

Application Note 1-1

**Z-POWER LED series**

**Binning and Labeling**

Z-Power series is designed for high current operation and high flux output applications.



Z-Power LED's thermal management perform exceeds other power LED solutions.

It incorporates state of the art SMD design and Thermal emission material.

Z Power LED is ideal light sources for general illumination applications, custom designed solutions, automotive large LCD backlights

This application note provides binning and labeling information of Z-Power LED series.

It includes the Z-Power LED bins for luminous flux, wavelength (or x,y coordinates), correlated color temperature (CCT) for white and forward voltage.

**P4**

**Features**

- Super high flux output and high luminance
- Designed for high current operation
- Low thermal resistance
- SMT solderability
- Lead free product
- RoHS compliant

**Applications**

- Mobile phone flash
- Automotive interior / Exterior lighting
- Automotive signal lighting
- Automotive forward lighting
- Torch
- Architectural lighting
- LCD TV / Monitor backlight
- Projector light source
- Traffic signals
- Task lighting
- Decorative / Pathway lighting
- Remote / Solar powered lighting
- Household appliances

**Full Code of Z-Power LED Series**

Full code form :  $X_1 X_2 X_3 X_4 X_5 X_6 X_7 - X_8 X_9 - X_{10} X_{11} X_{12} X_{13} X_{14}$

**1. Part Number**

- $X_1$  : Color
- $X_2$  : Z-Power LED series number
- $X_3$  : LENS type
- $X_4$  : Chip quantity (or Power Dissipation)
- $X_5$  : Package outline size
- $X_6$  : Type of PCB
- $X_7$  : Grade of characteristic code





**2. Internal Number**


- $X_8$
- $X_9$

**3. Code Labeling**

- $X_{10}$  : Luminous flux (or Radiant flux for royal blue)
- $X_{11} X_{12} X_{13}$  : Dominant wavelength (or x,y coordinates rank code)
- $X_{14}$  : Forward voltage

**4. Sticker Diagram on Reel & Aluminum Vinyl Bag**

PART NO. :  $X_1 X_2 X_3 X_4 X_5 X_6 X_7 - X_8 X_9$   
  
 QUANTITY : ###  
  
 LOT NUMBER : #####  
  
 BIN CODE :  $X_{10} X_{11} X_{12} X_{13} X_{14}$   




For more information about binning and labeling, refer to the Application Note -1

**Part Number**

Part numbers specify color, Z-Power series, Lens type, P<sub>d</sub>, size, PCB and Grade of characteristic code type of Z-Power LED.

- Example: X<sub>1</sub> X<sub>2</sub> X<sub>3</sub> X<sub>4</sub> X<sub>5</sub> X<sub>6</sub> X<sub>7</sub> - X<sub>8</sub> X<sub>9</sub> <sup>1)</sup>

<b>X<sub>1</sub></b>	<b>Color</b>
W	Pure White
N	Warm White
S	Natural White
D	Royal Blue
B	Blue
C	Cyan
G	Green
A	Amber
R	Red
F	Full Color (7-color)

<b>X<sub>2</sub></b>	<b>Z-Power Series</b>
1	P1
4	P4
5	P5-II
7	P7
9	P9

<b>X<sub>3</sub></b>	<b>LENS Type</b>
0	P1,P5-II Flat Type
2	P4,P7,P9 Dome Type <sup>2)</sup>
9	P4 narrow Type <sup>3)</sup>

Note:

- 1) X<sub>8</sub>, X<sub>9</sub> is a internal code number
- 2) Hemispherical dome type
- 3) View angle : 93°

<b>X<sub>4</sub></b>	<b>Chip Quantity (or Power Dissipation)</b>
1	1 chip (1W)
2	2 chip (2.5W)
3	Full Color (7-color)
4	4 chip (5W)

<b>X<sub>5</sub></b>	<b>Package Outline Size</b>
9	9 X 9 mm
8	D 8 mm
6	5 X 6 mm
5	D 5 mm

<b>X<sub>6</sub></b>	<b>Metal PCB Type</b>
0	Emitter Only
2	Star

<b>X<sub>7</sub></b>	<b>Grade of Characteristic Code</b>
H	P4 Warm, Natural White Code
C	P9 Characteristic Code

**Code Labeling**

**1. Luminous Flux Bins**

- Luminous flux bin structure for pure white, warm white, blue, cyan, green, amber and red Z-Power.

Bin Code		Luminous Flux [lm]
J		6 ~ 8.5
K		8.5 ~ 11.0
L		11.0 ~ 14.5
M		14.5 ~ 19.0
O		19.0 ~ 24.5
P		24.5 ~ 32.0
Q		32.0 ~ 41.5
R		41.5 ~ 54.0
S	S1	54.0 ~ 60.0
	S2	60.0 ~ 70.0
T	T1	70.0 ~ 80.0
	T2	80.0 ~ 91.0
U	U1	91.0 ~ 100.0
	U2	100.0 ~ 118.5
V		118.5 ~ 154.0
W		154.0 ~ 200.0
X		200.0 ~ 260.0
Y		260.0 ~ 340.0

The list explains the photometric luminous flux bins for Z-Power LED. Z-Power LED are tested and binned by photometric luminous flux. Not all bins are available in all colors.

Tolerance : ±10% of Luminous flux value

## 2. Color Bins

Z-Power are tested and binned for dominant wavelength (blue, green, amber, red) or x,y coordinates (pure white, warm white)

2 -1 Blue, Green, Amber, Red

Bin Code	Color	Dominant Wavelength [nm]
BB1	Blue	455 ~ 460
BB2		460 ~ 465
BB3		465 ~ 470
BB4		470 ~ 475
GG1	Green	520 ~ 525
GG2		525 ~ 530
GG3		530 ~ 535
AA1	Amber	585 ~ 587.5
AA2		587.5 ~ 590
AA3		590 ~ 592.5
AA4		592.5 ~ 595
RR1	Red	618 ~ 625
RR2		625 ~ 632

Tolerance

Dominant wavelength :  $\pm 0.5$  nm

Peak wavelength :  $\pm 2.0$  nm

2-2. Pure White CIE

Pure white product tested and binned by x,y coordinates and CCT

- Pure white bin structure

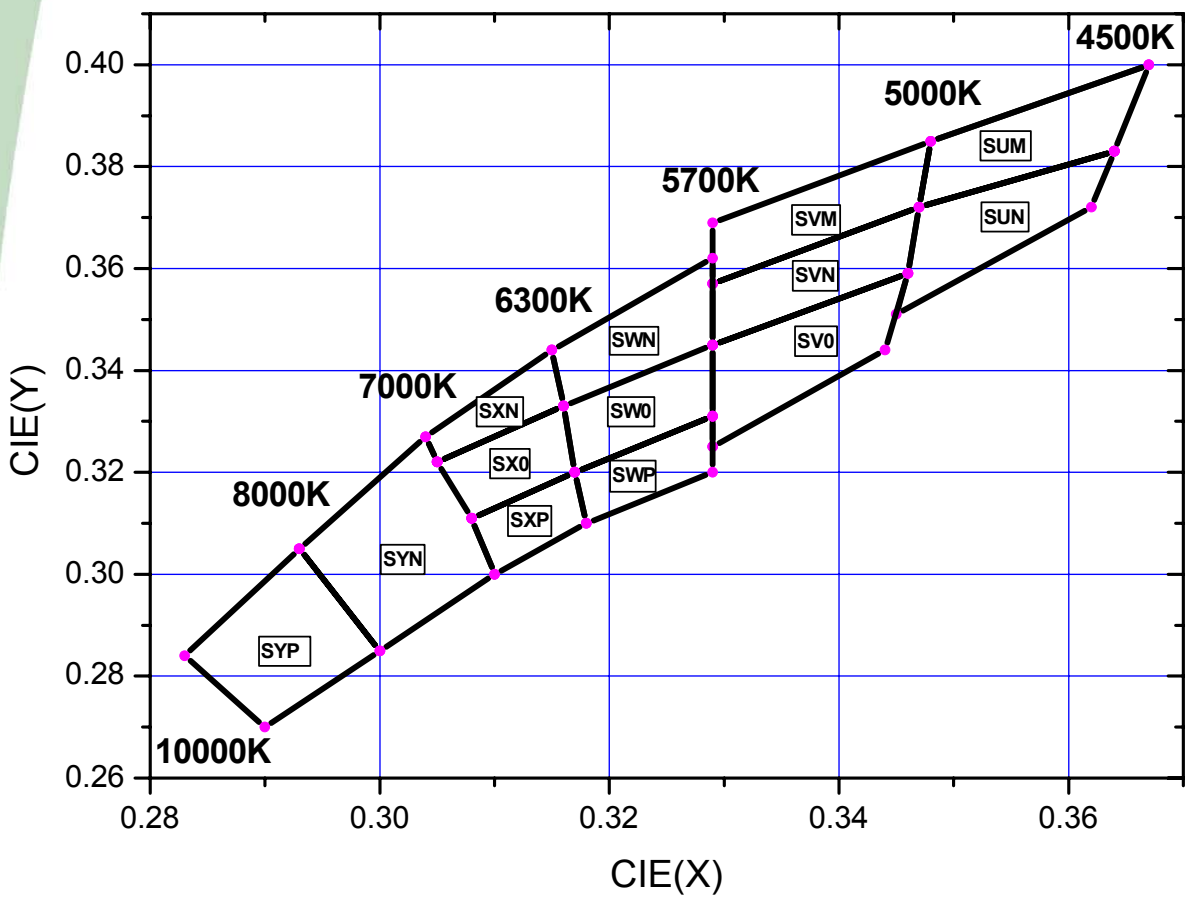
Bin	CHR_X	CHR_Y	CCT(K)	Bin	CHR_X	CHR_Y	CCT(K)	
SYP	0.293	0.305	9000	SWP	0.329	0.331	6050	
	0.283	0.284			0.317	0.320		
	0.290	0.270			0.318	0.310		
	0.300	0.285			0.329	0.320		
0.304	0.327	0.329	0.325					
SYN	0.293	0.305	7500	SVM	0.348	0.385	5350	
	0.300	0.285			0.329	0.369		
	0.310	0.300			0.329	0.362		
	0.308	0.311			0.329	0.357		
	0.305	0.322			0.347	0.372		
0.315	0.344	0.347	0.372					
SXX	0.304	0.327	6700	SVN	0.329	0.357	5350	
	0.305	0.322			0.329	0.345		
	0.316	0.333			0.346	0.359		
	0.316	0.333			0.346	0.359		
SX0	0.305	0.322	6700	SV0	0.329	0.345	5350	
	0.308	0.311			0.329	0.331		
	0.317	0.32			0.329	0.325		
	0.317	0.320			0.344	0.344		
SXP	0.308	0.311	6700		0.345	0.351		4800
	0.310	0.300			0.367	0.400		
	0.318	0.310		0.348	0.385			
	0.329	0.362		0.347	0.372			
SWN	0.315	0.344	6050	0.364	0.383	4800		
	0.316	0.333		0.364	0.383			
	0.329	0.345		0.347	0.372			
	0.329	0.357		0.346	0.359			
	0.329	0.345		0.345	0.351			
SW0	0.316	0.333	6050	0.362	0.372	4800		
	0.317	0.320						
	0.329	0.331						

Tolerance

Color coordinate : ±0.005

CCT : ±5% of value

- Pure white binning structure graphical representation





2-3. Natural white

Natural white product tested and binned by x,y coordinates and CCT

- Natural white bin structure

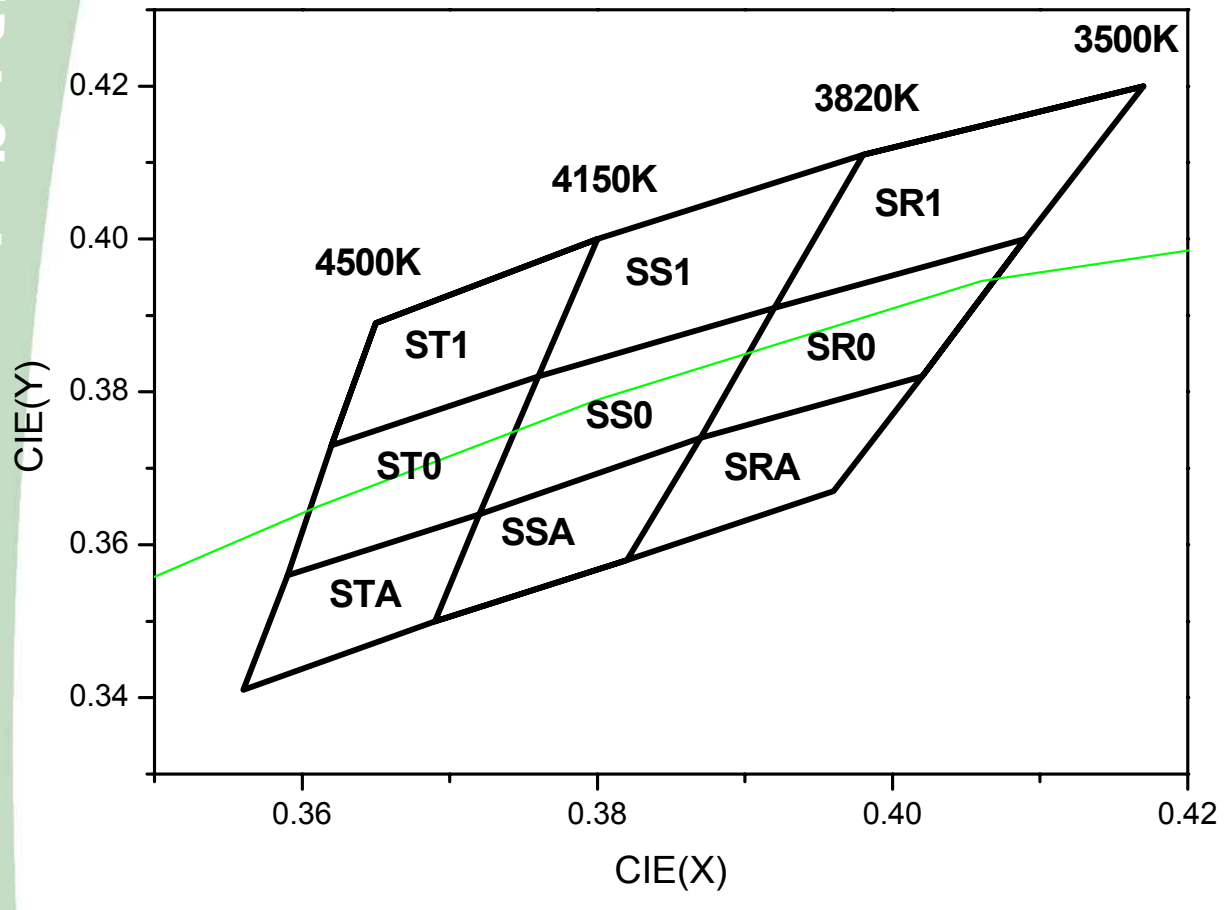
Bin	CHR_X	CHR_Y	CCT(K)	Bin	CHR_X	CHR_Y	CCT(K)
ST1	0.380	0.400	4325	SSA	0.387	0.374	3985
	0.365	0.389			0.372	0.364	
	0.362	0.373			0.369	0.350	
	0.376	0.382			0.382	0.358	
ST0	0.376	0.382	4325	SR1	0.417	0.420	3660
	0.362	0.373			0.398	0.411	
	0.359	0.356			0.392	0.391	
	0.372	0.364			0.409	0.400	
STA	0.372	0.364	4325	SR0	0.409	0.400	3660
	0.359	0.356			0.392	0.391	
	0.356	0.341			0.387	0.374	
	0.369	0.350			0.402	0.382	
SS1	0.398	0.411	3985	SRA	0.402	0.382	3660
	0.380	0.400			0.387	0.374	
	0.376	0.382			0.382	0.358	
	0.392	0.391			0.396	0.367	
SS0	0.392	0.391	3985				
	0.376	0.382					
	0.372	0.364					
	0.387	0.374					

Tolerance

Color coordinate :  $\pm 0.005$

CCT :  $\pm 5\%$  of value

- Natural white binning structure graphical representation



2-4. Warm White

Warm white product tested and binned by x,y coordinates and CCT

- Warm white bin structure

Bin	CHR_X	CHR_Y	CCT(K)	Bin	CHR_X	CHR_Y	CCT(K)
SL1	0.435	0.429	3375	SJ1	0.466	0.440	2950
	0.417	0.420			0.450	0.436	
	0.411	0.405			0.441	0.419	
	0.427	0.413			0.457	0.423	
SL0	0.427	0.413	3375	SJ0	0.457	0.423	2950
	0.411	0.405			0.441	0.419	
	0.405	0.390			0.433	0.403	
	0.420	0.398			0.449	0.408	
SLA	0.420	0.398	3375	SJA	0.449	0.408	2950
	0.405	0.390			0.433	0.403	
	0.399	0.375			0.426	0.388	
	0.412	0.381			0.440	0.392	
SLB	0.412	0.381	3375	SJB	0.440	0.392	2950
	0.399	0.375			0.426	0.388	
	0.395	0.365			0.42	0.375	
	0.407	0.37			0.432	0.378	
SK1	0.450	0.436	3150	SH1	0.482	0.444	2750
	0.435	0.429			0.466	0.440	
	0.427	0.413			0.457	0.423	
	0.441	0.419			0.472	0.426	
SK0	0.441	0.419	3150	SH0	0.472	0.426	2750
	0.427	0.413			0.457	0.423	
	0.420	0.398			0.449	0.408	
	0.433	0.403			0.464	0.412	
SKA	0.433	0.403	3150	SHA	0.464	0.412	2750
	0.420	0.398			0.449	0.408	
	0.412	0.381			0.440	0.392	
	0.426	0.388			0.454	0.395	
SKB	0.426	0.388	3150	SHB	0.454	0.395	2750
	0.412	0.381			0.440	0.392	
	0.407	0.370			0.432	0.378	
	0.420	0.375			0.446	0.381	

Tolerance

Color coordinate :  $\pm 0.005$

CCT :  $\pm 5\%$  of value



### 3. Forward Voltage Bins

Bin Code	Forward Voltage [V]
D	2.00 ~ 2.25
E	2.25 ~ 2.50
F	2.50 ~ 2.75
G	2.75 ~ 3.00
H	3.00 ~ 3.25
I	3.25 ~ 3.50
J	3.50 ~ 3.75
K	3.75 ~ 4.00
L	4.00 ~ 4.25
M	4.25 ~ 4.50

Tolerance :  $\pm 0.06V$

**1W Order Code (P4)**

**Z Power LED has an order code, use it as follows to purchase.**

- Example: W42180 - 1A
  - W42180 : Part Number
  - 1A : Order code

You can select PCB type, Lens type and Z-Power LED series number as part number.

**1. Pure White (1A,1B)**

Standard Order Codes for pure white				
Order Code	LF	CC	V <sub>F</sub>	Bin Codes
Part No. - 1A	T1	SXN	H I J K	T1SXNH~T1SXNK
		SWN		T1SWNH~T1SWNK
		SX0		T1SX0H~T1SX0K
		SW0		T1SW0H~T1SW0K
	T2	SXN		T2SXNH~T2SXNK
		SWN		T2SWNH~T2SWNK
		SX0		T2SX0H~T2SX0K
		SW0		T2SW0H~T2SW0K
Part No. - 1B	U1	SXN	H I J K	U1SXNH~U1SXNK
		SWN		U1SWNH~U1SWNK
		SX0		U1SX0H~U1SX0K
		SW0		U1SW0H~U1SW0K
	U2	SXN		U2SXNH~U2SXNK
		SWN		U2SWNH~U2SWNK
		SX0		U2SX0H~U2SX0K
		SW0		U2SW0H~U2SW0K
	V*	SXN		VSXNH~VSXNK
		SWN		VSWNH~VSWNK
		SX0		VSX0H~VSX0K
		SW0		VSW0H~VSW0K

\* : Not yet available

**1W Order Code (P4)**

**1. Pure White (1C,1D)**

Standard Order Codes for pure white				
Order Code	LF	CC	V <sub>F</sub>	Bin Codes
Part No. - 1C	T1	SX0	H I J K	T1SX0H~T1SX0K
		SW0		T1SW0H~T1SW0K
		SXP		T1SXPH~T1SXPK
		SWP		T1SWPH~T1SWPK
	T2	SX0		T2SX0H~T2SX0K
		SW0		T2SW0H~T2SW0K
		SXP		T2SXPH~T2SXPK
		SWP		T2SWPH~T2SWPK
Part No. - 1D	U1	SX0	H I J K	U1SX0H~U1SX0K
		SW0		U1SW0H~U1SW0K
		SXP		U1SXPH~U1SXPK
		SWP		U1SWPH~U1SWPK
	U2	SX0		U2SX0H~U2SX0K
		SW0		U2SW0H~U2SW0K
		SXP		U2SXPH~U2SXPK
		SWP		U2SWPH~U2SWPK
	V*	SX0		VSX0H~VSX0K
		SW0		VSW0H~VSW0K
		SXP		VSXPH~VSXPK
		SWP		VSWPH~VSWPK

\* : Not yet available

**1W Order Code (P4)**

**1. Pure White (1E,1F)**

Standard Order Codes for pure white				
Order Code	LF	CC	V <sub>F</sub>	Bin Codes
<b>Part No. - 1E</b>	T1	SYP	H I J K	T1SYPH~T1SYPK
		SYN		T1SYNH~T1SYNK
	T2	SYP		T2SYPH~T2SYPK
		SYN		T2SYNH~T2SYNK
<b>Part No. - 1F</b>	U1	SYP	H I J K	U1SYPH~U1SYPK
		SYN		U1SYNH~U1SYNK
	U2	SYP		U2SYPH~U2SYPK
		SYN		U2SYNH~U2SYNK
	V*	SYP		VSYPH~VSYPK
		SYN		VSYNH~VSYNK

\* : Not yet available



**1W Order Code (P4)**

**1. Pure White (1G,1H)**

Standard Order Codes for pure white						
Order Code	LF	CC	V <sub>F</sub>	Bin Codes		
Part No. - 1G	T1	SVM	H I J K	T1SVMH~T1SVMK		
		SVN		T1SVNH~T1SVNK		
		SVO		T1SV0H~T1SV0K		
	T2	SVM		T2SVMH~T2SVMK		
		SVN		T2SVNH~T2SVNK		
		SVO		T2SV0H~T2SV0K		
	Part No. - 1H	U1		SVM	H I J K	U1SVMH~U1SVMK
				SVN		U1SVNH~U1SVNK
				SVO		U1SV0H~U1SV0K
U2		SVM	U2SVMH~U2SVMK			
		SVN	U2SVNH~U2SVNK			
		SVO	U2SV0H~U2SV0K			
V*		SVM	VSVMH~VSVMK			
		SVN	VSVNH~VSVNK			
		SVO	VSV0H~VSV0K			

\* : Not yet available

**1W Order Code (P4)**

**1. Pure White (1I,1J)**

Standard Order Codes for pure white				
Order Code	LF	CC	V <sub>F</sub>	Bin Codes
Part No. - 1I	T1	SUM	H I J K	T1SUMH~T1SUMK
		SUN		T1SUNH~T1SUNK
		SVN		T1SVNH~T1SVNK
	T2	SUM		T2SUMH~T2SUMK
		SUN		T2SUNH~T2SUNK
		SVN		T2SVNH~T2SVNK
Part No. - 1J	U1	SUM	H I J K	U1SUMH~U1SUMK
		SUN		U1SUNH~U1SUNK
		SVN		U1SVNH~U1SVNK
	U2	SUM		U2SUMH~U2SUMK
		SUN		U2SUNH~U2SUNK
		SVN		U2SVNH~U2SVNK
	V*	SUM		VSUMH~VSUMK
		SUN		VSUNH~VSUNK
		SVN		VSVNH~VSVNK

\* : Not yet available

**1W Order Code (P4)**

**Z Power LED has an order code, use it as follows to purchase.**

- Example: S42180 - 1A
  - S42180 : Part Number
  - 1A : Order code

You can select PCB type, Lens type and Z-Power LED series number as part number.

**2. Natural white - S42180 (1A,1B)**

Standard Order Codes for Natural white				
Order Code	LF	CC	V <sub>F</sub>	Bin Codes
Part No. - 1A	S1	ST1	H I J K	S1ST1H~S1ST1K
		SS1		S1SS1H~S1SS1K
		ST0		S1ST0H~S1ST0K
		SS0		S1SS0H~S1SS0K
	S2	ST1		S2ST1H~S2ST1K
		SS1		S2SS1H~S2SS1K
		ST0		S2ST0H~S2ST0K
		SS0		S2SS0H~S2SS0K
Part No. - 1B*	T1	ST1	H I J K	T1ST1H~T1ST1K
		SS1		T1SS1H~T1SS1K
		ST0		T1ST0H~T1ST0K
		SS0		T1SS0H~T1SS0K
	T2	ST1		T2ST1H~T2ST1K
		SS1		T2SS1H~T2SS1K
		ST0		T2ST0H~T2ST0K
		SS0		T2SS0H~T2SS0K

\* : Not yet available

**1W Order Code (P4)**

**2. Natural white - S42180 (1C,1D)**

Standard Order Codes for Natural white				
Order Code	LF	CC	V <sub>F</sub>	Bin Codes
Part No. - 1C	S1	SS1	H I J K	S1SS1H~S1SS1K
		SR1		S1SR1H~S1SR1K
		SS0		S1SS0H~S1SS0K
		SR0		S1SS10H~RSR0K
	S2	SS1		S2SS1H~S2SS1K
		SR1		S2SR1H~S2SR1K
		SS0		S2SS0H~S2SS0K
		SR0		S2SR0H~S2SR0K
Part No. - 1D*	T1	SS1	H I J K	T1SS1H~T1SS1K
		SR1		T1SR1H~T1SR1K
		SS0		T1SS0H~T1SS0K
		SR0		T1SR0H~T1SR0K
	T2	SS1		T2SS1H~T2SS1K
		SR1		T2SR1H~T2SR1K
		SS0		T2SS0H~T2SS0K
		SR0		T2SR0H~T2SR0K

\* : Not yet available

**1W Order Code (P4)**

**2. Natural white - S42180 (1E,1F)**

Standard Order Codes for Natural white				
Order Code	LF	CC	V <sub>F</sub>	Bin Codes
Part No. - 1E	S1	ST0	H I J K	S1ST0H~S1ST0K
		SS0		S1SS0H~S1SS0K
		STA		S1STAH~S1STAK
		SSA		S1SSAH~S1SSAK
	S2	ST0		S2ST0H~S2ST0K
		SS0		S2SS0H~S2SS0K
		STA		S2STAH~S2STAK
		SSA		S2SSAH~S2SSAK
Part No. - 1F*	T1	ST0	H I J K	T1ST0H~T1ST0K
		SS0		T1SS0H~T1SS0K
		STA		T1STAH~T1STAK
		SSA		T1SSAH~T1SSAK
	T2	ST0		T2ST0H~T2ST0K
		SS0		T2SS0H~T2SS0K
		STA		T2STAH~T2STAK
		SSA		T2SSAH~T2SSAK

\* : Not yet available

**1W Order Code (P4)**

**2. Natural white - S42180 (1G,1H)**

Standard Order Codes for Natural white				
Order Code	LF	CC	V <sub>F</sub>	Bin Codes
Part No. - 1G	S1	SS0	H I J K	S1SS0H~S1SS0K
		SR0		S1SR0H~S1SR0K
		SSA		S1SSAH~S1SSAK
		SRA		S1SRAH~S1SRAK
	S2	SS0		S2SS0H~S2SS0K
		SR0		S2SR0H~S2SR0K
		SSA		S2SSAH~S2SSAK
		SRA		S2SRAH~S2SRAK
Part No. - 1H*	T1	SS0	H I J K	T1SS0H~T1SS0K
		SR0		T1SR0H~T1SR0K
		SSA		T1SSAH~T1SSAK
		SRA		T1SRAH~T1SRAK
	T2	SS0		T2SS0H~T2SS0K
		SR0		T2SR0H~T2SR0K
		SSA		T2SSAH~T2SSAK
		SRA		T2SRAH~T2SRAK

\* : Not yet available

**1W Order Code (P4)**

**Z Power LED has an order code, use it as follows to purchase.**

- Example: S42180H – 1A
  - S42180H : Part Number
  - 1A : Order code

You can select PCB type, Lens type and Z-Power LED series number as part number.

**3. Natural white - S42180H (1A,1B)**

Standard Order Codes for Natural white				
Order Code	LF	CC	V <sub>F</sub>	Bin Codes
Part No. - 1A	S2	ST1	H I J K	S2ST1H~S2ST1K
		SS1		S2SS1H~S2SS1K
		ST0		S2ST0H~S2ST0K
		SS0		S2SS0H~S2SS0K
	T1	ST1		T1ST1H~T1ST1K
		SS1		T1SS1H~T1SS1K
		ST0		T1ST0H~T1ST0K
		SS0		T1SS0H~T1SS0K
Part No. - 1B	T2	ST1	H I J K	T2ST1H~T2ST1K
		SS1		T2SS1H~T2SS1K
		ST0		T2ST0H~T2ST0K
		SS0		T2SS0H~T2SS0K
	U1*	ST1		U1ST1H~U1ST1K
		SS1		U1SS1H~U1SS1K
		ST0		U1ST0H~U1ST0K
		SS0		U1SS0H~U1SS0K

\* : Not yet available

**1W Order Code (P4)**

**3. Natural white - S42180H (1C,1D)**

Standard Order Codes for Natural white				
Order Code	LF	CC	V <sub>F</sub>	Bin Codes
Part No. - 1C	S2	SS1	H I J K	S2SS1H~S2SS1K
		SR1		S2SR1H~S2SR1K
		SS0		S2SS0H~S2SS0K
		SR0		S2SR0H~S2SR0K
	T1	SS1		T1SS1H~T1SS1K
		SR1		T1SR1H~T1SR1K
		SS0		T1SS0H~T1SS0K
		SR0		T1SR0H~T1SR0K
Part No. - 1D	T2	SS1	H I J K	T2SS1H~T2SS1K
		SR1		T2SR1H~T2SR1K
		SS0		T2SS0H~T2SS0K
		SR0		T2SR0H~T2SR0K
	U1*	SS1		U1SS1H~U1SS1K
		SR1		U1SR1H~U1SR1K
		SS0		U1SS0H~U1SS0K
		SR0		U1SR0H~U1SR0K

\* : Not yet available



**1W Order Code (P4)**

**3. Natural white - S42180H (1E,1F)**

Standard Order Codes for Natural white				
Order Code	LF	CC	V <sub>F</sub>	Bin Codes
Part No. - 1E	S2	ST0	H I J K	S2ST0H~S2ST0K
		SS0		S2SS0H~S2SS0K
		STA		S2STAH~S2STAK
		SSA		S2SSAH~S2SSAK
	T1	ST0		T1ST0H~T1ST0K
		SS0		T1SS0H~T1SS0K
		STA		T1STAH~T1STAK
		SSA		T1SSAH~T1SSAK
Part No. - 1F	T2	ST0	H I J K	T2ST0H~T2ST0K
		SS0		T2SS0H~T2SS0K
		STA		T2STAH~T2STAK
		SSA		T2SSAH~T2SSAK
	U1*	ST0		U1ST0H~U1ST0K
		SS0		U1SS0H~U1SS0K
		STA		U1STAH~U1STAK
		SSA		U1SSAH~U1SSAK

\* : Not yet available

**1W Order Code (P4)**

**3. Natural white - S42180H (1G,1H)**

Standard Order Codes for Natural white				
Order Code	LF	CC	V <sub>F</sub>	Bin Codes
Part No. - 1G	S2	SS0	H I J K	S2SS0H~S2SS0K
		SR0		S2SR0H~S2SR0K
		SSA		S2SSAH~S2SSAK
		SRA		S2SRAH~S2SRAK
	T1	SS0		T1SS0H~T1SS0K
		SR0		T1SR0H~T1SR0K
		SSA		T1SSAH~T1SSAK
		SRA		T1SRAH~T1SRAK
Part No. - 1H	T2	SS0	H I J K	T2SS0H~T2SS0K
		SR0		T2SR0H~T2SR0K
		SSA		T2SSAH~T2SSAK
		SRA		T2SRAH~T2SRAK
	U1*	SS0		U1SS0H~U1SS0K
		SR0		U1SR0H~U1SR0K
		SSA		U1SSAH~U1SSAK
		SRA		U1SRAH~U1SRAK

\* : Not yet available

**1W Order Code (P4)**

**Z Power LED has an order code, use it as follows to purchase.**

- Example: N42180 – 1A
  - N42180 : Part Number
  - 1A : Order code

You can select PCB type, Lens type and Z-Power LED series number as part number.

**4. Warm White - N42180 (1A,1B)**

Standard Order Codes for Warm white				
Order Code	LF	CC	V <sub>F</sub>	Bin Codes
Part No. - 1A	R	SL0	H I J K	RSL0H~RSL0K
		SLA		RSLAH~RSLAK
		SKA		RSKAH~RSKAK
		SK0		RSK0H~RSK0K
	S1	SL0		S1SL0H~S1SL0K
		SLA		S1SLAH~S1SLAK
		SKA		S1SKAH~ S1SKAK
		SK0		S1SK0H~ S1SK0K
Part No. - 1B	S2	SL0	H I J K	S2SL0H~S2SL0K
		SLA		S2SLAH~S2SLAK
		SKA		S2SKAH~S2SKAK
		SK0		S2SK0H~S2SK0K
	T1	SL0		T1SL0H~T1SL0K
		SLA		T1SLAH~T1SLAK
		SKA		T1SKAH~T1SKAK
		SK0		T1SK0H~T1SK0K

\* : Not yet available

**1W Order Code (P4)**

**4. Warm White – N42180 (1C,1D)**

Standard Order Codes for Warm white				
Order Code	LF	CC	V <sub>F</sub>	Bin Codes
Part No. - 1C	R	SK0	H I J K	RSK0H~RSK0K
		SKA		RSKAH~RSKAK
		SJA		RSJAH~RSJAK
		SJ0		RSJ0H~RSJ0K
	S1	SK0		S1SK0H~S1SK0K
		SKA		S1SKAH~S1SKAK
		SJA		S1SJAH~S1SJAK
		SJ0		S1SJ0H~S1SJ0K
Part No. - 1D	S2	SK0	H I J K	S2SK0H~S2SK0K
		SKA		S2SKAH~S2SKAK
		SJA		S2SJAH~S2SJAK
		SJ0		S2SJ0H~S2SJ0K
	T1	SK0		T1SK0H~T1SK0K
		SKA		T1SKAH~T1SKAK
		SJA		T1SJAH~T1SJAK
		SJ0		T1SJ0H~T1SJ0K

\* : Not yet available

**1W Order Code (P4)**

**4. Warm White – N42180 (1E,1F)**

Standard Order Codes for Warm white				
Order Code	LF	CC	V <sub>F</sub>	Bin Codes
Part No. - 1E	R	SJ0	H I J K	RSJ0H~RSJ0K
		SJA		RSJAH~RSJAK
		SHA		RSHAH~RSHAK
		SH0		RSH0H~RSH0K
	S1	SJ0		S1SJ0H~S1SJ0K
		SJA		S1SJAH~S1SJAK
		SHA		S1SHAH~S1SHAK
		SH0		S1SH0H~S1SH0K
Part No. - 1F	S2	SJ0	H I J K	S2SJ0H~S2SJ0K
		SJA		S2SJAH~S2SJAK
		SHA		S2SHAH~S2SHAK
		SH0		S2SH0H~S2SH0K
	T1	SJ0		T1SJ0H~T1SJ0K
		SJA		T1SJAH~T1SJAK
		SHA		T1SHAH~T1SHAK
		SH0		T1SH0H~T1SH0K

\* : Not yet available

**1W Order Code (P4)**

**4. Warm White – N42180 (1G,1H)**

Standard Order Codes for Warm white				
Order Code	LF	CC	V <sub>F</sub>	Bin Codes
Part No. - 1G	R	SL1	H I J K	RSL1H~RSL1K
		SL0		RSL0H~RSL0K
		SK0		RSK0H~RSK0K
		SK1		RSK1H~RSK1K
	S1	SL1		S1SL1H~S1SL1K
		SL0		S1SL0H~S1SL0K
		SK0		S1SK0H~S1SK0K
		SK1		S1SK1H~S1SK1K
Part No. - 1H	S2	SL1	H I J K	S2SL1H~S2SL1K
		SL0		S2SL0H~S2SL0K
		SK0		S2SK0H~S2SK0K
		SK1		S2SK1H~S2SK1K
	T1	SL1		T1SL1H~T1SL1K
		SL0		T1SL0H~T1SL0K
		SK0		T1SK0H~T1SK0K
		SK1		T1SK1H~T1SK1K

\* : Not yet available

**1W Order Code (P4)**

**4. Warm White – N42180 (1I,1J)**

Standard Order Codes for Warm white				
Order Code	LF	CC	V <sub>F</sub>	Bin Codes
Part No. – 1I	R	SJ1	H I J K	RSJ1H~RSJ1K
		SJ0		RSJ0H~RSJ0K
		SH0		RSH0H~RSH0K
		SH1		RSH1H~RSH1K
	S1	SJ1		S1SJ1H~S1SJ1K
		SJ0		S1SJ0H~S1SJ0K
		SH0		S1SH0H~S1SH0K
		SH1		S1SH1H~S1SH1K
Part No. – 1J	S2	SJ1	H I J K	S2SJ1H~S2SJ1K
		SJ0		S2SJ0H~S2SJ0K
		SH0		S2SH0H~S2SH0K
		SH1		S2SH1H~S2SH1K
	T1	SJ1		T1SJ1H~T1SJ1K
		SJ0		T1SJ0H~T1SJ0K
		SH0		T1SH0H~T1SH0K
		SH1		T1SH1H~T1SH1K

\* : Not yet available

**1W Order Code (P4)**

**4. Warm White – N42180 (1K,1L)**

Standard Order Codes for Warm White				
Order Code	LF	CC	V <sub>F</sub>	Bin Codes
Part No. – 1K	R	SLA	H I J K	RSLAH~RSLAK
		SLB		RSLBH~RSLBK
		SKB		RSKBH~RSKBK
		SKA		RSKAH~RSKAK
	S1	SLA		S1SLAH~S1SLAK
		SLB		S1SLBH~S1SLBK
		SKB		S1SKBH~S1SKBK
		SKA		S1SKAH~S1SKAK
Part No. – 1L	S2	SLA	H I J K	S2SLAH~S2SLAK
		SLB		S2SLBH~S2SLBK
		SKB		S2SKBH~S2SKBK
		SKA		S2SKAH~S2SKAK
	T1	SLA		T1SLAH~T1SLAK
		SLB		T1SLBH~T1SLBK
		SKB		T1SKBH~T1SKBK
		SKA		T1SKAH~T1SKAK

\* : Not yet available



**1W Order Code (P4)**

**4. Warm White – N42180 (1M,1N)**

Standard Order Codes for Warm White				
Order Code	LF	CC	V <sub>F</sub>	Bin Codes
Part No. – 1M	R	SJA	H I J K	RSJAH~RSJAK
		SJB		RSJBH~RSJBK
		SHB		RSHBH~RSHBK
		SHA		RSHAH~RSHAK
	S1	SJA		S1SJAH~S1SJAK
		SJB		S1SJBH~S1SJBK
		SHB		S1SHBH~S1SHBK
		SHA		S1SHAH~S1SHAK
Part No. – 1N	S2	SJA	H I J K	S2SJAH~S2SJAK
		SJB		S2SJBH~S2SJBK
		SHB		S2SHBH~S2SHBK
		SHA		S2SHAH~S2SHAK
	T1	SJA		T1SJAH~T1SJAK
		SJB		T1SJBH~T1SJBK
		SHB		T1SHBH~T1SHBK
		SHA		T1SHAH~T1SHAK

\* : Not yet available

**1W Order Code (P4)**

**Z Power LED has an order code, use it as follows to purchase.**

- Example: N42180H – 1A
  - N42180H : Part Number
  - 1A : Order code

You can select PCB type, Lens type and Z-Power LED series number as part number.

**5. Warm White – N42180H (1A,1B)**

Standard Order Codes for Warm white				
Order Code	LF	CC	V <sub>F</sub>	Bin Codes
Part No. – 1A	S2	SL0	H I J K	S2SL0H~S2SL0K
		SLA		S2SLAH~S2SLAK
		SKA		S2SKAH~S2SKAK
		SK0		S2SK0H~S2SK0K
	T1	SL0		T1SL0H~T1SL0K
		SLA		T1SLAH~T1SLAK
		SKA		T1SKAH~ T1SKAK
		SK0		T1SK0H~ T1SK0K
Part No. - 1B	T2	SL0	H I J K	T2SL0H~T2SL0K
		SLA		T2SLAH~T2SLAK
		SKA		T2SKAH~T2SKAK
		SK0		T2SK0H~T2SK0K
	U1*	SL0		U1SL0H~U1SL0K
		SLA		U1SLAH~U1SLAK
		SKA		U1SKAH~U1SKAK
		SK0		U1SK0H~U1SK0K

\* : Not yet available

**1W Order Code (P4)**

**5. Warm White – N42180H (1C,1D)**

Standard Order Codes for Warm white				
Order Code	LF	CC	V <sub>F</sub>	Bin Codes
Part No. - 1C	S2	SK0	H I J K	S2SK0H~S2SK0K
		SKA		S2SKAH~S2SKAK
		SJA		S2SJAH~S2SJAK
		SJ0		S2SJ0H~S2SJ0K
	T1	SK0		T1SK0H~T1SK0K
		SKA		T1SKAH~T1SKAK
		SJA		T1SJAH~T1SJAK
		SJ0		T1SJ0H~T1SJ0K
Part No. - 1D	T2	SK0	H I J K	T2SK0H~T2SK0K
		SKA		T2SKAH~T2SKAK
		SJA		T2SJAH~T2SJAK
		SJ0		T2SJ0H~T2SJ0K
	U1*	SK0		U1SK0H~U1SK0K
		SKA		U1SKAH~U1SKAK
		SJA		U1SJAH~U1SJAK
		SJ0		U1SJ0H~U1SJ0K

\* : Not yet available

**1W Order Code (P4)**

**5. Warm White – N42180H (1E,1F)**

Standard Order Codes for Warm white				
Order Code	LF	CC	V <sub>F</sub>	Bin Codes
Part No. - 1E	S2	SJ0	H I J K	S2SJ0H~S2SJ0K
		SJA		S2SJAH~S2SJAK
		SHA		S2SHAH~S2SHAK
		SH0		S2SH0H~S2SH0K
	T1	SJ0		T1SJ0H~T1SJ0K
		SJA		T1SJAH~T1SJAK
		SHA		T1SHAH~T1SHAK
		SH0		T1SH0H~T1SH0K
Part No. - 1F	T2	SJ0	H I J K	T2SJ0H~T2SJ0K
		SJA		T2SJAH~T2SJAK
		SHA		T2SHAH~T2SHAK
		SH0		T2SH0H~T2SH0K
	U1*	SJ0		U1SJ0H~U1SJ0K
		SJA		U1SJAH~U1SJAK
		SHA		U1SHAH~U1SHAK
		SH0		U1SH0H~U1SH0K

\* : Not yet available

**1W Order Code (P4)**

**5. Warm White – N42180H (1G,1H)**

Standard Order Codes for Warm white				
Order Code	LF	CC	V <sub>F</sub>	Bin Codes
Part No. - 1G	S2	SL1	H I J K	S2SL1H~S2SL1K
		SL0		S2SL0H~S2SL0K
		SK0		S2SK0H~S2SK0K
		SK1		S2SK1H~S2SK1K
	T1	SL1		T1SL1H~T1SL1K
		SL0		T1SL0H~T1SL0K
		SK0		T1SK0H~T1SK0K
		SK1		T1SK1H~T1SK1K
Part No. - 1H	T2	SL1	H I J K	T2SL1H~T2SL1K
		SL0		T2SL0H~T2SL0K
		SK0		T2SK0H~T2SK0K
		SK1		T2SK1H~T2SK1K
	U1*	SL1		U1SL1H~U1SL1K
		SL0		U1SL0H~U1SL0K
		SK0		U1SK0H~U1SK0K
		SK1		U1SK1H~U1SK1K

\* : Not yet available

**1W Order Code (P4)**

**5. Warm White – N42180H (1I,1J)**

Standard Order Codes for Warm white				
Order Code	LF	CC	V <sub>F</sub>	Bin Codes
Part No. – 1I	S2	SJ1	H I J K	S2SJ1H~S2SJ1K
		SJ0		S2SJ0H~S2SJ0K
		SH0		S2SH0H~S2SH0K
		SH1		S2SH1H~S2SH1K
	T1	SJ1		T1SJ1H~T1SJ1K
		SJ0		T1SJ0H~T1SJ0K
		SH0		T1SH0H~T1SH0K
		SH1		T1SH1H~T1SH1K
Part No. – 1J	T2	SJ1	H I J K	T2SJ1H~T2SJ1K
		SJ0		T2SJ0H~T2SJ0K
		SH0		T2SH0H~T2SH0K
		SH1		T2SH1H~T2SH1K
	U1*	SJ1		U1SJ1H~U1SJ1K
		SJ0		U1SJ0H~U1SJ0K
		SH0		U1SH0H~U1SH0K
		SH1		U1SH1H~U1SH1K

\* : Not yet available

**1W Order Code (P4)**

**5. Warm White – N42180H (1K,1L)**

Standard Order Codes for Warm White				
Order Code	LF	CC	V <sub>F</sub>	Bin Codes
Part No. – 1K	S2	SLA	H I J K	S2SLAH~S2SLAK
		SLB		S2SLBH~S2SLBK
		SKB		S2SKBH~S2SKBK
		SKA		S2SKAH~S2SKAK
	T1	SLA		T1SLAH~T1SLAK
		SLB		T1SLBH~T1SLBK
		SKB		T1SKBH~T1SKBK
		SKA		T1SKAH~T1SKAK
Part No. – 1L	T2	SLA	H I J K	T2SLAH~T2SLAK
		SLB		T2SLBH~T2SLBK
		SKB		T2SKBH~T2SKBK
		SKA		T2SKAH~T2SKAK
	U1*	SLA		U1SLAH~U1SLAK
		SLB		U1SLBH~U1SLBK
		SKB		U1SKBH~U1SKBK
		SKA		U1SKAH~U1SKAK

\* : Not yet available

**1W Order Code (P4)**

**5. Warm White – N42180H (1M,1N)**

Standard Order Codes for Warm White				
Order Code	LF	CC	V <sub>F</sub>	Bin Codes
Part No. – 1M	S2	SJA	H I J K	S2SJAH~S2SJAK
		SJB		S2SJBH~S2SJBK
		SHB		S2SHBH~S2SHBK
		SHA		S2SHAH~S2SHAK
	T1	SJA		T1SJAH~T1SJAK
		SJB		T1SJBH~T1SJBK
		SHB		T1SHBH~T1SHBK
		SHA		T1SHAH~T1SHAK
Part No. – 1N	T2	SJA	H I J K	T2SJAH~T2SJAK
		SJB		T2SJBH~T2SJBK
		SHB		T2SHBH~T2SHBK
		SHA		T2SHAH~T2SHAK
	U1*	SJA		U1SJAH~U1SJAK
		SJB		U1SJBH~U1SJBK
		SHB		U1SHBH~U1SHBK
		SHA		U1SHAH~U1SHAK

\* : Not yet available



**1W Order Code (P4)**

**6. Blue - B42180**

Standard Order Codes for Blue				
Order Code	Luminous Flux	Color Coordinate	Forward Voltage	Bin Codes
<b>Part No. - 1A</b>	M	BB1	H I J K	MBB1H~MBB1K
		BB2		MBB2H~MBB2K
	O*	BB1		OBB1H~OBB1K
		BB2		OBB2H~OBB2K
<b>Part No. - 1B</b>	P*	BB1	H I J K	PBB1H~PBB1K
		BB2		PBB2H~PBB2K
	Q*	BB1		QBB1H~QBB1K
		BB2		QBB2H~QBB2K
<b>Part No. - 1C</b>	M	BB3	H I J K	MBB3H~MBB3K
		BB4		MBB4H~MBB4K
	O	BB3		OBB3H~OBB3K
		BB4		OBB4H~OBB4K
<b>Part No. - 1D</b>	P	BB3	H I J K	PBB3H~PBB3K
		BB4		PBB4H~PBB4K
	Q*	BB3		QBB3H~QBB3K
		BB4		QBB4H~QBB4K

\* : Not yet available

**1W Order Code (P4)**

**7. Green - G42180**

Standard Order Codes for Green				
Order Code	Luminous Flux	Color Coordinate	Forward Voltage	Bin Codes
<b>Part No. - 1A</b>	S	GG1	H,I,J,K	SGG1H~SGG1K
<b>Part No. - 1B</b>	T		H,I,J,K	TGG1H~TGG1K
	U*			UGG1H~UGG1K
<b>Part No. - 1C</b>	S	GG2	H,I,J,K	SGG2H~SGG2K
<b>Part No. - 1D</b>	T		H,I,J,K	TGG2H~TGG2K
	U*			UGG2H~UGG2K
<b>Part No. - 1E</b>	S	GG3	H,I,J,K	SGG3H~SGG3K
<b>Part No. - 1F</b>	T		H,I,J,K	TGG3H~TGG3K
	U*			UGG3H~UGG3K

\* : Not yet available

**1W Order Code (P4)**

**8. Amber - A42180**

Standard Order Codes for Amber				
Order Code	Luminous Flux	Color Coordinate	Forward Voltage	Bin Codes
<b>Part No. - 1A</b>	R	AA1	D E F G	RAA1D~RAA1G
		AA2		RAA2D~RAA2G
	S*	AA1		SAA1D~SAA1G
		AA2		SAA1D~SAA1G
<b>Part No.- 1B</b>	R	AA3	D E F G	RAA3D~RAA3G
		AA4		RAA4D~RAA4G
	S*	AA3		SAA3D~SAA3G
		AA4		SAA4D~SAA4G

\* : Not yet available

**1W Order Code (P4)**

**9. Red - R42180**

Standard Order Codes for Red				
Order Code	Luminous Flux	Color Coordinate	Forward Voltage	Bin Codes
<b>Part No. - 1A</b>	Q	RR1	D,E,F,G	QRR1D~QRR1G
<b>Part No. - 1B</b>	R		D,E,F,G	RRR1D~RRR1G
	S*		D,E,F,G	SRR1D~SRR1G
<b>Part No. - 1C</b>	Q	RR2*	D,E,F,G	QRR2D~QRR2G
<b>Part No. - 1D</b>	R		D,E,F,G	RRR2D~RRR2G
	S		D,E,F,G	SRR2D~SRR2G

\* : Not yet available

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