
Light Blue USA-Rayhil

Client:

LumCAT: INV-12-CCT-UNV-**-2700K-F

Luminaire: LED lamp

Report No:

Ballast type:

Test No:

Voltage(V): 120.020

LampCAT:

Current(A): 0.159

Lamp flux(lm): 1359.0

Power (W): 17.730

Number of Lamps: 1

PF: 0.927

Length(mm): -270

Width(mm): -270

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1358.97, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 76.65

Central intensity(cd): 492.720, Maximum intensity(cd): 492.720

Angle of maximum intensity: C=0.0 γ =0.0

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

[C90/270]Total=109.6

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

[C90/270]Total=158.8

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(%): 0.23%

Down flux rate of lamp(%): 99.77%

Up flux rate of LUM(%): 0.23%

Down flux rate of LUM(%): 99.77%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 80.156%

Light Blue USA-Rayhil INV-12-CCT-UNV-**-2700K-F

Zonal flux distribution table

Appendix Page: 2 Total:12

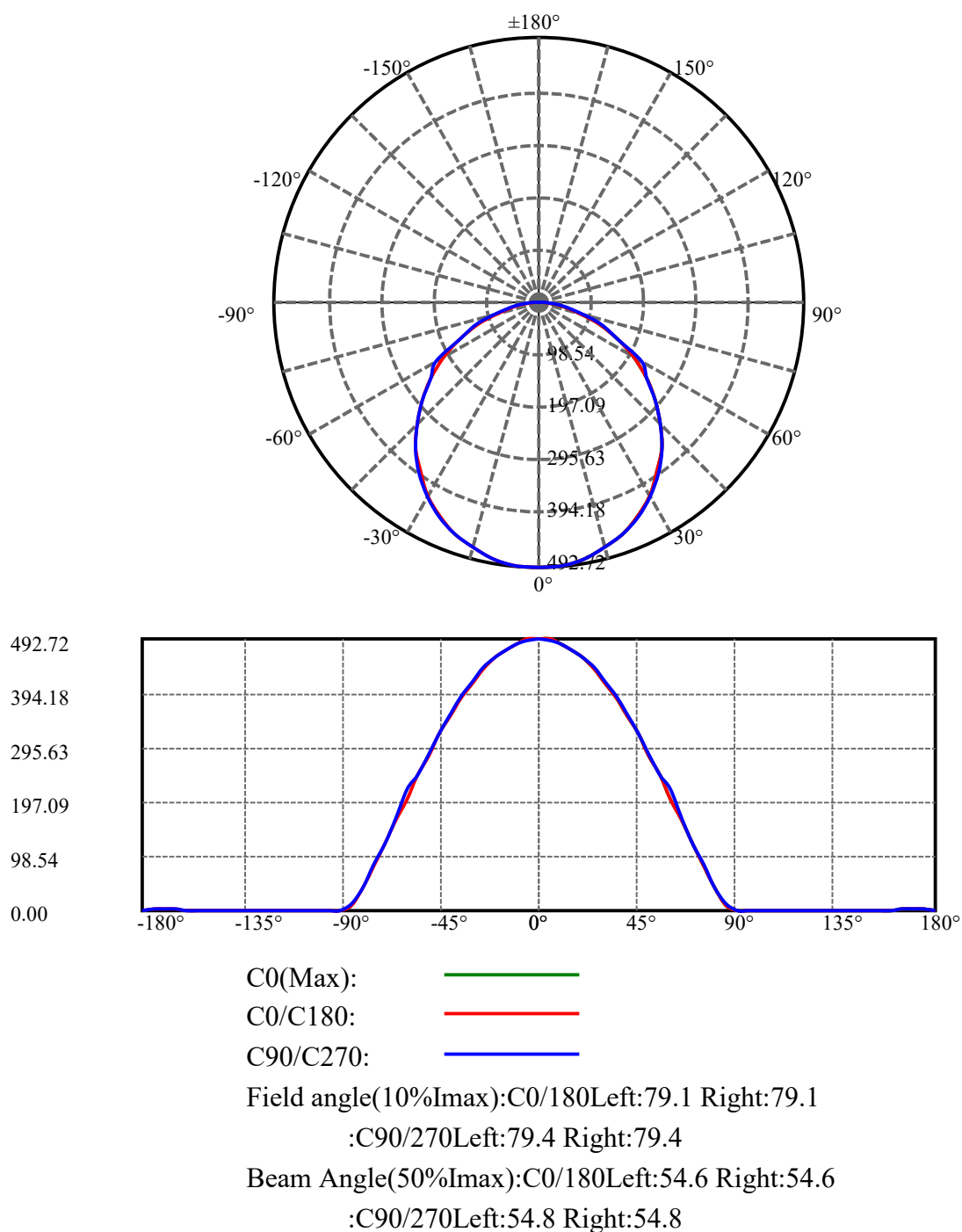
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	492.720	0.000	0	0.00%	0.00%
5.0	490.651	11.756	11.756	0.87%	0.87%
10.0	484.173	34.873	46.628	2.57%	3.43%
15.0	472.788	56.766	103.395	4.18%	7.61%
20.0	457.799	76.693	180.088	5.64%	13.25%
25.0	438.366	93.991	274.079	6.92%	20.17%
30.0	414.869	107.978	382.057	7.95%	28.11%
35.0	386.888	118.064	500.121	8.69%	36.80%
40.0	356.184	123.976	624.097	9.12%	45.92%
45.0	320.265	125.250	749.347	9.22%	55.14%
50.0	282.699	121.838	871.184	8.97%	64.11%
55.0	243.677	114.452	985.636	8.42%	72.53%
60.0	204.810	103.666	1089.302	7.63%	80.16%
65.0	162.567	89.310	1178.612	6.57%	86.73%
70.0	121.973	72.047	1250.66	5.30%	92.03%
75.0	82.109	53.344	1304.003	3.93%	95.96%
80.0	45.232	34.073	1338.076	2.51%	98.46%
85.0	9.931	14.989	1353.065	1.10%	99.57%
90.0	0.191	2.772	1355.837	0.20%	99.77%
95.0	0.307	0.136	1355.973	0.01%	99.78%
100.0	0.384	0.188	1356.161	0.01%	99.79%
105.0	0.460	0.226	1356.387	0.02%	99.81%
110.0	0.460	0.240	1356.627	0.02%	99.83%
115.0	0.383	0.213	1356.841	0.02%	99.84%
120.0	0.383	0.186	1357.027	0.01%	99.86%
125.0	0.191	0.133	1357.16	0.01%	99.87%
130.0	0.153	0.075	1357.234	0.01%	99.87%
135.0	0.000	0.031	1357.265	0.00%	99.87%
140.0	0.460	0.085	1357.35	0.01%	99.88%
145.0	0.537	0.166	1357.517	0.01%	99.89%
150.0	0.920	0.214	1357.731	0.02%	99.91%
155.0	1.380	0.291	1358.022	0.02%	99.93%
160.0	1.418	0.293	1358.316	0.02%	99.95%
165.0	1.840	0.269	1358.584	0.02%	99.97%
170.0	1.878	0.221	1358.805	0.02%	99.99%
175.0	1.878	0.134	1358.939	0.01%	100.00%
180.0	0.958	0.034	1358.973	0.00%	100.00%

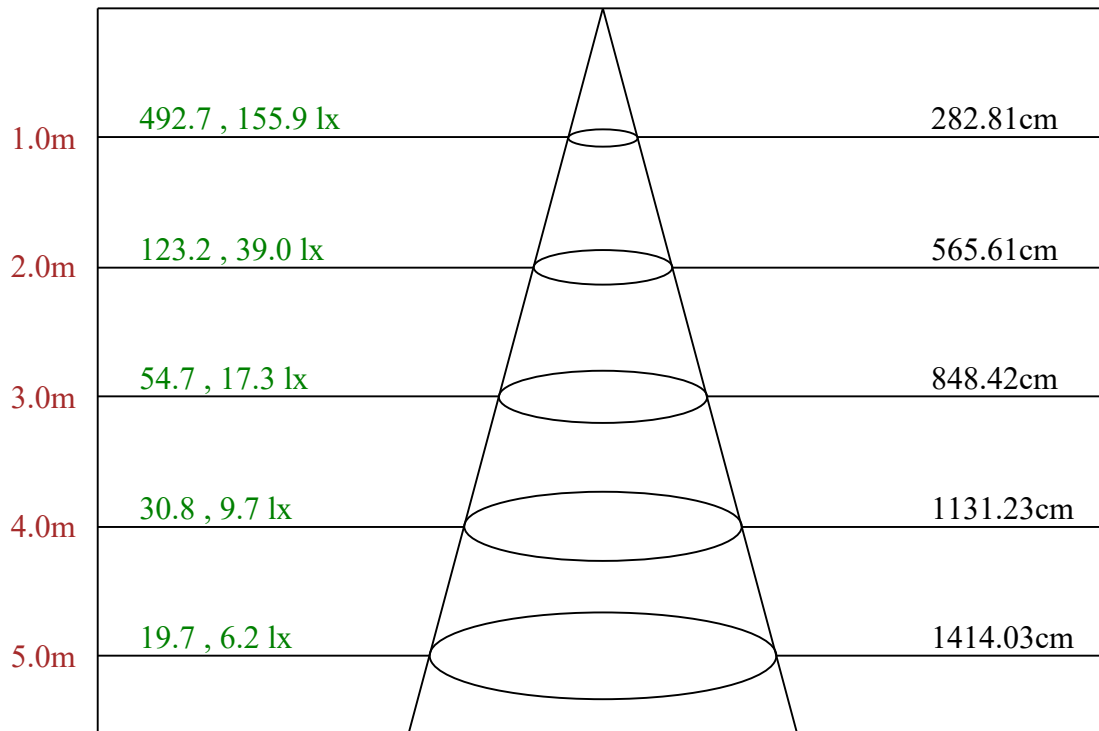
ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	382.06	28.11%	28.11%
0-40	624.10	45.92%	45.92%
0-60	1089.30	80.16%	80.16%
0-90	1355.84	99.77%	99.77%
0-120	1357.03	99.86%	99.86%
0-180	1358.97	100.00%	100.00%
60-90	266.53	19.61%	19.61%
90-120	1.19	0.09%	0.09%
90-130	1.40	0.10%	0.10%
90-150	1.89	0.14%	0.14%
90-180	3.10	0.23%	0.23%
0-59.90	1087.18	80.00%	80.00%

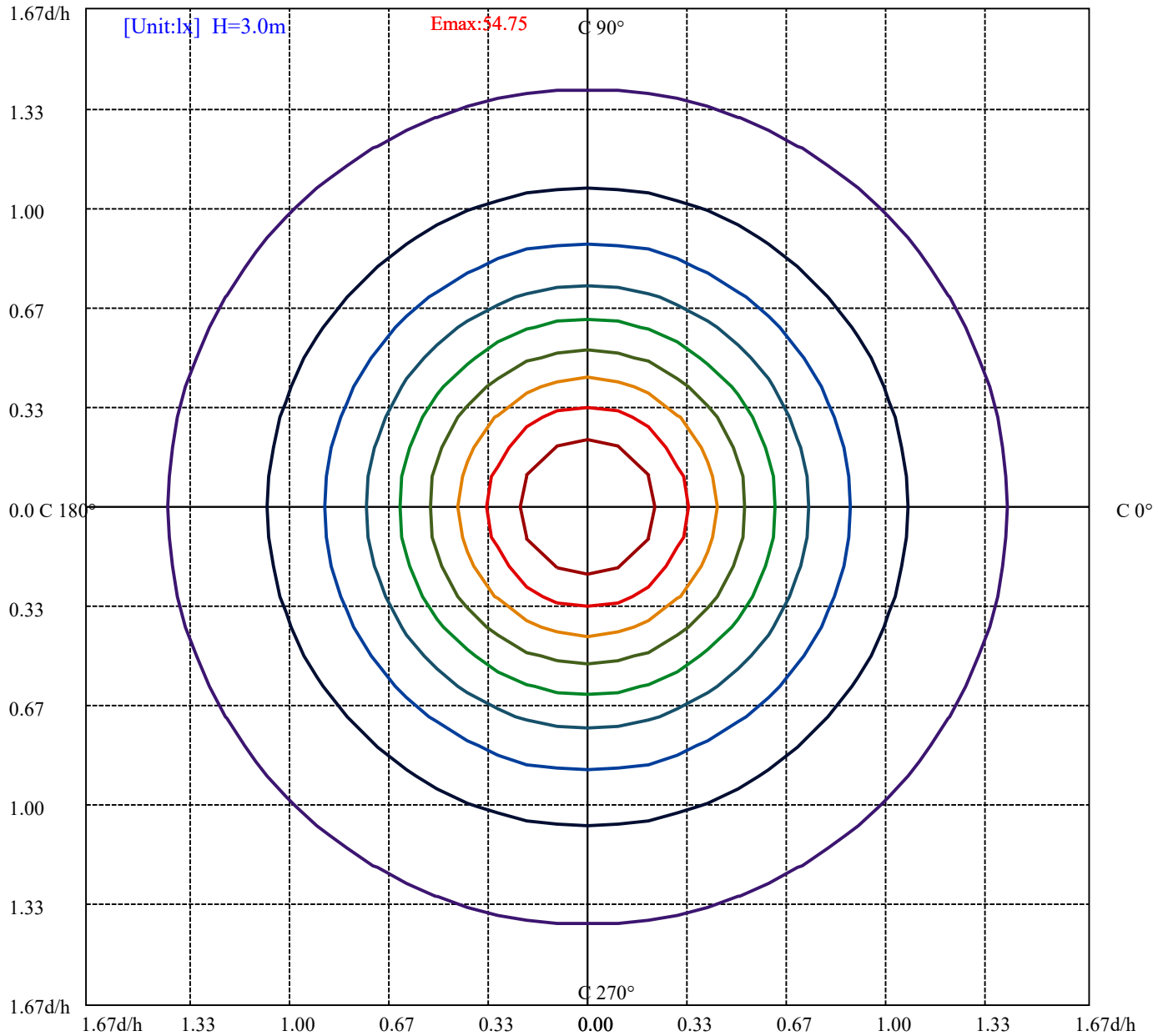
ZONAL LUMEN SUMMARY

0-10	46.63
10-20	133.46
20-30	201.97
30-40	242.04
40-50	247.09
50-60	218.12
60-70	161.36
70-80	87.42
80-90	17.76
90-100	0.32
100-110	0.47
110-120	0.40
120-130	0.21
130-140	0.12
140-150	0.38
150-160	0.58
160-170	0.49
170-180	0.13

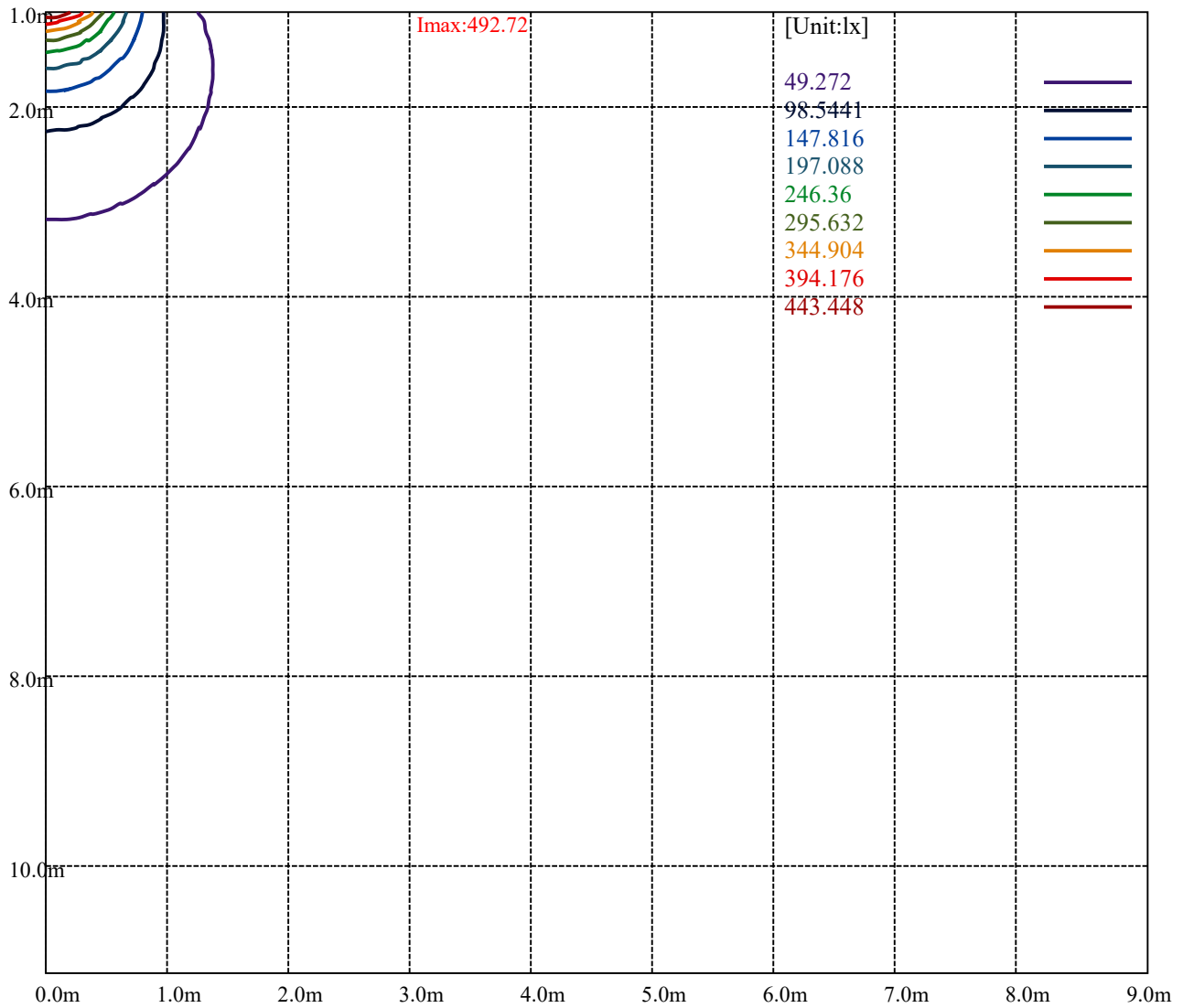




Max , Ave Beam angle of C0 plane 109.46



(10%Emax) 5.474667	—
(20%Emax) 10.94934	—
(30%Emax) 16.424	—
(40%Emax) 21.89867	—
(50%Emax) 27.37333	—
(60%Emax) 32.848	—
(70%Emax) 38.32267	—
(80%Emax) 43.79733	—
(90%Emax) 49.272	—



Light Blue USA-Rayhil INV-12-CCT-UNV-**-2700K-F

Luminance Limiting Curve(no luminous side)

Appendix Page: 8 Total:12

Luminance Table

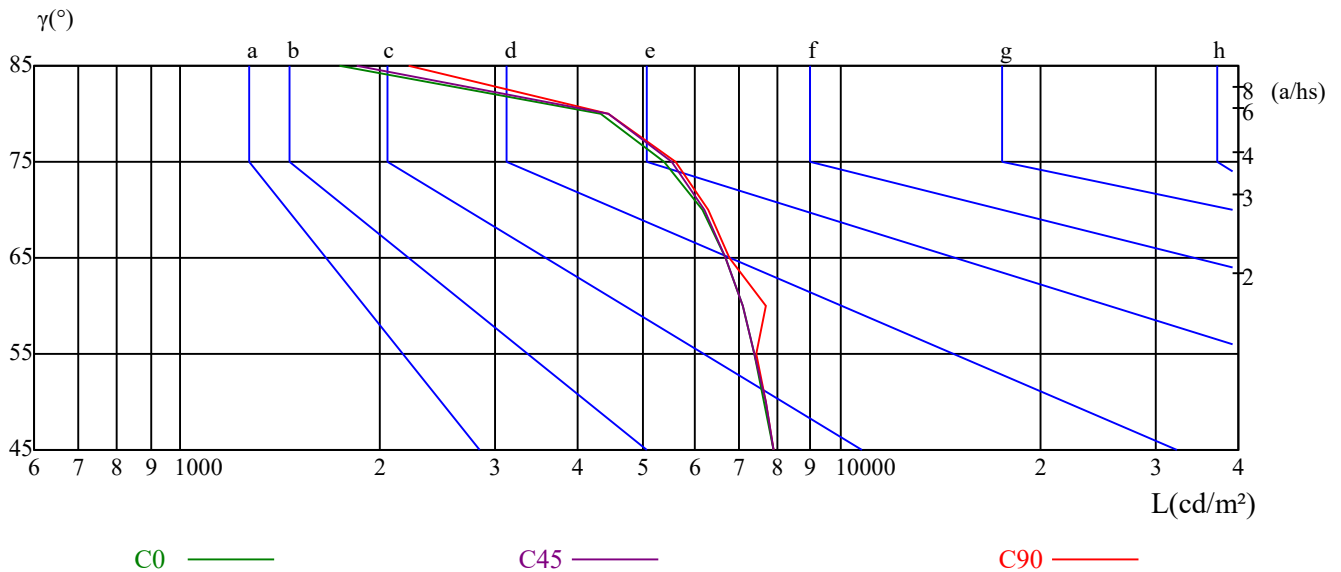
γ	45	50	55	60	65	70	75	80	85
C0	7914	7663	7418	7105	6668	6185	5398	4321	1740
C45	7898	7675	7411	7119	6702	6202	5557	4442	1844
C90	7928	7707	7446	7689	6794	6302	5624	4446	2215

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
6668	6794	6702	5398	5624	5557	1740	2215	1844

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-**-2700K-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	492.72	491.81	486.32	474.44	460.73	441.53	416.85	389.42	358.34		
15.0	492.72	489.98	484.49	474.44	458.90	439.70	415.93	387.59	357.43		
30.0	492.72	491.80	485.38	474.37	459.69	440.42	418.40	389.96	357.84		
45.0	492.72	489.97	484.46	474.37	459.69	440.42	417.48	390.87	358.76		
60.0	492.72	491.80	486.29	475.25	460.55	441.24	419.18	391.60	360.35		
75.0	492.72	490.88	485.37	475.25	461.47	442.16	418.26	390.68	363.11		
90.0	492.72	491.80	486.27	475.22	462.33	442.99	420.88	394.18	362.86		
105.0	492.72	491.80	487.18	477.03	462.27	444.74	422.60	396.76	363.54		
120.0	492.72	491.80	487.18	477.03	462.27	444.74	423.52	396.76	364.47		
135.0	492.72	492.72	487.18	477.96	464.12	444.74	422.60	395.84	367.23		
150.0	492.72	492.72	488.10	478.85	452.05	446.50	424.31	398.43	367.92		
165.0	492.72	493.64	488.10	478.85	466.84	447.42	425.24	399.35	366.07		
180.0	492.72	490.89	483.58	470.78	455.24	434.22	409.53	379.37	350.11		
195.0	492.72	489.06	481.75	469.87	454.33	435.13	410.45	382.11	351.03		
210.0	492.72	489.97	483.54	471.62	456.02	437.67	413.81	384.45	352.34		
225.0	492.72	489.97	482.63	471.62	456.02	436.75	412.89	384.45	351.42		
240.0	492.72	489.96	482.61	471.58	456.87	435.73	413.66	385.17	352.99		
255.0	492.72	489.04	482.61	469.74	455.95	435.73	412.75	383.33	352.99		
270.0	492.72	489.96	481.67	469.70	454.96	435.62	410.75	383.12	350.89		
285.0	492.72	489.95	482.57	469.65	453.97	434.59	411.52	380.15	372.77		
300.0	492.72	489.03	480.73	468.73	465.04	431.82	406.91	379.23	344.17		
315.0	492.72	489.03	480.73	466.88	450.28	429.98	404.14	374.62	343.24		
330.0	492.72	489.02	480.70	467.76	449.27	428.93	403.05	375.32	340.19		
345.0	492.72	489.02	480.70	465.91	448.35	428.01	402.13	372.54	338.34		
360.0	492.72	491.81	486.32	474.44	460.73	441.53	416.85	389.42	358.34		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	326.35	287.04	250.47	209.34	168.20	127.07	86.84	48.45	13.71		
15.0	323.60	287.04	247.73	206.60	166.37	127.07	86.84	48.45	12.80		
30.0	322.98	285.36	247.74	207.36	166.99	126.62	86.25	47.71	13.76		
45.0	322.06	287.19	247.74	208.28	166.99	125.70	87.17	48.63	12.85		
60.0	326.34	288.65	250.96	208.67	170.06	128.70	88.25	48.72	14.71		
75.0	328.17	290.48	251.88	211.43	170.06	128.70	90.09	51.48	14.71		
90.0	327.87	291.03	252.35	213.67	172.22	131.70	90.26	51.57	17.50		
105.0	330.33	293.42	253.74	213.14	172.54	131.95	93.19	54.44	17.53		
120.0	331.25	293.42	254.66	216.83	175.31	134.71	94.12	55.36	18.45		
135.0	332.17	297.11	258.36	217.76	176.24	134.71	96.88	57.21	19.38		
150.0	334.64	297.67	258.84	220.94	177.49	137.74	97.07	58.24	21.26		
165.0	334.64	299.51	261.61	220.01	179.34	138.66	99.84	61.01	24.04		
180.0	314.46	276.98	236.76	197.45	154.49	115.18	73.13	37.48	3.66		
195.0	313.55	277.90	237.68	197.45	156.32	115.18	75.87	37.48	5.48		
210.0	316.55	278.02	237.64	197.27	155.98	117.45	76.16	39.45	4.59		
225.0	317.47	277.10	239.48	199.11	158.73	117.45	77.07	40.37	3.67		
240.0	318.06	279.45	239.93	199.48	159.95	118.58	78.14	39.53	4.60		
255.0	315.30	279.45	239.93	199.48	158.11	116.75	76.30	68.02	4.60		
270.0	314.05	276.29	236.69	226.56	156.57	115.12	76.44	36.84	4.60		
285.0	311.87	273.12	233.44	192.84	154.09	113.49	73.82	35.99	2.77		
300.0	310.03	271.27	231.60	191.92	150.40	109.80	70.13	32.29	0.92		
315.0	307.26	268.50	227.91	190.08	146.71	107.96	68.28	30.45	0.92		
330.0	305.06	266.24	226.49	185.81	145.14	104.46	64.71	29.58	0.92		
345.0	302.29	262.54	224.64	183.96	143.29	102.61	63.79	26.81	0.92		
360.0	326.35	287.04	250.47	209.34	168.20	127.07	86.84	48.45	13.71		

Light Blue USA-Rayhil INV-12-CCT-UNV-**-2700K-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	0.00	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	1.83	2.74	1.83		
15.0	0.00	0.91	0.91	0.91	1.83	1.83	1.83	1.83	1.83		
30.0	0.00	0.92	0.92	0.92	1.84	1.84	1.84	1.84	1.84		
45.0	0.00	0.92	0.92	0.92	1.84	1.84	1.84	1.84	1.84		
60.0	0.00	0.92	0.92	0.92	1.84	1.84	1.84	1.84	1.84		
75.0	0.00	0.92	0.92	0.92	1.84	1.84	1.84	1.84	1.84		
90.0	0.00	0.92	0.92	0.92	1.84	1.84	1.84	1.84	2.76		
105.0	0.00	0.92	0.92	0.92	1.85	1.85	1.85	1.85	1.85		
120.0	0.00	0.92	0.92	0.92	1.85	1.85	1.85	1.85	1.85		
135.0	0.00	0.92	0.92	0.92	1.85	1.85	1.85	1.85	1.85		
150.0	0.00	0.92	0.92	0.92	1.85	1.85	1.85	1.85	1.85		
165.0	0.00	0.92	0.92	0.92	1.85	1.85	1.85	1.85	1.85		
180.0	0.00	0.00	0.00	0.91	0.91	0.91	1.83	1.83	1.83		
195.0	0.00	0.00	0.91	0.91	0.91	0.91	1.83	1.83	1.83		
210.0	0.00	0.00	0.00	0.92	0.92	1.84	1.84	1.84	1.84		
225.0	0.00	0.00	0.00	0.92	0.92	0.92	1.84	1.84	1.84		
240.0	0.00	0.00	0.00	0.92	0.92	0.92	1.84	1.84	1.84		
255.0	0.00	0.00	0.00	0.92	0.92	0.92	1.84	1.84	1.84		
270.0	0.00	0.00	0.00	0.92	0.92	0.92	1.84	1.84	1.84		
285.0	0.00	0.00	0.00	0.92	0.92	0.92	1.85	1.85	1.85		
300.0	0.00	0.00	0.00	0.92	0.92	0.92	1.85	1.85	1.85		
315.0	0.00	0.00	0.92	0.92	0.92	0.92	1.85	1.85	1.85		
330.0	0.00	0.00	0.00	0.92	0.92	0.92	1.85	1.85	1.85		
345.0	0.00	0.00	0.00	0.92	0.92	0.92	1.85	1.85	1.85		
360.0	0.00	0.91	0.91	0.91	1.83	1.83	1.83	2.74	1.83		

Intensity data(cd)

C/γ(°)	180.0
0.0	1.83
15.0	1.83
30.0	1.84
45.0	1.84
60.0	1.84
75.0	2.76
90.0	1.84
105.0	1.85
120.0	1.85
135.0	1.85
150.0	1.85
165.0	1.85
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	1.83