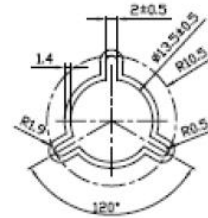
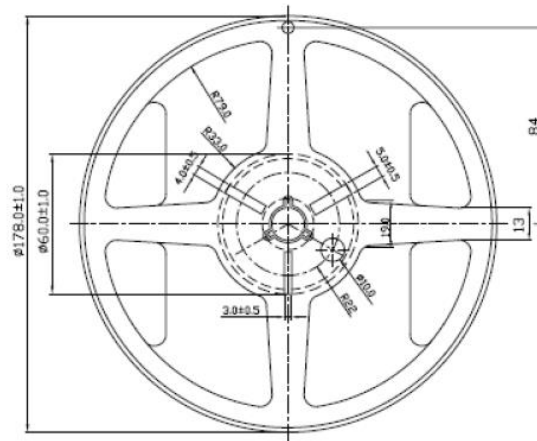
-The recommended reflow soldering profile is as follows (temperatures indicated are as measured on the surface of the LED resin):



Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Temperature Min(T_{smin})	100°C	150°C
Temperature Max(T_{smax})	150°C	200°C
Time(t_a) from (T_{smin} to T_{smax})	60-120 seconds	60-120 seconds
Ramp-up rate(T_L to T_P)	3°C/second max.	3°C/second max.
Liquidous Temperature(T_L)	183°C	217°C
Time(t_L) maintained above T_L	60-150 seconds	60-150 seconds
Peak package body temperature(T_P)	235°C	260°C
Time within 5°C of Actual Peak temperature (t_p)	20seconds*	30 seconds*
Ramp-down rate(T_P to T_L)	6°C/second max.	6°C/second max.
Time 25°C to peak temperature	6 minutes max.	8 minutes max.
* Tolerance for peak profile temperature (T_P) is defined as a supplier minimum and a user maximum.		

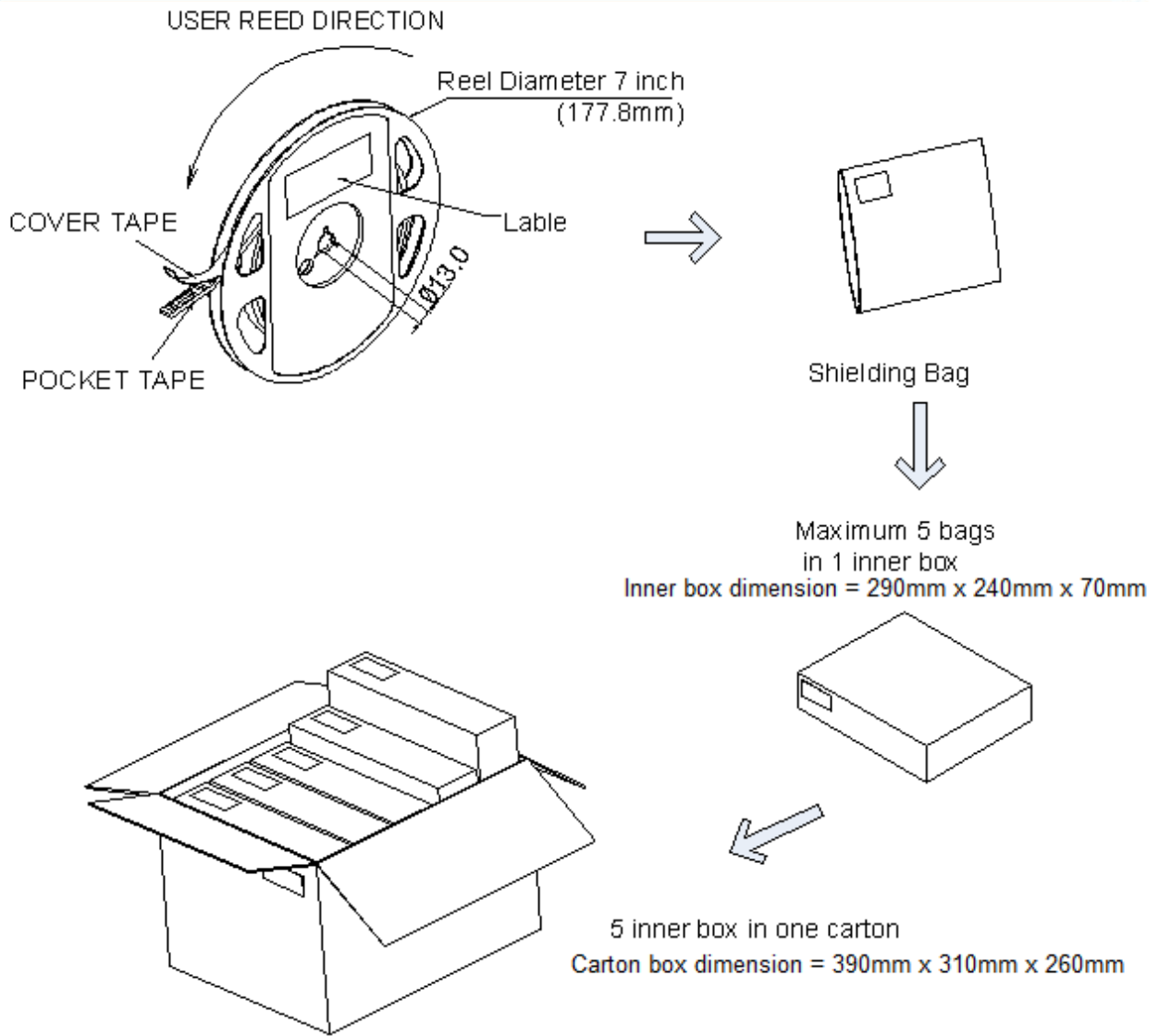


Taping & Packing:

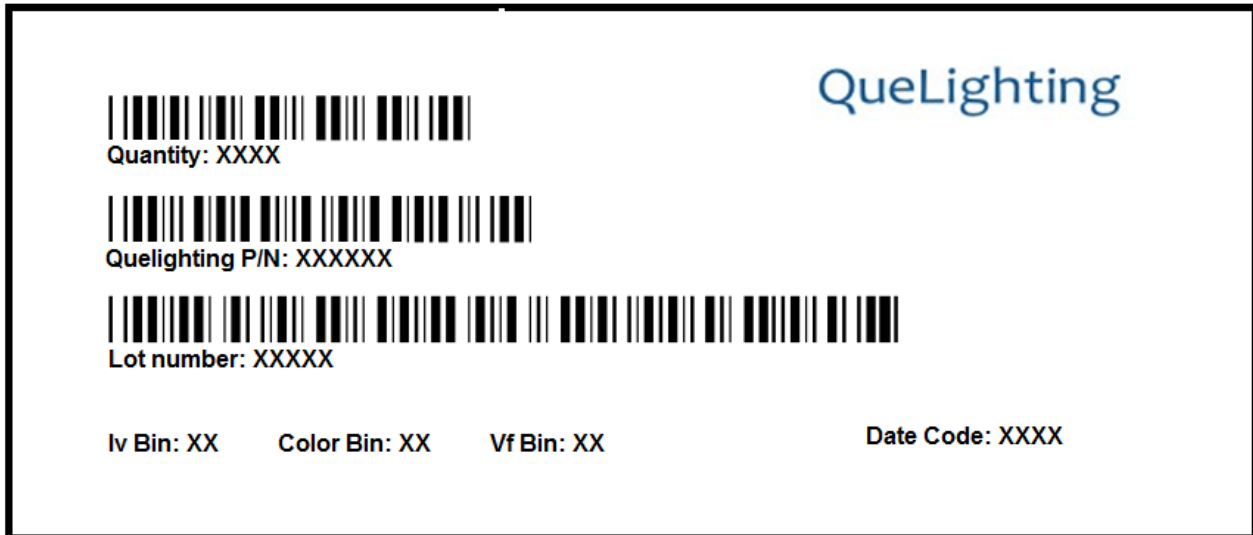


Unit : mm





Labeling



Ordering Information:

Part #	Multiple Quantities	Quantity per Reel
QLSP07WXC-175		1000 pcs

Revision History:

Revision Date:	Changes:	Version #:
09-01-2017	Initial release	1.0
06-22-2020	Revised the performance Update the max. current to 1500mA	2.0

