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Nata

Client:

LumCAT: 3-1550-A3

Luminaire: TE2213407+92.76.365.00

Report No: nata-0100

Test No:

LampCAT: bridgelux V18B

Lamp flux(lm): 2960.0

Number of Lamps: 1

Length(mm): 78

Phm Type: C

Voltage(V): 34.0000

Current(A): 0.6000

Power (W): 20.4000

PF: 0.0000

Ballast type: CC600mA

Width(mm): 78

Height(mm): 0

Photometric Results

Lumens(lm): 2694.50, Efficiency(%): 91.03% , Luminous Efficacy(lm/W): 132.08

Central intensity(cd): 4468.102, Maximum intensity(cd): 4468.102

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=45.0

[C90/270]Total=45.0

Field angle(10%Imax): [C0/180]Total=73.6

[C90/270]Total=73.6

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

Maximum s/h(1/4): C0_180=0.75 C90_270=0.75

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 91.06%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 98.492%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4468.102	1.069	1.069	.036%	.040%
1.0	4462.872	8.541	9.61	.289%	.357%
2.0	4445.391	17.013	26.623	.575%	.988%
3.0	4410.293	25.312	51.935	.855%	1.927%
4.0	4360.329	33.355	85.289	1.127%	3.165%
5.0	4300.180	41.099	126.389	1.388%	4.691%
6.0	4235.214	48.547	174.936	1.640%	6.492%
7.0	4152.216	55.491	230.427	1.875%	8.552%
8.0	4072.522	62.154	292.581	2.100%	10.858%
9.0	3979.201	68.262	360.843	2.306%	13.392%
10.0	3872.805	73.748	434.591	2.491%	16.129%
11.0	3777.144	79.034	513.625	2.670%	19.062%
12.0	3672.262	83.727	597.352	2.829%	22.169%
13.0	3549.348	87.557	684.908	2.958%	25.419%
14.0	3437.446	91.193	776.102	3.081%	28.803%
15.0	3327.058	94.430	870.531	3.190%	32.308%
16.0	3188.316	96.372	966.903	3.256%	35.884%
17.0	3061.411	98.154	1065.057	3.316%	39.527%
18.0	2916.338	98.826	1163.884	3.339%	43.195%
19.0	2756.123	98.399	1262.283	3.324%	46.847%
20.0	2601.002	97.554	1359.837	3.296%	50.467%
21.0	2446.569	96.148	1455.984	3.248%	54.035%
22.0	2303.009	94.607	1550.591	3.196%	57.547%
23.0	2176.104	93.242	1643.833	3.150%	61.007%
24.0	2056.081	91.708	1735.54	3.098%	64.411%
25.0	1925.460	89.235	1824.775	3.015%	67.722%
26.0	1818.238	87.407	1912.182	2.953%	70.966%
27.0	1706.198	84.943	1997.125	2.870%	74.119%
28.0	1597.599	82.249	2079.373	2.779%	77.171%
29.0	1484.458	78.921	2158.294	2.666%	80.100%
30.0	1353.685	74.223	2232.517	2.508%	82.855%
31.0	1228.707	69.397	2301.914	2.344%	85.430%
32.0	1093.750	63.559	2365.474	2.147%	87.789%
33.0	958.477	57.246	2422.719	1.934%	89.914%
34.0	807.953	49.545	2472.264	1.674%	91.752%
35.0	677.813	42.634	2514.898	1.440%	93.335%
36.0	541.590	34.909	2549.807	1.179%	94.630%
37.0	420.452	27.748	2577.555	.937%	95.660%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	307.765	20.778	2598.333	.702%	96.431%
39.0	223.006	15.390	2613.724	.520%	97.002%
40.0	140.242	9.885	2623.609	.334%	97.369%
41.0	81.126	5.837	2629.446	.197%	97.586%
42.0	47.004	3.449	2632.895	.117%	97.714%
43.0	29.730	2.223	2635.118	.075%	97.796%
44.0	22.201	1.691	2636.809	.057%	97.859%
45.0	17.852	1.384	2638.194	.047%	97.910%
46.0	15.223	1.201	2639.394	.041%	97.955%
47.0	13.847	1.111	2640.505	.038%	97.996%
48.0	13.530	1.103	2641.608	.037%	98.037%
49.0	13.117	1.086	2642.693	.037%	98.077%
50.0	12.897	1.083	2643.777	.037%	98.118%
51.0	12.746	1.086	2644.863	.037%	98.158%
52.0	12.608	1.089	2645.952	.037%	98.198%
53.0	12.498	1.095	2647.047	.037%	98.239%
54.0	12.360	1.097	2648.143	.037%	98.280%
55.0	12.236	1.099	2649.243	.037%	98.320%
56.0	12.154	1.105	2650.348	.037%	98.361%
57.0	12.057	1.109	2651.456	.037%	98.403%
58.0	12.002	1.116	2652.573	.038%	98.444%
59.0	11.920	1.120	2653.693	.038%	98.486%
60.0	11.865	1.127	2654.82	.038%	98.527%
61.0	11.755	1.127	2655.947	.038%	98.569%
62.0	11.699	1.133	2657.08	.038%	98.611%
63.0	11.713	1.144	2658.225	.039%	98.654%
64.0	11.975	1.180	2659.405	.040%	98.698%
65.0	12.649	1.257	2660.662	.042%	98.744%
66.0	13.269	1.329	2661.991	.045%	98.794%
67.0	13.571	1.370	2663.361	.046%	98.844%
68.0	14.012	1.425	2664.786	.048%	98.897%
69.0	14.466	1.481	2666.267	.050%	98.952%
70.0	14.507	1.495	2667.762	.051%	99.008%
71.0	14.356	1.489	2669.25	.050%	99.063%
72.0	14.659	1.529	2670.779	.052%	99.120%
73.0	14.645	1.536	2672.315	.052%	99.177%
74.0	14.562	1.535	2673.85	.052%	99.234%
75.0	14.673	1.554	2675.404	.053%	99.291%

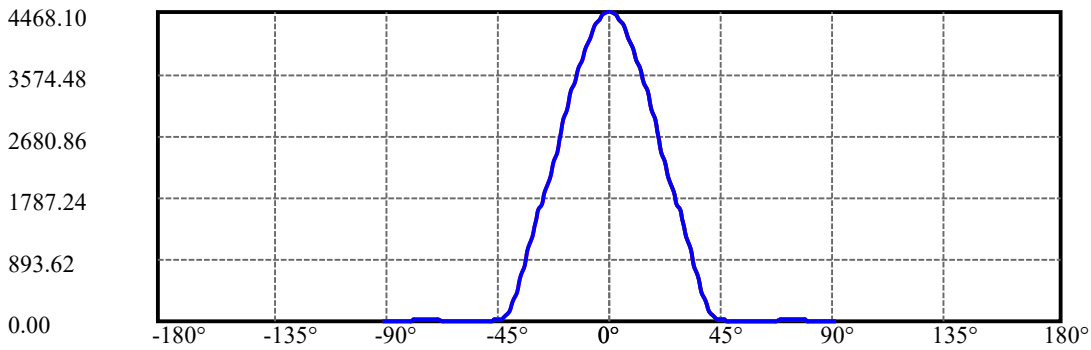
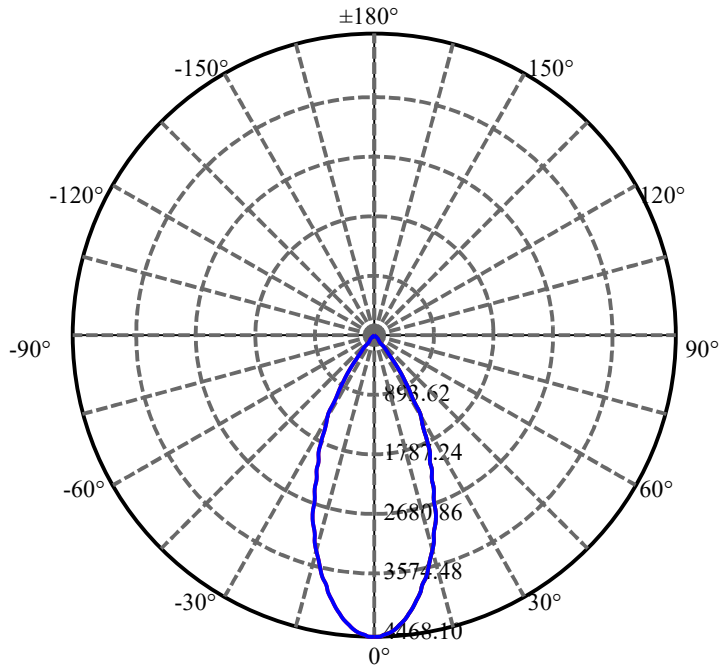
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	14.273	1.519	2676.923	.051%	99.348%
77.0	14.287	1.527	2678.449	.052%	99.404%
78.0	14.026	1.504	2679.954	.051%	99.460%
79.0	13.544	1.458	2681.412	.049%	99.514%
80.0	12.911	1.394	2682.806	.047%	99.566%
81.0	12.457	1.349	2684.155	.046%	99.616%
82.0	12.071	1.311	2685.466	.044%	99.665%
83.0	11.713	1.275	2686.741	.043%	99.712%
84.0	11.383	1.241	2687.982	.042%	99.758%
85.0	11.080	1.210	2689.193	.041%	99.803%
86.0	10.929	1.196	2690.388	.040%	99.847%
87.0	10.832	1.186	2691.575	.040%	99.891%
88.0	10.681	1.171	2692.745	.040%	99.935%
89.0	10.653	1.168	2693.913	.039%	99.978%
90.0	10.667	0.585	2694.498	.020%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2232.52	75.42%	82.85%
0-40	2623.61	88.64%	97.37%
0-60	2654.82	89.69%	98.53%
0-90	2693.91	91.01%	99.98%
0-120	2693.91	91.01%	99.98%
0-180	2694.50	91.03%	100.00%
60-90	40.22	1.36%	1.49%
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%
0-28.97	2155.60	72.82%	80.00%

ZONAL LUMEN SUMMARY

0-10	434.59
10-20	925.25
20-30	872.68
30-40	391.09
40-50	20.17
50-60	11.04
60-70	12.94
70-80	15.04
80-90	11.11
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: ———

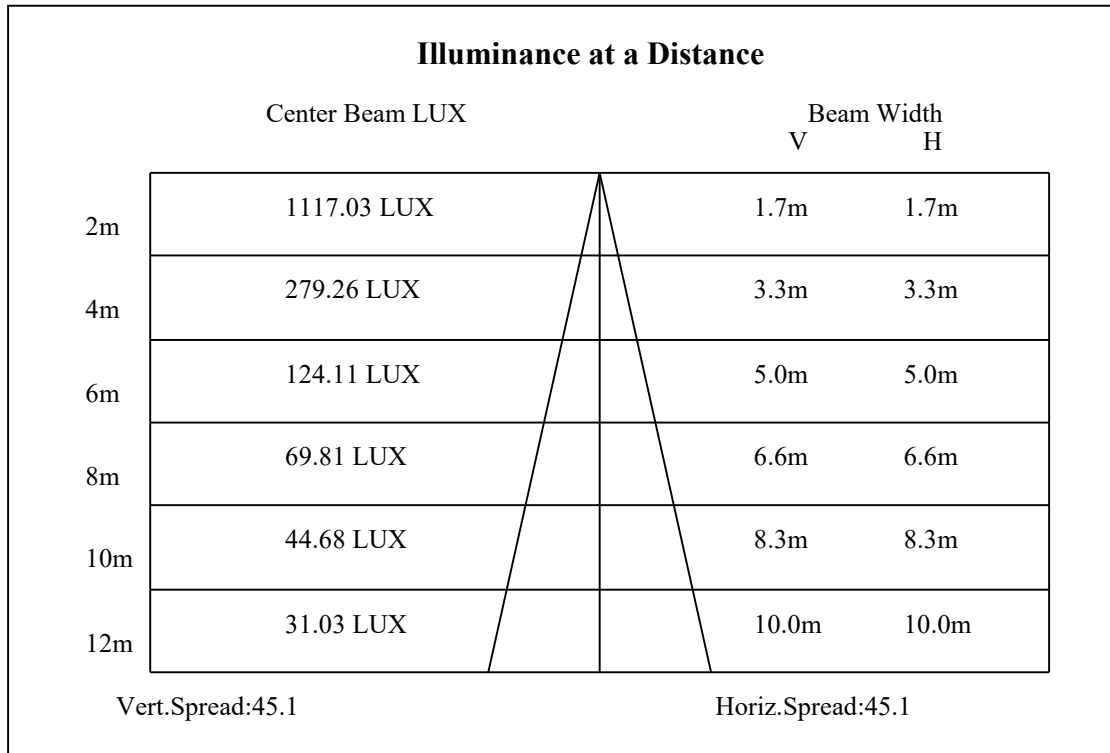
C90/C270: ———

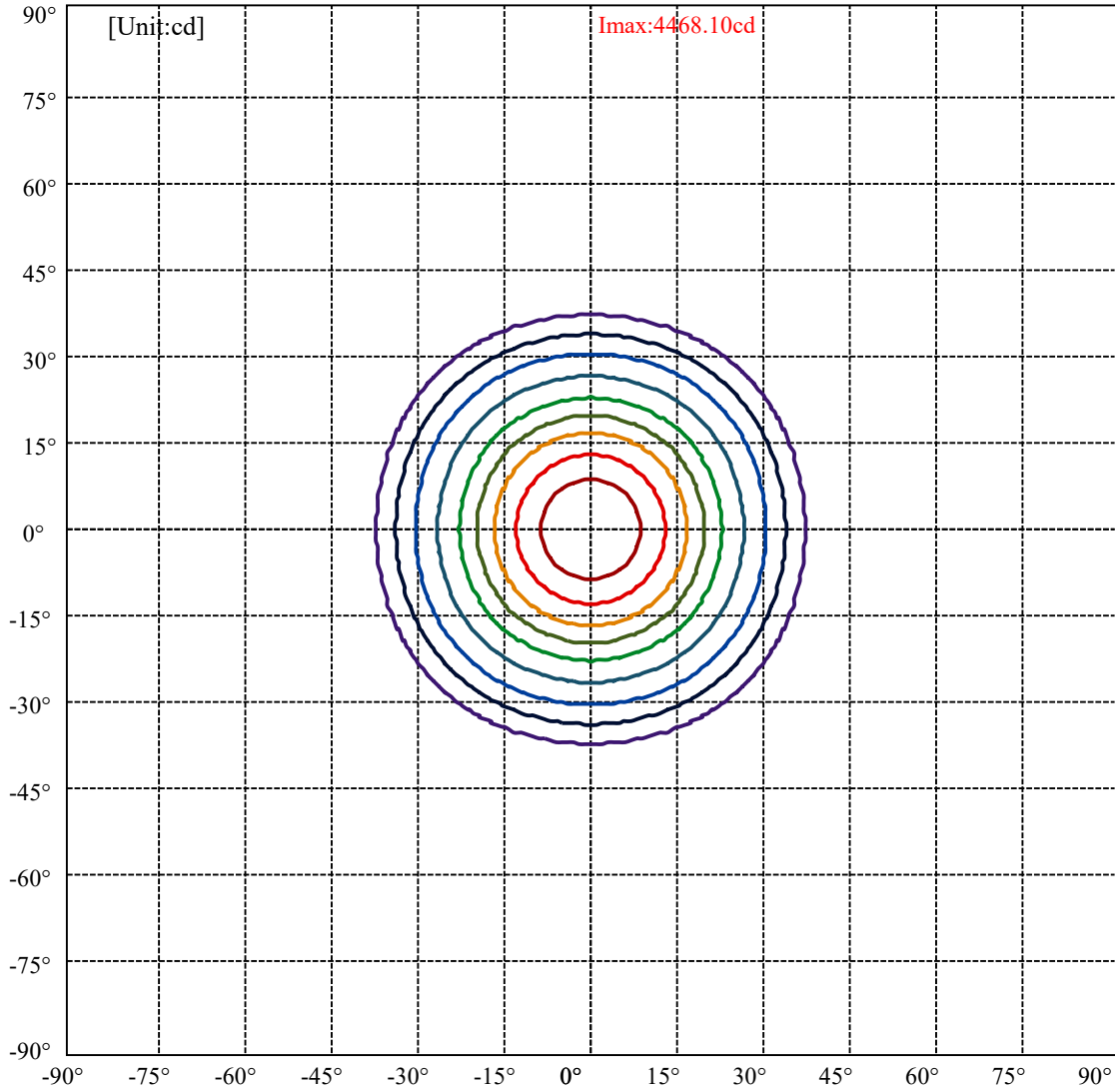
Field angle(10%Imax):C0/180Left:36.8 Right:36.8

:C90/270Left:36.8 Right:36.8

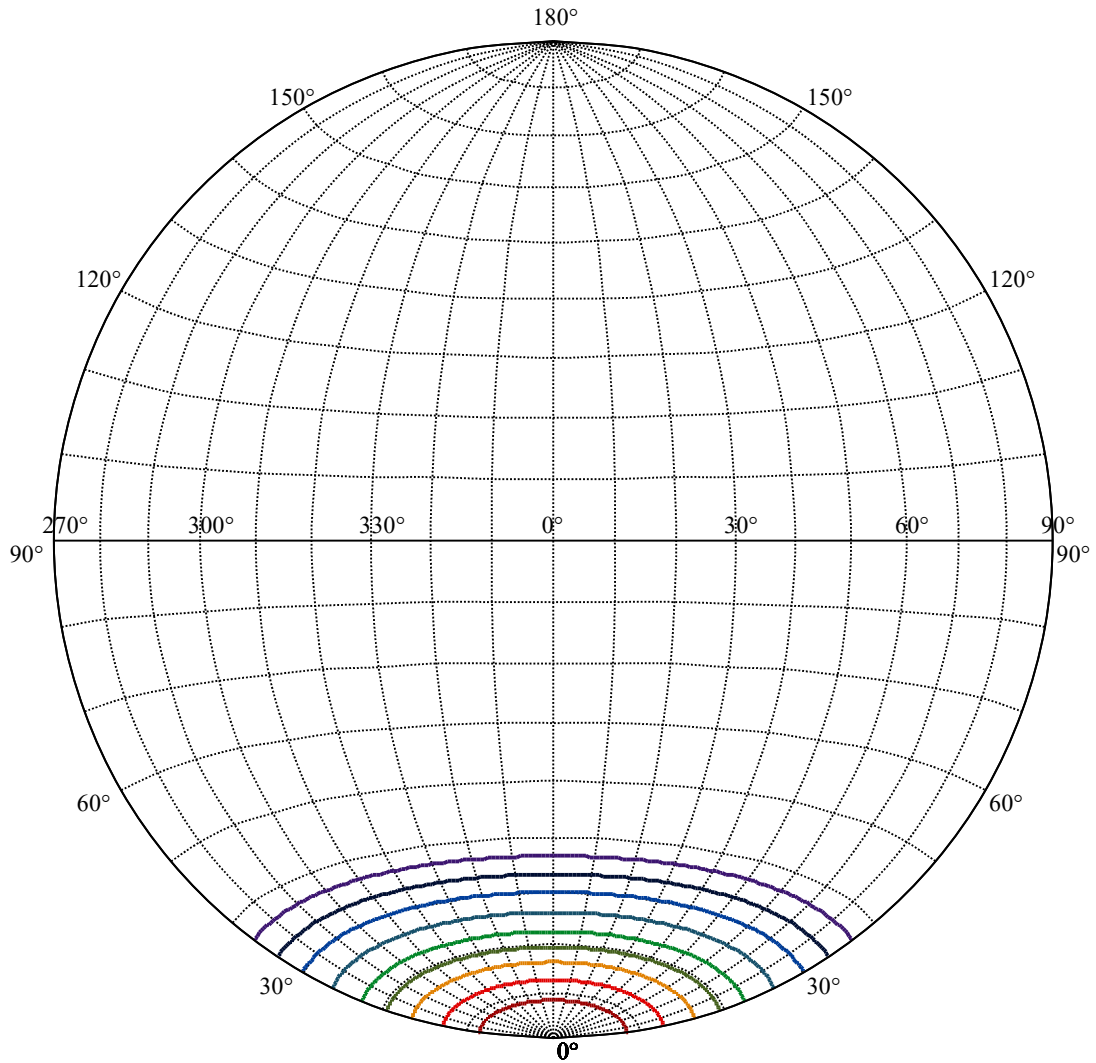
Beam Angle(50%Imax):C0/180Left:22.5 Right:22.5

:C90/270Left:22.5 Right:22.5





(10%Imax) 446.81	—
(20%Imax) 893.62	—
(30%Imax) 1340.43	—
(40%Imax) 1787.24	—
(50%Imax) 2234.05	—
(60%Imax) 2680.86	—
(70%Imax) 3127.67	—
(80%Imax) 3574.48	—
(90%Imax) 4021.29	—



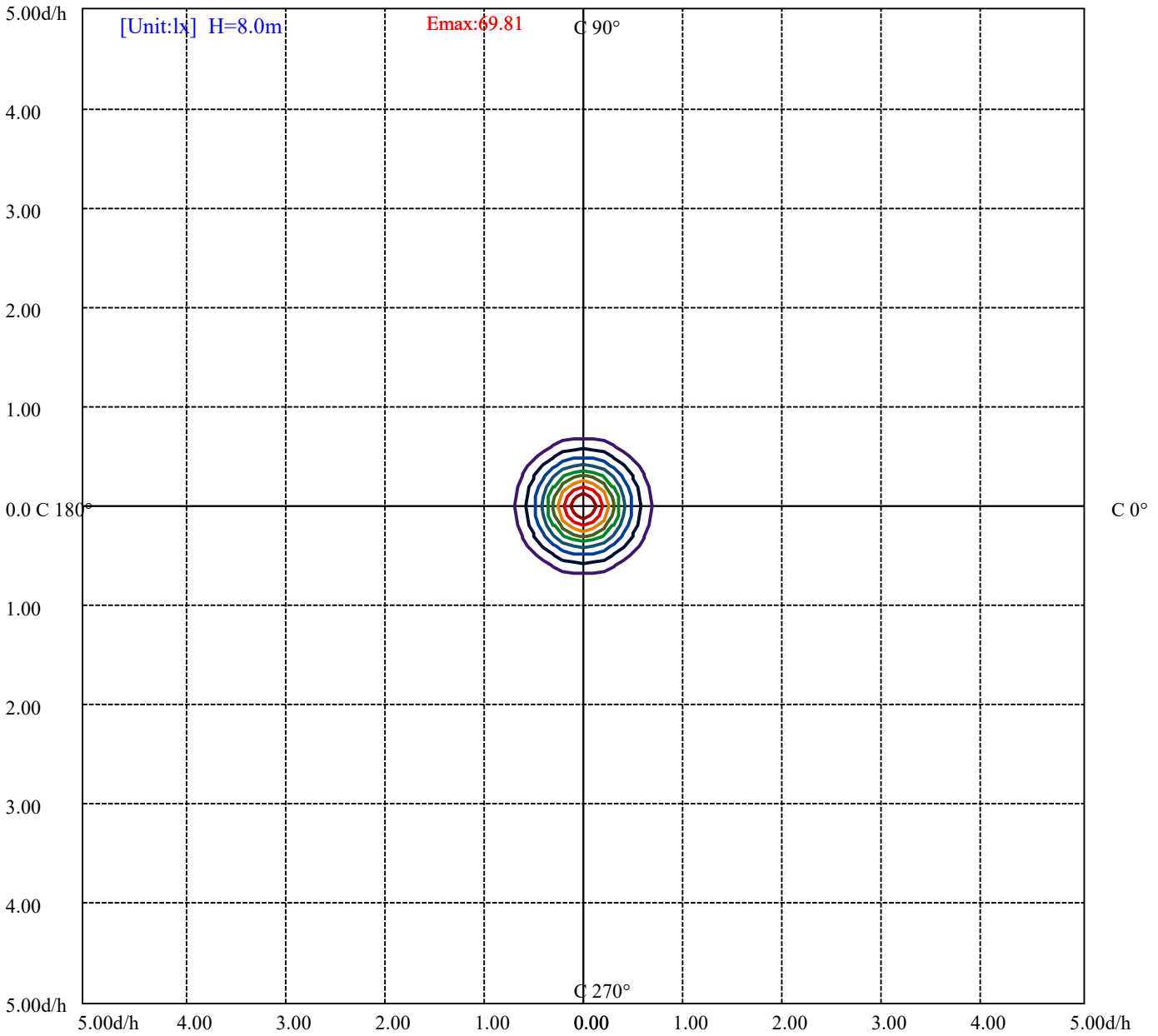
House

[Unit:cd]

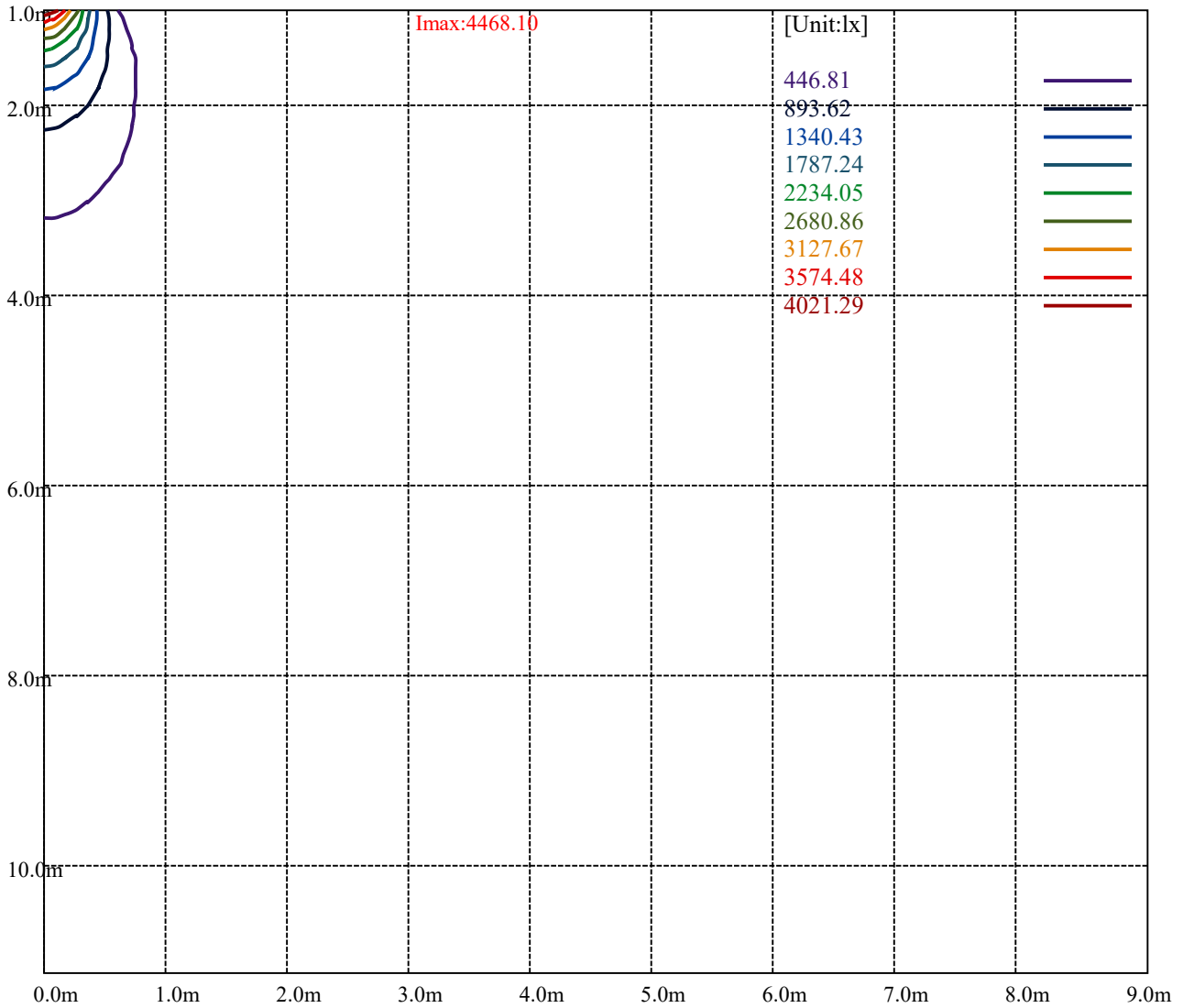
Road

Imax:4468.10

(10%Imax)	446.81	—
(20%Imax)	893.62	—
(30%Imax)	1340.43	—
(40%Imax)	1787.24	—
(50%Imax)	2234.05	—
(60%Imax)	2680.86	—
(70%Imax)	3127.67	—
(80%Imax)	3574.48	—
(90%Imax)	4021.29	—



- (10%Emax) 6.981406 ———
- (20%Emax) 13.96281 ———
- (30%Emax) 20.94422 ———
- (40%Emax) 27.92562 ———
- (50%Emax) 34.90703 ———
- (60%Emax) 41.88844 ———
- (70%Emax) 48.86984 ———
- (80%Emax) 55.85125 ———
- (90%Emax) 62.83266 ———



Luminance Table

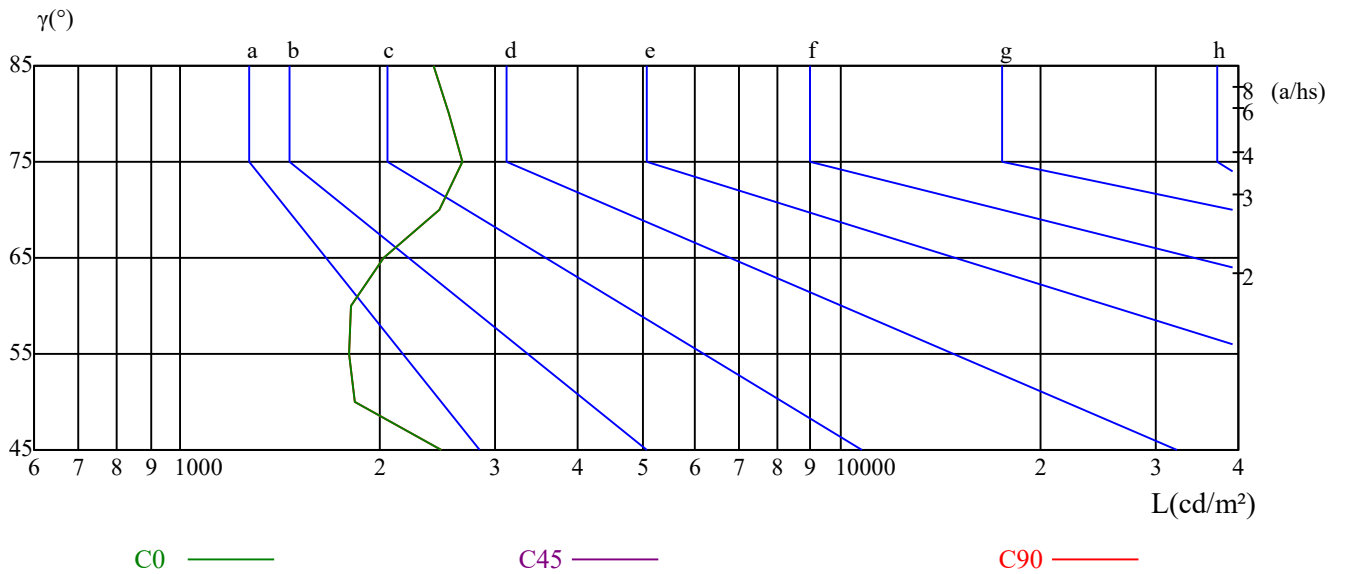
γ	45	50	55	60	65	70	75	80	85
C0	2490	1838	1796	1810	2025	2462	2671	2556	2424
C45	0	0	0	0	0	0	0	0	0
C90	2490	1838	1796	1810	2025	2462	2671	2556	2424

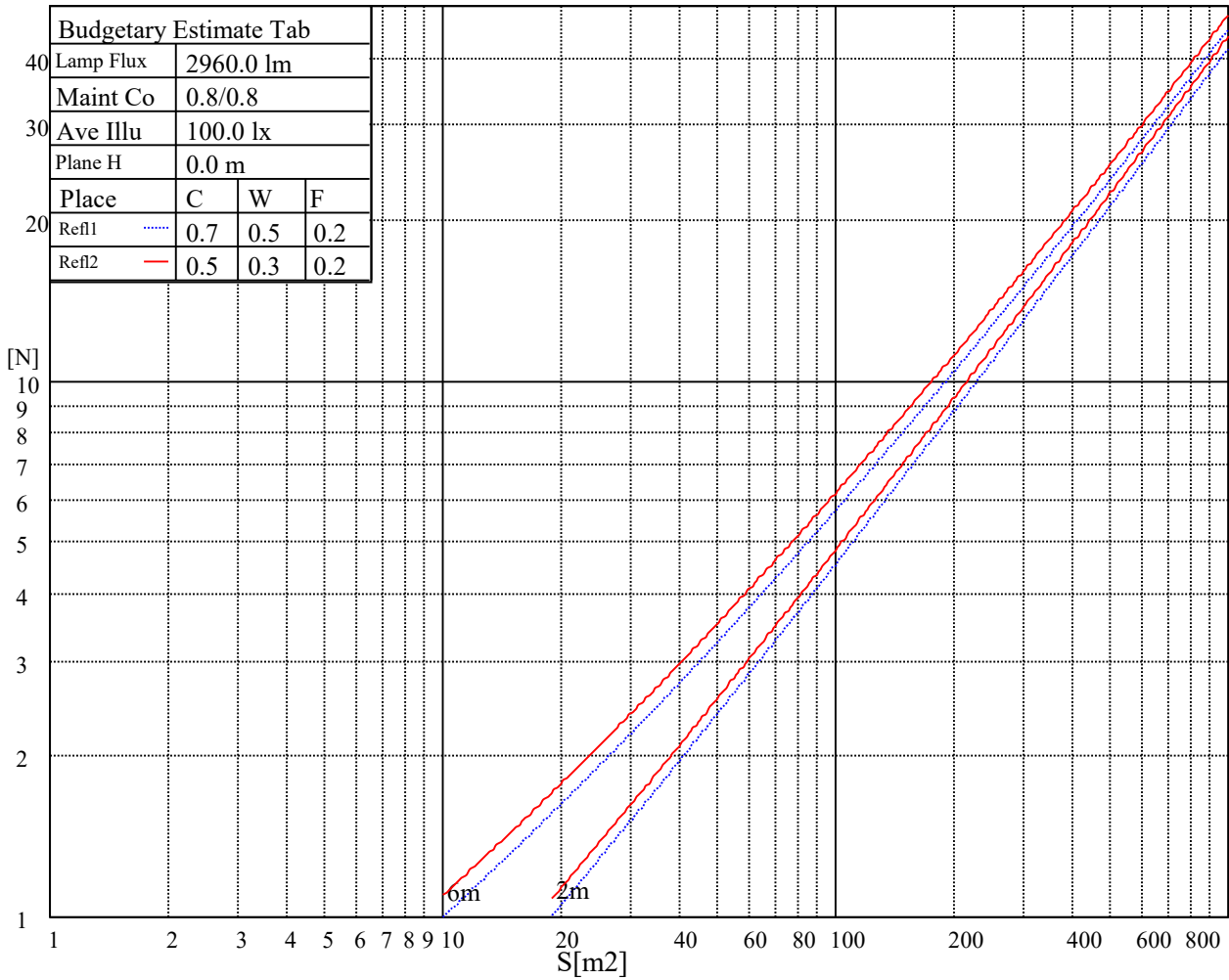
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4920	4920	0	9318	9318	0	20896	20896	0

Glare Table

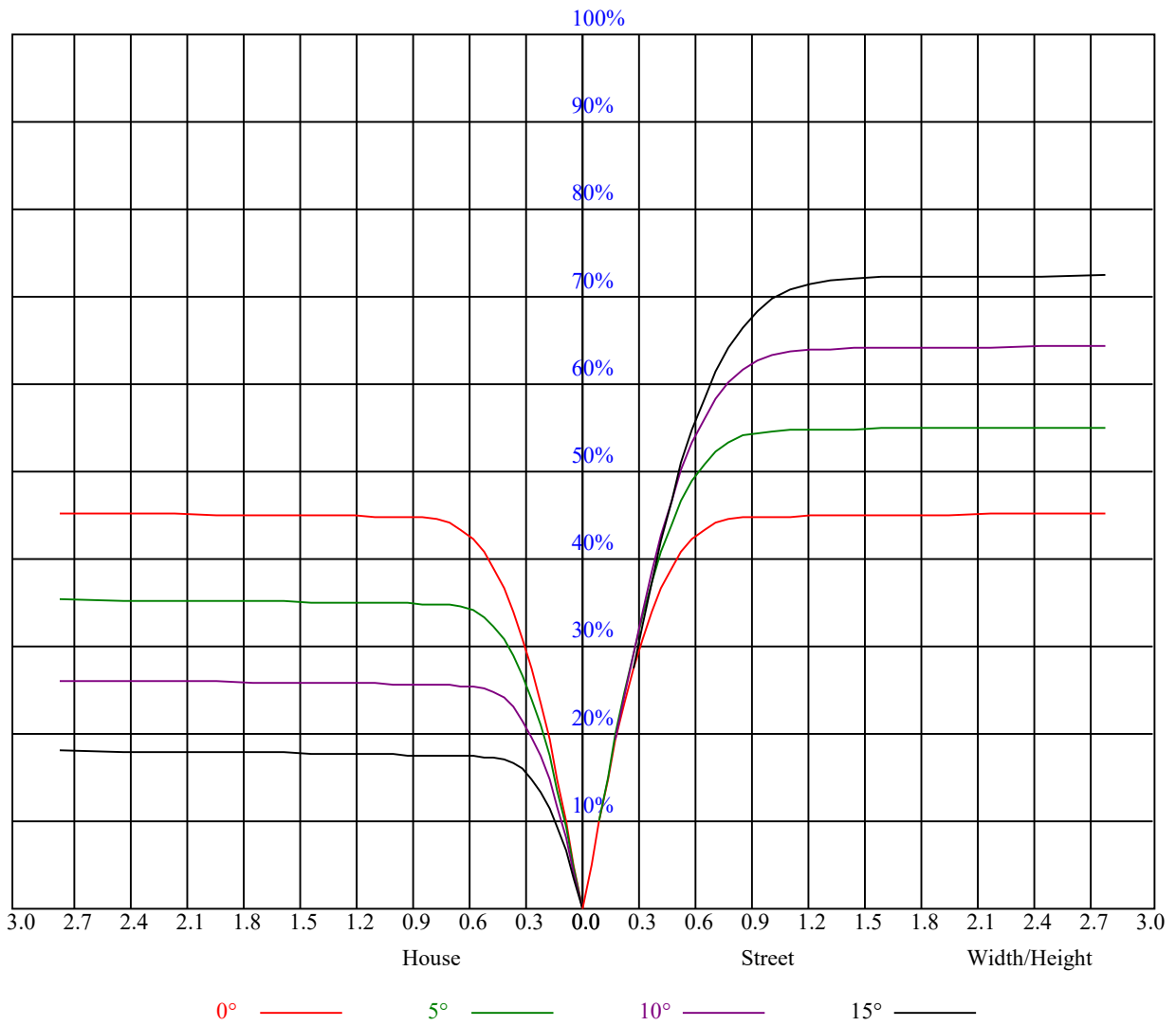
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

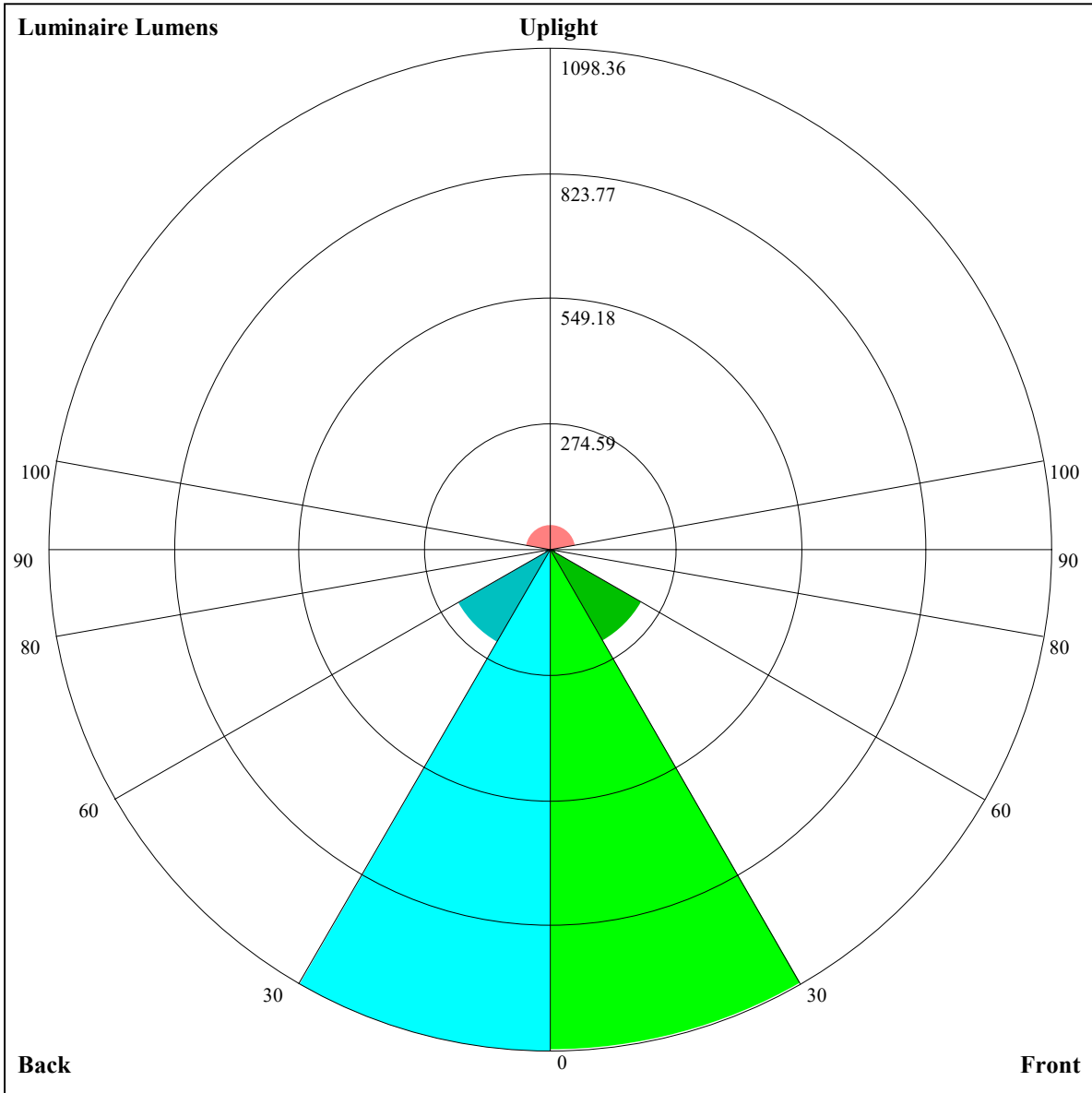
Luminance Limiting Curve





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	1.08	1.08	1.08	1.06	1.06	1.06	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.91
1	1.01	0.99	0.97	0.99	0.97	0.96	0.96	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86
2	0.95	0.91	0.89	0.93	0.90	0.88	0.90	0.88	0.86	0.88	0.86	0.84	0.85	0.84	0.82	0.81
3	0.89	0.85	0.82	0.88	0.84	0.81	0.86	0.83	0.80	0.84	0.81	0.79	0.82	0.79	0.77	0.76
4	0.84	0.80	0.76	0.83	0.79	0.76	0.81	0.78	0.75	0.80	0.77	0.74	0.78	0.75	0.73	0.72
5	0.80	0.75	0.71	0.79	0.74	0.71	0.77	0.74	0.71	0.76	0.73	0.70	0.75	0.72	0.69	0.68
6	0.76	0.71	0.67	0.75	0.70	0.67	0.74	0.70	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.65
7	0.72	0.67	0.64	0.71	0.67	0.63	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.62	0.61
8	0.68	0.64	0.60	0.68	0.63	0.60	0.67	0.63	0.60	0.66	0.62	0.60	0.65	0.62	0.59	0.58
9	0.65	0.60	0.57	0.65	0.60	0.57	0.64	0.60	0.57	0.63	0.59	0.57	0.63	0.59	0.57	0.55
10	0.62	0.58	0.54	0.62	0.57	0.54	0.61	0.57	0.54	0.61	0.57	0.54	0.60	0.56	0.54	0.53





Luminaire Lumens:

FL=1094.92,FM=232.56,FH=12.81,FVH=6.08

BL=1098.36,BM=233.16,BH=14.74,BVH=6.31

UL=11.64,UH=55.39

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	4469.48	4462.32	4439.75	4404.51	4349.46	4283.94	4217.32	4139.69	4069.22
90.0	4466.73	4480.49	4485.44	4477.74	4451.86	4401.76	4350.01	4280.08	4211.81
180.0	4469.48	4466.73	4452.41	4421.03	4379.74	4328.53	4261.37	4177.13	4091.24
270.0	4466.73	4441.95	4403.96	4337.89	4260.26	4186.49	4112.16	4011.96	3917.81
360.0	4469.48	4462.32	4439.75	4404.51	4349.46	4283.94	4217.32	4139.69	4069.22
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3971.22	3864.96	3766.96	3660.15	3524.16	3421.20	3312.74	3164.09	3035.81
90.0	4136.39	4049.95	3964.61	3869.91	3737.78	3633.72	3540.68	3393.68	3284.11
180.0	3989.39	3879.82	3785.13	3677.22	3577.01	3457.54	3333.67	3219.15	3091.97
270.0	3819.81	3696.49	3591.88	3481.77	3358.44	3237.32	3121.15	2976.35	2833.75
360.0	3971.22	3864.96	3766.96	3660.15	3524.16	3421.20	3312.74	3164.09	3035.81
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	2896.52	2734.65	2573.89	2434.59	2287.59	2152.71	2035.44	1913.21	1803.10
90.0	3178.96	3017.64	2854.67	2705.47	2546.91	2411.47	2286.49	2134.54	2020.57
180.0	2922.39	2774.29	2620.68	2433.49	2298.05	2175.28	2043.14	1921.47	1817.41
270.0	2667.48	2497.91	2354.76	2212.72	2079.48	1964.96	1859.25	1732.62	1631.87
360.0	2896.52	2734.65	2573.89	2434.59	2287.59	2152.71	2035.44	1913.21	1803.10
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	1683.07	1581.22	1474.41	1370.35	1218.40	1086.26	953.03	805.48	661.23
90.0	1901.10	1782.18	1678.67	1578.47	1454.59	1332.92	1202.43	1037.81	899.07
180.0	1707.85	1609.30	1501.39	1374.21	1247.03	1091.77	942.18	810.04	678.96
270.0	1532.77	1417.70	1283.36	1091.71	994.81	864.06	736.27	578.48	472.00
360.0	1683.07	1581.22	1474.41	1370.35	1218.40	1086.26	953.03	805.48	661.23
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	536.25	429.99	284.64	228.43	121.45	63.92	35.51	28.74	22.08
90.0	760.88	610.58	476.24	369.43	280.24	164.40	91.01	44.98	30.67
180.0	524.03	411.27	309.09	205.25	118.37	64.64	36.17	26.65	21.58
270.0	345.20	229.97	161.10	88.92	40.91	31.55	25.33	18.55	14.48
360.0	536.25	429.99	284.64	228.43	121.45	63.92	35.51	28.74	22.08
C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	15.91	13.82	13.38	13.10	12.83	12.66	12.50	12.33	12.22
90.0	24.28	18.66	14.26	13.76	13.32	13.05	12.88	12.72	12.55
180.0	17.29	14.87	14.48	14.20	13.49	13.21	13.10	12.99	12.94
270.0	13.93	13.54	13.27	13.05	12.83	12.66	12.50	12.39	12.28
360.0	15.91	13.82	13.38	13.10	12.83	12.66	12.50	12.33	12.22
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	12.11	12.00	11.89	11.84	11.78	11.73	11.67	11.56	11.51
90.0	12.39	12.28	12.22	12.11	12.06	11.95	11.89	11.84	11.73
180.0	12.77	12.66	12.55	12.44	12.39	12.28	12.22	12.06	12.00
270.0	12.17	12.00	11.95	11.84	11.78	11.73	11.67	11.56	11.56
360.0	12.11	12.00	11.89	11.84	11.78	11.73	11.67	11.56	11.51
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	11.40	11.34	11.34	11.34	11.34	11.34	11.34	11.29	11.23
90.0	11.67	11.56	11.56	11.51	11.51	11.95	12.33	12.61	12.55
180.0	11.89	11.84	13.32	15.42	16.57	17.84	19.38	19.32	18.88
270.0	11.89	13.16	14.37	14.81	14.87	14.92	14.81	14.81	14.76
360.0	11.40	11.34	11.34	11.34	11.34	11.34	11.34	11.29	11.23

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Intensity data(cd)

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	11.23	11.18	11.18	11.18	11.12	11.07	11.01	10.96	10.90
90.0	12.39	12.39	12.72	12.55	12.39	12.50	12.22	12.22	12.22
180.0	19.93	20.26	19.60	20.10	18.94	19.27	18.55	16.85	15.14
270.0	15.09	14.76	14.76	14.87	14.65	14.31	14.31	14.15	13.38
360.0	11.23	11.18	11.18	11.18	11.12	11.07	11.01	10.96	10.90
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	10.90	10.90	10.85	10.85	10.85	10.68	10.63	10.63	10.63
90.0	12.00	11.84	11.67	11.45	11.23	11.12	11.01	10.79	10.68
180.0	13.93	13.38	12.99	12.06	11.45	11.23	11.07	10.63	10.63
270.0	12.99	12.17	11.34	11.18	10.79	10.68	10.63	10.68	10.68
360.0	10.90	10.90	10.85	10.85	10.85	10.68	10.63	10.63	10.63
C/γ(°)	90.0								
0.0	10.68								
90.0	10.68								
180.0	10.63								
270.0	10.68								
360.0	10.68								