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Nata

Client:

LumCAT: 2-1777-L

Luminaire: 92.70.131.00

Report No: NT2018011018

Test No: GC2018011018

LampCAT: LUMINUS CXM-14

Lamp flux(lm): 2422.0

Number of Lamps: 1

Length(mm): 64

Phm Type: C

Voltage(V): 34.5000

Current(A): 0.6400

Power (W): 22.0800

PF: 0.0000

Ballast type: DC

Width(mm): 64

Height(mm): 0

Photometric Results

Lumens(lm): 2366.88, Efficiency(%): 97.72% , Luminous Efficacy(lm/W): 107.20

Central intensity(cd): 13784.750, Maximum intensity(cd): 13784.750

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=17.8

[C90/270]Total=17.8

Field angle(10%Imax): [C0/180]Total=39.4

[C90/270]Total=39.4

Maximum s/h(1/2): C0_180=0.31 C90_270=0.31

Maximum s/h(1/4): C0_180=0.31 C90_270=0.31

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 97.86%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 98.348%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	13784.746	3.298	3.298	.136%	.139%
1.0	13764.788	26.344	29.642	1.088%	1.252%
2.0	13675.322	52.337	81.979	2.161%	3.464%
3.0	13415.180	76.992	158.971	3.179%	6.716%
4.0	12674.809	96.957	255.928	4.003%	10.813%
5.0	12160.858	116.228	372.156	4.799%	15.724%
6.0	10913.830	125.102	497.258	5.165%	21.009%
7.0	9374.247	125.280	622.538	5.173%	26.302%
8.0	8065.694	123.097	745.635	5.082%	31.503%
9.0	6697.542	114.895	860.53	4.744%	36.357%
10.0	5444.390	103.674	964.204	4.281%	40.737%
11.0	4558.808	95.390	1059.594	3.938%	44.768%
12.0	3828.484	87.289	1146.883	3.604%	48.456%
13.0	3226.580	79.594	1226.477	3.286%	51.818%
14.0	2775.531	73.633	1300.11	3.040%	54.929%
15.0	2398.050	68.062	1368.172	2.810%	57.805%
16.0	2084.986	63.022	1431.194	2.602%	60.468%
17.0	1829.387	58.653	1489.848	2.422%	62.946%
18.0	1625.540	55.085	1544.933	2.274%	65.273%
19.0	1463.812	52.261	1597.194	2.158%	67.481%
20.0	1334.498	50.052	1647.246	2.067%	69.596%
21.0	1226.429	48.197	1695.443	1.990%	71.632%
22.0	1134.038	46.586	1742.029	1.923%	73.600%
23.0	1067.220	45.728	1787.757	1.888%	75.532%
24.0	1010.780	45.084	1832.841	1.861%	77.437%
25.0	956.997	44.352	1877.193	1.831%	79.311%
26.0	915.870	44.028	1921.221	1.818%	81.171%
27.0	877.214	43.672	1964.893	1.803%	83.016%
28.0	838.908	43.189	2008.082	1.783%	84.841%
29.0	797.134	42.379	2050.461	1.750%	86.632%
30.0	750.715	41.162	2091.623	1.700%	88.371%
31.0	684.241	38.646	2130.269	1.596%	90.003%
32.0	611.388	35.529	2165.798	1.467%	91.504%
33.0	540.007	32.252	2198.05	1.332%	92.867%
34.0	455.722	27.946	2225.995	1.154%	94.048%
35.0	376.221	23.664	2249.659	.977%	95.048%
36.0	301.516	19.435	2269.094	.802%	95.869%
37.0	223.226	14.732	2283.826	.608%	96.491%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	161.611	10.911	2294.737	.450%	96.952%
39.0	94.862	6.547	2301.284	.270%	97.229%
40.0	54.905	3.870	2305.154	.160%	97.392%
41.0	32.786	2.359	2307.513	.097%	97.492%
42.0	22.298	1.636	2309.149	.068%	97.561%
43.0	19.593	1.465	2310.614	.061%	97.623%
44.0	17.852	1.360	2311.974	.056%	97.680%
45.0	16.421	1.273	2313.247	.053%	97.734%
46.0	15.581	1.229	2314.477	.051%	97.786%
47.0	15.134	1.214	2315.69	.050%	97.837%
48.0	14.748	1.202	2316.892	.050%	97.888%
49.0	14.356	1.188	2318.08	.049%	97.938%
50.0	14.039	1.179	2319.26	.049%	97.988%
51.0	13.785	1.175	2320.434	.049%	98.038%
52.0	13.537	1.170	2321.604	.048%	98.087%
53.0	13.344	1.169	2322.773	.048%	98.137%
54.0	13.158	1.167	2323.94	.048%	98.186%
55.0	12.973	1.165	2325.106	.048%	98.235%
56.0	12.807	1.164	2326.27	.048%	98.284%
57.0	12.663	1.165	2327.435	.048%	98.334%
58.0	12.532	1.165	2328.6	.048%	98.383%
59.0	12.401	1.166	2329.766	.048%	98.432%
60.0	12.291	1.167	2330.933	.048%	98.481%
61.0	12.174	1.168	2332.101	.048%	98.531%
62.0	12.085	1.170	2333.271	.048%	98.580%
63.0	11.989	1.171	2334.442	.048%	98.630%
64.0	11.892	1.172	2335.614	.048%	98.679%
65.0	11.803	1.173	2336.787	.048%	98.729%
66.0	11.734	1.176	2337.963	.049%	98.778%
67.0	11.631	1.174	2339.137	.048%	98.828%
68.0	11.576	1.177	2340.314	.049%	98.878%
69.0	11.507	1.178	2341.492	.049%	98.928%
70.0	11.459	1.181	2342.673	.049%	98.977%
71.0	11.397	1.182	2343.854	.049%	99.027%
72.0	11.349	1.184	2345.038	.049%	99.077%
73.0	11.293	1.184	2346.222	.049%	99.127%
74.0	11.321	1.193	2347.416	.049%	99.178%
75.0	11.390	1.206	2348.622	.050%	99.229%

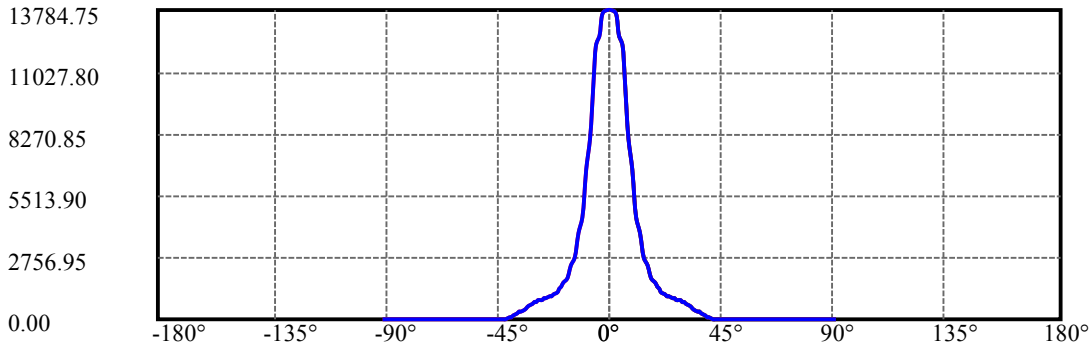
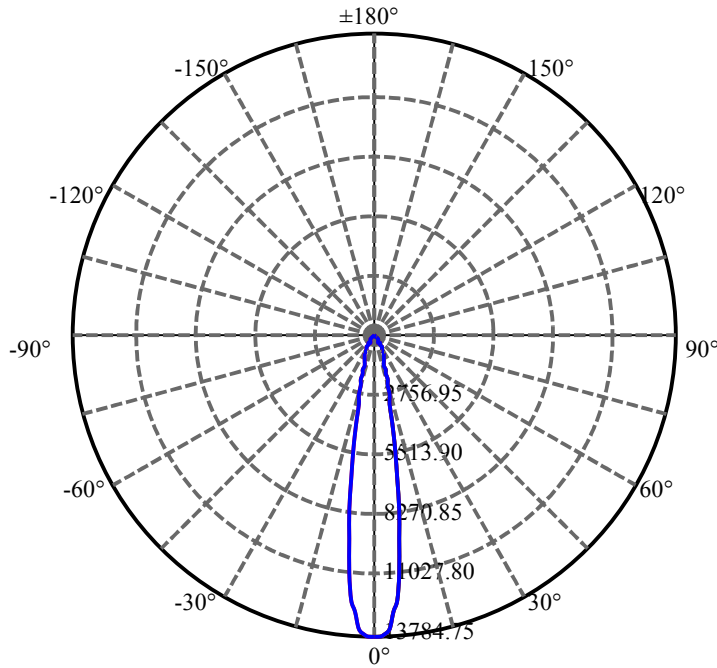
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	11.541	1.228	2349.85	.051%	99.281%
77.0	11.837	1.265	2351.115	.052%	99.334%
78.0	12.030	1.290	2352.405	.053%	99.389%
79.0	12.202	1.313	2353.719	.054%	99.444%
80.0	12.415	1.341	2355.06	.055%	99.501%
81.0	12.429	1.346	2356.406	.056%	99.558%
82.0	11.995	1.303	2357.708	.054%	99.613%
83.0	11.465	1.248	2358.956	.052%	99.665%
84.0	11.197	1.221	2360.177	.050%	99.717%
85.0	11.170	1.220	2361.398	.050%	99.769%
86.0	11.225	1.228	2362.626	.051%	99.820%
87.0	11.238	1.231	2363.856	.051%	99.872%
88.0	11.163	1.223	2365.08	.051%	99.924%
89.0	10.991	1.205	2366.285	.050%	99.975%
90.0	10.784	0.591	2366.876	.024%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2091.62	86.36%	88.37%
0-40	2305.15	95.18%	97.39%
0-60	2330.93	96.24%	98.48%
0-90	2366.28	97.70%	99.98%
0-120	2366.28	97.70%	99.98%
0-180	2366.88	97.72%	100.00%
60-90	36.52	1.51%	1.54%
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%
0-25.37	1893.50	78.18%	80.00%

ZONAL LUMEN SUMMARY

0-10	964.20
10-20	683.04
20-30	444.38
30-40	213.53
40-50	14.11
50-60	11.67
60-70	11.74
70-80	12.39
80-90	11.23
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



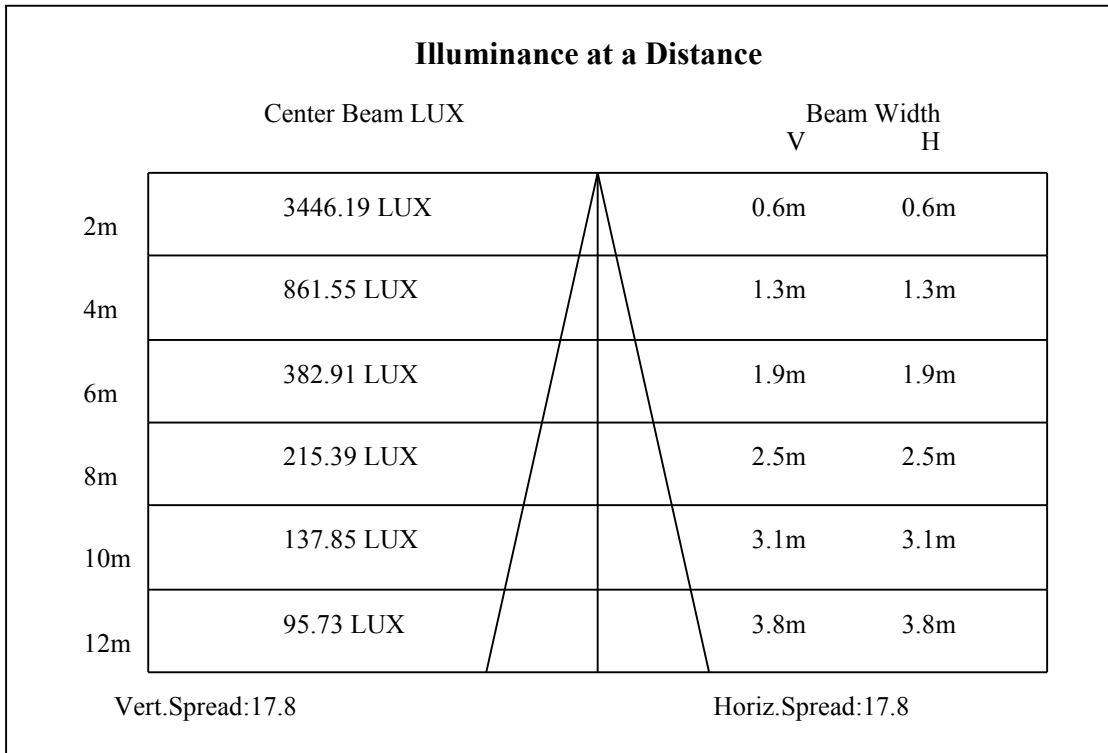
C0(Max): —————

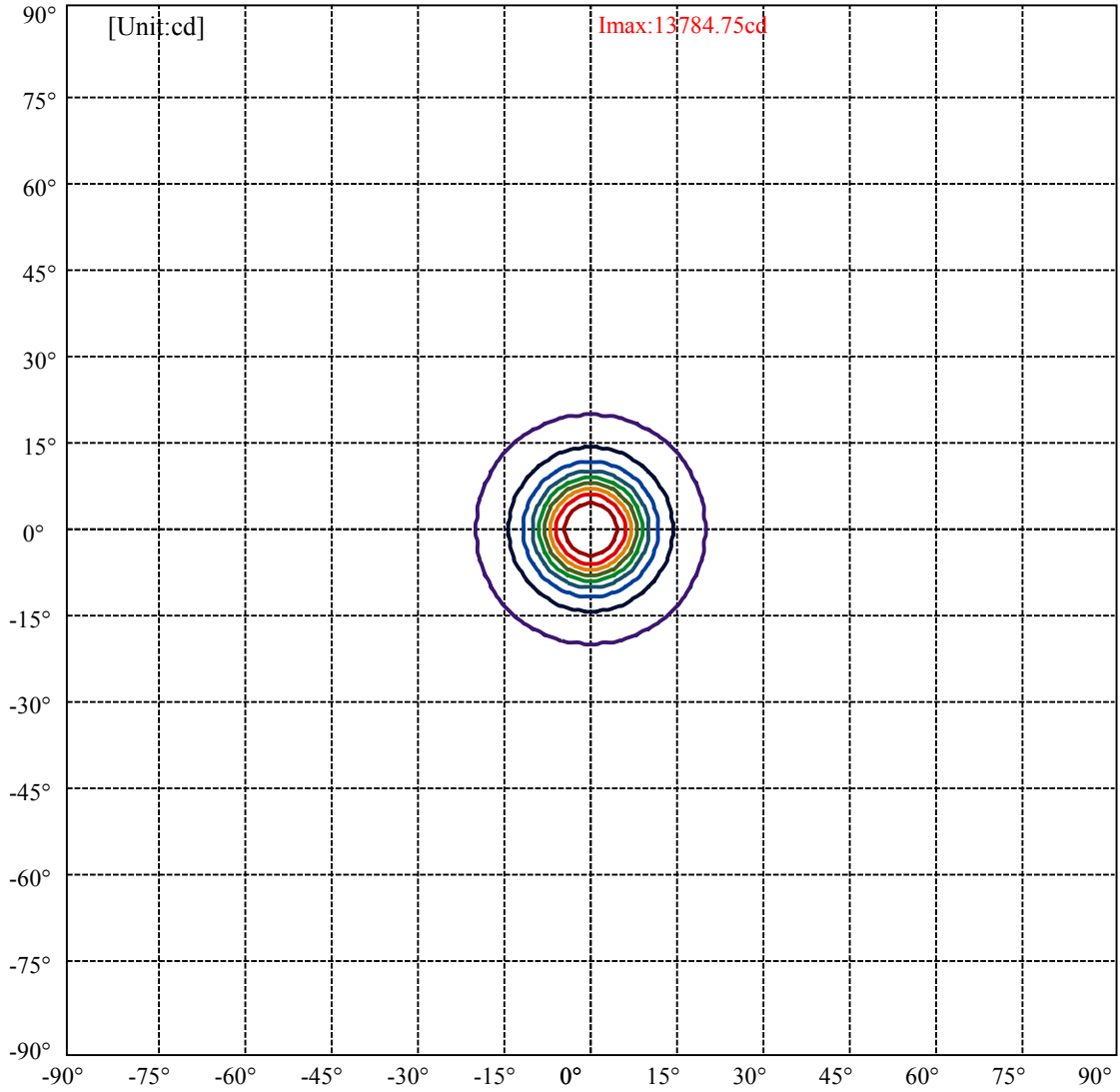
C0/C180: —————

C90/C270: —————

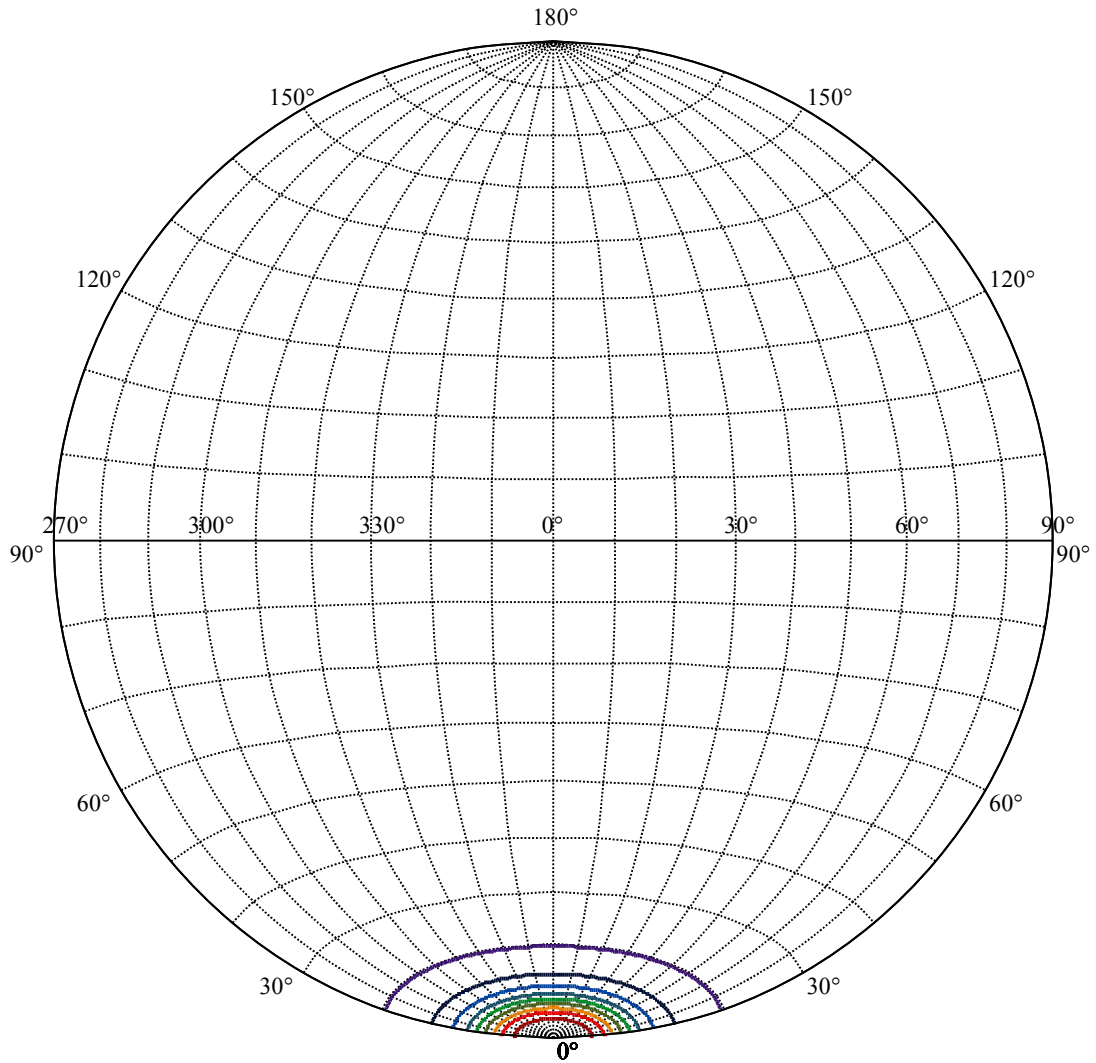
Field angle(10%Imax):C0/180Left:19.7 Right:19.7
:C90/270Left:19.7 Right:19.7

Beam Angle(50%Imax):C0/180Left:8.9 Right:8.9
:C90/270Left:8.9 Right:8.9





(10%Imax) 1378.47	—
(20%Imax) 2756.95	—
(30%Imax) 4135.42	—
(40%Imax) 5513.9	—
(50%Imax) 6892.37	—
(60%Imax) 8270.85	—
(70%Imax) 9649.32	—
(80%Imax) 11027.8	—
(90%Imax) 12406.3	—



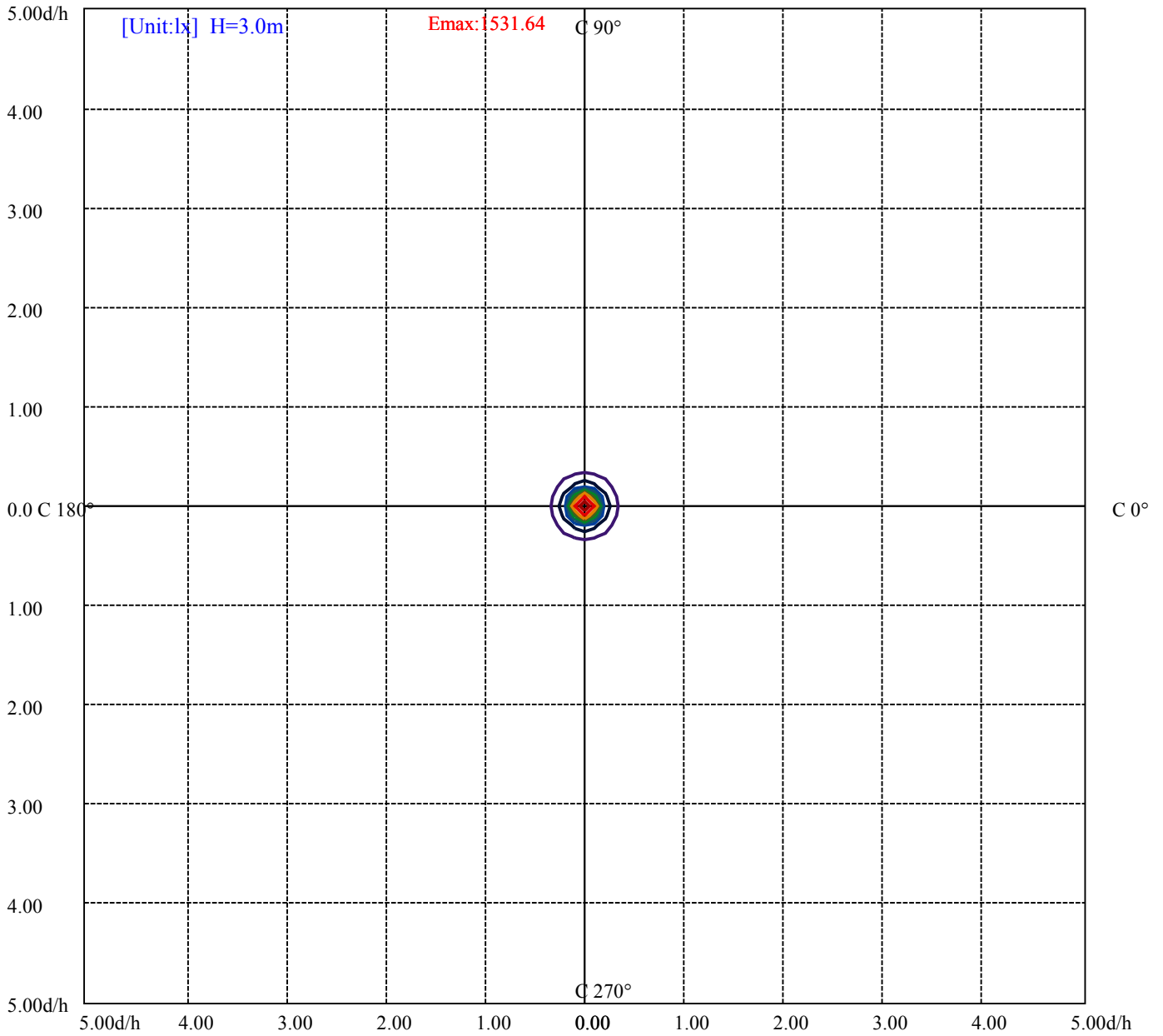
House

[Unit:cd]

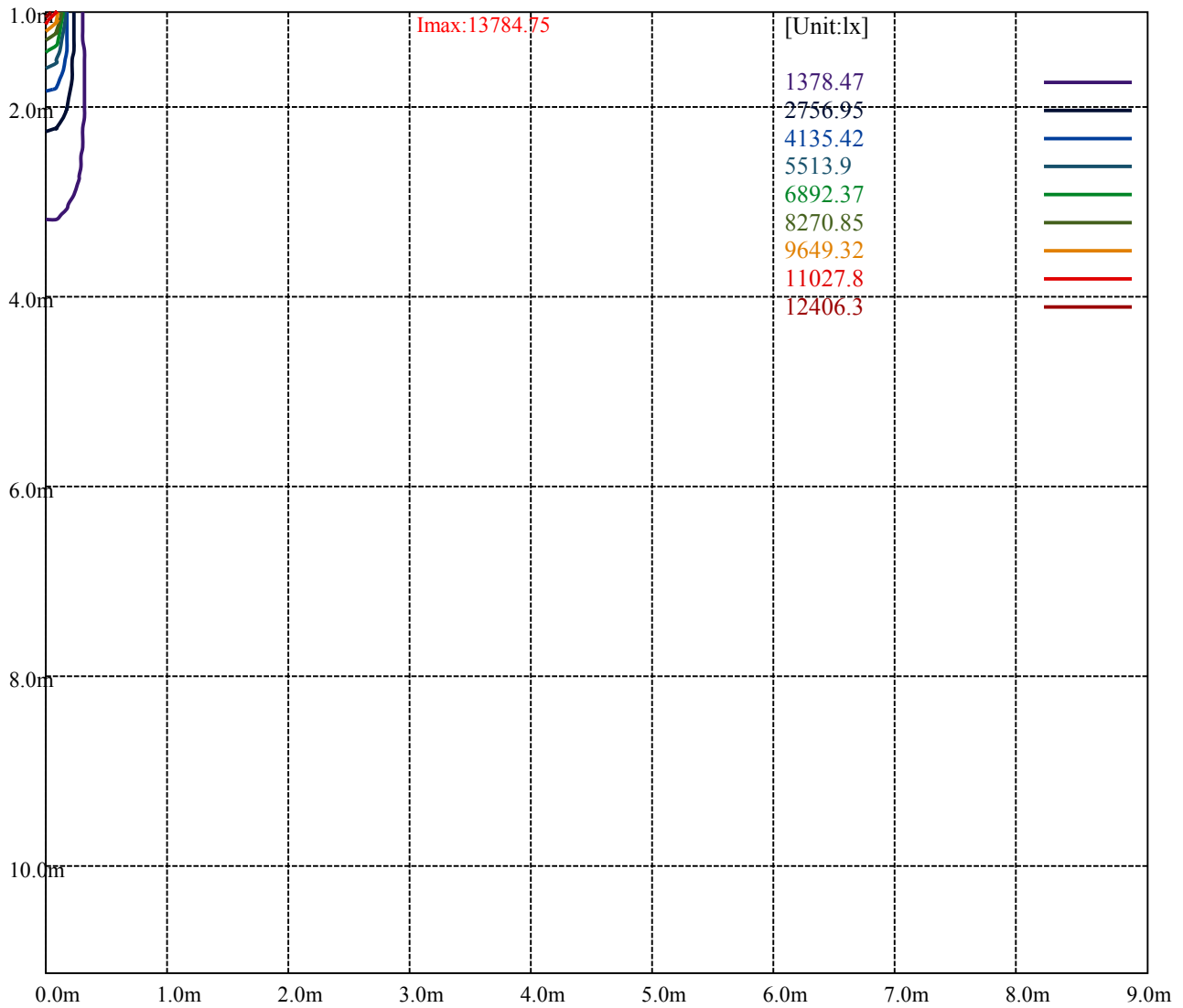
Road

Imax:13784.75

(10%Imax) 1378.47	—
(20%Imax) 2756.95	—
(30%Imax) 4135.42	—
(40%Imax) 5513.9	—
(50%Imax) 6892.37	—
(60%Imax) 8270.85	—
(70%Imax) 9649.32	—
(80%Imax) 11027.8	—
(90%Imax) 12406.3	—



(10%Emax) 153.1633	—
(20%Emax) 306.3278	—
(30%Emax) 459.4911	—
(40%Emax) 612.6555	—
(50%Emax) 765.8189	—
(60%Emax) 918.9833	—
(70%Emax) 1072.147	—
(80%Emax) 1225.311	—
(90%Emax) 1378.478	—



Luminance Table

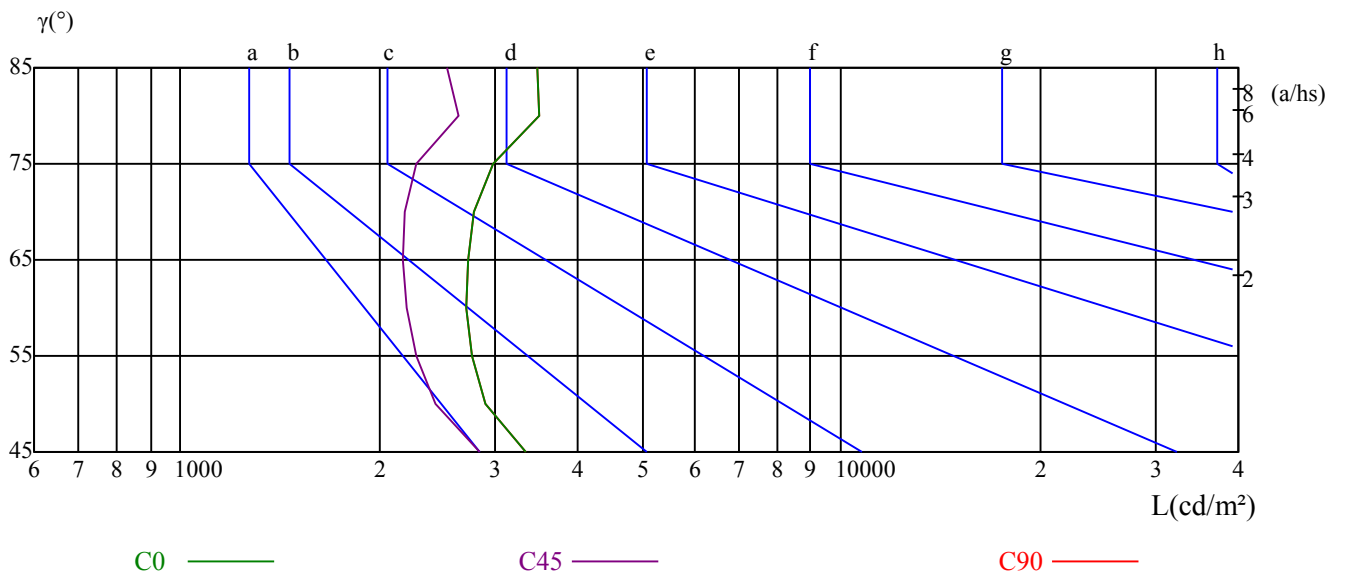
γ	45	50	55	60	65	70	75	80	85
C0	3329	2901	2755	2706	2719	2790	2965	3500	3462
C45	2843	2440	2282	2205	2177	2192	2281	2629	2530
C90	3329	2901	2755	2706	2719	2790	2965	3500	3462

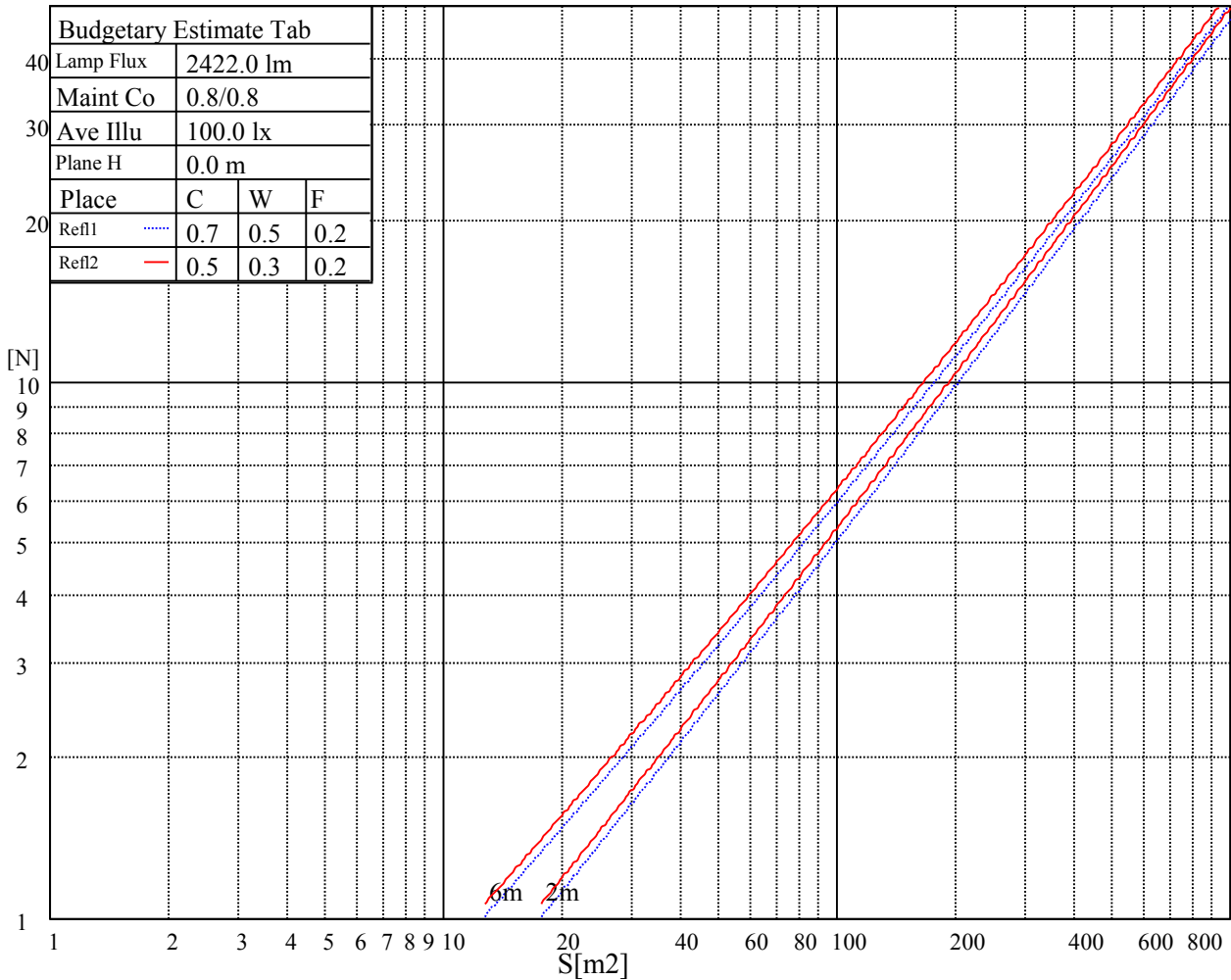
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
6818	6818	6818	10744	10744	10744	31288	31288	31288

Glare Table

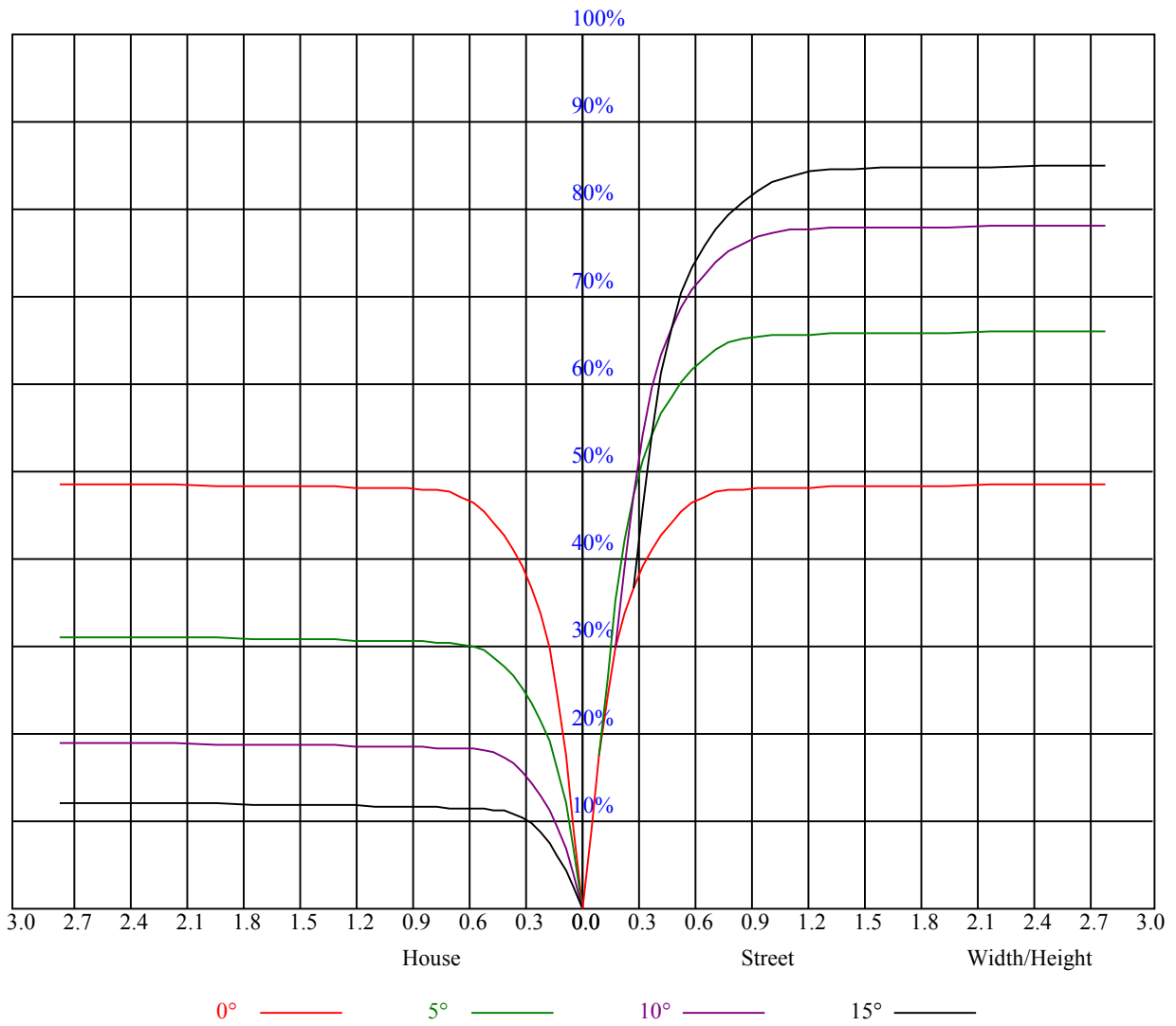
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

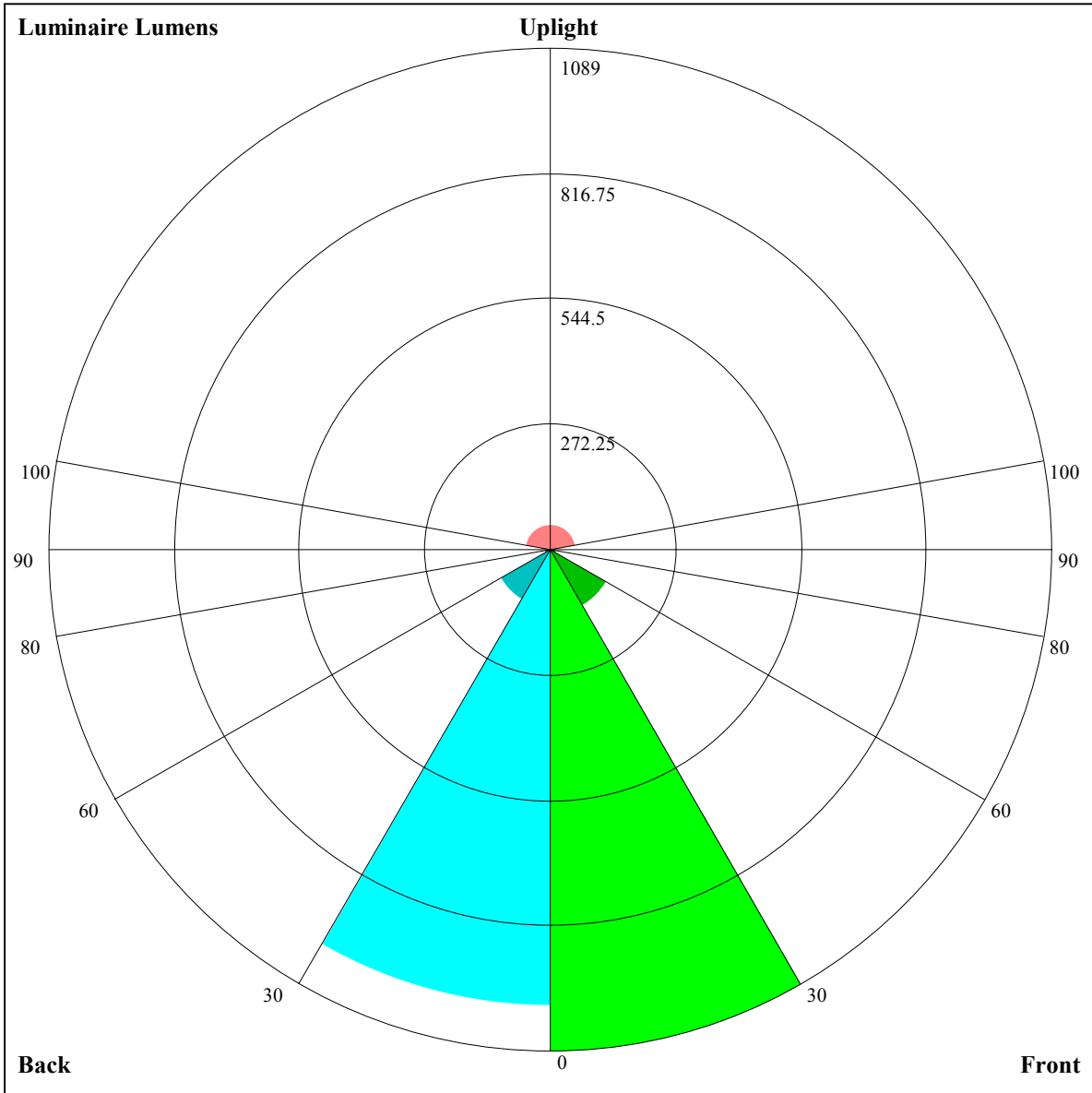
Luminance Limiting Curve





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	1.16	1.16	1.16	1.14	1.14	1.14	1.09	1.09	1.09	1.04	1.04	1.04	1.00	1.00	1.00	0.98
1	1.10	1.08	1.06	1.08	1.06	1.04	1.04	1.02	1.01	1.00	0.99	0.98	0.97	0.96	0.95	0.93
2	1.04	1.01	0.98	1.03	1.00	0.97	0.99	0.97	0.95	0.97	0.95	0.93	0.94	0.93	0.91	0.90
3	0.99	0.96	0.93	0.98	0.95	0.92	0.96	0.93	0.90	0.93	0.91	0.89	0.91	0.89	0.88	0.86
4	0.95	0.91	0.88	0.94	0.90	0.87	0.92	0.89	0.86	0.90	0.88	0.86	0.89	0.86	0.85	0.83
5	0.92	0.87	0.84	0.91	0.87	0.84	0.89	0.86	0.83	0.88	0.85	0.82	0.86	0.84	0.82	0.81
6	0.88	0.84	0.81	0.88	0.84	0.81	0.86	0.83	0.80	0.85	0.82	0.80	0.84	0.81	0.79	0.78
7	0.85	0.81	0.78	0.85	0.81	0.78	0.84	0.80	0.77	0.83	0.79	0.77	0.82	0.79	0.77	0.76
8	0.83	0.78	0.75	0.82	0.78	0.75	0.81	0.78	0.75	0.80	0.77	0.75	0.80	0.77	0.74	0.73
9	0.80	0.76	0.73	0.80	0.76	0.73	0.79	0.75	0.73	0.78	0.75	0.73	0.77	0.75	0.72	0.71
10	0.78	0.74	0.71	0.78	0.74	0.71	0.77	0.73	0.71	0.76	0.73	0.71	0.76	0.73	0.70	0.70





Luminaire Lumens:

FL=1089,FM=139.62,FH=12.31,FVH=6.39

BL=990.66,BM=123.73,BH=11.95,BVH=6.03

UL=11.77,UH=55.99

BUG Rating:B2-U2-G0

Intensity data(cd)

C/γ(°)	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
0.0	13797.13	13813.65	13802.64	13764.10	13648.48	13340.17	12712.52	11479.26	10031.28
45.0	13791.63	13736.57	13642.98	13483.31	13048.37	12101.40	10774.54	8979.70	7493.18
90.0	13753.09	13665.00	13461.29	12800.61	10862.08	10674.33	9061.18	7162.29	5940.59
135.0	13797.13	13720.05	13510.84	13103.42	12233.53	11038.81	9321.05	7586.77	6331.49
180.0	13797.13	13714.55	13494.32	12877.69	10902.82	10728.29	9057.33	7423.25	6208.71
225.0	13791.63	13824.66	13791.63	13615.45	13257.58	12585.89	10854.37	9750.49	8262.86
270.0	13753.09	13819.16	13857.70	13863.20	13747.58	13433.76	12932.75	11693.98	10290.04
315.0	13797.13	13824.66	13841.18	13813.65	13698.03	13384.21	12596.90	10918.23	9967.41
360.0	13797.13	13813.65	13802.64	13764.10	13648.48	13340.17	12712.52	11479.26	10031.28
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	8313.52	6755.42	5615.75	4718.33	3831.93	3286.87	2890.46	2611.88	2174.18
45.0	6116.77	5010.13	4222.83	3446.53	2984.06	2802.37	2320.63	1952.85	1734.28
90.0	4980.95	4040.59	3456.99	2998.37	2589.30	2246.85	1980.38	1733.18	1561.95
135.0	5241.37	4338.44	3672.26	3143.72	2818.89	2292.55	2013.96	1756.30	1571.31
180.0	5085.56	4199.70	3570.41	3004.43	2596.46	2225.38	1935.78	1733.73	1566.91
225.0	6924.44	5693.93	4691.91	3969.02	3309.44	2783.65	2412.57	2075.08	1838.88
270.0	8731.95	6915.08	5742.38	4833.95	3931.03	3352.93	2879.45	2412.57	2120.77
315.0	8185.79	6601.81	5497.93	4513.52	3751.54	3213.64	2751.17	2404.31	2066.82
360.0	8313.52	6755.42	5615.75	4718.33	3831.93	3286.87	2890.46	2611.88	2174.18
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1896.69	1697.39	1493.68	1366.50	1258.04	1151.78	1084.06	1027.35	970.64
45.0	1543.23	1380.81	1253.08	1166.65	1091.77	1025.15	972.85	920.54	885.31
90.0	1405.59	1283.36	1198.03	1097.00	1044.14	992.56	948.40	903.31	869.67
135.0	1421.56	1299.33	1199.13	1127.56	1055.98	1001.48	950.27	908.98	877.05
180.0	1400.08	1294.38	1205.74	1090.78	1045.36	994.26	950.11	904.03	871.60
225.0	1636.28	1476.06	1363.20	1255.29	1094.52	1086.54	1027.08	966.63	926.65
270.0	1890.09	1682.52	1516.80	1394.58	1279.51	1191.97	1106.63	1038.36	986.61
315.0	1810.80	1596.64	1446.33	1313.10	1202.98	1094.03	1046.84	986.78	939.43
360.0	1896.69	1697.39	1493.68	1366.50	1258.04	1151.78	1084.06	1027.35	970.64
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	920.54	885.31	850.07	822.54	770.79	702.52	634.80	552.77	469.08
45.0	849.52	820.89	785.65	726.74	649.11	565.98	494.41	398.06	324.28
90.0	840.93	794.35	729.28	662.55	579.08	493.69	417.27	332.54	258.93
135.0	842.36	804.37	752.07	696.46	602.32	525.24	446.51	369.43	284.64
180.0	839.56	802.78	752.84	680.83	609.64	522.98	446.23	360.01	286.35
225.0	891.09	851.72	817.15	784.44	729.39	656.22	584.20	496.83	420.08
270.0	934.86	893.01	859.98	830.25	787.31	733.90	670.04	591.31	507.07
315.0	898.85	858.82	830.03	801.90	746.29	690.57	626.60	544.84	459.34
360.0	920.54	885.31	850.07	822.54	770.79	702.52	634.80	552.77	469.08
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	392.55	325.93	278.59	150.58	91.06	42.23	23.29	20.92	18.22
45.0	279.14	172.44	103.67	56.87	26.81	21.31	18.99	16.68	15.31
90.0	182.51	113.47	64.31	34.58	26.37	24.39	22.13	20.10	19.49
135.0	202.17	145.84	78.07	37.60	22.35	19.60	17.29	15.75	14.76
180.0	208.17	134.61	78.01	34.47	22.02	20.15	17.78	15.53	14.87
225.0	334.91	252.71	181.74	115.07	53.96	27.69	22.08	19.27	16.96
270.0	430.54	343.55	285.74	183.56	112.92	63.15	32.70	27.58	24.94
315.0	382.15	297.25	222.76	146.17	83.74	43.77	24.11	20.92	18.28
360.0	392.55	325.93	278.59	150.58	91.06	42.23	23.29	20.92	18.22

Intensity data(cd)

C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	15.86	14.81	14.37	13.98	13.60	13.32	13.10	12.88	12.72
45.0	14.87	14.37	14.04	13.65	13.21	12.99	12.83	12.61	12.50
90.0	18.83	18.06	17.56	17.07	16.63	16.24	15.91	15.53	15.25
135.0	14.20	13.87	13.49	13.27	13.05	12.83	12.66	12.55	12.39
180.0	14.26	13.87	13.60	13.38	13.16	12.99	12.83	12.66	12.55
225.0	15.53	14.76	14.15	13.82	13.49	13.16	12.88	12.66	12.55
270.0	21.91	20.15	19.49	18.83	18.11	17.51	17.01	16.63	16.13
315.0	15.91	14.76	14.37	13.98	13.60	13.27	13.05	12.77	12.66
360.0	15.86	14.81	14.37	13.98	13.60	13.32	13.10	12.88	12.72
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	12.61	12.50	12.33	12.22	12.17	12.06	11.95	11.89	11.84
45.0	12.33	12.22	12.11	12.00	11.95	11.84	11.78	11.73	11.67
90.0	14.98	14.65	14.42	14.20	13.87	13.71	13.49	13.27	13.10
135.0	12.28	12.11	12.00	11.89	11.89	11.78	11.73	11.67	11.62
180.0	12.44	12.28	12.17	12.11	12.00	11.95	11.89	11.78	11.73
225.0	12.39	12.22	12.11	12.00	11.89	11.78	11.73	11.62	11.56
270.0	15.80	15.47	15.09	14.76	14.48	14.20	13.93	13.71	13.43
315.0	12.44	12.33	12.22	12.11	12.00	11.89	11.84	11.73	11.73
360.0	12.61	12.50	12.33	12.22	12.17	12.06	11.95	11.89	11.84
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	11.78	11.73	11.67	11.62	11.56	11.51	11.45	11.45	11.40
45.0	11.62	11.56	11.51	11.45	11.40	11.34	11.29	11.29	11.23
90.0	12.88	12.72	12.55	12.44	12.22	12.11	12.00	11.84	11.73
135.0	11.56	11.51	11.45	11.40	11.34	11.34	11.29	11.29	11.23
180.0	11.67	11.56	11.51	11.51	11.40	11.40	11.34	11.29	11.29
225.0	11.51	11.51	11.40	11.34	11.29	11.23	11.18	11.18	11.12
270.0	13.21	12.99	12.83	12.66	12.44	12.33	12.17	12.06	11.89
315.0	11.67	11.56	11.51	11.45	11.40	11.34	11.34	11.29	11.29
360.0	11.78	11.73	11.67	11.62	11.56	11.51	11.45	11.45	11.40
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	11.34	11.34	11.34	11.40	11.78	12.50	12.83	12.39	12.50
45.0	11.23	11.23	11.67	12.50	13.32	14.53	15.53	16.46	17.45
90.0	11.67	11.51	11.45	11.34	11.45	12.00	12.50	12.99	13.21
135.0	11.23	11.18	11.18	11.12	11.18	11.12	11.07	11.12	11.07
180.0	11.23	11.18	11.18	11.12	11.12	11.12	11.07	11.07	11.07
225.0	11.07	11.07	11.01	11.01	10.96	10.96	10.90	10.90	10.90
270.0	11.78	11.67	11.56	11.45	11.40	11.34	11.23	11.23	11.12
315.0	11.23	11.18	11.18	11.18	11.12	11.12	11.12	11.45	12.00
360.0	11.34	11.34	11.34	11.40	11.78	12.50	12.83	12.39	12.50
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	12.28	12.00	11.84	11.34	11.29	11.40	11.56	11.62	11.51
45.0	17.56	15.53	11.89	11.34	11.45	11.67	11.78	11.78	10.74
90.0	12.99	11.40	11.23	11.34	11.34	11.45	11.40	10.74	10.74
135.0	11.07	11.07	11.07	11.07	11.12	11.12	11.01	10.90	10.79
180.0	11.01	11.01	10.96	10.96	11.01	10.96	10.90	10.85	10.85
225.0	10.85	10.85	10.90	10.85	10.85	10.85	10.79	10.79	10.74
270.0	11.12	11.07	11.01	11.01	11.01	10.96	10.96	11.07	11.01
315.0	12.55	13.05	12.83	11.67	11.29	11.40	11.51	11.56	11.56
360.0	12.28	12.00	11.84	11.34	11.29	11.40	11.56	11.62	11.51

Intensity data(cd)

C/ γ (°)	90.0
0.0	10.90
45.0	10.68
90.0	10.74
135.0	10.79
180.0	10.85
225.0	10.74
270.0	10.79
315.0	10.79
360.0	10.90