
Light Blue USA-Rayhil

Client:

LumCAT: INV-9-CCT-120-**-3000K-F

Luminaire: LED lamp

Report No:

Ballast type:

Test No:

Voltage(V): 120.040

LampCAT:

Current(A): 0.128

Lamp flux(lm): 1179.4

Power (W): 14.580

Number of Lamps: 1

PF: 0.949

Length(mm): -210

Width(mm): -210

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1179.42, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 80.89

Central intensity(cd): 422.504, Maximum intensity(cd): 422.504

Angle of maximum intensity: C=15.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=110.2

[C90/270]Total=109.8

Field angle(10%Imax): [C0/180]Total=158.4

[C90/270]Total=158.2

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

Maximum s/h(1/4): C0_180=1.37 C90_270=1.37

Up flux rate of lamp(%): 0.92%

Down flux rate of lamp(%): 99.08%

Up flux rate of LUM(%): 0.92%

Down flux rate of LUM(%): 99.08%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 79.615%

Light Blue USA-Rayhil INV-9-CCT-120-**-3000K-F

Zonal flux distribution table

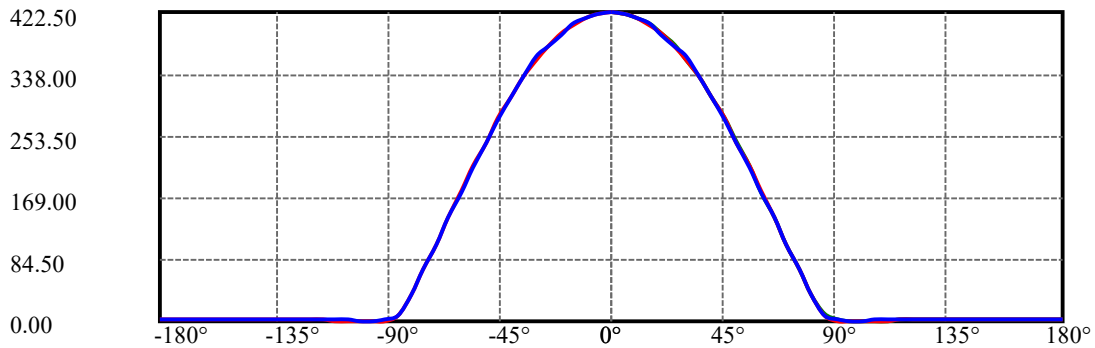
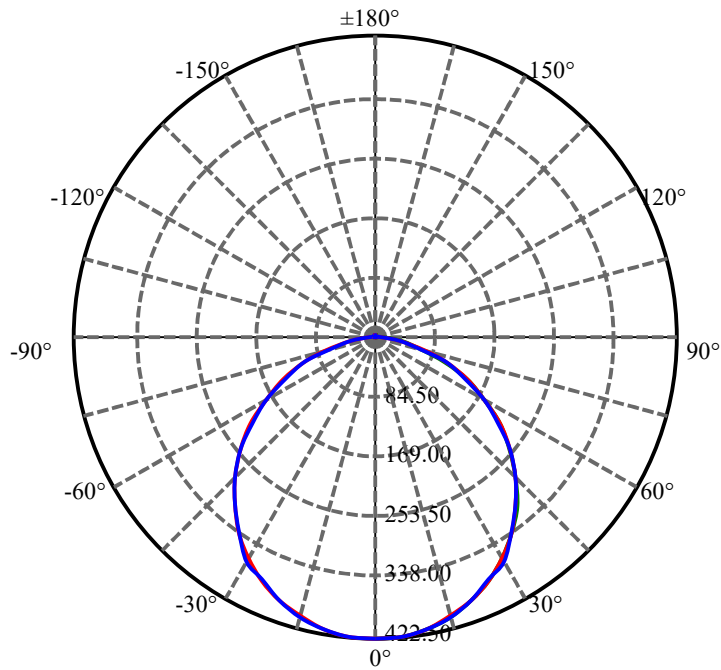
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$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	422.504	0.000	0	0.00%	0.00%
5.0	420.902	10.083	10.083	0.85%	0.85%
10.0	414.874	29.898	39.981	2.54%	3.39%
15.0	405.717	48.677	88.658	4.13%	7.52%
20.0	392.631	65.795	154.453	5.58%	13.10%
25.0	376.339	80.651	235.104	6.84%	19.93%
30.0	356.500	92.741	327.845	7.86%	27.80%
35.0	333.799	101.651	429.496	8.62%	36.42%
40.0	307.283	106.960	536.456	9.07%	45.48%
45.0	277.333	108.246	644.702	9.18%	54.66%
50.0	244.178	105.379	750.081	8.93%	63.60%
55.0	211.862	99.158	849.239	8.41%	72.00%
60.0	176.457	89.759	938.998	7.61%	79.61%
65.0	141.241	77.233	1016.231	6.55%	86.16%
70.0	104.919	62.329	1078.56	5.28%	91.45%
75.0	70.277	45.793	1124.354	3.88%	95.33%
80.0	37.581	28.860	1153.214	2.45%	97.78%
85.0	8.584	12.544	1165.758	1.06%	98.84%
90.0	1.526	2.768	1168.526	0.23%	99.08%
95.0	0.763	0.627	1169.153	0.05%	99.13%
100.0	0.534	0.353	1169.506	0.03%	99.16%
105.0	0.839	0.368	1169.873	0.03%	99.19%
110.0	0.916	0.459	1170.332	0.04%	99.23%
115.0	1.373	0.580	1170.911	0.05%	99.28%
120.0	1.831	0.779	1171.691	0.07%	99.34%
125.0	1.831	0.847	1172.537	0.07%	99.42%
130.0	1.946	0.821	1173.358	0.07%	99.49%
135.0	2.060	0.810	1174.168	0.07%	99.55%
140.0	2.290	0.805	1174.973	0.07%	99.62%
145.0	2.747	0.840	1175.814	0.07%	99.69%
150.0	3.053	0.854	1176.668	0.07%	99.77%
155.0	3.586	0.840	1177.508	0.07%	99.84%
160.0	3.548	0.748	1178.256	0.06%	99.90%
165.0	3.319	0.566	1178.822	0.05%	99.95%
170.0	2.862	0.367	1179.189	0.03%	99.98%
175.0	2.442	0.190	1179.379	0.02%	100.00%
180.0	1.374	0.046	1179.424	0.00%	100.00%

ZONAL LUMEN SUMMARY			
Zone	Lumens	%Lamp	%Fixt
0-30	327.85	27.80%	27.80%
0-40	536.46	45.48%	45.48%
0-60	939.00	79.62%	79.61%
0-90	1168.53	99.08%	99.08%
0-120	1171.69	99.34%	99.34%
0-180	1179.42	100.00%	100.00%
60-90	229.53	19.46%	19.46%
90-120	3.16	0.27%	0.27%
90-130	4.83	0.41%	0.41%
90-150	8.14	0.69%	0.69%
90-180	10.85	0.92%	0.92%
0-60.29	943.54	80.00%	80.00%

ZONAL LUMEN SUMMARY

0-10	39.98
10-20	114.47
20-30	173.39
30-40	208.61
40-50	213.63
50-60	188.92
60-70	139.56
70-80	74.65
80-90	15.31
90-100	0.98
100-110	0.83
110-120	1.36
120-130	1.67
130-140	1.61
140-150	1.69
150-160	1.59
160-170	0.93
170-180	0.19



C15(Max): —

C0/C180: —

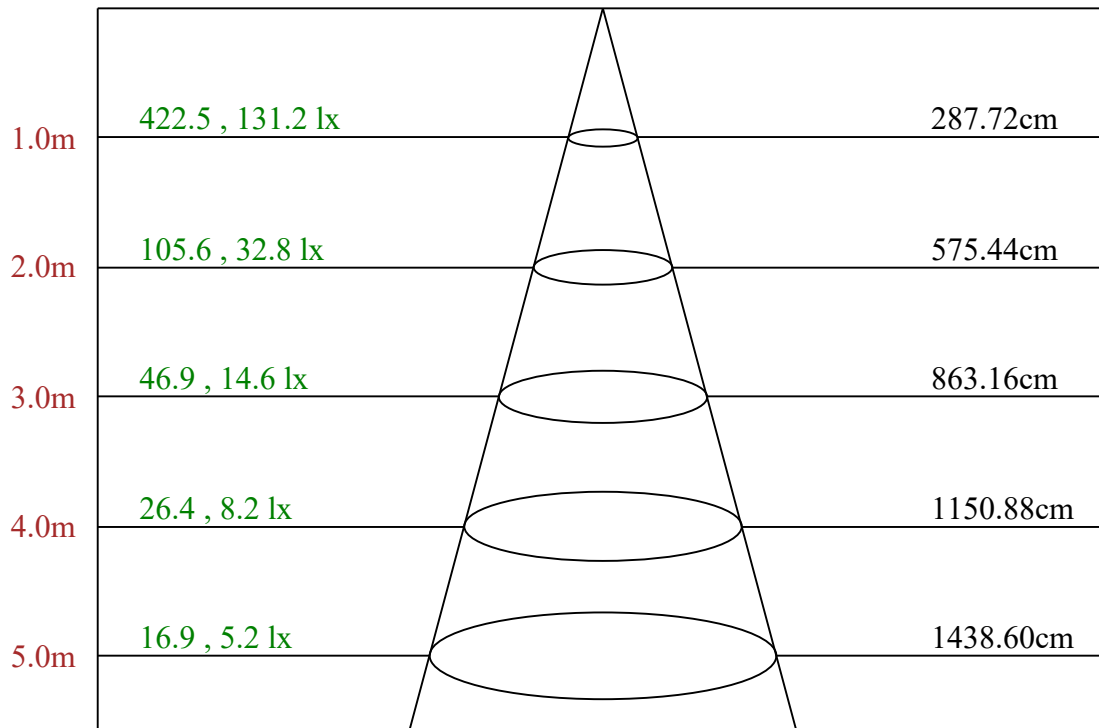
C90/C270: —

Field angle(10%Imax):C0/180Left:79.2 Right:79.2

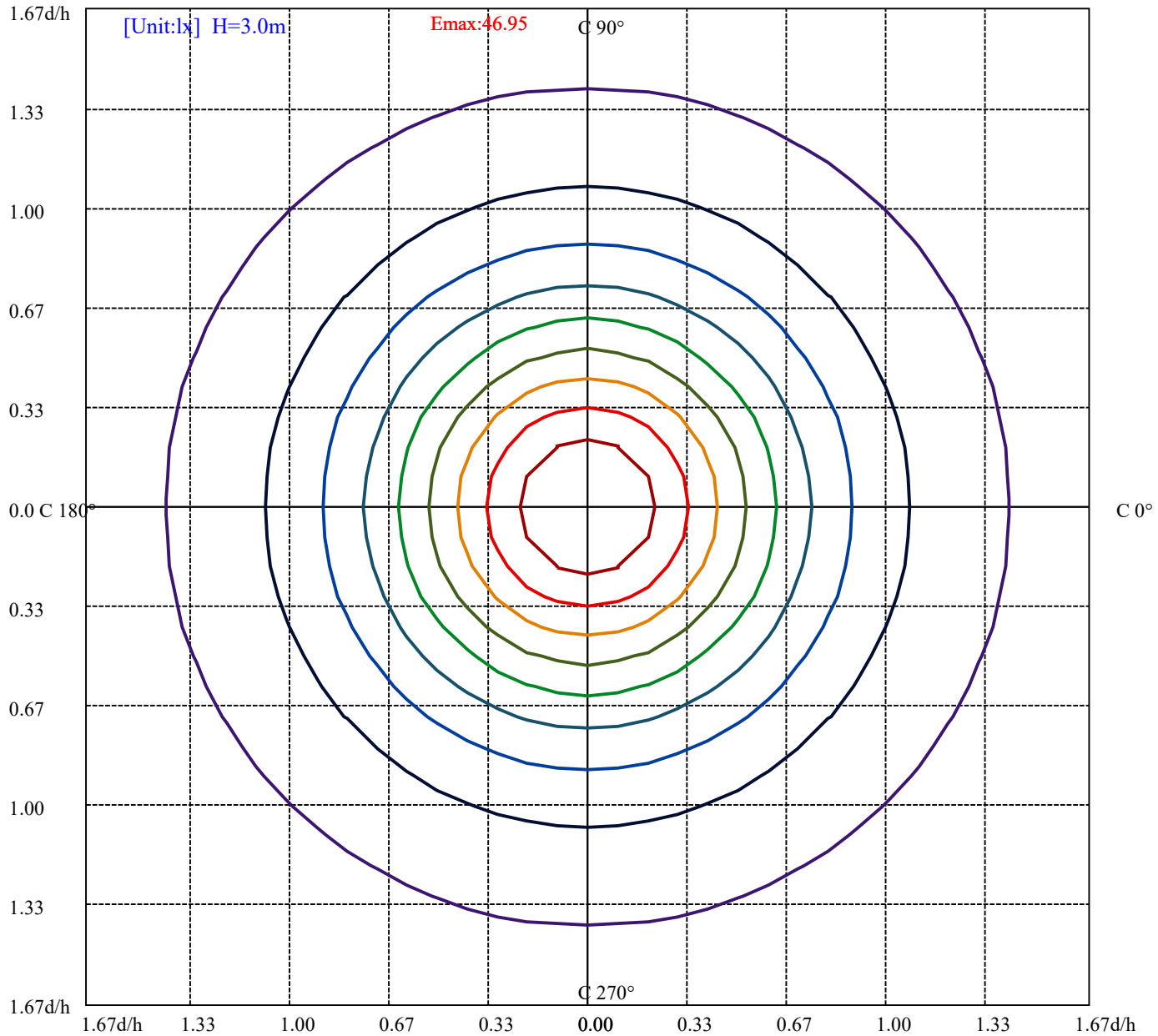
:C90/270Left:79.1 Right:79.1

Beam Angle(50%Imax):C0/180Left:55.1 Right:55.1

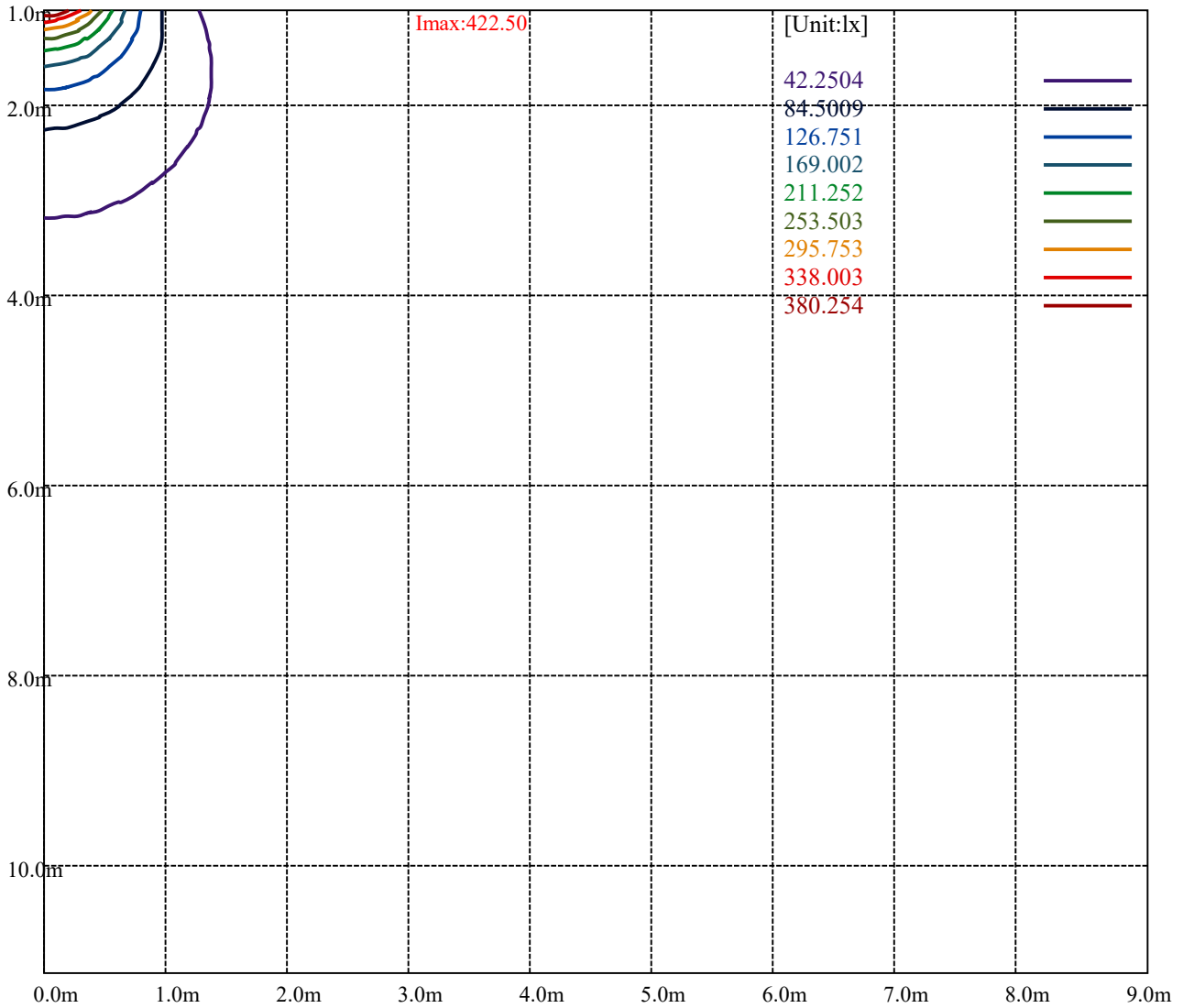
:C90/270Left:54.9 Right:54.9



Max , Ave Beam angle of C15 plane 110.39



(10%Emax)	4.694489	
(20%Emax)	9.388988	
(30%Emax)	14.08344	
(40%Emax)	18.778	
(50%Emax)	23.47244	
(60%Emax)	28.167	
(70%Emax)	32.86144	
(80%Emax)	37.55589	
(90%Emax)	42.25044	



Luminance Table

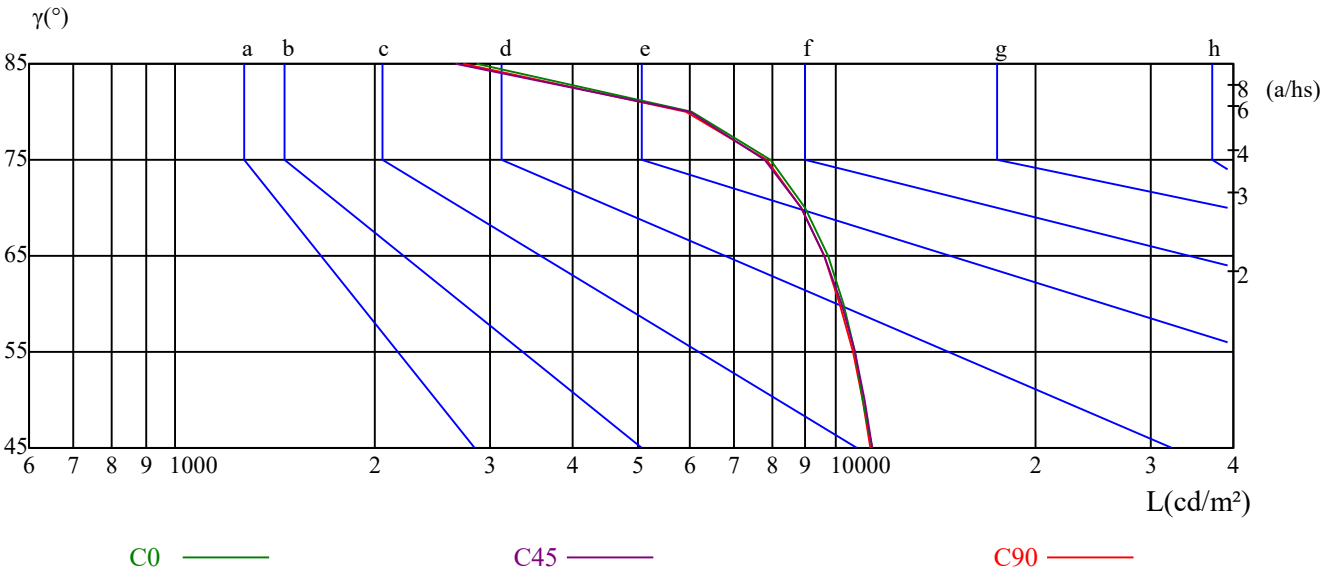
γ	45	50	55	60	65	70	75	80	85
C0	11340	10982	10679	10253	9735	8955	7974	6056	2866
C45	11339	11043	10668	10174	9627	8878	7796	6019	2657
C90	11282	10971	10611	10161	9611	8858	7872	5943	2732

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
9735	9611	9627	7974	7872	7796	2866	2732	2657

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



RHOCC	80			70			50			30			10			0
RHOW	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR	COEFFCIENTS 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	1.01	1.01	1.01	0.99
1	1.04	1.00	0.96	1.02	0.98	0.95	0.97	0.94	0.91	0.93	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	0.85	0.80	0.76	0.82	0.78	0.74	0.79	0.75	0.72	0.70
3	0.80	0.72	0.65	0.78	0.71	0.65	0.75	0.69	0.64	0.72	0.67	0.62	0.70	0.65	0.61	0.59
4	0.71	0.62	0.56	0.70	0.61	0.55	0.67	0.60	0.54	0.64	0.58	0.53	0.62	0.57	0.53	0.50
5	0.63	0.54	0.48	0.62	0.54	0.48	0.60	0.53	0.47	0.58	0.51	0.46	0.56	0.50	0.46	0.44
6	0.57	0.48	0.42	0.56	0.48	0.42	0.54	0.47	0.41	0.52	0.46	0.41	0.51	0.45	0.40	0.38
7	0.52	0.43	0.37	0.51	0.43	0.37	0.49	0.42	0.36	0.48	0.41	0.36	0.46	0.40	0.36	0.34
8	0.47	0.39	0.33	0.46	0.38	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	0.41	0.34	0.29	0.40	0.34	0.29	0.39	0.33	0.29	0.27
10	0.40	0.32	0.27	0.39	0.32	0.27	0.38	0.31	0.27	0.37	0.31	0.26	0.36	0.31	0.26	0.25

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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	422.50	420.68	417.04	407.94	396.10	381.53	361.50	340.55	315.06
15.0	422.50	422.50	417.02	409.70	397.81	382.27	363.06	341.11	316.42
30.0	422.50	421.59	417.02	407.87	395.07	380.44	361.23	339.28	312.76
45.0	422.50	422.50	417.92	407.84	395.93	379.43	361.10	339.10	312.52
60.0	422.50	422.50	416.09	407.84	395.93	379.43	361.10	339.10	312.52
75.0	422.50	422.50	416.09	407.84	395.93	379.43	361.10	339.10	313.44
90.0	422.50	420.67	416.09	407.84	394.09	378.51	359.27	339.10	312.52
105.0	422.50	422.50	416.09	407.84	395.93	379.43	361.10	339.10	312.52
120.0	422.50	420.67	410.59	407.84	395.93	381.26	361.10	340.02	313.44
135.0	422.50	422.50	416.09	408.76	395.93	381.26	346.44	341.85	315.27
150.0	422.50	420.67	416.09	408.76	397.76	383.10	363.85	341.85	317.11
165.0	422.50	420.67	416.09	408.76	395.93	383.10	363.85	341.85	318.02
180.0	422.50	419.77	412.49	402.47	388.81	371.51	351.48	327.81	298.67
195.0	422.50	421.59	414.27	404.21	389.58	373.12	353.00	329.22	299.96
210.0	422.50	419.76	414.27	404.21	389.58	373.12	353.00	329.22	301.79
225.0	422.50	420.67	415.17	405.09	390.43	372.10	353.77	328.11	302.44
240.0	422.50	420.67	413.34	405.09	390.43	372.10	351.93	328.11	300.61
255.0	422.50	420.67	413.34	403.26	390.43	372.10	351.93	328.11	302.44
270.0	422.50	419.75	413.34	403.26	390.43	372.10	366.60	325.36	300.61
285.0	422.50	419.75	417.92	403.26	388.59	371.18	350.10	327.19	300.61
300.0	422.50	419.75	412.42	403.26	388.59	372.10	350.10	327.19	300.61
315.0	422.50	419.75	413.34	401.43	388.59	371.18	350.10	327.19	298.78
330.0	422.50	419.75	412.42	401.43	388.59	371.18	350.10	327.19	298.78
345.0	422.50	419.75	412.42	401.43	386.76	371.18	349.18	324.44	297.86
360.0	422.50	420.68	417.04	407.94	396.10	381.53	361.50	340.55	315.06
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	285.92	253.14	220.36	187.58	151.15	114.73	80.13	45.53	12.75
15.0	285.33	254.23	221.31	184.73	149.07	114.31	77.73	45.73	12.80
30.0	283.50	251.49	221.31	182.90	149.07	111.57	77.73	43.90	12.80
45.0	284.11	252.04	219.96	183.30	148.47	112.73	78.82	42.16	11.91
60.0	283.20	252.04	218.13	183.30	149.39	112.73	77.90	42.16	11.91
75.0	280.45	252.04	218.13	183.30	146.64	111.81	76.07	43.99	11.91
90.0	283.20	251.12	218.13	183.30	149.39	112.73	77.90	42.16	11.91
105.0	285.95	252.04	221.79	185.13	149.39	112.73	77.90	45.82	11.91
120.0	284.11	253.87	219.96	187.88	151.22	112.73	77.90	45.82	12.83
135.0	285.95	254.79	219.96	186.05	151.22	114.56	78.82	45.82	12.83
150.0	287.78	230.04	221.79	187.88	152.14	115.48	82.48	46.74	14.66
165.0	288.70	256.62	222.71	188.80	152.14	111.81	82.48	46.74	16.50
180.0	269.53	235.84	203.97	167.54	133.85	97.43	62.83	27.32	4.55
195.0	270.70	238.69	203.02	168.27	133.52	97.85	63.10	31.09	4.57
210.0	270.70	236.86	204.85	166.44	133.52	97.85	63.10	29.26	4.57
225.0	271.28	239.21	205.29	168.64	133.81	98.07	61.41	29.33	4.58
240.0	271.28	239.21	205.29	170.47	133.81	98.07	63.24	29.33	4.58
255.0	269.45	237.37	203.46	166.80	131.98	97.15	61.41	54.07	4.58
270.0	269.45	237.37	203.46	168.64	131.98	97.15	63.24	29.33	4.58
285.0	269.45	237.37	203.46	168.64	133.81	97.15	61.41	27.49	4.58
300.0	269.45	236.46	202.55	166.80	131.98	97.15	61.41	27.49	4.58
315.0	269.45	237.37	202.55	166.80	130.14	95.32	60.49	27.49	2.75
330.0	268.53	236.46	202.55	165.89	131.98	93.48	60.49	26.58	2.75
345.0	268.53	234.62	200.71	165.89	130.14	93.48	58.66	26.58	4.58
360.0	285.92	253.14	220.36	187.58	151.15	114.73	80.13	45.53	12.75

Light Blue USA-Rayhil INV-9-CCT-120-**-3000K-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	1.82	0.00	0.00	0.00	0.00	1.82	1.82	1.82	1.82
15.0	1.83	0.00	0.00	0.00	0.00	1.83	1.83	1.83	1.83
30.0	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1.83	1.83
45.0	1.83	0.00	0.00	0.00	0.00	1.83	1.83	1.83	1.83
60.0	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1.83	1.83
75.0	0.00	0.00	0.00	0.00	0.00	1.83	1.83	1.83	1.83
90.0	1.83	0.00	0.00	1.83	1.83	1.83	1.83	1.83	1.83
105.0	1.83	0.00	0.00	0.00	0.00	1.83	1.83	1.83	1.83
120.0	1.83	0.00	0.00	0.00	0.00	1.83	1.83	1.83	1.83
135.0	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1.83	1.83
150.0	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1.83	1.83
165.0	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1.83	1.83
180.0	0.00	1.82	0.00	1.82	1.82	1.82	1.82	1.82	1.82
195.0	1.83	1.83	0.00	1.83	1.83	1.83	1.83	1.83	1.83
210.0	1.83	1.83	1.83	1.83	1.83	0.00	1.83	1.83	1.83
225.0	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83
240.0	0.00	0.00	0.00	0.00	1.83	1.83	1.83	1.83	1.83
255.0	0.00	0.00	0.00	0.00	0.00	1.83	1.83	1.83	1.83
270.0	1.83	1.83	0.00	1.83	1.83	1.83	1.83	1.83	1.83
285.0	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83	2.75
300.0	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83	2.75
315.0	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83	2.75
330.0	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83
345.0	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83
360.0	1.82	0.00	0.00	0.00	0.00	1.82	1.82	1.82	1.82

C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	1.82	1.82	2.73	2.73	4.55	4.55	4.55	2.73	2.73
15.0	1.83	1.83	2.74	2.74	4.57	4.57	4.57	2.74	2.74
30.0	1.83	1.83	2.74	2.74	4.57	4.57	4.57	2.74	2.74
45.0	1.83	2.75	2.75	2.75	2.75	2.75	2.75	4.58	2.75
60.0	1.83	2.75	2.75	2.75	2.75	4.58	2.75	2.75	2.75
75.0	1.83	1.83	2.75	2.75	4.58	4.58	2.75	2.75	2.75
90.0	2.75	2.75	2.75	4.58	4.58	4.58	4.58	2.75	2.75
105.0	2.75	2.75	4.58	4.58	4.58	4.58	4.58	2.75	2.75
120.0	2.75	2.75	2.75	4.58	4.58	4.58	4.58	2.75	2.75
135.0	1.83	2.75	2.75	4.58	4.58	4.58	4.58	4.58	2.75
150.0	1.83	2.75	2.75	2.75	4.58	4.58	4.58	4.58	2.75
165.0	1.83	1.83	2.75	2.75	2.75	2.75	4.58	4.58	2.75
180.0	1.82	1.82	1.82	1.82	2.73	2.73	2.73	2.73	1.82
195.0	1.83	1.83	1.83	1.83	2.74	2.74	2.74	2.74	1.83
210.0	1.83	1.83	1.83	1.83	2.74	2.74	2.74	2.74	2.74
225.0	0.00	1.83	1.83	1.83	2.75	2.75	2.75	2.75	1.83
240.0	1.83	1.83	2.75	2.75	2.75	1.83	2.75	2.75	2.75
255.0	1.83	1.83	2.75	2.75	2.75	2.75	1.83	1.83	2.75
270.0	2.75	2.75	2.75	2.75	2.75	2.75	1.83	1.83	1.83
285.0	2.75	2.75	2.75	4.58	4.58	2.75	1.83	1.83	1.83
300.0	2.75	2.75	4.58	4.58	4.58	4.58	2.75	1.83	1.83
315.0	2.75	2.75	2.75	2.75	2.75	2.75	2.75	1.83	1.83
330.0	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75
345.0	1.83	1.83	2.75	2.75	2.75	2.75	2.75	2.75	1.83
360.0	1.82	1.82	2.73	2.73	4.55	4.55	4.55	2.73	2.73

Intensity data(cd)

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C/γ(°)	180.0
0.0	2.73
15.0	2.74
30.0	2.74
45.0	2.75
60.0	2.75
75.0	2.75
90.0	2.75
105.0	2.75
120.0	2.75
135.0	2.75
150.0	2.75
165.0	2.75
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	2.73