
Light Blue USA-Rayhil

Client:

LumCAT: INV-9-CCT-120-**-3500K-F

Luminaire: LED lamp

Report No:

Ballast type:

Test No:

Voltage(V): 120.030

LampCAT:

Current(A): 0.128

Lamp flux(lm): 1208.9

Power (W): 14.540

Number of Lamps: 1

PF: 0.948

Length(mm): -210

Width(mm): -210

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1208.93, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 83.15

Central intensity(cd): 433.111, Maximum intensity(cd): 433.111

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=110.4

[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 : 79.614%

Light Blue USA-Rayhil INV-9-CCT-120-**-3500K-F

Zonal flux distribution table

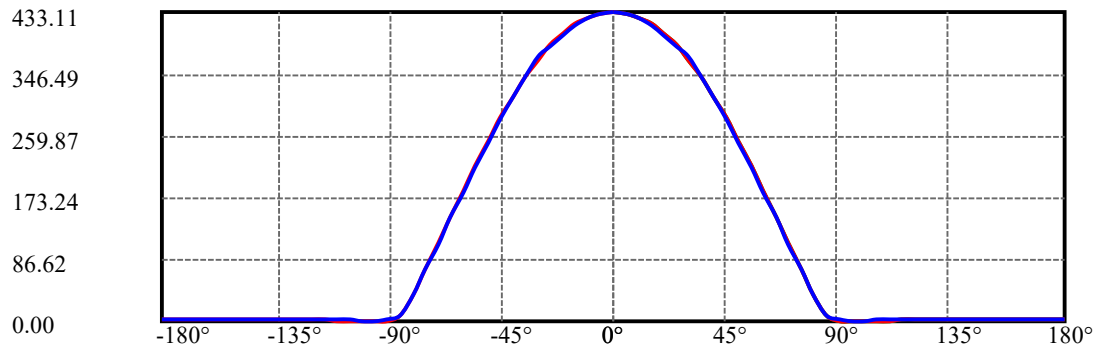
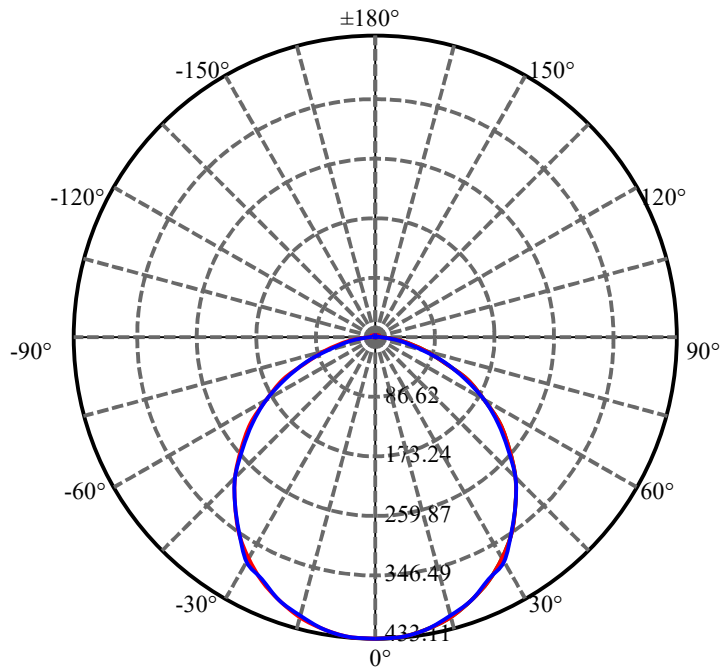
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$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	433.111	0.000	0	0.00%	0.00%
5.0	431.623	10.338	10.338	0.86%	0.86%
10.0	425.404	30.659	40.996	2.54%	3.39%
15.0	415.866	49.904	90.9	4.13%	7.52%
20.0	402.627	67.455	158.355	5.58%	13.10%
25.0	385.762	82.687	241.043	6.84%	19.94%
30.0	365.427	95.064	336.106	7.86%	27.80%
35.0	342.078	104.185	440.291	8.62%	36.42%
40.0	314.685	109.576	549.867	9.06%	45.48%
45.0	284.392	110.924	660.791	9.18%	54.66%
50.0	250.318	108.046	768.837	8.94%	63.60%
55.0	217.051	101.622	870.459	8.41%	72.00%
60.0	181.035	92.017	962.475	7.61%	79.61%
65.0	144.790	79.209	1041.684	6.55%	86.17%
70.0	107.666	63.924	1105.608	5.29%	91.45%
75.0	72.070	46.980	1152.588	3.89%	95.34%
80.0	38.687	29.635	1182.223	2.45%	97.79%
85.0	8.585	12.845	1195.068	1.06%	98.85%
90.0	1.526	2.769	1197.837	0.23%	99.08%
95.0	0.763	0.627	1198.463	0.05%	99.13%
100.0	0.535	0.353	1198.816	0.03%	99.16%
105.0	0.839	0.368	1199.184	0.03%	99.19%
110.0	0.916	0.459	1199.642	0.04%	99.23%
115.0	1.373	0.580	1200.222	0.05%	99.28%
120.0	1.831	0.779	1201.001	0.06%	99.34%
125.0	1.908	0.864	1201.865	0.07%	99.42%
130.0	2.099	0.871	1202.737	0.07%	99.49%
135.0	2.061	0.840	1203.577	0.07%	99.56%
140.0	2.518	0.848	1204.425	0.07%	99.63%
145.0	2.748	0.879	1205.303	0.07%	99.70%
150.0	3.053	0.854	1206.158	0.07%	99.77%
155.0	3.587	0.840	1206.998	0.07%	99.84%
160.0	3.548	0.748	1207.746	0.06%	99.90%
165.0	3.319	0.566	1208.312	0.05%	99.95%
170.0	2.862	0.367	1208.679	0.03%	99.98%
175.0	2.747	0.201	1208.879	0.02%	100.00%
180.0	1.374	0.049	1208.929	0.00%	100.00%

ZONAL LUMEN SUMMARY			
Zone	Lumens	%Lamp	%Fixt
0-30	336.11	27.80%	27.80%
0-40	549.87	45.48%	45.48%
0-60	962.48	79.61%	79.61%
0-90	1197.84	99.08%	99.08%
0-120	1201.00	99.34%	99.34%
0-180	1208.93	100.00%	100.00%
60-90	235.36	19.47%	19.47%
90-120	3.16	0.26%	0.26%
90-130	4.90	0.41%	0.41%
90-150	8.32	0.69%	0.69%
90-180	11.04	0.91%	0.91%
0-60.29	967.14	80.00%	80.00%

ZONAL LUMEN SUMMARY

0-10	41.00
10-20	117.36
20-30	177.75
30-40	213.76
40-50	218.97
50-60	193.64
60-70	143.13
70-80	76.62
80-90	15.61
90-100	0.98
100-110	0.83
110-120	1.36
120-130	1.74
130-140	1.69
140-150	1.73
150-160	1.59
160-170	0.93
170-180	0.20



C0(Max): —————

C0/C180: —————

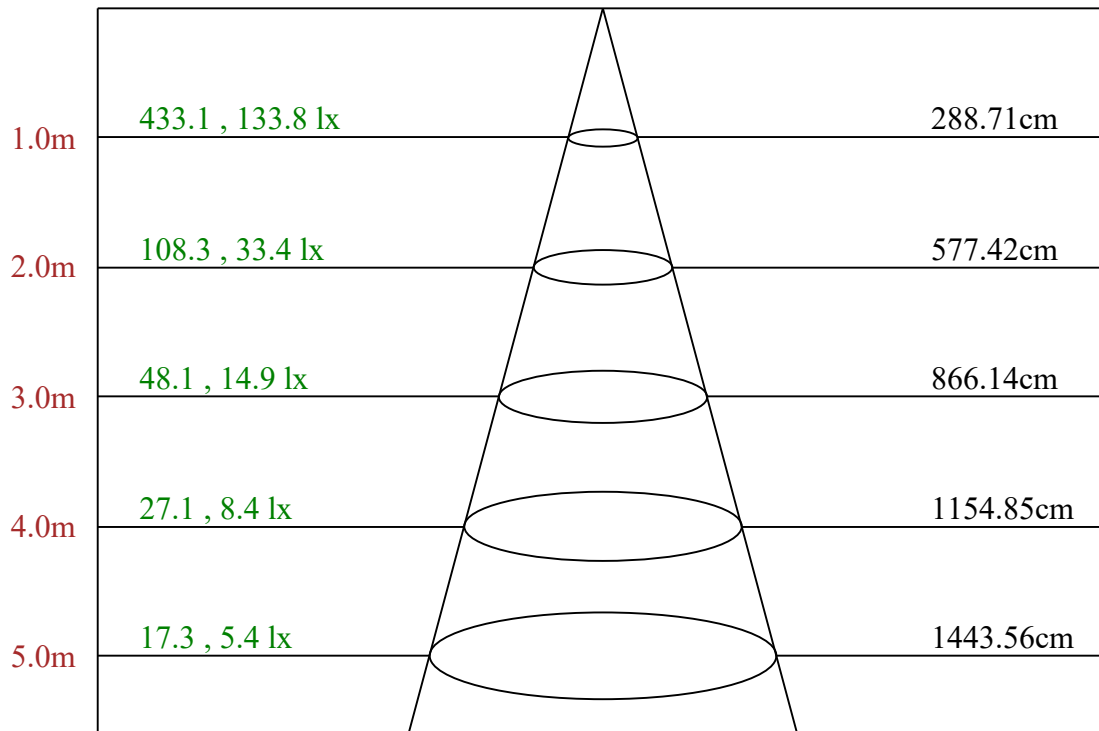
C90/C270: —————

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

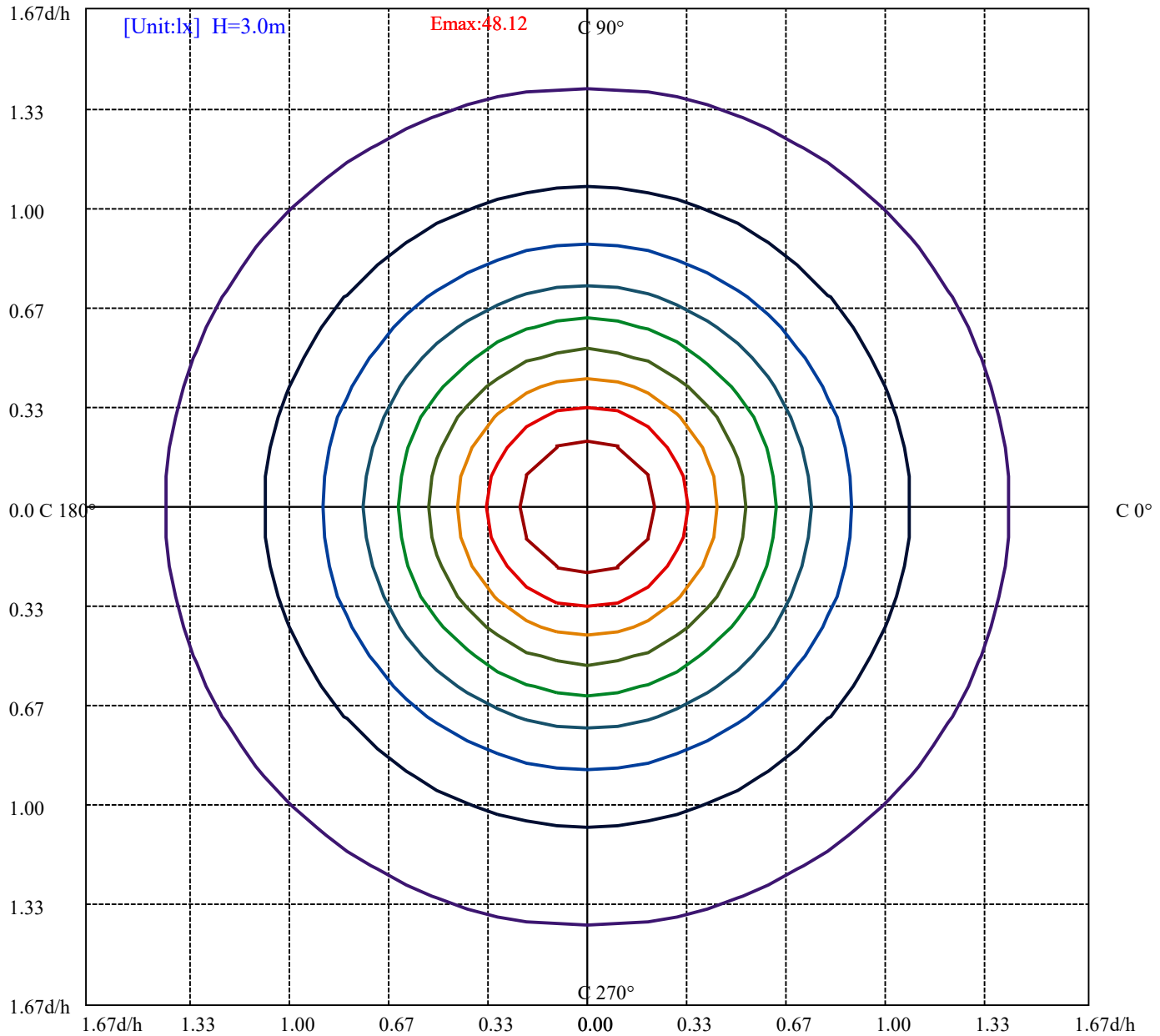
:C90/270Left:79.1 Right:79.1

Beam Angle(50%Imax):C0/180Left:55.2 Right:55.2

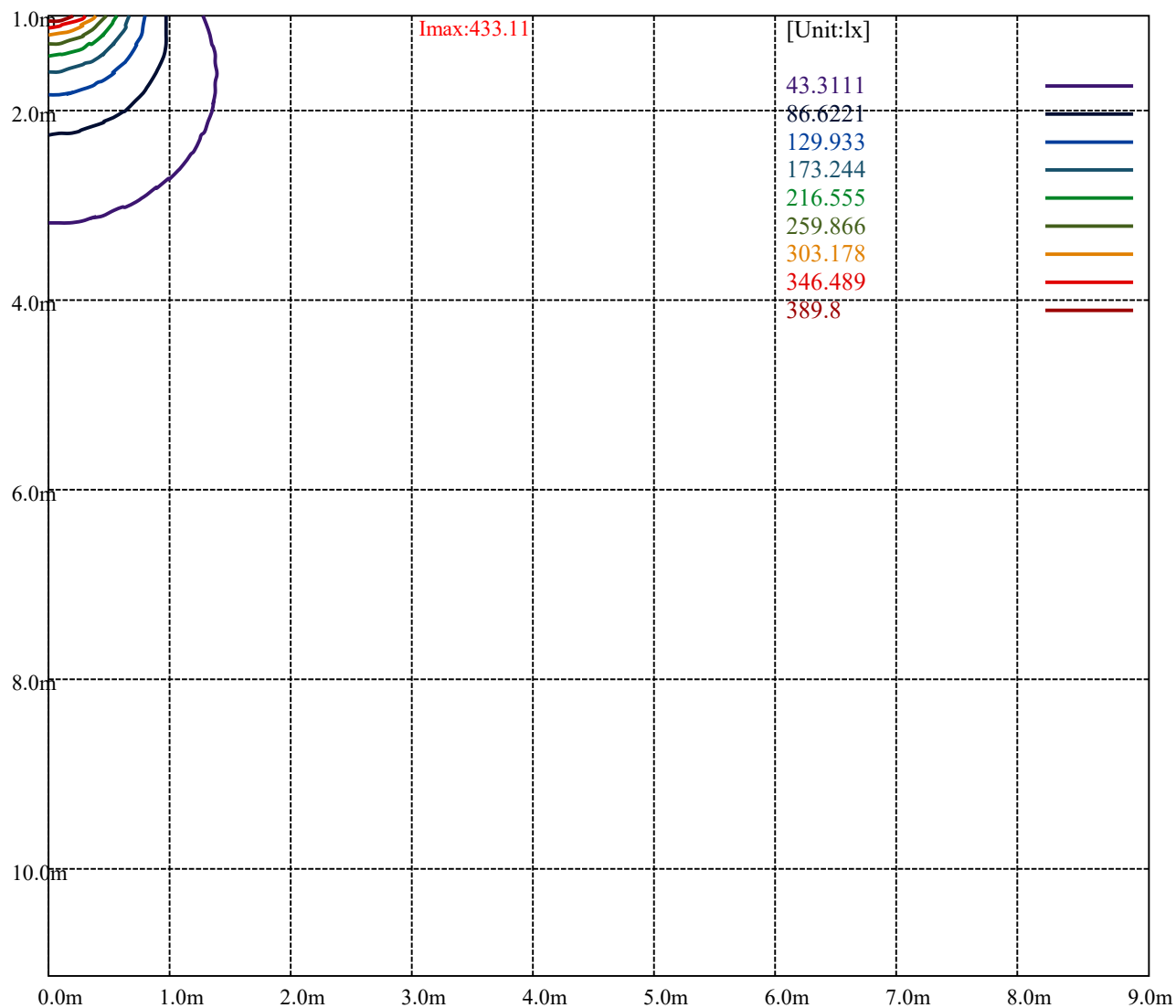
:C90/270Left:54.9 Right:54.9



Max , Ave Beam angle of C0 plane 110.58



(10%Emax)	4.812345	
(20%Emax)	9.624678	
(30%Emax)	14.437	
(40%Emax)	19.24933	
(50%Emax)	24.06167	
(60%Emax)	28.874	
(70%Emax)	33.68633	
(80%Emax)	38.49878	
(90%Emax)	43.31111	



Light Blue USA-Rayhil INV-9-CCT-120-**-3500K-F

Luminance Limiting Curve(no luminous side)

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Luminance Table

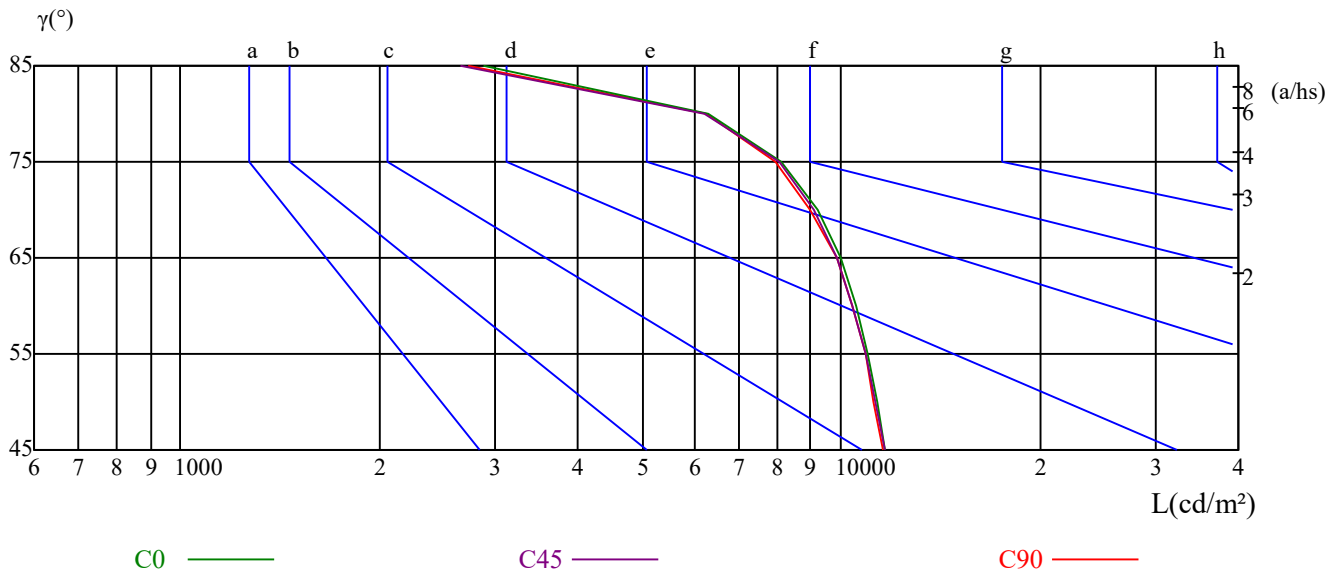
γ	45	50	55	60	65	70	75	80	85
C0	11634	11324	10969	10530	9998	9236	8137	6292	2869
C45	11627	11300	10901	10429	9852	9082	8095	6204	2654
C90	11571	11228	10878	10416	9852	9005	7967	6242	2730

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
9998	9852	9852	8137	7967	8095	2869	2730	2654

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	1.01	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

Light Blue USA-Rayhil INV-9-CCT-120-**-3500K-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	433.11	433.11	427.64	418.52	406.67	392.08	372.02	350.14	321.87		
15.0	433.11	431.29	425.82	418.52	406.67	391.17	372.02	348.31	321.87		
30.0	433.11	433.11	427.62	418.46	405.64	390.99	371.76	348.87	322.31		
45.0	433.11	432.20	427.62	418.46	405.64	389.16	369.01	347.04	320.48		
60.0	433.11	432.20	425.79	418.46	403.81	389.16	369.01	347.04	320.48		
75.0	433.11	432.20	425.79	417.54	405.64	388.24	369.01	347.04	320.48		
90.0	433.11	432.20	425.79	417.54	403.81	388.24	369.01	347.04	320.48		
105.0	433.11	433.11	426.69	418.43	406.50	389.07	369.80	347.77	320.25		
120.0	433.11	433.11	421.18	418.43	406.50	389.98	371.63	349.61	323.00		
135.0	433.11	432.20	427.62	418.46	405.64	390.99	354.36	349.79	322.31		
150.0	433.11	433.11	428.52	419.35	408.34	391.82	372.55	350.53	323.92		
165.0	433.11	433.11	428.52	419.35	406.50	391.82	372.55	350.53	325.75		
180.0	433.11	430.38	423.08	413.05	399.37	382.05	360.17	335.55	307.28		
195.0	433.11	430.38	423.99	413.05	398.46	382.05	360.17	336.46	306.37		
210.0	433.11	432.20	424.87	414.80	400.15	381.83	363.52	336.97	308.58		
225.0	433.11	430.36	424.87	414.80	400.15	381.83	361.69	336.97	308.58		
240.0	433.11	430.36	424.87	414.80	400.15	381.83	359.86	335.13	307.66		
255.0	433.11	430.36	423.04	412.97	400.15	380.92	359.86	336.97	308.58		
270.0	433.11	430.36	423.04	412.97	400.15	380.92	374.51	334.22	307.66		
285.0	433.11	431.28	430.36	413.84	399.16	381.72	360.62	334.93	308.32		
300.0	433.11	431.28	423.93	413.84	399.16	381.72	359.70	335.84	308.32		
315.0	433.11	430.36	423.04	411.13	398.32	380.92	359.86	335.13	305.83		
330.0	433.11	430.36	423.02	412.01	399.16	379.89	359.70	334.93	306.48		
345.0	433.11	430.36	423.02	412.01	397.32	379.89	357.87	333.09	305.56		
360.0	433.11	433.11	427.64	418.52	406.67	392.08	372.02	350.14	321.87		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	292.69	260.78	226.13	192.39	155.92	118.54	82.06	46.50	12.77		
15.0	291.78	259.87	224.31	189.66	153.18	116.71	80.24	46.50	12.77		
30.0	291.18	259.13	225.25	188.63	153.83	114.46	80.58	43.95	12.82		
45.0	291.18	257.30	225.25	188.63	152.00	115.37	80.58	42.12	11.90		
60.0	290.27	257.30	224.34	187.71	152.00	115.37	78.75	43.95	11.90		
75.0	286.60	257.30	224.34	187.71	151.09	114.46	77.83	43.95	11.90		
90.0	290.27	257.30	224.34	187.71	153.83	115.37	78.75	43.95	11.90		
105.0	293.63	259.68	225.73	189.03	152.32	115.62	78.91	45.88	11.93		
120.0	291.80	259.68	225.73	192.70	155.99	115.62	78.91	45.88	12.85		
135.0	293.01	261.88	225.25	190.46	153.83	117.21	82.41	46.70	12.82		
150.0	294.55	235.83	227.57	192.70	155.99	119.29	83.50	48.63	14.68		
165.0	296.39	264.27	228.48	193.62	156.91	114.70	85.34	48.63	16.52		
180.0	277.19	243.45	209.72	172.33	136.77	100.30	63.83	29.18	4.56		
195.0	277.19	243.45	208.80	172.33	135.86	99.39	63.83	31.00	4.56		
210.0	276.53	244.48	210.60	171.23	137.35	100.72	65.93	31.13	4.58		
225.0	278.36	244.48	209.69	173.06	136.43	99.81	64.10	31.13	4.58		
240.0	276.53	244.48	210.60	173.98	137.35	100.72	64.10	29.30	4.58		
255.0	276.53	242.65	207.86	171.23	134.60	99.81	63.18	55.86	4.58		
270.0	276.53	242.65	207.86	173.06	134.60	97.98	64.10	31.13	4.58		
285.0	277.12	243.17	210.13	173.43	136.72	100.02	63.31	29.36	4.59		
300.0	277.12	243.17	206.46	171.59	134.89	100.02	64.23	29.36	4.59		
315.0	276.53	242.65	206.03	170.31	134.60	97.98	63.18	29.30	2.75		
330.0	276.20	242.25	208.30	170.67	134.89	97.27	61.48	27.53	2.75		
345.0	276.20	240.41	206.46	170.67	133.97	97.27	60.56	27.53	4.59		
360.0	292.69	260.78	226.13	192.39	155.92	118.54	82.06	46.50	12.77		

Light Blue USA-Rayhil INV-9-CCT-120-**-3500K-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	1.82	0.00	0.00	0.00	0.00	1.82	1.82	1.82	1.82
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	2.75
105.0	1.84	0.00	0.00	0.00	0.00	1.84	1.84	1.84	2.75
120.0	1.84	0.00	0.00	0.00	0.00	1.84	1.84	1.84	1.84
135.0	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1.83	1.83
150.0	1.84	0.00	0.00	0.00	0.00	0.00	1.84	1.84	1.84
165.0	1.84	0.00	0.00	0.00	0.00	0.00	1.84	1.84	1.84
180.0	0.00	1.82	0.00	1.82	1.82	1.82	1.82	1.82	1.82
195.0	1.82	1.82	0.00	1.82	1.82	1.82	1.82	1.82	1.82
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	2.75
285.0	1.84	1.84	1.84	1.84	1.84	1.84	1.84	2.75	2.75
300.0	1.84	1.84	1.84	1.84	1.84	1.84	1.84	2.75	2.75
315.0	1.83	1.83	1.83	1.83	1.83	1.83	1.83	1.83	2.75
330.0	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	2.75
345.0	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84
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	2.74	2.74	2.74	4.56	4.56	4.56	2.74	2.74
15.0	1.82	2.74	2.74	2.74	4.56	4.56	4.56	2.74	2.74
30.0	1.83	2.75	2.75	2.75	4.58	4.58	4.58	2.75	2.75
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	2.75	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	4.59	4.59	4.59	4.59	4.59	2.75	2.75
120.0	2.75	2.75	2.75	4.59	4.59	4.59	4.59	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	1.84	2.75	2.75	2.75	4.59	4.59	4.59	4.59	2.75
165.0	1.84	1.84	2.75	2.75	2.75	2.75	4.59	4.59	2.75
180.0	1.82	1.82	1.82	1.82	2.74	2.74	2.74	2.74	2.74
195.0	1.82	1.82	1.82	1.82	2.74	2.74	2.74	2.74	2.74
210.0	1.83	1.83	1.83	1.83	2.75	2.75	2.75	2.75	2.75
225.0	0.00	1.83	1.83	1.83	2.75	2.75	2.75	2.75	2.75
240.0	1.83	2.75	2.75	2.75	2.75	1.83	2.75	2.75	2.75
255.0	1.83	2.75	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	2.75
285.0	2.75	2.75	2.75	4.59	4.59	2.75	1.84	1.84	2.75
300.0	2.75	2.75	4.59	4.59	4.59	4.59	2.75	1.84	2.75
315.0	2.75	2.75	2.75	2.75	2.75	2.75	2.75	1.83	2.75
330.0	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75
345.0	1.84	1.84	2.75	2.75	2.75	2.75	2.75	2.75	2.75
360.0	1.82	2.74	2.74	2.74	4.56	4.56	4.56	2.74	2.74

Intensity data(cd)

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C/γ(°)	180.0
0.0	2.74
15.0	2.74
30.0	2.75
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	2.74