

Test Report

Report number: KYR240603001-TRA0

Product name: LED lamp

Size of product: P10037(BR30-19-9CCT-DIM)

Client: Technical Department

Brand name: RAB

Statement

1. To The inspection agencies ensure the impartiality, independence and integrity of the test data responsible for the commission to provide the Confidentiality and protection of ownership test samples
2. The report ownerless inspection, review, approval and other personnel signature, altered or copied, not stamped seal of the agency test is invalid.
3. The commissioning party disagrees with the report, it is timely to our bodie.
4. The agency received the commission to send samples tested, the test report issued by the inspection data and results of sample submission only responsible forthe authenticity and representativeness of the sample by the commission responsible.
5. Pages of this report are an integral part of the test report, the user singled out some of the pages can lead to misunderstandings or used for other purposes and consequences, the agency pays the corresponding legal responsibility.
6. Test report commissioned by the release and disposal of samples: Principal shall after receiving notification of the completion operations after 30 working days, according to the contract completion inspection reports and sample collection. Overdue Principal will abandon this body, this body on behalf of disposal in accordance with the relevant provisions.
7. The report of the test findings do not prove untested items (functional or performance), compliance with the requirements.

Test Report

Sample Name	LED lamp	Test categories	LM-79
Specifications/level	P10037(BR30-19-9C CT-DIM)	Trademark	RAB
Entrust unit	Technical Department	Entrust unit address	/
Entrust the date	2024.06.03	Date received	2024.06.03
The sample quantity	1	The sample description	Intact appearance
Detection of address	/	Testing environment	25.2°C, 58.9%
Starting test time	2024.06.03	Detection of completion time	2024.06.15
Detection based on	IESNA LM-79-2019 Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products		
	Special requirements:		
Test items	/		
Test Conclusion	The test items are qualified. Please refer to Technical Specifications for results. Special seal for test report. Date of issue 2024.06.15		
Note and subcontract information	/		
Opinions and explain	/		
The principal(unit)	Address	/	Zip code /
Communication data	Mailbox	/	Telephone /

Photos of the sample

Type: P10037(BR30-19-9CCT-DIM)



Test Equipment List

Serial number	device name	Number	specifications	Calibration Date	Calibration Due date
1	Spectral analysis system	2030070003-008	HAAS-2000	2024/1/4	2025/1/3
2	Precision digital display DC power supply	2020180039-002	WY305	2023/12/25	2024/12/24
3	Intelligent AC test power supply	2020180074-005	DPS1010	2023/12/26	2024/12/25
4	Temperature and humidity meter	2080190001-002	C0S03	2023/12/25	2024/12/24
5	Integrate Sphere system	2030100001-017	(1.5M)	2024/1/4	2025/1/3
6	Electrical parameter measuring instrument	2020090011-018	PF310A	2023/12/26	2024/12/25
7	Intelligent AC test power supply	2020180103-998	DPS1005	2023/12/25	2024/12/24
8	Precision digital display DC power supply	2020180128-001	WY3010	2023/12/25	2024/12/24
9	Electrical parameter measuring instrument	2020090015-999	PF9811	2023/12/25	2024/12/24
10	Calibration lamp	2030030004-029	D204	2024/4/15	2025/4/14
11	Horizontal distribution photometer	2030060006-001	GO-2000	2024/1/4	2025/1/3

Test Summary

Sample Tested: A10121(A19-6-9CCT-DIM)

Luminous Efficacy (Lumens /Watt)	Total Luminous Flux (Lumens)	Power (Watts)	Power Factor
115	2200	19	0.9
CCT (K)	CRI	Stabilization Time (Min)	
2700/3000/3500/4000/5000	90	85	

Table 1: Executive Data Summary

Note: The above results are recorded/ derived from measurements made using an Integrating Sphere.

Test specifications:

Date of Receipt	: June 15, 2024
Date of Test	: June 15, 2024
Test item	: Total Luminous Flux, Luminous Distribution Intensity, Luminous Efficacy, Correlated Color Temperature, Color Rendering Index, Chromaticity Coordinate, Electrical parameters
Reference Standard	: IESNA LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products ANSI/IES TM-30-18 IES Method for Evaluating Light Source Color Rendition
Equipment Under Test (EUT)	
Name	: LED Lamp
Model	: P10037(BR30-19-9CCT-DIM)
Electrical Ratings	: 120V, 60Hz, 19W
ProductDescription	: E26 base, 2700K/3000K/3500K/4000K/5000K

TEST RESULTS

Test ambient temperature was 25.2°C.

Base orientation was base up. Test was conducted without a dimmer in the circuit.

The stabilization time of the sample was 85 minutes, and the total operating time including stabilization was 120 minutes.

Sphere-Spectroradiometer Method(2700K)

Parameter	Result
Test Voltage (V)	120.1
Voltage frequency (Hz)	59.98
Test Current (A)	0.1652
Power Factor	0.9136
Test Power (W)	18.12
Luminous Efficacy (lm/W)	128.93
Total Luminous Flux (lm)	2336.8
Color Rendering Index (CRI)	92.2
R9	64
Correlated Color Temperature (CCT) (K)	2765
Chromaticity (Chroma x, Chroma y)	(0.4552,0.4104)
Chromaticity (Chroma u, Chroma v)	(0.2596,0.5266)
Duv	0.0003460

Special Color Rendering Indices	
R1	95
R2	94
R3	90
R4	94
R5	93
R6	93
R7	93
R8	86
R9	64
R10	82
R11	94
R12	77
R13	94
R14	92
R15	91

(3000K)

Parameter	Result
Test Voltage (V)	120.1
Voltage frequency (Hz)	59.98
Test Current (A)	0.1641
Power Factor	0.9128
Test Power (W)	17.99
Luminous Efficacy (lm/W)	132.76
Total Luminous Flux (lm)	2388.3
Color Rendering Index (CRI)	94.8
R9	74
Correlated Color Temperature (CCT) (K)	3019
Chromaticity (Chroma x, Chroma y)	(0.4332,0.3987)
Chromaticity (Chroma u, Chroma v)	(0.2505,0.5187)
Duv	-0.0016600

Special Color Rendering Indices	
R1	98
R2	96
R3	92
R4	96
R5	96
R6	95
R7	95
R8	90
R9	74
R10	88
R11	95
R12	80
R13	97
R14	94
R15	95

(3500K)

Parameter	Result
Test Voltage (V)	120.1
Voltage frequency (Hz)	59.98
Test Current (A)	0.1618
Power Factor	0.9107
Test Power (W)	17.69
Luminous Efficacy (lm/W)	137.57
Total Luminous Flux (lm)	2434.1
Color Rendering Index (CRI)	96.8
R9	87
Correlated Color Temperature (CCT) (K)	3513
Chromaticity (Chroma x, Chroma y)	(0.4016,0.3824)
Chromaticity (Chroma u, Chroma v)	(0.2368,0.5072)
Duv	-0.0028800

Special Color Rendering Indices	
R1	92
R2	99
R3	98
R4	93
R5	98
R6	98
R7	95
R8	97
R9	96
R10	87
R11	93
R12	96
R13	78
R14	100
R15	95

(4000K)

Parameter	Result
Test Voltage (V)	120.1
Voltage frequency (Hz)	59.98
Test Current (A)	0.1628
Power Factor	0.9116
Test Power (W)	17.83
Luminous Efficacy (lm/W)	135.07
Total Luminous Flux (lm)	2407.8
Color Rendering Index (CRI)	97.2
R9	93
Correlated Color Temperature (CCT) (K)	4060
Chromaticity (Chroma x, Chroma y)	(0.3764, 0.3694)
Chromaticity (Chroma u, Chroma v)	(0.2254, 0.4977)
Duv	-0.00228

Special Color Rendering Indices	
R1	98
R2	99
R3	94
R4	99
R5	98
R6	95
R7	98
R8	98
R9	93
R10	94
R11	97
R12	73
R13	99
R14	95
R15	97

(5000K)

Parameter	Result
Test Voltage (V)	120.1
Voltage frequency (Hz)	59.97
Test Current (A)	0.1653
Power Factor	0.9138
Test Power (W)	18.14
Luminous Efficacy (lm/W)	126.8
Total Luminous Flux (lm)	2300.3
Color Rendering Index (CRI)	96.7
R9	90
Correlated Color Temperature (CCT) (K)	5096
Chromaticity (Chroma x, Chroma y)	(0.3427, 0.3522)
Chromaticity (Chroma u, Chroma v)	(0.2096, 0.4846)
Duv	0.00126

Table 2: Test data per Sphere-Spectroradiometer Method

Note: According to CIE 1976 (u',v') diagram, $u' = u = 4x/(-2x+12y+3)$, $v' = 3v/2 = 9y/(-2x+12y+3)$.

Special Color Rendering Indices	
R1	98
R2	98
R3	94
R4	98
R5	97
R6	95
R7	97
R8	96
R9	90
R10	92
R11	97
R12	73
R13	99
R14	96
R15	97

Goniophotometer Method

The photometric distance is 9.91m.

Luminous data was taken at 1°vertical intervals and 22.5°horizontal intervals. **(2700K)**

Parameter	Result
Test Voltage (V)	120.09
Voltage frequency (Hz)	59.98
Test Current (A)	0.1553
Power Factor	0.9805
Test Power (W)	18.281
Luminous Efficacy (lm/W)	130.71
Total Luminous Flux (lm)	2389.48
Beam Angle (°)	119.1
Max Beam Candle Power (cd)	663.8
Spacing Criteria	119.1 (0° -180°) / 119.1 (90°
Zonal Lumens in the 0°-60°Zone	64.4%
Zonal Lumens in the 60°-90°Zone	25.1%
Zonal Lumens in the 90°-180°Zone	10.3%

(3000K)

Parameter	Result
Test Voltage (V)	120.09
Voltage frequency (Hz)	59.98
Test Current (A)	0.1543
Power Factor	0.9803
Test Power (W)	18.16
Luminous Efficacy (lm/W)	134.63

Total Luminous Flux (lm)	2444.81
Beam Angle (°)	119
Max Beam Candle Power (cd)	679.1
Spacing Criteria	118.9(0° -180°)/ 119.1(90°
Zonal Lumens in the 0°-60°Zone	64.6%
Zonal Lumens in the 60°-90°Zone	25.1%
Zonal Lumens in the 90°-180°Zone	10.3%

(3500K)

Parameter	Result
Test Voltage (V)	120.09
Voltage frequency (Hz)	59.98
Test Current (A)	0.1521
Power Factor	0.9797
Test Power (W)	17.899
Luminous Efficacy (lm/W)	139.18
Total Luminous Flux (lm)	2491.14
Beam Angle (°)	119.1
Max Beam Candle Power (cd)	694.0
Spacing Criteria	119.3(0° -180°)/ 118.9 (90°
Zonal Lumens in the 0°-60°Zone	64.5%
Zonal Lumens in the 60°-90°Zone	25.2%
Zonal Lumens in the 90°-180°Zone	10.3%

(4000K)

Parameter	Result
Test Voltage (V)	120.09
Voltage frequency (Hz)	59.98
Test Current (A)	0.1531
Power Factor	0.9800
Test Power (W)	18.017
Luminous Efficacy (lm/W)	137.04
Total Luminous Flux (lm)	2469.09
Beam Angle (°)	119.1
Max Beam Candle Power (cd)	686
Spacing Criteria	119.2(0° -180°)/ 119.0 (90° -270°)
Zonal Lumens in the 0°-60°Zone	64.5%
Zonal Lumens in the 60°-90°Zone	25.2%
Zonal Lumens in the 90°-180°Zone	10.3%

(5000K)

Parameter	Result
Test Voltage (V)	120.09
Voltage frequency (Hz)	59.98
Test Current (A)	0.0522
Power Factor	0.1555

Test Power (W)	18.310
Luminous Efficacy (lm/W)	129.37
Total Luminous Flux (lm)	2368.76
Beam Angle (°)	119.3
Max Beam Candle Power (cd)	656.9
Spacing Criteria	119.3(0° -180°)/ 119.2 (90° -270°)
Zonal Lumens in the 0°-60°Zone	65.5%
Zonal Lumens in the 60°-90°Zone	25.5%
Zonal Lumens in the 90°-180°Zone	10.3%

Table 3: Test data per Goniophotometer Method

Zonal Lumen Tabulation- Goniophotometer Method(2700K)

$\gamma(^{\circ})$	Lumens	% Total
0-30	518.3	21.7
0-40	853.6	35.7
0-60	1542.0	64.6
0-90	2144	89.7
0-120	2314	96.8
0-180	2389	100.0
60-90	602	25.1
90-120	170	7.1
90-130	200	8.4
90-150	233	9.8
90-180	245	10.3

(3000K)

$\gamma(^{\circ})$	Lumens	% Total
0-30	530.4	21.7
0-40	873.3	35.7
0-60	1578	64.6
0-90	2193	89.7
0-120	2368	96.8
0-180	2445	100.0
60-90	615	25.1
90-120	175	7.1
90-130	205	8.1
90-150	239	9.8
90-180	252	10.3

(3500K)

(4000K)

$\gamma(^{\circ})$	Lumens	% Total
0-30	540.0	21.7
0-40	889.3	35.7
0-60	1608	64.5
0-90	2235	89.7
0-120	2412	96.8
0-180	2491	100
60-90	627	25.2
90-120	177	7.1
90-130	208	8.4
90-150	243	9.8
90-180	256	10.3

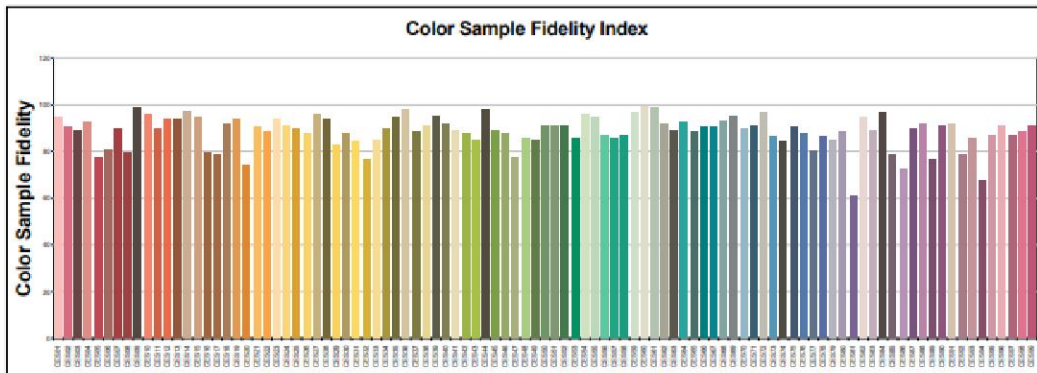
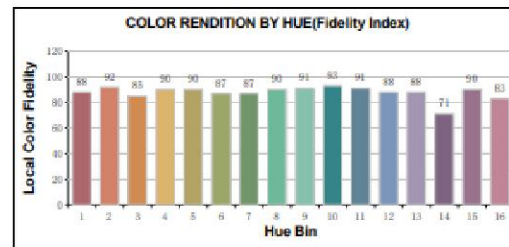
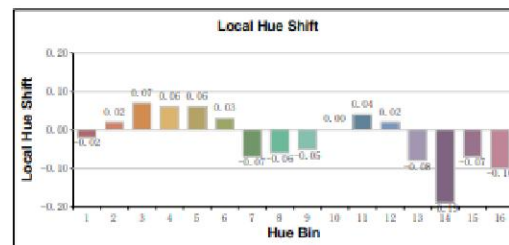
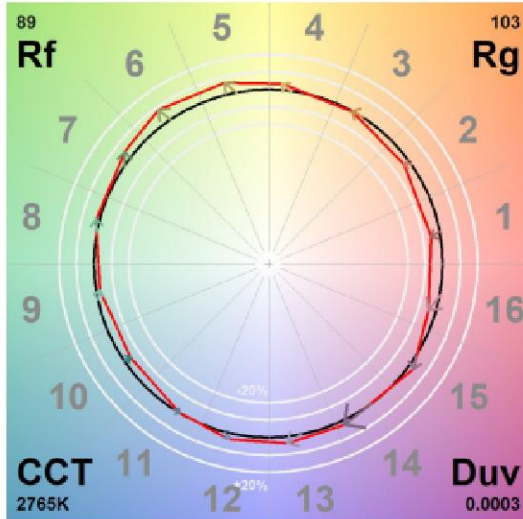
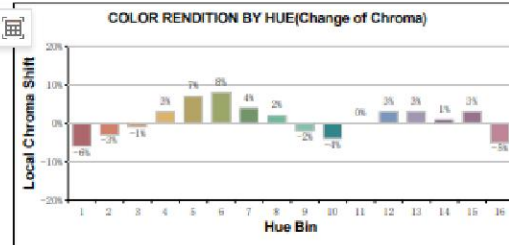
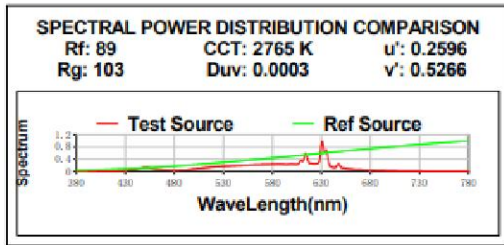
(5000K)

$\gamma(^{\circ})$	Lumens	% Total
0-30	535.1	21.7
0-40	881.4	35.7
0-60	1593	64.5
0-90	2215	89.7
0-120	2391	96.8
0-180	2469	100
60-90	622	25.2
90-120	176	7.1
90-130	207	8.4
90-150	241	9.8
90-180	254	10.3

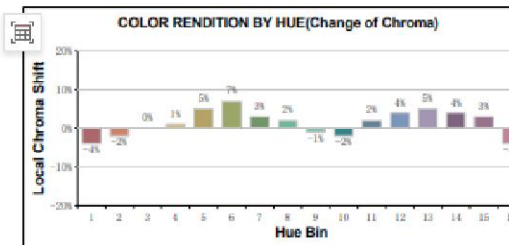
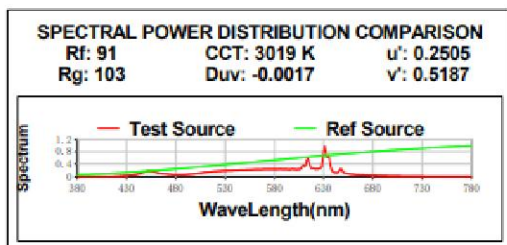
$\gamma(^{\circ})$	Lumens	% Total
0-30	513.2	21.7
0-40	845.4	35.7
0-60	1529	64.5
0-90	2125	89.7
0-120	2294	96.9
0-180	2369	100
60-90	596	25.2
90-120	169	7.2
90-130	199	8.4
90-150	231	9.8
90-180	244	10.3

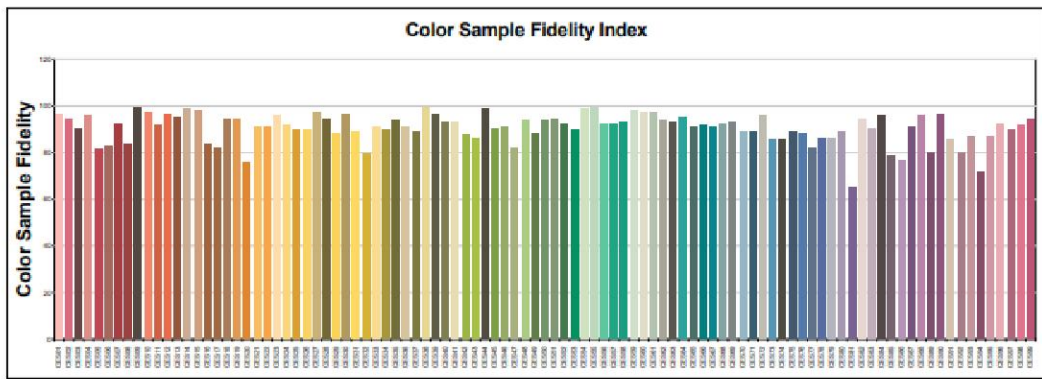
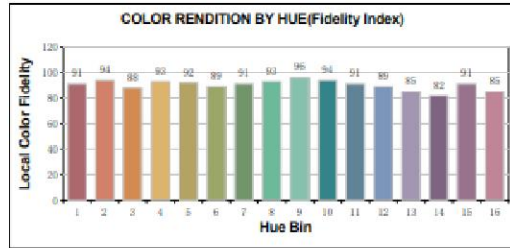
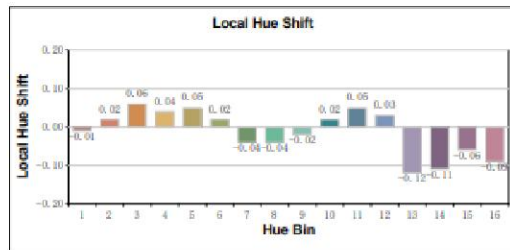
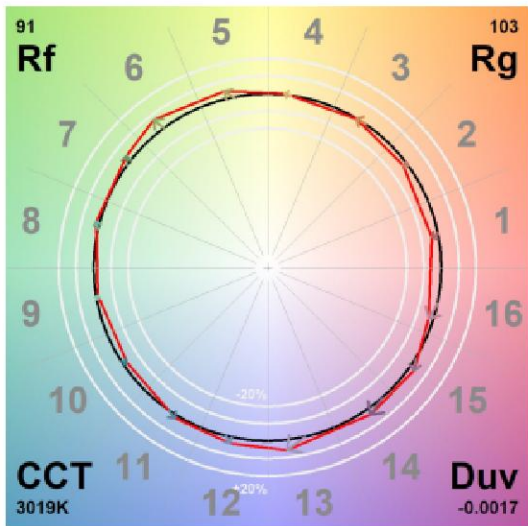
Table 4: Zonal Lumen Data

Color Rendition Report-Sphere Spectroradiometer Method(2700K)

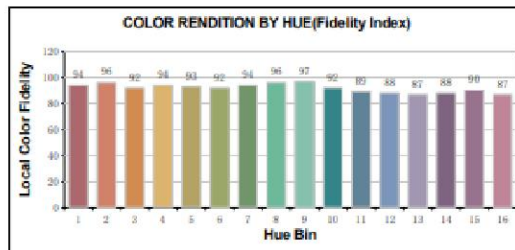
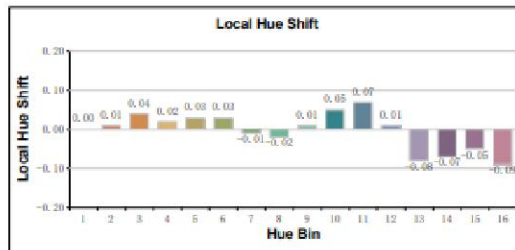
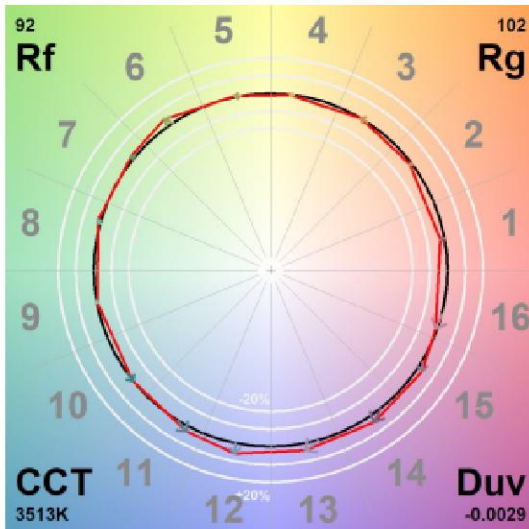
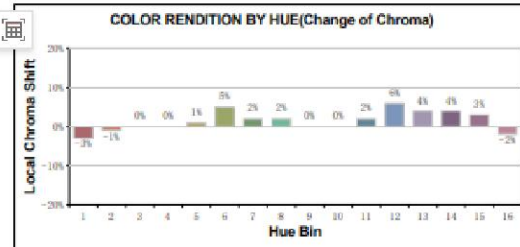
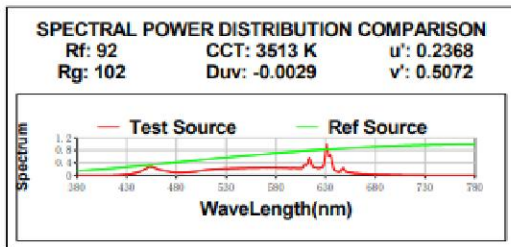


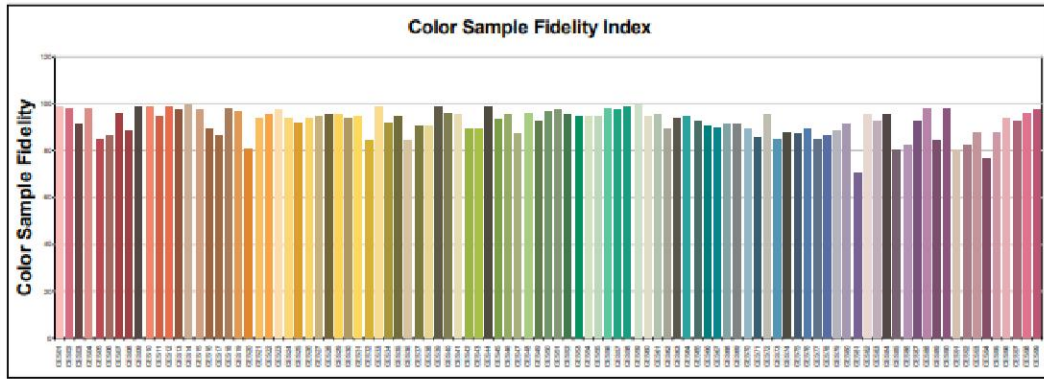
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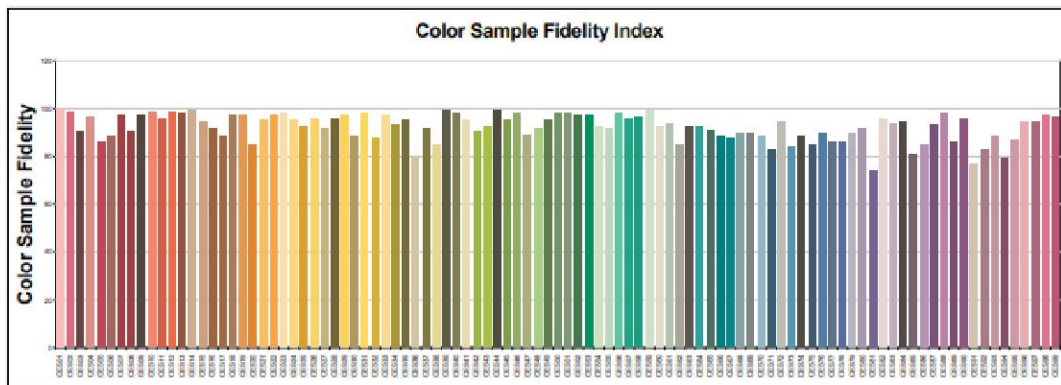
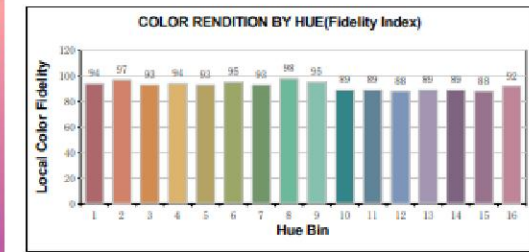
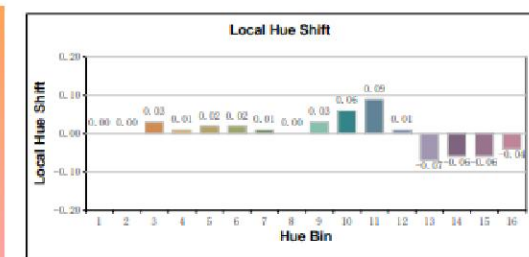
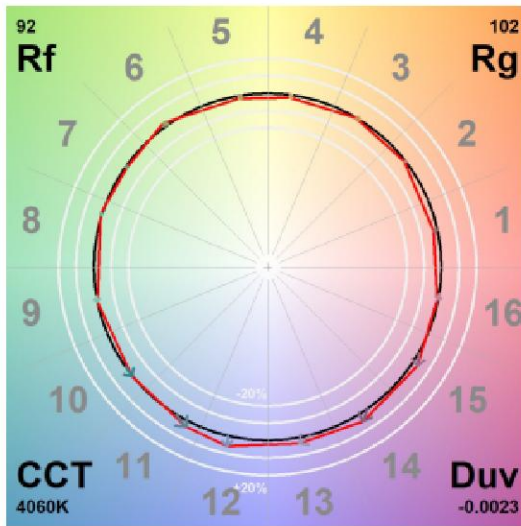
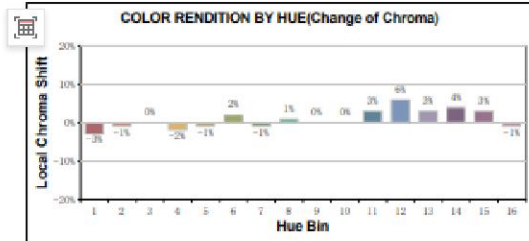
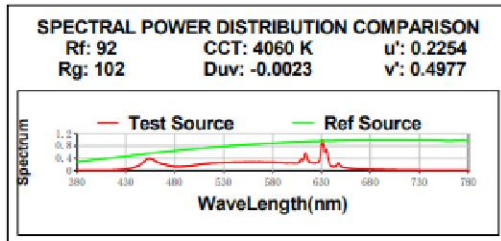


(3500K)





(4000K)



(5000K)

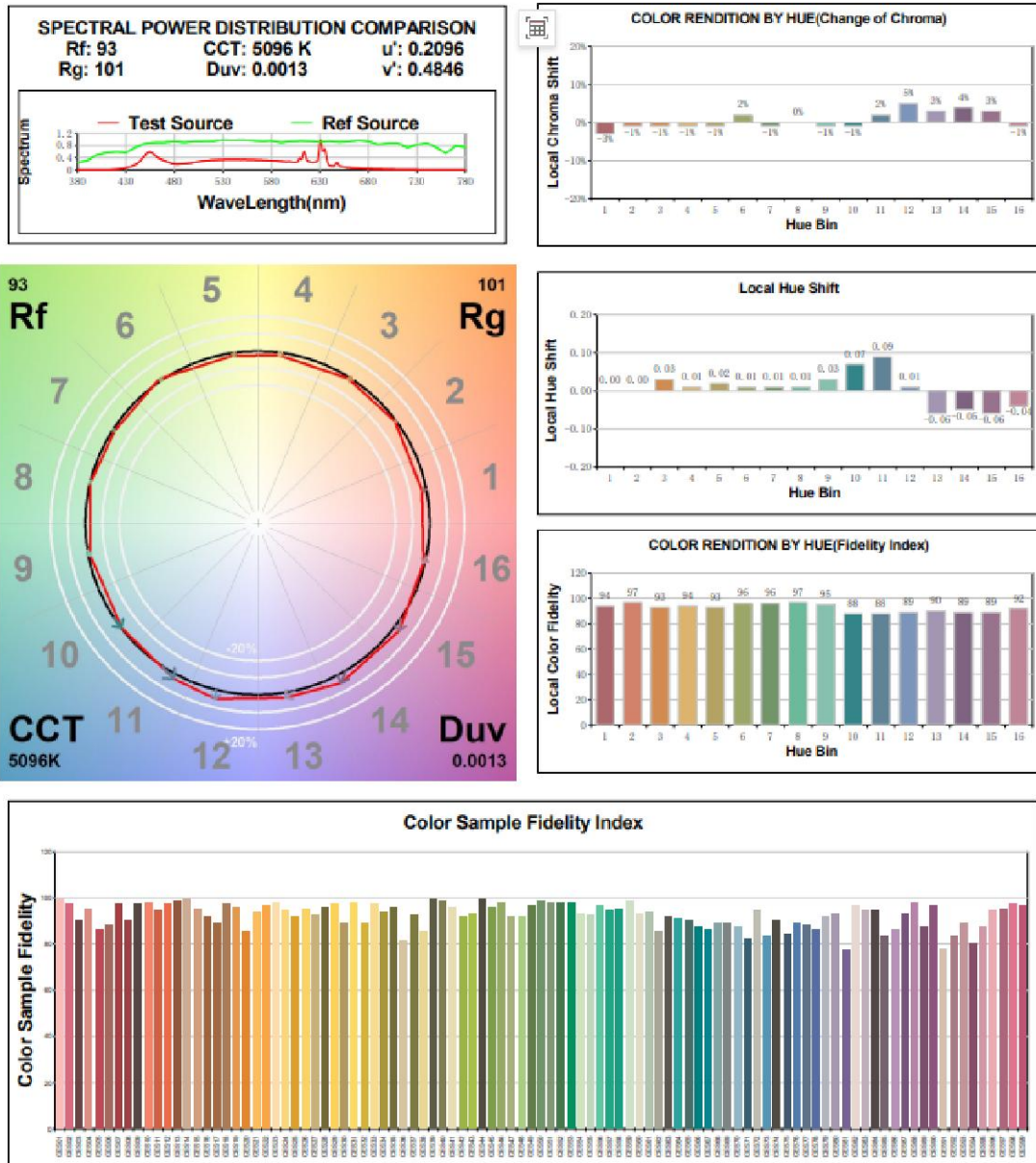
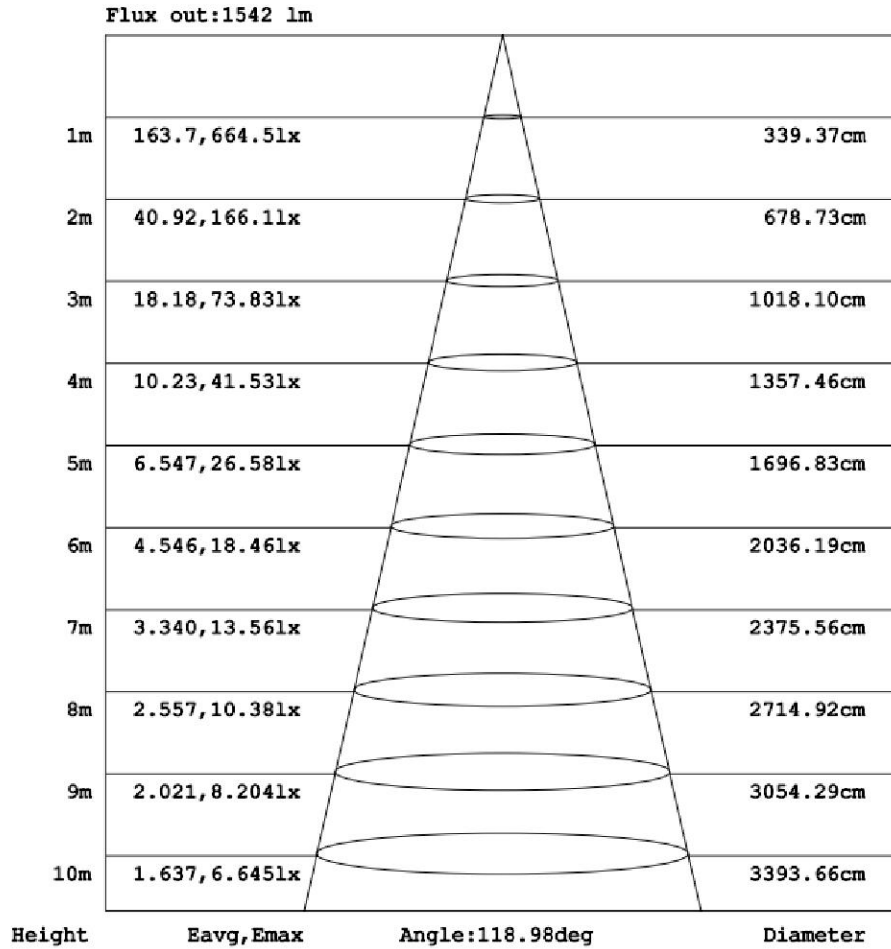
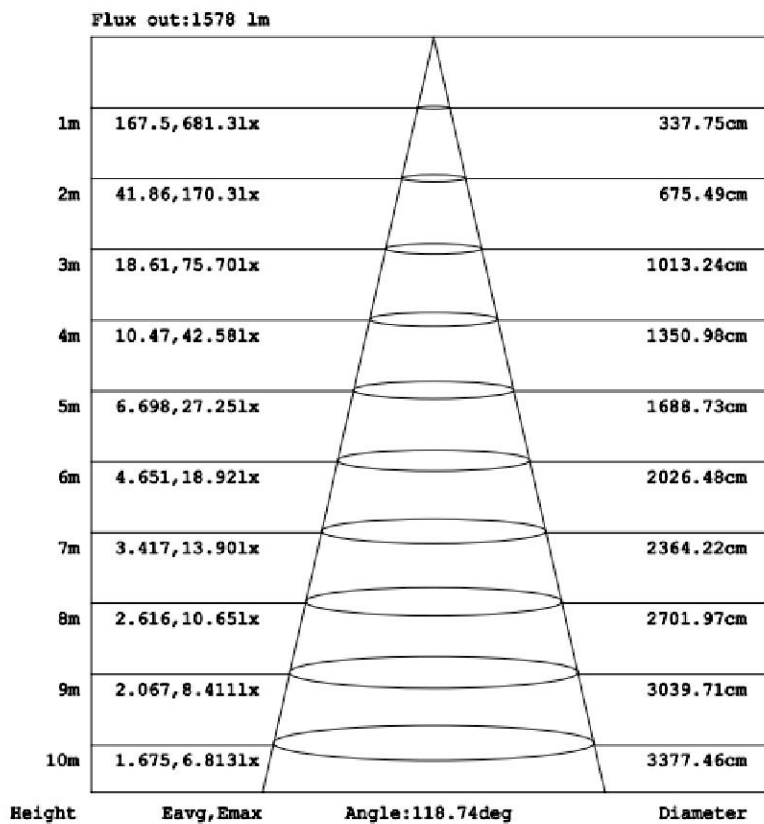


Table 2: TM30

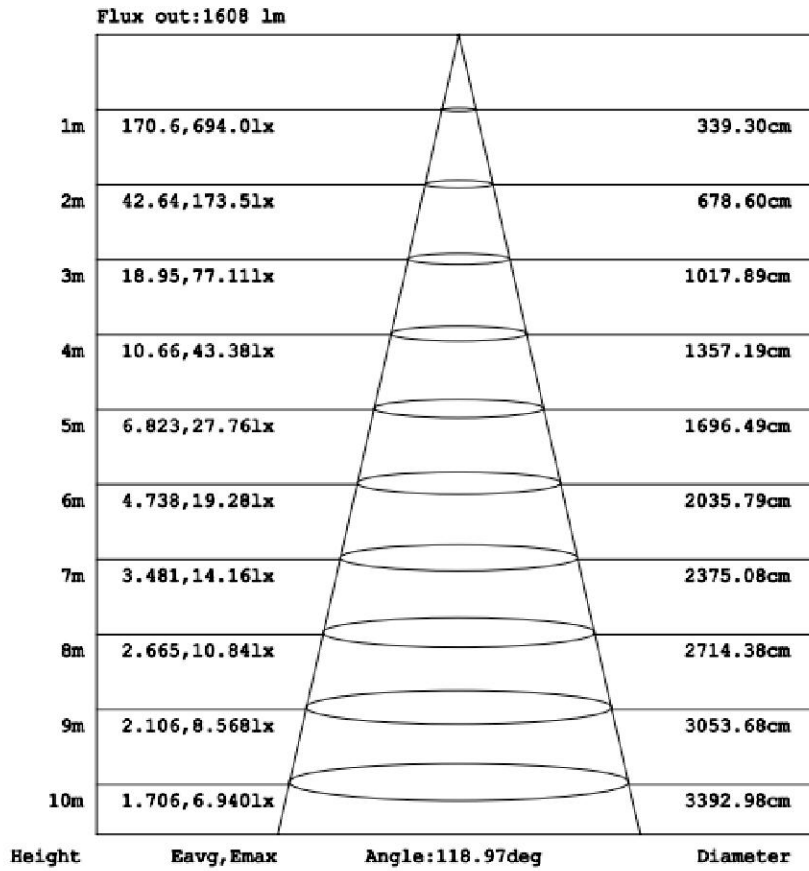
Illuminance Plots- Goniophotometer Method(2700K)



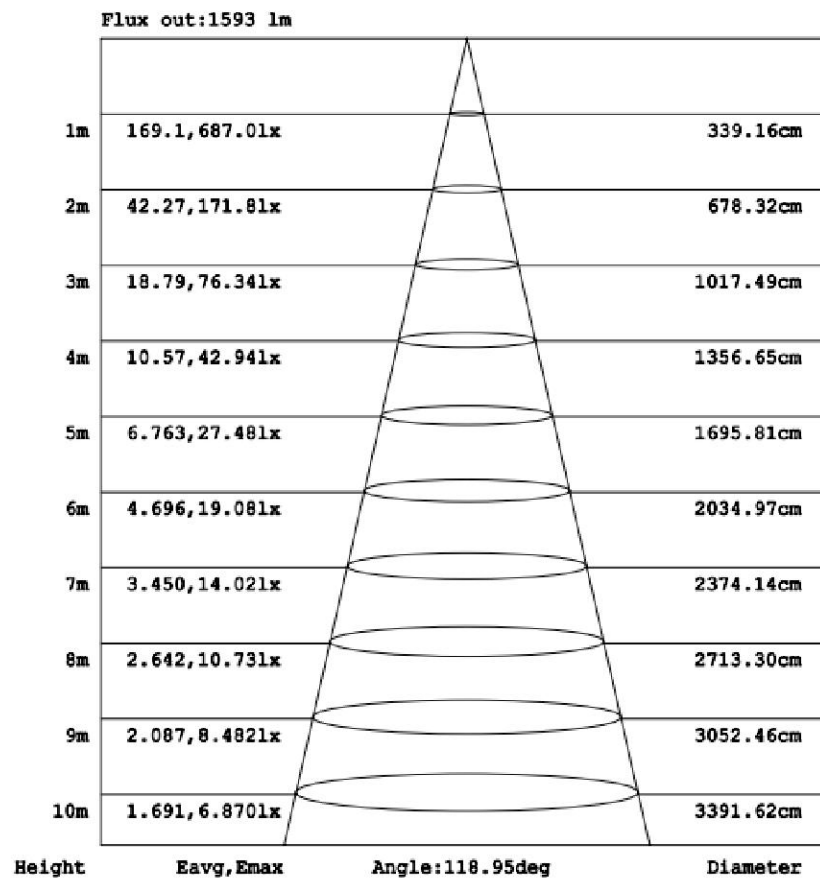
(3000K)



(3500K)



(4000K)



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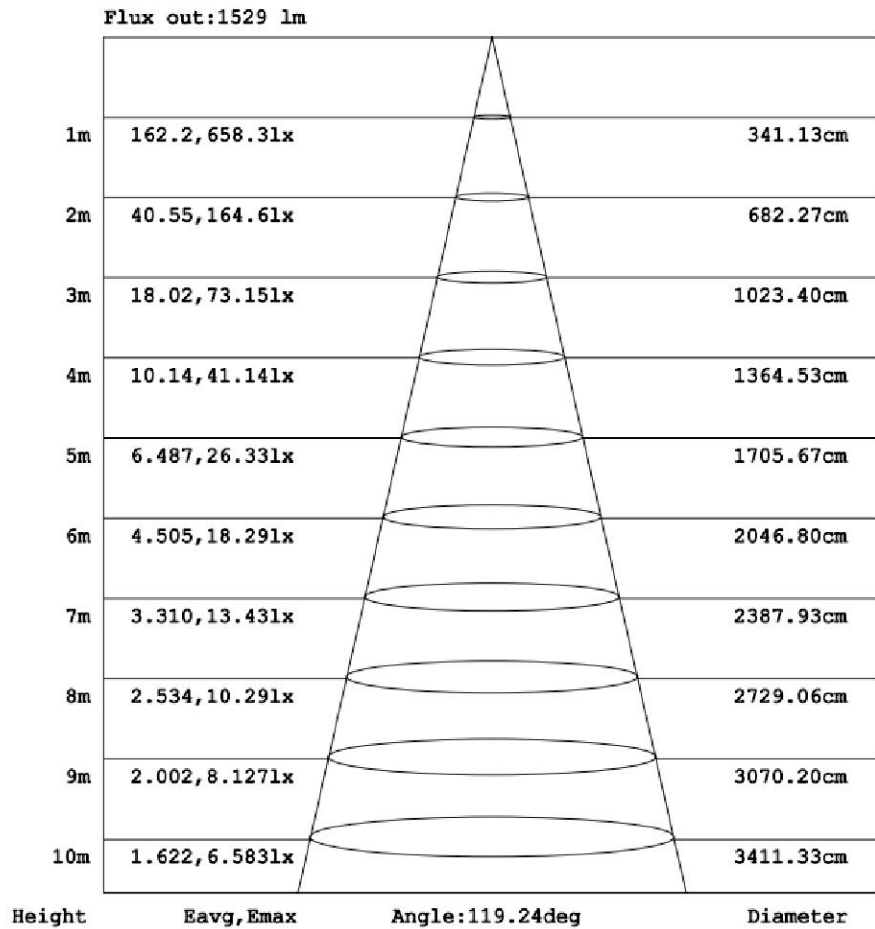
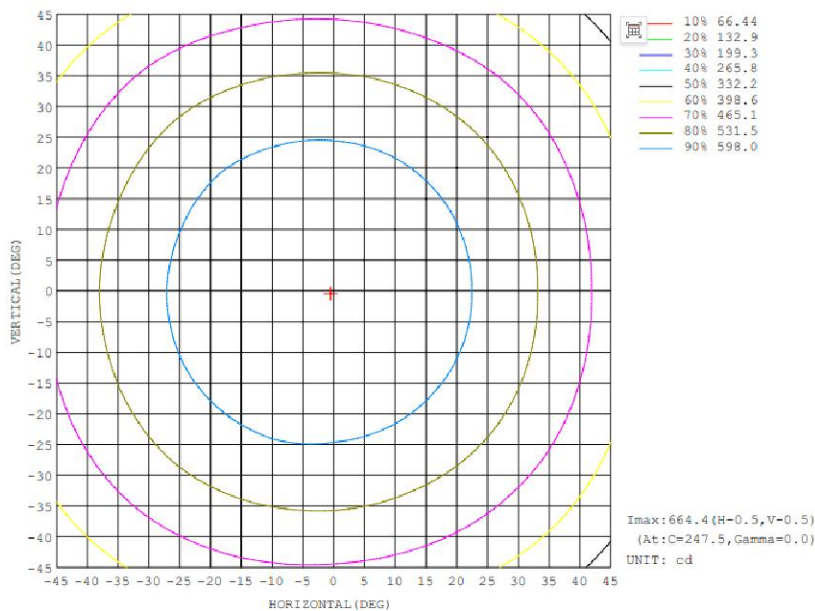
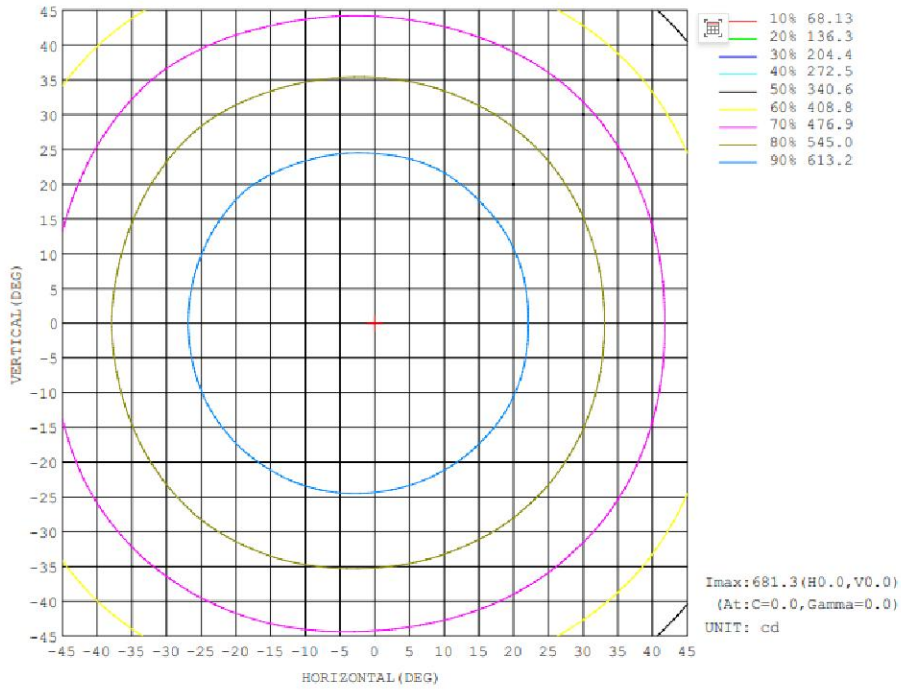


Chart 2: AAI Figure

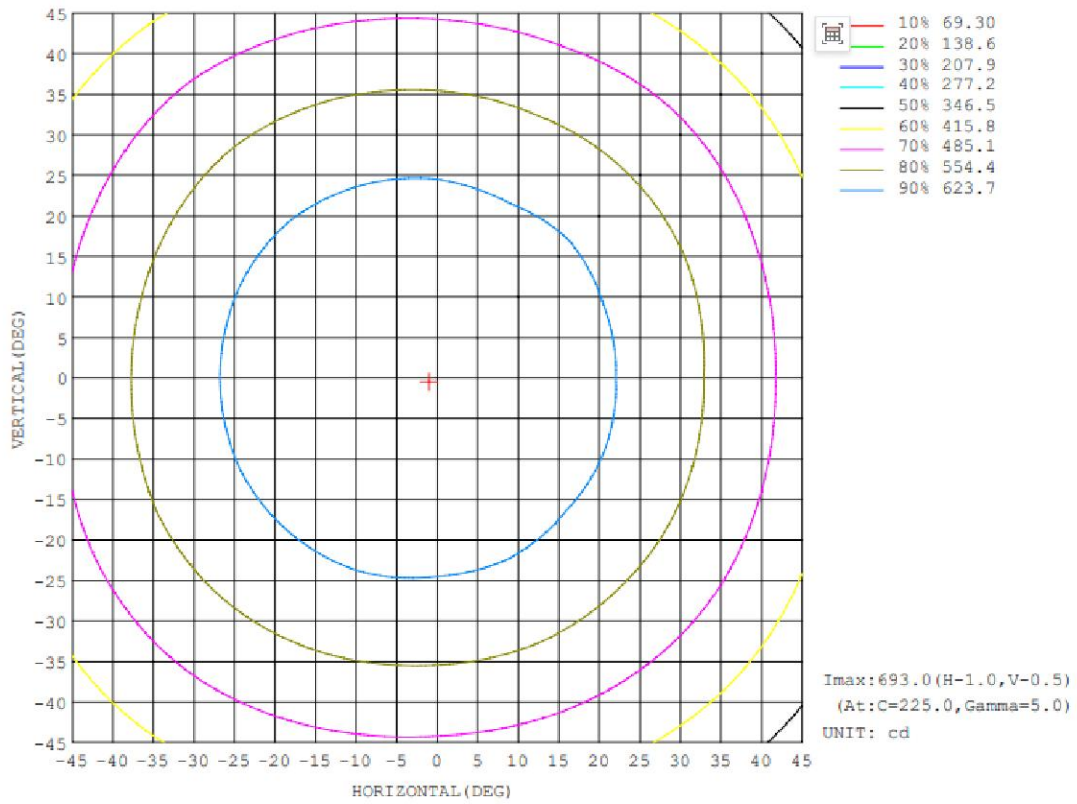
Luminous Intensity Distribution Plots- Goniophotometer Method(2700K)



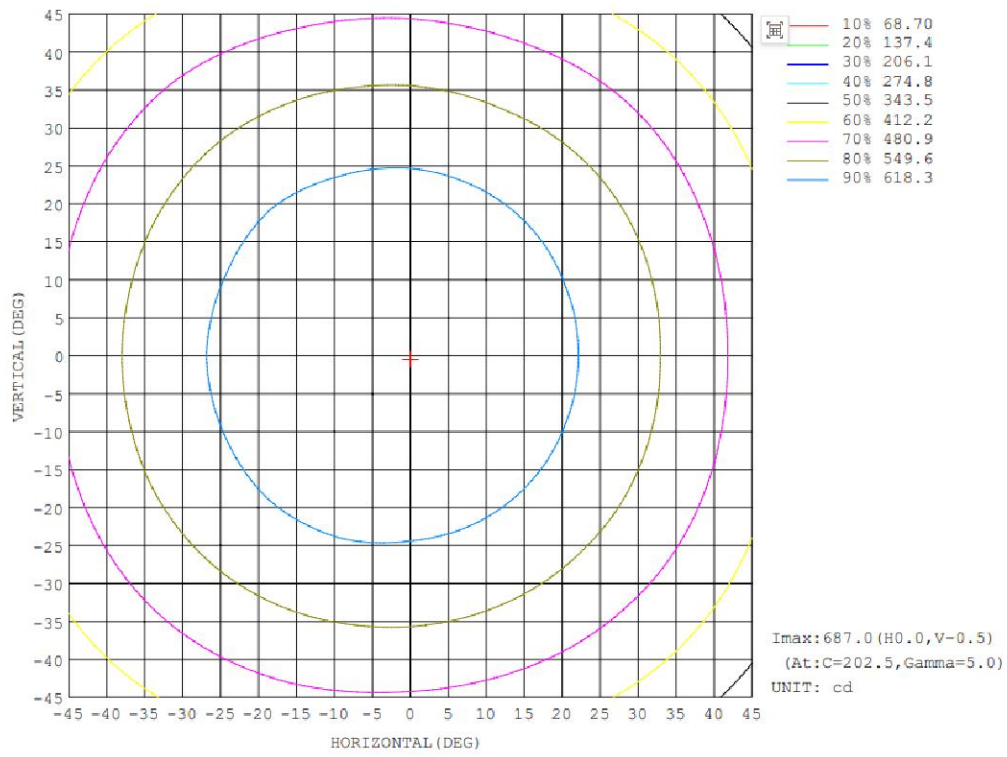
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(3500K)



(4000K)



(5000K)

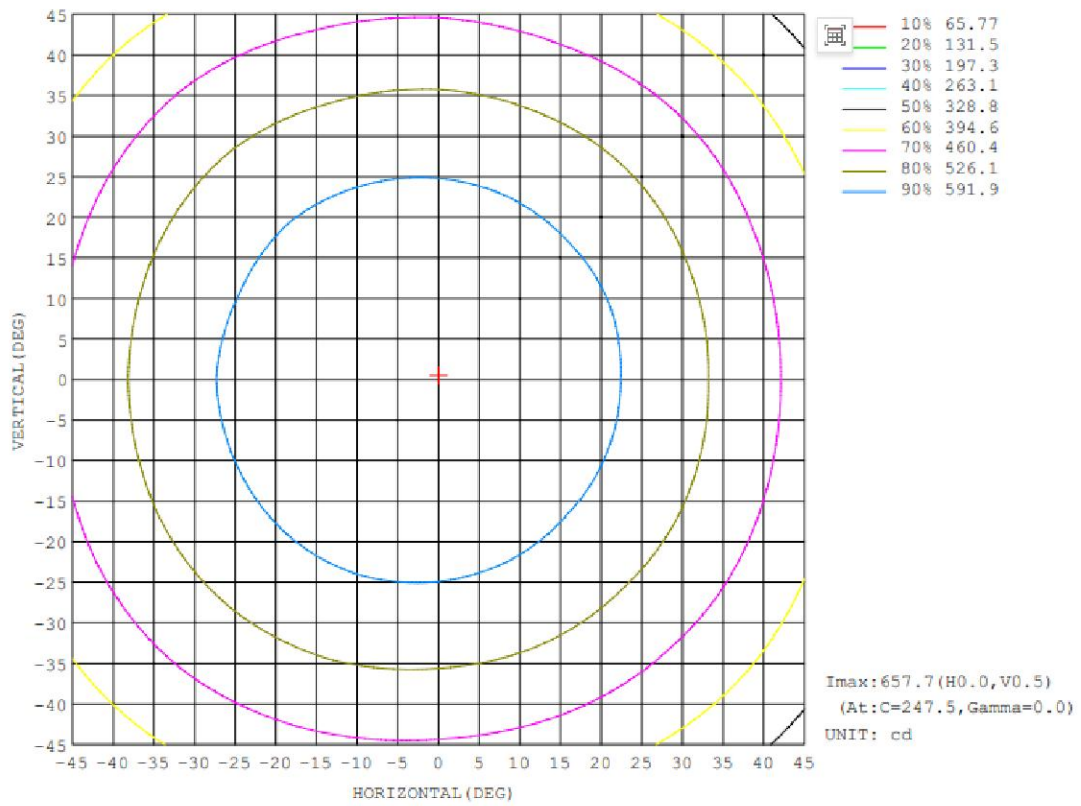
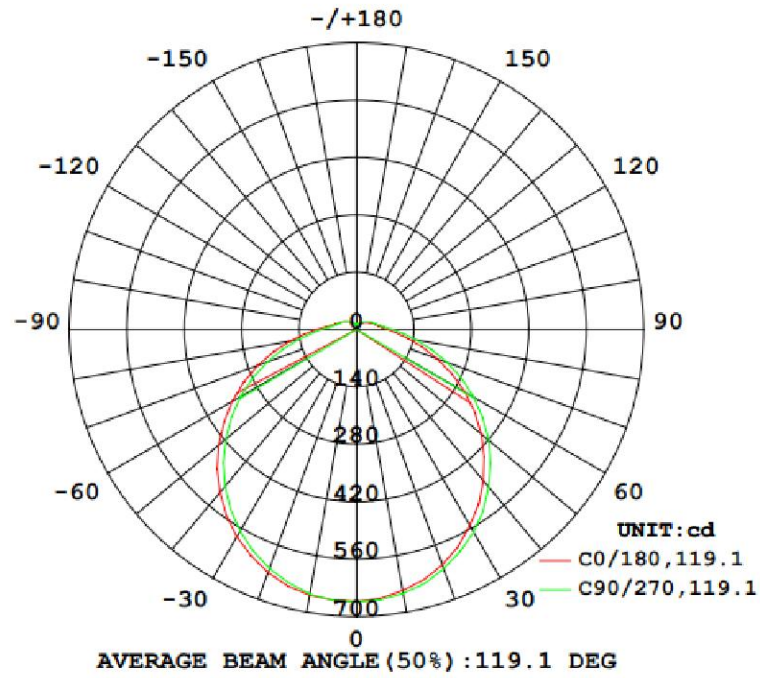


Chart 3: Isocandela Diagram

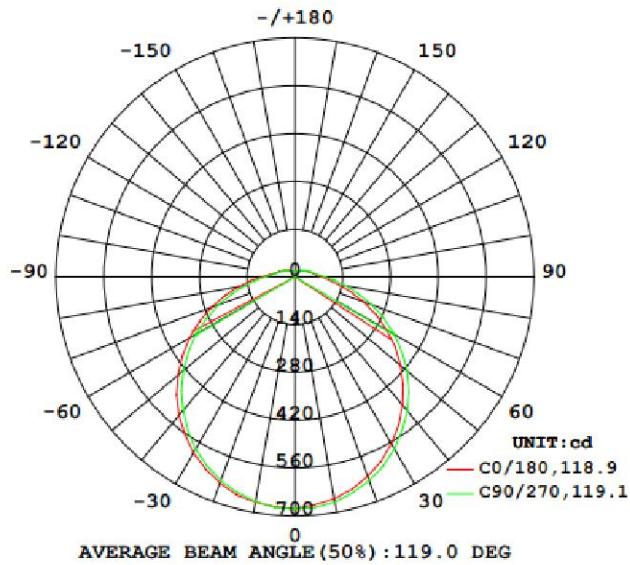
(2700K)

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



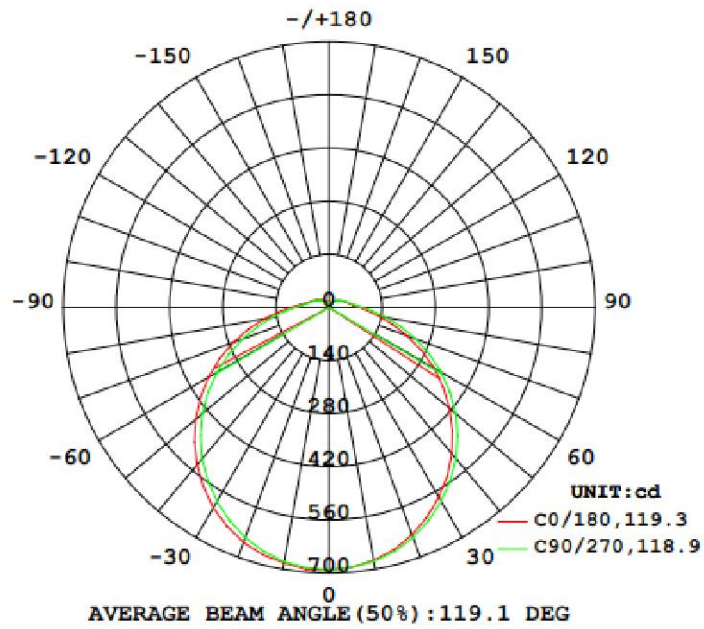
(3000K)

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



(3500K)

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



(4000K)

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM

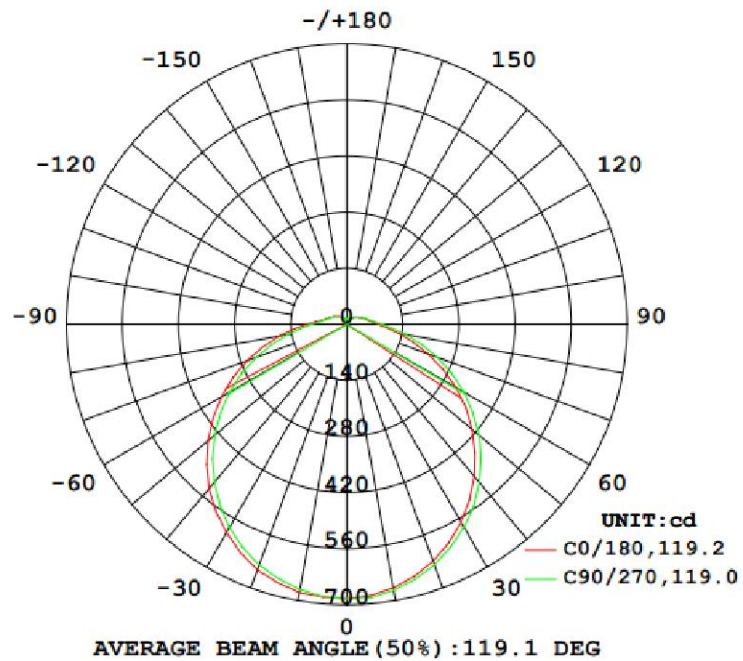


Table--1 UNIT: cd

C (DEG) y (DEG)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5			
0	679	679	679	679	679	679	679	679	679	679	679	679	679	679	679	679			
5	670	674	676	676	678	675	677	678	676	679	679	679	679	675	674	674			
10	661	664	665	667	670	673	670	670	670	672	673	669	667	666	664	663			
15	644	647	651	652	654	657	658	662	661	661	660	657	654	651	648	644			
20	622	627	630	632	635	639	643	645	643	644	642	639	635	632	627	625			
25	596	600	602	607	611	615	617	622	621	623	622	615	611	608	599	601			
30	565	568	572	576	582	587	589	594	595	596	595	597	582	576	569	567			
35	529	534	537	542	548	554	558	562	564	562	562	554	549	542	535	533			
40	490	495	499	506	512	520	522	527	529	527	525	517	510	504	497	494			
45	448	454	458	465	472	480	482	490	490	488	487	477	471	463	457	451			
50	404	409	413	419	428	437	442	447	448	447	444	435	427	419	411	408			
55	359	362	366	374	383	391	398	402	403	403	398	391	382	373	366	361			
60	310	314	320	327	336	345	351	356	358	358	352	343	335	326	317	314			
65	262	266	271	279	287	297	297	304	309	309	304	295	287	277	269	265			
70	213	218	222	231	240	249	255	260	262	260	255	247	238	229	221	216			
75	168	173	177	184	192	201	207	212	213	212	208	199	191	182	176	171			
80	130	133	137	143	150	158	163	168	169	167	163	156	149	141	136	132			
85	99.4	102	105	110	114	121	125	129	130	128	125	119	114	108	104	101			
90	77.5	79.2	80.9	84.5	88.0	92.5	94.8	98.0	98.6	97.5	95.6	91.0	87.5	83.2	80.2	78.3			
95	63.5	64.4	65.2	67.6	69.8	72.8	73.9	76.1	76.6	75.6	74.8	71.9	69.4	66.8	64.9	64.0			
100	54.7	55.5	56.0	57.1	58.4	60.1	60.7	62.3	62.5	61.9	61.4	59.6	58.3	56.7	55.7	54.9			
105	48.9	49.4	49.7	50.6	51.9	52.5	52.9	53.8	53.9	53.7	53.5	52.3	51.6	50.6	49.7	49.1			
110	44.0	44.4	44.7	45.4	46.6	47.2	47.5	48.2	48.3	48.2	48.0	47.1	46.4	45.6	44.6	44.2			
115	39.4	39.6	40.0	40.7	41.9	42.5	42.7	43.4	43.4	43.4	43.1	42.2	41.8	40.9	40.0	39.6			
120	35.3	35.7	35.8	36.4	37.7	38.3	38.4	39.0	39.2	39.1	39.0	38.0	37.5	36.8	36.0	35.4			
125	31.5	31.8	31.9	32.5	33.7	34.4	34.5	35.0	35.3	35.1	34.9	34.1	33.6	32.9	32.2	31.6			
130	28.1	28.3	28.4	29.0	30.2	30.8	30.8	31.2	31.5	31.4	31.3	30.5	30.2	29.5	28.8	28.2			
135	24.9	25.1	25.2	25.7	27.1	27.6	27.5	28.0	28.2	28.0	27.9	27.2	26.8	26.3	25.6	24.9			
140	22.0	22.2	22.3	22.7	24.1	24.5	24.4	24.7	25.1	25.0	24.8	24.2	23.9	23.4	22.7	22.1			
145	19.5	19.5	19.7	20.1	21.4	21.9	21.7	22.0	22.2	22.2	22.0	21.4	21.1	20.7	20.1	19.4			
150	17.2	17.3	17.3	17.7	19.1	19.4	19.2	19.5	19.7	19.5	19.5	19.0	18.7	18.3	17.7	17.1			
155	15.3	15.3	15.4	15.6	17.0	17.3	17.0	17.2	17.5	17.3	17.2	16.8	16.7	16.3	15.8	15.2			
160	13.8	13.9	13.9	14.0	15.4	15.6	15.2	15.4	15.7	15.4	15.4	15.0	14.9	14.7	14.2	13.8			
165	13.0	13.0	13.0	13.0	14.4	14.4	13.8	14.1	14.3	14.1	14.0	13.7	13.7	13.6	13.3	12.8			
170	13.0	13.0	12.9	12.9	14.0	13.9	13.2	13.3	13.6	13.4	13.3	13.2	13.3	13.3	13.1	12.7			
175	13.5	13.6	13.4	13.3	14.5	14.4	13.4	13.4	13.6	13.3	13.3	13.2	13.5	13.7	13.6	13.3			
180	13.9	13.9	13.7	13.7	15.0	14.9	13.8	13.8	14.1	13.8	13.8	13.8	14.0	14.1	14.0	13.7			

(3500K)

Table--1 UNIT: cd

C (DEG) y (DEG)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5			
0	692	692	692	692	692	692	692	692	692	692	692	692	692	692	692	692			
5	687	687	689	686	686	689	692	687	692	691	694	687	688	686	688	685			
10	676	677	681	677	679	680	684	685	683	685	685	680	680	675	678	675			
15	661	661	663	661	666	667	673	672	675	674	677	667	665	663	660	659			
20	638	639	640	641	645	649	654	654	659	657	658	650	645	641	642	635			
25	610	610	615	616	620	626	629	631	636	634	634	624	620	613	614	606			
30	577	579	586	586	590	598	601	604	610	607	607	596	590	585	581	578			
35	542	543	547	551	557	563	569	573	577	573	574	562	556	549	546	543			
40	503	503	511	511	520	528	534	537	541	538	537	527	520	513	509	501			
45	459	462	467	472	477	486	494	498	501	497	498	485	478	469	467	460			
50	414	415	422	426	436	443	450	455	459	455	454	442	435	425	419	415			
55	367	368	375	380	388	397	406	408	413	412	407	397	389	380	373	369			
60	319	320	327	331	340	350	358	362	366	363	360	350	341	331	325	320			
65	269	271	277	284	291	301	310	314	318	314	311	301	291	282	275	270			
70	219	222	227	234	243	252	260	265	268	266	261	251	243	233	226	220			
75	173	176	180	187	194	205	211	216	219	215	212	202	195	185	179	175			
80	134	136	139	145	152	160	165	171	173	170	167	158	152	143	139	135			
85	102	104	106	111	116	123	127	131	133	130	128	121	116	110	106	103			
90	79.9	80.7	82.5	85.6	89.3	93.9	97.1	99.7	101	99.3	97.5	92.8	89.0	84.6	82.1	80.1			
95	65.1	65.6	66.8	68.4	70.6	73.7	75.5	77.2	78.6	77.3	76.2	72.9	70.6	68.0	66.6	65.1			
100	56.4	56.5	57.3	57.9	59.0	60.8	62.0	63.1	64.0	63.3	62.5	60.6	59.2	57.8	57.0	55.9			
105	50.6	50.5	50.9	51.3	52.1	53.3	54.0	54.6	55.3	54.8	54.6	53.0	52.4	51.5	51.0	50.1			
110	45.4	45.4	45.7	46.2	46.8	48.0	48.4	49.0	49.8	49.2	49.0	47.7	47.0	46.3	46.0	45.1			
115	40.9	40.7	41.0	41.3	42.0	43.0	43.9	44.0	44.8	44.3	44.1	42.8	42.4	41.7	41.4	40.4			
120	36.8	36.4	36.6	37.0	37.5	38.6	39.5	39.8	40.4	39.8	39.8	38.6	38.0	37.5	37.3	36.3			
125	32.9	32.5	32.7	33.0	33.6	34.5	35.2	35.7	36.4	35.9	35.7	34.7	34.0	33.6	33.4	32.3			
130	29.4	29.0	29.1	29.4	29.9	30.9	31.7	31.9	32.6	32.1	31.9	31.1	30.5	30.2	29.9	28.8			
135	26.2	25.8	25.8	26.2	26.6	27.6	28.2	28.6	29.1	28.7	28.6	27.6	27.1	27.0	26.7	25.5			
140	23.3	22.9	22.8	23.1	23.6	24.4	25.2	25.4	26.1	25.6	25.4	24.6	24.1	24.0	23.8	22.6			
145	20.6	20.2	20.1	20.4	20.8	21.5	22.4	22.6	23.2	22.7	22.6	21.8	21.3	21.3	21.1	19.9			
150	18.2	17.8	17.8	17.9	18.3	19.0	19.8	20.0	20.6	20.1	20.0	19.2	18.7	18.9	18.8	17.6			
155	16.3	15.9	15.8	15.9	16.2	16.8	17.6	17.7	18.3	17.8	17.7	17.1	16.7	17.0	16.8	15.6			
160	14.8	14.3	14.2	14.2	14.6	15.0	15.8	15.9	16.5	16.0	15.9	15.2	14.9	15.3	15.3	14.1			
165	14.0	13.5	13.3	13.2	13.4	13.7	14.4	14.5	15.1	14.6	14.4	14.0	13.7	14.3	14.3	13.2			
170	14.0	13.6	13.2	13.1	13.0	13.1	13.8	13.8	14.4	13.8	13.7	13.3	13.2	14.0	14.2	13.1			
175	14.6	14.1	13.7	13.6	13.4	13.4	13.9	13.9	14.4	13.7	13.8	13.4	13.4						

(4000K)

Table--1 UNIT: cd

C (DEG) r (DEG)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5
0	685	685	685	685	685	685	685	685	685	685	685	685	685	685	685	685
5	679	679	680	683	685	683	683	686	683	686	682	684	681	679	678	678
10	668	669	671	675	674	676	677	677	680	679	679	678	672	672	669	667
15	651	653	653	658	659	663	665	663	667	666	667	665	657	658	655	653
20	630	631	634	638	639	644	647	652	652	651	650	647	639	639	635	632
25	602	602	606	613	613	623	626	626	629	626	626	622	615	612	606	602
30	570	572	578	584	585	593	598	600	600	600	599	594	586	582	576	573
35	534	537	540	549	553	561	566	569	570	567	565	561	552	546	541	538
40	496	498	502	511	514	524	528	534	536	534	529	525	514	510	504	498
45	453	458	460	468	473	485	489	493	495	495	492	484	474	467	462	457
50	409	410	417	425	431	441	446	451	453	451	449	440	430	423	417	412
55	363	365	371	378	384	396	401	405	408	408	402	396	385	378	370	366
60	315	316	323	331	338	347	353	359	361	359	355	349	337	329	322	318
65	265	268	273	281	289	300	306	312	313	313	308	299	290	280	273	269
70	216	219	224	233	241	251	258	262	265	263	258	250	241	232	224	219
75	171	174	178	186	193	203	208	215	217	213	210	202	193	184	179	173
80	132	135	138	145	150	159	164	169	171	168	165	157	150	143	138	134
85	101	103	105	111	115	122	125	130	131	129	127	121	115	109	105	102
90	78.4	79.9	81.6	85.2	88.4	93.2	96.0	98.8	99.6	98.5	96.6	92.0	88.3	84.0	81.6	79.6
95	64.2	65.2	66.0	67.9	69.9	72.9	74.7	76.8	77.4	76.8	75.1	72.8	69.9	67.2	65.8	65.1
100	55.4	56.0	56.5	57.9	58.6	60.7	61.5	62.9	62.9	62.6	61.9	60.4	58.6	57.4	56.4	55.9
105	49.6	50.0	50.4	51.2	51.7	52.8	53.4	54.4	54.3	54.4	53.9	53.1	51.9	51.0	50.3	50.2
110	44.5	44.9	45.4	46.2	46.4	47.6	47.8	48.8	48.6	48.9	48.5	47.8	46.7	45.8	44.9	45.2
115	39.8	40.3	40.6	41.3	41.7	42.7	43.2	43.8	43.9	44.2	44.0	42.8	41.9	41.1	40.4	40.7
120	35.6	36.2	36.3	37.1	37.4	38.3	38.9	39.5	39.5	39.8	39.5	38.6	37.6	36.9	36.4	36.5
125	31.8	32.2	32.5	33.1	33.2	34.1	34.8	35.5	35.4	35.9	35.5	34.6	33.7	33.0	32.6	32.6
130	28.2	28.6	28.9	29.4	29.8	30.7	31.1	32.0	31.7	32.3	31.9	31.1	30.1	29.5	29.0	29.1
135	25.0	25.4	25.7	26.2	26.4	27.2	27.7	28.5	28.2	29.0	28.5	27.7	26.9	26.2	25.7	26.1
140	22.1	22.5	22.7	23.2	23.5	24.2	24.6	25.3	25.1	25.9	25.5	24.5	23.9	23.3	22.7	23.1
145	19.5	19.8	20.1	20.5	20.6	21.3	21.9	22.4	22.2	23.1	22.9	21.8	21.2	20.6	20.0	20.5
150	17.2	17.5	17.7	18.0	18.2	18.9	19.3	20.0	19.6	20.6	20.3	19.4	18.7	18.1	17.6	18.3
155	15.2	15.5	15.8	16.0	16.1	16.6	17.1	17.7	17.3	18.4	18.1	17.2	16.6	16.1	15.7	16.3
160	13.7	14.0	14.2	14.3	14.4	14.8	15.3	15.8	15.5	16.6	16.3	15.3	14.9	14.4	14.1	14.9
165	12.9	13.1	13.3	13.4	13.3	13.6	14.0	14.4	14.0	15.2	14.9	14.0	13.7	13.3	13.1	14.0
170	12.9	13.2	13.3	13.3	12.9	13.0	13.4	13.7	13.3	14.6	14.4	13.5	13.2	13.0	12.8	13.9
175	13.4	13.7	13.8	13.7	13.4	13.4	13.6	13.7	13.3	14.5	14.4	13.5	13.4	13.3	13.3	14.5
180	13.9	14.1	14.2	14.2	13.7	13.8	14.1	14.0	13.8	15.0	14.9	14.0	13.9	13.7	13.7	15.0

(5000K)

Table--1 UNIT: cd

C (DEG) r (DEG)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5
0	657	657	657	657	657	657	657	657	657	657	657	657	657	657	657	657
5	652	651	654	653	652	656	656	654	656	655	657	655	654	653	654	651
10	640	641	644	645	645	649	649	648	651	651	650	649	644	646	643	640
15	624	625	629	630	633	637	638	639	641	639	639	636	632	631	627	625
20	605	605	608	611	613	619	622	621	625	622	621	619	614	610	608	605
25	578	579	583	588	591	596	600	600	603	599	601	596	590	587	582	580
30	547	550	553	558	563	570	571	574	579	575	575	569	563	558	553	549
35	514	516	520	526	530	538	542	545	549	545	543	535	530	525	520	515
40	478	479	482	489	495	502	507	510	513	511	509	501	495	488	483	478
45	436	438	443	450	454	464	470	474	476	472	472	462	457	448	444	437
50	394	394	401	406	415	421	429	432	435	433	429	421	413	407	400	396
55	348	350	355	362	370	379	386	389	393	389	386	378	370	361	355	351
60	303	304	310	317	325	334	341	344	348	347	341	333	324	316	309	304
65	255	257	263	269	278	288	294	299	302	299	294	287	278	270	262	257
70	208	211	215	224	232	241	247	252	255	252	248	240	231	221	216	210
75	164	167	171	179	185	195	201	206	208	205	201	193	185	177	171	166
80	127	129	133	139	145	153	158	162	164	161	158	151	144	137	132	128
85	97.0	98.8	101	106	111	117	121	124	126	124	121	116	110	105	101	98.0
90	75.7	76.7	78.6	82.3	84.9	89.7	92.0	94.6	95.9	93.8	92.3	88.3	84.5	80.5	78.1	76.2
95	61.8	62.4	63.5	65.8	67.4	70.2	71.7	73.4	74.2	72.9	72.1	69.3	67.0	64.5	63.2	62.0
100	53.4	53.7	54.4	55.8	56.5	58.1	59.1	60.1	60.4	59.7	59.1	57.9	56.3	54.8	54.1	53.5
105	47.7	48.0	48.6	49.5	49.8	50.9	51.4	52.0	52.1	51.8	51.4	50.9	49.9	48.8	48.3	47.7
110	42.8	43.2	43.6	44.5	44.7	45.6	46.0	46.4	46.7	46.4	46.3	45.7	44.9	44.0	43.4	42.9
115	38.4	38.5	39.0	40.1	40.2	41.0	41.4	41.9	42.1	41.7	41.6	41.3	40.4	39.5	39.0	38.4
120	34.3	34.4	35.0	36.1	36.0	36.9	37.2	37.5	37.9	37.6	37.5	37.2	36.3	35.4	34.9	34.4
125	30.7	30.8	31.2	32.2	32.2	32.9	33.3	33.7	34.0	33.8	33.6	33.4	32.5	31.8	31.2	30.7
130	27.1	27.3	27.8	28.8	28.8	29.4	29.8	30.2	30.4	30.2	30.1	30.0	29.2	28.4	27.8	27.3
135	24.1	24.3	24.8	25.7	25.5	26.3	26.6	26.9	27.1	27.0	26.9	26.7	26.0	25.2	24.7	24.2
140	21.2	21.4	22.0	22.8	22.7	23.3	23.6	23.9	24.1	24.0	23.9	23.9	23.2	22.4	21.9	21.3
145	18.7	18.8	19.4	20.2	20.0	20.6	20.8	21.1	21.3	21.3	21.1	21.2	20.5	19.7	19.3	18.8
150	16.5	16.5	17.2	17.9	17.7	18.2	18.4	18.7	18.9	18.7	18.7	18.9	18.2	17.5	17.0	16.5
155	14.6	14.6	15.3	16.0	15.6	16.1	16.3	16.5	16.7	16.6	16.6	16.8	16.2	15.5	15.1	14.6
160	13.1	13.1	13.9	14.4	14.1	14.4	14.5	14.7	14.9	14.8	14.8	15.1	14.5	13.9	13.5	13.1
165	12.3	12.3	13.0	13.5	13.0	13.2	13.2	13.4	13.5	13.5	13.4	13.8	13.4	12.8	12.6	12.3
170	12.3	12.4	13.0	13.4	12.6	12.6	12.6	12.7	12.8	12.8	12.7	13.3	13.0	12.5	12.4	12.2
175	12.8	12.8	13.5	13.9	13.0	13.0	12.8	12.7	12.8	12.7	12.7	13.3	13.2	12.9	12.8	12.7
180	13.2	13.2	14.0	14.2	13.4	13.4	13.1	13.1	13.3	13.1	13.2	13.7	13.6	13.2	13.2	13.1

Table 5: Luminous Intensity Data

---End of Report---