
Light Blue USA-Rayhil

Client:

LumCAT: INV-20-CCT-UNV-**-4000K-F

Luminaire: LED lamp

Report No:

Ballast type:

Test No:

Voltage(V): 120.000

LampCAT:

Current(A): 0.264

Lamp flux(lm): 2796.0

Power (W): 31.440

Number of Lamps: 1

PF: 0.993

Length(mm): -480

Width(mm): -480

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 2795.95, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 88.93

Central intensity(cd): 957.636, Maximum intensity(cd): 957.636

Angle of maximum intensity: C=0.0 γ =0.0

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

[C90/270]Total=115.4

Field angle(10%Imax): [C0/180]Total=162.8

[C90/270]Total=162.8

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(%): 0.52%

Down flux rate of lamp(%): 99.48%

Up flux rate of LUM(%): 0.52%

Down flux rate of LUM(%): 99.48%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 77.706%

Light Blue USA-Rayhil INV-20-CCT-UNV-**-4000K-F

Zonal flux distribution table

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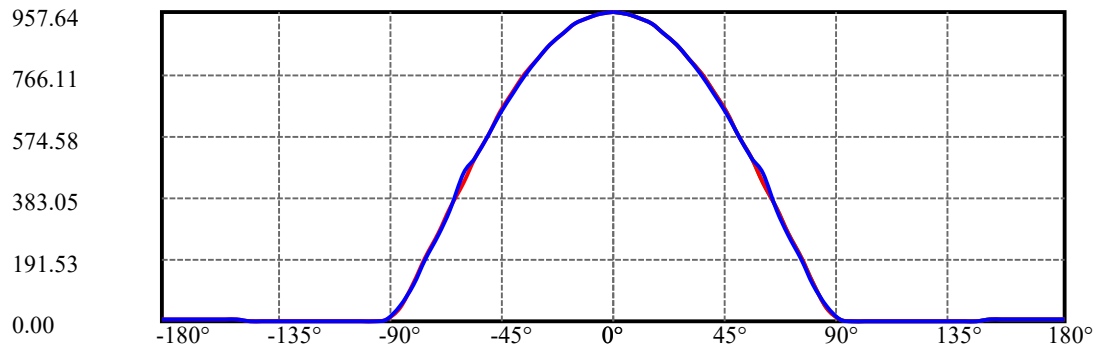
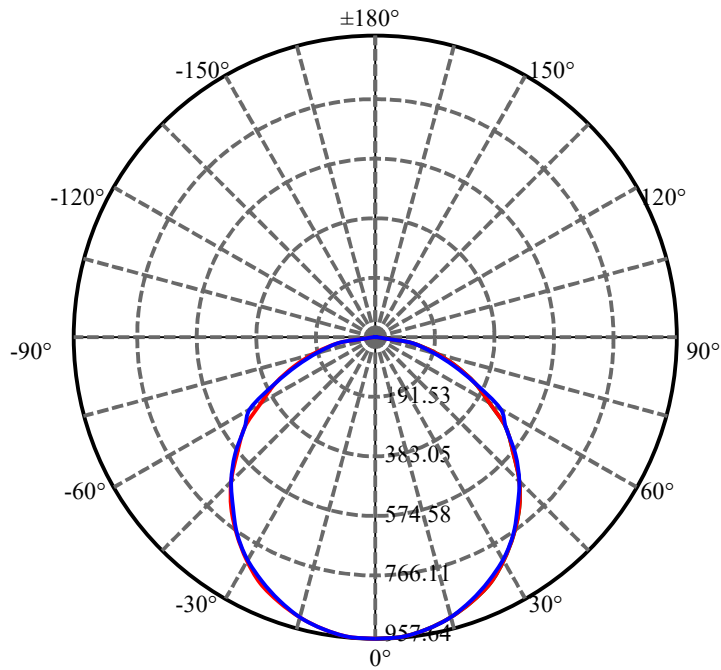
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	957.636	0.000	0	0.00%	0.00%
5.0	953.439	22.846	22.846	0.82%	0.82%
10.0	941.497	67.788	90.634	2.42%	3.24%
15.0	920.818	110.471	201.105	3.95%	7.19%
20.0	892.808	149.468	350.574	5.35%	12.54%
25.0	857.556	183.581	534.155	6.57%	19.10%
30.0	815.055	211.670	745.825	7.57%	26.68%
35.0	765.455	232.741	978.566	8.32%	35.00%
40.0	710.557	246.262	1224.827	8.81%	43.81%
45.0	645.234	251.036	1475.863	8.98%	52.79%
50.0	576.025	246.773	1722.636	8.83%	61.61%
55.0	502.848	234.583	1957.219	8.39%	70.00%
60.0	429.066	215.409	2172.629	7.70%	77.71%
65.0	349.472	189.264	2361.893	6.77%	84.48%
70.0	270.228	156.912	2518.805	5.61%	90.09%
75.0	192.627	120.983	2639.788	4.33%	94.41%
80.0	118.312	83.199	2722.987	2.98%	97.39%
85.0	45.094	44.401	2767.388	1.59%	98.98%
90.0	6.179	14.039	2781.427	0.50%	99.48%
95.0	1.374	2.068	2783.495	0.07%	99.55%
100.0	1.374	0.746	2784.242	0.03%	99.58%
105.0	1.374	0.735	2784.977	0.03%	99.61%
110.0	1.526	0.758	2785.735	0.03%	99.63%
115.0	1.564	0.782	2786.517	0.03%	99.66%
120.0	1.374	0.714	2787.231	0.03%	99.69%
125.0	1.564	0.679	2787.91	0.02%	99.71%
130.0	1.831	0.738	2788.648	0.03%	99.74%
135.0	1.831	0.740	2789.389	0.03%	99.77%
140.0	1.984	0.706	2790.095	0.03%	99.79%
145.0	2.747	0.789	2790.884	0.03%	99.82%
150.0	4.121	1.011	2791.896	0.04%	99.85%
155.0	4.349	1.072	2792.967	0.04%	99.89%
160.0	4.998	0.980	2793.948	0.04%	99.93%
165.0	5.036	0.827	2794.775	0.03%	99.96%
170.0	5.723	0.638	2795.413	0.02%	99.98%
175.0	6.257	0.429	2795.842	0.02%	100.00%
180.0	3.205	0.113	2795.955	0.00%	100.00%

Zonal flux distribution table

ZONAL LUMEN SUMMARY			
Zone	Lumens	%Lamp	%Fixt
0-30	745.82	26.68%	26.68%
0-40	1224.83	43.81%	43.81%
0-60	2172.63	77.71%	77.71%
0-90	2781.43	99.48%	99.48%
0-120	2787.23	99.69%	99.69%
0-180	2795.95	100.00%	100.00%
60-90	608.80	21.77%	21.77%
90-120	5.80	0.21%	0.21%
90-130	7.22	0.26%	0.26%
90-150	10.47	0.37%	0.37%
90-180	14.41	0.52%	0.52%
0-61.69	2236.76	80.00%	80.00%

ZONAL LUMEN SUMMARY

0-10	90.63
10-20	259.94
20-30	395.25
30-40	479.00
40-50	497.81
50-60	449.99
60-70	346.18
70-80	204.18
80-90	58.44
90-100	2.81
100-110	1.49
110-120	1.50
120-130	1.42
130-140	1.45
140-150	1.80
150-160	2.05
160-170	1.47
170-180	0.43



C0(Max): —————

C0/C180: —————

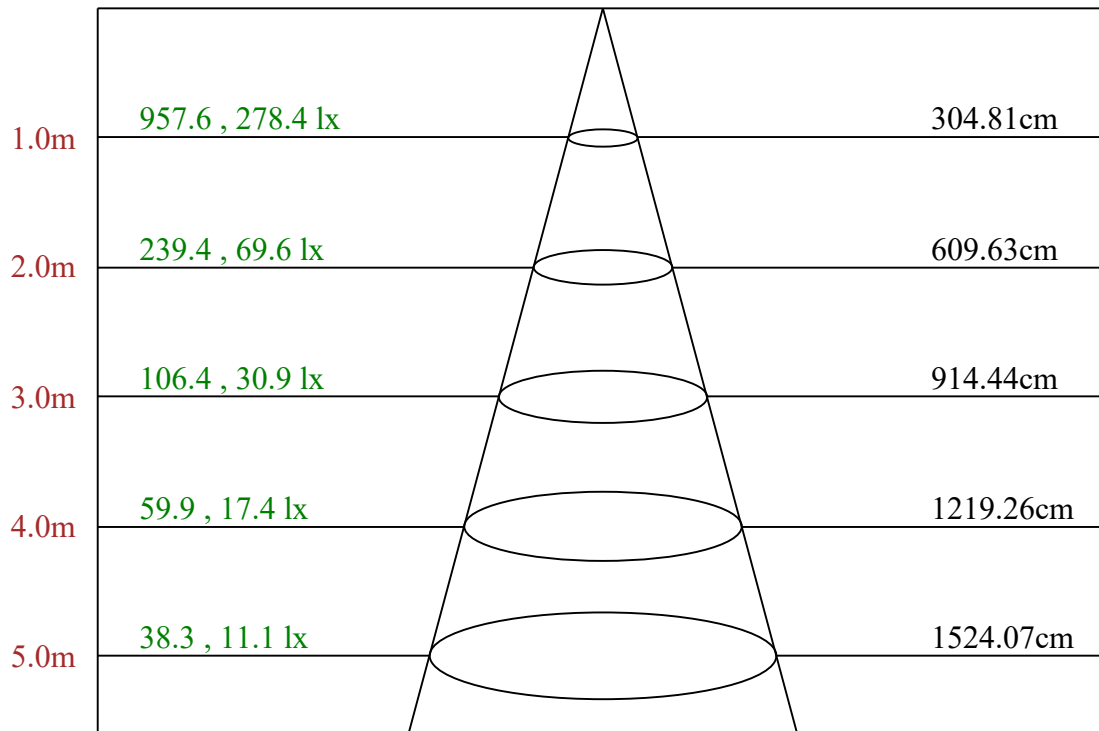
C90/C270: —————

Field angle(10%Imax):C0/180Left:81.4 Right:81.4

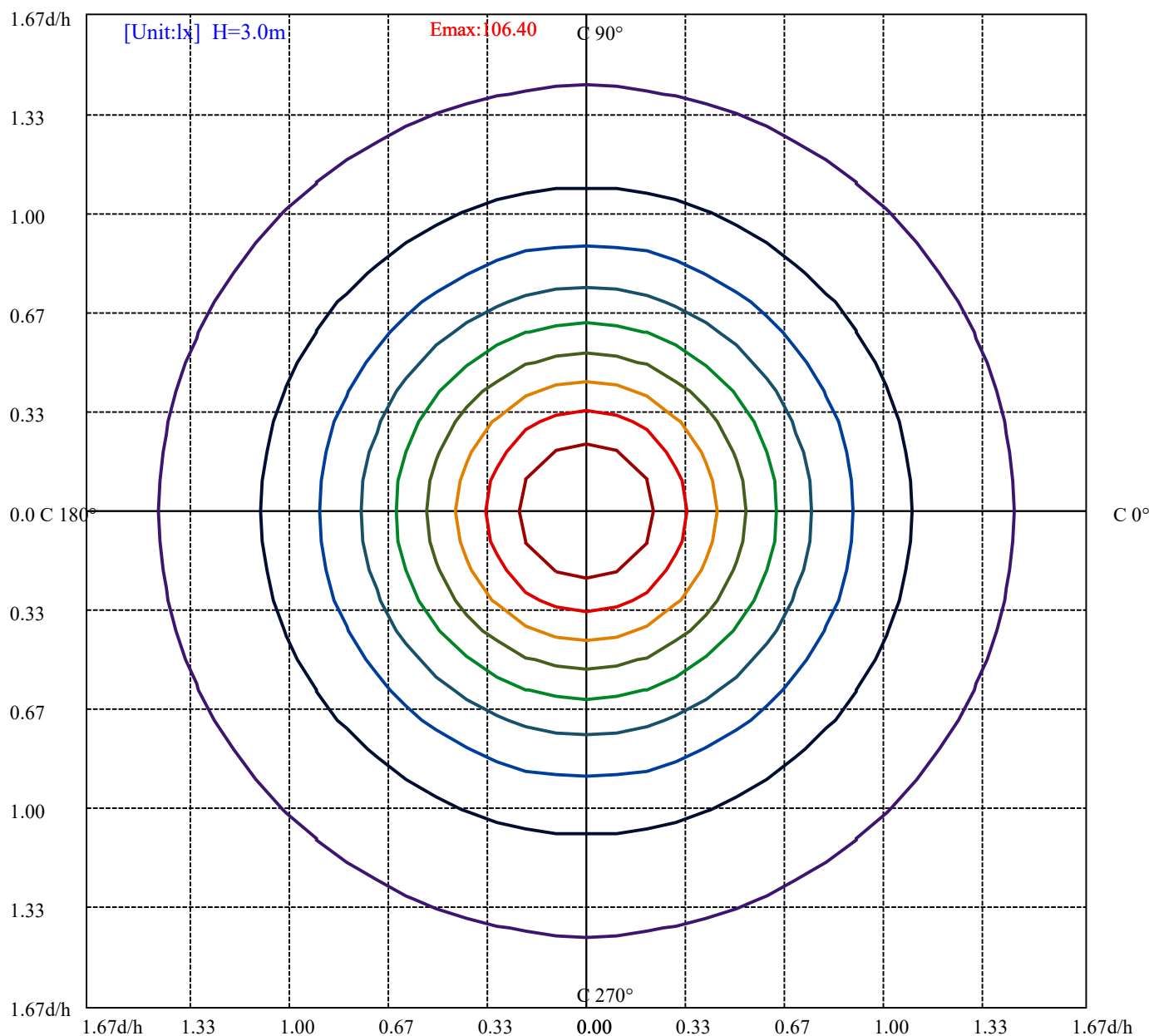
:C90/270Left:81.4 Right:81.4

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

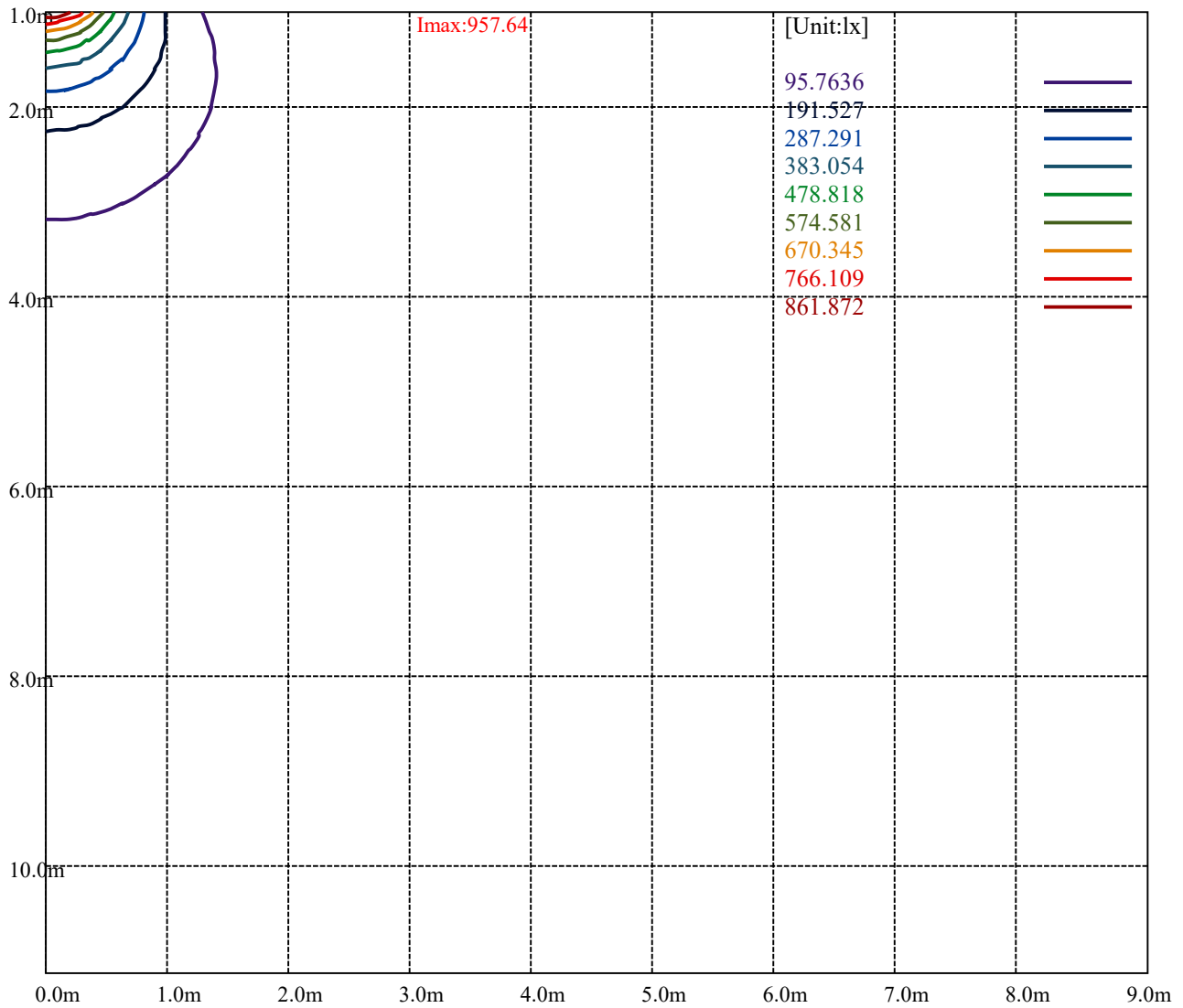
:C90/270Left:57.7 Right:57.7



Max , Ave Beam angle of C0 plane 113.46



(10%Emax) 10.64039	—
(20%Emax) 21.28078	—
(30%Emax) 31.92122	—
(40%Emax) 42.56155	—
(50%Emax) 53.202	—
(60%Emax) 63.84233	—
(70%Emax) 74.48277	—
(80%Emax) 85.12311	—
(90%Emax) 95.76356	—



Light Blue USA-Rayhil INV-20-CCT-UNV-**-4000K-F

Luminance Limiting Curve(no luminous side)

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Luminance Table

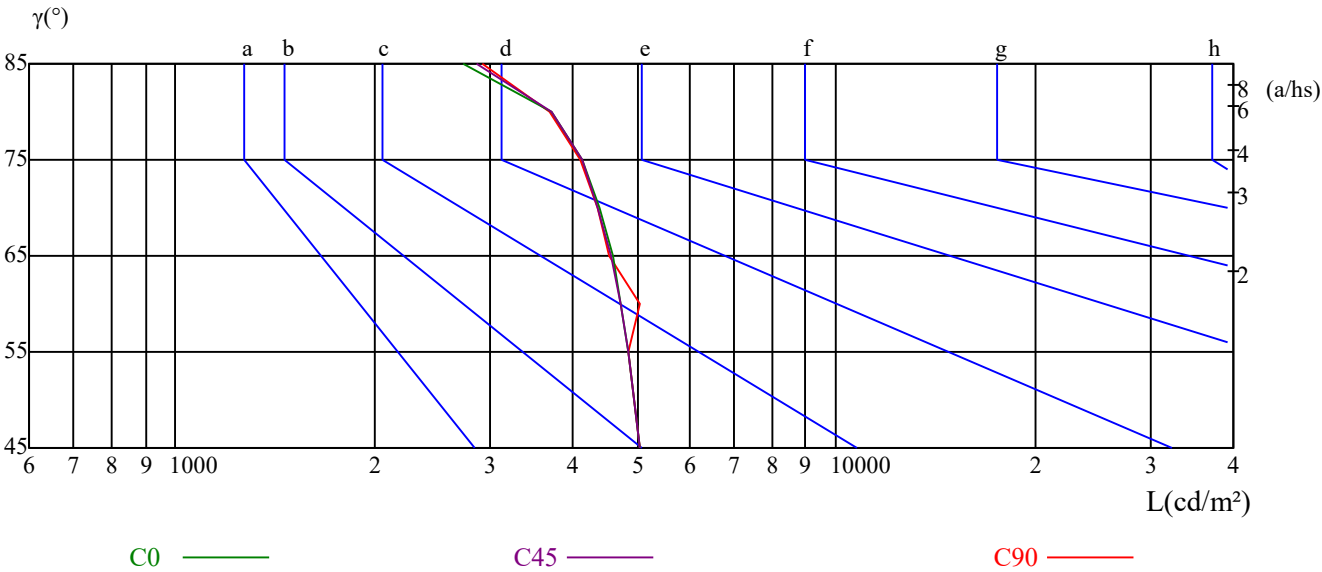
γ	45	50	55	60	65	70	75	80	85
C0	5051	4957	4853	4707	4598	4395	4136	3701	2726
C45	5046	4958	4841	4720	4577	4349	4119	3711	2861
C90	5032	4964	4856	5054	4540	4350	4103	3678	2908

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4598	4540	4577	4136	4103	4119	2726	2908	2861

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	0.99
1	1.04	0.99	0.95	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	0.77	0.88	0.82	0.76	0.84	0.79	0.74	0.81	0.77	0.73	0.78	0.74	0.71	0.69
3	0.79	0.71	0.64	0.77	0.70	0.63	0.74	0.68	0.62	0.71	0.66	0.61	0.69	0.64	0.60	0.58
4	0.70	0.61	0.54	0.68	0.60	0.54	0.66	0.59	0.53	0.63	0.57	0.52	0.61	0.56	0.51	0.49
5	0.62	0.53	0.47	0.61	0.53	0.46	0.59	0.51	0.46	0.57	0.50	0.45	0.55	0.49	0.45	0.42
6	0.56	0.47	0.41	0.55	0.47	0.40	0.53	0.46	0.40	0.51	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	0.48	0.41	0.35	0.47	0.40	0.35	0.45	0.39	0.35	0.33
8	0.46	0.38	0.32	0.46	0.37	0.32	0.44	0.37	0.31	0.43	0.36	0.31	0.42	0.36	0.31	0.29
9	0.42	0.34	0.29	0.42	0.34	0.29	0.41	0.33	0.28	0.40	0.33	0.28	0.38	0.32	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	0.25	0.24

Light Blue USA-Rayhil INV-20-CCT-UNV-**-4000K-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	957.64	956.73	948.58	930.48	906.04	875.27	832.73	791.09	736.78		
15.0	957.64	957.64	949.46	933.10	909.48	877.68	839.52	792.28	739.58		
30.0	957.64	957.64	950.35	933.95	909.34	879.28	842.83	797.27	743.51		
45.0	957.64	958.55	953.07	936.62	914.69	882.71	845.24	799.55	746.55		
60.0	957.64	960.38	953.05	938.39	914.56	883.41	847.67	800.93	749.61		
75.0	957.64	958.55	953.05	938.39	914.56	884.32	844.92	800.93	747.78		
90.0	957.64	959.47	952.13	937.46	913.61	881.50	842.06	797.11	744.83		
105.0	957.64	959.47	952.12	937.42	914.44	882.27	842.76	795.89	745.34		
120.0	957.64	958.55	950.28	933.74	911.68	877.68	839.08	793.13	739.82		
135.0	957.64	957.64	949.36	932.82	908.93	875.84	836.32	789.45	733.39		
150.0	957.64	957.64	950.26	930.91	883.90	872.84	834.13	788.97	733.66		
165.0	957.64	956.71	948.43	929.09	902.39	871.08	829.64	783.60	721.91		
180.0	957.64	950.39	935.91	910.57	881.60	843.59	798.33	745.83	685.19		
195.0	957.64	949.46	933.10	909.48	878.59	840.43	792.28	739.58	682.34		
210.0	957.64	947.61	930.30	907.52	876.54	837.36	791.80	737.13	678.82		
225.0	957.64	948.50	931.14	905.55	872.65	834.28	788.59	733.76	673.45		
240.0	957.64	947.56	932.89	905.40	873.33	834.84	788.10	732.20	670.80		
255.0	957.64	947.56	929.23	902.65	869.66	830.26	784.44	727.62	668.97		
270.0	957.64	947.55	929.20	903.52	868.66	831.05	782.44	727.40	667.78		
285.0	957.64	947.53	930.98	904.33	870.33	830.81	783.02	733.39	716.85		
300.0	957.64	947.53	931.90	906.17	897.90	831.73	787.61	731.55	672.73		
315.0	957.64	947.53	930.98	908.01	872.17	836.32	789.45	735.23	677.33		
330.0	957.64	950.26	934.59	910.63	878.37	840.58	795.42	745.65	685.74		
345.0	957.64	952.11	935.54	913.44	883.97	846.22	802.94	751.38	690.60		
360.0	957.64	956.73	948.58	930.48	906.04	875.27	832.73	791.09	736.78		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	674.33	606.44	533.13	457.09	384.68	305.03	226.28	147.54	71.51		
15.0	681.43	615.10	543.33	467.91	388.87	314.37	230.78	156.27	79.95		
30.0	684.29	618.68	546.70	471.07	397.27	318.00	238.73	159.45	86.56		
45.0	688.99	619.54	550.09	476.08	398.41	318.91	243.06	165.39	88.64		
60.0	689.13	623.15	550.76	474.69	401.38	322.57	243.76	165.87	92.56		
75.0	690.96	621.32	554.42	479.28	401.38	322.57	241.93	165.87	89.81		
90.0	686.12	621.91	551.28	479.74	397.18	320.13	241.24	163.28	86.22		
105.0	682.84	618.51	546.83	470.55	393.35	314.31	235.27	160.83	84.55		
120.0	679.17	612.08	544.99	465.03	391.51	312.47	232.52	154.40	78.12		
135.0	676.41	610.24	538.56	462.28	384.16	304.20	225.16	150.72	75.36		
150.0	670.07	602.79	529.97	458.08	376.05	299.55	221.21	142.86	67.28		
165.0	663.90	594.84	524.86	447.51	369.24	290.97	215.47	138.12	62.61		
180.0	618.21	546.70	474.29	394.64	318.61	238.96	161.11	85.08	14.48		
195.0	616.01	544.24	467.91	390.69	310.73	232.59	157.18	76.32	10.90		
210.0	608.66	536.68	461.05	387.25	307.97	228.70	151.25	72.89	6.38		
225.0	604.92	532.73	456.89	379.22	305.20	221.13	148.03	71.27	5.48		
240.0	601.16	528.76	452.70	378.47	300.58	220.85	142.96	66.90	5.50		
255.0	601.16	529.68	454.53	375.72	301.49	218.10	142.96	121.88	5.50		
270.0	601.73	532.94	456.80	434.79	297.20	218.31	143.09	67.88	5.50		
285.0	604.73	529.36	456.76	379.56	299.61	221.49	144.29	69.85	5.51		
300.0	605.64	533.96	457.68	381.40	307.88	224.24	150.72	75.36	9.19		
315.0	612.08	544.07	464.11	390.59	312.47	232.52	155.32	79.04	11.03		
330.0	619.38	548.41	473.75	396.33	317.06	237.80	160.37	88.48	17.51		
345.0	624.30	552.48	476.98	399.63	325.04	247.70	170.35	93.92	22.10		
360.0	674.33	606.44	533.13	457.09	384.68	305.03	226.28	147.54	71.51		

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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	6.34	0.91	0.91	0.91	0.91	0.91	0.91	0.91	1.81		
15.0	9.99	0.91	0.91	0.91	0.91	0.91	0.91	0.91	1.82		
30.0	10.93	0.91	0.91	0.91	0.91	4.56	0.91	1.82	1.82		
45.0	15.53	0.91	0.91	0.91	0.91	0.91	0.91	1.83	1.83		
60.0	15.58	0.92	0.92	0.92	0.92	0.92	0.92	1.83	1.83		
75.0	16.50	0.92	0.92	0.92	0.92	1.83	0.92	0.92	1.83		
90.0	14.68	0.92	0.92	0.92	0.92	0.92	0.92	1.83	1.83		
105.0	12.87	0.92	0.92	0.92	0.92	0.92	0.92	0.92	1.84		
120.0	9.19	0.92	0.92	0.92	0.92	0.92	0.92	1.84	1.84		
135.0	6.43	0.92	0.92	0.92	0.92	0.92	0.92	0.92	1.84		
150.0	4.61	0.92	0.92	0.92	0.92	0.92	0.92	0.92	1.84		
165.0	3.68	0.92	0.92	0.92	0.92	0.92	0.92	0.92	1.84		
180.0	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81		
195.0	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82		
210.0	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82		
225.0	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83		
240.0	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83		
255.0	1.83	1.83	1.83	1.83	3.67	1.83	1.83	1.83	1.83		
270.0	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83		
285.0	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84		
300.0	1.84	1.84	1.84	1.84	3.68	1.84	1.84	1.84	1.84		
315.0	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84		
330.0	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84		
345.0	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84		
360.0	6.34	0.91	0.91	0.91	0.91	0.91	0.91	0.91	1.81		
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0		
0.0	1.81	1.81	3.62	4.53	5.43	5.43	5.43	6.34	6.34		
15.0	1.82	1.82	3.63	4.54	5.45	5.45	5.45	5.45	6.36		
30.0	1.82	3.64	3.64	4.56	5.47	5.47	5.47	5.47	6.38		
45.0	1.83	1.83	3.66	4.57	5.48	5.48	5.48	6.40	6.40		
60.0	1.83	1.83	3.67	4.58	4.58	5.50	5.50	5.50	6.41		
75.0	1.83	1.83	3.67	4.58	4.58	5.50	5.50	5.50	6.41		
90.0	1.83	1.83	3.67	4.59	4.59	5.50	5.50	6.42	5.50		
105.0	1.84	3.68	3.68	4.60	4.60	5.51	5.51	6.43	6.43		
120.0	1.84	1.84	3.68	4.60	5.51	5.51	5.51	6.43	6.43		
135.0	1.84	1.84	3.68	4.60	4.60	5.51	5.51	5.51	6.43		
150.0	1.84	1.84	3.69	4.61	4.61	5.53	5.53	5.53	6.45		
165.0	1.84	1.84	3.68	4.60	5.52	5.52	5.52	6.45	6.45		
180.0	1.81	1.81	1.81	3.62	3.62	4.53	4.53	5.43	6.34		
195.0	1.82	1.82	1.82	3.63	3.63	3.63	4.54	5.45	5.45		
210.0	1.82	1.82	1.82	3.64	3.64	4.56	4.56	5.47	6.38		
225.0	1.83	1.83	1.83	3.66	3.66	4.57	4.57	5.48	6.40		
240.0	1.83	1.83	1.83	3.67	3.67	4.58	4.58	5.50	6.41		
255.0	1.83	1.83	1.83	3.67	3.67	4.58	4.58	5.50	6.41		
270.0	1.83	1.83	1.83	3.67	3.67	4.59	4.59	5.50	6.42		
285.0	1.84	1.84	1.84	3.68	3.68	4.60	4.60	5.51	6.43		
300.0	1.84	1.84	1.84	3.68	3.68	4.60	4.60	5.51	5.51		
315.0	1.84	1.84	1.84	3.68	3.68	4.60	4.60	5.51	5.51		
330.0	1.84	1.84	1.84	3.69	3.69	4.61	4.61	5.53	6.45		
345.0	1.84	1.84	1.84	3.68	3.68	4.60	4.60	5.52	6.45		
360.0	1.81	1.81	3.62	4.53	5.43	5.43	5.43	6.34	6.34		

Intensity data(cd)

C/γ(°)	180.0
0.0	6.34
15.0	6.36
30.0	6.38
45.0	6.40
60.0	6.41
75.0	6.41
90.0	6.42
105.0	6.43
120.0	6.43
135.0	6.43
150.0	6.45
165.0	6.45
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	6.34