
Light Blue USA-Rayhil

Client:

LumCAT: LCD-RDD-2x12-5CCT-36-UNV-**

Luminaire: LED lamp

Report No:

Ballast type:

Test No:

Voltage(V): 119.980

LampCAT:

Current(A): 0.209

Lamp flux(lm): 2068.2

Power (W): 24.950

Number of Lamps: 1

PF: 0.994

Length(mm): 185

Width(mm): 55

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 2068.21, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 82.89

Central intensity(cd): 3012.977, Maximum intensity(cd): 3012.977

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=42.2

[C90/270]Total=43.0

Field angle(10%Imax): [C0/180]Total=77.6

[C90/270]Total=77.6

Maximum s/h(1/2): C0_180=0.67 C90_270=0.69

Maximum s/h(1/4): C0_180=0.69 C90_270=0.70

Up flux rate of lamp(%): 0.31%

Down flux rate of lamp(%): 99.69%

Up flux rate of LUM(%): 0.31%

Down flux rate of LUM(%): 99.69%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 93.741%

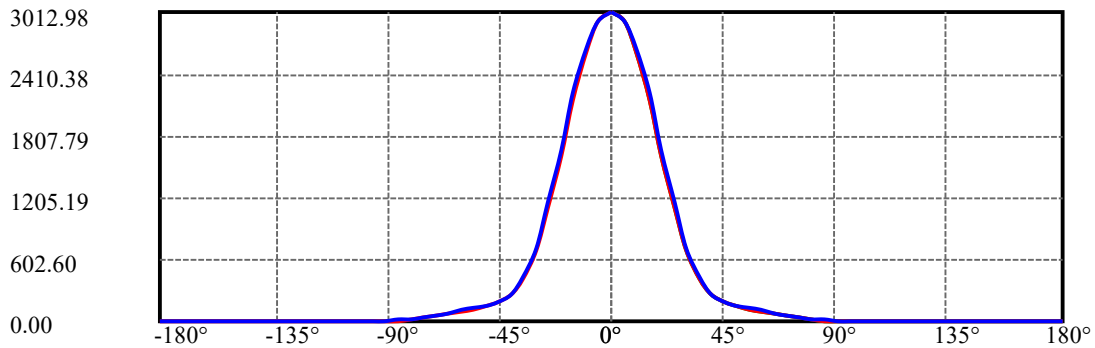
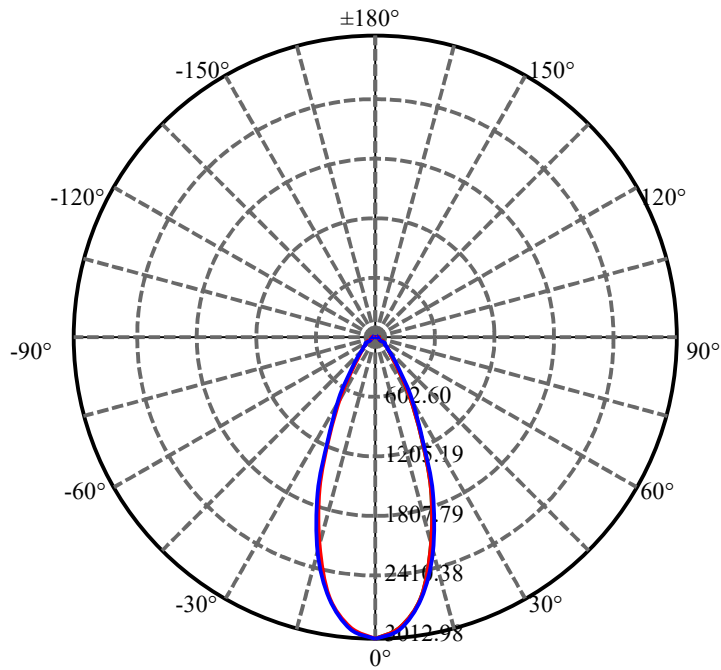
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3012.977	0.000	0	0.00%	0.00%
5.0	2921.076	70.940	70.94	3.43%	3.43%
10.0	2644.709	199.106	270.046	9.63%	13.06%
15.0	2186.127	286.562	556.607	13.86%	26.91%
20.0	1649.592	316.117	872.725	15.28%	42.20%
25.0	1127.159	291.230	1163.954	14.08%	56.28%
30.0	696.157	230.742	1394.696	11.16%	67.44%
35.0	424.458	165.018	1559.715	7.98%	75.41%
40.0	266.622	115.301	1675.016	5.57%	80.99%
45.0	193.733	85.239	1760.255	4.12%	85.11%
50.0	149.967	69.450	1829.705	3.36%	88.47%
55.0	120.530	58.815	1888.52	2.84%	91.31%
60.0	96.845	50.245	1938.765	2.43%	93.74%
65.0	71.874	41.016	1979.781	1.98%	95.72%
70.0	50.675	31.030	2010.811	1.50%	97.22%
75.0	35.623	22.557	2033.368	1.09%	98.32%
80.0	23.326	15.773	2049.141	0.76%	99.08%
85.0	10.636	9.229	2058.37	0.45%	99.52%
90.0	2.189	3.512	2061.882	0.17%	99.69%
95.0	0.000	0.599	2062.481	0.03%	99.72%
100.0	0.000	0.000	2062.481	0.00%	99.72%
105.0	0.000	0.000	2062.481	0.00%	99.72%
110.0	0.000	0.000	2062.481	0.00%	99.72%
115.0	0.000	0.000	2062.481	0.00%	99.72%
120.0	0.000	0.000	2062.481	0.00%	99.72%
125.0	0.000	0.000	2062.481	0.00%	99.72%
130.0	0.000	0.000	2062.481	0.00%	99.72%
135.0	0.000	0.000	2062.481	0.00%	99.72%
140.0	0.689	0.128	2062.609	0.01%	99.73%
145.0	1.304	0.333	2062.941	0.02%	99.75%
150.0	2.300	0.531	2063.472	0.03%	99.77%
155.0	4.217	0.825	2064.297	0.04%	99.81%
160.0	6.173	1.090	2065.386	0.05%	99.86%
165.0	7.437	1.122	2066.508	0.05%	99.92%
170.0	8.281	0.932	2067.44	0.05%	99.96%
175.0	8.741	0.609	2068.049	0.03%	99.99%
180.0	4.563	0.159	2068.208	0.01%	100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1394.70	67.43%	67.44%
0-40	1675.02	80.99%	80.99%
0-60	1938.77	93.74%	93.74%
0-90	2061.88	99.69%	99.69%
0-120	2062.48	99.72%	99.72%
0-180	2068.21	100.00%	100.00%
60-90	123.12	5.95%	5.95%
90-120	0.60	0.03%	0.03%
90-130	0.60	0.03%	0.03%
90-150	1.59	0.08%	0.08%
90-180	6.17	0.30%	0.30%
0-39.11	1654.57	80.00%	80.00%

ZONAL LUMEN SUMMARY

0-10	270.05
10-20	602.68
20-30	521.97
30-40	280.32
40-50	154.69
50-60	109.06
60-70	72.05
70-80	38.33
80-90	12.74
90-100	0.60
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.13
140-150	0.86
150-160	1.91
160-170	2.05
170-180	0.61



C0(Max):

C0/C180:

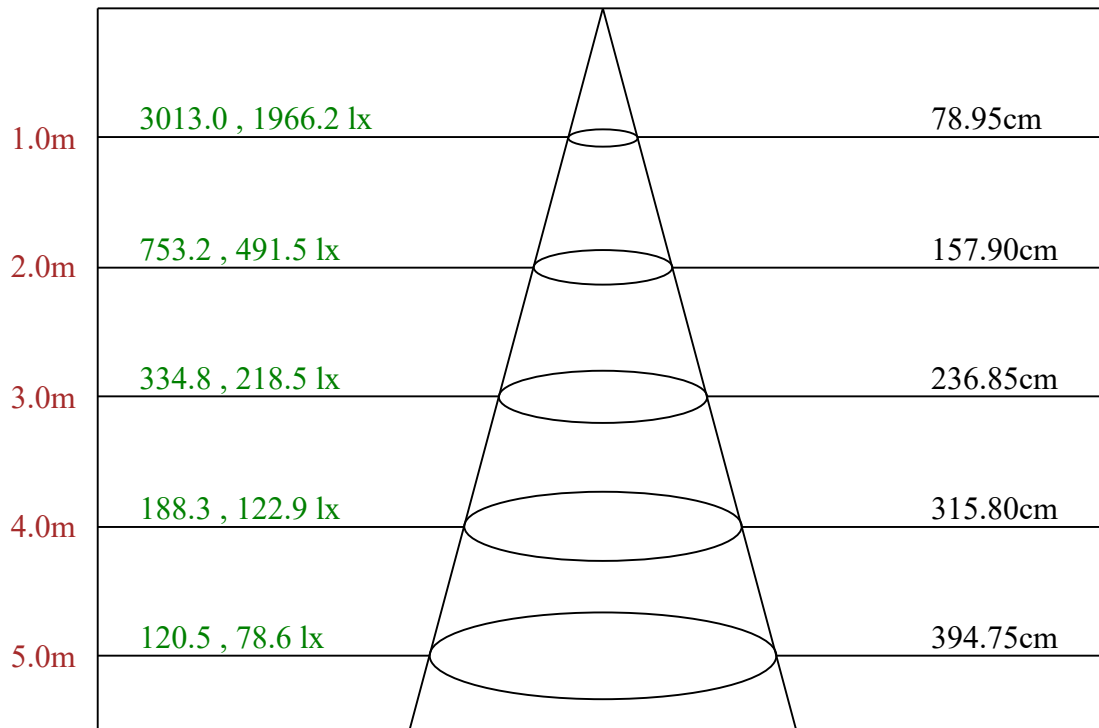
C90/C270:

Field angle(10%Imax):C0/180Left:38.8 Right:38.8

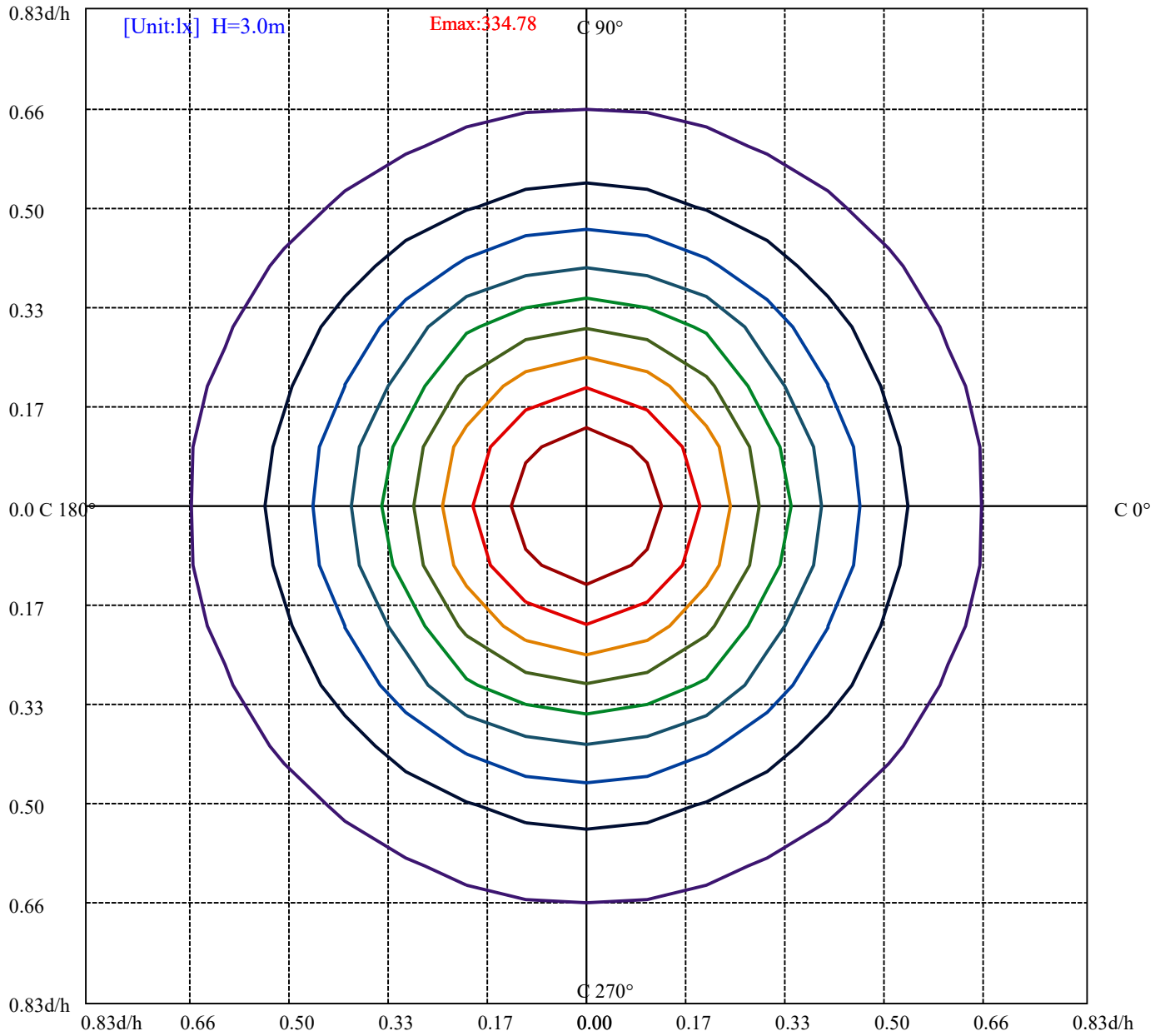
:C90/270Left:38.8 Right:38.8

Beam Angle(50%Imax):C0/180Left:21.1 Right:21.1

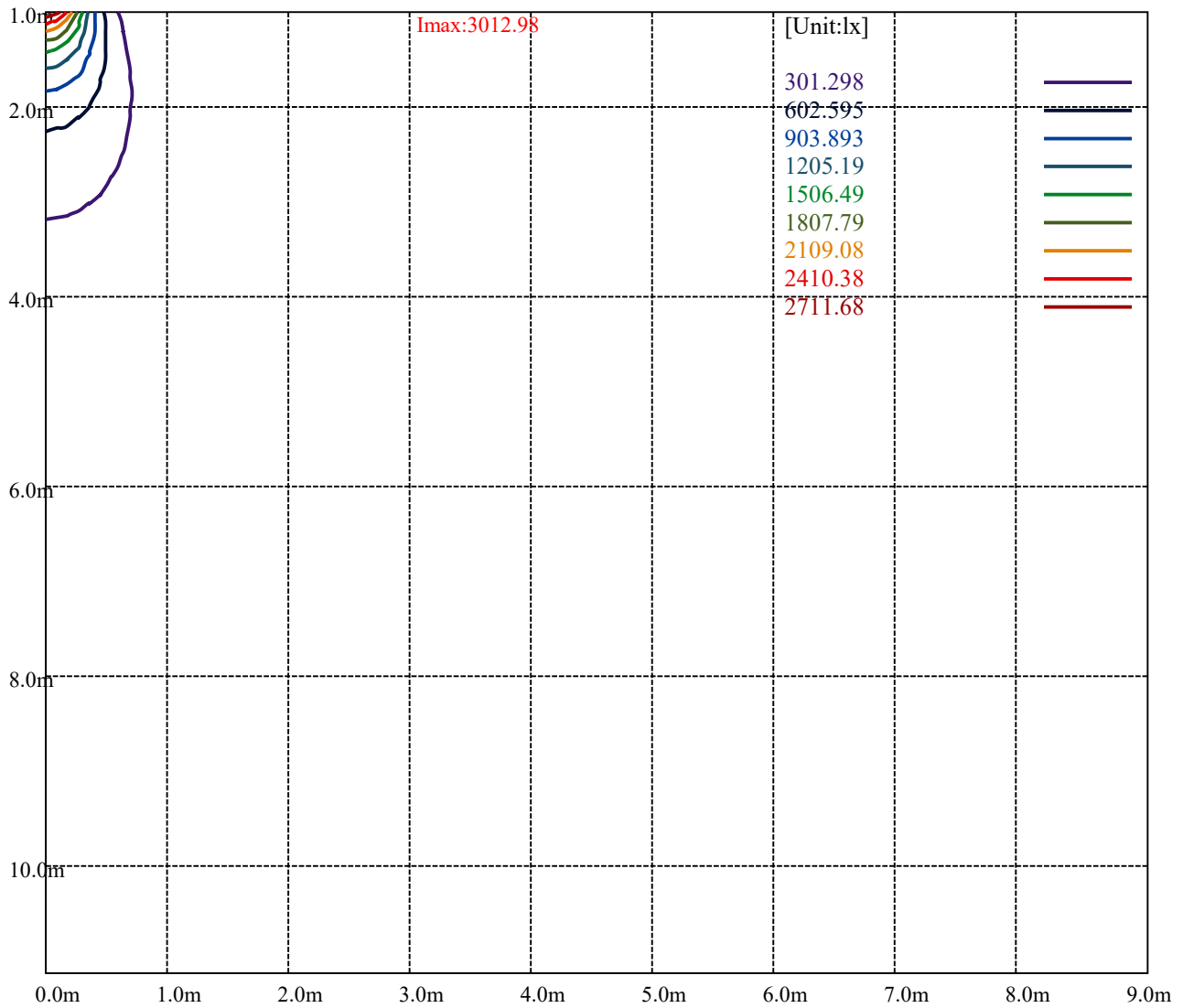
:C90/270Left:21.5 Right:21.5



Max , Ave Beam angle of C0 plane 43.08



(10%Emax)	33.47744	
(20%Emax)	66.95499	
(30%Emax)	100.4324	
(40%Emax)	133.91	
(50%Emax)	167.3878	
(60%Emax)	200.8644	
(70%Emax)	234.3422	
(80%Emax)	267.82	
(90%Emax)	301.2978	



Luminance Table

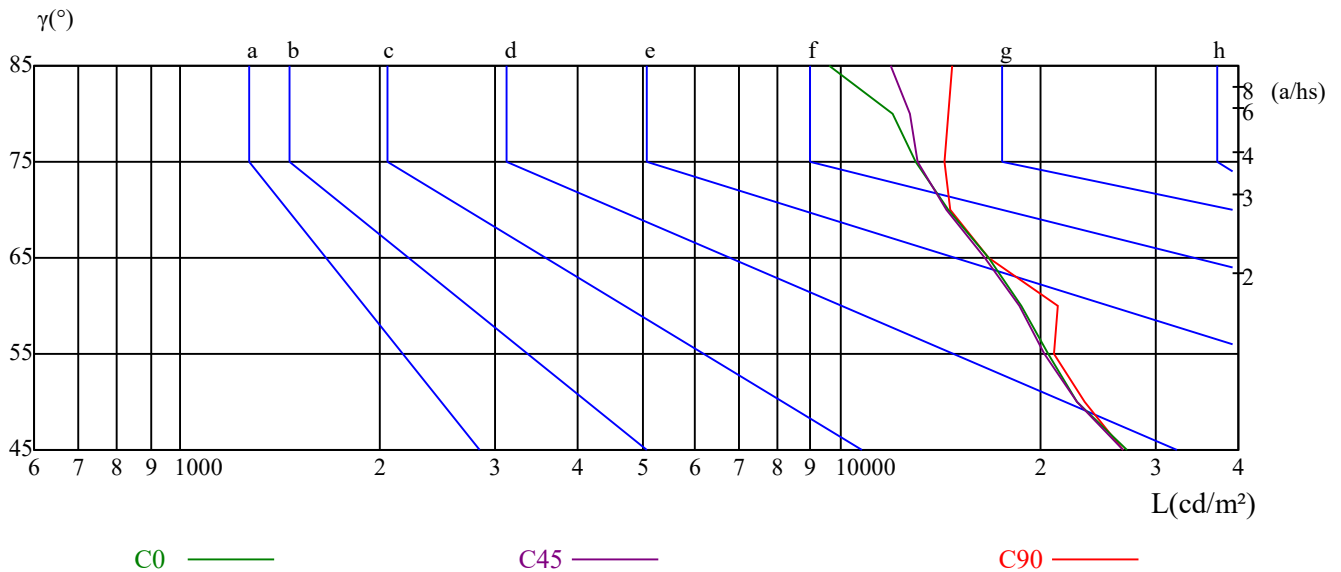
γ	45	50	55	60	65	70	75	80	85
C0	27156	22800	20549	18717	16712	14585	12962	11948	9623
C45	26782	22728	20361	18667	16537	14435	13065	12723	11900
C90	26821	23376	21005	21347	16801	14599	14337	14510	14717

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
16712	16801	16537	12962	14337	13065	9623	14717	11900

Glare Table

Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve



RHOC	80			70			50			30			10			0
RHOW	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR	COEFFICIENTS OF UTILIZATION RHOFC=20 CU															
0	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00
1	1.09	1.06	1.04	1.07	1.05	1.02	1.03	1.01	0.99	0.99	0.98	0.96	0.96	0.94	0.93	0.91
2	1.01	0.96	0.92	0.99	0.95	0.91	0.96	0.92	0.89	0.93	0.90	0.87	0.90	0.87	0.85	0.84
3	0.93	0.88	0.83	0.92	0.87	0.83	0.89	0.85	0.81	0.87	0.83	0.80	0.84	0.81	0.79	0.77
4	0.87	0.81	0.76	0.86	0.80	0.76	0.83	0.79	0.75	0.81	0.77	0.74	0.79	0.76	0.73	0.71
5	0.81	0.75	0.70	0.80	0.74	0.70	0.78	0.73	0.69	0.76	0.72	0.69	0.75	0.71	0.68	0.66
6	0.76	0.70	0.65	0.75	0.69	0.65	0.74	0.68	0.64	0.72	0.68	0.64	0.71	0.67	0.64	0.62
7	0.72	0.65	0.61	0.71	0.65	0.61	0.70	0.64	0.60	0.68	0.64	0.60	0.67	0.63	0.60	0.58
8	0.68	0.61	0.57	0.67	0.61	0.57	0.66	0.61	0.57	0.65	0.60	0.57	0.64	0.60	0.56	0.55
9	0.64	0.58	0.54	0.64	0.58	0.54	0.63	0.57	0.54	0.62	0.57	0.53	0.61	0.56	0.53	0.52
10	0.61	0.55	0.51	0.60	0.55	0.51	0.60	0.54	0.51	0.59	0.54	0.51	0.58	0.54	0.50	0.49

Light Blue USA-Rayhil LCD-RDD-2x12-5CCT-36-UNV-**

Intensity data(cd)									Appendix Page: 10 Total:12		
C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0		
0.0	3012.98	3003.99	2828.82	2407.51	1888.28	1332.21	853.41	503.06	310.82		
15.0	3012.98	3022.96	2849.67	2452.30	1928.81	1340.01	876.40	518.04	318.44		
30.0	3012.98	3045.20	2904.35	2520.48	1979.19	1400.16	890.18	519.19	325.88		
45.0	3012.98	3057.73	2912.51	2523.45	1974.55	1431.14	908.73	536.11	315.09		
60.0	3012.98	3056.19	2920.11	2536.71	1986.89	1415.92	893.69	524.08	320.88		
75.0	3012.98	3065.87	2932.25	2524.89	2001.54	1419.73	896.38	521.49	302.50		
90.0	3012.98	3054.93	2907.63	2511.44	1965.15	1413.27	885.62	530.44	297.38		
105.0	3012.98	3059.17	2909.28	2505.79	1951.46	1372.62	856.94	527.93	299.79		
120.0	3012.98	3031.60	2846.31	2451.54	1907.78	1343.55	837.97	529.78	291.43		
135.0	3012.98	3003.76	2800.93	2377.74	1832.86	1271.39	808.56	526.44	285.81		
150.0	3012.98	2989.13	2780.01	2320.50	1372.12	1227.20	753.01	524.63	280.66		
165.0	3012.98	2971.14	2722.87	2260.87	1707.02	1166.81	737.56	514.74	261.92		
180.0	3012.98	2824.33	2425.47	1893.67	1339.40	878.56	516.54	313.51	220.99		
195.0	3012.98	2806.12	2424.17	1868.93	1344.54	863.70	507.15	309.37	219.55		
210.0	3012.98	2803.09	2376.87	1890.82	1346.77	861.64	508.15	310.23	221.85		
225.0	3012.98	2783.74	2379.15	1902.40	1339.81	879.51	514.19	310.52	218.28		
240.0	3012.98	2778.52	2396.96	1878.40	1332.26	875.30	513.04	310.77	217.91		
255.0	3012.98	2800.48	2400.55	1902.25	1354.77	874.11	532.63	318.28	223.63		
270.0	3012.98	2797.63	2406.09	1933.45	1355.47	896.81	535.10	317.89	224.67		
285.0	3012.98	2803.69	2441.68	1916.58	1392.42	916.34	543.96	330.90	295.08		
300.0	3012.98	2807.21	2427.33	1941.30	1824.92	936.67	556.79	332.40	229.05		
315.0	3012.98	2823.97	2448.74	1985.91	1455.78	963.45	575.31	342.05	234.18		
330.0	3012.98	2849.72	2503.94	1986.64	1502.36	973.14	602.60	357.71	243.06		
345.0	3012.98	2865.65	2527.34	1973.49	1506.03	998.57	603.87	357.41	240.09		
360.0	3012.98	3003.99	2828.82	2407.51	1888.28	1332.21	853.41	503.06	310.82		

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	223.68	167.09	132.95	106.90	83.54	60.19	41.32	27.85	14.37		
15.0	225.00	170.56	135.18	108.87	84.37	61.69	42.64	29.03	14.52		
30.0	230.14	173.06	135.32	109.55	84.69	62.60	42.35	29.46	14.73		
45.0	223.76	169.87	135.17	108.68	83.11	60.28	42.01	27.40	15.53		
60.0	222.50	169.18	133.32	105.73	81.83	59.76	41.37	27.58	17.47		
75.0	218.99	167.03	132.69	105.78	81.66	58.46	40.83	28.77	18.56		
90.0	212.55	166.87	131.44	106.27	81.10	56.87	41.02	27.97	17.71		
105.0	214.94	164.04	130.10	102.76	80.13	57.51	39.59	27.34	16.03		
120.0	209.49	161.08	127.56	100.56	76.35	54.00	37.24	25.14	14.90		
135.0	209.29	157.66	125.39	100.49	75.60	53.47	36.88	23.05	12.91		
150.0	203.62	155.01	122.90	99.06	77.04	53.20	36.69	23.85	10.09		
165.0	196.44	151.88	120.96	97.31	74.57	51.84	35.47	22.74	10.00		
180.0	167.09	131.16	106.90	83.54	60.19	41.32	26.95	14.37	2.69		
195.0	166.03	130.64	107.96	85.28	61.69	42.64	29.03	14.52	2.72		
210.0	164.78	131.64	106.78	83.77	60.76	41.42	28.54	14.73	4.60		
225.0	163.48	128.78	104.12	83.11	60.28	42.01	28.31	18.27	5.48		
240.0	166.42	131.48	110.33	87.35	62.52	42.29	32.18	20.23	6.44		
255.0	170.74	137.33	113.21	89.08	62.17	43.61	34.33	31.55	7.42		
270.0	173.40	138.90	113.73	110.94	63.39	44.75	34.49	23.31	8.39		
285.0	177.23	139.52	115.96	90.50	65.05	45.25	35.82	22.63	9.43		
300.0	175.04	136.87	114.52	90.31	67.04	45.62	33.52	22.35	8.38		
315.0	174.25	138.29	110.64	87.59	65.46	45.18	30.42	21.21	8.30		
330.0	179.77	139.41	112.81	89.88	65.12	45.86	32.10	17.43	7.34		
345.0	180.98	141.87	112.77	90.94	67.30	46.38	31.83	19.10	7.28		
360.0	223.68	167.09	132.95	106.90	83.54	60.19	41.32	27.85	14.37		

Light Blue USA-Rayhil LCD-RDD-2x12-5CCT-36-UNV-**

Intensity data(cd)									Appendix Page: 11 Total:12		
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0		
0.0	2.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
15.0	3.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
30.0	4.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
45.0	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
60.0	5.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
75.0	5.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
90.0	4.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
105.0	4.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
120.0	4.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
135.0	3.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
150.0	1.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
165.0	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
180.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
195.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
210.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
225.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
240.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
255.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
270.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
285.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
300.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
315.0	1.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
330.0	1.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
345.0	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
360.0	2.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0		
0.0	0.00	0.90	1.80	2.69	5.39	7.19	8.08	8.98	8.98		
15.0	0.00	0.91	1.81	2.72	4.54	7.26	8.17	9.07	9.07		
30.0	0.00	0.92	0.92	2.76	4.60	7.36	8.28	9.21	9.21		
45.0	0.00	0.91	0.91	2.74	4.57	7.31	8.22	9.13	9.13		
60.0	0.00	0.92	1.84	2.76	4.60	7.36	8.27	9.19	9.19		
75.0	0.00	0.93	1.86	2.78	4.64	7.42	8.35	9.28	9.28		
90.0	0.00	0.93	1.86	2.80	4.66	7.46	8.39	9.32	9.32		
105.0	0.00	0.94	1.89	2.83	4.71	7.54	8.48	9.43	9.43		
120.0	0.00	0.93	1.86	2.79	5.59	7.45	8.38	9.31	9.31		
135.0	0.00	0.92	1.84	2.77	5.53	7.38	8.30	9.22	9.22		
150.0	0.00	0.92	1.83	2.75	5.50	7.34	9.17	9.17	9.17		
165.0	0.00	0.91	1.82	2.73	5.46	7.28	9.09	9.09	9.09		
180.0	0.00	0.90	0.90	1.80	3.59	5.39	6.29	7.19	8.08		
195.0	0.00	0.91	0.91	1.81	3.63	3.63	6.35	7.26	8.17		
210.0	0.00	0.00	0.92	1.84	3.68	5.52	6.44	7.36	8.28		
225.0	0.00	0.91	0.91	1.83	3.65	5.48	6.39	7.31	8.22		
240.0	0.00	0.92	0.92	1.84	3.68	5.52	6.44	7.36	8.27		
255.0	0.00	0.93	0.93	1.86	3.71	5.57	6.50	7.42	8.35		
270.0	0.00	0.93	0.93	1.86	3.73	5.59	6.53	7.46	8.39		
285.0	0.00	0.00	0.94	1.89	3.77	4.71	6.60	7.54	8.48		
300.0	0.00	0.00	0.93	1.86	3.72	4.66	6.52	7.45	8.38		
315.0	0.00	0.00	0.92	1.84	2.77	4.61	6.45	7.38	8.30		
330.0	0.00	0.00	0.92	1.83	2.75	4.59	6.42	7.34	8.25		
345.0	0.00	0.00	0.91	1.82	2.73	4.55	6.37	7.28	8.18		
360.0	0.00	0.90	1.80	2.69	5.39	7.19	8.08	8.98	8.98		

Intensity data(cd)

C/γ(°)	180.0
0.0	8.08
15.0	9.07
30.0	9.21
45.0	9.13
60.0	9.19
75.0	9.28
90.0	9.32
105.0	9.43
120.0	9.31
135.0	9.22
150.0	9.17
165.0	9.09
180.0	0.00
195.0	0.00
210.0	0.00
225.0	0.00
240.0	0.00
255.0	0.00
270.0	0.00
285.0	0.00
300.0	0.00
315.0	0.00
330.0	0.00
345.0	0.00
360.0	8.08