QUELIGHTING

Sustainable Lighting Solution

QLSP19WXWU
2835 1W

Product Outline:

This high output reflector type 2835S LEDs are available in warm white / neutral white / pure white / and cold white to suit customer's application. These 1W LEDs are equipped with heat sink to enhance operating performance. With special binning technology, these LEDs are ideal for architecture lighting and special lighting needs.

■ Features:

- High brightness output @ 60mA
- Max. current @ 420mA
- Package Dimension = 3.5mmX2.8mmX0.68mm
- CRI = 80 and above
- Available in white color
- ANSI binning
- RoHS compliant
- Custom Bin available upon special request

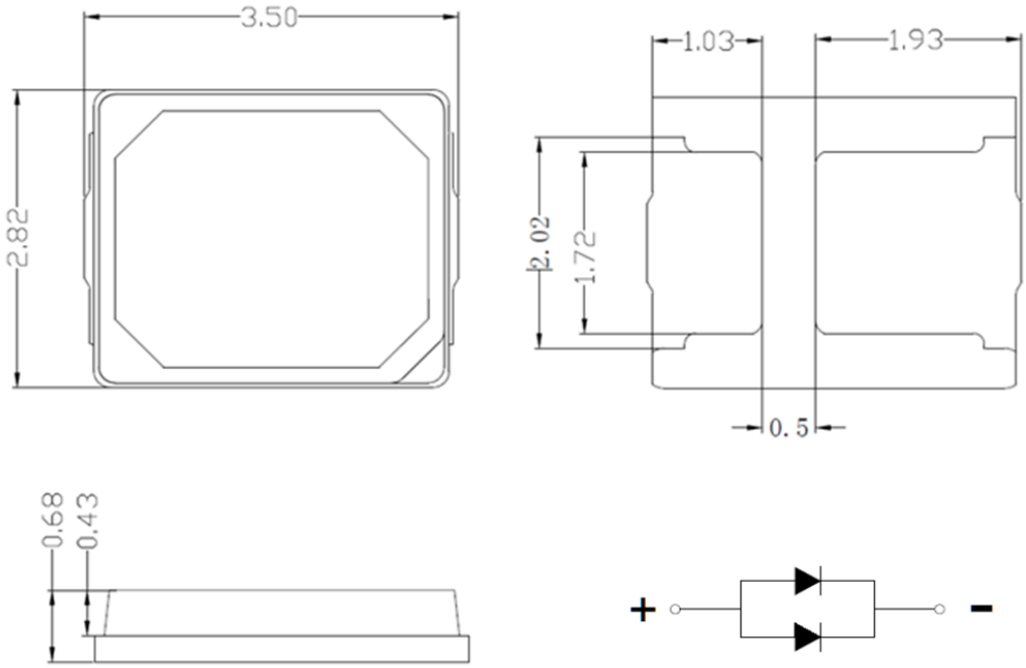
■ Application:

- Architecture Lighting
- Tube Lighting
- Interior Lighting
- General Lighting

Compliance and Certification:

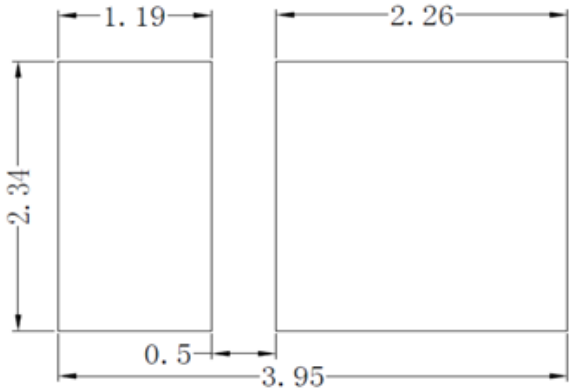
■ Mechanical Property:

(Dimension)



Unit: mm

Recommended Solder footprint:



* All dimensions are in millimeters.
* The LEDs is designed to be reflow soldered on to a PCB. IF dip soldered that QL cannot guarantee its reliability.
* Reflow soldering must not be performed more than twice.

■ Product Selection with Ta=25℃, Test current 60mA

Product	Color	I_F(mA)	V_F(V)		CCT	CRI	Luminous Flux(lm)*		Typical Efficacy (lm/W)
			Typ.	max	Typ		Min	typ.	
QLSP19WW1WU	Warm White	60	2.75	3.0	2700	80		34	210
QLSP19WW2WU	Warm White	60	2.75	3.0	3000	80		34.6	214
QLSP19WNWU	Neutral White	60	2.75	3.0	4000	80		35.9	222
QLSP19WPWU	Pure White	60	2.75	3.0	5000	80		35.9	222
QLSP19WC1WU	Cold White	60	2.75	3.0	5700	80		35.5	220
QLSP19WC2WU	Cold White	60	2.75	3.0	6250	80		35.5	220

*Tolerance = +/- 10%

■ Electrical / Optical Characteristic

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward voltage(1)	Vf	If=60mA	2.6	-	3.0	V
Color Rendering Index(2)	Ra		80	-	-	-
View angle	θ		-	120	-	Deg
Thermal Resistance(3)	R_{th}		-	16	-	℃/W

(1) The forward voltage tolerance is ± 0.1V
(2) The Color Rendering Index tolerance is ± 2

■ Performance at Commonly Used Drive Currents

Product	Color	Drive Current1 (mA)	Typical Vf Tsp = 25°C (V)	Typical Power Tsp = 25°C (W)	Typical Pulsed Flux2 Tsp = 25°C (lm)	Typical Efficacy Tsp = 25°C (lm/W)
QLSP19WW1WU	2700K	30	2.64	0.1	17.0	214.6
		60	2.69	0.2	34.0	210.7
		90	2.76	0.2	48.5	195.0
		120	2.81	0.3	63.9	189.6
		150	2.85	0.4	79.1	184.9
		300	2.95	1	156.4	176.7
QLSP19WW2WU	3000K	30	2.64	0.1	17.3	218.4
		60	2.69	0.2	34.6	214.4
		90	2.76	0.2	49.3	198.5
		120	2.81	0.3	65.0	192.9
		150	2.85	0.4	80.4	188.2
		300	2.95	1	159.2	179.8
QLSP19WNWU	4000K	30	2.64	0.1	18.0	226.6
		60	2.69	0.2	35.9	222.4
		90	2.76	0.2	51.2	205.9
		120	2.81	0.3	67.5	200.2
		150	2.85	0.4	83.5	195.2
		300	2.95	1	165.1	186.6
QLSP19WPWU	5000K	30	2.64	0.1	18.0	226.6
		60	2.69	0.2	35.9	222.4
		90	2.76	0.2	51.2	205.9
		120	2.81	0.3	67.5	200.2
		150	2.85	0.4	83.5	195.2
		300	2.95	1	192.7	186.6
QLSP19WC1WU	5700K	30	2.64	0.1	17.8	224.1
		60	2.69	0.2	35.5	220.0
		90	2.76	0.2	50.6	203.7
		120	2.81	0.3	66.7	197.9
		150	2.85	0.4	82.5	193.1
		300	2.95	1	190.5	184.5
QLSP19WC2WU	6250K	30	2.64	0.1	17.8	224.1
		60	2.69	0.2	35.5	220.0
		90	2.76	0.2	50.6	203.7
		120	2.81	0.3	66.7	197.9
		150	2.85	0.4	82.5	193.1
		300	2.95	1	190.5	184.5

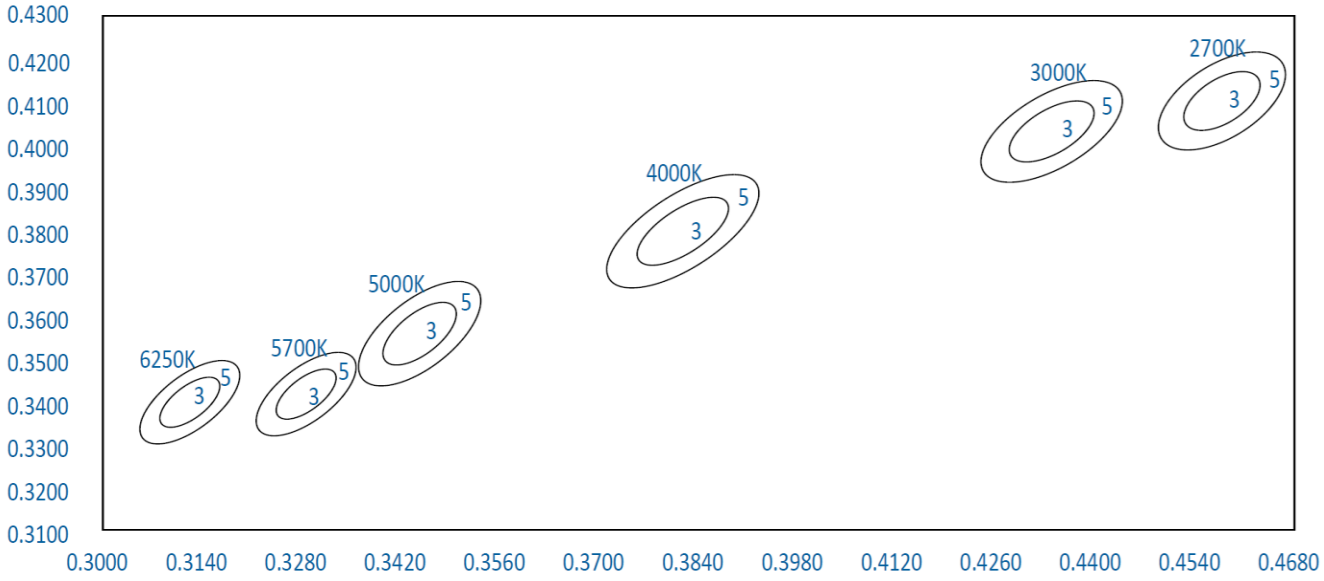
■ Absolute Maximum Rating

(T=25 °C)

Part #	P_d (mW)	I_F (mA)	I_{FP} (mA)*	V_R (V)	T_{OP} (°C)	T_{ST} (°C)	T_{SOL} (°C)**
QLSP19WXWU-XXX	1260	420	500	5	-40 – 85	-40 - 105	260

*Duty 1/10 @ 10Khz
** IR Reflow for no more than 10 sec @ 250 °C

■ White Binning



Note: (1). Correlated color temperature is derived from the CIE 1931 Chromaticity diagram
(2). Measurement tolerance is +/- 0.01

■ Luminous Flux Bin:

Im rank (Im) @ 60mA			
Code name	**Low**	**High**	**Unit**
QN1	32	34	lm
QN2	34	36	
QN3	36	38	

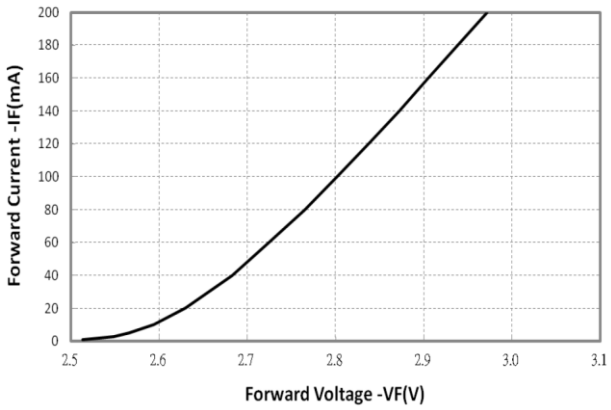
The luminous flux tolerance is ± 10%

■ Forward Voltage (V_F) Bin:

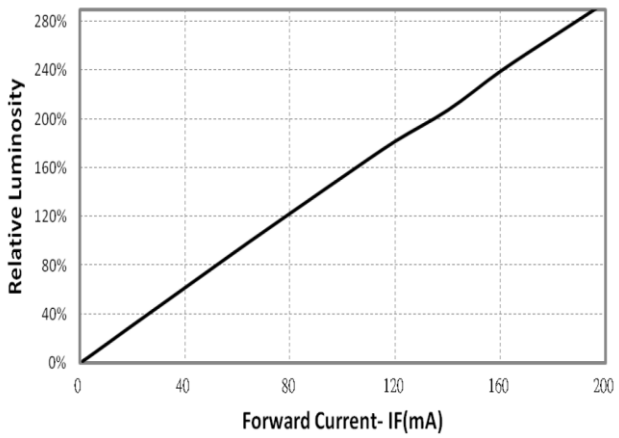
VF rank @ 60mA			
Code name	**Low**	**High**	**Unit**
XY	2.6	2.8	V
Z1	2.8	3.0	

The forward voltage tolerance is ± 0.1V

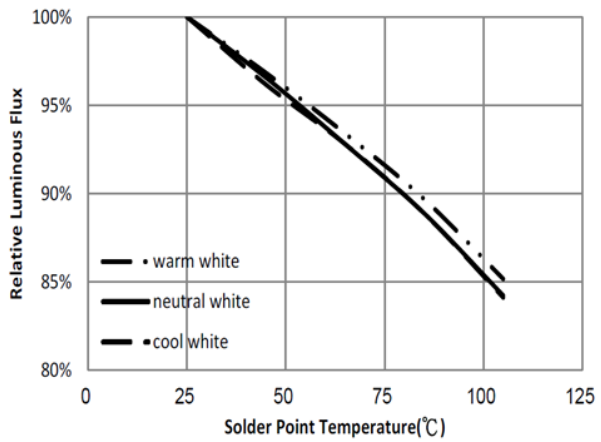
■ Characteristic Curves



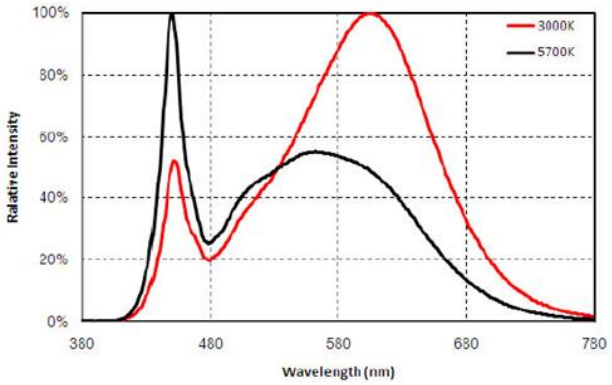
Forward Voltage vs. Forward Current



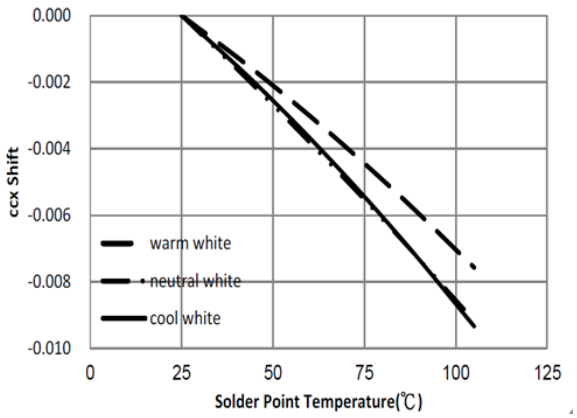
Forward current vs. Relative luminous intensity



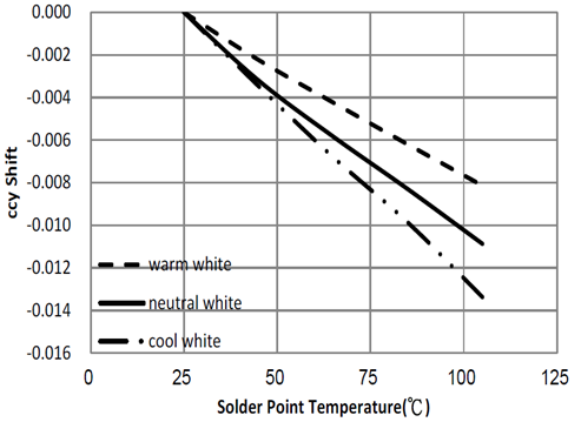
Forward Current VS Soldering Temperature



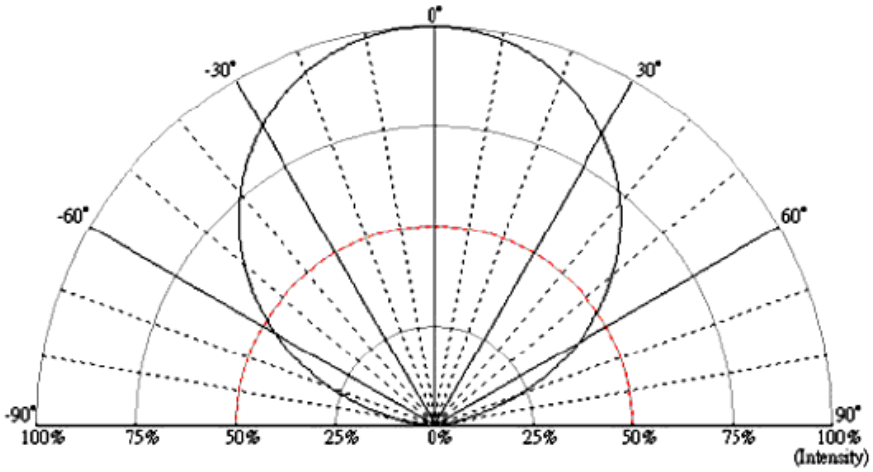
Spectrum Distribution



Typical ccx Shift vs. Solder Point Temperature



Typical ccy Shift vs. Solder Point Temperature



Radiation Pattern

■ Reliability test:

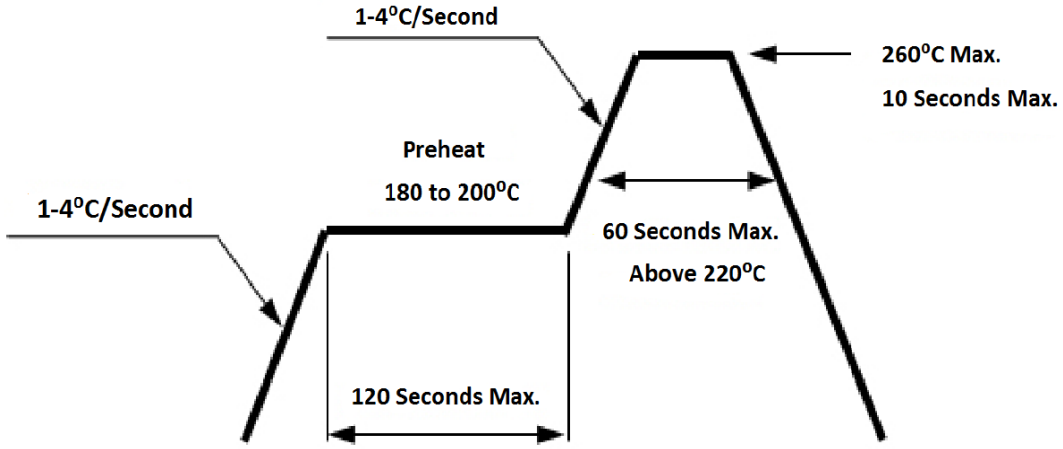
No	Item	Condition	Time/Cycle	Sample size
1	Steady State Operating Life of Room Temperature	25℃ Operating	1000 Hrs	20 pcs
2	Steady State Operating Life of Low Temperature -40℃	-40℃ Operating	1000 Hrs	20 pcs
3	Steady State Operating Life of Low Temperature 60℃	60℃ Operating	1000 Hrs	20 pcs
4	Steady State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

■ Judgment Criteria:

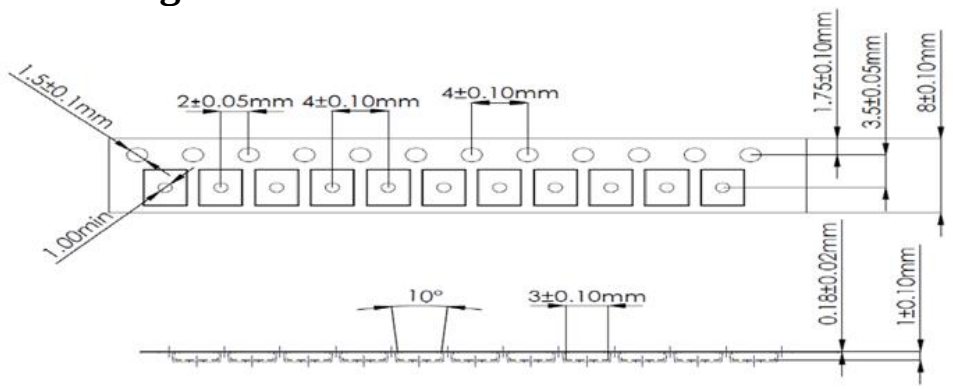
Item	Symbol	Test Condition	Judgment Criteria
Forward Voltage	Vf	350 mA	△Vf< 10%
Luminous Flux	Iv	350 mA	△Iv< 30%

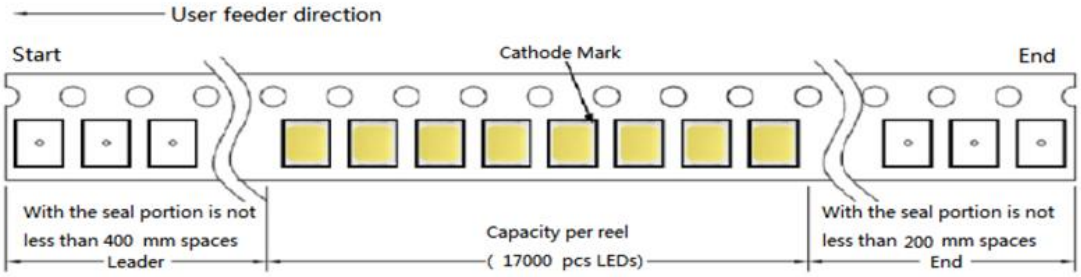
■ Solder Profile:

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

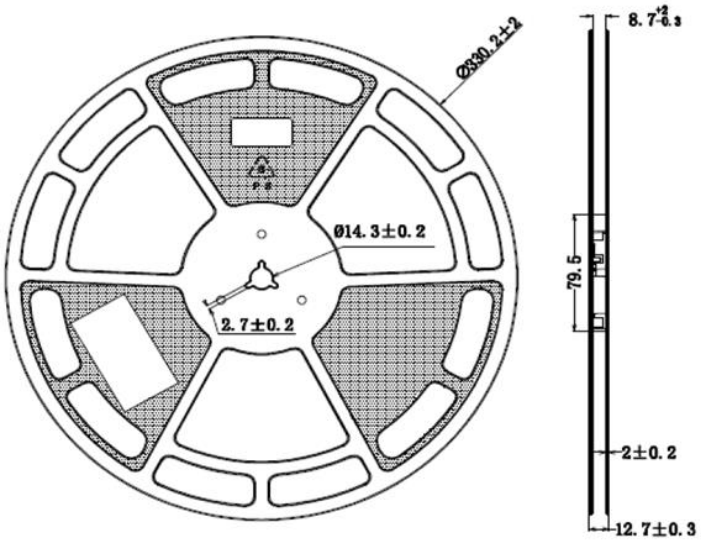


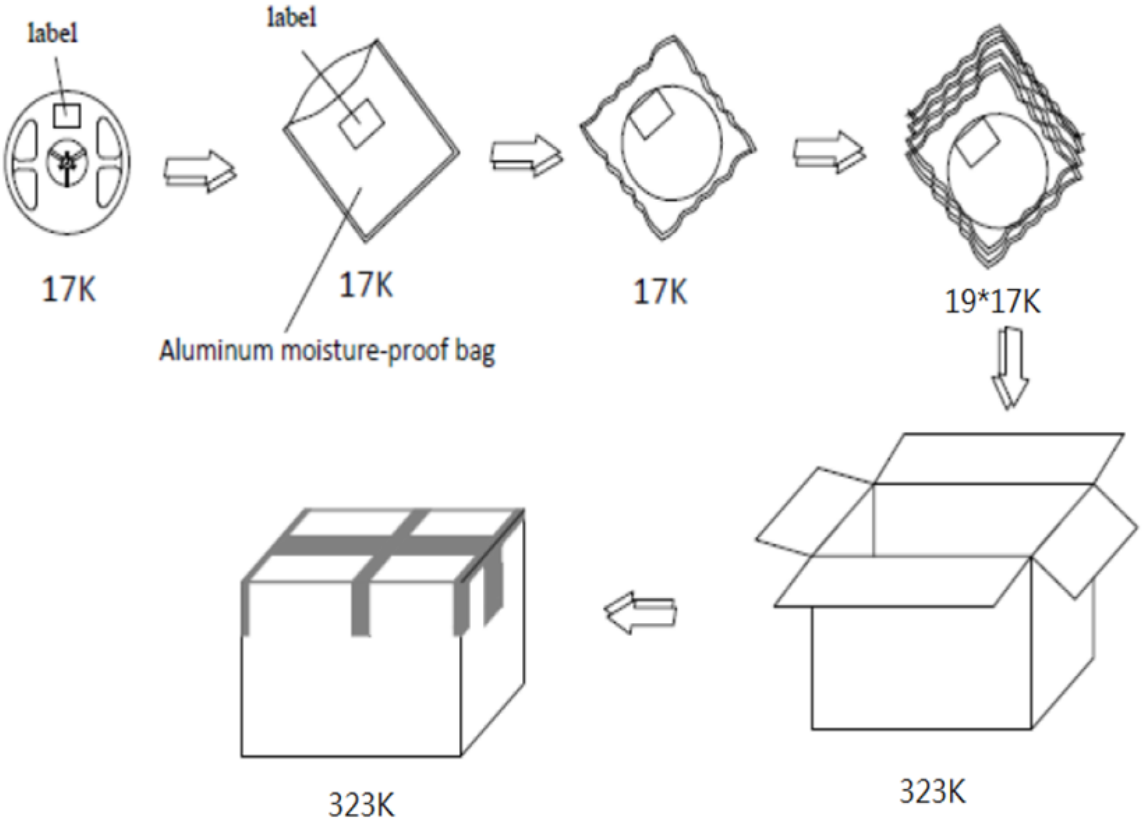
■ Taping & Packing



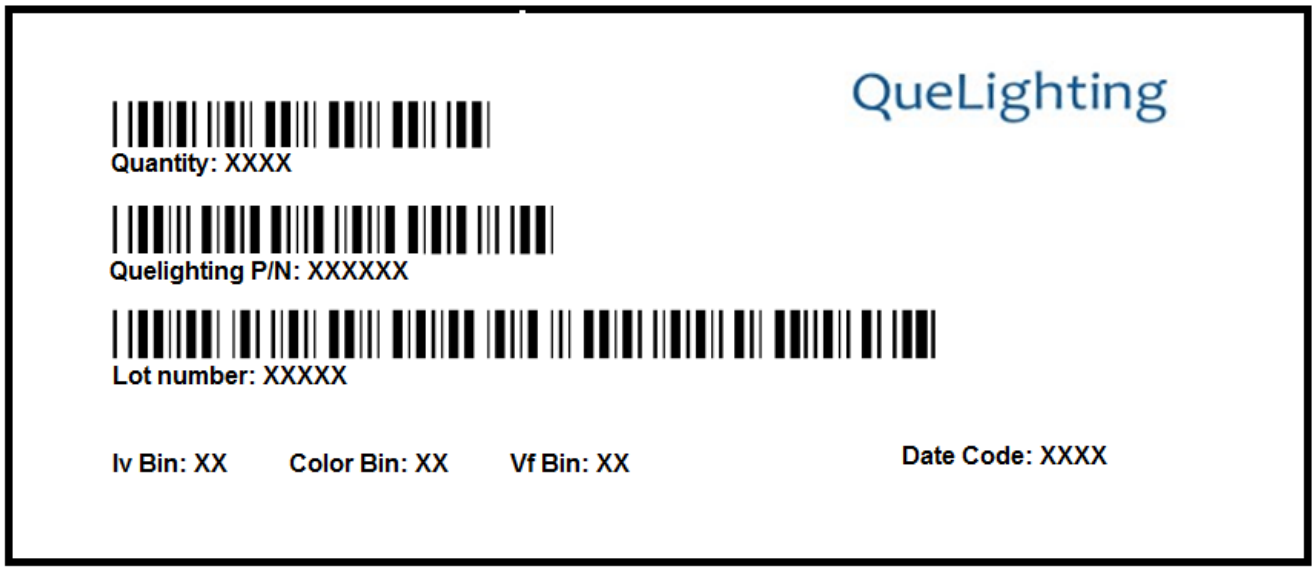


Unit : mm


Ø330.2±2
Ø14.3±0.2
2.7±0.2
8.7
79.5
2±0.2
12.7±0.3


label
label
17K
17K
17K
19*17K
Aluminum moisture-proof bag
323K
323K

Labeling



Ordering Information:

Part #	Multiple Quantities	Quantity per Reel
QLSP19WXWU		17000 pcs

Revision History:

Revision Date:	Changes:	Version #:
10-25-2024	Initial release	1.0