

NLW7070PC LED Specification

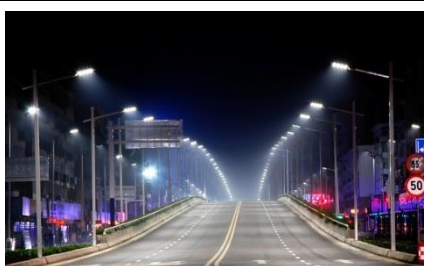


Anhui Retop Electromnics Co., Ltd.

Part No: NLW7070PC

Version: V1.2

Date: 2019-10-24



NLW7070PC



Features

- High efficiency for cost-effective solutions
- Optimized for optical design
- Low thermal resistance 1.5°C/W
- Reflow soldering-JEDEC J-STD-020C

Applications

- Outdoor lighting
- Indoor lighting
- Automotive lighting

Specification

CCT	CRI Typ.	Luminous Flux		Forward Voltage Typ.	Angle Typ.	Thermal resistance Typ.
		Min.	Typ.			
6500K	70	1120lm	1290lm	6.0V	130°	1.5°C/W

Notes : 1. Photoelectric parameters tested by CAS140-151Spectrometer of I.S. Inc (German) and 2700 Sourcemeter of Keithley Inc (US) with forward

Current =1400mA, Test Time =20ms, Ambient Temperature = 25°C.

2. Viewing angle (the angle of 50% central luminous intensity) tested by SIG-400 Source Imaging Goniometer of R.I. Inc (US). Optical

simulation software light source data of ProSource\Lighttools\TracePro\ASAP\Zemax etc can be provided.

3. The device thermal resistance was tested by T3Ster of MicRed company (Hungary)

4. ETI maintains a testing tolerance of $\pm 7\%$ on flux and power measurements, ± 0.005 on chromaticity (CCx, CCy), ± 2 on CRI measurements

Absolute Maximum Ratings

Parameter	Maximum Rating
Forward Current(mA)	100 - 3000mA
Pulse Current (mA)	100 - 4000mA
Junction Temperature(°C)	150°C
Solder point Temperature Ts(°C)	105°C
Operating Temperature(°C)	-40°C ~ 120°C
Storage Temperature(°C)	-40°C - 120°C
Soldering Temperature(JEDEC 020c)	260°C
Reflow Times(Cycles)	3

Notes : 1. Maximum Forward Current and Maximum Pulse Current require the junction temperature to be lower than the rated Tj and Ts

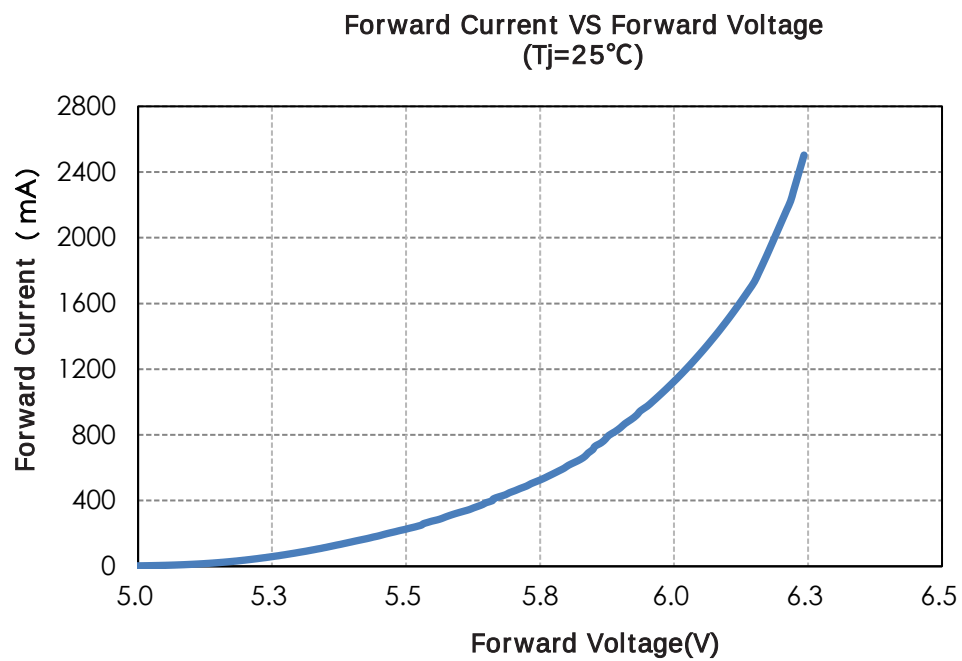
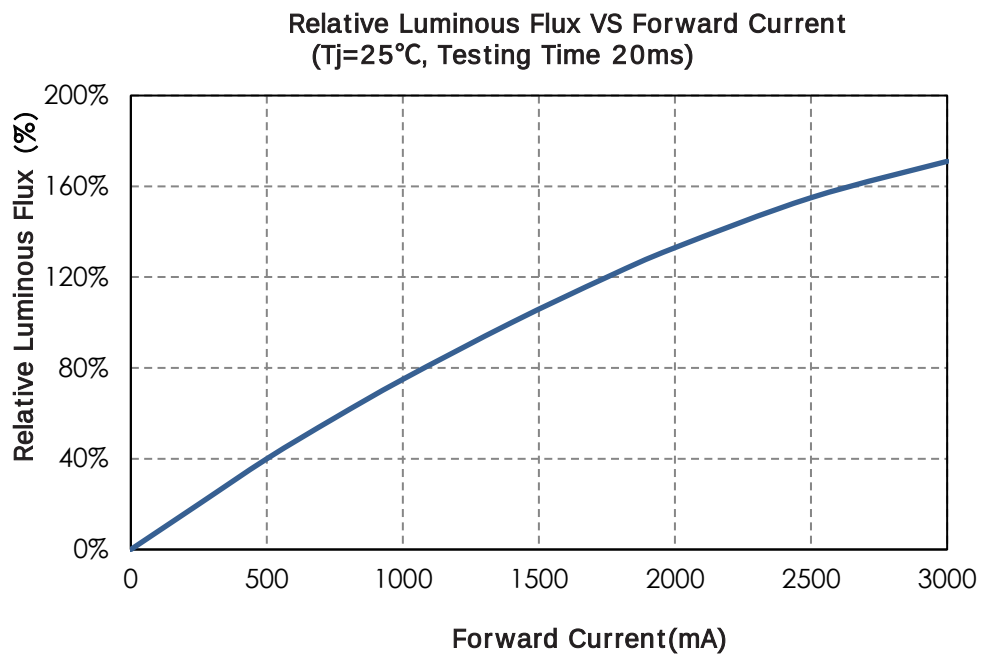
2. IFM condition Pulse width at 50ms and duty cycle at 0.016

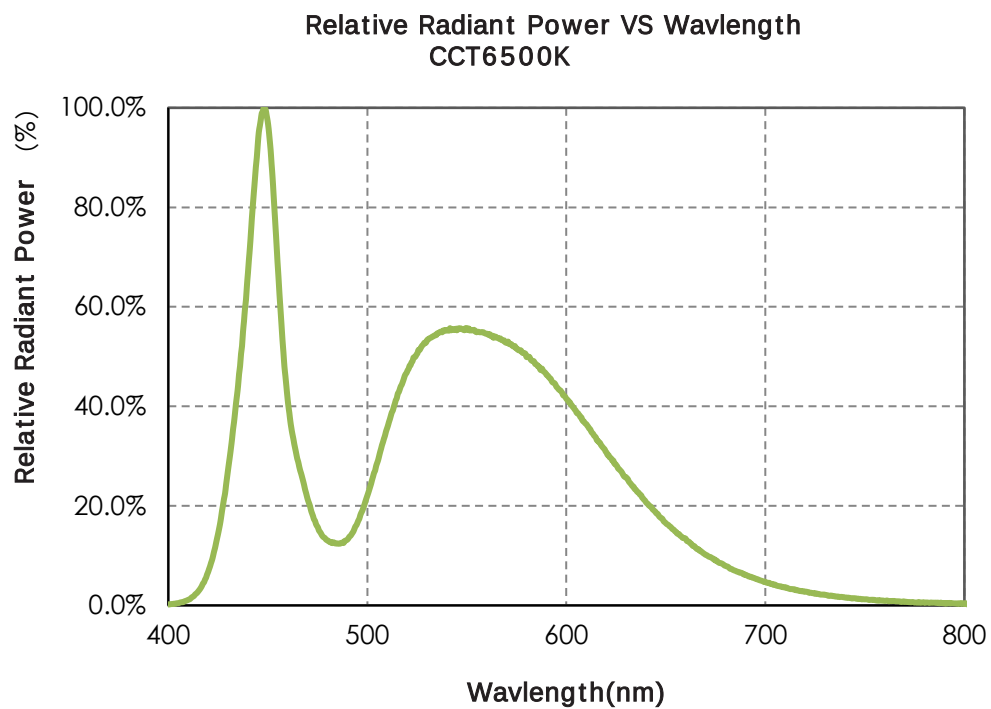
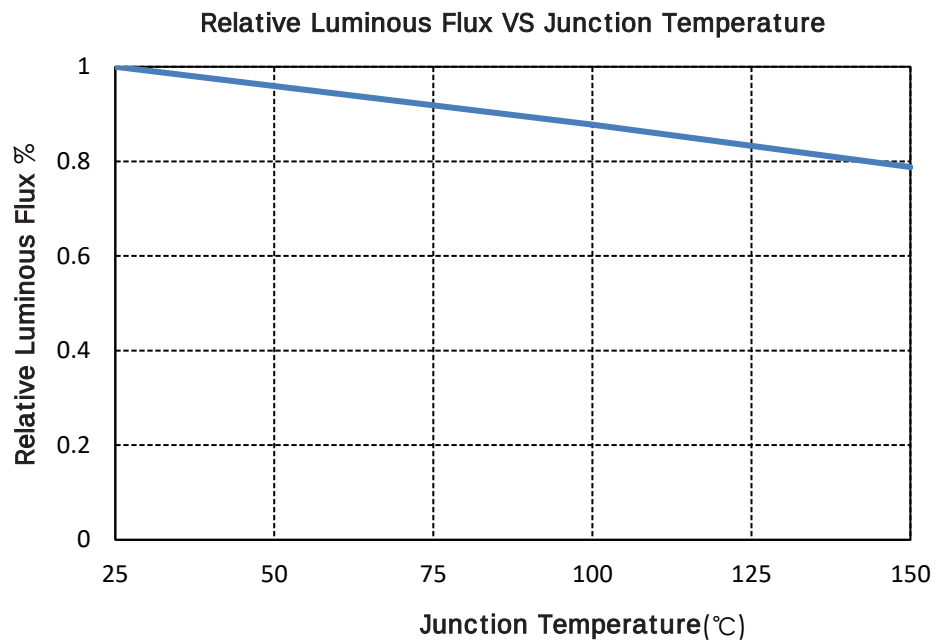
3. Built-in ESD protection diode

JEDEC Moisture Sensitivity

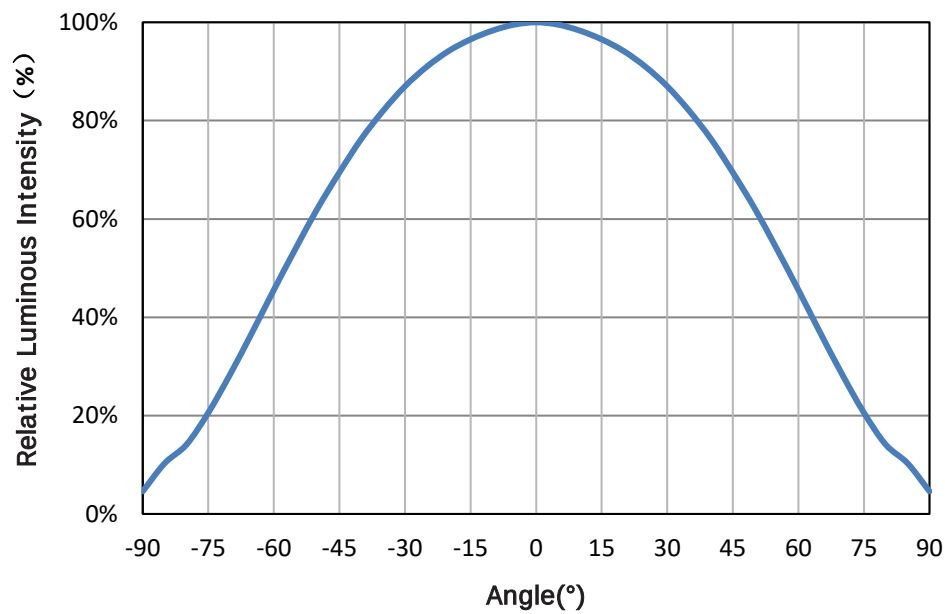
Level	Floor life		Soak Requirement	
	Time	Condition	Standard	Condition
1	Unlimited	≤30°C/85%RH	168h+5/-0h	85°C/85%RH

Product Characteristic Curve

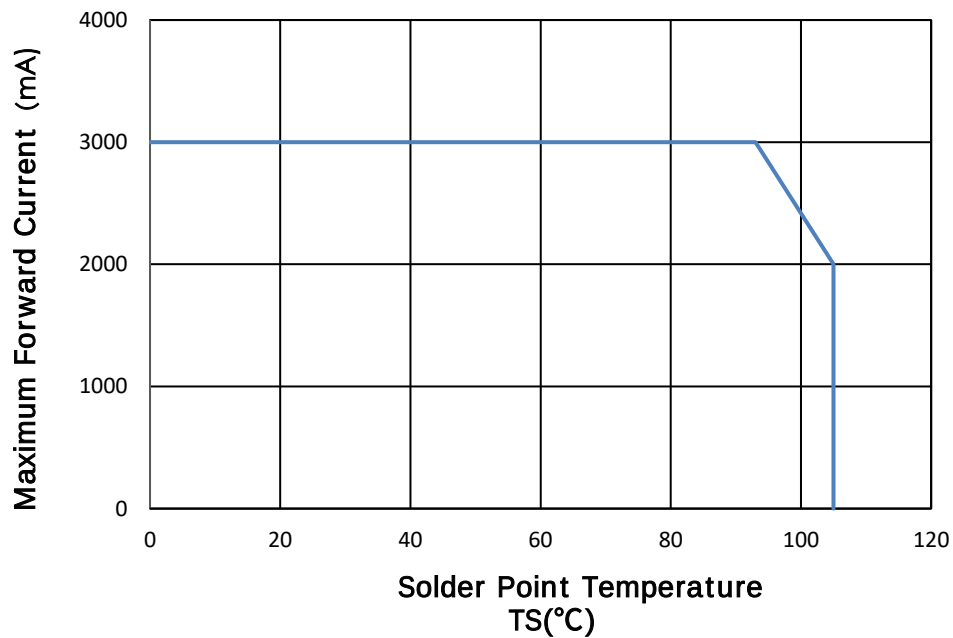




Relative Luminous Intensity VS Angle



Maximum Forward Current VS Solder Point Temperature

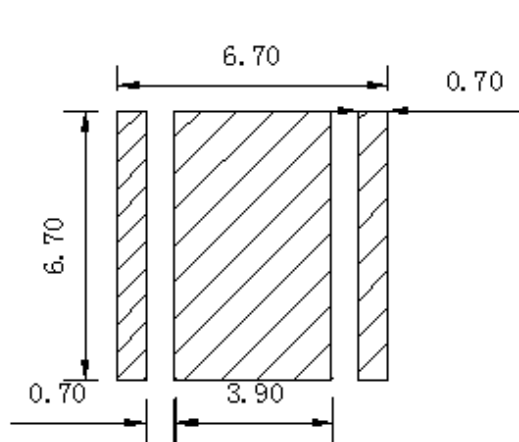
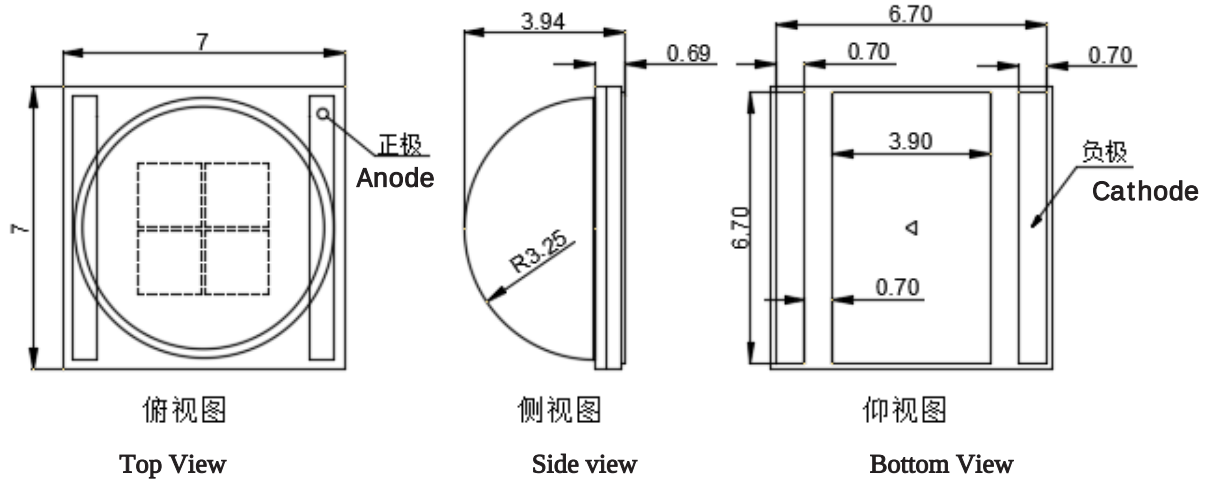


Notes:

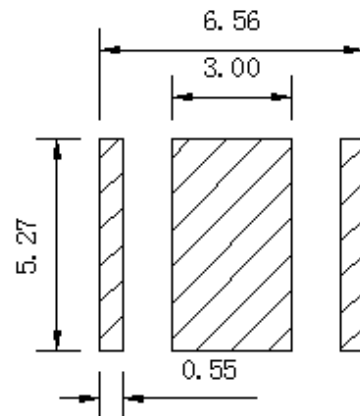
LED solder point temperature do not exceed to 105°C when current driving to 3000mA, otherwise please lower driving current.

Mechanical Dimensions

Unit: mm, Tolerance: ± 0.1

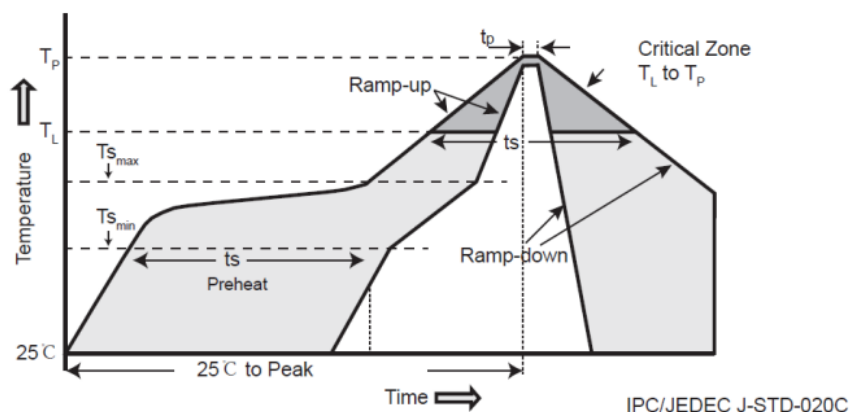


Recommended PCB Solder Size



Rcommended Stencil Pattern

Recommended Reflow Profile



Profile Feature	Lead-Based Solder	Lead-Free Solder
Average Ramp-Up Rate ($T_{s_{max}}$ to T_p)	3°C/s Max.	3°C/s Max.
Preheat: Temperature Min ($T_{s_{min}}$)	100°C	150°C
Preheat: Temperature Max ($T_{s_{max}}$)	150°C	200°C
Preheat Time($T_{s_{min}}$ to $T_{s_{max}}$)	60-120s	60-180s
Time Maintain Above: Temperature (T_L)	183°C	217°C
Time Maintain Above: Time (t_L)	60-150s	60-150s
Peak/Classification Temperature (T_p)	215°C	260°C
Time within 5°C of Peak Temperature (t_p)	10-30s	20-40s
Ramp-Down (T_p to T_L)	6°C/s Max.	6°C/s Max.
Time 25 °C to peak Temperature	6minutes Max.	8minutes Max.

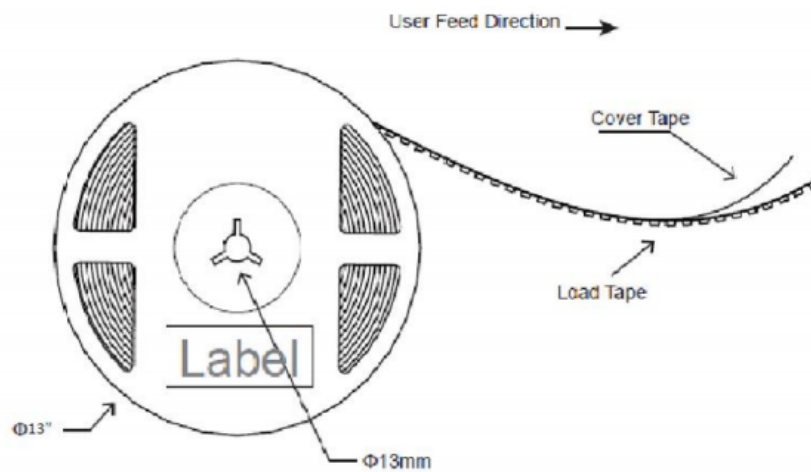
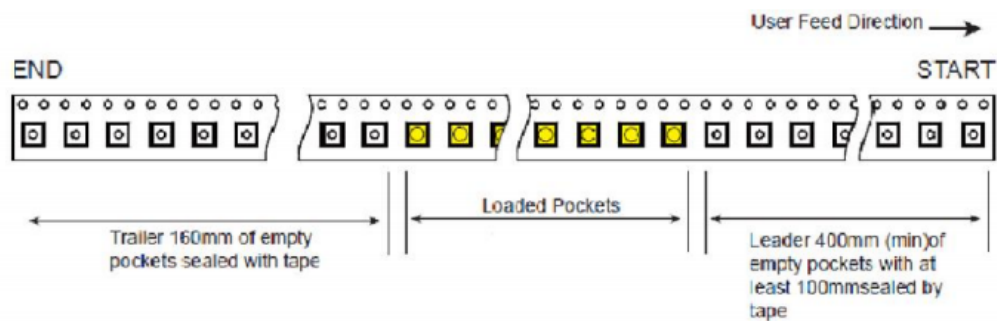
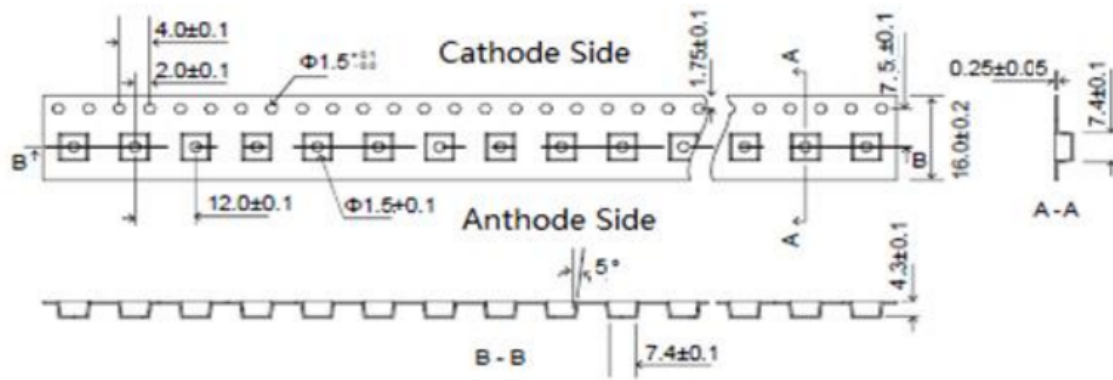
Notes: 1. The temperature distribution is compatible with IPC/JEDEC J-STD-020C.

2. Fulfilled Product Moisture Sensitivity Level1 (MSL 1).

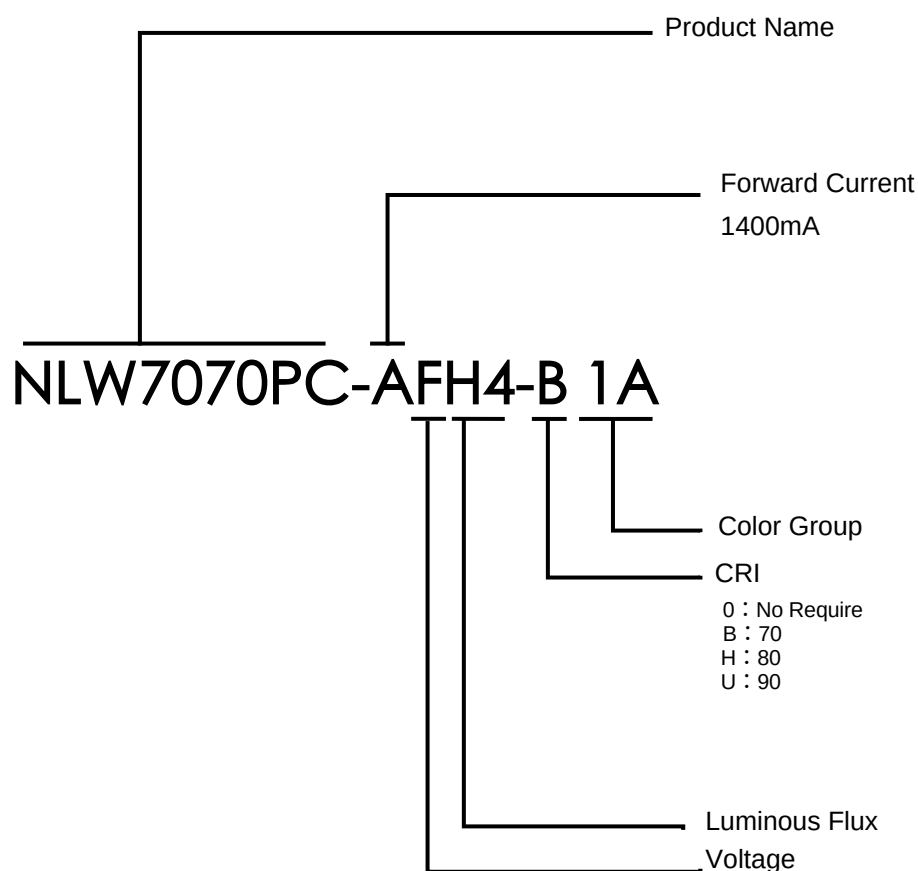
Tape and Reel

Specification: Quantity (300PCS)

Unit: mm



Product Name Description



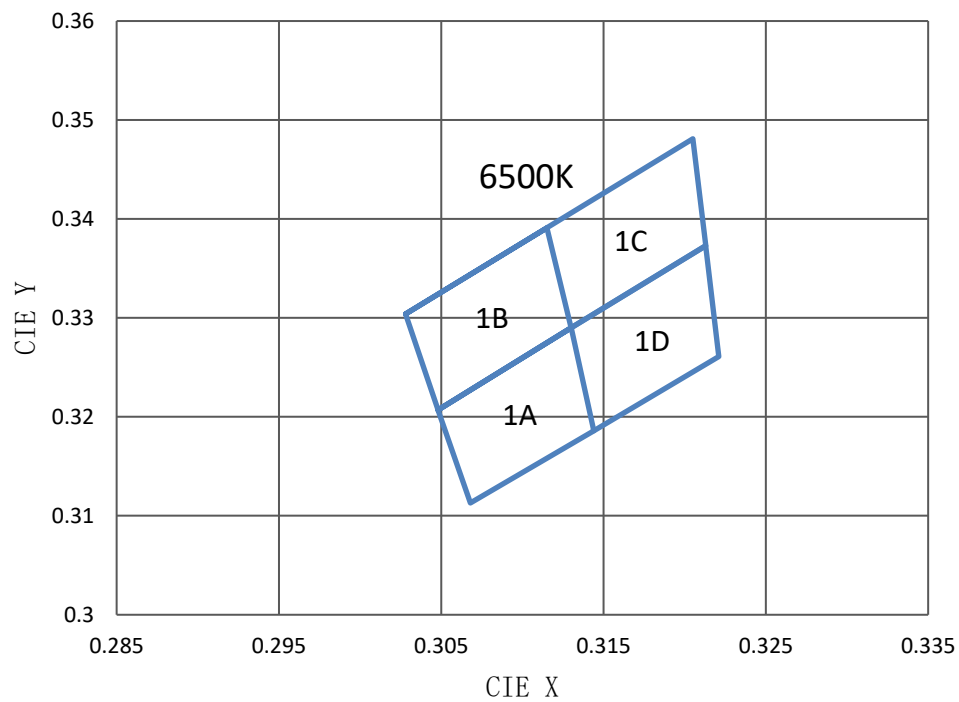
Performance Groups-Flux

Group Code	Min	Max
J4	1120	1200
K2	1200	1290
K4	1290	1380

Performance Groups-Voltage

Voltage	NLW7070PC	
	Min	Max
F	5.2	5.7
G	5.7	6.2
H	6.2	6.7

Color Group Description



Equipment: CAS140-151Spectrometer of I.S. Inc (German), 2700Sourcemeter of Keithley Inc(US).

Tolerance: ± 0.005 on chromaticity (CCx, CCy)

Forward Current:1400mA

Test Time: 20ms

Ambient Temperature: 25°C

ColorGroups –Chromaticity

Code	CCT	Bin Code	x	y
E1	6500	1A	0.3048	0.3207
			0.313	0.329
			0.3144	0.3186
			0.3068	0.3113
		1B	0.3028	0.3304
			0.3115	0.3391
			0.313	0.329
			0.3048	0.3207
		1C	0.3115	0.3391
			0.3205	0.3481
			0.3213	0.3373
			0.313	0.329
		1D	0.313	0.329
			0.3213	0.3373
			0.3221	0.3261
			0.3144	0.3186

Code	CCT	Bin Code	x	y
E2	5700	2A	0.3215	0.335
			0.329	0.3417
			0.329	0.33
			0.3222	0.3243
		2B	0.3207	0.3462
			0.329	0.3538
			0.329	0.3417
			0.3215	0.335
		2C	0.329	0.3538
			0.3376	0.3616
			0.3371	0.349
			0.329	0.3417
		2D	0.329	0.3417
			0.3371	0.349
			0.3366	0.3369
			0.329	0.33

Color Kits Code

Color	Kit	Chromaticity Bins
Cool White	E1	1A,1B,1C,1D
	E2	2A,2B,2C,2D

Ordering Description:

White LEDs have performance distribution and been classified into multiple color groups. It is recommended to order products in combination of color groups.

Color group classification for reference :

E1、 E2

