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Nata

Client:

LumCAT: 3-1880-L

Luminaire: 92.70.135.00

Report No: NT2018010904

Test No: GC2018010904

LampCAT: LUMILEDS 1208

Lamp flux(lm): 2981.0

Number of Lamps: 1

Length(mm): 74

Phm Type: C

Voltage(V): 35.0000

Current(A): 0.6400

Power (W): 22.4000

PF: 0.0000

Ballast type: DC

Width(mm): 74

Height(mm): 0

Photometric Results

Lumens(lm): 2872.58, Efficiency(%): 96.36% , Luminous Efficacy(lm/W): 128.24

Central intensity(cd): 20748.000, Maximum intensity(cd): 20748.000

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=15.6

[C90/270]Total=15.6

Field angle(10%Imax): [C0/180]Total=33.6

[C90/270]Total=33.6

Maximum s/h(1/2): C0_180=0.27 C90_270=0.27

Maximum s/h(1/4): C0_180=0.27 C90_270=0.27

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 96.53%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 98.301%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	20748.004	4.964	4.964	.167%	.173%
1.0	20648.215	39.518	44.481	1.326%	1.548%
2.0	20284.154	77.630	122.111	2.604%	4.251%
3.0	19531.258	112.094	234.205	3.760%	8.153%
4.0	18321.395	140.151	374.355	4.701%	13.032%
5.0	16596.752	158.625	532.98	5.321%	18.554%
6.0	13981.848	160.269	693.25	5.376%	24.133%
7.0	12089.491	161.568	854.817	5.420%	29.758%
8.0	9866.657	150.583	1005.401	5.051%	35.000%
9.0	8062.459	138.309	1143.71	4.640%	39.815%
10.0	6558.181	124.884	1268.594	4.189%	44.162%
11.0	5403.166	113.057	1381.651	3.793%	48.098%
12.0	4479.389	102.129	1483.78	3.426%	51.653%
13.0	3730.140	92.016	1575.796	3.087%	54.856%
14.0	3150.327	83.576	1659.373	2.804%	57.766%
15.0	2672.644	75.856	1735.228	2.545%	60.407%
16.0	2361.369	71.376	1806.605	2.394%	62.891%
17.0	2017.266	64.677	1871.282	2.170%	65.143%
18.0	1793.256	60.768	1932.05	2.039%	67.258%
19.0	1628.293	58.133	1990.183	1.950%	69.282%
20.0	1484.114	55.664	2045.847	1.867%	71.220%
21.0	1374.001	53.997	2099.844	1.811%	73.100%
22.0	1293.137	53.122	2152.965	1.782%	74.949%
23.0	1213.877	52.012	2204.978	1.745%	76.759%
24.0	1150.871	51.332	2256.31	1.722%	78.546%
25.0	1106.283	51.270	2307.58	1.720%	80.331%
26.0	1065.624	51.227	2358.807	1.718%	82.115%
27.0	1028.288	51.193	2410	1.717%	83.897%
28.0	996.796	51.318	2461.318	1.721%	85.683%
29.0	956.412	50.847	2512.165	1.706%	87.453%
30.0	899.697	49.331	2561.496	1.655%	89.171%
31.0	821.703	46.409	2607.906	1.557%	90.786%
32.0	725.595	42.165	2650.071	1.414%	92.254%
33.0	620.699	37.072	2687.143	1.244%	93.545%
34.0	518.198	31.777	2718.919	1.066%	94.651%
35.0	406.461	25.566	2744.485	.858%	95.541%
36.0	310.188	19.994	2764.479	.671%	96.237%
37.0	217.624	14.362	2778.841	.482%	96.737%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	142.004	9.587	2788.429	.322%	97.071%
39.0	70.452	4.862	2793.291	.163%	97.240%
40.0	40.928	2.885	2796.175	.097%	97.340%
41.0	29.552	2.126	2798.302	.071%	97.414%
42.0	25.787	1.892	2800.194	.063%	97.480%
43.0	23.337	1.745	2801.939	.059%	97.541%
44.0	22.284	1.698	2803.637	.057%	97.600%
45.0	21.740	1.686	2805.322	.057%	97.659%
46.0	21.204	1.673	2806.995	.056%	97.717%
47.0	20.570	1.650	2808.645	.055%	97.774%
48.0	19.910	1.623	2810.267	.054%	97.831%
49.0	19.249	1.593	2811.86	.053%	97.886%
50.0	18.643	1.566	2813.427	.053%	97.941%
51.0	18.162	1.548	2814.974	.052%	97.995%
52.0	17.687	1.528	2816.503	.051%	98.048%
53.0	17.246	1.510	2818.013	.051%	98.100%
54.0	16.875	1.497	2819.51	.050%	98.153%
55.0	16.600	1.491	2821.001	.050%	98.204%
56.0	16.427	1.493	2822.495	.050%	98.256%
57.0	16.304	1.499	2823.994	.050%	98.309%
58.0	16.193	1.506	2825.5	.051%	98.361%
59.0	16.125	1.516	2827.016	.051%	98.414%
60.0	16.070	1.526	2828.542	.051%	98.467%
61.0	16.001	1.535	2830.077	.051%	98.520%
62.0	15.918	1.541	2831.618	.052%	98.574%
63.0	15.787	1.543	2833.16	.052%	98.628%
64.0	15.636	1.541	2834.702	.052%	98.681%
65.0	15.478	1.538	2836.24	.052%	98.735%
66.0	15.292	1.532	2837.772	.051%	98.788%
67.0	15.099	1.524	2839.296	.051%	98.841%
68.0	14.893	1.514	2840.81	.051%	98.894%
69.0	14.714	1.506	2842.317	.051%	98.946%
70.0	14.604	1.505	2843.821	.050%	98.999%
71.0	14.500	1.504	2845.325	.050%	99.051%
72.0	14.383	1.500	2846.825	.050%	99.103%
73.0	14.266	1.496	2848.321	.050%	99.156%
74.0	14.101	1.486	2849.808	.050%	99.207%
75.0	13.929	1.475	2851.283	.049%	99.259%

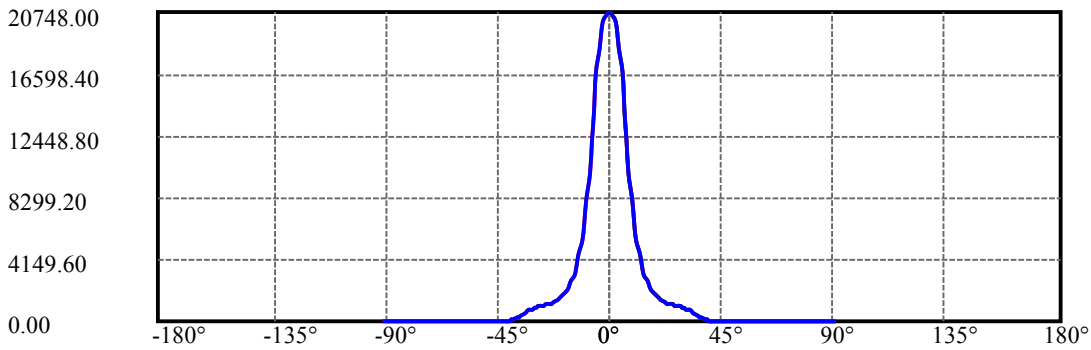
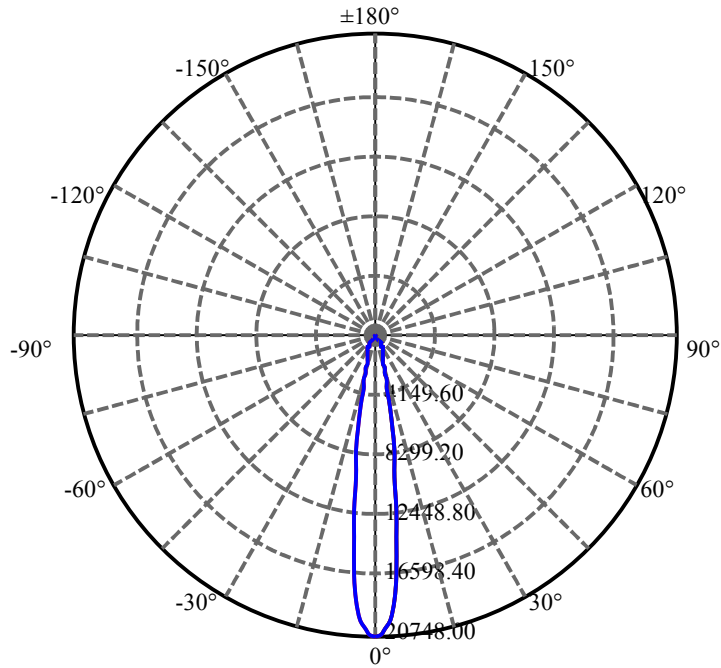
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	13.799	1.468	2852.751	.049%	99.310%
77.0	13.730	1.467	2854.218	.049%	99.361%
78.0	13.688	1.468	2855.687	.049%	99.412%
79.0	13.661	1.471	2857.157	.049%	99.463%
80.0	13.613	1.470	2858.627	.049%	99.514%
81.0	13.571	1.470	2860.097	.049%	99.565%
82.0	13.544	1.471	2861.568	.049%	99.617%
83.0	13.509	1.470	2863.038	.049%	99.668%
84.0	13.503	1.473	2864.511	.049%	99.719%
85.0	13.475	1.472	2865.983	.049%	99.770%
86.0	13.468	1.473	2867.456	.049%	99.822%
87.0	13.454	1.473	2868.93	.049%	99.873%
88.0	13.372	1.465	2870.395	.049%	99.924%
89.0	13.296	1.458	2871.853	.049%	99.975%
90.0	13.248	0.726	2872.579	.024%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2561.50	85.93%	89.17%
0-40	2796.18	93.80%	97.34%
0-60	2828.54	94.89%	98.47%
0-90	2871.85	96.34%	99.97%
0-120	2871.85	96.34%	99.97%
0-180	2872.58	96.36%	100.00%
60-90	44.84	1.50%	1.56%
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%
0-24.81	2298.06	77.09%	80.00%

ZONAL LUMEN SUMMARY

0-10	1268.59
10-20	777.25
20-30	515.65
30-40	234.68
40-50	17.25
50-60	15.12
60-70	15.28
70-80	14.81
80-90	13.23
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: —————

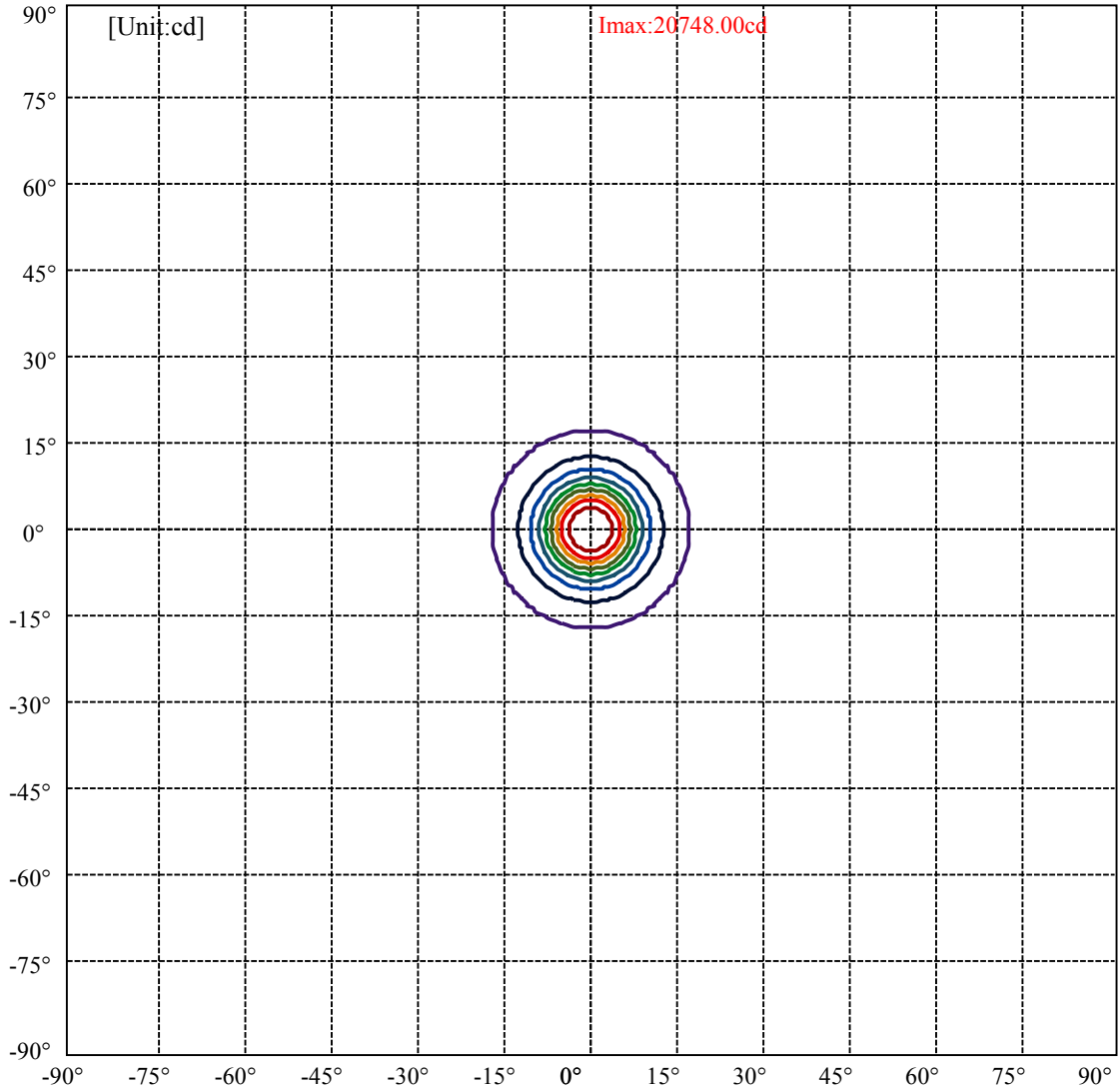
C90/C270: —————

Field angle(10%Imax):C0/180Left:16.8 Right:16.8

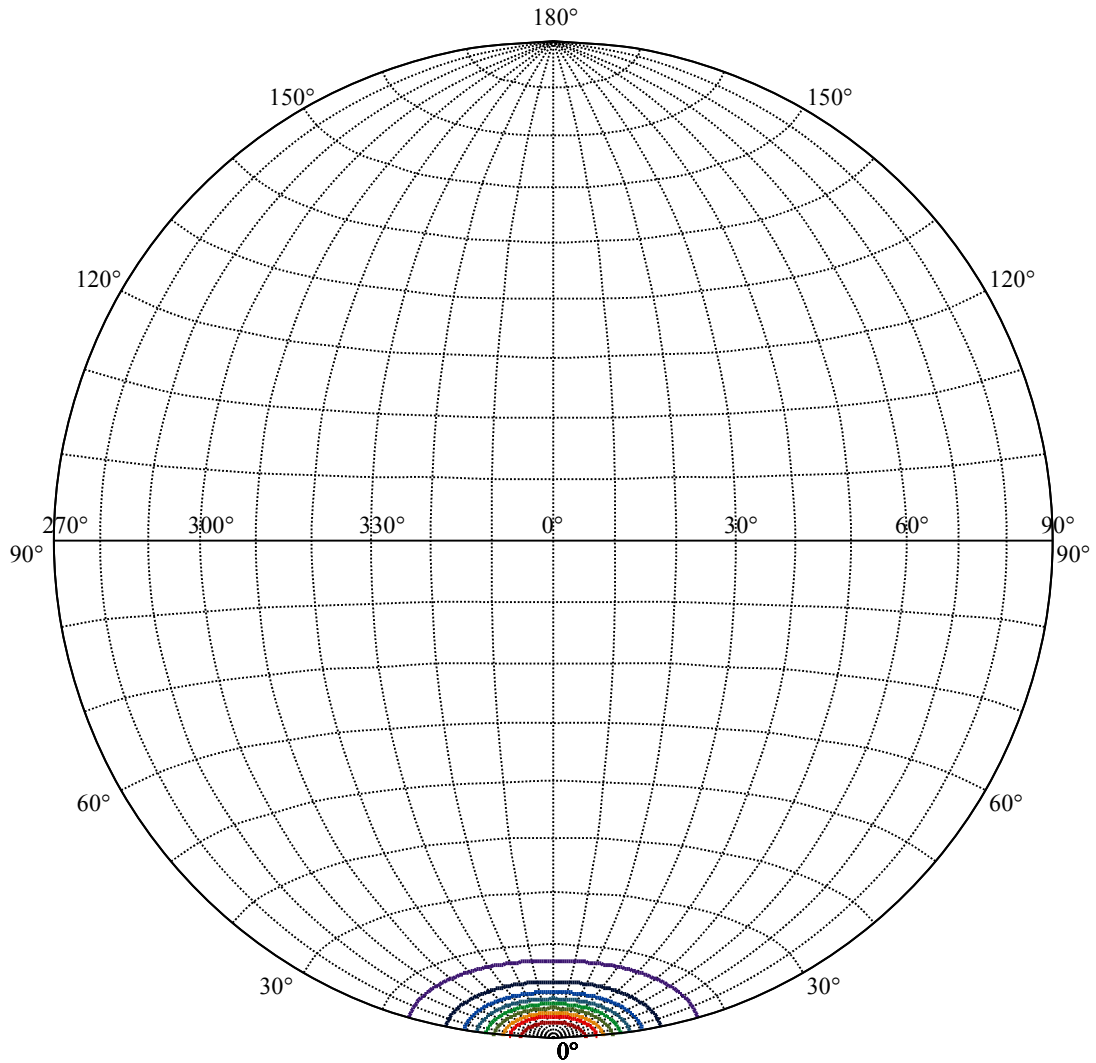
:C90/270Left:16.8 Right:16.8

Beam Angle(50%Imax):C0/180Left:7.8 Right:7.8

:C90/270Left:7.8 Right:7.8



(10%Imax) 2074.8	—
(20%Imax) 4149.6	—
(30%Imax) 6224.4	—
(40%Imax) 8299.2	—
(50%Imax) 10374	—
(60%Imax) 12448.8	—
(70%Imax) 14523.6	—
(80%Imax) 16598.4	—
(90%Imax) 18673.2	—



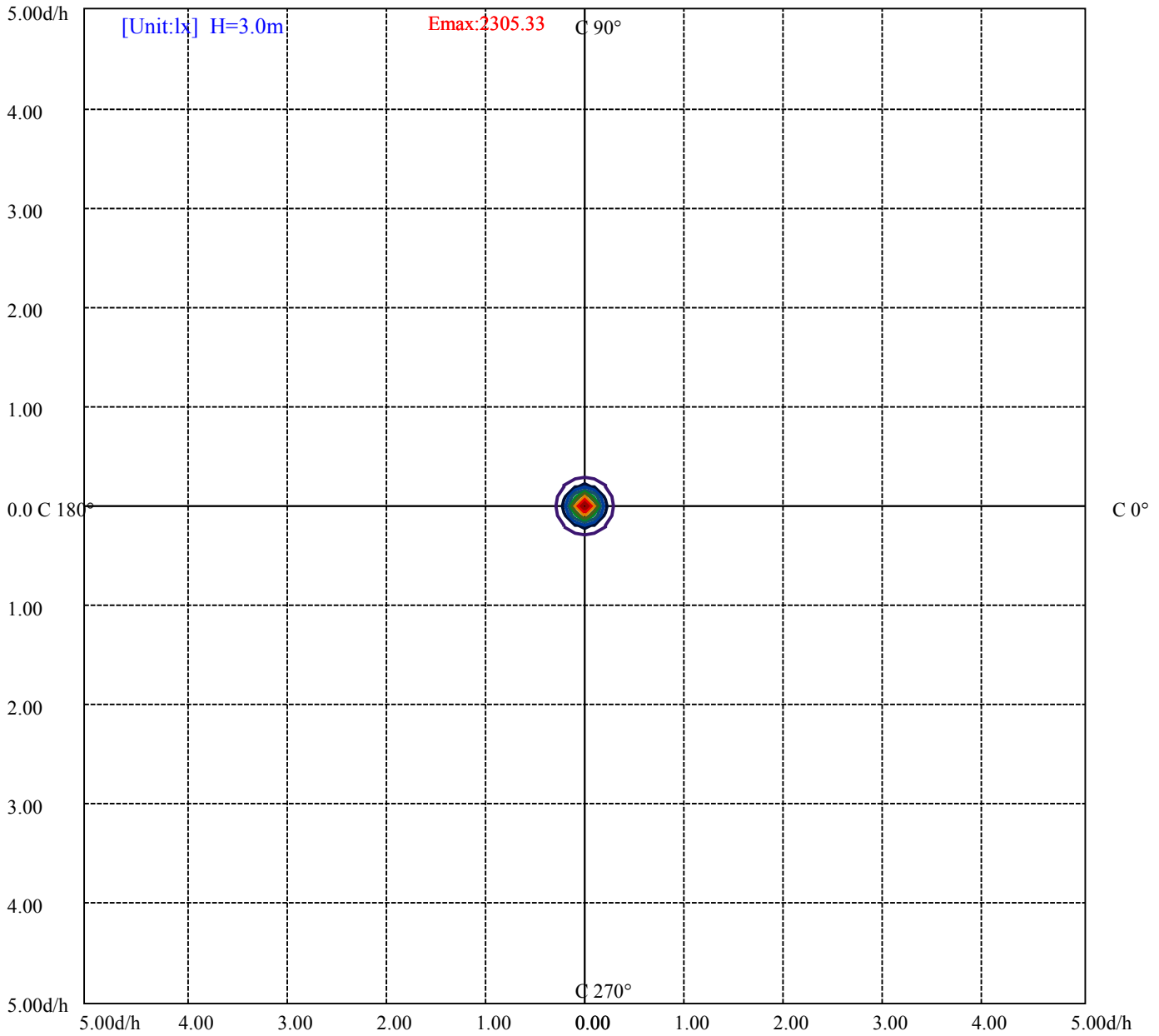
House

[Unit:cd]

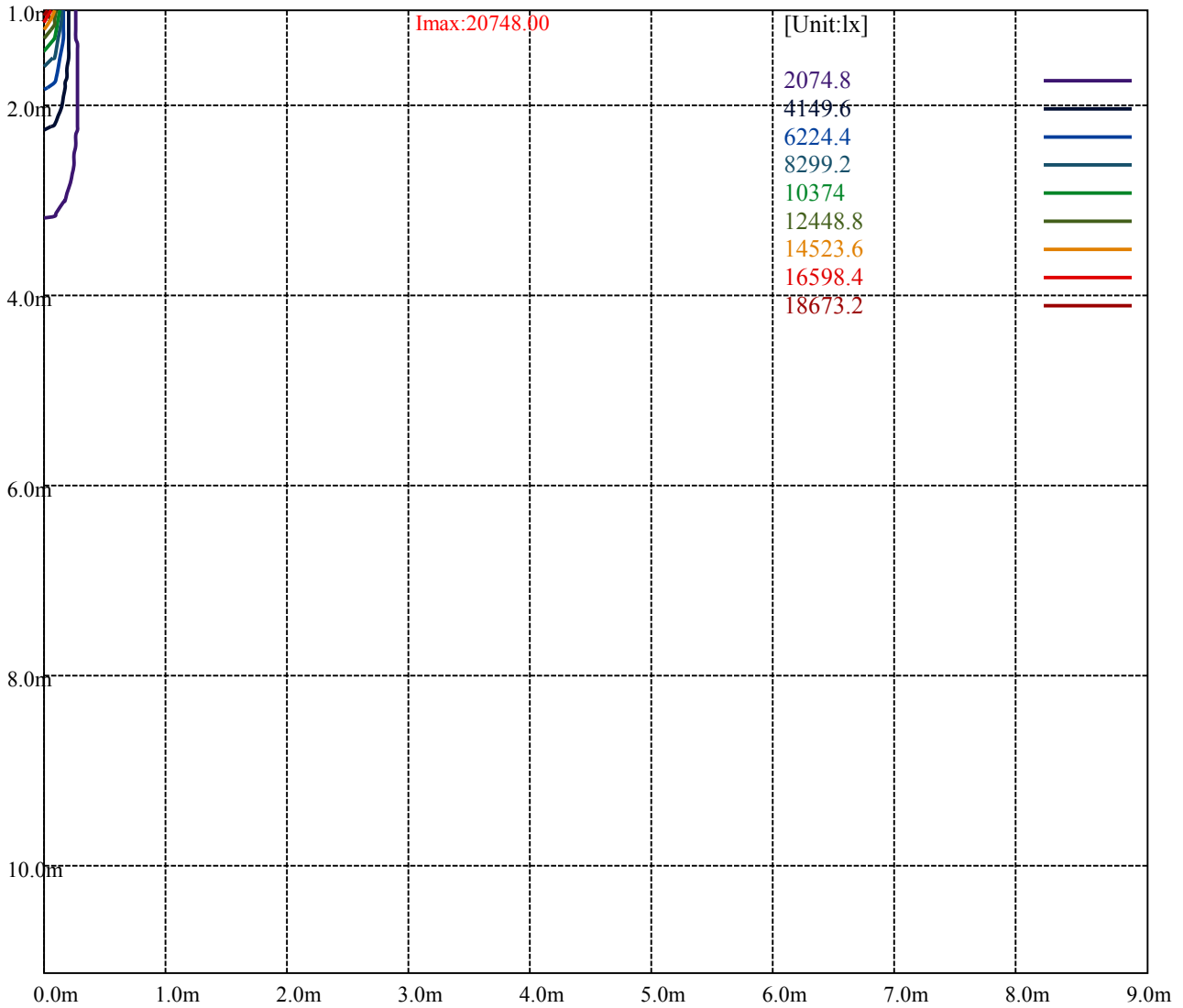
Road

Imax:20748.00

(10%Imax) 2074.8	—
(20%Imax) 4149.6	—
(30%Imax) 6224.4	—
(40%Imax) 8299.2	—
(50%Imax) 10374	—
(60%Imax) 12448.8	—
(70%Imax) 14523.6	—
(80%Imax) 16598.4	—
(90%Imax) 18673.2	—



(10%Emax) 230.5333	—
(20%Emax) 461.0667	—
(30%Emax) 691.6	—
(40%Emax) 922.1334	—
(50%Emax) 1152.667	—
(60%Emax) 1383.2	—
(70%Emax) 1613.733	—
(80%Emax) 1844.267	—
(90%Emax) 2074.8	—



Luminance Table

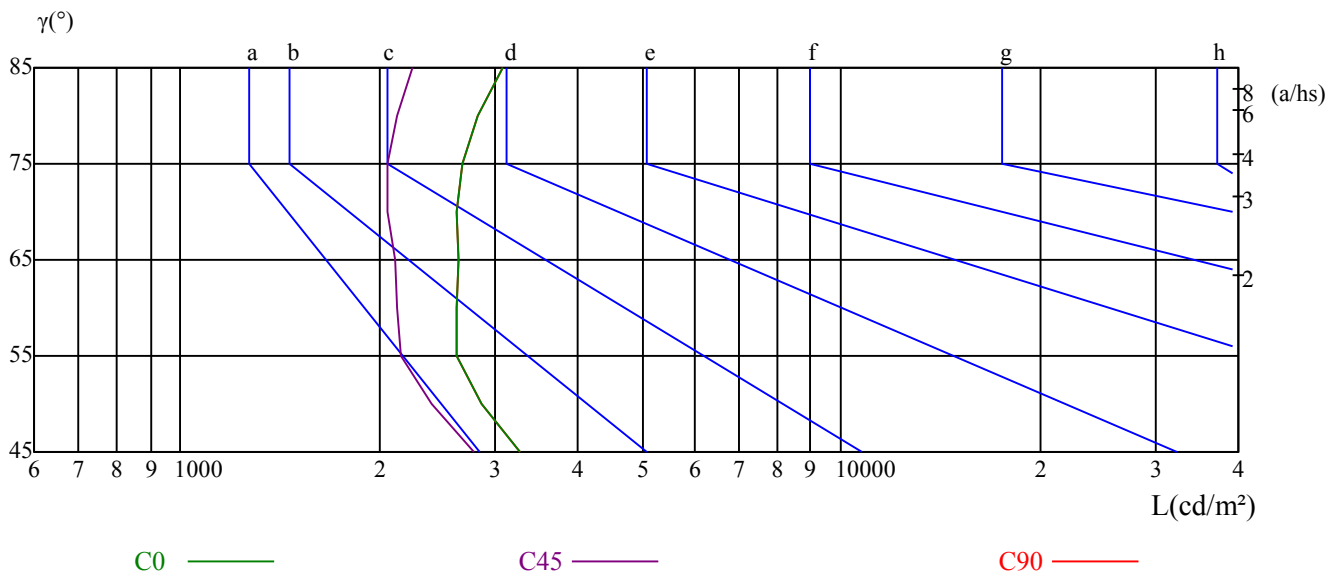
γ	45	50	55	60	65	70	75	80	85
C0	3272	2858	2613	2620	2637	2627	2676	2828	3073
C45	2789	2400	2160	2131	2108	2061	2056	2123	2245
C90	3272	2858	2613	2620	2637	2627	2676	2828	3073

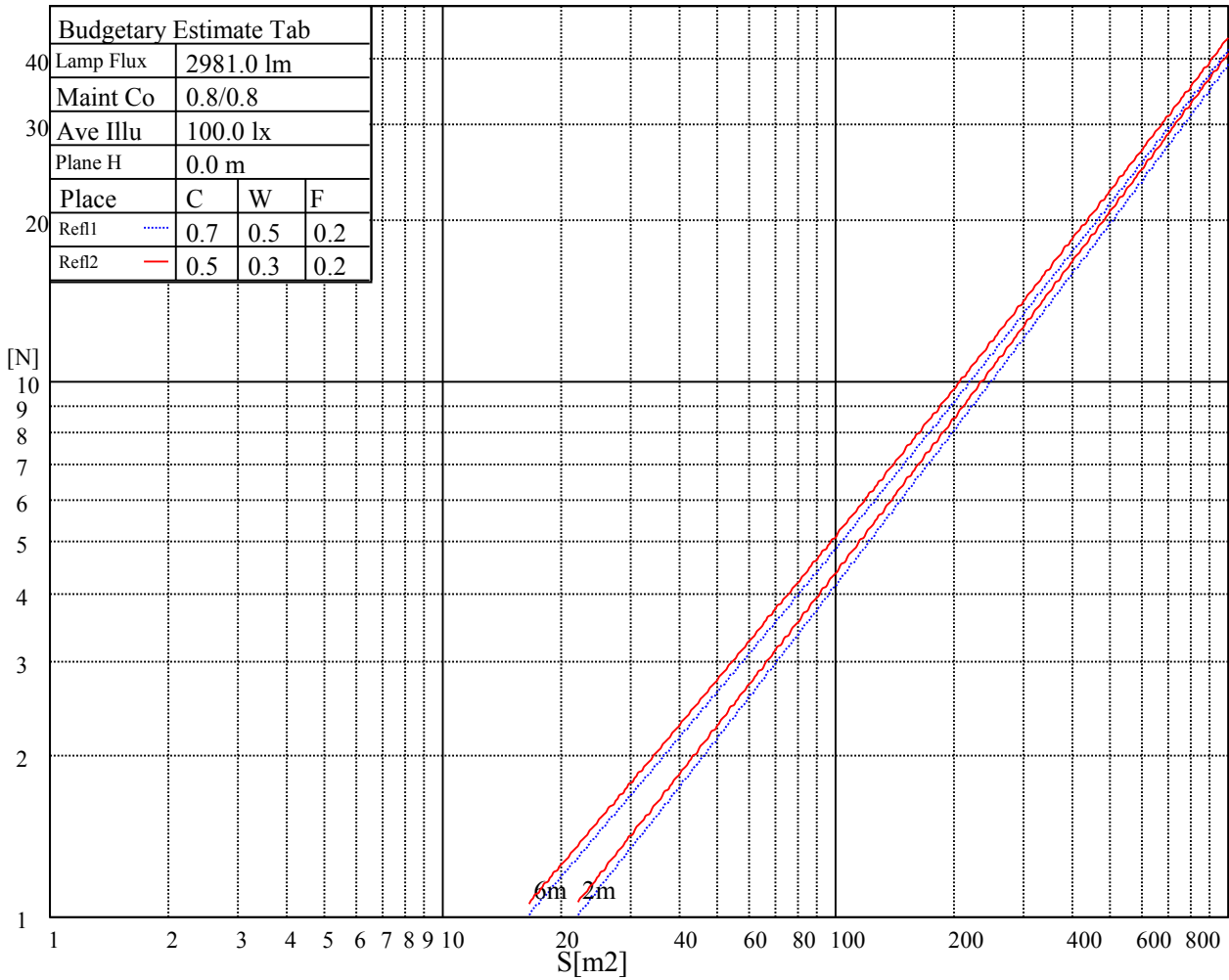
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
6688	6688	6688	9828	9828	9828	28234	28234	28234

Glare Table

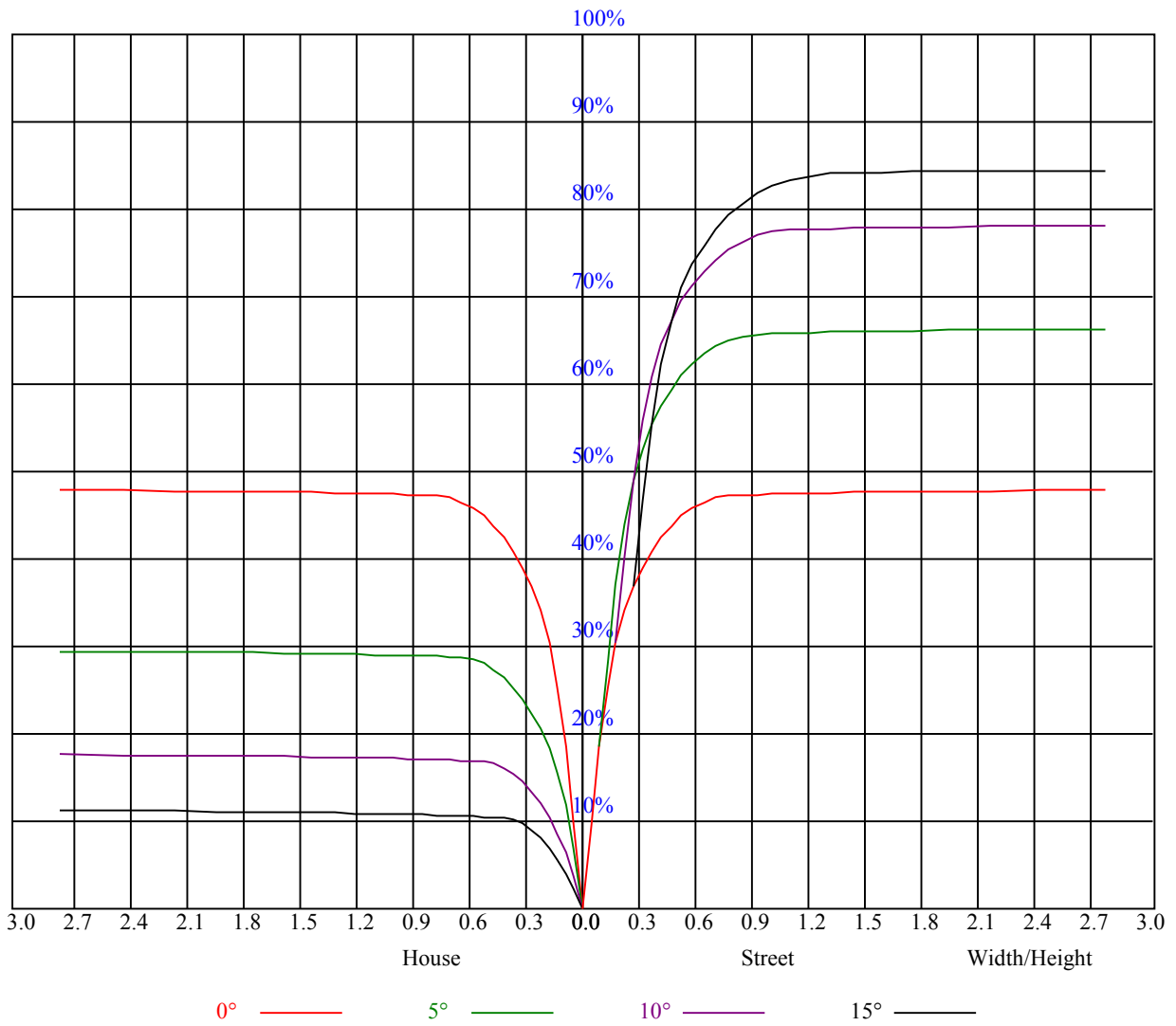
Glare	Quality	Service Values Illuminance(lx)							
		a	b	c	d	e	f	g	h
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

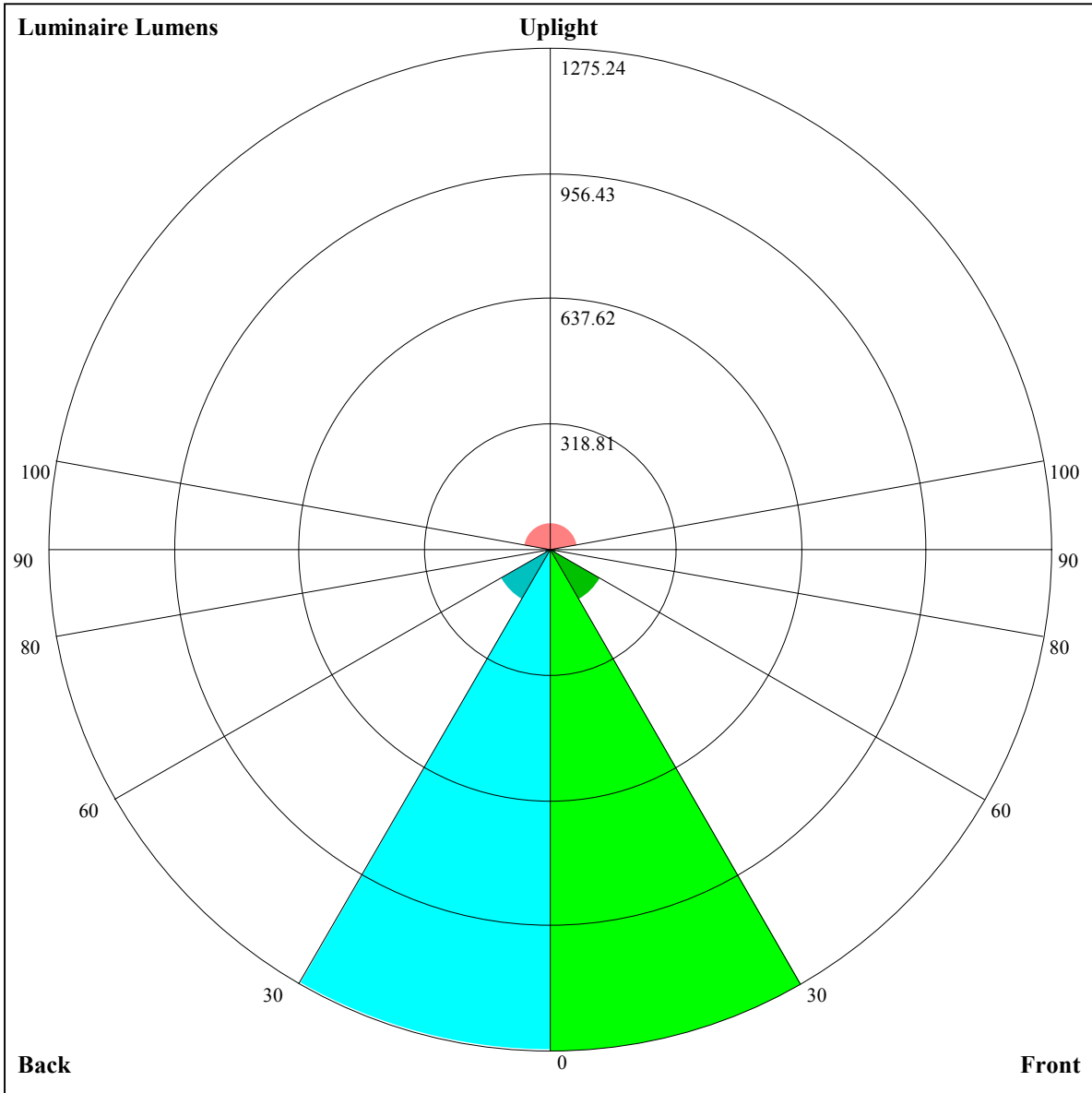
Luminance Limiting Curve





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	1.15	1.15	1.15	1.12	1.12	1.12	1.07	1.07	1.07	1.03	1.03	1.03	0.98	0.98	0.98	0.97
1	1.08	1.06	1.04	1.06	1.04	1.03	1.02	1.01	1.00	0.99	0.98	0.97	0.96	0.95	0.94	0.92
2	1.03	1.00	0.97	1.01	0.99	0.96	0.98	0.96	0.94	0.96	0.94	0.92	0.93	0.92	0.90	0.89
3	0.98	0.95	0.92	0.97	0.94	0.91	0.95	0.92	0.90	0.93	0.90	0.88	0.90	0.89	0.87	0.86
4	0.94	0.91	0.87	0.93	0.90	0.87	0.92	0.88	0.86	0.90	0.87	0.85	0.88	0.86	0.84	0.83
5	0.91	0.87	0.84	0.90	0.86	0.83	0.89	0.85	0.83	0.87	0.84	0.82	0.86	0.83	0.81	0.80
6	0.88	0.84	0.81	0.87	0.83	0.80	0.86	0.83	0.80	0.85	0.82	0.79	0.84	0.81	0.79	0.78
7	0.85	0.81	0.78	0.85	0.81	0.78	0.83	0.80	0.77	0.82	0.79	0.77	0.81	0.79	0.77	0.76
8	0.83	0.78	0.76	0.82	0.78	0.76	0.81	0.78	0.75	0.80	0.77	0.75	0.80	0.77	0.75	0.74
9	0.80	0.76	0.74	0.80	0.76	0.73	0.79	0.76	0.73	0.78	0.75	0.73	0.78	0.75	0.73	0.72
10	0.78	0.74	0.72	0.78	0.74	0.71	0.77	0.74	0.71	0.76	0.73	0.71	0.76	0.73	0.71	0.70





Luminaire Lumens:

FL=1275.24,FM=146.83,FH=15.13,FVH=7.35

BL=1274.75,BM=146.15,BH=15.03,BVH=7.34

UL=14.45,UH=68.78

BUG Rating:B3-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	20662.67	20651.66	20442.44	19864.35	18867.83	17161.08	14848.71	12596.90	10521.28
45.0	20778.29	20855.36	20717.72	20304.80	19500.98	17816.25	15916.81	13676.01	11242.52
90.0	20849.86	20937.95	20822.33	20436.94	19699.18	18383.33	16549.95	14479.83	10798.76
135.0	20701.21	20794.80	20717.72	20398.40	19787.27	18884.35	16770.18	14683.54	12729.04
180.0	20662.67	20458.96	20040.53	19110.08	17353.78	15669.05	13411.74	10646.81	8801.87
225.0	20778.29	20536.04	19930.42	18834.79	17353.78	15129.50	10985.95	10492.10	8503.46
270.0	20849.86	20607.61	19902.89	18856.82	17353.78	15162.53	12547.35	10328.58	8456.66
315.0	20701.21	20343.34	19699.18	18443.89	16654.56	14567.92	10824.09	9812.15	7879.67
360.0	20662.67	20651.66	20442.44	19864.35	18867.83	17161.08	14848.71	12596.90	10521.28
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	8379.58	6959.13	5797.44	4773.39	3958.56	3358.44	2824.39	2403.76	2113.62
45.0	9144.87	7559.24	6111.26	5114.74	4222.83	3512.60	3000.57	2785.85	2218.22
90.0	9768.11	7791.58	6248.35	5192.92	4266.32	3536.27	3025.90	2621.24	2224.83
135.0	9855.10	8098.80	6832.50	5395.53	4404.51	3804.40	3110.69	2785.85	2302.46
180.0	7247.07	5733.57	4829.00	4113.26	3524.71	2910.28	2513.88	2201.15	1920.92
225.0	7022.44	5674.11	4634.65	3912.86	3329.81	2737.95	2370.73	2083.33	1832.83
270.0	6606.77	5445.08	4531.14	3749.34	3138.21	2802.37	2307.96	2033.23	1794.29
315.0	6475.73	5203.93	4240.99	3583.07	2996.17	2540.30	2227.03	1976.52	1730.97
360.0	8379.58	6959.13	5797.44	4773.39	3958.56	3358.44	2824.39	2403.76	2113.62
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1860.91	1688.58	1537.17	1412.75	1323.56	1243.17	1177.11	1127.00	1086.26
45.0	1944.04	1740.33	1558.10	1443.58	1353.84	1263.54	1190.32	1139.67	1095.07
90.0	1977.08	1781.63	1607.65	1470.01	1370.90	1280.61	1206.84	1140.77	1093.09
135.0	2015.61	1805.85	1623.61	1483.77	1385.77	1299.33	1213.44	1160.04	1111.59
180.0	1708.95	1548.19	1433.67	1331.26	1258.04	1193.07	1134.16	1089.35	1048.27
225.0	1646.19	1514.60	1388.52	1305.39	1236.57	1167.20	1095.46	1077.34	1039.35
270.0	1611.50	1486.52	1372.56	1281.16	1215.09	1167.20	1103.33	1066.44	1036.71
315.0	1581.77	1460.65	1351.63	1264.09	1201.33	1096.89	1086.32	1049.65	1014.63
360.0	1860.91	1688.58	1537.17	1412.75	1323.56	1243.17	1177.11	1127.00	1086.26
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	1042.77	1013.59	984.96	937.61	859.98	776.85	670.59	559.37	455.87
45.0	1049.37	1017.99	987.16	951.37	888.06	811.53	704.72	596.26	498.81
90.0	1054.50	1014.47	979.62	953.85	901.00	803.55	712.43	616.74	492.31
135.0	1066.99	1027.90	998.72	969.54	908.98	835.76	725.64	631.50	510.37
180.0	1016.84	989.42	947.58	876.44	786.32	668.22	569.06	469.19	358.25
225.0	1010.17	984.96	931.77	857.34	767.16	661.72	549.30	446.01	344.43
270.0	1000.37	972.30	932.10	840.71	739.96	657.37	532.95	429.99	317.68
315.0	985.29	953.74	889.38	810.71	722.17	589.76	500.90	396.52	273.96
360.0	1042.77	1013.59	984.96	937.61	859.98	776.85	670.59	559.37	455.87
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	343.00	283.54	148.93	81.21	41.02	34.74	29.68	25.66	24.56
45.0	394.20	295.10	221.38	102.24	49.55	32.26	27.25	23.34	22.02
90.0	392.39	297.63	199.74	114.96	56.98	32.15	28.30	23.95	21.97
135.0	402.46	305.56	280.79	117.60	58.08	32.21	27.47	23.62	21.64
180.0	254.69	172.11	94.31	48.28	34.58	30.17	26.43	25.05	24.22
225.0	226.78	144.58	78.29	35.84	29.95	26.04	22.74	21.86	21.36
270.0	282.44	131.31	66.67	32.54	29.68	26.10	23.29	22.63	22.24
315.0	185.54	111.16	45.92	30.94	27.58	22.74	21.14	20.59	20.26
360.0	343.00	283.54	148.93	81.21	41.02	34.74	29.68	25.66	24.56

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	23.78	23.12	22.30	21.53	20.37	19.71	19.21	18.50	17.95
45.0	21.42	21.03	20.48	19.82	19.10	18.55	18.06	17.56	17.12
90.0	21.36	20.92	20.43	19.77	19.21	18.61	18.11	17.73	17.29
135.0	21.03	20.65	20.26	19.77	19.21	18.61	18.11	17.62	17.18
180.0	23.73	23.07	22.19	21.31	20.54	19.77	19.10	18.50	17.89
225.0	20.92	20.43	19.82	19.10	18.61	18.00	17.51	17.12	16.79
270.0	21.80	21.20	20.54	19.88	19.32	18.83	18.39	17.95	17.62
315.0	19.88	19.21	18.55	18.11	17.62	17.07	16.79	16.52	16.13
360.0	23.78	23.12	22.30	21.53	20.37	19.71	19.21	18.50	17.95
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	17.56	17.12	16.90	16.79	16.63	16.52	16.46	16.35	16.30
45.0	16.74	16.52	16.30	16.24	16.08	16.08	16.02	16.02	15.97
90.0	16.85	16.57	16.35	16.13	16.02	15.97	15.91	15.86	15.86
135.0	16.74	16.41	16.19	15.97	15.86	15.75	15.69	15.64	15.58
180.0	17.40	17.01	16.74	16.57	16.35	16.24	16.13	15.97	15.80
225.0	16.41	16.19	16.08	15.97	15.91	15.86	15.80	15.75	15.69
270.0	17.29	17.07	17.01	16.90	16.90	16.85	16.79	16.74	16.63
315.0	16.02	15.91	15.86	15.86	15.80	15.75	15.75	15.69	15.53
360.0	17.56	17.12	16.90	16.79	16.63	16.52	16.46	16.35	16.30
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	16.19	15.97	15.86	15.69	15.36	15.14	14.98	14.81	14.70
45.0	15.86	15.69	15.58	15.36	15.25	15.03	14.81	14.76	14.70
90.0	15.69	15.64	15.47	15.36	15.14	14.98	14.76	14.65	14.53
135.0	15.53	15.42	15.31	15.14	14.98	14.76	14.65	14.48	14.37
180.0	15.64	15.53	15.31	15.09	14.98	14.70	14.53	14.42	14.37
225.0	15.53	15.36	15.20	15.03	14.87	14.70	14.53	14.48	14.37
270.0	16.41	16.19	15.97	15.64	15.36	15.14	14.92	14.76	14.59
315.0	15.47	15.31	15.14	15.03	14.87	14.70	14.53	14.48	14.37
360.0	16.19	15.97	15.86	15.69	15.36	15.14	14.98	14.81	14.70
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	14.59	14.48	14.20	13.98	13.76	13.76	13.65	13.65	13.60
45.0	14.59	14.48	14.37	14.15	13.98	13.93	13.82	13.87	13.82
90.0	14.37	14.26	14.20	13.98	13.82	13.71	13.71	13.65	13.60
135.0	14.26	14.20	14.09	13.98	13.76	13.65	13.65	13.60	13.54
180.0	14.26	14.20	13.98	13.82	13.71	13.65	13.60	13.54	13.54
225.0	14.31	14.20	14.04	13.93	13.82	13.76	13.76	13.71	13.65
270.0	14.42	14.20	14.04	13.82	13.76	13.71	13.65	13.65	13.60
315.0	14.26	14.09	13.87	13.76	13.76	13.65	13.65	13.60	13.54
360.0	14.59	14.48	14.20	13.98	13.76	13.76	13.65	13.65	13.60
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	13.49	13.49	13.43	13.43	13.38	13.38	13.38	13.38	13.27
45.0	13.71	13.71	13.65	13.65	13.65	13.65	13.60	13.54	13.49
90.0	13.60	13.60	13.54	13.49	13.49	13.43	13.43	13.38	13.32
135.0	13.54	13.49	13.43	13.43	13.43	13.38	13.32	13.32	13.27
180.0	13.49	13.49	13.43	13.43	13.38	13.32	13.32	13.27	13.10
225.0	13.65	13.60	13.65	13.60	13.60	13.65	13.71	13.49	13.43
270.0	13.54	13.54	13.49	13.49	13.49	13.49	13.49	13.32	13.27
315.0	13.54	13.43	13.43	13.49	13.38	13.43	13.38	13.27	13.21
360.0	13.49	13.49	13.43	13.43	13.38	13.38	13.38	13.38	13.27

Intensity data(cd)

C/γ(°)	90.0
0.0	13.16
45.0	13.38
90.0	13.32
135.0	13.21
180.0	13.10
225.0	13.43
270.0	13.27
315.0	13.10
360.0	13.16