



NATA LIGHTING CO.,LTD.
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Nata

Client: NT

LumCAT: 62-0068

Luminaire: 92.70.429.00

Report No: 20251008-B002

Ballast type: DC

Test No: 20251008-C002

Voltage(V): 35.700

LampCAT: CREE CXA1820

Current(A): 0.539

Lamp flux(lm): 2970.0

Power (W): 19.240

Number of Lamps: 1

PF: 0.000

Length(mm): 62

Width(mm): 62

Phm Type: C

Height(mm): 32

Photometric Results

Lumens(lm): 2822.24, Efficiency(%): 95.02% , Luminous Efficacy(lm/W): 146.69

Central intensity(cd): 21089.530, Maximum intensity(cd): 21089.530

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=17.6

[C90/270]Total=17.6

Field angle(10%Imax): [C0/180]Total=33.2

[C90/270]Total=33.2

Maximum s/h(1/2): C0_180=0.30 C90_270=0.30

Maximum s/h(1/4): C0_180=0.30 C90_270=0.30

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 95.02%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 96.566%

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2025/10/8
Humidity(%): 60.0%

Operator: 杨泽全
Distance(m): 9.19

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	21089.533	0.000	0	0.00%	0.00%
1.0	20955.459	20.118	20.118	0.68%	0.71%
2.0	20430.775	59.401	79.519	2.00%	2.82%
3.0	19354.088	95.152	174.671	3.20%	6.19%
4.0	18441.961	126.515	301.187	4.26%	10.67%
5.0	16992.926	152.439	453.626	5.13%	16.07%
6.0	15627.693	171.430	625.056	5.77%	22.15%
7.0	13842.925	182.924	807.98	6.16%	28.63%
8.0	11966.416	184.713	992.692	6.22%	35.17%
9.0	10201.811	179.661	1172.353	6.05%	41.54%
10.0	8454.942	168.837	1341.19	5.68%	47.52%
11.0	6893.771	153.365	1494.555	5.16%	52.96%
12.0	5565.066	136.193	1630.748	4.59%	57.78%
13.0	4565.950	120.230	1750.978	4.05%	62.04%
14.0	3825.587	107.411	1858.389	3.62%	65.85%
15.0	2931.556	92.765	1951.154	3.12%	69.13%
16.0	2454.917	78.927	2030.081	2.66%	71.93%
17.0	1832.571	66.768	2096.849	2.25%	74.30%
18.0	1571.929	56.133	2152.981	1.89%	76.29%
19.0	1310.453	50.148	2203.129	1.69%	78.06%
20.0	1092.587	43.982	2247.111	1.48%	79.62%
21.0	924.277	38.728	2285.839	1.30%	80.99%
22.0	785.421	34.357	2320.196	1.16%	82.21%
23.0	668.734	30.512	2350.708	1.03%	83.29%
24.0	570.965	27.104	2377.813	0.91%	84.25%
25.0	493.319	24.199	2402.012	0.81%	85.11%
26.0	433.418	21.876	2423.888	0.74%	85.89%
27.0	382.196	19.954	2443.842	0.67%	86.59%
28.0	340.791	18.304	2462.146	0.62%	87.24%
29.0	279.381	16.225	2478.372	0.55%	87.82%
30.0	249.304	14.274	2492.646	0.48%	88.32%
31.0	222.764	13.137	2505.783	0.44%	88.79%
32.0	200.330	12.121	2517.904	0.41%	89.22%
33.0	182.657	11.283	2529.187	0.38%	89.62%
34.0	167.413	10.594	2539.781	0.36%	89.99%
35.0	155.135	10.017	2549.799	0.34%	90.35%
36.0	144.272	9.533	2559.332	0.32%	90.68%
37.0	134.064	9.078	2568.41	0.31%	91.01%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	125.829	8.675	2577.084	0.29%	91.31%
39.0	118.133	8.327	2585.411	0.28%	91.61%
40.0	111.746	8.017	2593.429	0.27%	91.89%
41.0	105.982	7.753	2601.182	0.26%	92.17%
42.0	101.073	7.523	2608.705	0.25%	92.43%
43.0	96.459	7.317	2616.022	0.25%	92.69%
44.0	92.722	7.140	2623.162	0.24%	92.95%
45.0	89.471	7.002	2630.164	0.24%	93.19%
46.0	86.768	6.892	2637.056	0.23%	93.44%
47.0	84.636	6.817	2643.873	0.23%	93.68%
48.0	82.989	6.776	2650.65	0.23%	93.92%
49.0	81.542	6.757	2657.406	0.23%	94.16%
50.0	80.128	6.741	2664.147	0.23%	94.40%
51.0	78.502	6.711	2670.858	0.23%	94.64%
52.0	76.422	6.648	2677.506	0.22%	94.87%
53.0	73.846	6.537	2684.043	0.22%	95.10%
54.0	70.964	6.383	2690.425	0.21%	95.33%
55.0	68.167	6.211	2696.636	0.21%	95.55%
56.0	65.453	6.038	2702.674	0.20%	95.76%
57.0	63.057	5.876	2708.55	0.20%	95.97%
58.0	60.851	5.730	2714.28	0.19%	96.17%
59.0	58.718	5.590	2719.87	0.19%	96.37%
60.0	56.670	5.451	2725.321	0.18%	96.57%
61.0	54.580	5.309	2730.63	0.18%	96.75%
62.0	52.489	5.159	2735.789	0.17%	96.94%
63.0	50.452	5.007	2740.796	0.17%	97.11%
64.0	48.414	4.851	2745.647	0.16%	97.29%
65.0	46.314	4.688	2750.335	0.16%	97.45%
66.0	44.181	4.515	2754.85	0.15%	97.61%
67.0	42.070	4.337	2759.187	0.15%	97.77%
68.0	39.863	4.150	2763.338	0.14%	97.91%
69.0	37.689	3.956	2767.294	0.13%	98.05%
70.0	35.778	3.773	2771.067	0.13%	98.19%
71.0	34.226	3.618	2774.685	0.12%	98.31%
72.0	32.832	3.487	2778.172	0.12%	98.44%
73.0	31.523	3.365	2781.537	0.11%	98.56%
74.0	30.330	3.252	2784.789	0.11%	98.67%
75.0	29.148	3.143	2787.932	0.11%	98.78%

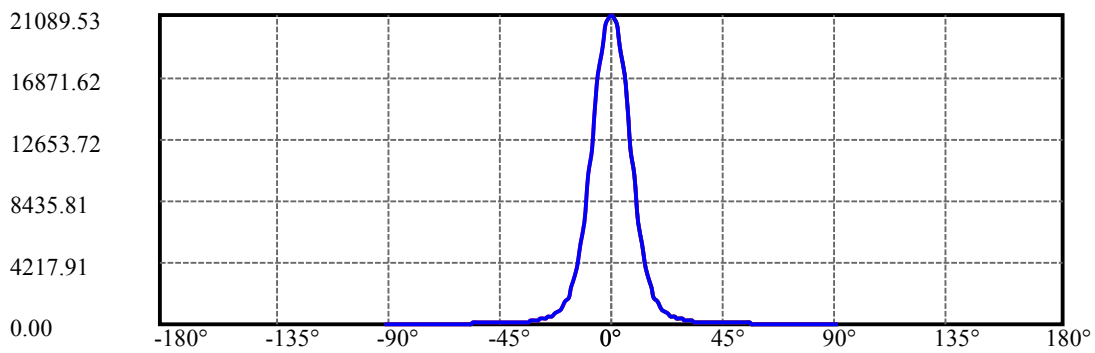
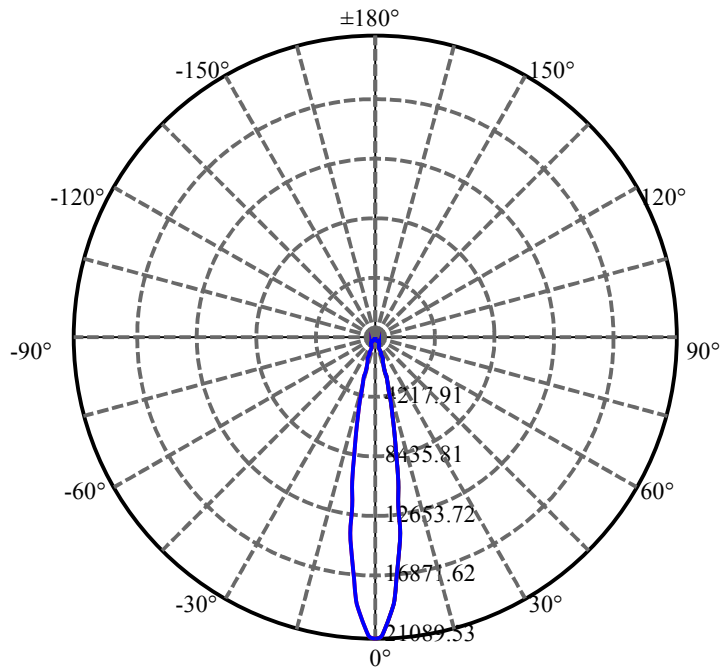
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	27.987	3.033	2790.965	0.10%	98.89%
77.0	26.815	2.922	2793.886	0.10%	99.00%
78.0	25.706	2.811	2796.698	0.09%	99.09%
79.0	24.746	2.711	2799.409	0.09%	99.19%
80.0	23.986	2.627	2802.036	0.09%	99.28%
81.0	23.247	2.554	2804.59	0.09%	99.37%
82.0	22.032	2.455	2807.046	0.08%	99.46%
83.0	20.607	2.318	2809.363	0.08%	99.54%
84.0	19.446	2.182	2811.546	0.07%	99.62%
85.0	18.285	2.059	2813.605	0.07%	99.69%
86.0	17.166	1.938	2815.543	0.07%	99.76%
87.0	16.078	1.819	2817.362	0.06%	99.83%
88.0	15.075	1.707	2819.068	0.06%	99.89%
89.0	14.400	1.616	2820.684	0.05%	99.94%
90.0	13.977	1.556	2822.24	0.05%	100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2492.65	83.93%	88.32%
0-40	2593.43	87.32%	91.89%
0-60	2725.32	91.76%	96.57%
0-90	2820.68	94.97%	99.94%
0-120	2820.68	94.97%	99.94%
0-180	2822.24	95.02%	100.00%
60-90	95.36	3.21%	3.38%
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%
0-20.28	2257.79	76.02%	80.00%

ZONAL LUMEN SUMMARY

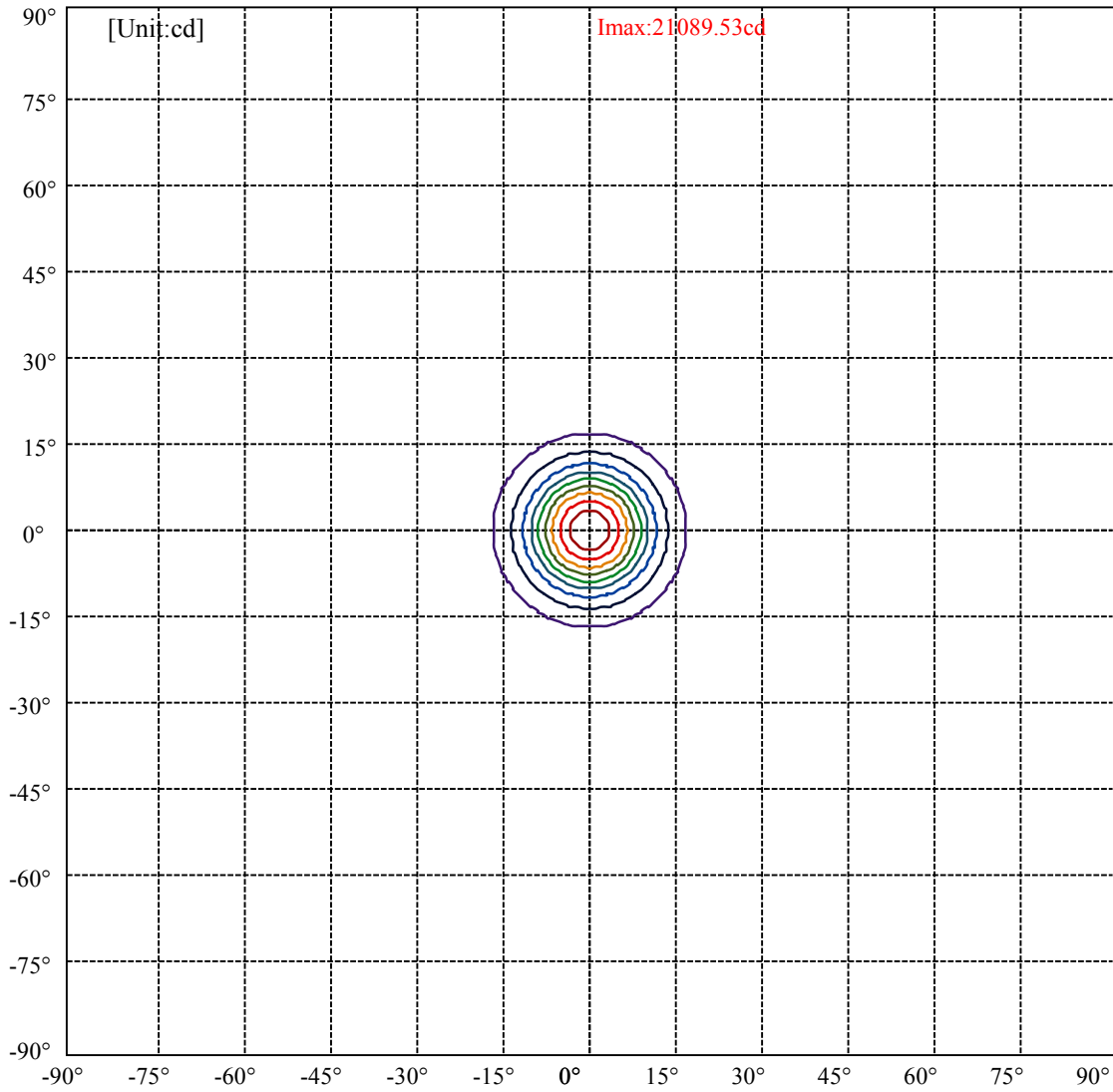
0-10	1341.19
10-20	905.92
20-30	245.54
30-40	100.78
40-50	70.72
50-60	61.17
60-70	45.75
70-80	30.97
80-90	18.65
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00



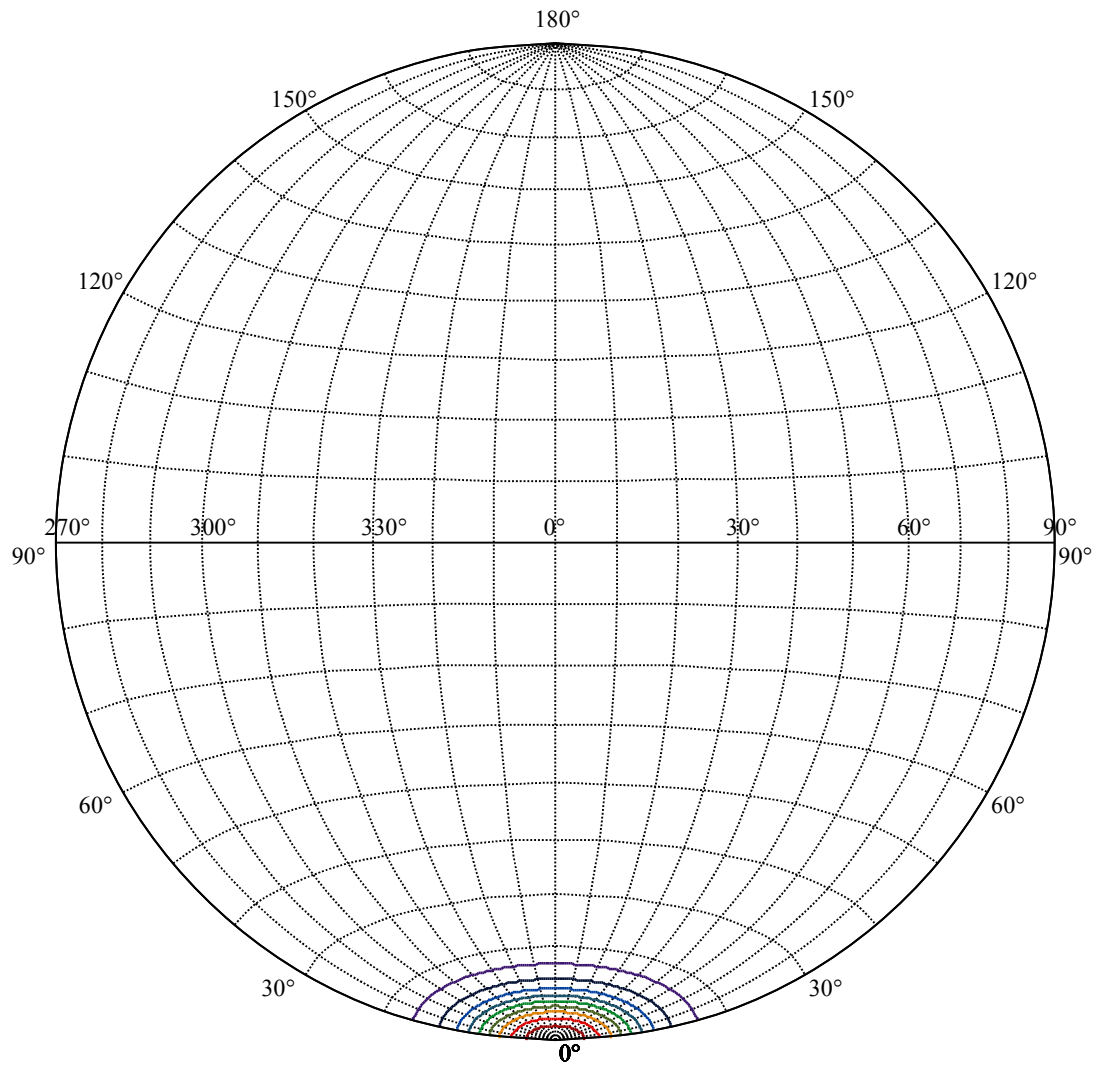
C0(Max): ———
C0/C180: ———
C90/C270: ———

Field angle(10%Imax):C0/180Left:16.6 Right:16.6
:C90/270Left:16.6 Right:16.6

Beam Angle(50%Imax):C0/180Left:8.8 Right:8.8
:C90/270Left:8.8 Right:8.8



(10%Imax) 2108.95	—
(20%Imax) 4217.91	—
(30%Imax) 6326.86	—
(40%Imax) 8435.81	—
(50%Imax) 10544.8	—
(60%Imax) 12653.7	—
(70%Imax) 14762.7	—
(80%Imax) 16871.6	—
(90%Imax) 18980.6	—



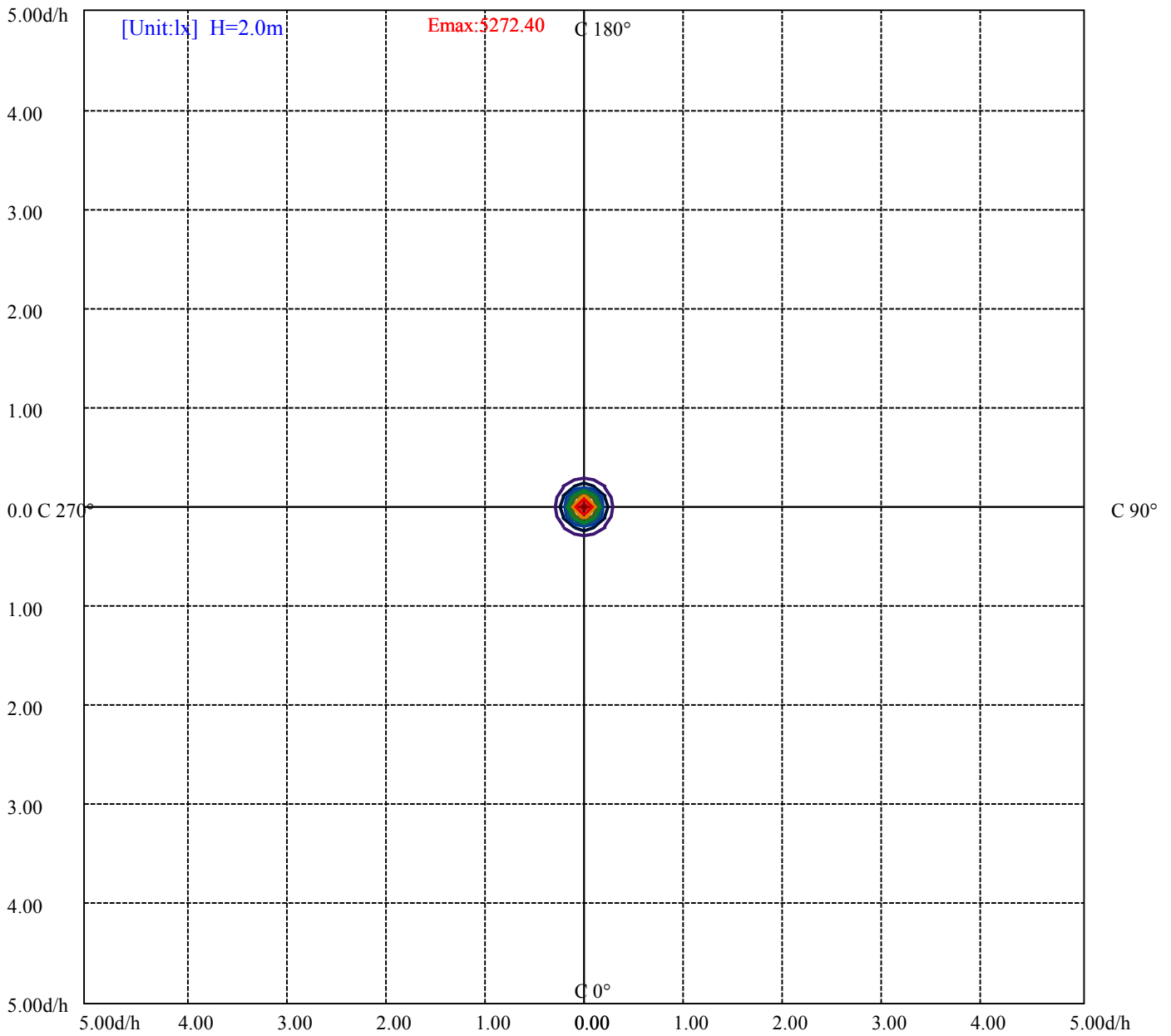
House

[Unit:cd]

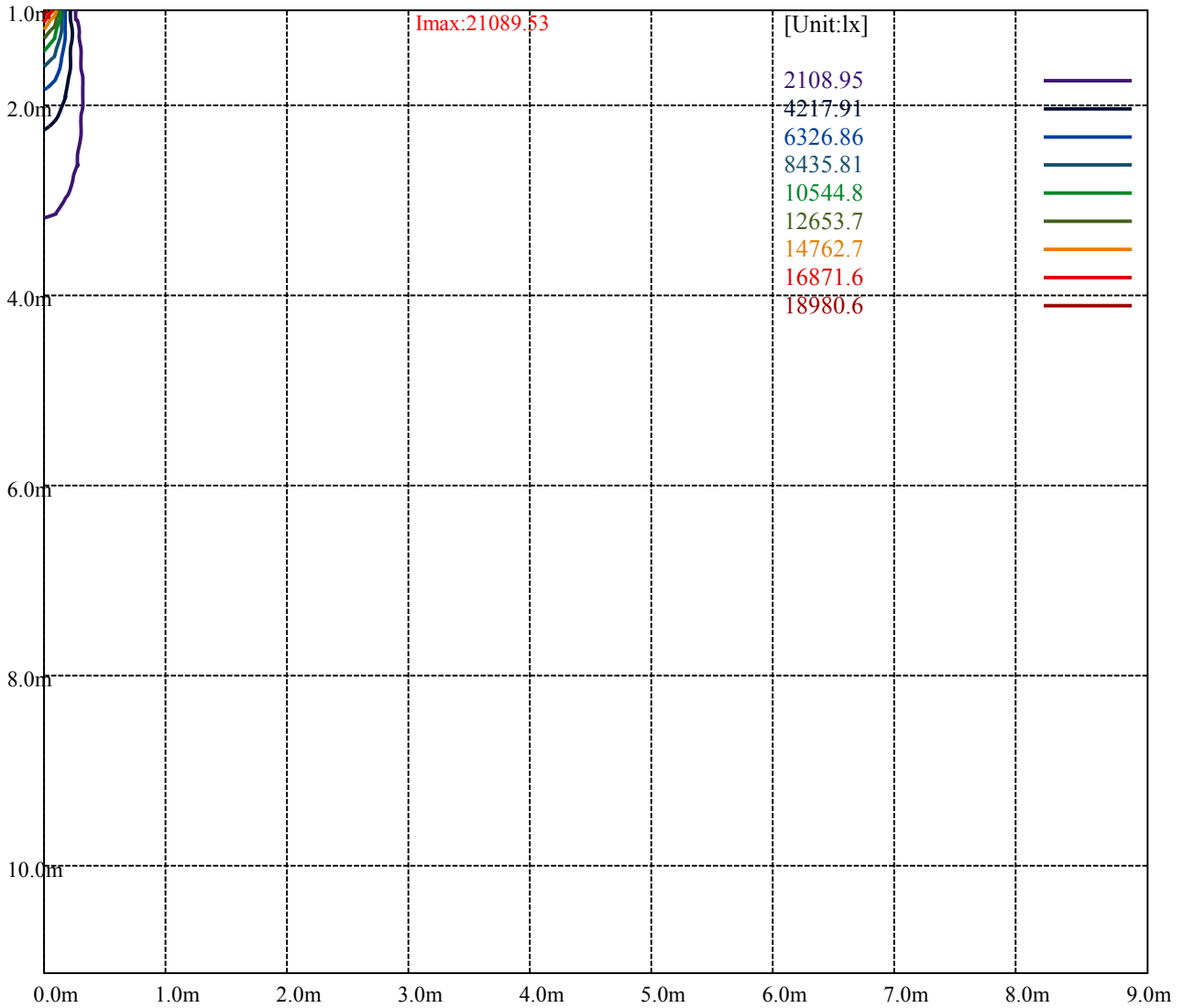
Road

Imax:21089.53

(10%Imax) 2108.95	—
(20%Imax) 4217.91	—
(30%Imax) 6326.86	—
(40%Imax) 8435.81	—
(50%Imax) 10544.8	—
(60%Imax) 12653.7	—
(70%Imax) 14762.7	—
(80%Imax) 16871.6	—
(90%Imax) 18980.6	—



- (10%Emax) 527.2375
- (20%Emax) 1054.475
- (30%Emax) 1581.713
- (40%Emax) 2108.95
- (50%Emax) 2636.2
- (60%Emax) 3163.425
- (70%Emax) 3690.675
- (80%Emax) 4217.9
- (90%Emax) 4745.15



Luminance Table

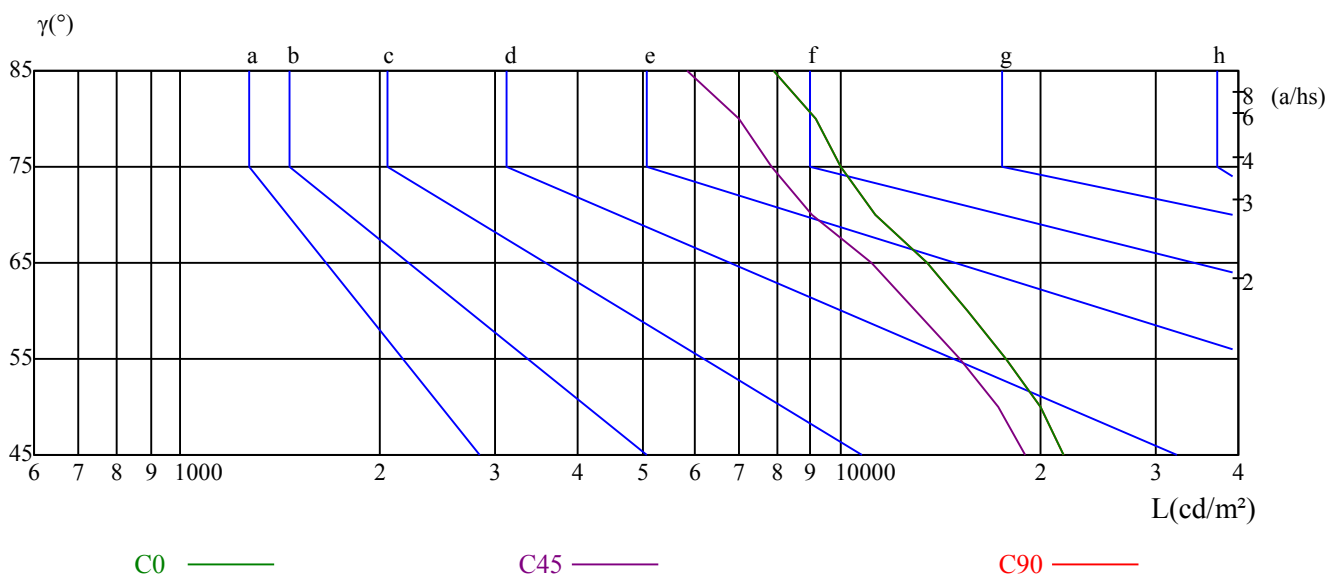
γ	45	50	55	60	65	70	75	80	85
C0	21711	20079	17798	15568	13531	11254	10012	9150	7910
C45	19028	17343	15137	13022	11113	9055	7867	6991	5841
C90	21711	20079	17798	15568	13531	11254	10012	9150	7910

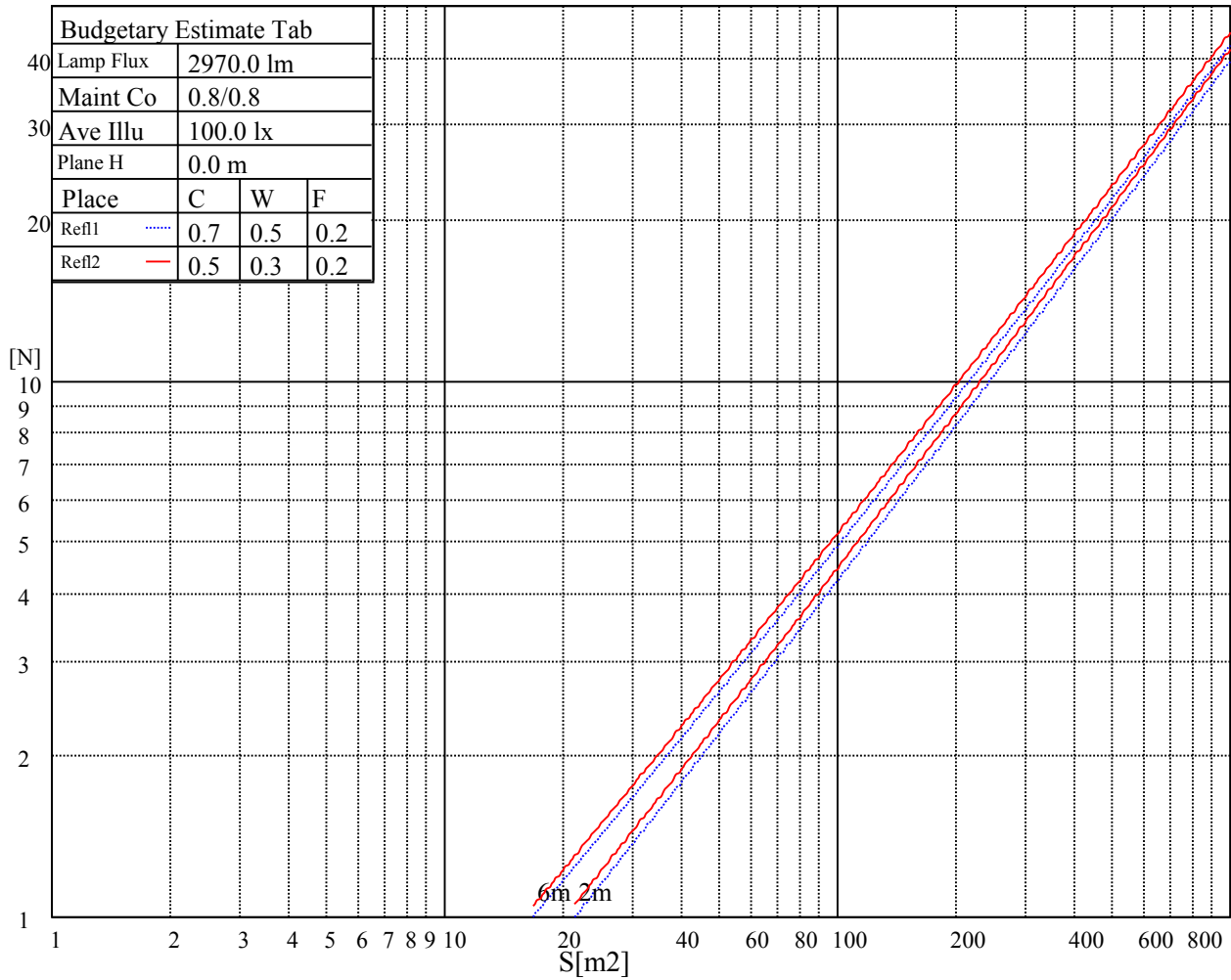
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
28509	28509	28509	29297	29297	29297	54577	54577	54577

Glare Table

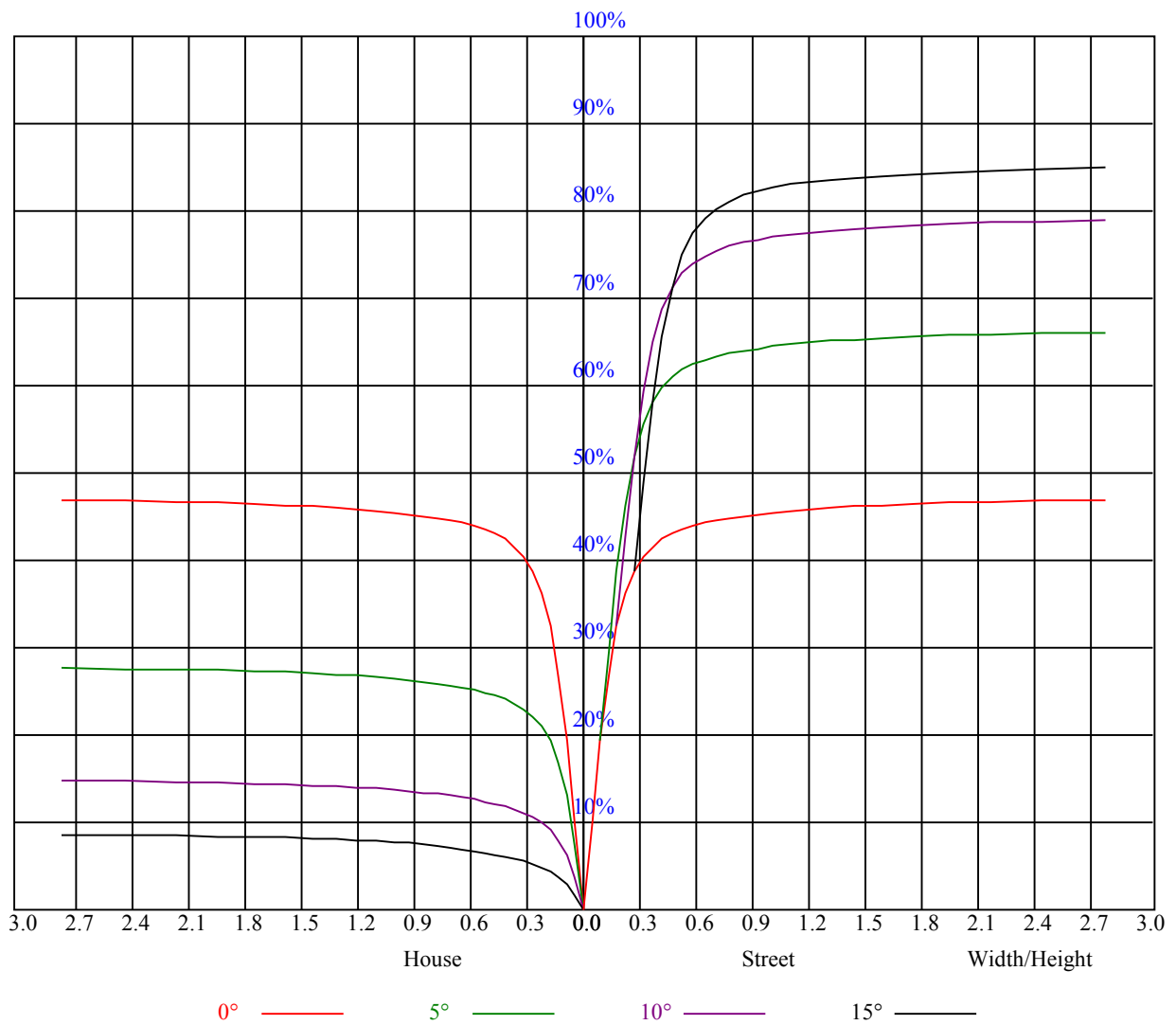
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

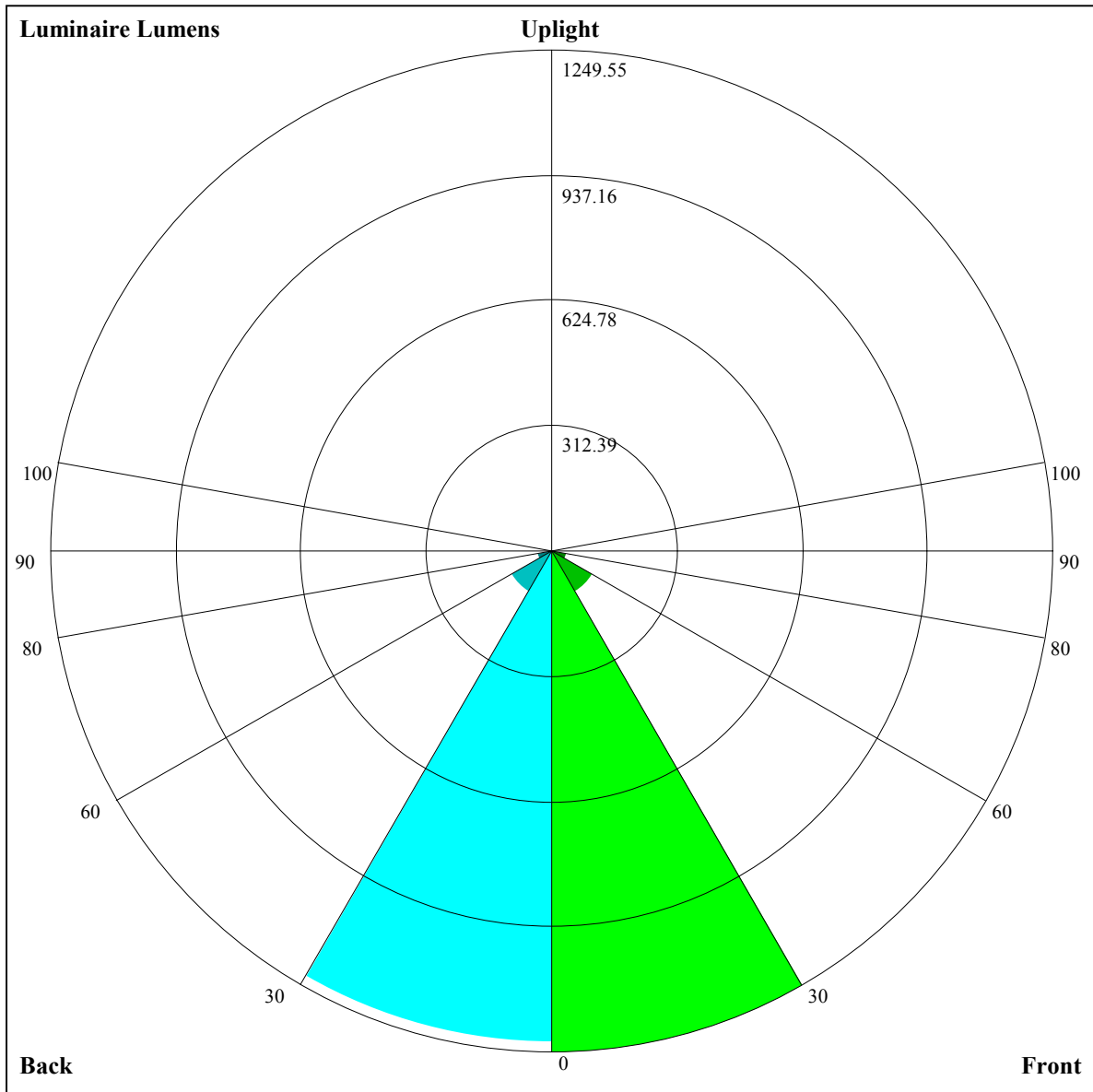
Luminance Limiting Curve





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	1.13	1.13	1.13	1.10	1.10	1.10	1.06	1.06	1.06	1.01	1.01	1.01	0.97	0.97	0.97	0.95
1	1.07	1.05	1.03	1.05	1.03	1.01	1.01	0.99	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91
2	1.01	0.98	0.96	1.00	0.97	0.94	0.97	0.94	0.92	0.94	0.92	0.90	0.91	0.90	0.89	0.87
3	0.97	0.93	0.90	0.96	0.92	0.89	0.93	0.90	0.88	0.91	0.89	0.87	0.89	0.87	0.85	0.84
4	0.93	0.89	0.86	0.92	0.88	0.86	0.90	0.87	0.85	0.88	0.86	0.84	0.87	0.85	0.83	0.82
5	0.90	0.86	0.83	0.89	0.85	0.82	0.87	0.84	0.82	0.86	0.83	0.81	0.85	0.82	0.80	0.79
6	0.87	0.83	0.80	0.86	0.83	0.80	0.85	0.82	0.79	0.84	0.81	0.79	0.83	0.80	0.78	0.77
7	0.84	0.80	0.78	0.84	0.80	0.78	0.83	0.80	0.77	0.82	0.79	0.77	0.81	0.78	0.76	0.75
8	0.82	0.78	0.76	0.82	0.78	0.76	0.81	0.78	0.75	0.80	0.77	0.75	0.79	0.77	0.75	0.74
9	0.80	0.76	0.74	0.80	0.76	0.74	0.79	0.76	0.74	0.78	0.75	0.73	0.78	0.75	0.73	0.72
10	0.78	0.75	0.72	0.78	0.75	0.72	0.77	0.74	0.72	0.77	0.74	0.72	0.76	0.74	0.72	0.71





Luminaire Lumens:

FL=1249.55,FM=115.96,FH=38.16,FVH=10.04

BL=1226.79,BM=116.8,BH=38.53,BVH=10.11

UL=0,UH=0

BUG Rating:B3-U0-G1

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	21203.55	21068.42	20755.93	20122.51	18450.28	16499.43	16133.73	14487.68	12354.32
45.0	20950.18	21186.66	21161.32	20806.60	20266.09	19227.28	17994.22	16575.35	14573.74
90.0	21186.66	21127.54	20739.04	20114.06	18500.95	16561.08	16184.41	14521.47	12747.04
135.0	21017.75	21161.32	21043.08	20629.25	19928.26	18957.02	17707.07	15747.68	14109.24
180.0	21203.55	21059.97	20671.48	19978.94	18644.53	17267.89	15680.12	13492.71	11744.47
225.0	20950.18	20519.45	18779.66	16833.03	16833.03	15176.85	12917.64	11100.99	9385.69
270.0	21186.66	20983.96	20494.12	19708.68	18272.92	16837.17	15181.83	13382.91	11144.83
315.0	21017.75	20536.35	19801.58	16639.63	16639.63	15416.70	13222.53	11434.60	9672.00
360.0	21203.55	21068.42	20755.93	20122.51	18450.28	16499.43	16133.73	14487.68	12354.32
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	10637.33	8979.46	7065.68	5724.52	4645.17	3571.73	2899.46	2013.52	1615.05
45.0	12884.62	11153.27	9464.15	7479.43	6085.91	4920.41	4405.23	4405.23	2470.43
90.0	10959.11	8837.57	7240.51	5895.12	4781.14	3699.26	3018.55	2019.43	1621.30
135.0	12344.10	10595.86	8450.68	6972.70	5646.73	4329.22	4329.22	3439.14	2218.75
180.0	9616.17	8019.95	6592.64	5393.37	4413.68	4413.68	2899.46	2413.84	1928.22
225.0	7775.11	6058.12	4961.88	4075.09	3199.28	2644.40	1625.61	1625.61	1494.62
270.0	9354.36	7715.91	6246.37	4776.84	4286.99	4286.99	2591.20	2038.85	1696.81
315.0	8043.68	6279.40	5128.26	4203.46	3468.70	2739.00	1683.72	1683.72	1615.39
360.0	10637.33	8979.46	7065.68	5724.52	4645.17	3571.73	2899.46	2013.52	1615.05
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1541.41	1295.56	1098.35	939.49	777.93	672.52	582.75	505.64	424.56
45.0	2020.27	1669.78	1339.56	1132.64	929.10	796.51	690.09	573.54	495.84
90.0	1621.30	1311.01	1110.18	946.67	812.30	668.39	574.89	497.11	432.33
135.0	1822.65	1511.00	1204.43	1016.09	864.91	743.30	613.24	527.94	456.15
180.0	1623.33	1379.25	1184.16	975.55	842.11	728.94	611.55	533.00	454.46
225.0	1268.45	1039.49	897.26	775.98	674.72	567.54	496.01	436.72	385.12
270.0	1358.98	1149.53	978.09	809.17	694.31	597.19	495.84	430.81	430.81
315.0	1319.04	1128.00	928.68	798.62	687.98	575.48	503.36	441.79	388.08
360.0	1541.41	1295.56	1098.35	939.49	777.93	672.52	582.75	505.64	424.56
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	370.17	313.08	274.74	243.23	210.13	189.35	171.45	152.87	140.28
45.0	429.97	429.97	310.04	273.47	242.98	211.65	191.29	174.82	160.89
90.0	366.12	324.56	291.80	264.43	235.46	217.22	198.64	186.31	175.84
135.0	438.41	365.61	283.35	248.55	218.99	189.10	169.67	149.40	135.89
180.0	425.74	425.74	306.66	274.99	250.75	231.07	208.86	194.50	181.75
225.0	331.66	296.10	258.52	234.28	214.18	192.14	178.46	166.13	152.61
270.0	361.64	271.53	239.01	210.38	186.99	163.68	148.14	135.72	125.00
315.0	333.85	299.73	270.94	245.09	222.63	208.44	194.76	179.55	168.83
360.0	370.17	313.08	274.74	243.23	210.13	189.35	171.45	152.87	140.28
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	129.56	120.60	111.06	104.39	99.15	94.76	90.03	86.74	83.61
45.0	148.64	135.13	126.43	117.14	110.89	105.40	100.08	95.52	91.47
90.0	164.52	155.99	148.22	138.68	131.75	124.83	118.75	111.06	107.17
135.0	124.66	112.50	104.73	98.48	92.90	87.58	84.12	81.25	78.63
180.0	170.09	157.93	148.90	140.45	132.34	124.49	118.24	112.16	107.09
225.0	143.83	135.30	127.36	118.83	112.33	106.92	102.11	97.21	93.66
270.0	113.26	105.82	98.14	93.32	89.44	85.22	82.34	80.06	78.38
315.0	159.62	149.23	141.80	133.78	125.16	118.66	112.92	107.68	101.77
360.0	129.56	120.60	111.06	104.39	99.15	94.76	90.03	86.74	83.61

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	80.91	79.39	78.46	77.53	76.77	76.01	75.00	73.22	70.61
45.0	88.00	84.96	82.77	82.60	81.67	80.99	79.47	78.38	75.93
90.0	102.53	98.22	94.51	91.89	89.35	86.82	84.88	81.75	78.54
135.0	76.09	74.66	73.56	72.63	72.46	72.29	72.13	71.79	70.94
180.0	102.95	98.90	95.77	93.58	91.04	88.00	85.89	83.36	80.74
225.0	90.87	88.00	85.81	83.61	81.84	80.23	78.04	75.00	72.38
270.0	76.52	75.67	75.25	74.91	74.74	74.49	73.81	72.29	70.35
315.0	97.88	94.34	90.96	87.16	84.46	82.18	78.80	75.59	71.28
360.0	80.91	79.39	78.46	77.53	76.77	76.01	75.00	73.22	70.61
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	68.16	65.37	63.60	61.74	59.63	57.94	56.25	53.97	52.45
45.0	71.96	68.16	64.95	62.84	60.64	58.70	57.09	55.23	53.12
90.0	74.66	71.03	67.06	64.36	61.74	59.29	56.59	54.56	52.70
135.0	69.68	67.99	65.96	63.93	62.08	60.39	58.70	56.50	54.64
180.0	76.86	74.15	71.28	67.65	64.86	62.16	59.96	57.68	55.32
225.0	69.68	67.23	64.36	62.08	59.88	57.26	54.98	52.87	50.25
270.0	68.41	65.96	64.19	61.91	60.13	58.19	56.42	54.39	52.02
315.0	68.32	65.45	62.24	59.96	57.85	55.83	53.38	51.43	49.41
360.0	68.16	65.37	63.60	61.74	59.63	57.94	56.25	53.97	52.45
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	50.59	48.39	46.62	44.51	42.99	40.37	38.26	36.32	34.88
45.0	51.43	49.74	47.97	45.78	43.92	42.14	40.29	37.67	35.64
90.0	50.25	48.39	46.62	44.34	42.48	40.71	37.84	36.06	34.88
135.0	52.79	50.93	48.56	46.70	44.17	42.14	40.12	37.08	35.13
180.0	52.79	50.59	48.14	46.03	43.49	41.21	38.43	36.74	34.96
225.0	47.97	46.03	43.41	41.30	39.19	36.99	35.22	34.12	32.85
270.0	50.17	48.06	45.94	43.41	41.38	38.60	36.23	34.63	32.94
315.0	47.63	45.18	43.24	41.38	38.93	36.74	35.13	33.61	32.52
360.0	50.59	48.39	46.62	44.51	42.99	40.37	38.26	36.32	34.88
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	32.94	31.67	30.57	29.14	27.95	26.60	25.51	24.49	23.31
45.0	34.04	32.85	31.67	30.40	29.31	28.21	26.86	25.84	25.00
90.0	33.36	32.26	31.16	30.07	28.97	27.62	26.60	25.59	24.91
135.0	33.78	32.52	31.08	29.98	28.97	27.79	26.43	25.42	24.49
180.0	33.78	32.18	31.16	30.07	28.72	27.45	26.60	25.51	24.91
225.0	31.76	30.32	29.14	27.95	26.69	25.76	24.75	23.82	23.31
270.0	31.67	30.49	28.97	27.87	26.69	25.67	24.41	23.56	22.89
315.0	31.33	29.90	28.88	27.70	26.60	25.42	24.49	23.73	23.06
360.0	32.94	31.67	30.57	29.14	27.95	26.60	25.51	24.49	23.31
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	22.72	21.87	20.52	19.09	18.16	16.98	15.79	14.78	14.10
45.0	24.07	23.48	22.04	20.35	19.34	18.24	17.06	15.96	14.86
90.0	24.49	22.72	21.11	20.02	18.58	17.48	16.38	15.29	14.19
135.0	23.65	23.14	21.20	19.93	18.92	17.82	16.55	15.37	14.36
180.0	24.75	22.72	21.28	20.44	19.09	17.82	16.89	15.71	15.12
225.0	21.71	20.69	19.68	18.66	17.40	16.47	15.46	14.78	14.61
270.0	22.47	20.95	19.42	18.41	17.23	16.22	15.20	14.10	13.51
315.0	22.13	20.69	19.59	18.66	17.57	16.30	15.29	14.61	14.44
360.0	22.72	21.87	20.52	19.09	18.16	16.98	15.79	14.78	14.10

Intensity data(cd)

C/ γ (°)	90.0
0.0	13.60
45.0	14.10
90.0	13.94
135.0	13.43
180.0	14.86
225.0	14.44
270.0	13.26
315.0	14.19
360.0	13.60