

## TEST RESULTS

Test ambient temperature was 25.8°C.

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

The stabilization time of the sample was 90 minutes, and the total operating time including stabilization was 125 minutes.

### Sphere-Spectroradiometer Method

Parameter	Result
Test Voltage (V)	120.0
Voltage frequency (Hz)	60
Test Current (A)	0.123
Power Factor	0.9701
Test Power (W)	14.3
Luminous Efficacy (lm/W)	79.9
THD A%	16.97
Total Luminous Flux (lm)	1151
Color Rendering Index (CRI)	82.8
R9	17.2
Correlated Color Temperature (CCT) (K)	3030
Chromaticity (Chroma x, Chroma y)	(0.4360, 0.4060)
Chromaticity (Chroma u, Chroma v)	(0.2491, 0.3480)
Chromaticity (Chroma u', Chroma v')	(0.2491, 0.5220)
Duv	0.0008

Special Color Rendering Indices	
R1	80.7
R2	88.3
R3	95.2
R4	82
R5	80.5
R6	84.8
R7	85.9
R8	64.7
R9	17.2
R10	73.3
R11	80.5
R12	70.8
R13	82
R14	97

Table 2: Test data per Sphere-Spectroradiometer Method

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

### Goniophotometer Method

The photometric distance is 2.475m.

Luminous data was taken at 0.5°vertical intervals and 10°horizontal intervals.

Parameter	Result
Test Voltage (V)	120.0
Voltage frequency (Hz)	60
Test Current (A)	0.123
Power Factor	0.9692
Test Power (W)	14.3
Luminous Efficacy (lm/W)	80.7
Total Luminous Flux (lm)	1153.7
Beam Angle (°)	70.2
Center Beam Candle Power (cd)	801
Maximum Beam Candle Power (cd)	801.3 (At: C=120.0, Gamma=0.0)
Spacing Criteria	0.93 (0°-180°)/ 0.94 (90°-270°)
Zonal Lumens in the 0°-60°Zone	93.27%
Zonal Lumens in the 60°-90°Zone	6.73%
Zonal Lumens in the 90°-120°Zone	0.02%
Zonal Lumens in the 120°-180°Zone	0.06%

Table 3: Test data per Goniophotometer Method

## Spectral Power Distribution - Sphere Spectroradiometer Method

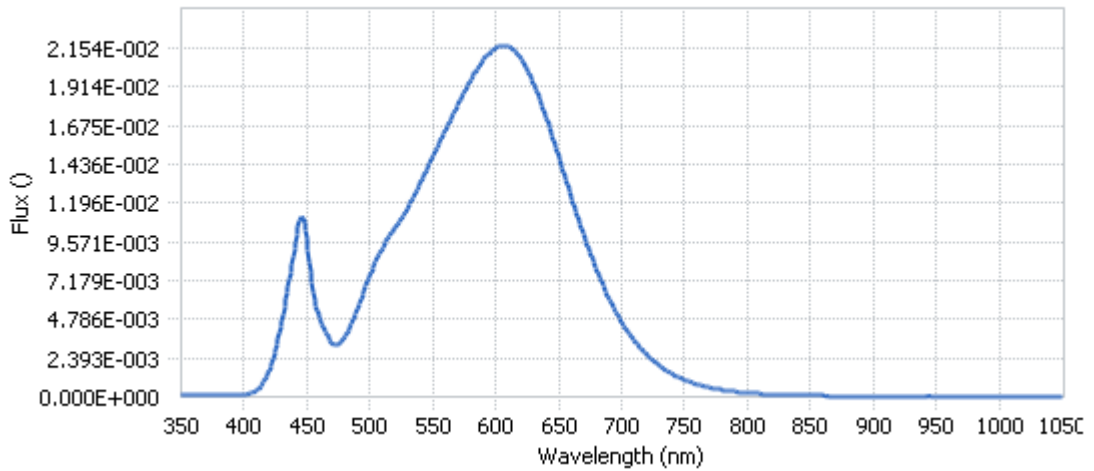
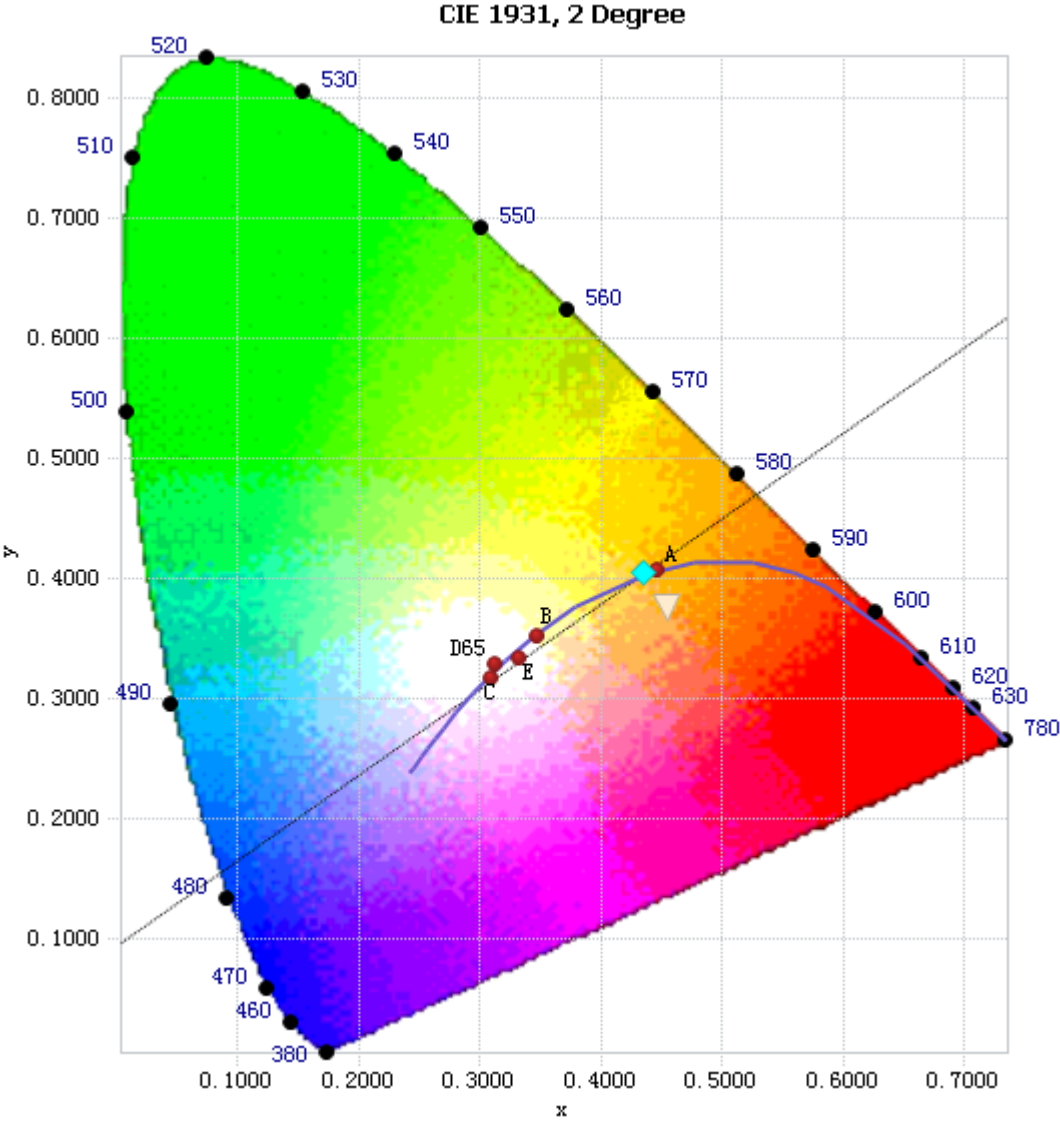


Chart 1: Spectral Power Distribution

Spectral Distribution over Visible Wavelength							
WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)	WL(nm)	Radiant(Watts)
380	6.88E-05	485	4.42E-03	590	2.09E-02	695	5.32E-03
385	7.61E-05	490	5.42E-03	595	2.12E-02	700	4.62E-03
390	6.48E-05	495	6.53E-03	600	2.16E-02	705	4.00E-03
395	8.28E-05	500	7.53E-03	605	2.17E-02	710	3.47E-03
400	1.21E-04	505	8.42E-03	610	2.16E-02	715	3.00E-03
405	1.84E-04	510	9.19E-03	615	2.14E-02	720	2.59E-03
410	3.69E-04	515	9.86E-03	620	2.09E-02	725	2.23E-03
415	7.96E-04	520	1.04E-02	625	2.03E-02	730	1.92E-03
420	1.63E-03	525	1.10E-02	630	1.94E-02	735	1.64E-03
425	2.94E-03	530	1.17E-02	635	1.83E-02	740	1.41E-03
430	4.69E-03	535	1.24E-02	640	1.72E-02	745	1.20E-03
435	6.83E-03	540	1.32E-02	645	1.61E-02	750	1.03E-03
440	9.15E-03	545	1.40E-02	650	1.49E-02	755	8.80E-04
445	1.11E-02	550	1.48E-02	655	1.36E-02	760	7.61E-04
450	9.71E-03	555	1.57E-02	660	1.24E-02	765	6.48E-04
455	6.48E-03	560	1.65E-02	665	1.11E-02	770	5.56E-04
460	4.81E-03	565	1.73E-02	670	9.99E-03	775	4.77E-04
465	3.95E-03	570	1.81E-02	675	8.89E-03	780	4.12E-04
470	3.28E-03	575	1.88E-02	680	7.88E-03		
475	3.23E-03	580	1.96E-02	685	6.94E-03		
480	3.68E-03	585	2.02E-02	690	6.09E-03		

Table 4: Spectral Power Distribution Numerical Data per Sphere - Spectroradiometer Method

# Chromaticity Diagram - Sphere Spectroradiometer Method



Tristimulus values(x, y) : (0.4360, 0.4060)

Chart 2: Chromaticity Diagram per Sphere - Spectroradiometer Method

Note: The location on the diagram of the tristimulus coordinates are indicated by the blue diamond.

### Nominal CCT Quadrangles – Sphere Spectroradiometer Method

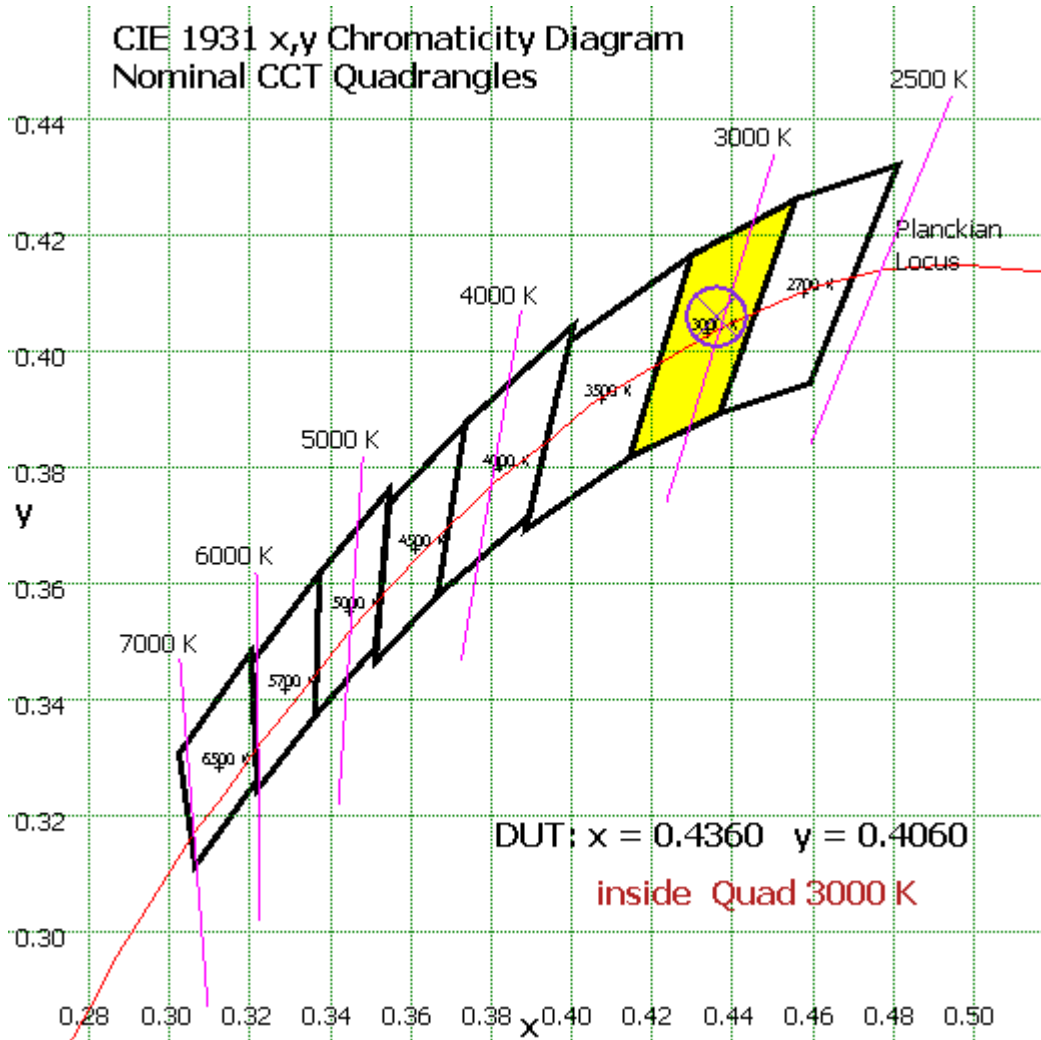


Chart 3: Plot of Lamp x/y coordinates on CIE 1931 Chromaticity Diagram

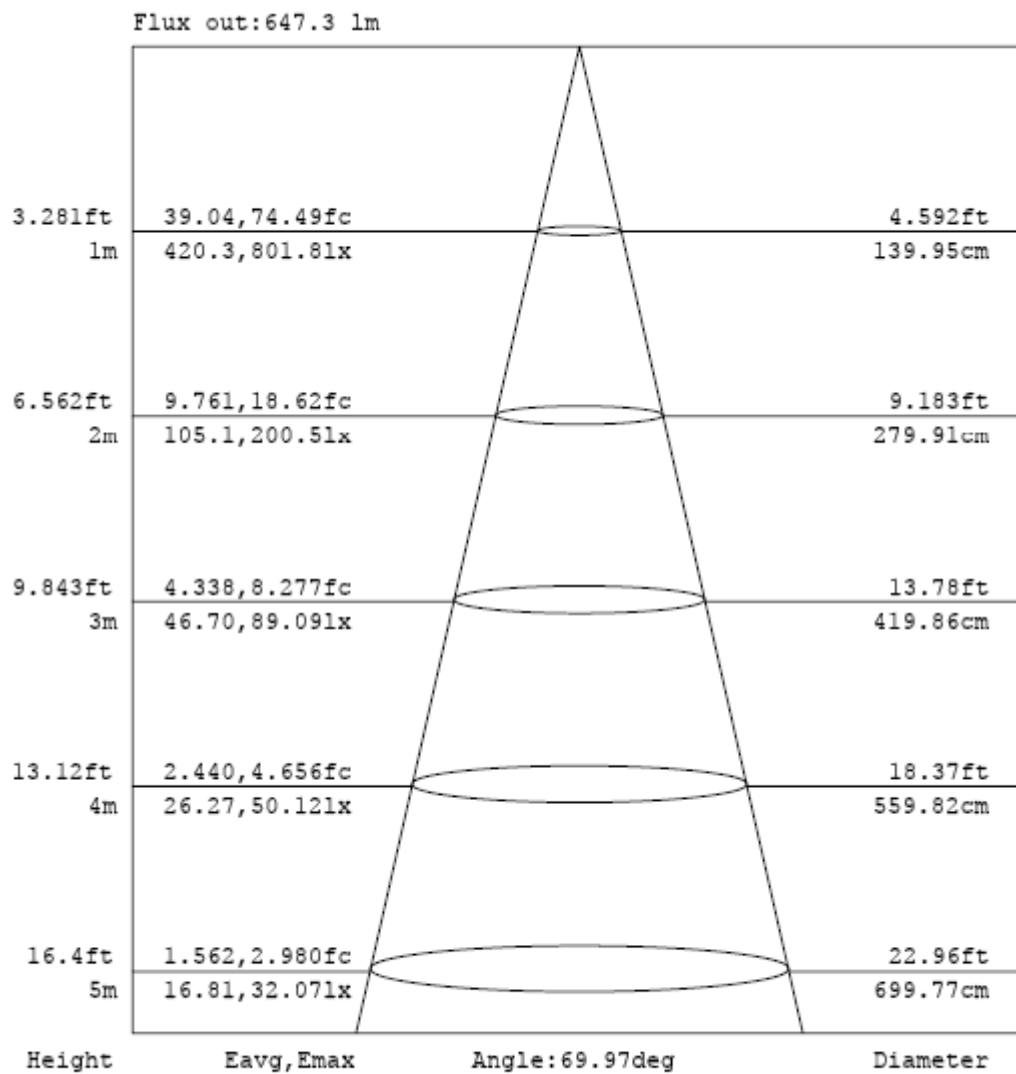
### Zonal Lumen Tabulation- Goniophotometer Method

$\gamma(^{\circ})$	Lumens	% Total
0- 10	73.877	6.40%
10- 20	193.482	16.77%
20- 30	251.361	21.79%
30- 40	250.305	21.70%
40- 50	193.954	16.81%
50- 60	113.106	9.80%
60- 70	50.809	4.40%
70- 80	19.837	1.72%
80- 90	6.996	0.61%
Total	1153.7	100%

$\gamma(^{\circ})$	Lumens	% Total
0- 60	1076.085	93.27%
60- 90	77.642	6.73%
0-90	1153.7	100%
90- 180	0	0%
0- 180	1153.7	100%

Table 5: Zonal Lumen Data

### Illuminance Plots- Goniophotometer Method



Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

Chart 4: Beam Angle

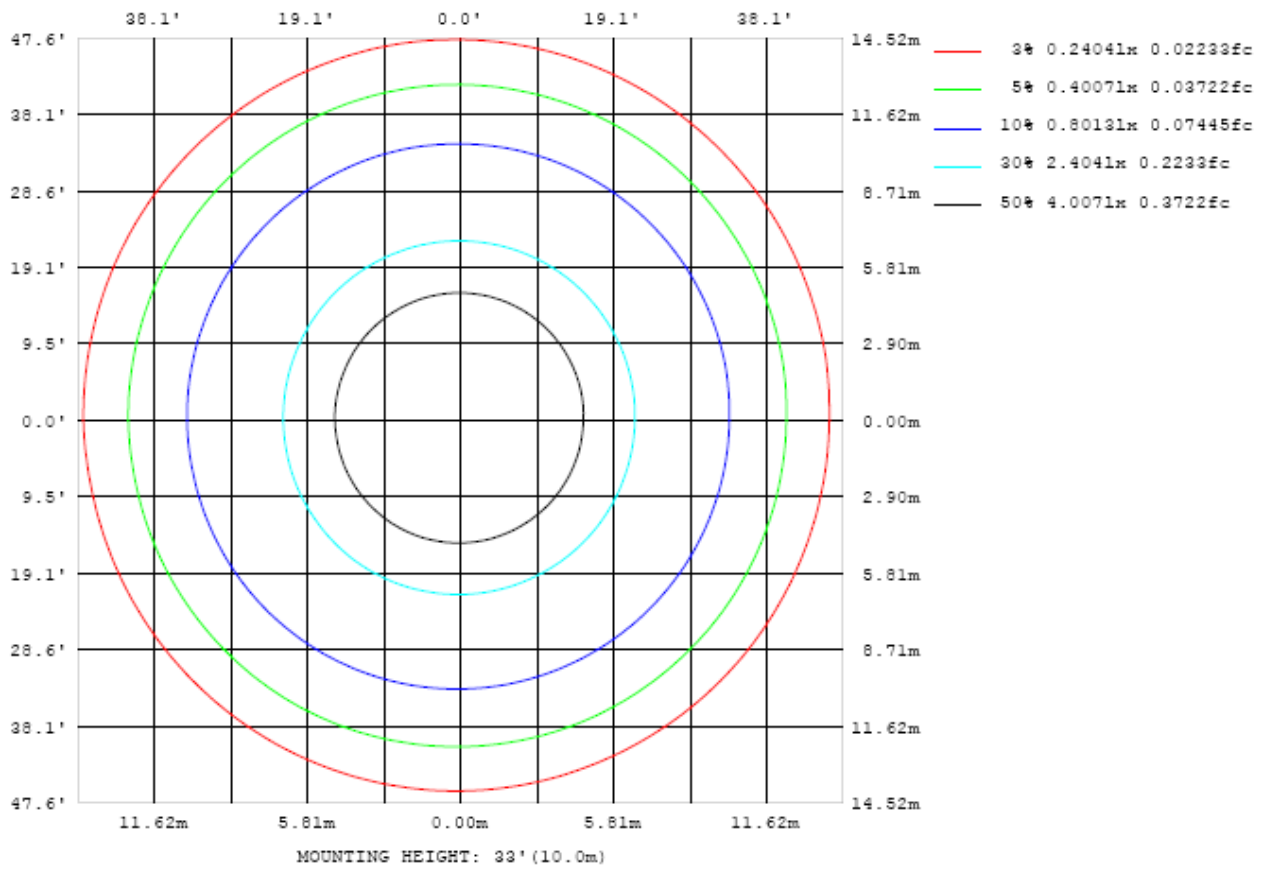


Chart 5: Illuminance Plot (Footcandles)



## Luminous Intensity Distribution Plots- Goniophotometer Method

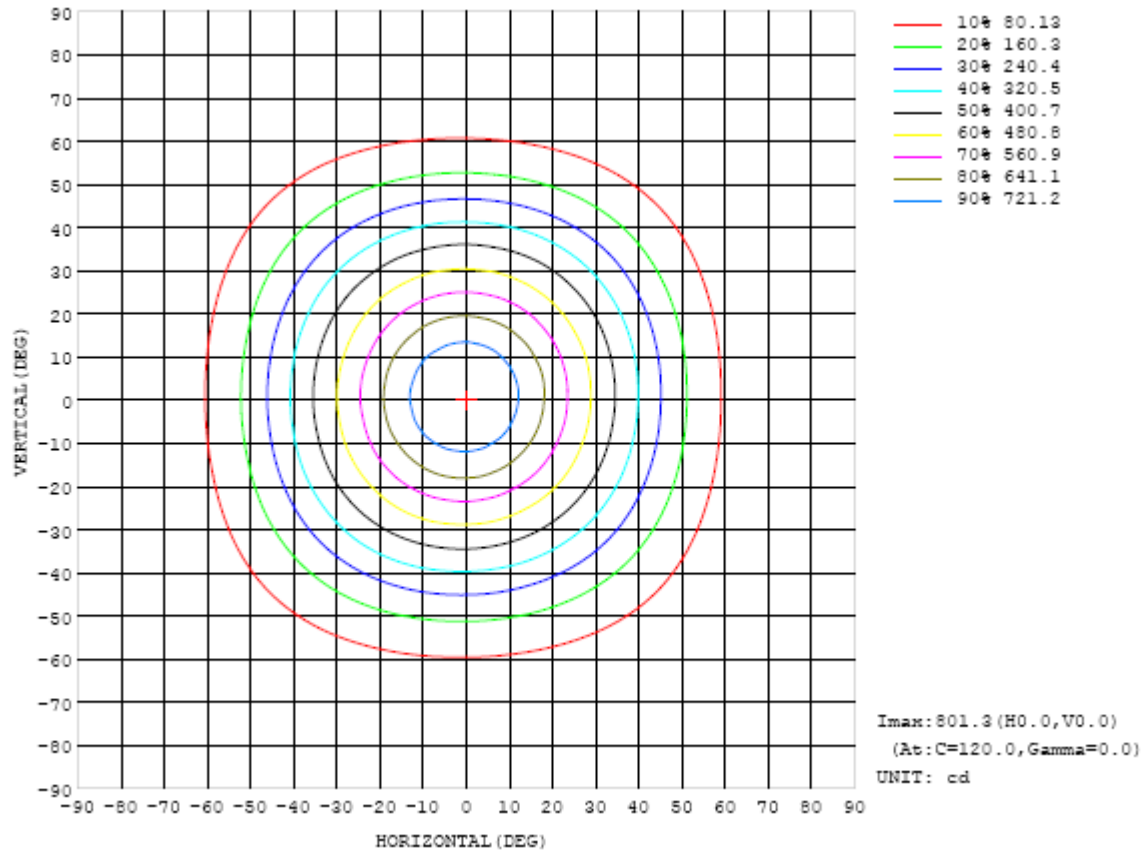


Chart 6: Isocandela Plot

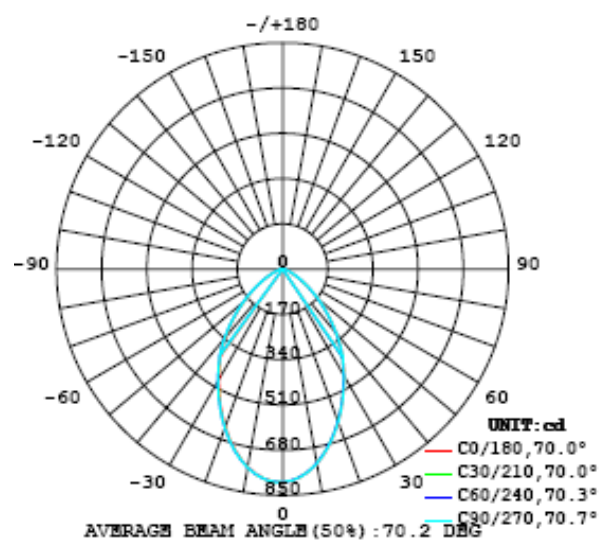


Chart 7: Polar Candela Distribution

# Luminous Intensity Data- Goniophotometer Method

Table--1 UNIT: cd

C (DEG) y (DEG)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
0	801	800	800	801	801	801	799	801	800	800	800	801	802	801	799	802	800	799	801
5	785	783	783	783	783	783	780	782	782	784	782	783	785	785	785	787	787	789	791
10	744	741	741	740	740	740	738	739	740	742	741	743	744	746	749	748	751	752	754
15	684	681	681	679	679	678	679	679	682	681	684	686	687	689	690	692	694	694	698
20	613	610	609	608	607	607	608	608	612	611	614	617	618	621	620	623	623	625	630
25	538	535	534	532	532	532	533	534	536	538	540	542	543	545	546	548	550	551	554
30	463	461	460	458	458	458	459	461	461	464	465	467	469	470	472	473	476	477	479
35	393	391	389	388	388	388	388	390	391	393	394	397	399	400	402	403	404	405	408
40	317	315	312	311	311	311	310	312	314	315	318	321	323	325	326	328	329	329	333
45	242	240	238	237	237	237	237	238	240	242	244	246	248	250	250	252	253	254	257
50	174	173	171	171	171	171	172	172	174	175	177	178	180	181	182	183	184	185	188
55	117	116	116	116	116	116	117	117	118	120	121	122	122	123	124	125	126	127	129
60	73.1	73.0	73.0	73.4	73.7	74.3	74.9	75.7	76.3	77.0	77.7	78.6	79.1	79.6	80.1	80.9	81.5	82.1	84.1
65	44.9	45.0	45.2	45.5	46.0	46.5	47.0	47.7	48.3	48.7	49.2	49.8	50.2	50.7	51.3	51.7	52.2	52.7	53.2
70	26.8	26.8	26.9	27.1	27.4	27.7	28.0	28.5	28.9	29.4	29.8	30.3	30.8	31.2	31.7	32.1	32.4	32.7	33.0
75	15.4	15.6	15.9	16.2	16.5	16.7	16.9	17.2	17.4	17.6	17.8	17.9	18.0	18.2	18.4	18.6	18.7	18.7	19.0
80	11.3	11.4	11.6	11.8	12.0	12.1	12.3	12.5	12.6	12.8	13.0	13.2	13.4	13.6	13.7	13.9	13.9	13.9	14.0
85	5.52	5.48	5.45	5.47	5.49	5.55	5.58	5.69	5.83	5.98	6.19	6.42	6.65	6.88	7.08	7.30	7.52	7.66	7.94
90	0.04	0.04	0.04	0.05	0.05	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.05	0.07	0.13	0.33

Table 6: Luminous Intensity Data

Table--2 UNIT: cd

C (DEG) y (DEG)	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350		
0	800	800	801	801	801	799	801	800	800	800	801	802	801	799	802	800	799		
5	791	790	792	792	791	791	792	792	790	791	791	789	789	787	787	787	785		
10	755	755	757	757	757	758	758	759	756	755	755	753	751	751	748	748	746		
15	700	699	701	702	702	704	703	703	702	700	699	698	695	694	692	688	686		
20	631	631	633	633	635	636	635	635	637	633	633	632	628	624	623	620	616		
25	556	556	558	560	561	562	562	562	562	560	559	557	554	550	547	546	543		
30	481	481	483	485	487	487	488	488	487	486	484	481	479	477	473	471	468		
35	409	410	412	414	416	416	417	417	415	414	412	411	407	405	403	399	396		
40	335	336	338	340	342	342	343	342	341	339	338	336	333	329	327	324	321		
45	258	260	262	263	265	265	266	265	265	263	262	260	257	254	251	249	246		
50	189	190	192	194	195	195	195	195	194	193	191	189	186	184	181	179	177		
55	130	132	133	134	135	136	135	135	134	133	131	129	126	124	123	121	119		
60	84.8	85.9	86.7	87.3	87.4	87.4	87.2	87.0	85.9	84.8	83.1	81.6	79.9	78.1	76.9	76.0	75.0		
65	53.5	53.9	54.1	54.2	54.1	53.7	53.5	52.9	52.2	51.3	50.3	49.2	48.2	47.2	46.5	46.1	45.6		
70	33.1	33.1	33.1	32.9	32.6	32.1	31.8	31.2	30.7	29.9	29.4	28.8	28.3	27.9	27.5	27.3	27.1		
75	19.0	18.9	18.7	18.5	18.2	17.8	17.4	17.0	16.6	16.2	15.9	15.6	15.4	15.3	15.3	15.3	15.3		
80	13.9	13.8	13.6	13.5	13.1	12.9	12.6	12.3	12.0	11.8	11.5	11.4	11.3	11.2	11.2	11.3	11.3		
85	8.01	8.01	7.98	7.90	7.78	7.62	7.40	7.22	6.97	6.76	6.54	6.38	6.20	6.04	5.93	5.86	5.77		
90	0.45	0.57	0.68	0.74	0.79	0.77	0.74	0.68	0.58	0.47	0.36	0.24	0.16	0.10	0.07	0.06	0.06		

Table 7: Luminous Intensity Data continuous