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Light Blue USA-Rayhil

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Client:

LumCAT: INF-RD-CCT-WH

Luminaire: LED lamp

Report No:

Ballast type:

Test No:

Voltage(V): 120.040

LampCAT:

Current(A): 0.095

Lamp flux(lm): 909.2

Power (W): 11.110

Number of Lamps: 1

PF: 0.977

Length(mm): -50

Width(mm): -50

Phm Type: C

Height(mm): 0

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Photometric Results

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Lumens(lm): 909.16, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 81.83

Central intensity(cd): 1849.215, Maximum intensity(cd): 1849.215

Angle of maximum intensity: C=0.0  $\gamma$ =0.0

Beam Angle(50%Imax): [C0/180]Total=35.2

[C90/270]Total=36.2

Field angle(10%Imax): [C0/180]Total=59.0

[C90/270]Total=60.2

Maximum s/h(1/2): C0\_180=0.56 C90\_270=0.58

Maximum s/h(1/4): C0\_180=0.61 C90\_270=0.61

Up flux rate of lamp(%): 0.21%

Down flux rate of lamp(%): 99.79%

Up flux rate of LUM(%): 0.21%

Down flux rate of LUM(%): 99.79%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 93.770%

# Light Blue USA-Rayhil INF-RD-CCT-WH

Zonal flux distribution table

Appendix Page: 2 Total:12

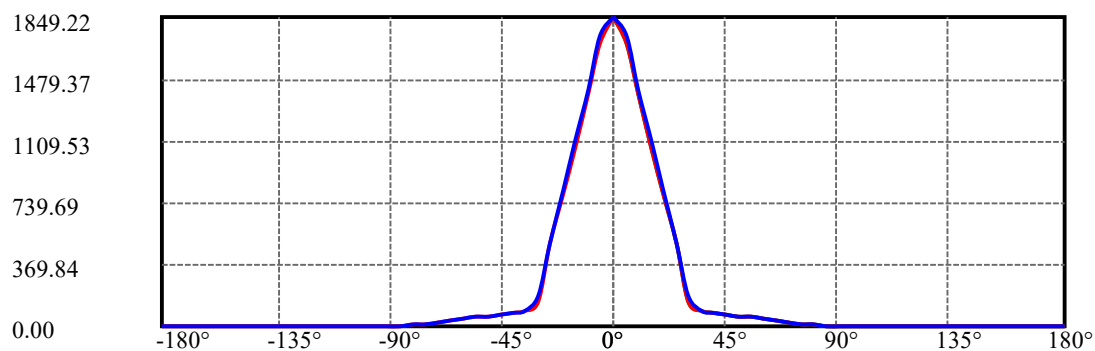
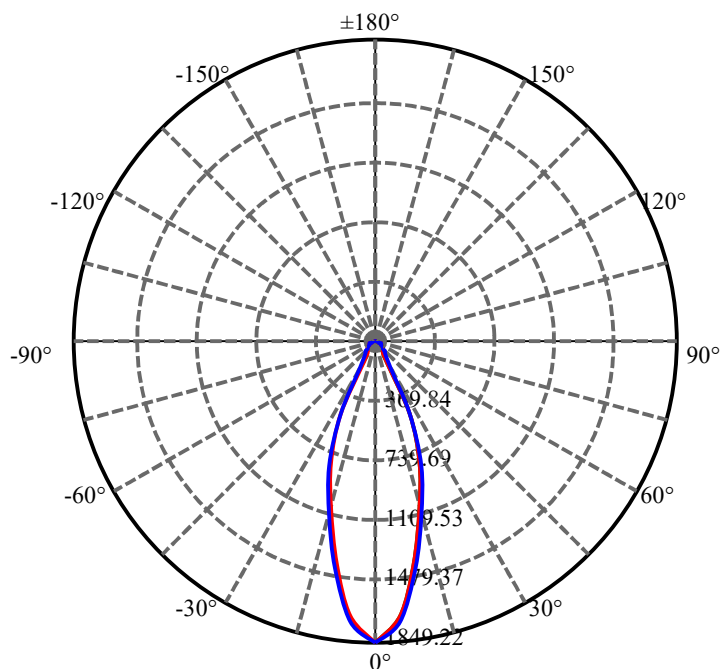
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1849.215	0.000	0	0.00%	0.00%
5.0	1715.383	42.614	42.614	4.69%	4.69%
10.0	1411.413	111.855	154.469	12.30%	16.99%
15.0	1092.024	148.502	302.971	16.33%	33.32%
20.0	809.712	156.730	459.701	17.24%	50.56%
25.0	491.850	136.510	596.211	15.01%	65.58%
30.0	176.694	84.605	680.816	9.31%	74.88%
35.0	93.306	39.759	720.575	4.37%	79.26%
40.0	81.679	29.195	749.77	3.21%	82.47%
45.0	71.434	28.350	778.12	3.12%	85.59%
50.0	61.617	26.885	805.005	2.96%	88.54%
55.0	53.261	24.978	829.983	2.75%	91.29%
60.0	44.242	22.538	852.521	2.48%	93.77%
65.0	33.551	18.912	871.433	2.08%	95.85%
70.0	23.733	14.505	885.938	1.60%	97.45%
75.0	15.762	10.323	896.261	1.14%	98.58%
80.0	9.013	6.629	902.89	0.73%	99.31%
85.0	3.334	3.355	906.245	0.37%	99.68%
90.0	0.312	0.998	907.243	0.11%	99.79%
95.0	0.000	0.085	907.328	0.01%	99.80%
100.0	0.000	0.000	907.328	0.00%	99.80%
105.0	0.000	0.000	907.328	0.00%	99.80%
110.0	0.000	0.000	907.328	0.00%	99.80%
115.0	0.000	0.000	907.328	0.00%	99.80%
120.0	0.000	0.000	907.328	0.00%	99.80%
125.0	0.000	0.000	907.328	0.00%	99.80%
130.0	0.000	0.000	907.328	0.00%	99.80%
135.0	0.000	0.000	907.328	0.00%	99.80%
140.0	0.000	0.000	907.328	0.00%	99.80%
145.0	0.000	0.000	907.328	0.00%	99.80%
150.0	0.460	0.068	907.396	0.01%	99.81%
155.0	1.381	0.233	907.629	0.03%	99.83%
160.0	2.301	0.386	908.015	0.04%	99.87%
165.0	3.222	0.455	908.471	0.05%	99.92%
170.0	3.222	0.382	908.853	0.04%	99.97%
175.0	3.643	0.246	909.098	0.03%	99.99%
180.0	1.841	0.066	909.164	0.01%	100.00%

## ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	680.82	74.88%	74.88%
0-40	749.77	82.47%	82.47%
0-60	852.52	93.77%	93.77%
0-90	907.24	99.79%	99.79%
0-120	907.33	99.80%	99.80%
0-180	909.16	100.00%	100.00%
60-90	54.72	6.02%	6.02%
90-120	0.09	0.01%	0.01%
90-130	0.09	0.01%	0.01%
90-150	0.15	0.02%	0.02%
90-180	1.86	0.20%	0.20%
0-36.16	727.33	80.00%	80.00%

## ZONAL LUMEN SUMMARY

0-10	154.47
10-20	305.23
20-30	221.11
30-40	68.95
40-50	55.23
50-60	47.52
60-70	33.42
70-80	16.95
80-90	4.35
90-100	0.09
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.07
150-160	0.62
160-170	0.84
170-180	0.25



C0(Max):

C0/C180:

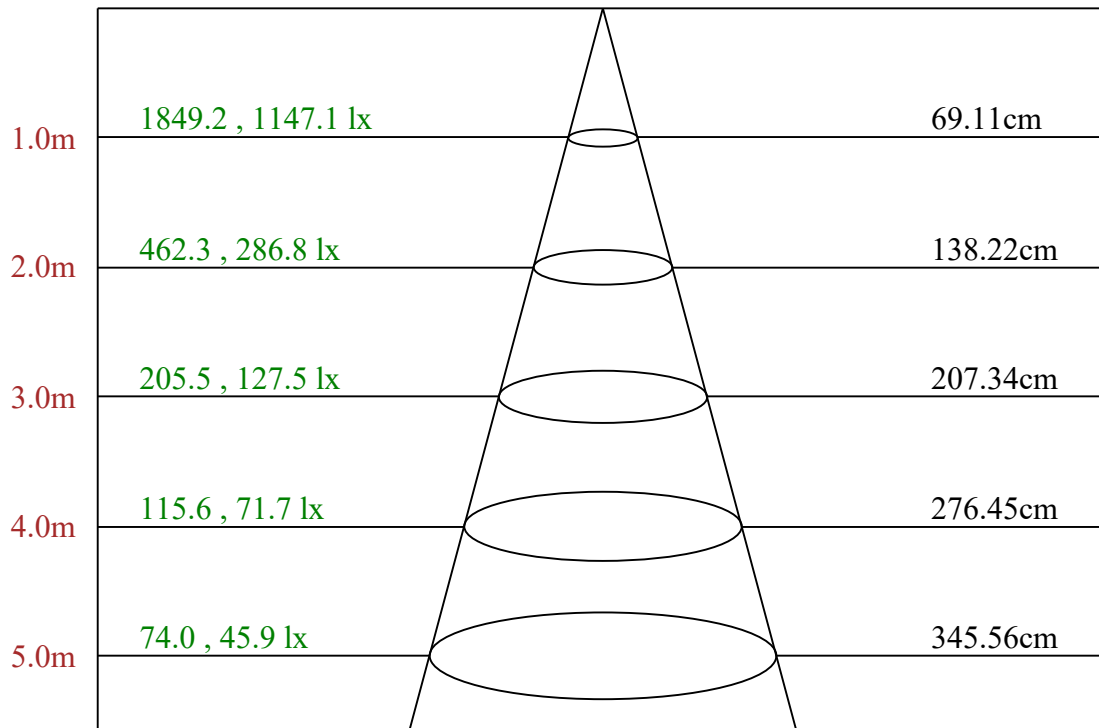
C90/C270:

Field angle(10%Imax):C0/180Left:29.5 Right:29.5

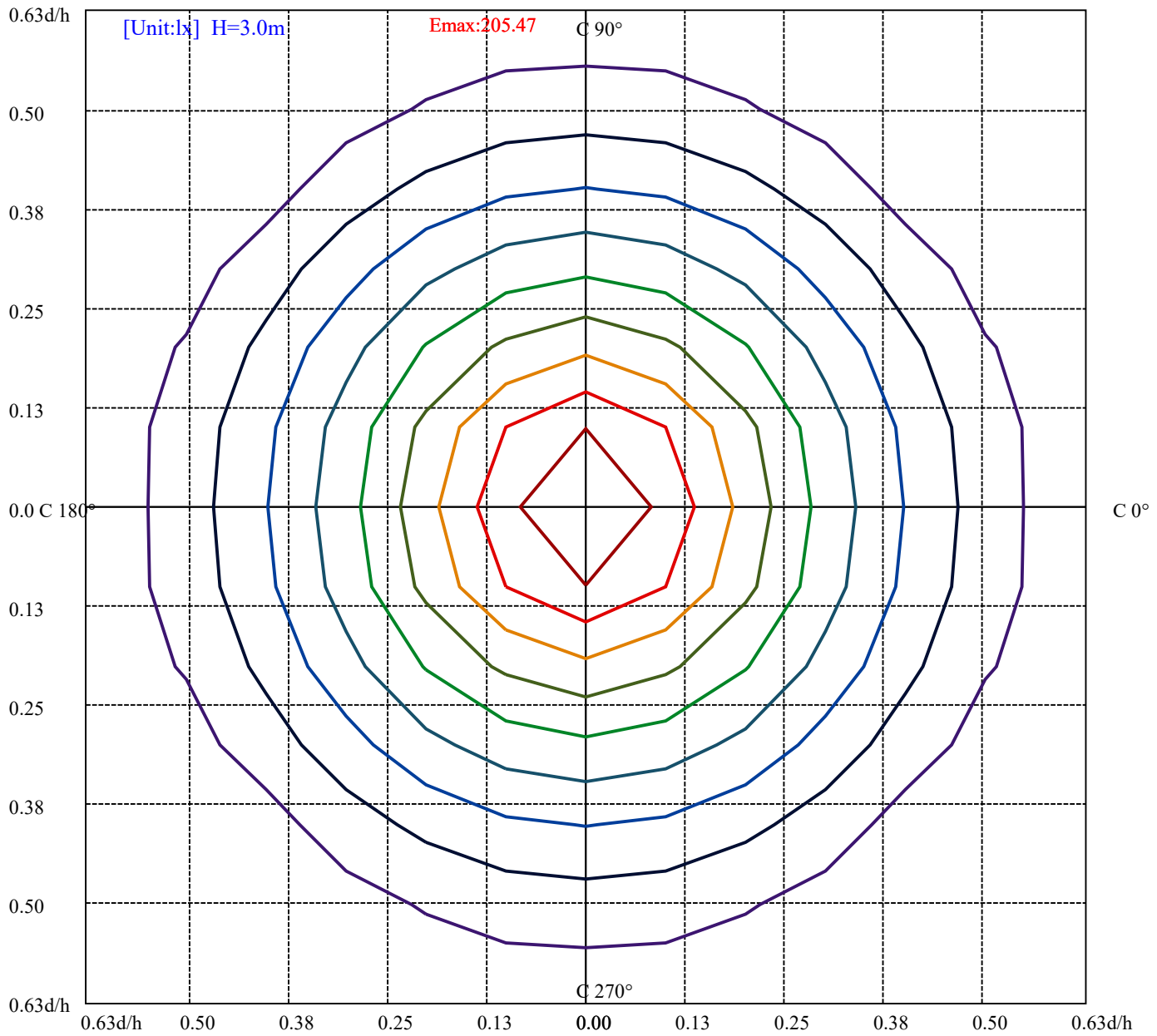
:C90/270Left:30.1 Right:30.1

Beam Angle(50%Imax):C0/180Left:17.6 Right:17.6

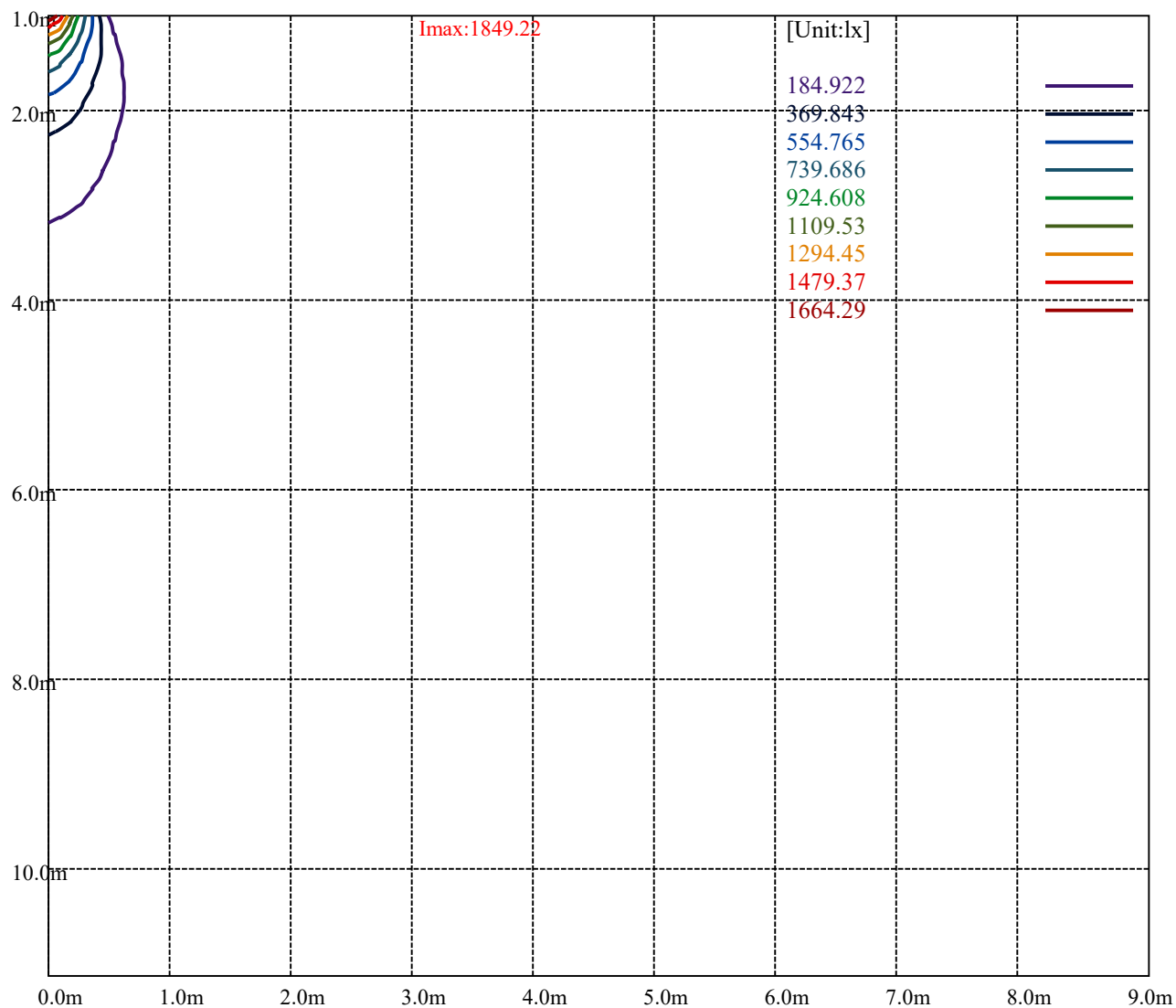
:C90/270Left:18.1 Right:18.1



Max , Ave      Beam angle of C0 plane 38.13



(10%Emax)	20.54678	
(20%Emax)	41.09356	
(30%Emax)	61.64034	
(40%Emax)	82.18711	
(50%Emax)	102.734	
(60%Emax)	123.2811	
(70%Emax)	143.8278	
(80%Emax)	164.3745	
(90%Emax)	184.9211	



# Light Blue USA-Rayhil INF-RD-CCT-WH

## Luminance Limiting Curve(no luminous side)

Appendix Page: 8 Total:12

Luminance Table

$\gamma$	45	50	55	60	65	70	75	80	85
C0	50763	47815	46545	44869	39813	34109	30338	25839	20593
C45	51651	48780	47287	45320	40562	35025	31301	26389	18865
C90	51536	48962	47444	45433	40314	34593	31085	25892	19005

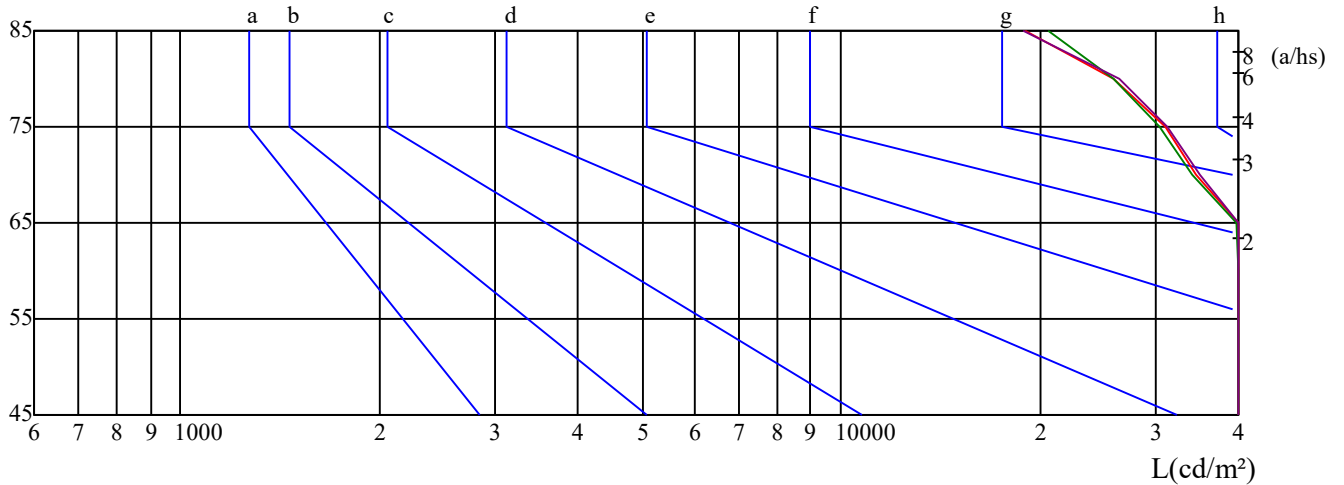
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
39813	40314	40562	30338	31085	31301	20593	19005	18865

Glare Table

Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	$\leq 300$				
1.5	B		2000	1000	500	$\leq 300$			
1.85	C			2000	1000	500	$\leq 300$		
2.2	D				2000	1000	500	$\leq 300$	
2.55	E					2000	1000	500	$\leq 300$
		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	1.05	1.08	1.05	1.03	1.04	1.02	1.00	1.00	0.98	0.97	0.96	0.95	0.94	0.92
2	1.02	0.97	0.94	1.00	0.96	0.93	0.97	0.93	0.91	0.94	0.91	0.89	0.91	0.89	0.87	0.85
3	0.95	0.90	0.85	0.93	0.89	0.85	0.91	0.87	0.83	0.88	0.85	0.82	0.86	0.83	0.81	0.79
4	0.89	0.83	0.79	0.88	0.82	0.78	0.85	0.81	0.77	0.83	0.79	0.76	0.81	0.78	0.75	0.74
5	0.84	0.78	0.73	0.83	0.77	0.73	0.81	0.76	0.72	0.79	0.75	0.72	0.77	0.74	0.71	0.69
6	0.79	0.73	0.69	0.78	0.73	0.68	0.77	0.72	0.68	0.75	0.71	0.67	0.74	0.70	0.67	0.66
7	0.75	0.69	0.65	0.74	0.69	0.65	0.73	0.68	0.64	0.72	0.67	0.64	0.71	0.67	0.64	0.62
8	0.71	0.65	0.61	0.71	0.65	0.61	0.69	0.65	0.61	0.68	0.64	0.61	0.67	0.63	0.60	0.59
9	0.68	0.62	0.58	0.67	0.62	0.58	0.66	0.61	0.58	0.66	0.61	0.58	0.65	0.61	0.58	0.56
10	0.65	0.59	0.56	0.64	0.59	0.56	0.64	0.59	0.55	0.63	0.58	0.55	0.62	0.58	0.55	0.54

Light Blue USA-Rayhil INF-RD-CCT-WH

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	1849.22	1698.56	1400.79	1088.91	835.19	544.46	187.65	93.39	83.69		
15.0	1849.22	1716.11	1411.76	1097.64	834.99	552.81	197.88	94.06	83.41		
30.0	1849.22	1734.03	1418.83	1100.06	842.91	570.57	208.94	93.76	82.15		
45.0	1849.22	1763.23	1445.52	1131.43	876.18	572.96	217.24	95.95	83.27		
60.0	1849.22	1777.46	1477.74	1148.95	874.65	589.46	239.78	96.28	83.56		
75.0	1849.22	1826.13	1522.39	1204.81	902.91	614.87	249.27	96.94	84.94		
90.0	1849.22	1859.44	1564.86	1248.92	931.11	631.89	271.34	98.50	87.35		
105.0	1849.22	1879.15	1595.73	1285.19	941.91	648.21	297.45	100.08	86.05		
120.0	1849.22	1899.22	1404.84	1302.00	982.16	672.70	315.12	100.95	88.69		
135.0	1849.22	1899.02	1631.22	1312.68	971.59	664.33	112.76	101.48	88.33		
150.0	1849.22	1917.53	1687.92	1311.24	987.70	684.09	328.29	102.47	87.29		
165.0	1849.22	1924.48	1678.68	1336.66	968.91	687.86	330.59	102.89	89.55		
180.0	1849.22	1682.71	1377.00	1033.41	755.90	432.57	116.29	88.98	77.53		
195.0	1849.22	1680.62	1359.40	1029.31	747.14	428.58	120.68	88.73	77.20		
210.0	1849.22	1670.63	1353.65	1011.67	741.11	431.28	109.83	87.51	76.79		
225.0	1849.22	1644.65	1324.23	1009.24	740.41	416.37	112.24	88.70	77.84		
240.0	1849.22	1611.25	1297.90	990.91	734.78	394.18	106.27	87.19	77.20		
255.0	1849.22	1623.95	1297.13	980.46	726.58	376.67	106.17	89.55	78.47		
270.0	1849.22	1598.32	1268.43	959.92	706.23	348.47	103.15	88.28	78.06		
285.0	1849.22	1584.51	1488.16	934.43	696.85	328.31	103.83	89.79	77.64		
300.0	1849.22	1546.36	1233.12	939.70	678.36	325.50	101.90	88.69	78.31		
315.0	1849.22	1546.65	1216.84	922.73	657.75	298.81	100.54	88.33	77.05		
330.0	1849.22	1545.60	1212.57	911.80	649.93	294.13	101.52	87.29	77.80		
345.0	1849.22	1539.58	1205.18	916.51	647.84	295.34	101.94	89.55	78.12		
360.0	1849.22	1698.56	1400.79	1088.91	835.19	544.46	187.65	93.39	83.69		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	73.12	62.55	54.62	46.69	35.24	24.67	16.74	10.57	4.40		
15.0	72.76	63.00	55.02	47.03	35.49	25.73	16.86	10.65	4.44		
30.0	72.33	62.50	54.47	47.32	36.61	25.89	17.86	10.71	4.46		
45.0	73.32	63.36	56.12	47.97	37.11	26.25	18.10	10.86	4.53		
60.0	73.57	63.58	55.40	46.32	37.24	26.34	18.17	11.81	4.54		
75.0	74.78	64.63	56.32	48.93	37.85	26.77	18.46	12.00	5.54		
90.0	75.27	65.05	56.68	49.25	39.03	26.95	19.51	12.08	5.58		
105.0	75.76	66.41	57.06	49.57	39.29	28.06	19.64	12.16	5.61		
120.0	76.42	66.04	57.55	48.12	40.57	28.30	19.81	12.27	5.66		
135.0	77.05	66.71	57.32	49.80	39.46	28.19	19.73	13.15	5.64		
150.0	77.80	59.77	57.88	48.39	39.85	28.46	19.92	13.28	5.69		
165.0	77.17	67.64	58.12	48.59	40.01	27.63	20.01	13.34	5.72		
180.0	67.84	58.15	50.22	41.41	30.83	21.14	14.10	7.05	2.64		
195.0	68.33	58.56	49.69	40.82	30.17	20.41	13.31	7.10	2.66		
210.0	67.86	58.04	50.00	40.18	29.47	20.54	13.39	7.14	1.79		
225.0	67.89	57.93	49.78	40.73	29.87	19.91	13.58	6.34	1.81		
240.0	68.12	58.13	49.95	39.96	29.06	26.34	12.72	6.36	1.82		
255.0	68.32	64.63	49.85	39.70	29.54	20.31	12.93	5.54	1.85		
270.0	67.84	58.54	50.18	39.96	27.88	19.51	12.08	5.58	0.93		
285.0	68.28	58.93	50.51	40.22	28.06	19.64	12.16	5.61	0.94		
300.0	66.99	58.50	50.00	40.57	28.30	19.81	12.27	5.66	0.94		
315.0	68.59	58.26	49.80	39.46	28.19	19.73	12.22	5.64	0.94		
330.0	67.36	58.83	51.24	39.85	27.52	18.98	12.33	5.69	0.95		
345.0	67.64	59.07	50.49	40.97	28.58	20.01	12.39	5.72	0.95		
360.0	73.12	62.55	54.62	46.69	35.24	24.67	16.74	10.57	4.40		

# Light Blue USA-Rayhil INF-RD-CCT-WH

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	0.00	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	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
90.0	0.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
105.0	0.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
120.0	0.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
135.0	0.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
150.0	0.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
165.0	0.95	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	0.91	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	0.00	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	0.00	0.88	1.76	2.64	3.52	3.52	3.52		
15.0	0.00	0.00	0.00	0.89	1.77	2.66	3.55	3.55	3.55		
30.0	0.00	0.00	0.00	0.89	1.79	2.68	3.57	3.57	3.57		
45.0	0.00	0.00	0.00	0.91	1.81	2.72	3.62	3.62	3.62		
60.0	0.00	0.00	0.00	0.91	1.82	2.72	3.63	3.63	3.63		
75.0	0.00	0.00	0.00	0.92	1.85	2.77	3.69	3.69	3.69		
90.0	0.00	0.00	0.00	0.93	1.86	2.79	3.72	3.72	3.72		
105.0	0.00	0.00	0.00	0.94	1.87	2.81	3.74	3.74	3.74		
120.0	0.00	0.00	0.00	0.94	1.89	2.83	3.77	3.77	3.77		
135.0	0.00	0.00	0.00	0.94	1.88	2.82	3.76	3.76	3.76		
150.0	0.00	0.00	0.00	0.95	1.90	2.85	3.80	3.80	3.80		
165.0	0.00	0.00	0.00	0.95	1.91	2.86	3.81	3.81	3.81		
180.0	0.00	0.00	0.00	0.00	0.88	1.76	2.64	2.64	3.52		
195.0	0.00	0.00	0.00	0.00	0.89	1.77	2.66	2.66	3.55		
210.0	0.00	0.00	0.00	0.00	0.89	1.79	2.68	2.68	3.57		
225.0	0.00	0.00	0.00	0.00	0.91	1.81	2.72	2.72	3.62		
240.0	0.00	0.00	0.00	0.00	0.91	1.82	2.72	2.72	3.63		
255.0	0.00	0.00	0.00	0.00	0.92	1.85	2.77	2.77	3.69		
270.0	0.00	0.00	0.00	0.00	0.93	1.86	2.79	2.79	3.72		
285.0	0.00	0.00	0.00	0.00	0.94	1.87	2.81	2.81	3.74		
300.0	0.00	0.00	0.00	0.00	0.94	1.89	2.83	2.83	3.77		
315.0	0.00	0.00	0.00	0.00	0.94	1.88	2.82	2.82	3.76		
330.0	0.00	0.00	0.00	0.00	0.95	1.90	2.85	2.85	3.80		
345.0	0.00	0.00	0.00	0.00	0.95	1.91	2.86	2.86	3.81		
360.0	0.00	0.00	0.00	0.88	1.76	2.64	3.52	3.52	3.52		

# Light Blue USA-Rayhil INF-RD-CCT-WH

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## Intensity data(cd)

C/γ(°)	180.0
0.0	3.52
15.0	3.55
30.0	3.57
45.0	3.62
60.0	3.63
75.0	3.69
90.0	3.72
105.0	3.74
120.0	3.77
135.0	3.76
150.0	3.80
165.0	3.81
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	3.52