
Light Blue USA-Rayhil

Client:

LumCAT: INV-12-CCT-UNV-**-4000K-F

Luminaire: LED lamp

Report No:

Ballast type:

Test No:

Voltage(V): 120.020

LampCAT:

Current(A): 0.161

Lamp flux(lm): 1553.7

Power (W): 17.980

Number of Lamps: 1

PF: 0.931

Length(mm): -270

Width(mm): -270

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1553.65, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 86.41

Central intensity(cd): 563.635, Maximum intensity(cd): 563.635

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=109.2

[C90/270]Total=109.4

Field angle(10%Imax): [C0/180]Total=158.2

[C90/270]Total=158.6

Maximum s/h(1/2): C0_180=1.25 C90_270=1.25

Maximum s/h(1/4): C0_180=1.36 C90_270=1.36

Up flux rate of lamp(%): 0.22%

Down flux rate of lamp(%): 99.78%

Up flux rate of LUM(%): 0.22%

Down flux rate of LUM(%): 99.78%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 80.170%

Light Blue USA-Rayhil INV-12-CCT-UNV-**-4000K-F

Zonal flux distribution table

Appendix Page: 2 Total:12

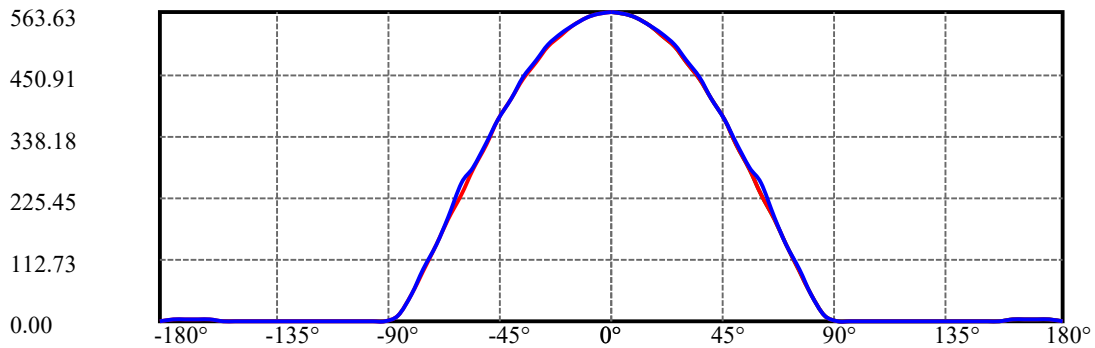
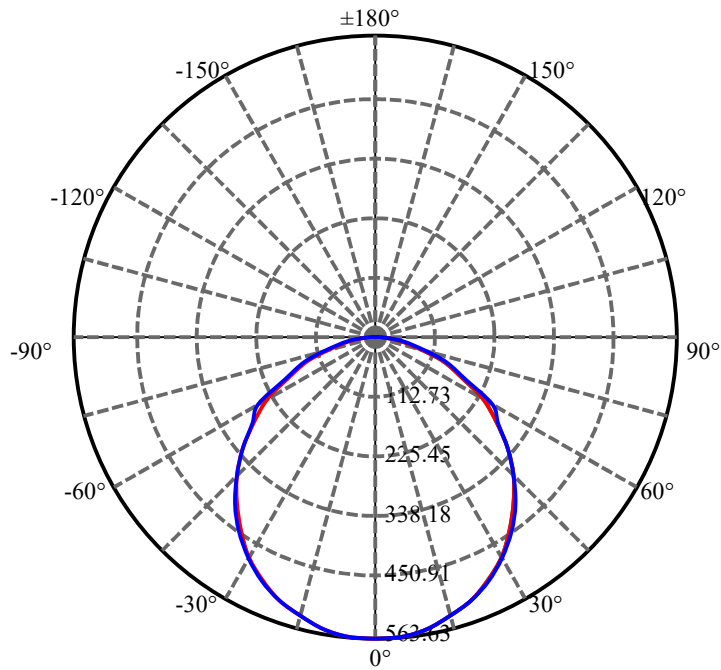
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	563.635	0.000	0	0.00%	0.00%
5.0	561.143	13.446	13.446	0.87%	0.87%
10.0	553.400	39.871	53.317	2.57%	3.43%
15.0	540.674	64.900	118.217	4.18%	7.61%
20.0	523.347	87.690	205.907	5.64%	13.25%
25.0	501.154	107.451	313.358	6.92%	20.17%
30.0	474.168	123.428	436.786	7.94%	28.11%
35.0	442.431	134.976	571.762	8.69%	36.80%
40.0	407.357	141.781	713.542	9.13%	45.93%
45.0	366.148	143.221	856.763	9.22%	55.15%
50.0	323.370	139.327	996.09	8.97%	64.11%
55.0	278.712	130.913	1127.003	8.43%	72.54%
60.0	234.172	118.552	1245.555	7.63%	80.17%
65.0	185.911	102.123	1347.678	6.57%	86.74%
70.0	139.529	82.404	1430.081	5.30%	92.05%
75.0	93.801	60.989	1491.07	3.93%	95.97%
80.0	51.557	38.894	1529.964	2.50%	98.48%
85.0	11.273	17.072	1547.036	1.10%	99.57%
90.0	0.191	3.139	1550.175	0.20%	99.78%
95.0	0.307	0.136	1550.311	0.01%	99.79%
100.0	0.384	0.188	1550.499	0.01%	99.80%
105.0	0.460	0.226	1550.724	0.01%	99.81%
110.0	0.460	0.240	1550.965	0.02%	99.83%
115.0	0.383	0.213	1551.178	0.01%	99.84%
120.0	0.383	0.186	1551.365	0.01%	99.85%
125.0	0.191	0.133	1551.497	0.01%	99.86%
130.0	0.153	0.075	1551.572	0.00%	99.87%
135.0	0.000	0.031	1551.603	0.00%	99.87%
140.0	0.460	0.085	1551.688	0.01%	99.87%
145.0	0.537	0.166	1551.854	0.01%	99.88%
150.0	1.227	0.260	1552.114	0.02%	99.90%
155.0	1.380	0.330	1552.444	0.02%	99.92%
160.0	1.955	0.350	1552.794	0.02%	99.95%
165.0	2.300	0.351	1553.144	0.02%	99.97%
170.0	2.300	0.273	1553.417	0.02%	99.99%
175.0	2.760	0.181	1553.598	0.01%	100.00%
180.0	1.380	0.049	1553.648	0.00%	100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	436.79	28.11%	28.11%
0-40	713.54	45.93%	45.93%
0-60	1245.55	80.17%	80.17%
0-90	1550.17	99.78%	99.78%
0-120	1551.36	99.85%	99.85%
0-180	1553.65	100.00%	100.00%
60-90	304.62	19.61%	19.61%
90-120	1.19	0.08%	0.08%
90-130	1.40	0.09%	0.09%
90-150	1.94	0.12%	0.12%
90-180	3.42	0.22%	0.22%
0-59.89	1242.92	80.00%	80.00%

ZONAL LUMEN SUMMARY

0-10	53.32
10-20	152.59
20-30	230.88
30-40	276.76
40-50	282.55
50-60	249.46
60-70	184.53
70-80	99.88
80-90	20.21
90-100	0.32
100-110	0.47
110-120	0.40
120-130	0.21
130-140	0.12
140-150	0.43
150-160	0.68
160-170	0.62
170-180	0.18



C0(Max): —————

C0/C180: —————

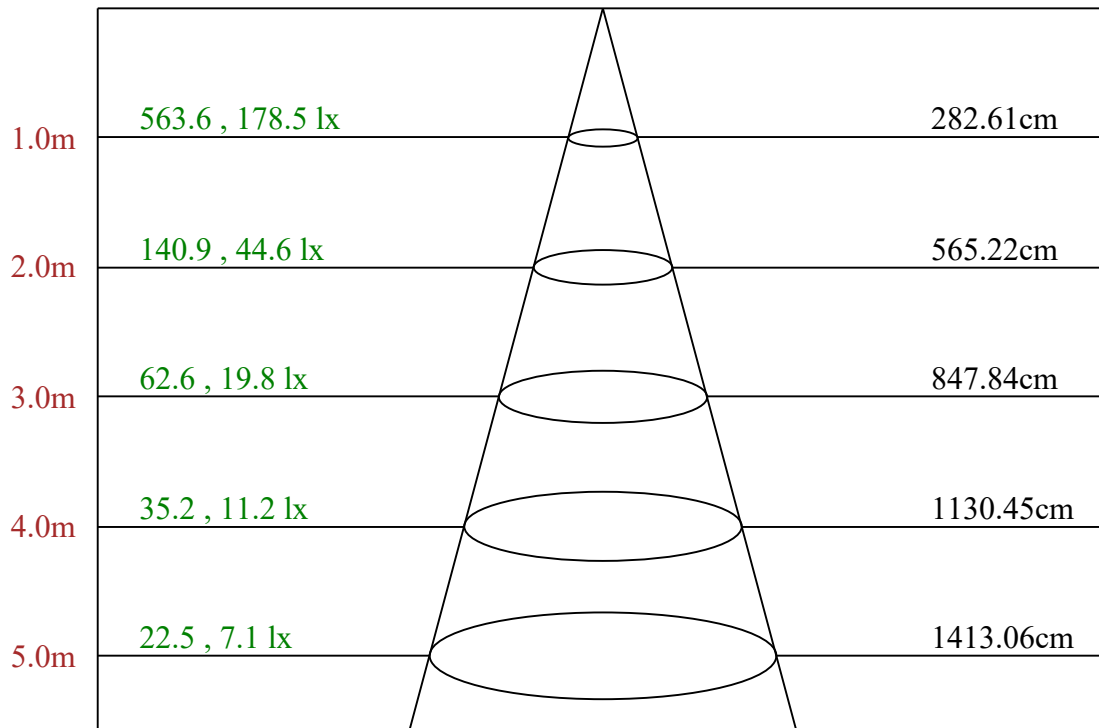
C90/C270: —————

Field angle(10%Imax):C0/180Left:79.1 Right:79.1

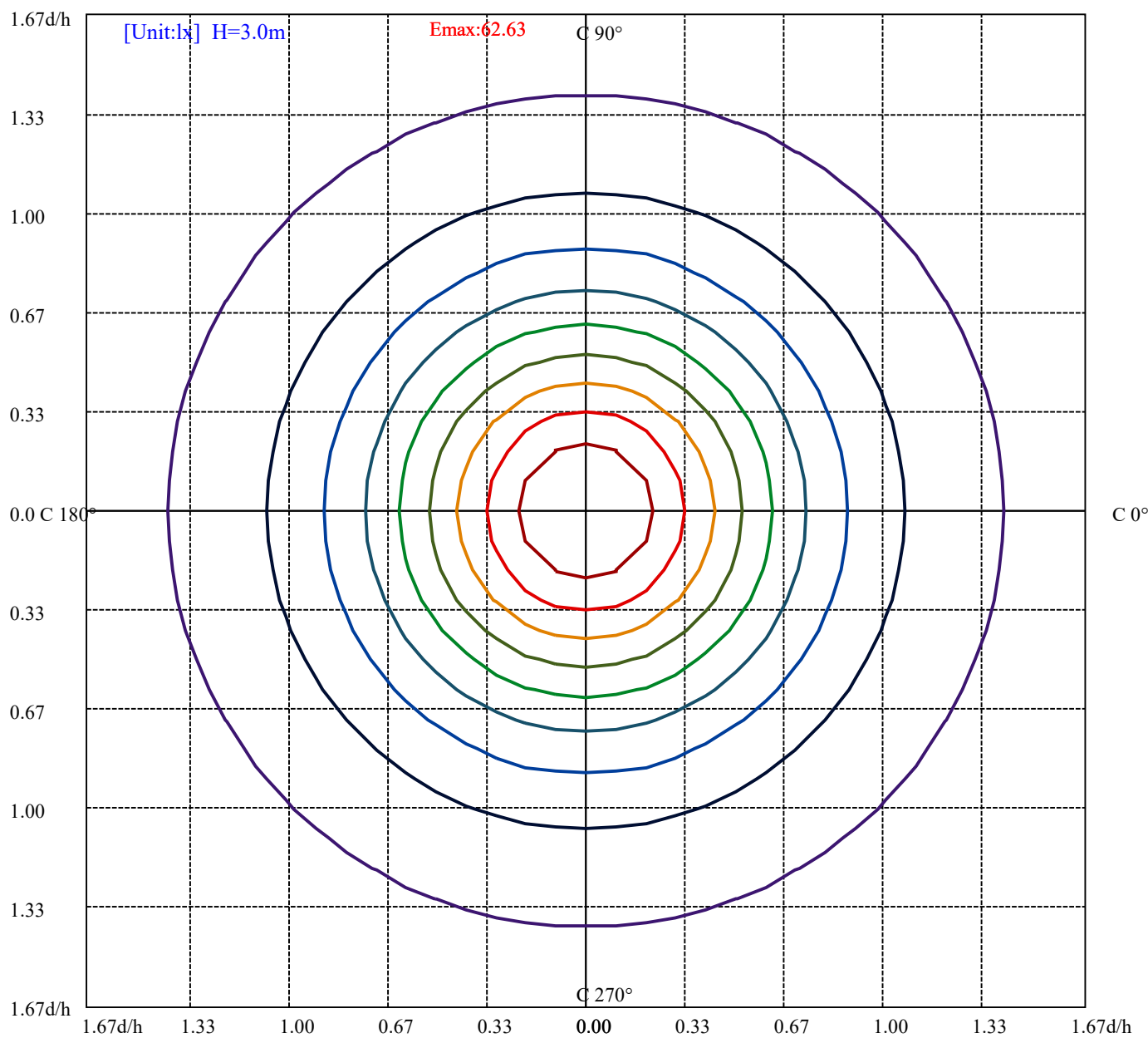
:C90/270Left:79.3 Right:79.3

Beam Angle(50%Imax):C0/180Left:54.6 Right:54.6

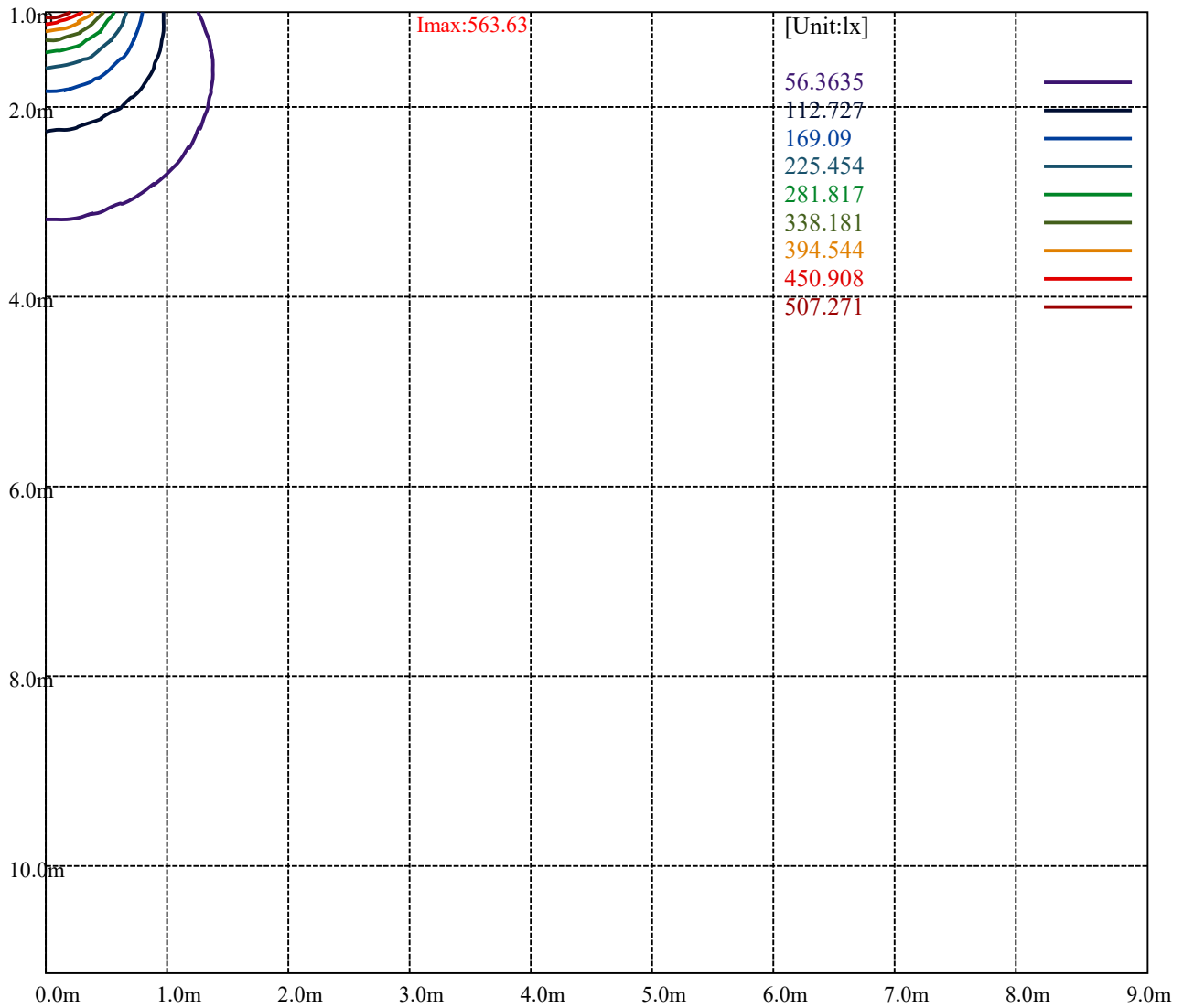
:C90/270Left:54.7 Right:54.7



Max , Ave Beam angle of C0 plane 109.43



(10%Emax) 6.262611	—
(20%Emax) 12.52522	—
(30%Emax) 18.78778	—
(40%Emax) 25.05044	—
(50%Emax) 31.313	—
(60%Emax) 37.57567	—
(70%Emax) 43.83822	—
(80%Emax) 50.10089	—
(90%Emax) 56.36345	—



Light Blue USA-Rayhil INV-12-CCT-UNV-**-4000K-F

Luminance Limiting Curve(no luminous side)

Appendix Page: 8 Total:12

Luminance Table

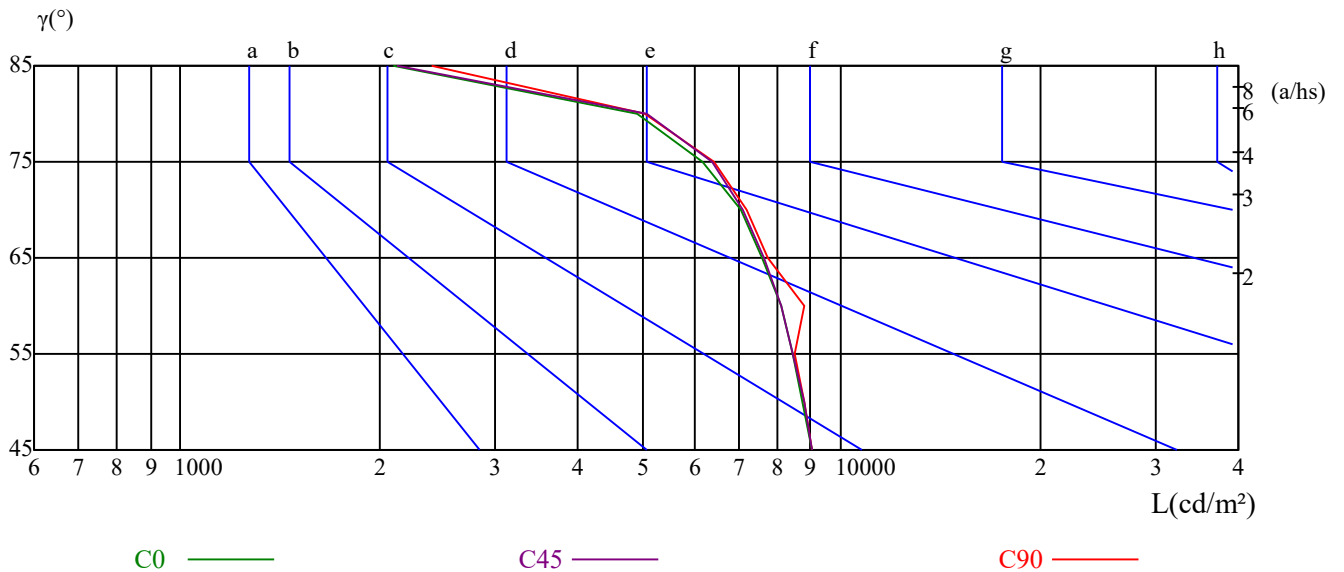
γ	45	50	55	60	65	70	75	80	85
C0	9037	8750	8470	8121	7607	7067	6165	4916	2105
C45	9035	8789	8483	8141	7672	7096	6365	5090	2121
C90	9065	8821	8511	8799	7764	7196	6432	5048	2399

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
7607	7764	7672	6165	6432	6365	2105	2399	2121

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	1.04	1.00	0.96	1.02	0.98	0.95	0.98	0.95	0.92	0.94	0.91	0.89	0.90	0.88	0.86	0.84
2	0.91	0.84	0.79	0.89	0.83	0.78	0.86	0.80	0.76	0.82	0.78	0.74	0.79	0.76	0.73	0.70
3	0.80	0.72	0.66	0.79	0.71	0.65	0.76	0.69	0.64	0.73	0.67	0.63	0.70	0.66	0.62	0.59
4	0.71	0.62	0.56	0.70	0.62	0.55	0.67	0.60	0.54	0.65	0.59	0.54	0.63	0.57	0.53	0.51
5	0.63	0.55	0.48	0.62	0.54	0.48	0.60	0.53	0.47	0.58	0.52	0.47	0.56	0.51	0.46	0.44
6	0.57	0.48	0.42	0.56	0.48	0.42	0.54	0.47	0.41	0.53	0.46	0.41	0.51	0.45	0.41	0.38
7	0.52	0.43	0.37	0.51	0.43	0.37	0.49	0.42	0.37	0.48	0.41	0.36	0.47	0.41	0.36	0.34
8	0.47	0.39	0.33	0.47	0.39	0.33	0.45	0.38	0.33	0.44	0.37	0.32	0.43	0.37	0.32	0.30
9	0.43	0.35	0.30	0.43	0.35	0.30	0.42	0.35	0.29	0.41	0.34	0.29	0.40	0.34	0.29	0.27
10	0.40	0.32	0.27	0.40	0.32	0.27	0.39	0.32	0.27	0.38	0.31	0.27	0.37	0.31	0.26	0.25

Light Blue USA-Rayhil INV-12-CCT-UNV-**-4000K-F

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	563.63	561.81	555.41	542.62	526.18	504.26	476.85	444.88	409.25
15.0	563.63	560.89	554.48	542.59	524.29	502.33	475.80	443.77	409.92
30.0	563.63	562.72	555.37	542.52	526.00	503.97	478.26	446.13	409.42
45.0	563.63	560.88	554.45	542.52	526.00	503.97	477.35	447.05	411.25
60.0	563.63	562.72	555.36	543.41	526.86	504.79	479.04	447.78	411.92
75.0	563.63	561.80	554.44	543.41	527.78	505.71	478.12	446.86	414.68
90.0	563.63	561.79	555.35	543.37	528.64	506.53	480.75	450.36	414.44
105.0	563.63	562.71	557.18	546.11	528.58	508.29	482.46	452.94	416.04
120.0	563.63	562.71	556.25	545.19	528.58	508.29	484.30	453.86	416.04
135.0	563.63	562.71	557.18	547.03	530.43	509.21	483.38	452.01	419.73
150.0	563.63	563.63	557.17	547.93	516.51	510.04	485.10	455.53	420.42
165.0	563.63	563.63	558.09	547.93	533.14	510.97	486.02	456.45	418.57
180.0	563.63	560.89	551.76	538.06	519.79	496.04	467.72	433.92	400.12
195.0	563.63	559.97	550.82	538.01	519.72	497.76	469.39	437.37	401.68
210.0	563.63	560.88	552.62	538.85	521.41	500.29	472.76	439.71	402.99
225.0	563.63	559.96	552.62	538.85	521.41	499.38	471.84	439.71	402.07
240.0	563.63	560.88	552.60	538.81	522.26	498.35	472.61	440.43	404.57
255.0	563.63	559.96	551.68	537.89	521.34	498.35	471.69	438.59	403.65
270.0	563.63	559.95	550.74	537.85	519.43	498.25	469.70	438.38	400.62
285.0	563.63	560.87	551.64	536.88	519.36	496.29	470.46	435.41	427.11
300.0	563.63	559.02	549.80	535.96	531.35	493.53	464.93	433.57	393.90
315.0	563.63	559.02	548.88	534.12	514.74	491.68	462.16	428.95	392.05
330.0	563.63	559.01	548.85	534.07	513.74	490.64	460.15	428.73	389.00
345.0	563.63	559.01	548.85	532.22	512.82	488.79	459.22	425.96	387.15
360.0	563.63	561.81	555.41	542.62	526.18	504.26	476.85	444.88	409.25
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	372.71	327.95	285.93	239.34	191.84	145.25	98.66	54.81	16.44
15.0	369.66	328.48	283.65	236.98	190.32	145.48	98.82	54.90	14.64
30.0	369.02	326.80	283.65	236.84	190.94	144.12	98.22	54.16	15.61
45.0	369.02	328.63	283.65	237.75	190.94	144.12	100.06	56.00	14.69
60.0	372.39	330.09	287.79	239.06	194.01	147.12	100.22	56.09	16.55
75.0	376.06	332.85	287.79	241.82	194.93	147.12	102.98	58.85	16.55
90.0	374.84	333.39	288.26	244.06	197.09	150.12	103.15	58.94	19.34
105.0	378.22	334.86	290.58	243.53	197.41	150.36	107.01	61.81	20.29
120.0	378.22	335.78	291.50	247.22	201.10	154.05	107.01	62.73	21.22
135.0	379.14	340.39	295.19	249.07	202.02	154.05	110.70	65.50	22.14
150.0	382.53	340.03	295.68	252.25	202.35	158.00	110.88	66.53	24.95
165.0	382.53	342.80	298.45	252.25	205.13	158.93	114.57	69.30	26.80
180.0	359.01	316.07	270.40	225.64	176.31	131.55	84.04	42.93	4.57
195.0	358.68	317.50	272.67	226.00	179.34	131.76	86.92	43.00	5.49
210.0	361.68	317.62	271.72	224.90	179.00	134.94	86.29	44.98	5.51
225.0	363.52	317.62	274.47	228.57	181.76	134.02	88.13	45.90	4.59
240.0	364.11	319.98	274.00	228.03	182.97	136.08	89.19	45.05	5.52
255.0	361.35	319.06	274.00	228.03	180.22	134.24	87.35	77.24	4.60
270.0	359.18	315.89	270.77	259.71	178.67	131.70	87.49	41.44	4.60
285.0	357.00	312.72	266.60	220.47	176.19	130.07	83.95	40.59	2.77
300.0	354.23	309.95	265.67	219.55	172.50	125.46	80.26	36.90	0.92
315.0	351.46	307.19	261.06	216.78	167.89	123.61	78.41	35.05	0.92
330.0	348.34	304.92	258.72	212.52	165.39	119.19	73.92	34.19	0.92
345.0	344.65	300.30	256.87	209.75	163.55	117.35	73.00	30.49	0.92
360.0	372.71	327.95	285.93	239.34	191.84	145.25	98.66	54.81	16.44

Light Blue USA-Rayhil INV-12-CCT-UNV-**-4000K-F

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	0.00	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	0.92	0.00	0.00		
180.0	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91		
195.0	0.91	0.00	0.00	0.91	0.91	0.91	0.91	0.91	0.91		
210.0	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
225.0	0.00	0.00	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
240.0	0.00	0.00	0.00	0.92	0.92	0.92	0.92	0.92	0.00		
255.0	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.00		
270.0	0.92	0.92	0.92	0.92	0.92	0.92	0.00	0.00	0.00		
285.0	0.00	0.92	0.92	0.92	0.92	0.00	0.00	0.00	0.00		
300.0	0.00	0.92	0.92	0.92	0.92	0.00	0.00	0.00	0.00		
315.0	0.00	0.92	0.92	0.92	0.92	0.92	0.92	0.00	0.00		
330.0	0.00	0.00	0.92	0.92	0.92	0.92	0.92	0.00	0.00		
345.0	0.00	0.92	0.92	0.92	0.92	0.92	0.92	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	0.91	0.91	0.91	1.83	1.83	2.74	2.74	2.74		
15.0	0.00	0.91	0.91	1.83	1.83	2.74	2.74	2.74	2.74		
30.0	0.00	0.92	0.92	1.84	1.84	2.75	2.75	2.75	2.75		
45.0	0.00	0.92	0.92	1.84	1.84	2.75	2.75	2.75	2.75		
60.0	0.00	0.92	0.92	0.92	1.84	2.76	2.76	2.76	2.76		
75.0	0.00	0.92	0.92	0.92	1.84	1.84	2.76	2.76	2.76		
90.0	0.00	0.92	0.92	1.84	1.84	2.76	2.76	2.76	2.76		
105.0	0.00	0.92	0.92	1.84	1.84	2.77	2.77	2.77	2.77		
120.0	0.00	0.92	0.92	1.84	1.84	2.77	2.77	2.77	2.77		
135.0	0.00	0.92	0.92	1.84	1.84	2.77	2.77	2.77	2.77		
150.0	0.00	0.92	0.92	1.85	1.85	1.85	2.77	2.77	2.77		
165.0	0.00	0.92	0.92	0.92	1.85	2.77	2.77	2.77	2.77		
180.0	0.00	0.00	0.00	0.91	0.91	1.83	1.83	1.83	2.74		
195.0	0.00	0.00	0.91	0.91	0.91	0.91	1.83	1.83	2.74		
210.0	0.00	0.00	0.00	0.92	0.92	1.84	1.84	1.84	2.75		
225.0	0.00	0.00	0.00	0.92	0.92	1.84	1.84	1.84	2.75		
240.0	0.00	0.00	0.00	0.92	0.92	1.84	1.84	1.84	2.76		
255.0	0.00	0.00	0.00	0.92	0.92	1.84	1.84	1.84	2.76		
270.0	0.00	0.00	0.00	0.92	0.92	1.84	1.84	1.84	2.76		
285.0	0.00	0.00	0.00	0.92	0.92	0.92	1.84	1.84	2.77		
300.0	0.00	0.00	0.00	0.92	0.92	0.92	1.84	1.84	2.77		
315.0	0.00	0.00	0.92	0.92	0.92	0.92	1.84	1.84	2.77		
330.0	0.00	0.00	0.00	0.92	0.92	0.92	1.85	1.85	2.77		
345.0	0.00	0.00	0.00	0.92	0.92	0.92	1.85	1.85	2.77		
360.0	0.00	0.91	0.91	0.91	1.83	1.83	2.74	2.74	2.74		

Intensity data(cd)

C/γ(°)	180.0
0.0	2.74
15.0	2.74
30.0	2.75
45.0	2.75
60.0	2.76
75.0	2.76
90.0	2.76
105.0	2.77
120.0	2.77
135.0	2.77
150.0	2.77
165.0	2.77
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	2.74