
Light Blue USA-Rayhil

Client:

LumCAT: LCD-RD-9-5CCT-UNV-120-**

Luminaire: LED lamp

Report No:

Ballast type:

Test No:

Voltage(V): 120.020

LampCAT:

Current(A): 0.105

Lamp flux(lm): 1038.0

Power (W): 12.340

Number of Lamps: 1

PF: 0.982

Length(mm): -60

Width(mm): -60

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1038.03, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 84.12

Central intensity(cd): 1572.765, Maximum intensity(cd): 1572.765

Angle of maximum intensity: C=75.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=43.0

[C90/270]Total=42.4

Field angle(10%Imax): [C0/180]Total=75.6

[C90/270]Total=75.2

Maximum s/h(1/2): C0_180=0.69 C90_270=0.68

Maximum s/h(1/4): C0_180=0.69 C90_270=0.68

Up flux rate of lamp(%): 0.27%

Down flux rate of lamp(%): 99.73%

Up flux rate of LUM(%): 0.27%

Down flux rate of LUM(%): 99.73%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 94.601%

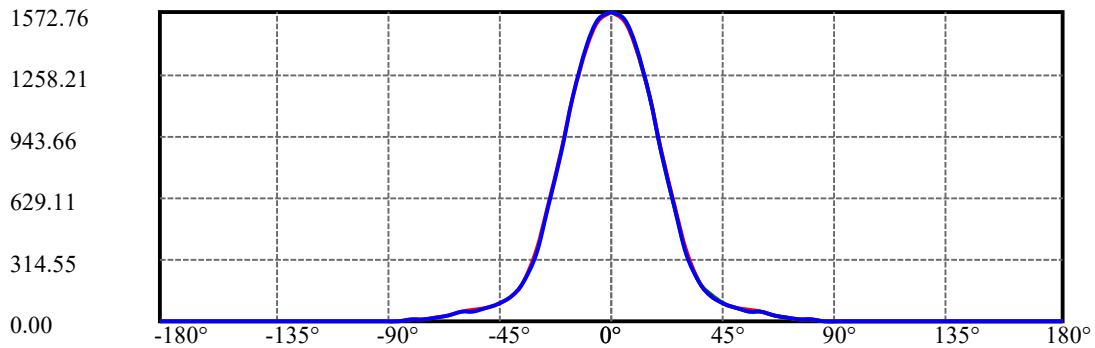
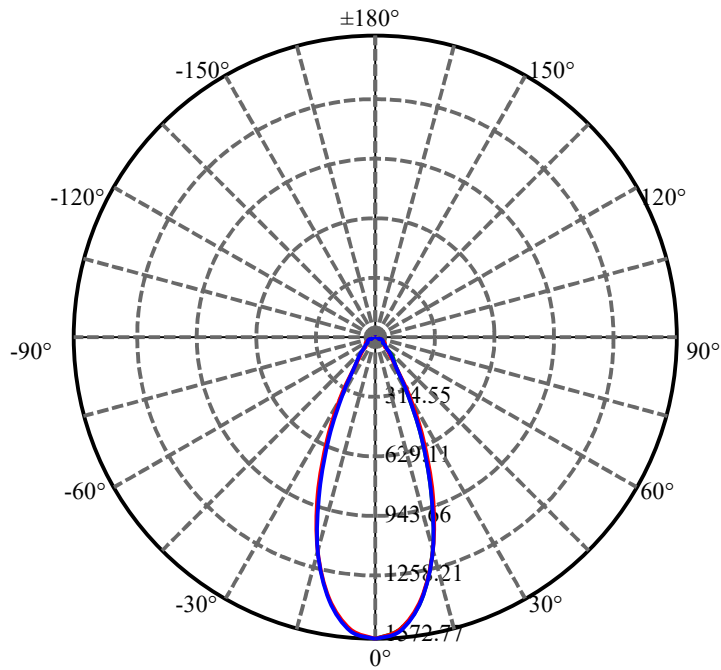
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1572.765	0.000	0	0.00%	0.00%
5.0	1529.676	37.089	37.089	3.57%	3.57%
10.0	1388.894	104.406	141.495	10.06%	13.63%
15.0	1145.494	150.338	291.833	14.48%	28.11%
20.0	862.445	165.482	457.316	15.94%	44.06%
25.0	578.285	151.106	608.422	14.56%	58.61%
30.0	351.299	117.640	726.061	11.33%	69.95%
35.0	194.787	80.415	806.476	7.75%	77.69%
40.0	125.888	53.502	859.979	5.15%	82.85%
45.0	89.609	39.901	899.88	3.84%	86.69%
50.0	68.682	31.985	931.865	3.08%	89.77%
55.0	55.110	26.917	958.781	2.59%	92.37%
60.0	45.303	23.210	981.991	2.24%	94.60%
65.0	33.273	19.102	1001.093	1.84%	96.44%
70.0	21.504	13.870	1014.963	1.34%	97.78%
75.0	14.334	9.368	1024.331	0.90%	98.68%
80.0	9.466	6.368	1030.699	0.61%	99.29%
85.0	3.487	3.520	1034.219	0.34%	99.63%
90.0	0.037	0.965	1035.184	0.09%	99.73%
95.0	0.000	0.010	1035.194	0.00%	99.73%
100.0	0.000	0.000	1035.194	0.00%	99.73%
105.0	0.000	0.000	1035.194	0.00%	99.73%
110.0	0.000	0.000	1035.194	0.00%	99.73%
115.0	0.000	0.000	1035.194	0.00%	99.73%
120.0	0.000	0.000	1035.194	0.00%	99.73%
125.0	0.000	0.000	1035.194	0.00%	99.73%
130.0	0.000	0.000	1035.194	0.00%	99.73%
135.0	0.000	0.000	1035.194	0.00%	99.73%
140.0	0.000	0.000	1035.194	0.00%	99.73%
145.0	0.460	0.077	1035.271	0.01%	99.73%
150.0	1.342	0.265	1035.536	0.03%	99.76%
155.0	2.300	0.461	1035.997	0.04%	99.80%
160.0	3.182	0.575	1036.572	0.06%	99.86%
165.0	3.948	0.588	1037.16	0.06%	99.92%
170.0	4.140	0.480	1037.64	0.05%	99.96%
175.0	4.562	0.311	1037.951	0.03%	99.99%
180.0	2.300	0.082	1038.033	0.01%	100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	726.06	69.95%	69.95%
0-40	859.98	82.85%	82.85%
0-60	981.99	94.60%	94.60%
0-90	1035.18	99.73%	99.73%
0-120	1035.19	99.73%	99.73%
0-180	1038.03	100.00%	100.00%
60-90	53.19	5.12%	5.12%
90-120	0.01	0.00%	0.00%
90-130	0.01	0.00%	0.00%
90-150	0.35	0.03%	0.03%
90-180	2.77	0.27%	0.27%
0-37.24	830.43	80.00%	80.00%

ZONAL LUMEN SUMMARY

0-10	141.50
10-20	315.82
20-30	268.75
30-40	133.92
40-50	71.89
50-60	50.13
60-70	32.97
70-80	15.74
80-90	4.48
90-100	0.01
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.34
150-160	1.04
160-170	1.07
170-180	0.31



C75(Max): —————

C0/C180: —————

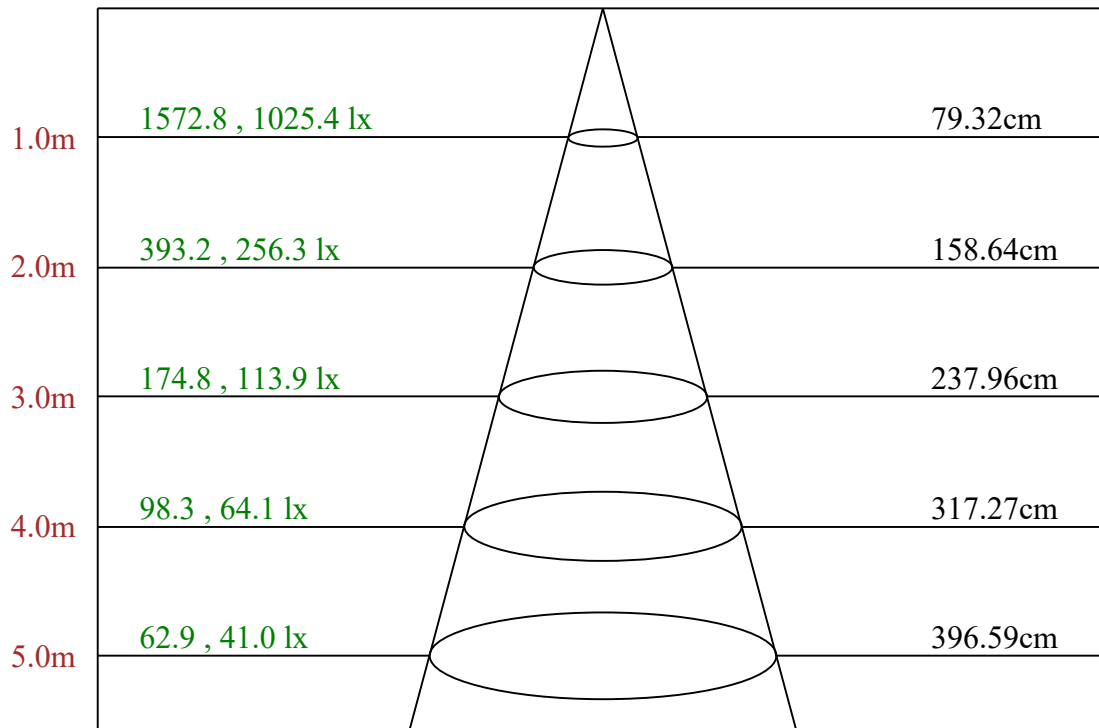
C90/C270: —————

Field angle(10%Imax):C0/180Left:37.8 Right:37.8

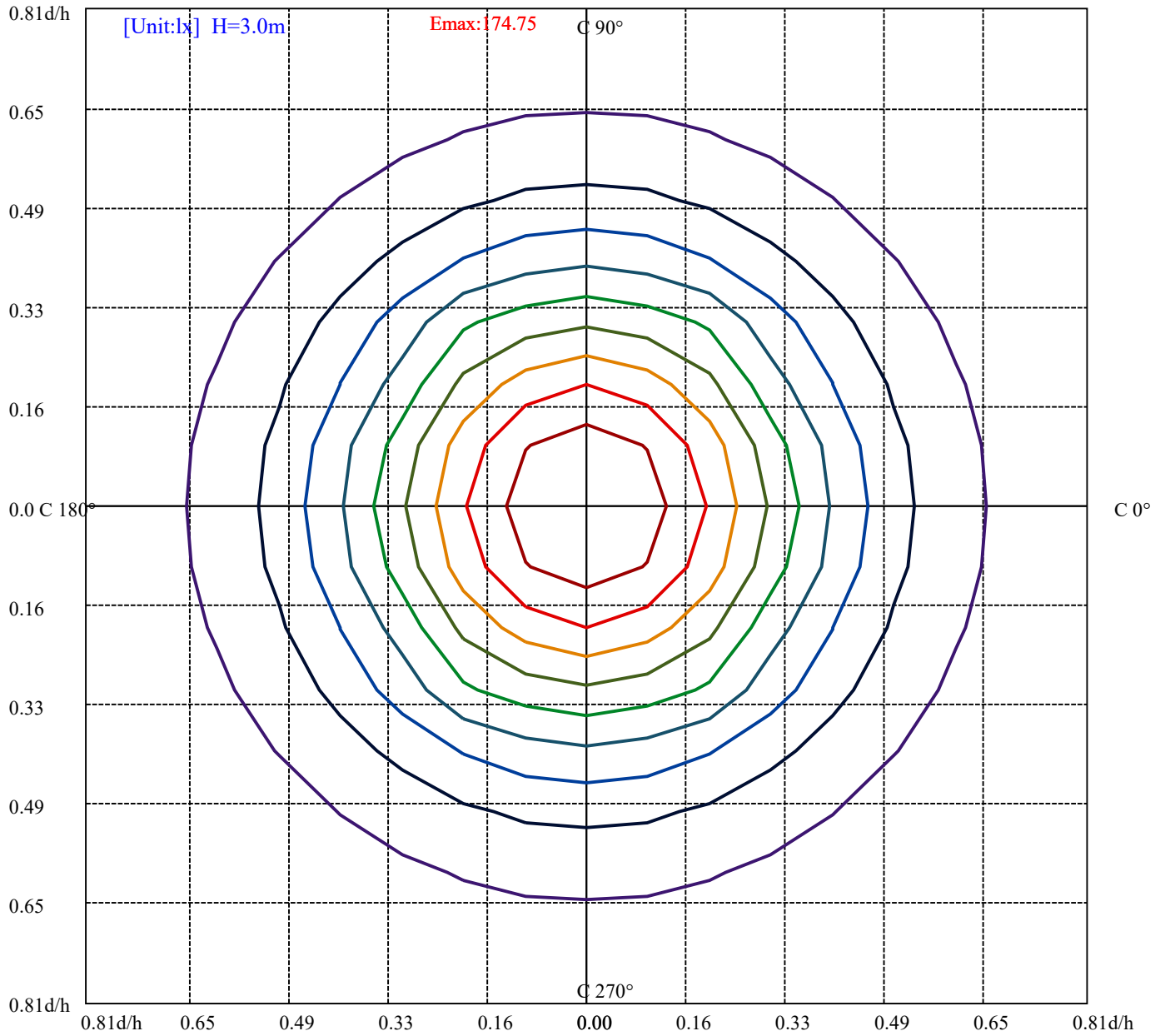
:C90/270Left:37.6 Right:37.6

Beam Angle(50%Imax):C0/180Left:21.5 Right:21.5

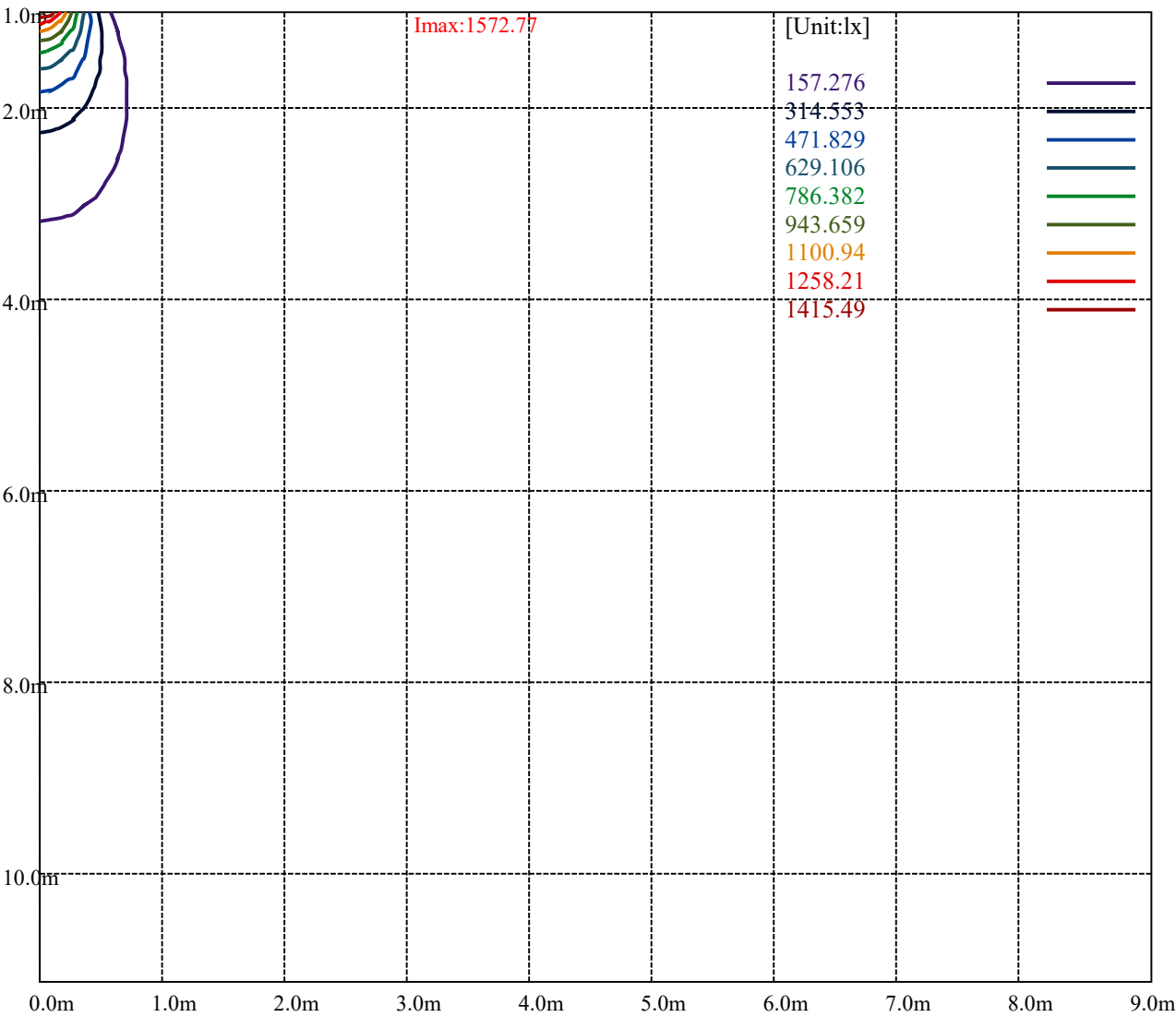
:C90/270Left:21.2 Right:21.2



Max , Ave Beam angle of C75 plane 43.27



(10%Emax) 17.47511	—
(20%Emax) 34.95033	—
(30%Emax) 52.42545	—
(40%Emax) 69.90055	—
(50%Emax) 87.37578	—
(60%Emax) 104.8509	—
(70%Emax) 122.3256	—
(80%Emax) 139.8011	—
(90%Emax) 157.2767	—



Luminance Table

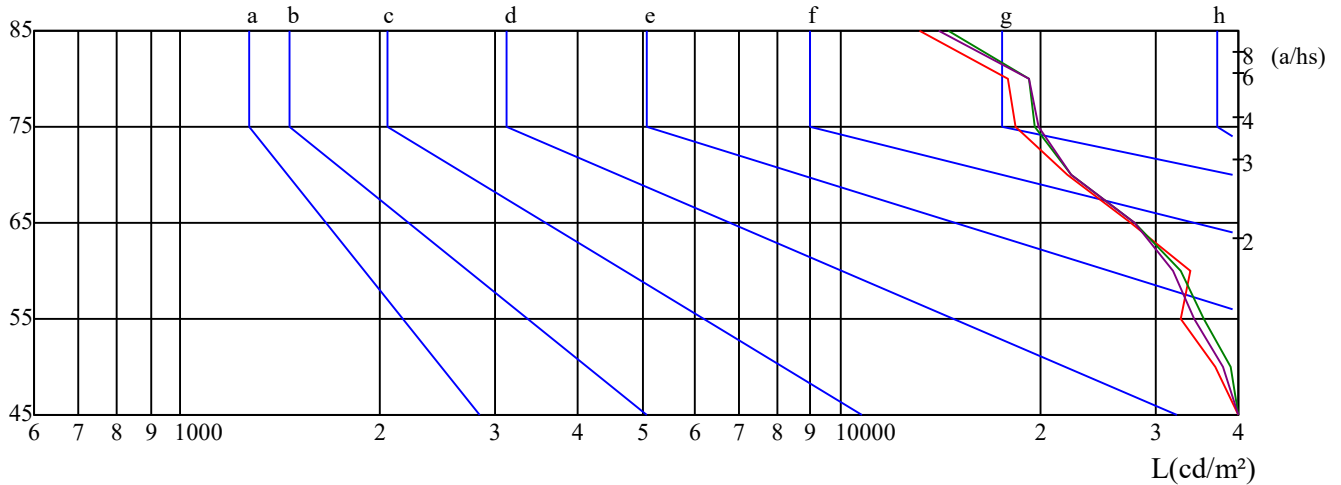
γ	45	50	55	60	65	70	75	80	85
C0	45877	38840	35487	32758	27844	22317	19661	19231	14596
C45	44936	37967	34264	31773	27907	22272	19934	19328	14089
C90	43986	36927	32821	33722	27502	22017	18342	17911	13148

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
27844	27502	27907	19661	18342	19934	14596	13148	14089

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

 $\gamma(^{\circ})$ 

C0 ———

C45 ———

C90 ———

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	1.10	1.07	1.04	1.07	1.05	1.03	1.03	1.01	1.00	1.00	0.98	0.97	0.96	0.95	0.94	0.92
2	1.01	0.97	0.93	1.00	0.96	0.92	0.96	0.93	0.90	0.93	0.90	0.88	0.90	0.88	0.86	0.84
3	0.94	0.89	0.84	0.93	0.88	0.84	0.90	0.86	0.82	0.87	0.84	0.81	0.85	0.82	0.80	0.78
4	0.88	0.82	0.77	0.87	0.81	0.77	0.84	0.80	0.76	0.82	0.78	0.75	0.80	0.77	0.74	0.73
5	0.82	0.76	0.72	0.81	0.75	0.71	0.79	0.74	0.71	0.78	0.73	0.70	0.76	0.72	0.69	0.68
6	0.77	0.71	0.67	0.76	0.71	0.66	0.75	0.70	0.66	0.73	0.69	0.65	0.72	0.68	0.65	0.63
7	0.73	0.67	0.62	0.72	0.66	0.62	0.71	0.66	0.62	0.70	0.65	0.61	0.68	0.64	0.61	0.60
8	0.69	0.63	0.59	0.68	0.63	0.59	0.67	0.62	0.58	0.66	0.61	0.58	0.65	0.61	0.58	0.56
9	0.65	0.59	0.55	0.65	0.59	0.55	0.64	0.59	0.55	0.63	0.58	0.55	0.62	0.58	0.55	0.53
10	0.62	0.56	0.52	0.62	0.56	0.52	0.61	0.56	0.52	0.60	0.55	0.52	0.59	0.55	0.52	0.51

Light Blue USA-Rayhil LCD-RD-9-5CCT-UNV-120-**

Appendix Page: 10 Total:12

Intensity data(cd)

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	1572.76	1579.96	1496.33	1282.31	1004.45	700.51	428.04	233.80	139.38
15.0	1572.76	1580.93	1492.90	1285.07	992.85	687.91	430.17	233.24	138.85
30.0	1572.76	1572.76	1482.24	1281.07	989.38	684.88	414.22	224.03	136.25
45.0	1572.76	1575.52	1481.71	1261.89	981.37	660.38	409.29	220.74	135.20
60.0	1572.76	1575.52	1463.31	1249.01	954.70	651.18	390.89	210.62	133.36
75.0	1572.76	1573.69	1461.08	1229.41	943.29	632.24	388.58	210.44	130.14
90.0	1572.76	1565.36	1457.05	1221.92	926.63	628.55	379.54	214.76	129.60
105.0	1572.76	1560.74	1440.47	1217.50	921.46	630.03	385.79	215.56	133.22
120.0	1572.76	1549.70	1431.63	1194.56	903.07	618.96	392.04	214.93	136.52
135.0	1572.76	1564.37	1441.23	1204.29	926.31	640.86	398.32	225.75	138.06
150.0	1572.76	1543.11	1418.92	1206.68	715.48	640.41	397.59	227.06	139.95
165.0	1572.76	1537.65	1415.67	1192.97	924.07	649.62	419.53	230.09	136.76
180.0	1572.76	1471.15	1274.22	1011.64	734.68	480.19	288.65	163.66	111.51
195.0	1572.76	1467.49	1283.26	1011.91	753.26	499.15	294.95	166.99	112.53
210.0	1572.76	1478.58	1292.96	1028.70	756.21	490.12	310.90	168.25	112.47
225.0	1572.76	1481.71	1315.24	1041.15	778.10	517.82	309.95	172.91	114.05
240.0	1572.76	1486.31	1311.56	1059.55	779.02	516.90	308.11	171.99	114.97
255.0	1572.76	1491.54	1327.25	1059.59	792.84	526.10	311.97	175.37	115.37
270.0	1572.76	1505.19	1333.01	1072.89	785.92	516.54	305.48	172.18	115.71
285.0	1572.76	1501.53	1334.07	1066.70	773.43	518.09	305.30	172.08	153.58
300.0	1572.76	1498.05	1343.08	1075.57	1031.29	495.35	299.79	167.88	112.54
315.0	1572.76	1527.06	1343.29	1086.76	784.52	507.46	293.84	166.05	113.81
330.0	1572.76	1513.45	1342.92	1073.22	770.16	492.13	289.16	159.41	110.29
345.0	1572.76	1510.85	1350.06	1077.46	776.22	493.45	279.07	157.09	107.19
360.0	1572.76	1579.96	1496.33	1282.31	1004.45	700.51	428.04	233.80	139.38
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	101.61	76.44	62.05	50.36	37.77	25.18	16.19	11.69	5.40
15.0	99.83	76.23	60.81	49.91	37.21	24.50	16.34	11.80	5.45
30.0	99.67	75.90	60.35	49.38	35.66	23.77	16.46	10.97	5.49
45.0	97.49	74.50	59.78	47.83	35.87	22.99	15.64	11.04	4.60
60.0	95.65	72.66	57.94	47.83	34.95	22.99	14.72	10.12	4.60
75.0	93.22	70.15	56.30	46.15	35.07	23.07	14.77	9.23	3.69
90.0	93.50	70.35	55.54	46.29	34.25	23.14	13.89	9.26	3.70
105.0	94.37	71.24	55.51	46.26	35.16	23.13	14.80	10.18	3.70
120.0	95.01	71.03	56.27	46.12	35.98	23.98	15.68	10.15	4.61
135.0	97.02	72.76	57.84	46.64	36.38	24.25	15.86	10.26	4.66
150.0	98.24	73.22	58.39	48.19	37.07	25.02	15.76	11.12	4.63
165.0	97.95	74.85	58.22	48.98	38.81	24.95	15.71	11.09	5.54
180.0	81.83	64.75	53.05	42.26	28.78	17.98	12.59	7.19	1.80
195.0	84.40	64.44	53.54	42.65	29.95	19.06	13.61	8.17	1.82
210.0	84.12	65.84	53.04	42.98	30.18	19.20	13.72	8.23	2.74
225.0	83.70	64.38	53.35	43.23	30.35	19.31	13.80	9.20	2.76
240.0	81.86	64.38	52.43	43.23	30.35	19.31	13.80	8.28	2.76
255.0	82.15	63.69	51.69	42.46	31.38	20.31	13.84	12.92	2.77
270.0	82.39	63.87	50.91	49.06	31.47	19.44	12.96	8.33	2.78
285.0	83.26	63.84	50.88	42.56	31.46	19.43	12.95	8.33	2.78
300.0	82.10	62.73	50.73	41.51	31.36	18.45	12.91	7.38	1.84
315.0	81.16	64.37	51.31	41.98	30.78	19.59	13.06	7.46	1.87
330.0	80.63	63.02	50.97	40.78	29.66	18.54	12.98	7.41	1.85
345.0	79.47	63.76	51.75	40.66	28.65	18.48	12.01	7.39	1.85
360.0	101.61	76.44	62.05	50.36	37.77	25.18	16.19	11.69	5.40

Light Blue USA-Rayhil LCD-RD-9-5CCT-UNV-120-**

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	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165.0	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
330.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
345.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
360.0	0.90	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	0.00	0.90	1.80	2.70	3.60	4.50	4.50	4.50
15.0	0.00	0.00	0.91	0.91	2.72	3.63	4.54	4.54	4.54
30.0	0.00	0.00	0.91	1.83	2.74	3.66	4.57	4.57	4.57
45.0	0.00	0.00	0.92	1.84	2.76	3.68	4.60	4.60	4.60
60.0	0.00	0.00	0.92	1.84	2.76	3.68	4.60	4.60	4.60
75.0	0.00	0.00	0.92	1.85	2.77	3.69	4.61	4.61	4.61
90.0	0.00	0.00	0.93	1.85	2.78	3.70	4.63	4.63	4.63
105.0	0.00	0.00	0.93	1.85	2.78	3.70	4.63	4.63	4.63
120.0	0.00	0.00	0.92	1.84	2.77	3.69	4.61	4.61	4.61
135.0	0.00	0.00	0.93	1.87	2.80	3.73	4.66	4.66	4.66
150.0	0.00	0.00	0.93	1.85	2.78	3.71	4.63	4.63	4.63
165.0	0.00	0.00	0.92	1.85	2.77	3.70	4.62	4.62	4.62
180.0	0.00	0.00	0.00	0.90	1.80	2.70	3.60	3.60	4.50
195.0	0.00	0.00	0.00	0.91	1.82	1.82	3.63	3.63	4.54
210.0	0.00	0.00	0.00	0.91	1.83	2.74	3.66	3.66	4.57
225.0	0.00	0.00	0.00	0.92	1.84	2.76	3.68	3.68	4.60
240.0	0.00	0.00	0.00	0.92	1.84	2.76	2.76	3.68	3.68
255.0	0.00	0.00	0.00	0.92	1.85	2.77	2.77	3.69	4.61
270.0	0.00	0.00	0.00	0.93	1.85	2.78	2.78	3.70	4.63
285.0	0.00	0.00	0.00	0.93	1.85	2.78	2.78	3.70	4.63
300.0	0.00	0.00	0.00	0.92	1.84	2.77	2.77	3.69	4.61
315.0	0.00	0.00	0.00	0.93	1.87	2.80	3.73	3.73	4.66
330.0	0.00	0.00	0.00	0.93	1.85	2.78	3.71	3.71	4.63
345.0	0.00	0.00	0.00	0.92	1.85	2.77	3.70	3.70	4.62
360.0	0.00	0.00	0.90	1.80	2.70	3.60	4.50	4.50	4.50

Intensity data(cd)

C/ γ (°)	180.0
0.0	4.50
15.0	4.54
30.0	4.57
45.0	4.60
60.0	4.60
75.0	4.61
90.0	4.63
105.0	4.63
120.0	4.61
135.0	4.66
150.0	4.63
165.0	4.62
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	4.50