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NT

Client:

LumCAT: 2-2681-L

Luminaire: 92.70.411.00

Report No: 2024423-B015

Ballast type: AC

Test No: 2024423-C015

Voltage(V): 36.260

LampCAT: NICHIA NFCWJ130B-V3

Current(A): 0.576

Lamp flux(lm): 2920.0

Power (W): 20.885

Number of Lamps: 1

PF: 0.000

Length(mm): 0

Width(mm): 0

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 2415.60, Efficiency(%): 82.73% , Luminous Efficacy(lm/W): 115.66

Central intensity(cd): 4345.647, Maximum intensity(cd): 4345.647

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=44.2

[C90/270]Total=44.2

Field angle(10%Imax): [C0/180]Total=68.0

[C90/270]Total=68.0

Maximum s/h(1/2): C0_180=0.71 C90_270=0.71

Maximum s/h(1/4): C0_180=0.69 C90_270=0.69

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 82.73%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 97.738%

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2024/4/23
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.65

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4345.647	0.000	0	0.00%	0.00%
1.0	4341.184	4.156	4.156	0.14%	0.17%
2.0	4328.822	12.444	16.601	0.43%	0.69%
3.0	4305.266	20.650	37.25	0.71%	1.54%
4.0	4270.226	28.705	65.955	0.98%	2.73%
5.0	4217.190	36.512	102.468	1.25%	4.24%
6.0	4159.692	44.023	146.49	1.51%	6.06%
7.0	4094.585	51.234	197.725	1.75%	8.19%
8.0	4014.190	58.033	255.758	1.99%	10.59%
9.0	3927.942	64.367	320.124	2.20%	13.25%
10.0	3829.478	70.202	390.326	2.40%	16.16%
11.0	3735.477	75.589	465.916	2.59%	19.29%
12.0	3620.334	80.410	546.325	2.75%	22.62%
13.0	3504.825	84.558	630.883	2.90%	26.12%
14.0	3381.196	88.140	719.023	3.02%	29.77%
15.0	3251.642	91.059	810.082	3.12%	33.54%
16.0	3115.065	93.290	903.372	3.19%	37.40%
17.0	2971.904	94.790	998.162	3.25%	41.32%
18.0	2827.793	95.624	1093.787	3.27%	45.28%
19.0	2670.952	95.667	1189.454	3.28%	49.24%
20.0	2517.258	94.959	1284.412	3.25%	53.17%
21.0	2349.079	93.444	1377.856	3.20%	57.04%
22.0	2185.435	91.123	1468.979	3.12%	60.81%
23.0	2033.862	88.532	1557.511	3.03%	64.48%
24.0	1875.339	85.469	1642.98	2.93%	68.02%
25.0	1715.134	81.639	1724.62	2.80%	71.40%
26.0	1515.352	76.256	1800.876	2.61%	74.55%
27.0	1311.123	69.150	1870.026	2.37%	77.41%
28.0	1228.226	64.291	1934.317	2.20%	80.08%
29.0	1077.187	60.316	1994.633	2.07%	82.57%
30.0	925.585	54.074	2048.708	1.85%	84.81%
31.0	785.277	47.611	2096.318	1.63%	86.78%
32.0	652.504	41.191	2137.509	1.41%	88.49%
33.0	534.274	34.963	2172.472	1.20%	89.94%
34.0	430.587	29.200	2201.671	1.00%	91.14%
35.0	345.400	24.099	2225.771	0.83%	92.14%
36.0	277.711	19.840	2245.611	0.68%	92.96%
37.0	245.136	17.052	2262.663	0.58%	93.67%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	176.328	14.068	2276.731	0.48%	94.25%
39.0	119.935	10.112	2286.843	0.35%	94.67%
40.0	95.626	7.518	2294.361	0.26%	94.98%
41.0	77.060	6.149	2300.51	0.21%	95.24%
42.0	64.536	5.144	2305.655	0.18%	95.45%
43.0	55.918	4.462	2310.117	0.15%	95.63%
44.0	50.512	4.017	2314.134	0.14%	95.80%
45.0	46.408	3.725	2317.859	0.13%	95.95%
46.0	43.036	3.498	2321.357	0.12%	96.10%
47.0	40.476	3.321	2324.678	0.11%	96.24%
48.0	38.493	3.192	2327.87	0.11%	96.37%
49.0	36.891	3.096	2330.966	0.11%	96.50%
50.0	35.296	3.010	2333.976	0.10%	96.62%
51.0	34.024	2.933	2336.909	0.10%	96.74%
52.0	32.882	2.871	2339.78	0.10%	96.86%
53.0	31.880	2.817	2342.597	0.10%	96.98%
54.0	30.951	2.769	2345.366	0.09%	97.09%
55.0	29.949	2.718	2348.085	0.09%	97.21%
56.0	29.122	2.669	2350.754	0.09%	97.32%
57.0	28.252	2.623	2353.377	0.09%	97.42%
58.0	27.462	2.576	2355.954	0.09%	97.53%
59.0	26.650	2.530	2358.483	0.09%	97.64%
60.0	25.860	2.481	2360.964	0.08%	97.74%
61.0	25.179	2.436	2363.4	0.08%	97.84%
62.0	24.484	2.393	2365.793	0.08%	97.94%
63.0	23.789	2.348	2368.141	0.08%	98.04%
64.0	23.072	2.299	2370.44	0.08%	98.13%
65.0	22.414	2.251	2372.691	0.08%	98.22%
66.0	21.741	2.203	2374.894	0.08%	98.32%
67.0	21.061	2.152	2377.046	0.07%	98.40%
68.0	20.454	2.103	2379.149	0.07%	98.49%
69.0	19.920	2.060	2381.209	0.07%	98.58%
70.0	19.598	2.030	2383.239	0.07%	98.66%
71.0	19.334	2.012	2385.251	0.07%	98.74%
72.0	19.144	2.001	2387.252	0.07%	98.83%
73.0	18.947	1.992	2389.243	0.07%	98.91%
74.0	18.786	1.984	2391.227	0.07%	98.99%
75.0	18.537	1.972	2393.199	0.07%	99.07%

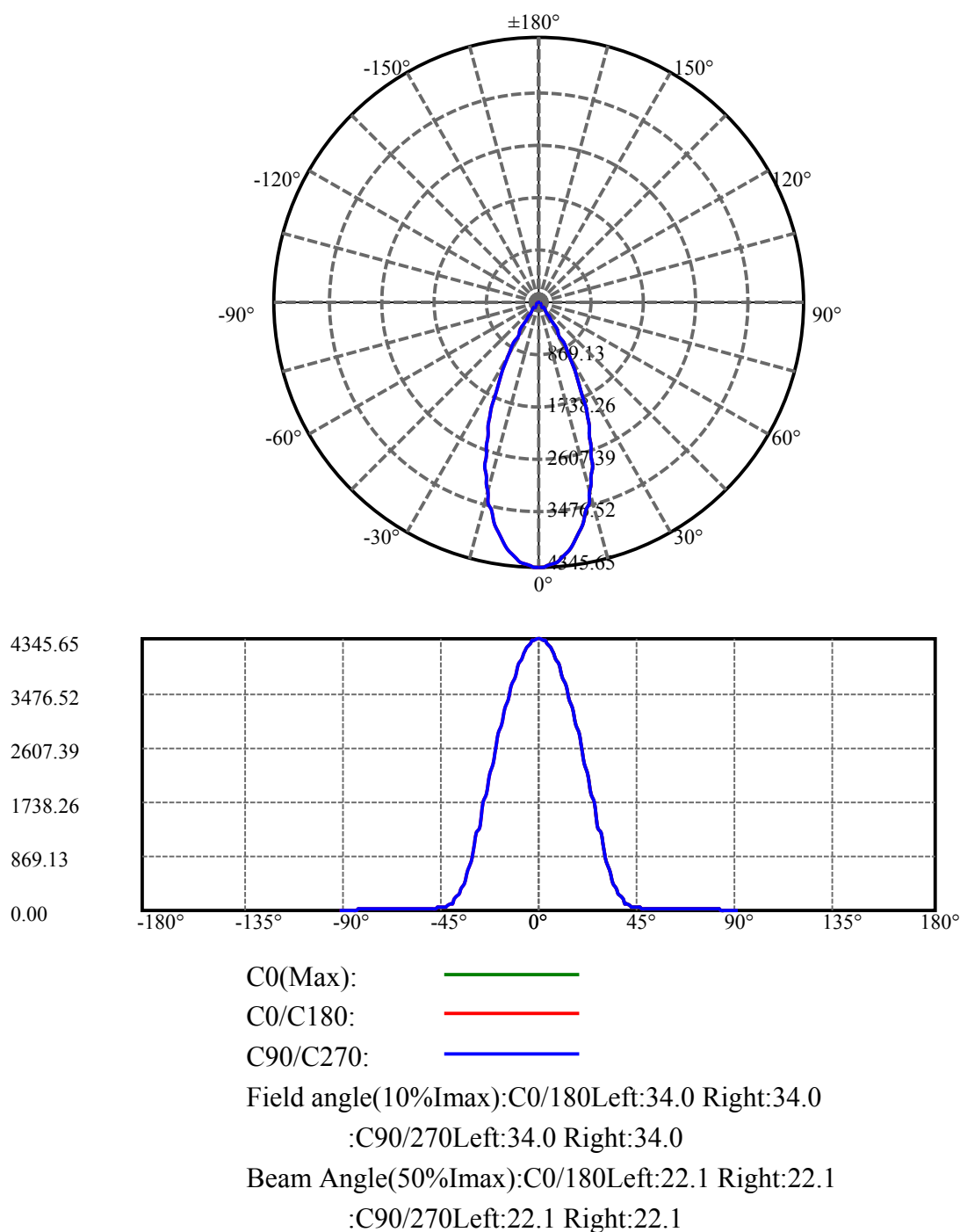
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	18.208	1.951	2395.15	0.07%	99.15%
77.0	17.820	1.921	2397.071	0.07%	99.23%
78.0	17.301	1.880	2398.951	0.06%	99.31%
79.0	16.606	1.822	2400.772	0.06%	99.39%
80.0	15.779	1.746	2402.518	0.06%	99.46%
81.0	14.821	1.655	2404.173	0.06%	99.53%
82.0	13.899	1.557	2405.731	0.05%	99.59%
83.0	13.153	1.471	2407.201	0.05%	99.65%
84.0	12.268	1.385	2408.586	0.05%	99.71%
85.0	11.412	1.292	2409.878	0.04%	99.76%
86.0	10.768	1.212	2411.091	0.04%	99.81%
87.0	10.446	1.161	2412.252	0.04%	99.86%
88.0	10.249	1.134	2413.385	0.04%	99.91%
89.0	10.051	1.113	2414.498	0.04%	99.95%
90.0	9.985	1.099	2415.597	0.04%	100.00%

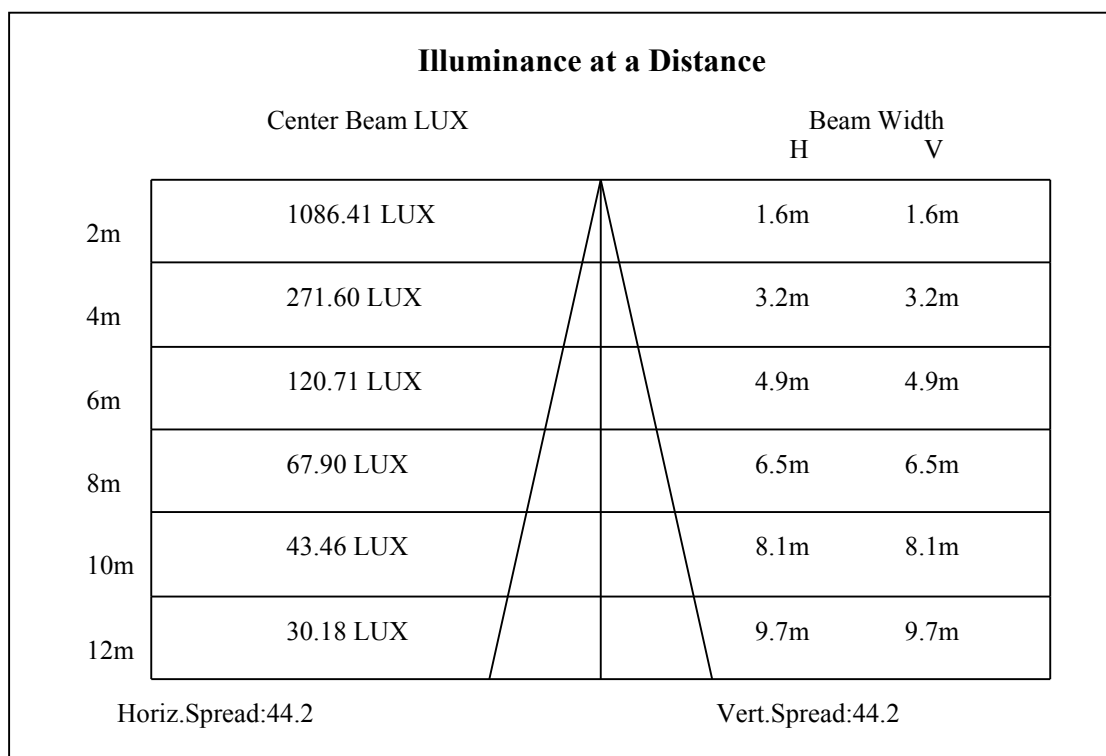
ZONAL LUMEN SUMMARY

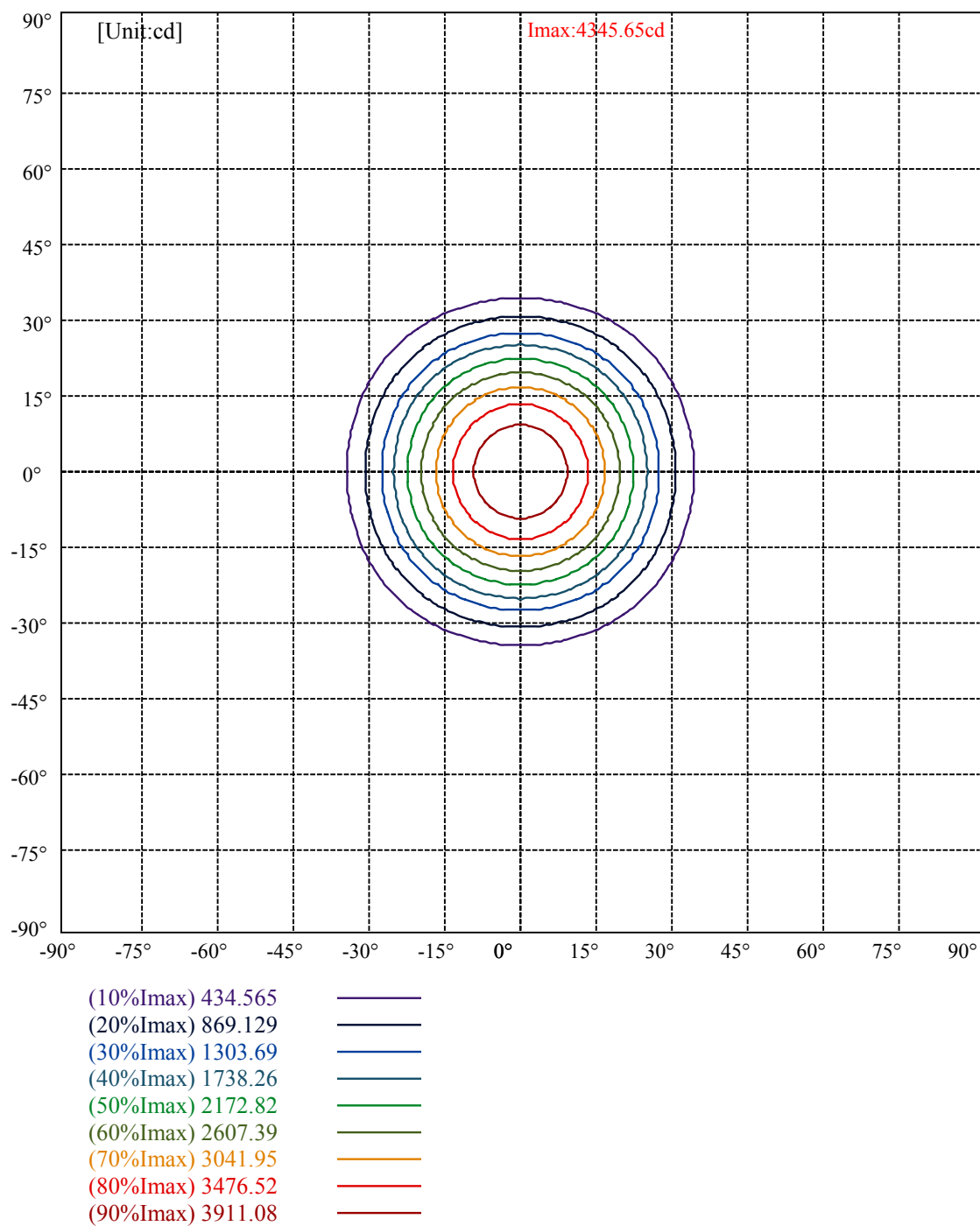
Zone	Lumens	%Lamp	%Fixt
0-30	2048.71	70.16%	84.81%
0-40	2294.36	78.57%	94.98%
0-60	2360.96	80.85%	97.74%
0-90	2414.50	82.69%	99.95%
0-120	2414.50	82.69%	99.95%
0-180	2415.60	82.73%	100.00%
60-90	53.53	1.83%	2.22%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-27.97	1932.48	66.18%	80.00%

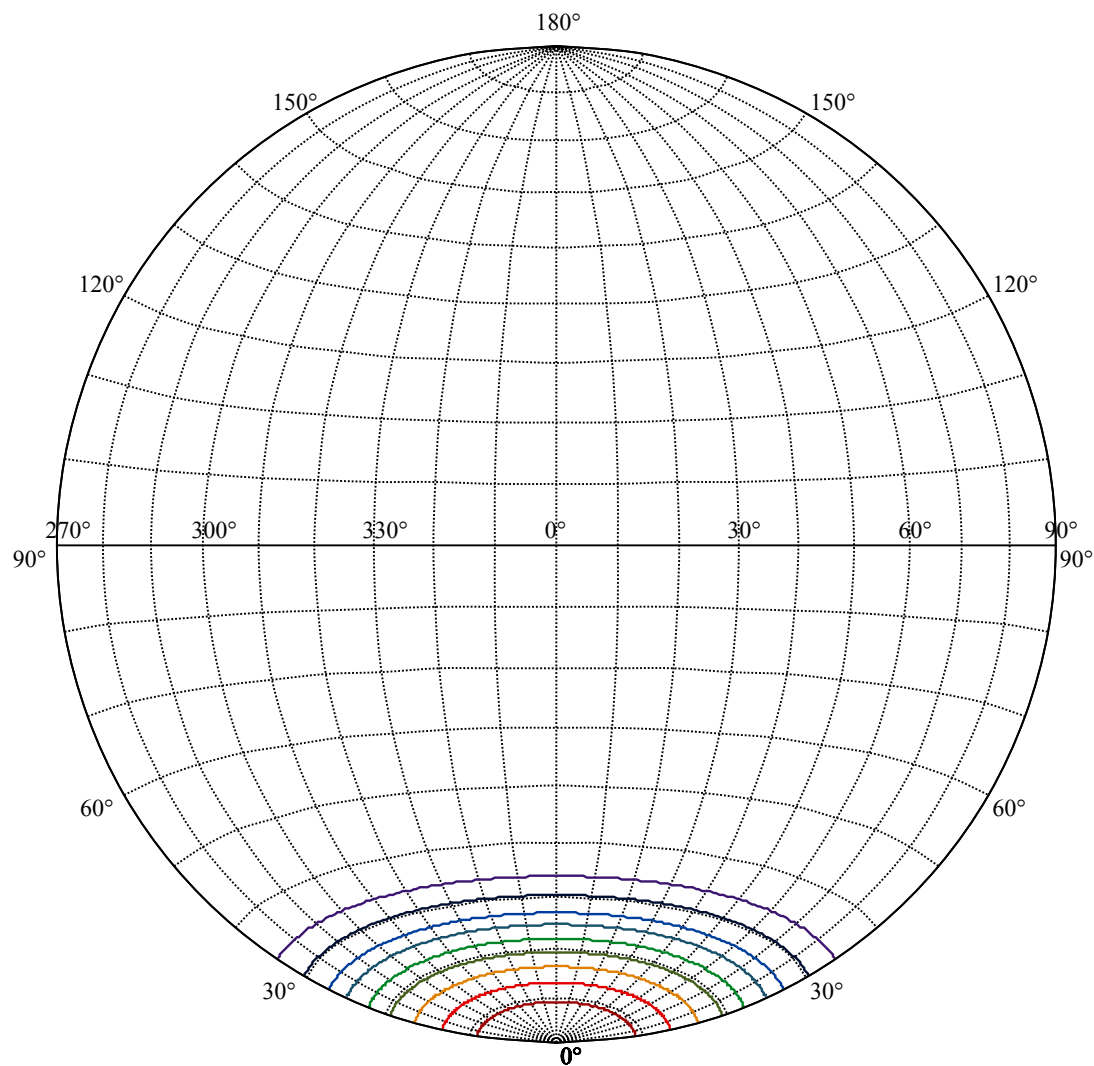
ZONAL LUMEN SUMMARY

0-10	390.33
10-20	894.09
20-30	764.30
30-40	245.65
40-50	39.61
50-60	26.99
60-70	22.27
70-80	19.28
80-90	11.98
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00









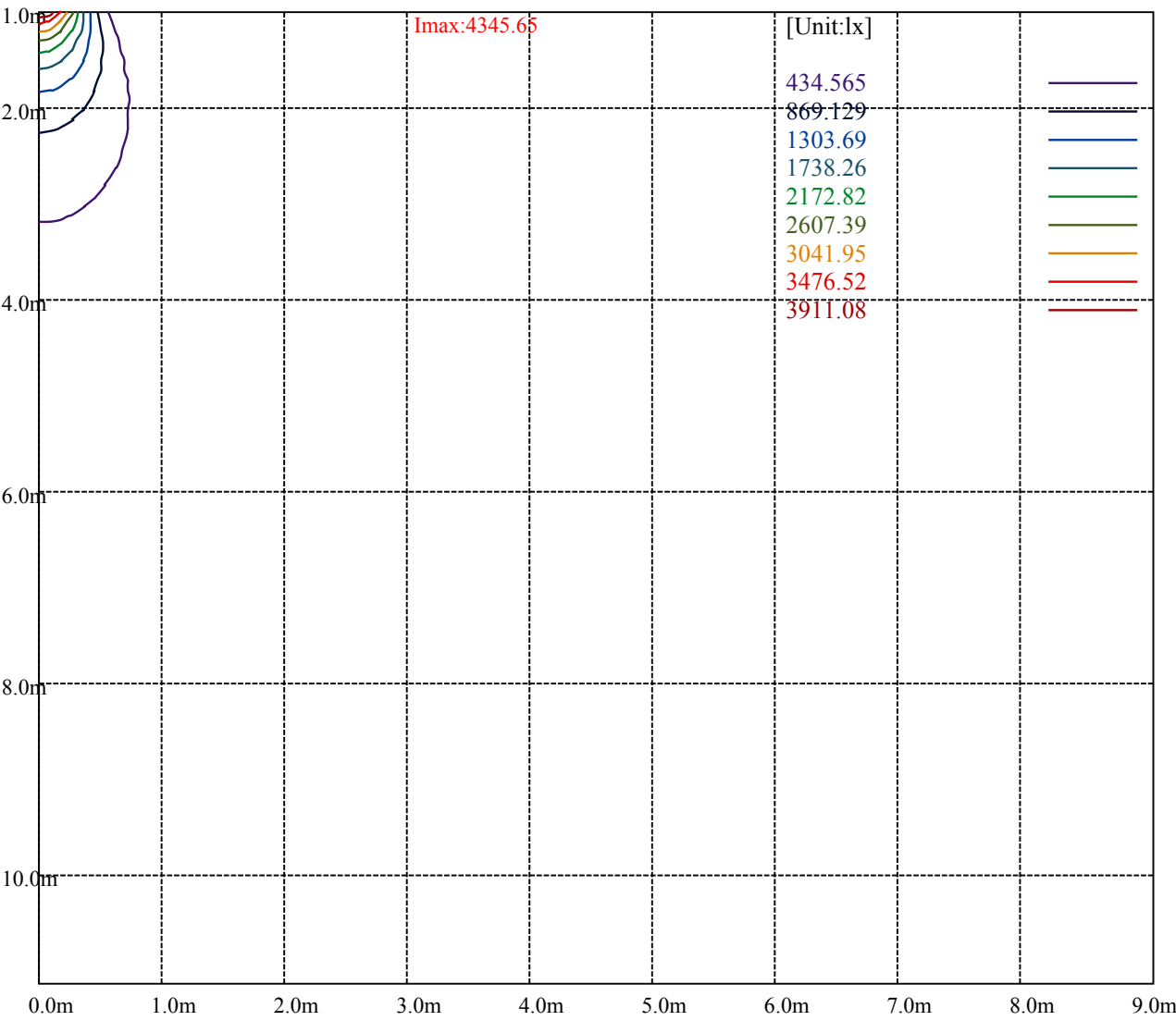
House

[Unit:cd]

Road

I_{max}:4345.65

(10%I _{max})	434.565	—
(20%I _{max})	869.129	—
(30%I _{max})	1303.69	—
(40%I _{max})	1738.26	—
(50%I _{max})	2172.82	—
(60%I _{max})	2607.39	—
(70%I _{max})	3041.95	—
(80%I _{max})	3476.52	—
(90%I _{max})	3911.08	—



Luminance Limiting Curve(no luminous side)

Luminance Table

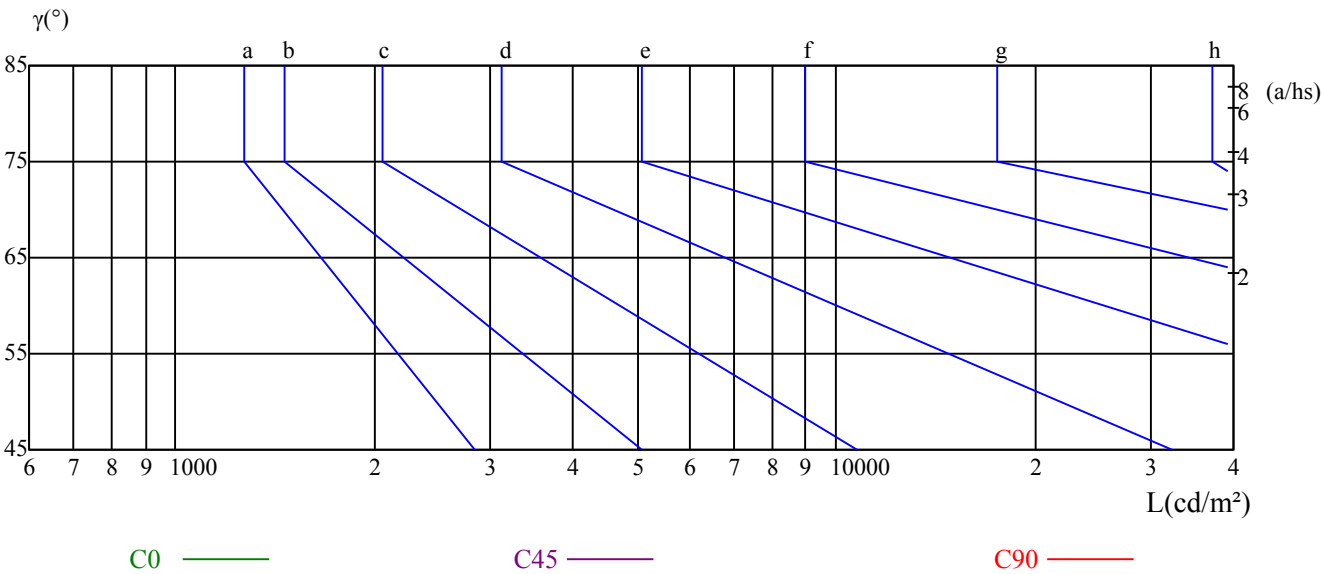
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

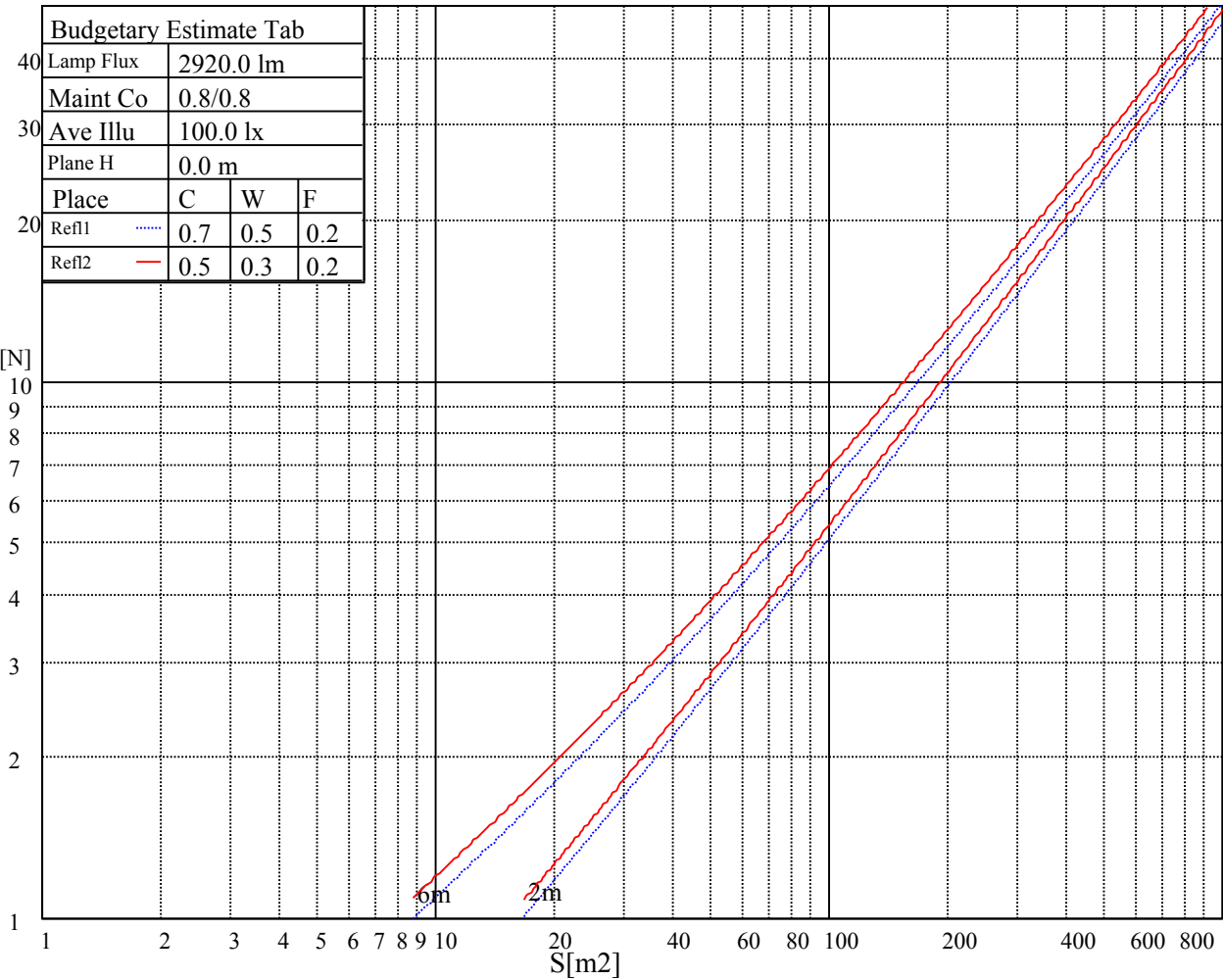
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

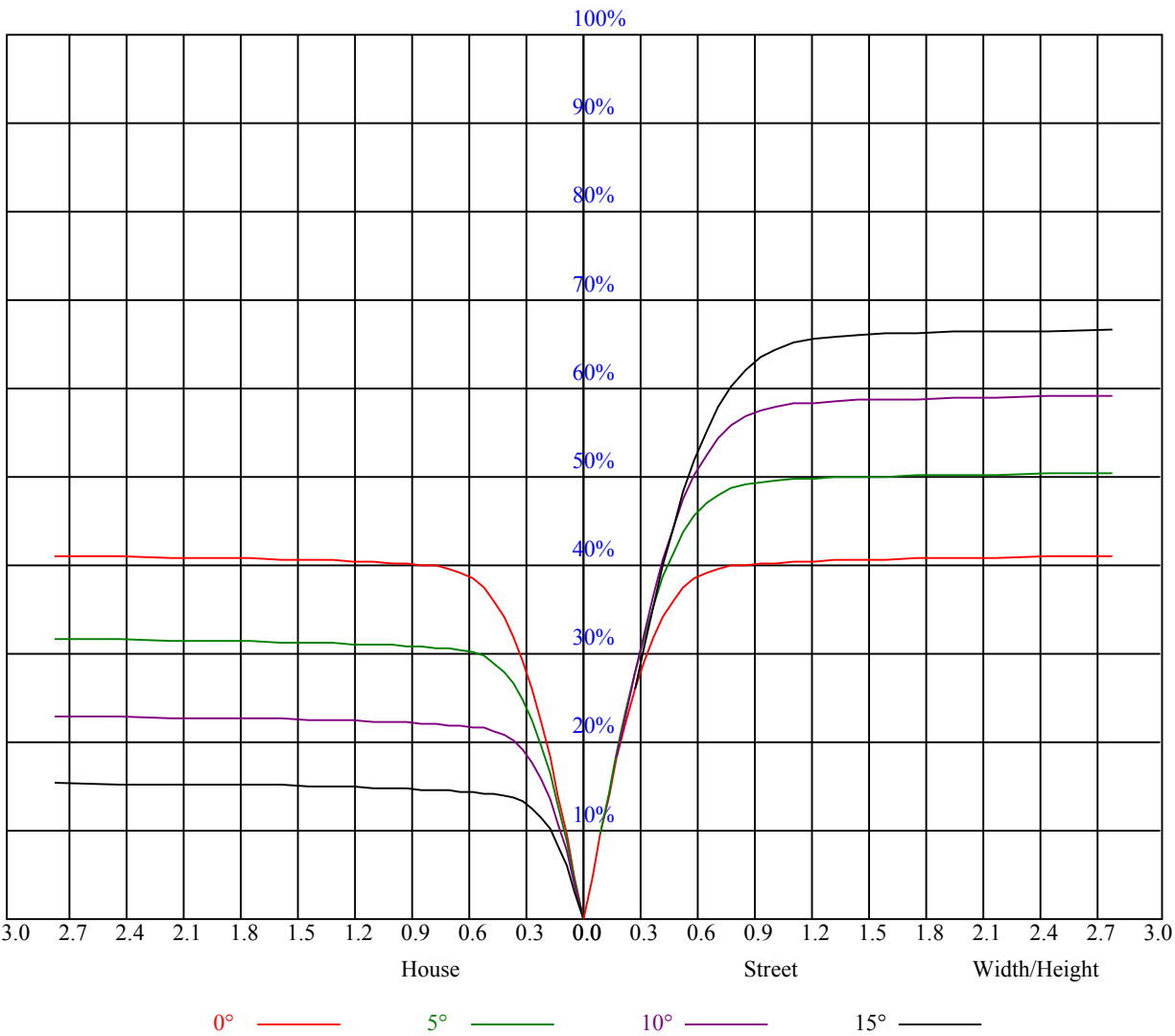
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

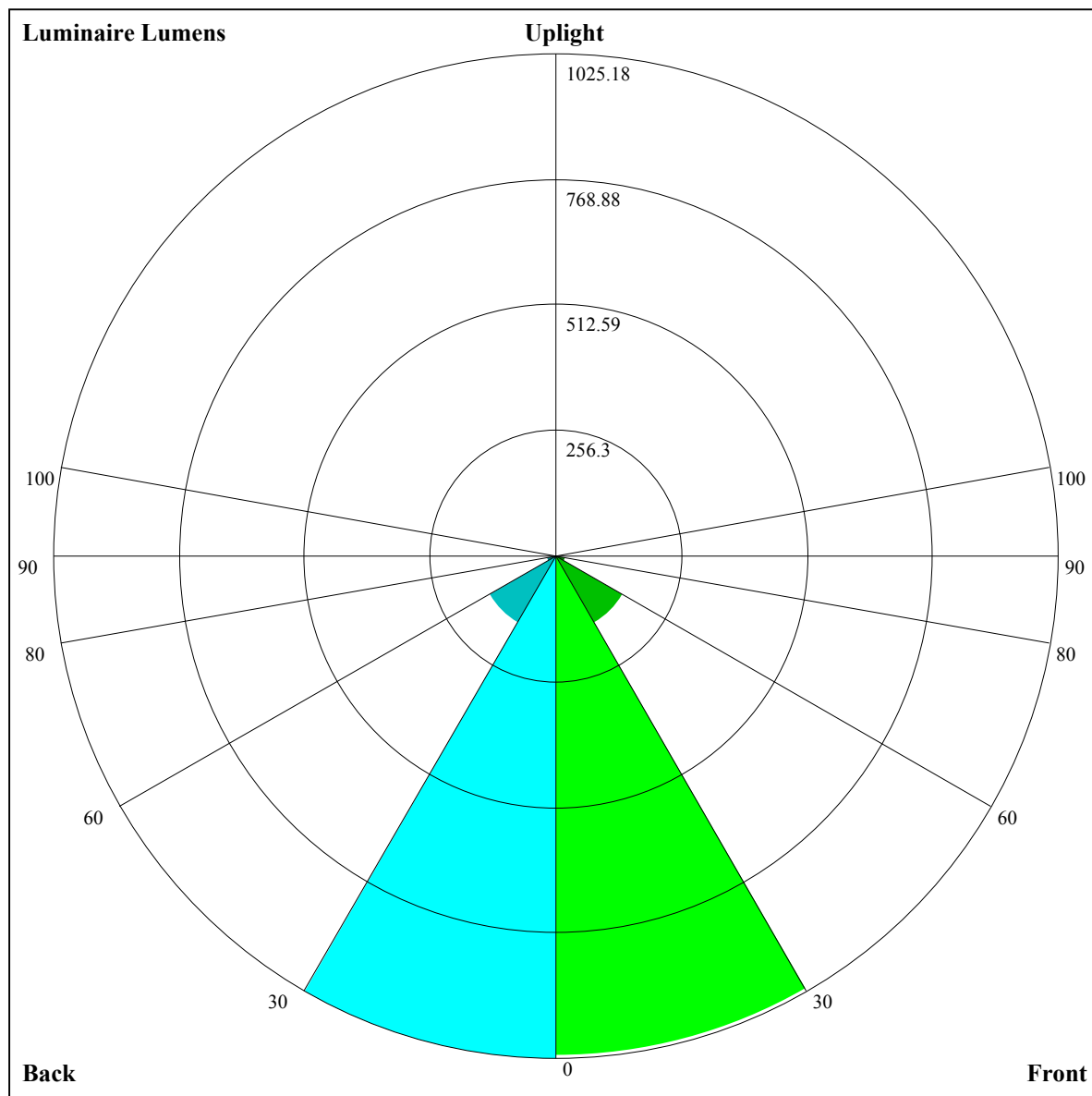
Luminance Limiting Curve





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	COEFFICIENTS OF UTILIZATION RHOFC=20 CU															
0	0.98	0.98	0.98	0.96	0.96	0.96	0.92	0.92	0.92	0.88	0.88	0.88	0.84	0.84	0.84	0.83
1	0.92	0.90	0.88	0.90	0.88	0.87	0.87	0.85	0.84	0.84	0.83	0.81	0.81	0.80	0.79	0.78
2	0.86	0.83	0.80	0.85	0.82	0.79	0.82	0.80	0.78	0.80	0.78	0.76	0.77	0.76	0.74	0.73
3	0.81	0.77	0.74	0.80	0.76	0.74	0.78	0.75	0.72	0.76	0.73	0.71	0.74	0.72	0.70	0.69
4	0.77	0.72	0.69	0.76	0.72	0.69	0.74	0.71	0.68	0.72	0.69	0.67	0.71	0.68	0.66	0.65
5	0.72	0.68	0.65	0.72	0.68	0.65	0.70	0.67	0.64	0.69	0.66	0.64	0.68	0.65	0.63	0.62
6	0.69	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.60	0.65	0.62	0.60	0.59
7	0.65	0.61	0.58	0.65	0.61	0.58	0.64	0.60	0.57	0.63	0.60	0.57	0.62	0.59	0.57	0.56
8	0.62	0.58	0.55	0.62	0.58	0.55	0.61	0.57	0.55	0.60	0.57	0.54	0.60	0.56	0.54	0.53
9	0.60	0.55	0.52	0.59	0.55	0.52	0.58	0.55	0.52	0.58	0.54	0.52	0.57	0.54	0.52	0.51
10	0.57	0.53	0.50	0.57	0.53	0.50	0.56	0.52	0.50	0.55	0.52	0.50	0.55	0.52	0.49	0.48





Luminaire Lumens:

FL=1021.03,FM=158.46,FH=20.67,FVH=6.55

BL=1025.18,BM=157.89,BH=20.74,BVH=6.57

UL=0,UH=0

BUG Rating:B3-U0-G0

Intensity data(cd)									Appendix Page: 17 Total:19
C/γ(°)	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
0.0	4352.38	4342.43	4325.46	4297.95	4259.91	4196.12	4141.11	4073.22	3980.76
45.0	4341.26	4343.60	4337.16	4325.46	4293.27	4259.91	4209.58	4156.91	4077.32
90.0	4343.60	4332.48	4320.19	4295.02	4264.01	4196.71	4145.79	4083.17	3984.27
135.0	4345.35	4344.77	4335.99	4323.70	4290.34	4241.77	4190.85	4133.50	4063.86
180.0	4352.38	4351.21	4344.77	4320.77	4289.17	4236.50	4182.66	4120.63	4050.40
225.0	4341.26	4334.82	4314.92	4273.37	4234.16	4179.74	4095.46	4024.65	3944.48
270.0	4343.60	4344.77	4335.41	4317.85	4283.32	4242.35	4191.44	4115.95	4042.79
315.0	4345.35	4335.41	4316.68	4288.00	4247.62	4184.42	4120.63	4048.65	3969.64
360.0	4352.38	4342.43	4325.46	4297.95	4259.91	4196.12	4141.11	4073.22	3980.76
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3897.07	3806.95	3708.63	3576.95	3466.93	3351.06	3191.29	3066.64	2899.26
45.0	4004.17	3922.24	3836.79	3716.82	3613.24	3478.05	3358.08	3232.26	3073.66
90.0	3904.68	3790.56	3695.75	3590.41	3477.47	3336.43	3211.77	3083.61	2951.35
135.0	3971.98	3887.12	3795.83	3699.27	3567.00	3459.32	3340.52	3186.02	3058.44
180.0	3952.67	3863.71	3773.59	3670.59	3535.40	3422.45	3302.48	3151.50	3022.16
225.0	3857.86	3736.72	3634.31	3528.38	3416.02	3268.54	3147.40	3017.48	2850.69
270.0	3969.64	3856.11	3760.71	3634.31	3529.55	3418.36	3298.97	3147.98	3018.06
315.0	3865.47	3772.42	3678.20	3545.94	3432.99	3315.36	3162.61	3035.04	2901.60
360.0	3897.07	3806.95	3708.63	3576.95	3466.93	3351.06	3191.29	3066.64	2899.26
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	2762.32	2616.01	2470.29	2284.78	2132.03	1978.70	1827.72	1643.96	1495.89
45.0	2943.74	2810.31	2665.17	2477.32	2331.59	2182.36	2034.30	1844.69	1692.53
90.0	2783.39	2637.67	2487.26	2298.82	2146.66	1991.58	1803.14	1655.66	1511.11
135.0	2925.60	2756.47	2611.33	2462.10	2277.17	2127.94	1974.61	1821.28	1634.01
180.0	2892.24	2713.16	2556.91	2408.84	2223.91	2069.41	1919.60	1779.14	1592.46
225.0	2706.72	2517.70	2369.63	2222.16	2032.54	1883.90	1735.84	1588.36	1444.76
270.0	2886.39	2745.35	2554.57	2401.24	2253.17	2102.19	1917.26	1777.97	1589.53
315.0	2721.94	2570.95	2422.89	2237.37	2086.39	1934.81	1790.26	1610.01	1462.54
360.0	2762.32	2616.01	2470.29	2284.78	2132.03	1978.70	1827.72	1643.96	1495.89
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	1158.86	1158.86	1017.30	877.78	750.32	602.84	499.49	388.41	314.97
45.0	1541.54	1355.44	1214.40	1069.26	897.79	766.12	619.23	515.06	424.35
90.0	1134.63	1134.63	1028.59	854.25	727.03	608.93	505.52	394.44	317.72
135.0	1481.26	1333.20	1148.86	1004.30	867.36	708.18	594.06	492.23	383.38
180.0	1444.39	1304.53	1152.37	963.34	826.40	699.99	557.19	459.46	357.63
225.0	1144.76	1107.77	963.05	825.28	668.27	557.95	461.98	359.68	287.52
270.0	1447.91	1295.75	1103.79	956.90	819.96	694.72	554.85	458.87	374.60
315.0	1135.63	1135.63	989.15	853.55	725.09	581.30	481.87	376.53	303.03
360.0	1158.86	1158.86	1017.30	877.78	750.32	602.84	499.49	388.41	314.97
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	249.89	195.82	142.97	112.54	91.00	75.73	62.27	55.25	50.10
45.0	346.51	310.81	310.81	152.10	118.68	89.83	74.56	63.85	56.47
90.0	250.42	194.47	140.40	109.96	88.66	70.52	60.75	52.61	48.05
135.0	307.30	307.30	227.13	129.86	102.24	83.16	67.24	58.82	52.73
180.0	303.79	303.79	160.64	124.89	98.84	80.82	68.12	57.47	51.68
225.0	223.73	161.93	125.00	93.11	76.37	64.73	56.59	49.69	45.82
270.0	300.86	300.86	168.14	130.33	103.00	79.71	67.07	56.47	50.80
315.0	239.18	186.10	135.54	106.69	86.20	71.98	59.69	53.20	48.46
360.0	249.89	195.82	142.97	112.54	91.00	75.73	62.27	55.25	50.10

Intensity data(cd)

Appendix Page: 18 Total:19

C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	46.29	42.78	40.15	38.45	36.87	35.46	34.00	32.95	32.01
45.0	50.04	46.23	43.37	40.50	38.62	36.58	35.35	34.12	32.89
90.0	44.65	41.84	39.21	37.57	36.05	34.76	33.42	32.42	31.54
135.0	48.34	44.24	41.79	39.68	37.98	36.17	34.94	33.59	32.66
180.0	47.52	44.30	41.26	39.33	37.63	35.87	34.65	33.24	32.30
225.0	42.84	40.50	38.16	36.64	35.23	33.83	32.77	31.78	30.67
270.0	46.64	42.78	40.38	38.39	36.75	35.00	33.77	32.71	31.66
315.0	44.95	41.61	39.50	37.40	35.99	34.70	33.30	32.25	31.31
360.0	46.29	42.78	40.15	38.45	36.87	35.46	34.00	32.95	32.01
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	31.13	30.02	29.14	28.32	27.51	26.69	25.93	25.34	24.46
45.0	31.95	31.02	30.08	29.14	28.03	27.27	26.45	25.57	24.93
90.0	30.61	29.55	28.73	27.74	26.98	26.22	25.40	24.70	24.05
135.0	31.72	30.61	29.85	29.03	28.27	27.33	26.57	25.81	25.16
180.0	31.37	30.31	29.55	28.68	27.92	27.04	26.28	25.63	24.99
225.0	29.85	29.03	28.09	27.33	26.69	25.93	25.11	24.46	23.82
270.0	30.55	29.67	28.91	27.92	27.15	26.45	25.57	24.99	24.17
315.0	30.43	29.38	28.62	27.86	27.15	26.28	25.57	24.93	24.29
360.0	31.13	30.02	29.14	28.32	27.51	26.69	25.93	25.34	24.46
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	23.82	23.17	22.36	21.77	21.01	20.48	20.31	20.66	21.19
45.0	24.29	23.47	22.82	22.24	21.42	20.83	20.19	19.61	19.02
90.0	23.47	22.65	22.06	21.48	20.89	20.13	19.61	19.08	18.49
135.0	24.40	23.82	23.17	22.41	21.83	21.19	20.48	19.96	19.43
180.0	24.17	23.47	22.88	22.06	21.48	20.89	20.31	20.48	21.01
225.0	23.17	22.36	21.71	21.13	20.37	19.84	19.20	18.73	18.20
270.0	23.53	22.88	22.30	21.48	20.83	20.19	19.66	19.08	18.67
315.0	23.47	22.77	22.00	21.36	20.66	20.07	19.61	19.20	18.67
360.0	23.82	23.17	22.36	21.77	21.01	20.48	20.31	20.66	21.19
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	21.83	21.83	21.48	20.72	19.96	19.14	18.08	17.21	16.04
45.0	18.43	17.91	17.38	16.91	16.62	16.27	15.86	15.45	15.10
90.0	18.08	18.38	18.84	19.14	19.02	18.90	18.61	17.62	16.27
135.0	19.02	18.73	19.14	19.55	19.61	19.72	19.37	18.61	17.67
180.0	21.59	21.59	21.19	20.31	19.49	18.49	17.56	16.74	15.63
225.0	17.62	17.21	16.80	16.50	16.04	15.63	15.22	14.81	14.22
270.0	18.14	17.62	17.26	17.21	17.03	16.74	16.44	15.92	15.45
315.0	18.43	18.32	18.20	17.97	17.91	17.67	17.26	16.50	15.86
360.0	21.83	21.83	21.48	20.72	19.96	19.14	18.08	17.21	16.04
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	14.63	13.81	12.99	11.94	11.18	10.83	10.42	10.18	10.01
45.0	14.63	14.22	13.58	12.87	11.82	11.12	10.59	10.42	10.18
90.0	14.98	13.52	12.93	11.88	11.12	10.65	10.42	10.24	10.01
135.0	16.68	14.81	13.52	12.58	11.65	10.77	10.48	10.36	10.12
180.0	14.86	14.05	13.46	12.58	11.65	10.77	10.48	10.30	10.12
225.0	13.81	13.34	12.64	11.82	11.06	10.53	10.36	10.12	10.01
270.0	14.40	13.75	13.17	12.52	11.70	10.89	10.48	10.30	10.01
315.0	14.57	13.69	12.93	11.94	11.12	10.59	10.36	10.07	9.95
360.0	14.63	13.81	12.99	11.94	11.18	10.83	10.42	10.18	10.01

Intensity data(cd)

Appendix Page: 19 Total:19

C/ γ (°)	90.0
0.0	10.01
45.0	10.01
90.0	10.01
135.0	9.95
180.0	9.95
225.0	10.01
270.0	10.01
315.0	9.95
360.0	10.01