

# Edixeon<sup>®</sup> Series Bin Group

This document describes the product bin group required to select Edixeon<sup>®</sup> series. All Edixeon<sup>®</sup> LEDs are tested and sorted by brightness, color and forward voltage into a unique bin. Each bin contains LEDs from one brightness, color and forward voltage group and is uniquely identified by a bin group code. Color Edixeon<sup>®</sup> LEDs are sorted by dominant wavelength (color), and luminous flux (brightness).

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### Product Bin Group Code

The following table describes the luminous or radiant flux group, color group, and forward voltage group.

< Table 1 Edixeon® series bin group >

<u>W</u>	<u>W2</u>	<u>V02</u>
X1	X2	X3
Group		
X1	luminous or radiant flux group	
X2	color group	
X3	forward voltage group	

### Photometric Luminous Flux Ranks

< Table 2 Edixeon® series photometric luminous flux group for cool white · neutral white · warm white >

Group	Min.	Max.	Group	Min.	Max.
A	0.1	1.0	R	39.4	51.2
B	1.0	1.3	S	S1	51.2
C	1.3	1.7		S2	58.8
D	1.7	2.2	T	T1	66.5
E	2.2	2.9		T2	70.0
F	2.9	3.7		T3	80.0
G	3.7	4.8	U	U1	86.5
H	4.8	6.3		U2	90.0
J	6.3	8.2		U3	100.0
K	8.2	10.6	V	112.5	146.2
L	10.6	13.8	W	146.2	190.0
M	13.8	17.9	X	190.0	247.1
N	17.9	23.3	Y	247.1	321.2
P	23.3	30.3	Z	321.2	417.5
Q	30.3	39.4			

Note:  
Unit: lm

< Table 3 Edixeon<sup>®</sup> series photometric luminous flux group for red · red orange · amber · green · cyan · blue colors >

Group	Min.	Max.	Group	Min.	Max.
A	0.1	1.0	N	17.9	23.3
B	1.0	1.3	P	23.3	30.3
C	1.3	1.7	Q	30.3	39.4
D	1.7	2.2	R	39.4	51.2
E	2.2	2.9	S	51.2	66.5
F	2.9	3.7	T	66.5	86.5
G	3.7	4.8	U	86.5	112.5
H	4.8	6.3	V	112.5	146.2
J	6.3	8.2	W	146.2	190.0
K	8.2	10.6	X	190.0	247.1
L	10.6	13.8	Y	247.1	321.2
M	13.8	17.9	Z	321.2	417.5

Note:  
Unit: lm

## Radiometric Power Ranks

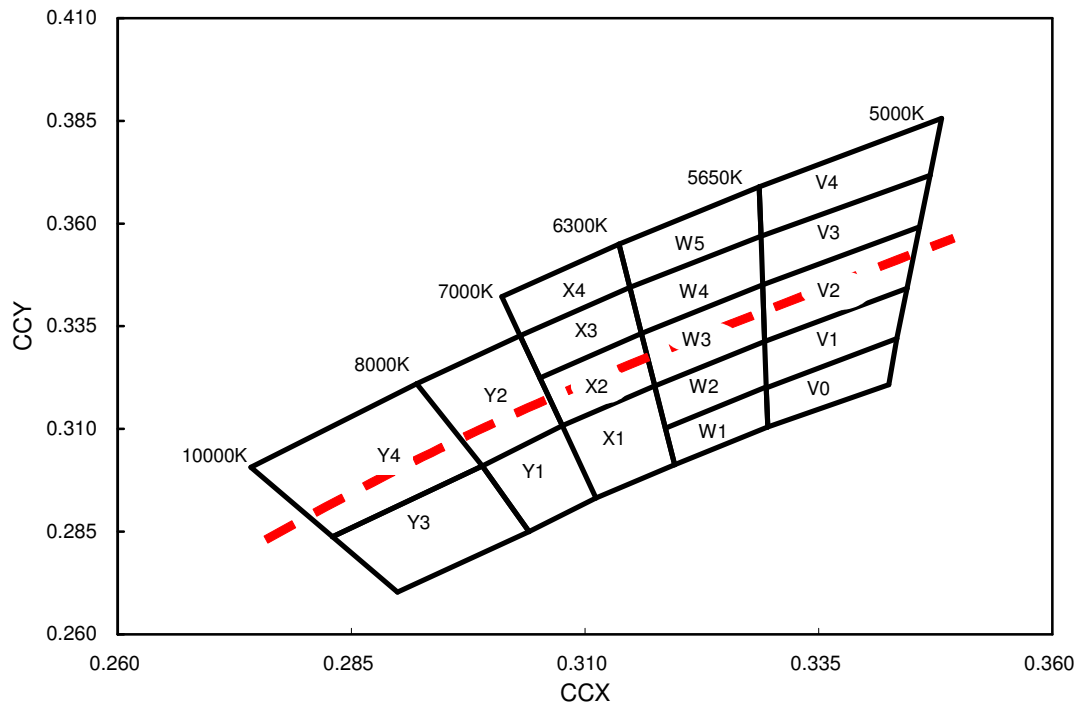
< Table 4 Edixeon<sup>®</sup> series radiometric power group for IR 850nm · IR 940nm · cherry red · Deep red · dental blue · royal blue · ultraviolet >

Group	Min.	Max.	Group	Min.	Max.
A	10.0	15.0	K	384.4	576.7
B	15.0	22.5	L	576.7	865.0
C	22.5	33.8	M	865.0	1,298
D	33.8	50.6	N	1,298	1,946
E	50.6	75.9	P	1,946	2,919
F	75.9	113.9	Q	2,919	4,379
G	113.9	170.9	R	4,379	6,569
H	170.9	256.3	S	6,569	9,853
J	256.3	384.4	T	9,853	14,779

Note:  
Unit: mW

## Color Ranks

### Cool White Color Ranks

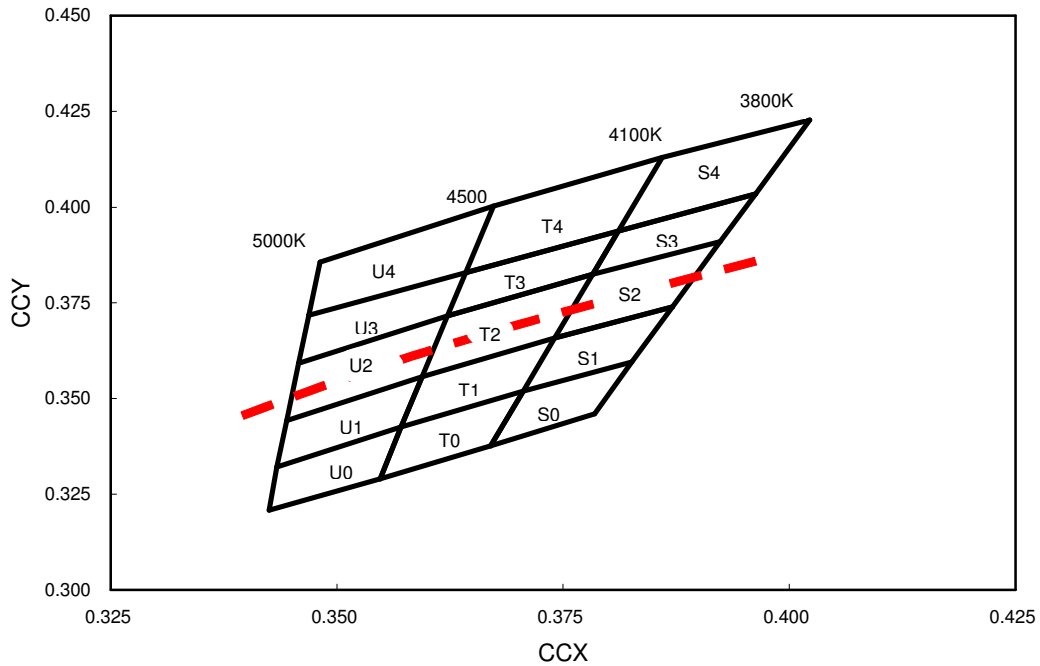


< Figure 1 Edixeon<sup>®</sup> series CIE chromaticity diagram for cool white >

< Table 5 Edixeon<sup>®</sup> series color bin group for cool white >

Group/ CCT(Typ)	X	Y	Group/ CCT(Typ)	X	Y	Group/ CCT(Typ)	X	Y	Group/ CCT(Typ)	X	Y
5300K V0	0.34335	0.33203	6000K W1	0.32939	0.32021	6650K X1	0.30755	0.31078	7500K Y1	0.30400	0.28500
	0.34250	0.32080		0.32954	0.31050		0.31745	0.32044		0.29900	0.30100
	0.32954	0.31050		0.31960	0.30130		0.31960	0.30130		0.30755	0.31078
	0.32939	0.32002		0.31861	0.31020		0.31116	0.29319		0.31116	0.29319
5300K V1	0.32922	0.33133	6000K W2	0.32922	0.33133	6650K X2	0.30755	0.31078	7500K Y2	0.29900	0.30100
	0.34444	0.34423		0.32939	0.32021		0.30517	0.32239		0.29200	0.32100
	0.34335	0.33203		0.31861	0.31020		0.31604	0.33322		0.30305	0.33271
	0.32939	0.32002		0.31747	0.32044		0.31747	0.32044		0.30755	0.31078
5300K V2	0.32922	0.33133	6000K W3	0.32901	0.34509	6650K X3	0.30517	0.32239	9000K Y3	0.30400	0.28500
	0.32901	0.34509		0.32922	0.33133		0.30305	0.33271		0.28992	0.27032
	0.34578	0.35919		0.31747	0.32044		0.31479	0.34444		0.28297	0.28377
	0.34444	0.34423		0.31604	0.33322		0.31604	0.33322		0.29900	0.30100
5300K V3	0.32901	0.34509	6000K W4	0.32901	0.34509	6650K X4	0.30305	0.33271	9000K Y4	0.29200	0.32100
	0.32882	0.35692		0.31604	0.33322		0.30109	0.34224		0.27424	0.30067
	0.34690	0.37174		0.31479	0.34444		0.31362	0.35499		0.28297	0.28377
	0.34578	0.35919		0.32882	0.35692		0.31479	0.34444		0.29900	0.30100
5300K V4	0.32882	0.35692	6000K W5	0.31479	0.34444						
	0.32864	0.36895									
	0.34815	0.38563									
	0.34690	0.37174									

### Neutral White Color Ranks

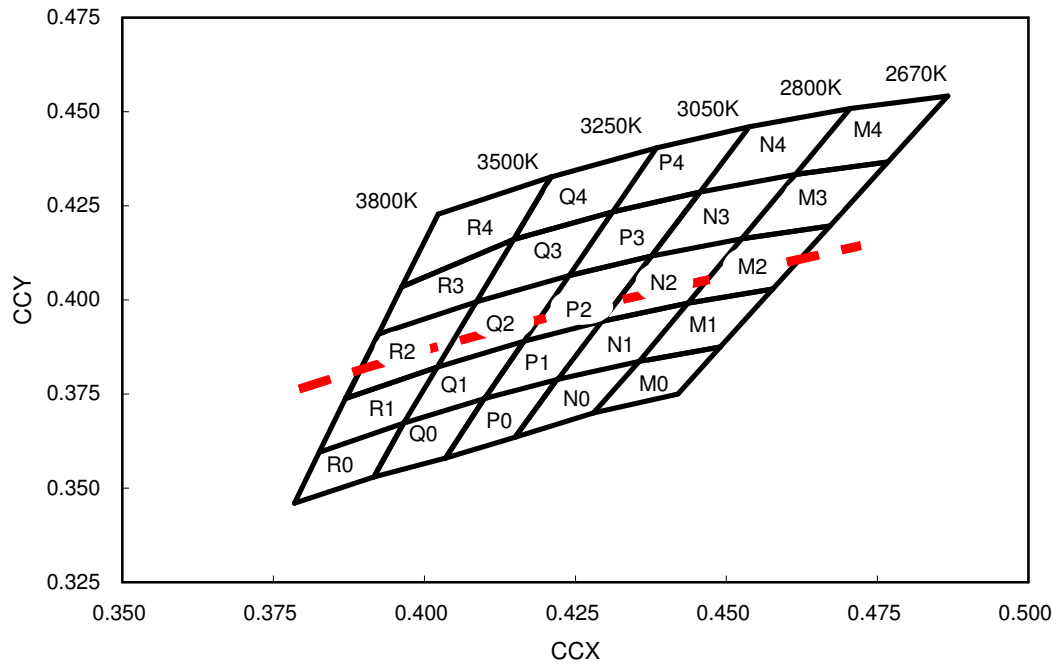


< Figure 2 Edixeon® series CIE chromaticity diagram for neutral white >

< Table 6 Edixeon® series color bin group for neutral white >

Group/ CCT(Typ)	X	Y	Group/ CCT(Typ)	X	Y	Group/ CCT(Typ)	X	Y
S0 3900K	0.382598	0.359515	T0 4300K	0.370582	0.351953	U0 4750K	0.357079	0.342581
	0.378500	0.346000		0.367000	0.337700		0.354800	0.329000
	0.367000	0.337700		0.354800	0.329000		0.342500	0.320800
	0.370582	0.351953		0.357079	0.342581		0.343352	0.332034
S1 3900K	0.374075	0.365822	T1 4300K	0.359401	0.355699	U1 4750K	0.344443	0.344232
	0.387071	0.373899		0.357079	0.342581		0.343352	0.332034
	0.382598	0.359515		0.370582	0.351953		0.357079	0.342581
	0.370582	0.351953		0.374075	0.365822		0.359401	0.355699
S2 3900K	0.378264	0.382458	T2 4300K	0.362219	0.371616	U2 4750K	0.362219	0.371616
	0.392368	0.390932		0.378264	0.382458		0.359401	0.355699
	0.387071	0.373899		0.374075	0.365822		0.344443	0.344232
	0.374075	0.365822		0.359401	0.355699		0.345781	0.359190
S3 3900K	0.378264	0.382458	T3 4300K	0.364212	0.382878	U3 4750K	0.364212	0.382878
	0.381106	0.393747		0.381106	0.393747		0.362219	0.371616
	0.396279	0.403508		0.378264	0.382458		0.345781	0.359190
	0.392368	0.390932		0.362219	0.371616		0.346904	0.371742
S4 3900K	0.385953	0.412995	T4 4300K	0.367294	0.400290	U4 4750K	0.364212	0.382878
	0.402270	0.422776		0.385953	0.412995		0.367294	0.400290
	0.396279	0.403508		0.381106	0.393747		0.348147	0.385629
	0.381106	0.393747		0.364212	0.382878		0.346904	0.371742

## Warm White Color Ranks



< Figure 3 Edixeon<sup>®</sup> series CIE chromaticity diagram for warm white >

< Table 7 Edixeon<sup>®</sup> series color bin group for warm white >

Group/ CCT(Typ)	X	Y	Group/ CCT(Typ)	X	Y	Group/ CCT(Typ)	X	Y
M0	0.43700	0.38400	N0	0.43559	0.38371	P0	0.42200	0.37900
	0.44899	0.38752		0.42800	0.37000		0.41500	0.36350
2700K	0.44200	0.37500	2900K	0.41500	0.36350	3150K	0.40350	0.35800
	0.42800	0.37000		0.42200	0.37900		0.41000	0.37400
M1	0.44360	0.39911	N1	0.42937	0.39428	P1	0.42937	0.39428
	0.45766	0.40287		0.44360	0.39911		0.42212	0.37895
2700K	0.44899	0.38752	2900K	0.43559	0.38371	3150K	0.41000	0.37381
	0.43559	0.38371		0.42212	0.37895		0.41649	0.38900
M2	0.45251	0.41624	N2	0.43758	0.41163	P2	0.42396	0.40647
	0.46713	0.41963		0.42937	0.39428		0.43758	0.41163
2700K	0.45766	0.40287	2900K	0.44360	0.39911	3150K	0.42937	0.39428
	0.44360	0.39911		0.45251	0.41624		0.41649	0.38900
M3	0.46140	0.43333	N3	0.46140	0.43333	P3	0.43119	0.42339
	0.47673	0.43663		0.45251	0.41624		0.44564	0.42868
2700K	0.46713	0.41963	2900K	0.43758	0.41163	3150K	0.43758	0.41163
	0.45251	0.41624		0.44564	0.42868		0.42396	0.40647
M4	0.47051	0.45083	N4	0.45382	0.44598	P4	0.43846	0.44040
	0.48665	0.45419		0.47051	0.45083		0.45382	0.44598
2700K	0.47673	0.43663	2900K	0.46140	0.43333	3150K	0.44564	0.42868
	0.46140	0.43333		0.44564	0.42868		0.43119	0.42339

<Table 8 Edixeon® series color bin group for warm white>

Group/ CCT(Typ)	X	Y	Group/ CCT(Typ)	X	Y
Q0	0.41000	0.37400	R0	0.39656	0.36728
	0.40350	0.35800		0.39165	0.35300
3300K	0.39165	0.35300	3650K	0.37850	0.34600
	0.39656	0.36728		0.38260	0.35952

Q1	0.41649	0.38900	R1	0.38707	0.37390
	0.41000	0.37381		0.40211	0.38216
3300K	0.41000	0.37381	3650K	0.39656	0.36728
	0.39656	0.36728		0.38260	0.35952

Q2	0.40859	0.39953	R2	0.39237	0.39093
	0.42396	0.40647		0.38707	0.37390
3300K	0.41649	0.38900	3650K	0.40211	0.38216
	0.40211	0.38216		0.40859	0.39953

Q3	0.40859	0.39953	R3	0.40859	0.39953
	0.41478	0.41610		0.39237	0.39093
3300K	0.43119	0.42339	3650K	0.39628	0.40351
	0.42396	0.40647		0.41478	0.41610

Q4	0.43846	0.44040	R4	0.40227	0.42278
	0.43119	0.42339		0.42094	0.43262
3300K	0.41478	0.41610	3650K	0.41478	0.41610
	0.42094	0.43262		0.39628	0.40351

## Wavelength Ranks

< Table 9 Edixeon<sup>®</sup> series wavelength group >

<b>Group</b>	<b><math>\lambda_d</math> (nm), <math>\lambda_p</math> (nm)</b>
<b>* Ultraviolet</b>	<b>395 — 410</b>
W	395 — 400
X	400 — 405
Y	405 — 410
<b>* Royal Blue</b>	<b>440 — 460</b>
V	440 — 445
W	445 — 450
X	450 — 455
Y	455 — 460
<b>* Dental Blue</b>	<b>450 — 470</b>
W	450 — 455
X	455 — 460
Y	460 — 465
Z	465 — 470
<b>Blue</b>	<b>455 — 475</b>
V	455 — 460
W	460 — 465
X	465 — 470
Y	470 — 475
<b>Cyan</b>	<b>490 — 510</b>
W	490 — 495
X	495 — 500
Y	500 — 505
Z	505 — 510
<b>True Green</b>	<b>515 — 535</b>
V	515 — 520
W	520 — 525
X	525 — 530
Y	530 — 535

<b>Group</b>	<b><math>\lambda_d</math> (nm), <math>\lambda_p</math> (nm)</b>
<b>Amber</b>	<b>585 — 595</b>
X	585 — 588
Y	588 — 591
Z	591 — 595
<b>Red Orange</b>	<b>610 — 620</b>
X	610 — 620
<b>Red</b>	<b>620 — 630</b>
X	620 — 630
<b>* Deep Red (660)</b>	<b>650 — 670</b>
U	650 — 655
V	655 — 660
W	660 — 665
X	665 — 670
<b>* Cherry Red (740)</b>	<b>730 — 750</b>
U	730 — 735
V	735 — 740
W	740 — 745
X	745 — 750
<b>* IR 850</b>	<b>840 — 860</b>
U	840 — 845
V	845 — 850
W	850 — 855
X	855 — 860
<b>* IR 940</b>	<b>930 — 950</b>
U	930 — 935
V	935 — 940
W	940 — 945
X	945 — 950

### Forward Voltage Ranks

<Table 10 Edixeon<sup>®</sup> series forward voltage group for cool white 、 neutral white 、 warm white 、 green 、 cyan 、 blue 、 dental blue 、 royal blue 、 ultraviolet>

$V_F(V)$			
<b>V01</b>	<i>2.8 — 3.1</i>	<b>V10</b>	<i>6.0 — 6.5</i>
<b>V02</b>	<i>3.1 — 3.4</i>	<b>V11</b>	<i>6.5 — 7.0</i>
<b>V03</b>	<i>3.4 — 3.7</i>	<b>V12</b>	<i>7.0 — 7.5</i>
<b>V04</b>	<i>3.7 — 4.0</i>	<b>V13</b>	<i>7.5 — 8.0</i>
<b>V05</b>	<i>4.0 — 4.3</i>	<b>V14</b>	<i>8.0 — 8.5</i>
<b>V06</b>	<i>4.3 — 4.6</i>	<b>V15</b>	<i>8.5 — 9.0</i>
<b>V07</b>	<i>4.6 — 4.9</i>	<b>V16</b>	<i>9.0 — 9.5</i>
<b>V08</b>	<i>4.9 — 5.2</i>	<b>V17</b>	<i>9.5 — 10.0</i>

### Forward Voltage Ranks for Red and Amber

<Table 11 Edixeon<sup>®</sup> series forward voltage group for red 、 red orange 、 amber>

$V_F(V)$			
<b>V01</b>	<i>2.0 — 2.25</i>	<b>V10</b>	<i>3.5 — 4.0</i>
<b>V02</b>	<i>2.25 — 2.5</i>	<b>V11</b>	<i>4.0 — 4.5</i>
<b>V03</b>	<i>2.5 — 2.75</i>	<b>V12</b>	<i>4.5 — 5.0</i>
<b>V04</b>	<i>2.75 — 3.0</i>	<b>V13</b>	<i>5.0 — 5.5</i>
<b>V05</b>	<i>3.0 — 3.25</i>	<b>V14</b>	<i>5.5 — 6.0</i>

## Wavelength & CIE Color Coordinates

<Table 12 Edixeon<sup>®</sup> series wavelength & CIE color coordinates>

	<b>Royal Blue</b>	<b>Wavelength/nm @ 350 mA</b>			<b>CIE color coordinates</b>		
		<b>Min. <math>\lambda_p</math></b>	<b>Max. <math>\lambda_p</math></b>	<b>Avg. <math>\lambda_p</math></b>	<b>saturation</b>	<b>average x</b>	<b>average y</b>
	<i>Royal Blue V</i>	440	445	442.5	99.6%	0.1645	0.0114
	<i>Royal Blue W</i>	445	450	447.5	99.6%	0.1597	0.0169
	<i>Royal Blue X</i>	450	455	452.5	99.2%	0.1554	0.0226
	<i>Royal Blue Y</i>	455	460	457.5	98.7%	0.1500	0.0299
	<b>Blue</b>	<b>Wavelength/nm @ 350 mA</b>			<b>CIE color coordinates</b>		
		<b>Min. <math>\lambda_d</math></b>	<b>Max. <math>\lambda_d</math></b>	<b>Avg. <math>\lambda_d</math></b>	<b>saturation</b>	<b>average x</b>	<b>average y</b>
	<i>Blue W</i>	460	465	462.5	98.2%	0.1434	0.0396
	<i>Blue X</i>	465	470	467.5	96.8%	0.1367	0.0568
	<i>Blue Y</i>	470	475	472.5	95.8%	0.1263	0.0817
	<b>True Green</b>	<b>Wavelength/nm @ 350 mA</b>			<b>CIE color coordinates</b>		
		<b>Min. <math>\lambda_d</math></b>	<b>Max. <math>\lambda_d</math></b>	<b>Avg. <math>\lambda_d</math></b>	<b>saturation</b>	<b>average x</b>	<b>average y</b>
	<i>Green V</i>	515	520	517.5	73.0%	0.1307	0.6939
	<i>Green W</i>	520	525	522.5	75.0%	0.1538	0.7077
	<i>Green X</i>	525	530	527.5	80.0%	0.1744	0.7201
	<i>Green Y</i>	530	535	532.5	83.5%	0.2003	0.7181
	<b>Amber</b>	<b>Wavelength/nm @ 350 mA</b>			<b>CIE color coordinates</b>		
		<b>Min. <math>\lambda_d</math></b>	<b>Max. <math>\lambda_d</math></b>	<b>Avg. <math>\lambda_d</math></b>	<b>saturation</b>	<b>average x</b>	<b>average y</b>
	<i>Amber X</i>	585	588	586.5	99.3%	0.5480	0.4490
	<i>Amber Y</i>	588	591	589.5	99.3%	0.5631	0.4339
	<i>Amber Z</i>	591	595	593.0	99.6%	0.5785	0.4195
	<b>Red &amp; Red Orange</b>	<b>Wavelength/nm @ 350 mA</b>			<b>CIE color coordinates</b>		
		<b>Min. <math>\lambda_d</math></b>	<b>Max. <math>\lambda_d</math></b>	<b>Avg. <math>\lambda_d</math></b>	<b>saturation</b>	<b>average x</b>	<b>average y</b>
	<i>Red Orange</i>	610	620	615	99.7%	0.6839	0.3149
	<i>Red</i>	620	630	625	99.8%	0.7011	0.2982