
Light Blue USA-Rayhil

Client:

LumCAT: INV-16-CCT-UNV-**-3000K-F

Luminaire: LED lamp

Report No:

Ballast type:

Test No:

Voltage(V): 120.020

LampCAT:

Current(A): 0.200

Lamp flux(lm): 1911.1

Power (W): 23.870

Number of Lamps: 1

PF: 0.993

Length(mm): -380

Width(mm): -380

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1911.06, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 80.06

Central intensity(cd): 660.120, Maximum intensity(cd): 660.120

Angle of maximum intensity: C=75.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=113.2

[C90/270]Total=114.2

Field angle(10%Imax): [C0/180]Total=162.2

[C90/270]Total=161.8

Maximum s/h(1/2): C0_180=1.27 C90_270=1.26

Maximum s/h(1/4): C0_180=1.38 C90_270=1.38

Up flux rate of lamp(%): 0.39%

Down flux rate of lamp(%): 99.61%

Up flux rate of LUM(%): 0.39%

Down flux rate of LUM(%): 99.61%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 78.259%

Light Blue USA-Rayhil INV-16-CCT-UNV-**-3000K-F

Zonal flux distribution table

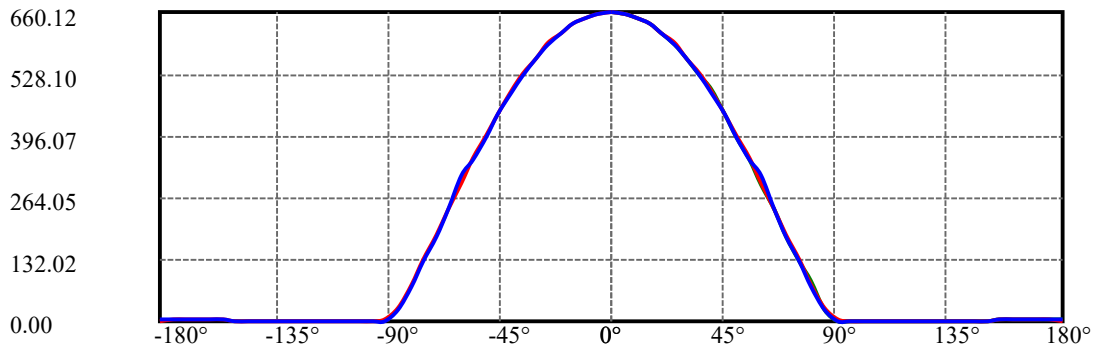
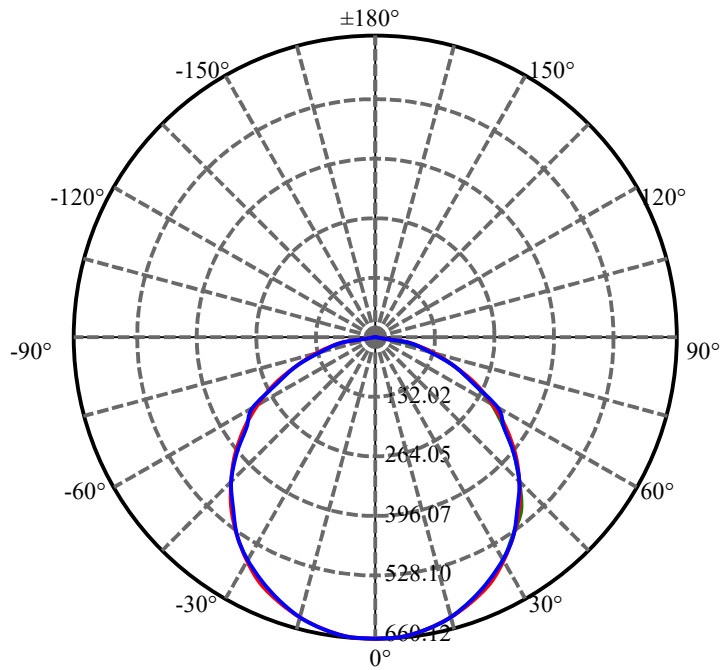
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$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	660.120	0.000	0	0.00%	0.00%
5.0	657.373	15.750	15.75	0.82%	0.82%
10.0	649.018	46.734	62.484	2.45%	3.27%
15.0	635.053	76.170	138.654	3.99%	7.26%
20.0	615.327	103.049	241.703	5.39%	12.65%
25.0	591.329	126.556	368.259	6.62%	19.27%
30.0	562.144	145.973	514.232	7.64%	26.91%
35.0	527.538	160.463	674.695	8.40%	35.30%
40.0	489.499	169.685	844.38	8.88%	44.18%
45.0	444.136	172.870	1017.251	9.05%	53.23%
50.0	395.909	169.743	1186.994	8.88%	62.11%
55.0	344.823	161.060	1348.054	8.43%	70.54%
60.0	293.434	147.531	1495.585	7.72%	78.26%
65.0	237.996	129.191	1624.776	6.76%	85.02%
70.0	182.751	106.536	1731.312	5.57%	90.59%
75.0	128.957	81.476	1812.788	4.26%	94.86%
80.0	77.832	55.331	1868.119	2.90%	97.75%
85.0	25.560	28.094	1896.213	1.47%	99.22%
90.0	1.448	7.395	1903.608	0.39%	99.61%
95.0	0.763	0.605	1904.214	0.03%	99.64%
100.0	0.686	0.394	1904.607	0.02%	99.66%
105.0	0.534	0.326	1904.934	0.02%	99.68%
110.0	0.496	0.269	1905.203	0.01%	99.69%
115.0	0.648	0.290	1905.493	0.02%	99.71%
120.0	1.068	0.417	1905.91	0.02%	99.73%
125.0	0.916	0.459	1906.368	0.02%	99.75%
130.0	0.916	0.398	1906.767	0.02%	99.78%
135.0	0.916	0.370	1907.137	0.02%	99.79%
140.0	0.916	0.339	1907.476	0.02%	99.81%
145.0	1.831	0.458	1907.934	0.02%	99.84%
150.0	1.831	0.539	1908.474	0.03%	99.86%
155.0	3.205	0.637	1909.111	0.03%	99.90%
160.0	3.205	0.672	1909.783	0.04%	99.93%
165.0	3.205	0.528	1910.311	0.03%	99.96%
170.0	3.663	0.407	1910.719	0.02%	99.98%
175.0	3.892	0.270	1910.989	0.01%	100.00%
180.0	2.175	0.073	1911.062	0.00%	100.00%

ZONAL LUMEN SUMMARY			
Zone	Lumens	%Lamp	%Fixt
0-30	514.23	26.91%	26.91%
0-40	844.38	44.18%	44.18%
0-60	1495.59	78.26%	78.26%
0-90	1903.61	99.61%	99.61%
0-120	1905.91	99.73%	99.73%
0-180	1911.06	100.00%	100.00%
60-90	408.02	21.35%	21.35%
90-120	2.30	0.12%	0.12%
90-130	3.16	0.17%	0.17%
90-150	4.87	0.25%	0.25%
90-180	7.38	0.39%	0.39%
0-61.29	1528.85	80.00%	80.00%

ZONAL LUMEN SUMMARY

0-10	62.48
10-20	179.22
20-30	272.53
30-40	330.15
40-50	342.61
50-60	308.59
60-70	235.73
70-80	136.81
80-90	35.49
90-100	1.00
100-110	0.60
110-120	0.71
120-130	0.86
130-140	0.71
140-150	1.00
150-160	1.31
160-170	0.94
170-180	0.27



C75(Max): —————

C0/C180: —————

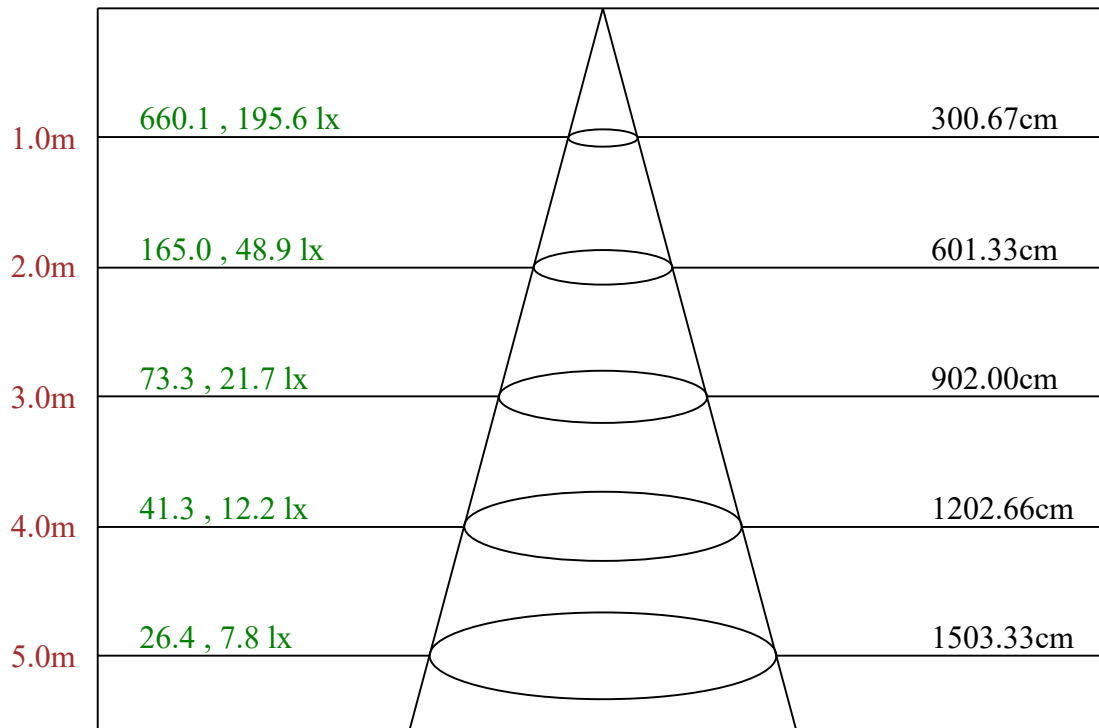
C90/C270: —————

Field angle(10%Imax):C0/180Left:81.1 Right:81.1

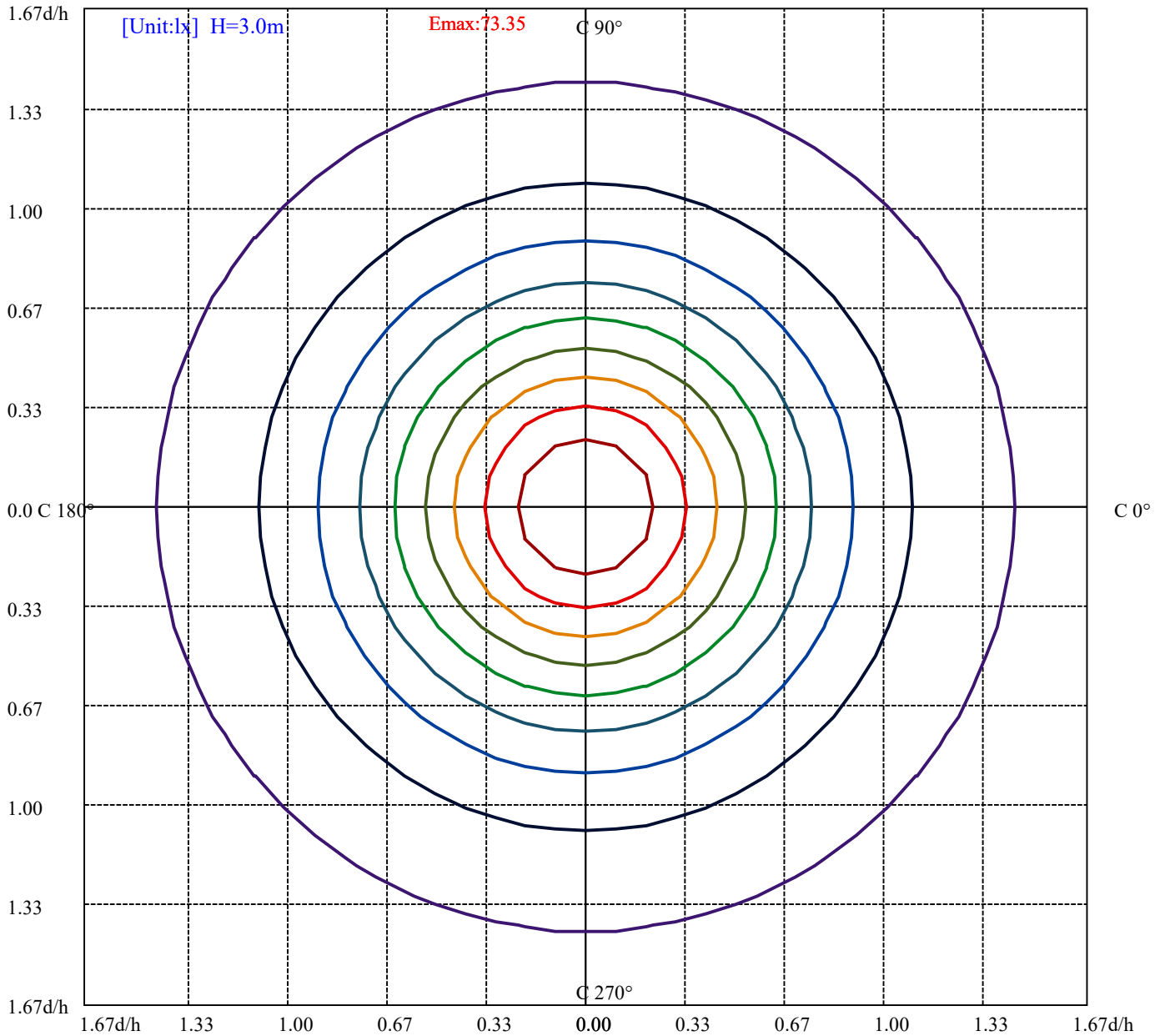
:C90/270Left:80.9 Right:80.9

Beam Angle(50%Imax):C0/180Left:56.6 Right:56.6

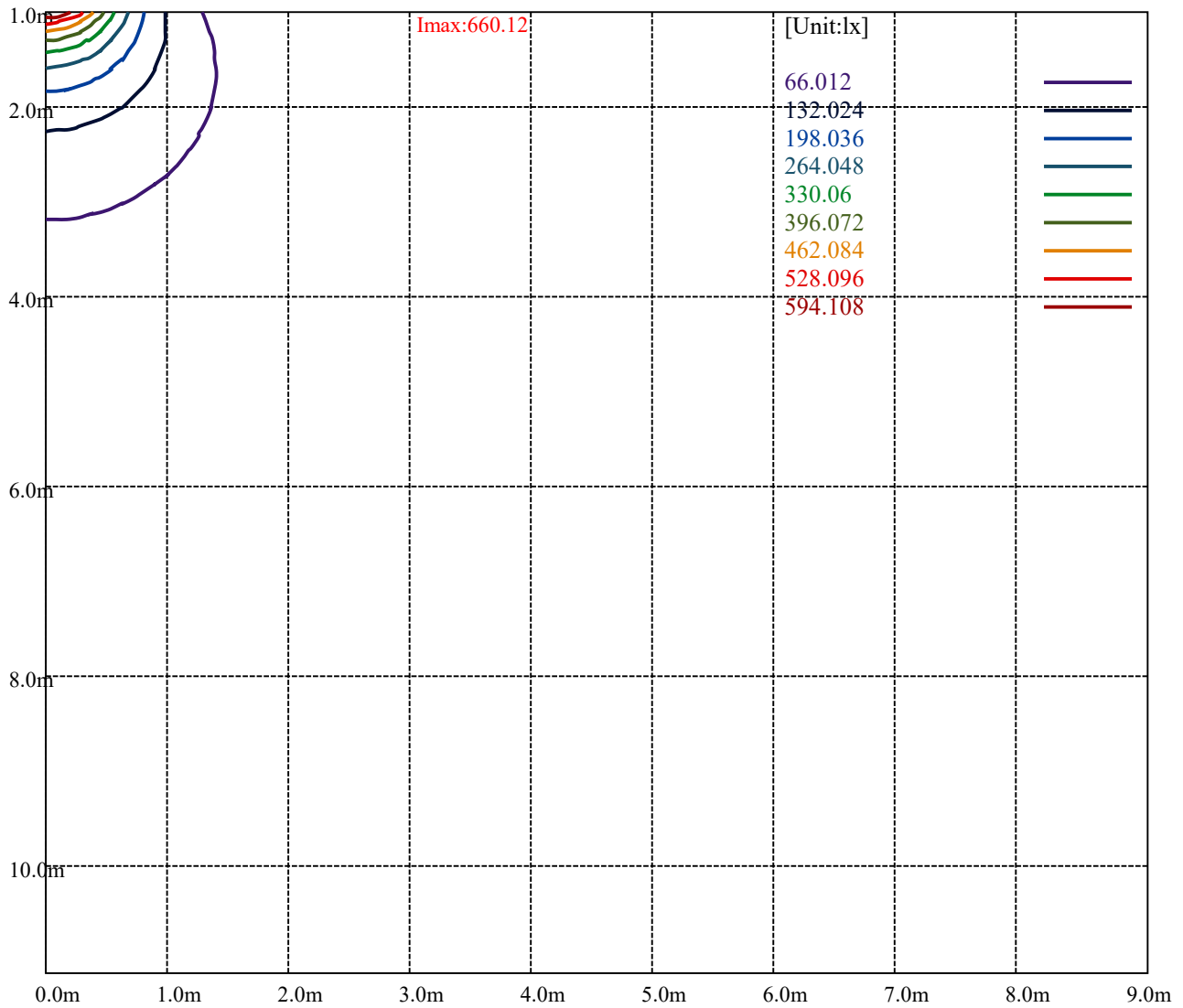
:C90/270Left:57.1 Right:57.1



Max , Ave Beam angle of C75 plane 112.74



(10%Emax)	7.334667	
(20%Emax)	14.66933	
(30%Emax)	22.004	
(40%Emax)	29.33867	
(50%Emax)	36.67333	
(60%Emax)	44.008	
(70%Emax)	51.34267	
(80%Emax)	58.67733	
(90%Emax)	66.01199	



Light Blue USA-Rayhil INV-16-CCT-UNV-**-3000K-F

Luminance Limiting Curve(no luminous side)

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Luminance Table

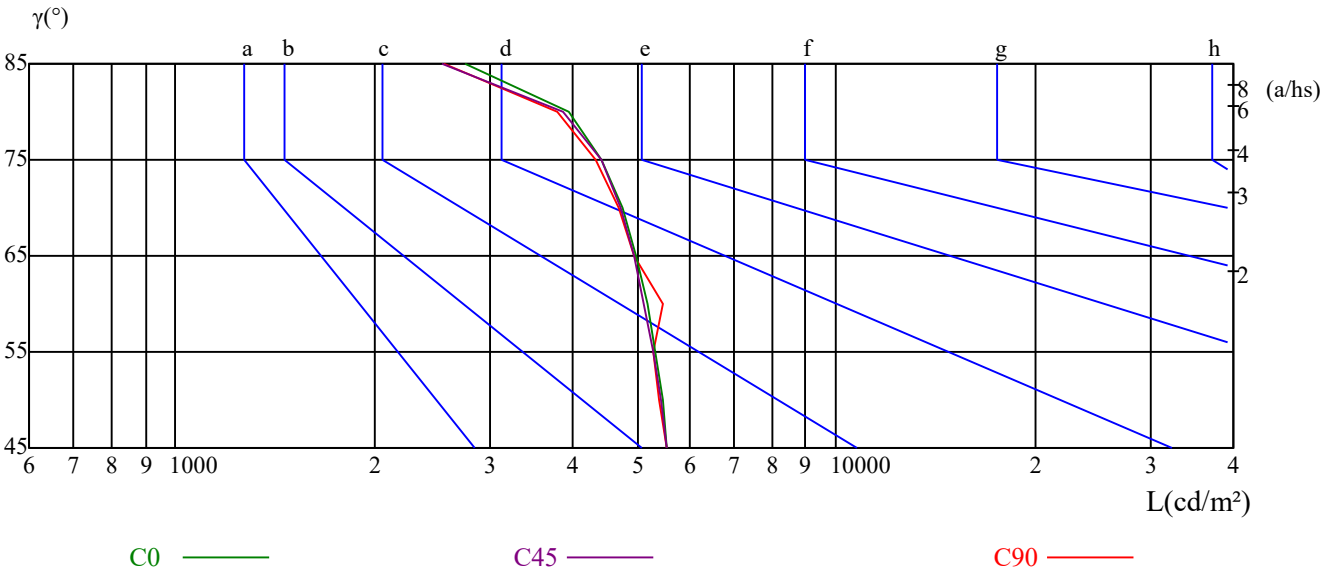
γ	45	50	55	60	65	70	75	80	85
C0	5546	5467	5332	5189	4985	4745	4402	3937	2752
C45	5530	5420	5292	5126	4946	4712	4417	3873	2526
C90	5528	5395	5285	5489	4935	4680	4342	3794	2551

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4985	4935	4946	4402	4342	4417	2752	2551	2526

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	0.99	0.96	1.01	0.97	0.94	0.97	0.94	0.91	0.93	0.90	0.88	0.89	0.87	0.85	0.83
2	0.90	0.83	0.78	0.88	0.82	0.77	0.85	0.79	0.75	0.81	0.77	0.73	0.78	0.75	0.71	0.69
3	0.79	0.71	0.64	0.78	0.70	0.64	0.74	0.68	0.63	0.72	0.66	0.61	0.69	0.64	0.60	0.58
4	0.70	0.61	0.54	0.69	0.60	0.54	0.66	0.59	0.53	0.64	0.57	0.52	0.62	0.56	0.52	0.49
5	0.63	0.53	0.47	0.61	0.53	0.46	0.59	0.52	0.46	0.57	0.51	0.45	0.55	0.49	0.45	0.43
6	0.56	0.47	0.41	0.55	0.47	0.41	0.53	0.46	0.40	0.52	0.45	0.40	0.50	0.44	0.39	0.37
7	0.51	0.42	0.36	0.50	0.42	0.36	0.49	0.41	0.36	0.47	0.40	0.35	0.46	0.40	0.35	0.33
8	0.46	0.38	0.32	0.46	0.38	0.32	0.44	0.37	0.32	0.43	0.36	0.31	0.42	0.36	0.31	0.29
9	0.43	0.34	0.29	0.42	0.34	0.29	0.41	0.34	0.29	0.40	0.33	0.28	0.39	0.33	0.28	0.26
10	0.39	0.31	0.26	0.39	0.31	0.26	0.38	0.31	0.26	0.37	0.30	0.26	0.36	0.30	0.26	0.24

Light Blue USA-Rayhil INV-16-CCT-UNV-**-3000K-F

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	660.12	660.12	653.77	643.80	625.66	604.81	577.61	544.96	509.60		
15.0	660.12	660.12	655.56	643.71	625.47	604.50	577.15	545.24	506.94		
30.0	660.12	660.12	653.73	641.86	624.51	602.60	574.30	542.34	506.73		
45.0	660.12	658.29	651.90	640.03	622.69	598.03	572.47	539.60	502.17		
60.0	660.12	659.20	651.87	640.87	623.45	599.61	571.19	537.26	499.67		
75.0	660.12	659.20	651.87	639.03	619.78	595.94	565.69	535.43	496.92		
90.0	660.12	658.29	650.95	637.20	619.78	595.02	565.69	532.68	493.26		
105.0	660.12	658.29	649.12	636.28	617.03	592.27	564.77	529.01	492.34		
120.0	660.12	657.37	650.02	636.25	616.97	593.10	564.64	530.67	490.27		
135.0	660.12	658.28	650.01	636.22	616.91	593.00	564.50	531.41	490.03		
150.0	660.12	657.36	650.01	636.22	598.52	593.92	566.34	529.57	490.03		
165.0	660.12	657.36	649.09	634.38	616.91	593.00	564.50	529.57	489.11		
180.0	660.12	653.77	643.80	627.48	605.71	580.33	547.68	511.41	471.51		
195.0	660.12	655.56	644.62	629.12	607.24	581.71	550.71	513.33	471.38		
210.0	660.12	655.55	644.60	628.16	606.25	581.60	550.56	514.95	473.86		
225.0	660.12	655.55	643.69	628.16	606.25	581.60	549.64	514.04	472.04		
240.0	660.12	656.45	646.37	630.78	608.78	583.11	551.93	516.18	476.75		
255.0	660.12	655.54	646.37	630.78	610.61	584.02	553.77	518.01	476.75		
270.0	660.12	656.45	647.28	631.70	610.61	584.94	555.60	519.84	480.42		
285.0	660.12	655.54	647.28	632.62	612.44	587.69	557.43	520.76	512.51		
300.0	660.12	656.45	648.18	633.49	628.90	588.51	560.05	524.24	485.68		
315.0	660.12	657.36	649.09	634.38	614.15	591.17	561.75	526.81	486.36		
330.0	660.12	657.36	649.09	634.38	614.15	591.17	561.75	526.81	486.36		
345.0	660.12	657.36	648.17	634.38	615.07	590.25	561.75	526.81	487.28		
360.0	660.12	660.12	653.77	643.80	625.66	604.81	577.61	544.96	509.60		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	464.26	419.83	369.96	317.37	262.05	207.65	152.34	99.74	47.15		
15.0	465.00	417.59	366.53	316.38	261.68	206.06	151.35	98.47	44.68		
30.0	461.99	416.34	365.21	312.26	257.47	202.69	147.00	97.69	44.74		
45.0	459.25	411.78	361.56	308.60	256.56	198.13	146.08	92.22	40.17		
60.0	458.42	410.74	361.23	307.14	253.05	196.20	142.11	90.77	36.67		
75.0	453.83	406.16	354.81	300.72	249.38	194.37	140.28	87.10	35.76		
90.0	452.00	401.57	353.90	300.72	245.71	190.70	135.69	84.35	31.17		
105.0	449.25	401.57	350.23	297.05	245.71	187.03	135.69	82.52	29.34		
120.0	448.96	397.54	349.80	297.47	242.38	187.29	132.21	82.63	29.38		
135.0	446.82	398.09	346.61	294.20	239.04	187.56	134.23	79.99	27.58		
150.0	445.90	399.93	346.61	296.04	242.72	186.64	131.47	77.23	28.50		
165.0	446.82	399.93	349.37	296.04	241.80	186.64	134.23	79.07	27.58		
180.0	425.27	377.21	323.71	271.12	215.81	160.50	106.09	55.31	7.25		
195.0	425.80	375.65	323.68	268.97	217.91	162.29	107.59	55.62	7.29		
210.0	427.30	377.08	325.04	270.26	217.30	162.52	110.48	55.69	9.13		
225.0	426.38	378.91	328.69	273.00	220.95	165.26	111.39	58.43	9.13		
240.0	431.83	382.32	330.06	276.88	221.87	166.86	114.60	59.59	12.84		
255.0	431.83	384.15	330.06	278.72	223.71	169.61	115.52	103.60	15.59		
270.0	434.58	385.07	333.73	321.81	227.37	172.36	119.19	65.10	19.25		
285.0	438.25	389.65	337.39	283.30	231.04	174.20	122.86	70.60	19.25		
300.0	437.94	391.11	341.54	287.37	232.28	178.11	123.03	70.69	22.95		
315.0	441.31	391.66	340.17	286.85	231.69	180.20	126.88	74.47	22.98		
330.0	443.14	393.50	342.93	290.53	236.28	180.20	126.88	72.63	21.15		
345.0	443.14	394.42	342.93	289.61	238.12	182.96	127.79	74.47	23.90		
360.0	464.26	419.83	369.96	317.37	262.05	207.65	152.34	99.74	47.15		

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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	3.63	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
15.0	3.65	0.91	0.00	0.00	0.00	0.91	0.91	0.91	0.91
30.0	2.74	0.91	0.91	0.91	0.00	0.91	0.91	0.91	0.91
45.0	2.74	0.91	0.91	0.00	0.00	0.00	0.91	0.91	0.91
60.0	2.75	0.92	0.00	0.00	0.00	0.00	0.92	0.92	0.92
75.0	2.75	0.92	0.92	0.00	0.00	0.00	0.92	0.92	0.92
90.0	0.92	0.92	0.00	0.00	0.00	0.00	0.92	0.92	0.92
105.0	0.92	0.00	0.92	0.00	0.00	0.92	0.92	0.92	0.92
120.0	0.92	0.00	0.00	0.00	0.00	0.92	0.92	0.92	0.92
135.0	0.92	0.00	0.00	0.00	0.00	0.00	0.92	0.92	0.92
150.0	0.92	0.92	0.92	0.00	0.00	0.00	0.92	0.92	0.92
165.0	0.92	0.00	0.00	0.00	0.00	0.00	0.92	0.92	0.92
180.0	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
195.0	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
210.0	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
225.0	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
240.0	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
255.0	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
270.0	0.92	0.92	0.92	0.92	0.92	0.92	2.75	0.92	0.92
285.0	0.92	0.92	0.92	0.92	0.92	0.92	2.75	0.92	0.92
300.0	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
315.0	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
330.0	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
345.0	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
360.0	3.63	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91

C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	0.91	0.91	2.72	2.72	3.63	3.63	3.63	3.63	3.63
15.0	0.91	0.91	2.74	2.74	3.65	3.65	3.65	3.65	3.65
30.0	0.91	0.91	2.74	2.74	3.65	3.65	3.65	3.65	4.57
45.0	0.91	0.91	2.74	2.74	3.65	3.65	3.65	3.65	4.57
60.0	0.92	0.92	2.75	2.75	3.67	3.67	3.67	3.67	4.58
75.0	0.92	0.92	2.75	2.75	3.67	3.67	3.67	3.67	3.67
90.0	0.92	0.92	2.75	2.75	3.67	3.67	3.67	3.67	4.58
105.0	0.92	0.92	2.75	2.75	3.67	3.67	3.67	3.67	3.67
120.0	0.92	0.92	2.75	2.75	3.67	3.67	3.67	3.67	4.59
135.0	0.92	0.92	2.76	2.76	3.68	3.68	3.68	3.68	3.68
150.0	0.92	0.92	2.76	2.76	3.68	3.68	3.68	3.68	4.60
165.0	0.92	0.92	2.76	2.76	3.68	3.68	3.68	3.68	3.68
180.0	0.91	0.91	0.91	0.91	2.72	2.72	2.72	3.63	3.63
195.0	0.91	0.91	0.91	0.91	2.74	2.74	2.74	3.65	3.65
210.0	0.91	0.91	0.91	0.91	2.74	2.74	2.74	3.65	3.65
225.0	0.91	0.91	0.91	0.91	2.74	2.74	2.74	3.65	3.65
240.0	0.92	0.92	0.92	0.92	2.75	2.75	2.75	3.67	3.67
255.0	0.92	0.92	0.92	0.92	2.75	2.75	2.75	3.67	3.67
270.0	0.92	0.92	0.92	0.92	2.75	2.75	2.75	3.67	3.67
285.0	0.92	0.92	0.92	0.92	2.75	2.75	2.75	3.67	3.67
300.0	0.92	0.92	0.92	0.92	2.75	2.75	2.75	3.67	3.67
315.0	0.92	0.92	0.92	0.92	2.76	2.76	2.76	3.68	3.68
330.0	0.92	0.92	0.92	0.92	2.76	2.76	2.76	3.68	3.68
345.0	0.92	0.92	0.92	0.92	2.76	2.76	2.76	3.68	3.68
360.0	0.91	0.91	2.72	2.72	3.63	3.63	3.63	3.63	3.63

Light Blue USA-Rayhil INV-16-CCT-UNV-**-3000K-F

Intensity data(cd)

Appendix Page: 12 Total:12

C/γ(°)	180.0
0.0	3.63
15.0	4.56
30.0	3.65
45.0	4.57
60.0	4.58
75.0	4.58
90.0	4.58
105.0	4.58
120.0	4.59
135.0	4.60
150.0	3.68
165.0	4.60
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	3.63