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## Nata

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LumCAT: 1-1009-M	
Luminaire: BJB 47.360.1020	
Report No: 210714-B012	Voltage(V): 39.2300
Test No: 210714-C012	Current(A): 0.2310
LampCAT: Fortimo LED SLM 1201 G7N	Power (W): 9.0620
Lamp flux(lm): 1093.7	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 570	Width(mm): 45
Phm Type: C	Height(mm): 20

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## Photometric Results

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Lumens(lm): 817.67  
Efficiency(%): 74.77%  
Lumens(lm)/Power(W): 90.23  
Central intensity(cd): 4015.688  
Maximum intensity(cd): 4015.688  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=25.9  
                                  [C90/270]Total=25.9  
Field angle(10%Imax): [C0/180]Total=42.6  
                                  [C90/270]Total=42.6  
Maximum s/h(1/2): C0\_180=0.44 C90\_270=0.44  
Maximum s/h(1/4): C0\_180=0.42 C90\_270=0.42  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 74.77%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 98.543%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4015.688	0.000	0	.000%	.000%
1.0	4000.219	3.835	3.835	.351%	.469%
2.0	3948.328	11.409	15.244	1.043%	1.864%
3.0	3868.453	18.695	33.939	1.709%	4.151%
4.0	3767.484	25.560	59.499	2.337%	7.277%
5.0	3639.164	31.863	91.362	2.913%	11.173%
6.0	3496.078	37.498	128.86	3.429%	15.759%
7.0	3333.445	42.391	171.25	3.876%	20.944%
8.0	3152.953	46.422	217.672	4.245%	26.621%
9.0	2956.781	49.516	267.188	4.528%	32.677%
10.0	2727.844	51.444	318.632	4.704%	38.968%
11.0	2487.656	52.114	370.746	4.765%	45.342%
12.0	2255.273	51.847	422.593	4.741%	51.683%
13.0	1994.133	50.430	473.023	4.611%	57.850%
14.0	1731.867	47.692	520.715	4.361%	63.683%
15.0	1517.991	44.615	565.33	4.080%	69.139%
16.0	1293.377	41.194	606.525	3.767%	74.177%
17.0	1074.818	36.879	643.404	3.372%	78.688%
18.0	885.502	32.321	675.725	2.955%	82.641%
19.0	728.311	28.077	703.803	2.567%	86.074%
20.0	571.134	23.783	727.586	2.175%	88.983%
21.0	431.930	19.261	746.847	1.761%	91.339%
22.0	324.598	15.203	762.05	1.390%	93.198%
23.0	219.199	11.410	773.46	1.043%	94.593%
24.0	126.661	7.562	781.022	.691%	95.518%
25.0	78.272	4.660	785.681	.426%	96.088%
26.0	42.968	2.862	788.543	.262%	96.438%
27.0	23.991	1.638	790.181	.150%	96.638%
28.0	16.988	1.037	791.219	.095%	96.765%
29.0	13.901	0.808	792.027	.074%	96.864%
30.0	12.045	0.701	792.728	.064%	96.950%
31.0	10.835	0.637	793.364	.058%	97.028%
32.0	9.816	0.592	793.956	.054%	97.100%
33.0	9.035	0.555	794.511	.051%	97.168%
34.0	8.445	0.529	795.04	.048%	97.233%
35.0	7.833	0.506	795.546	.046%	97.294%
36.0	7.348	0.483	796.029	.044%	97.354%
37.0	6.989	0.468	796.497	.043%	97.411%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	6.645	0.455	796.952	.042%	97.466%
39.0	6.321	0.443	797.394	.040%	97.520%
40.0	6.068	0.432	797.826	.040%	97.573%
41.0	5.843	0.424	798.25	.039%	97.625%
42.0	5.625	0.417	798.667	.038%	97.676%
43.0	5.442	0.410	799.077	.037%	97.726%
44.0	5.302	0.405	799.483	.037%	97.776%
45.0	5.154	0.402	799.884	.037%	97.825%
46.0	5.027	0.398	800.283	.036%	97.874%
47.0	4.908	0.395	800.678	.036%	97.922%
48.0	4.823	0.393	801.071	.036%	97.970%
49.0	4.725	0.392	801.463	.036%	98.018%
50.0	4.655	0.391	801.854	.036%	98.066%
51.0	4.570	0.390	802.245	.036%	98.114%
52.0	4.507	0.390	802.634	.036%	98.161%
53.0	4.451	0.390	803.024	.036%	98.209%
54.0	4.380	0.389	803.413	.036%	98.257%
55.0	4.331	0.389	803.802	.036%	98.304%
56.0	4.282	0.389	804.191	.036%	98.352%
57.0	4.233	0.389	804.58	.036%	98.399%
58.0	4.184	0.389	804.97	.036%	98.447%
59.0	4.170	0.391	805.36	.036%	98.495%
60.0	4.120	0.392	805.752	.036%	98.543%
61.0	4.085	0.392	806.143	.036%	98.590%
62.0	4.050	0.392	806.535	.036%	98.638%
63.0	4.036	0.393	806.929	.036%	98.687%
64.0	3.994	0.394	807.323	.036%	98.735%
65.0	3.973	0.394	807.717	.036%	98.783%
66.0	3.952	0.395	808.112	.036%	98.831%
67.0	3.938	0.397	808.509	.036%	98.880%
68.0	3.909	0.397	808.906	.036%	98.928%
69.0	3.888	0.398	809.304	.036%	98.977%
70.0	3.874	0.399	809.703	.036%	99.026%
71.0	3.860	0.400	810.103	.037%	99.075%
72.0	3.832	0.400	810.503	.037%	99.124%
73.0	3.825	0.400	810.903	.037%	99.173%
74.0	3.804	0.401	811.304	.037%	99.222%
75.0	3.776	0.400	811.705	.037%	99.271%

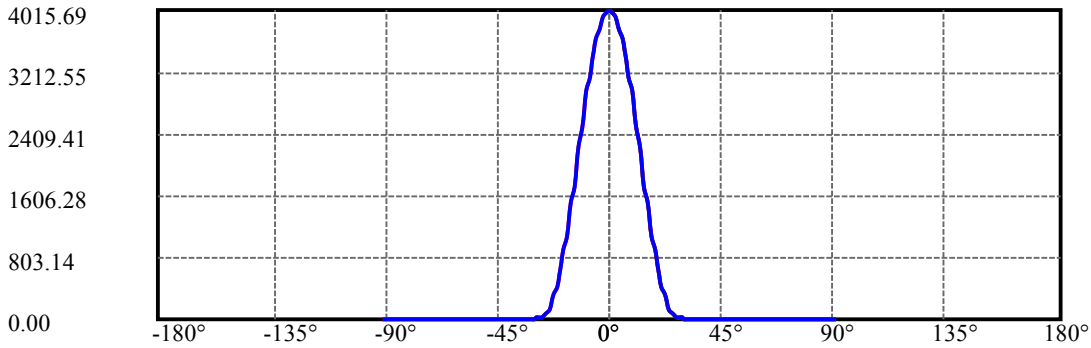
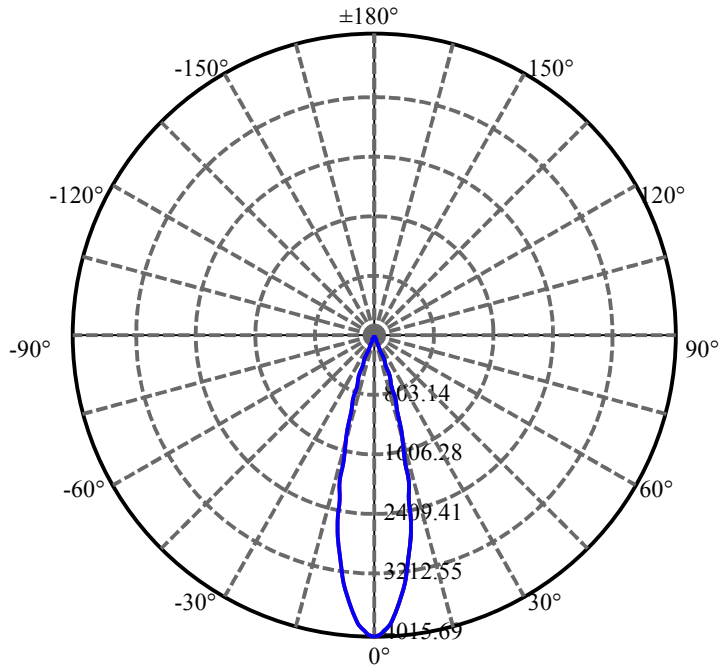
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	3.755	0.400	812.104	.037%	99.319%
77.0	3.755	0.400	812.505	.037%	99.368%
78.0	3.727	0.400	812.905	.037%	99.417%
79.0	3.713	0.400	813.305	.037%	99.466%
80.0	3.684	0.399	813.704	.036%	99.515%
81.0	3.670	0.398	814.101	.036%	99.564%
82.0	3.670	0.398	814.499	.036%	99.612%
83.0	3.649	0.398	814.897	.036%	99.661%
84.0	3.635	0.397	815.294	.036%	99.710%
85.0	3.621	0.396	815.69	.036%	99.758%
86.0	3.614	0.395	816.086	.036%	99.806%
87.0	3.614	0.396	816.481	.036%	99.855%
88.0	3.614	0.396	816.877	.036%	99.903%
89.0	3.607	0.396	817.273	.036%	99.952%
90.0	3.607	0.396	817.669	.036%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	792.73	72.48%	96.95%
0-40	797.83	72.95%	97.57%
0-60	805.75	73.68%	98.54%
0-90	817.27	74.73%	99.95%
0-120	817.27	74.73%	99.95%
0-180	817.67	74.77%	100.00%
60-90	11.91	1.09%	1.46%
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%
0-17.33	654.13	59.81%	80.00%

ZONAL LUMEN SUMMARY

0-10	318.63
10-20	408.95
20-30	65.14
30-40	5.10
40-50	4.03
50-60	3.90
60-70	3.95
70-80	4.00
80-90	3.57
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: —————

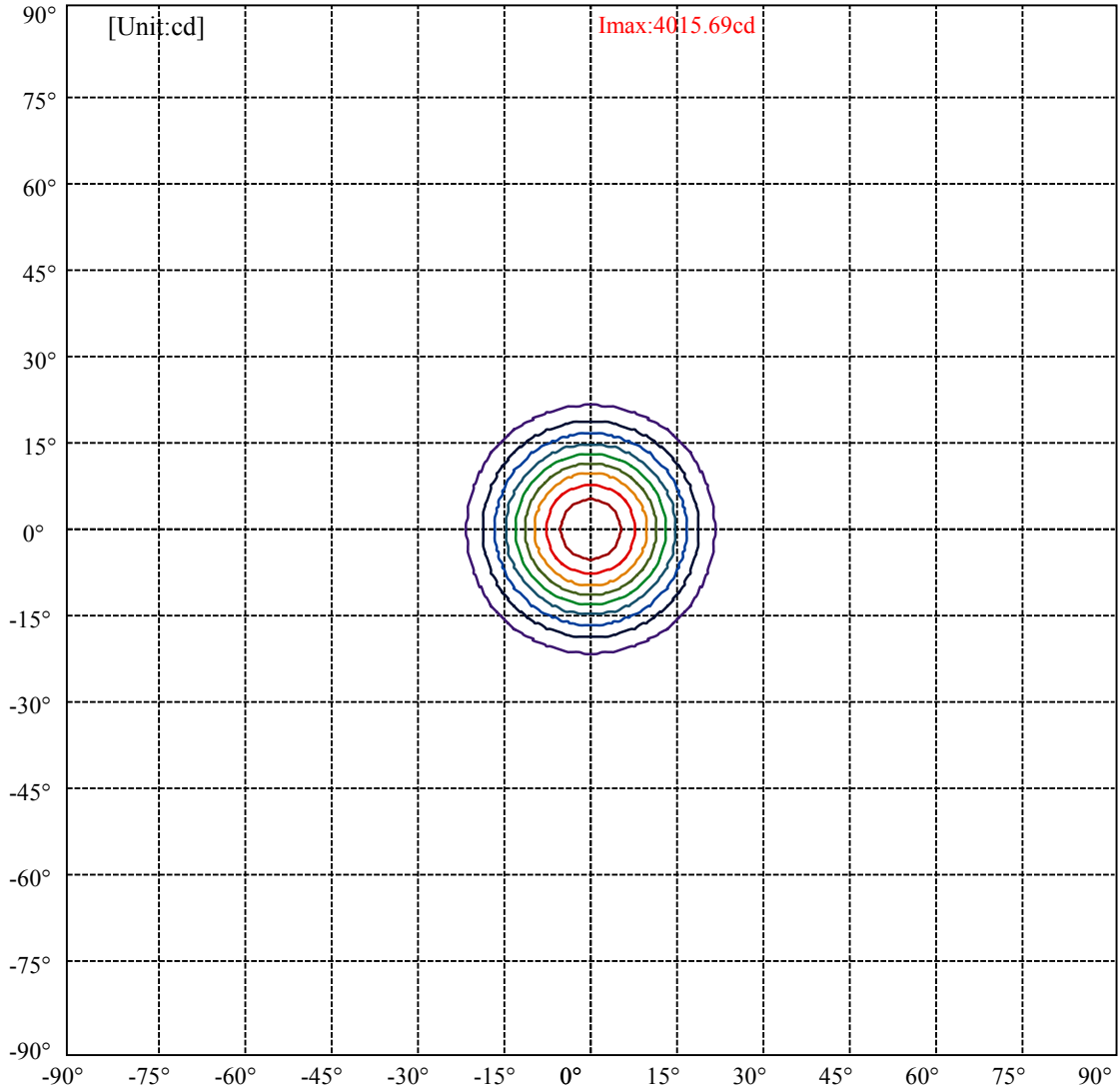
Field angle(10%Imax):C0/180Left:21.3 Right:21.3

:C90/270Left:21.3 Right:21.3

Beam Angle(50%Imax):C0/180Left:12.9 Right:12.9

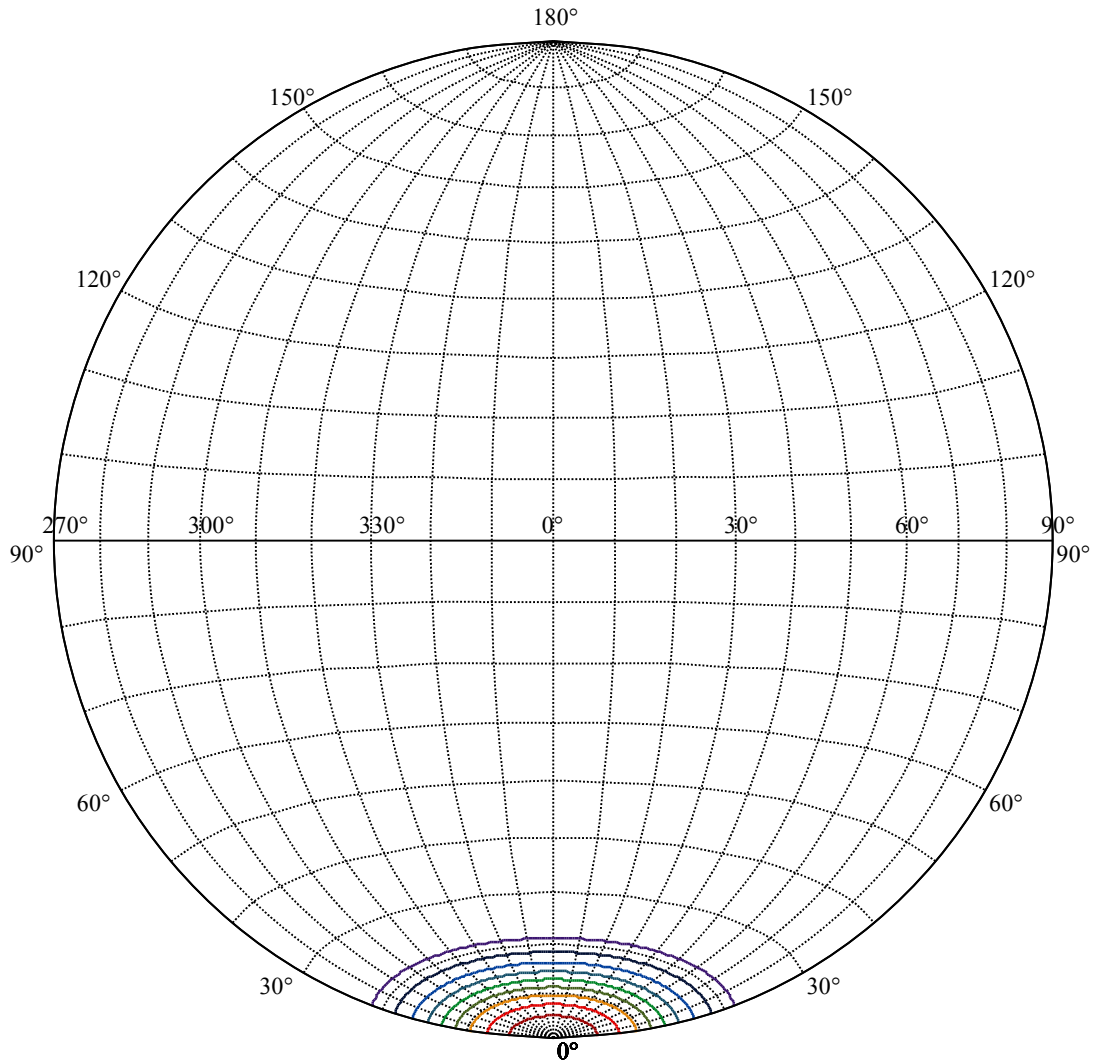
:C90/270Left:12.9 Right:12.9





(10%Imax) 401.569	—
(20%Imax) 803.138	—
(30%Imax) 1204.71	—
(40%Imax) 1606.28	—
(50%Imax) 2007.84	—
(60%Imax) 2409.41	—
(70%Imax) 2810.98	—
(80%Imax) 3212.55	—
(90%Imax) 3614.12	—





House

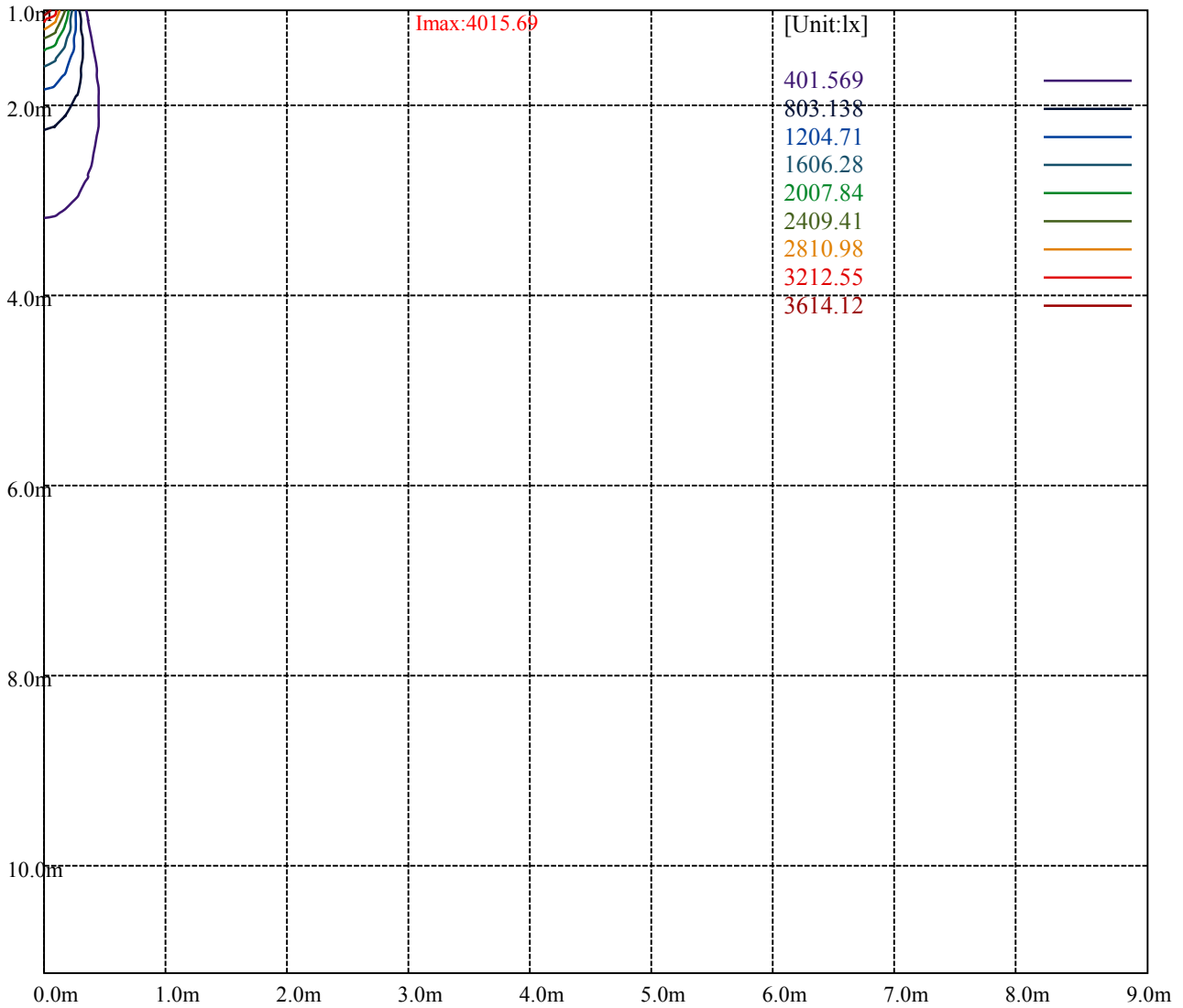
[Unit:cd]

Road

**Imax:4015.69**

(10%Imax) 401.569	—
(20%Imax) 803.138	—
(30%Imax) 1204.71	—
(40%Imax) 1606.28	—
(50%Imax) 2007.84	—
(60%Imax) 2409.41	—
(70%Imax) 2810.98	—
(80%Imax) 3212.55	—
(90%Imax) 3614.12	—





Luminance Table

$\gamma$	45	50	55	60	65	70	75	80	85
C0	197	185	180	182	188	199	214	235	266
C45	212	201	198	202	212	229	251	283	332
C90	275	271	280	303	341	403	503	690	1156

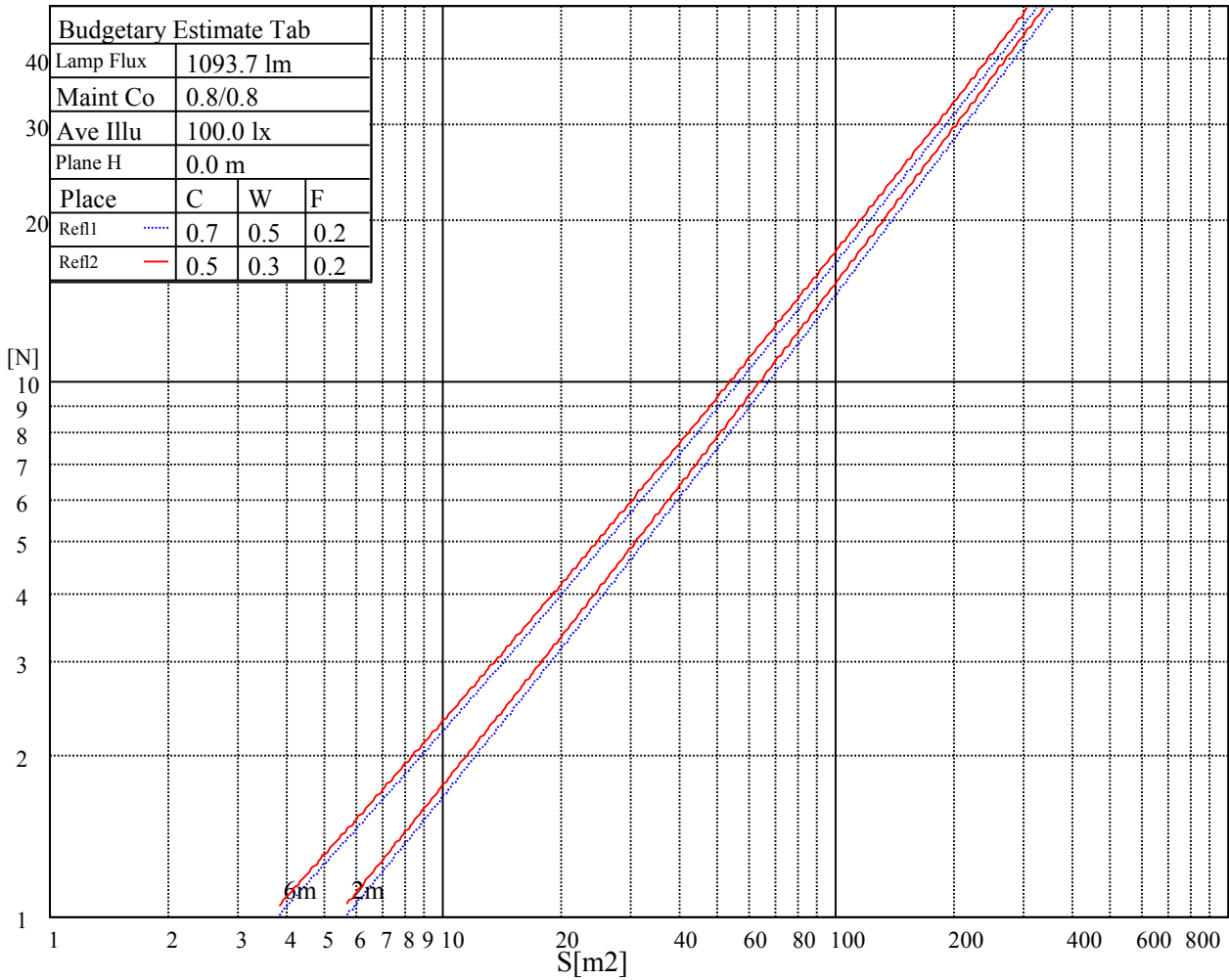
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
366	366	366	569	569	569	1620	1620	1620

Glare Table

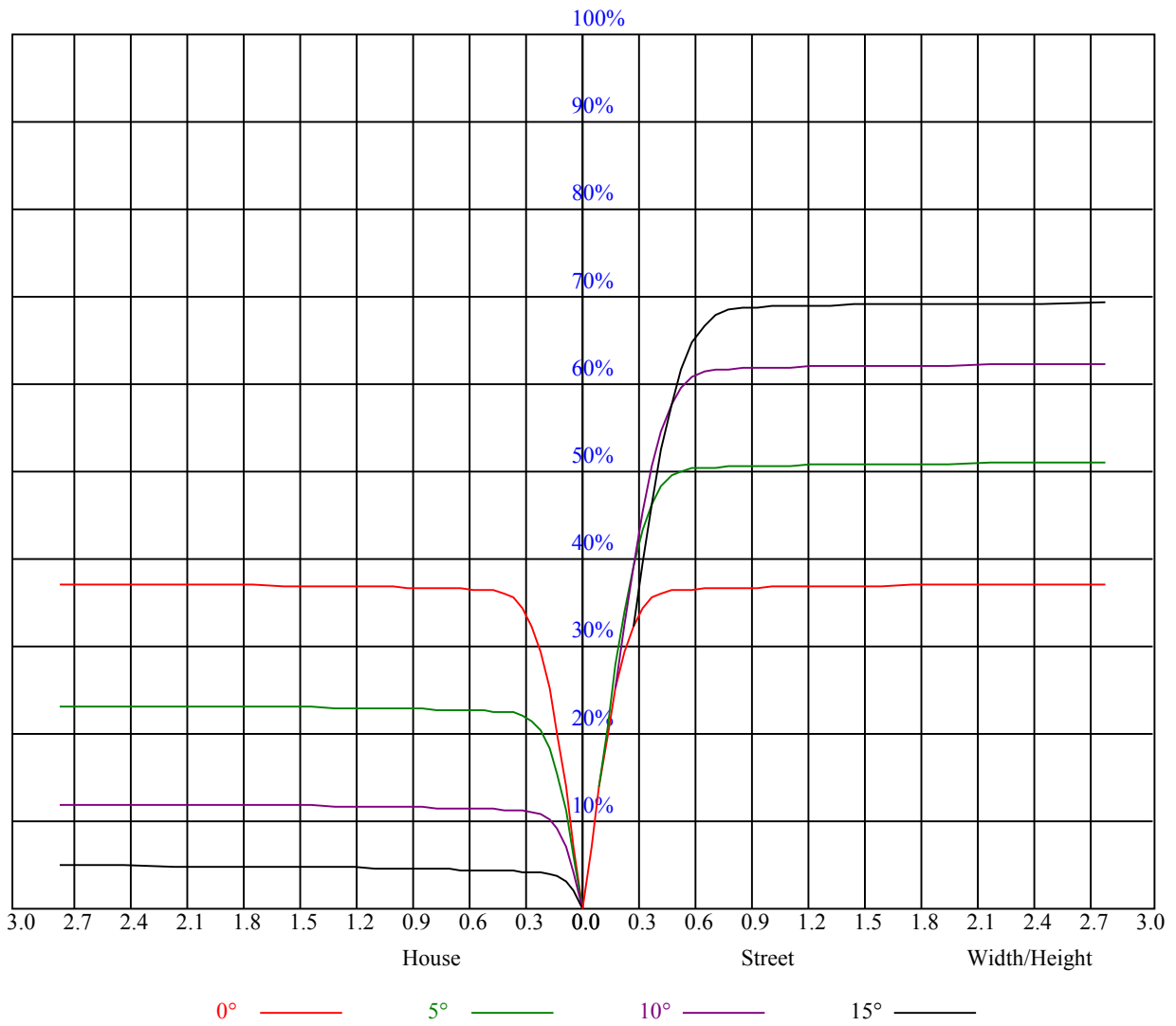
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	0.89	0.89	0.89	0.87	0.87	0.87	0.83	0.83	0.83	0.80	0.80	0.80	0.76	0.76	0.76	0.75
1	0.84	0.83	0.82	0.83	0.81	0.80	0.80	0.79	0.78	0.77	0.76	0.76	0.75	0.74	0.73	0.72
2	0.81	0.78	0.76	0.79	0.77	0.76	0.77	0.75	0.74	0.75	0.74	0.72	0.73	0.72	0.71	0.70
3	0.77	0.75	0.73	0.76	0.74	0.72	0.75	0.73	0.71	0.73	0.71	0.70	0.71	0.70	0.69	0.68
4	0.75	0.72	0.70	0.74	0.71	0.69	0.72	0.70	0.68	0.71	0.69	0.68	0.70	0.68	0.67	0.66
5	0.72	0.69	0.67	0.72	0.69	0.67	0.70	0.68	0.66	0.69	0.67	0.66	0.68	0.67	0.65	0.64
6	0.70	0.67	0.65	0.70	0.67	0.65	0.69	0.66	0.64	0.68	0.66	0.64	0.67	0.65	0.64	0.63
7	0.68	0.65	0.63	0.68	0.65	0.63	0.67	0.64	0.63	0.66	0.64	0.62	0.65	0.63	0.62	0.61
8	0.66	0.63	0.61	0.66	0.63	0.61	0.65	0.63	0.61	0.65	0.62	0.61	0.64	0.62	0.61	0.60
9	0.65	0.62	0.60	0.64	0.62	0.60	0.64	0.61	0.60	0.63	0.61	0.59	0.63	0.61	0.59	0.59
10	0.63	0.60	0.58	0.63	0.60	0.58	0.62	0.60	0.58	0.62	0.60	0.58	0.61	0.59	0.58	0.57



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	4021.31	4039.31	4007.81	3936.94	3837.94	3699.00	3568.50	3427.31	3264.75
45.0	4022.44	3963.94	3866.63	3754.13	3614.63	3447.00	3274.88	3066.75	2878.31
90.0	3992.63	3907.69	3813.19	3680.44	3522.38	3372.75	3194.44	2976.75	2765.81
135.0	4026.38	3974.63	3890.25	3799.69	3688.88	3543.75	3377.25	3213.56	3008.25
180.0	4021.31	3979.13	3895.88	3809.81	3709.69	3558.38	3440.25	3263.06	3039.75
225.0	4022.44	4048.88	4033.13	3983.06	3920.06	3833.44	3720.94	3584.25	3443.06
270.0	3992.63	4041.00	4057.88	4031.44	3971.81	3891.94	3762.56	3648.94	3515.06
315.0	4026.38	4047.19	4021.88	3952.13	3874.50	3767.06	3629.81	3486.94	3308.63
360.0	4021.31	4039.31	4007.81	3936.94	3837.94	3699.00	3568.50	3427.31	3264.75
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3066.19	2855.81	2606.06	2369.25	2102.06	1839.94	1613.81	1368.00	1134.56
45.0	2644.88	2380.50	2139.19	1905.75	1618.88	1400.63	1195.31	986.63	800.44
90.0	2543.06	2251.69	2017.13	1787.06	1509.75	1230.19	1100.36	928.58	723.94
135.0	2785.50	2562.19	2298.94	2064.38	1800.56	1550.25	1341.56	1146.38	923.06
180.0	2870.44	2624.06	2340.00	2139.75	1908.56	1597.50	1415.81	1110.88	1016.89
225.0	3265.88	3058.31	2853.56	2612.25	2376.56	2109.38	1847.25	1623.38	1406.25
270.0	3341.81	3174.19	2972.25	2725.88	2468.81	2226.94	1959.19	1731.38	1479.94
315.0	3136.50	2916.00	2674.13	2437.88	2167.88	1900.13	1670.63	1451.81	1113.47
360.0	3066.19	2855.81	2606.06	2369.25	2102.06	1839.94	1613.81	1368.00	1134.56
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	946.13	780.19	593.44	459.56	343.69	289.69	129.60	67.16	33.30
45.0	641.81	484.88	353.25	294.19	152.33	75.99	34.20	20.64	15.24
90.0	587.14	441.06	319.22	190.69	122.12	55.80	25.76	17.38	14.01
135.0	759.38	617.06	451.13	333.00	293.63	133.59	58.11	28.86	17.55
180.0	810.84	653.96	524.36	358.43	259.82	157.33	91.46	38.70	21.66
225.0	1101.04	968.06	811.46	625.78	490.50	369.28	235.86	147.15	86.57
270.0	1240.88	1048.50	861.19	688.50	552.38	417.38	285.75	217.80	113.23
315.0	996.81	832.78	655.03	505.29	382.33	254.53	152.55	88.48	42.19
360.0	946.13	780.19	593.44	459.56	343.69	289.69	129.60	67.16	33.30
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	20.48	16.59	14.06	12.60	11.31	10.24	9.45	8.78	8.10
45.0	12.99	11.81	10.46	9.62	8.94	8.21	7.76	7.31	6.92
90.0	12.32	11.03	10.07	9.34	8.66	8.04	7.59	7.26	6.81
135.0	14.57	12.60	11.36	10.29	9.45	8.83	8.21	7.76	7.31
180.0	15.98	13.67	11.93	10.69	9.79	9.00	8.33	7.88	7.37
225.0	39.43	23.91	17.78	14.40	12.94	11.42	10.29	9.45	8.66
270.0	50.96	27.62	20.31	16.09	13.67	12.15	10.86	10.01	9.17
315.0	25.20	18.68	15.24	13.33	11.93	10.63	9.79	9.11	8.33
360.0	20.48	16.59	14.06	12.60	11.31	10.24	9.45	8.78	8.10
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	7.59	7.20	6.81	6.47	6.19	5.96	5.74	5.51	5.40
45.0	6.64	6.36	6.08	5.85	5.68	5.46	5.34	5.23	5.06
90.0	6.53	6.30	6.08	5.91	5.68	5.51	5.34	5.23	5.12
135.0	6.92	6.64	6.36	6.13	5.91	5.74	5.51	5.34	5.23
180.0	6.92	6.64	6.36	6.08	5.85	5.68	5.46	5.29	5.18
225.0	7.93	7.48	7.09	6.64	6.30	6.08	5.79	5.57	5.40
270.0	8.44	7.93	7.43	6.92	6.64	6.30	6.02	5.79	5.63
315.0	7.82	7.37	6.98	6.58	6.30	6.02	5.79	5.57	5.40
360.0	7.59	7.20	6.81	6.47	6.19	5.96	5.74	5.51	5.40



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	5.23	5.06	4.95	4.89	4.78	4.73	4.61	4.56	4.50
45.0	4.95	4.89	4.78	4.67	4.67	4.56	4.50	4.44	4.39
90.0	5.01	4.95	4.84	4.78	4.67	4.67	4.61	4.56	4.50
135.0	5.12	4.95	4.89	4.78	4.73	4.67	4.56	4.50	4.44
180.0	5.01	4.89	4.78	4.73	4.61	4.56	4.44	4.39	4.39
225.0	5.23	5.06	4.95	4.84	4.67	4.61	4.56	4.44	4.39
270.0	5.46	5.29	5.12	5.01	4.89	4.78	4.67	4.61	4.56
315.0	5.23	5.12	4.95	4.89	4.78	4.67	4.61	4.56	4.44
360.0	5.23	5.06	4.95	4.89	4.78	4.73	4.61	4.56	4.50
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	4.44	4.39	4.33	4.28	4.22	4.22	4.16	4.16	4.11
45.0	4.33	4.28	4.22	4.22	4.16	4.16	4.11	4.11	4.05
90.0	4.44	4.39	4.39	4.33	4.28	4.28	4.22	4.16	4.16
135.0	4.39	4.33	4.28	4.22	4.16	4.16	4.11	4.11	4.05
180.0	4.33	4.28	4.22	4.16	4.11	4.11	4.05	3.99	3.99
225.0	4.28	4.28	4.22	4.16	4.11	4.11	4.05	3.99	3.99
270.0	4.44	4.39	4.33	4.28	4.28	4.22	4.16	4.11	4.05
315.0	4.39	4.33	4.28	4.22	4.16	4.11	4.11	4.05	3.99
360.0	4.44	4.39	4.33	4.28	4.22	4.22	4.16	4.16	4.11
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	4.05	3.99	3.99	3.99	3.94	3.94	3.88	3.88	3.83
45.0	4.05	3.99	3.99	3.94	3.99	3.94	3.94	3.94	3.94
90.0	4.11	4.11	4.05	4.05	4.05	3.99	3.94	3.94	3.94
135.0	4.05	3.99	3.99	3.94	3.94	3.94	3.88	3.88	3.83
180.0	3.99	3.94	3.94	3.88	3.88	3.83	3.83	3.83	3.83
225.0	3.99	3.94	3.88	3.88	3.83	3.88	3.88	3.83	3.83
270.0	4.05	4.05	3.99	3.99	3.99	3.88	3.94	3.88	3.88
315.0	3.99	3.94	3.94	3.94	3.88	3.88	3.83	3.83	3.83
360.0	4.05	3.99	3.99	3.99	3.94	3.94	3.88	3.88	3.83
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	3.88	3.88	3.83	3.77	3.77	3.77	3.77	3.77	3.71
45.0	3.88	3.88	3.88	3.83	3.77	3.77	3.71	3.66	3.60
90.0	3.88	3.88	3.88	3.83	3.77	3.83	3.71	3.71	3.66
135.0	3.83	3.83	3.77	3.77	3.77	3.77	3.71	3.71	3.71
180.0	3.77	3.77	3.77	3.71	3.71	3.71	3.71	3.71	3.71
225.0	3.77	3.77	3.71	3.77	3.77	3.71	3.71	3.66	3.66
270.0	3.88	3.83	3.83	3.77	3.77	3.77	3.77	3.77	3.71
315.0	3.77	3.77	3.77	3.77	3.71	3.71	3.71	3.71	3.71
360.0	3.88	3.88	3.83	3.77	3.77	3.77	3.77	3.77	3.71
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	3.71	3.71	3.66	3.66	3.66	3.66	3.66	3.66	3.60
45.0	3.60	3.60	3.60	3.60	3.54	3.54	3.54	3.54	3.54
90.0	3.66	3.66	3.66	3.66	3.54	3.60	3.60	3.60	3.60
135.0	3.71	3.71	3.66	3.66	3.66	3.66	3.66	3.66	3.66
180.0	3.66	3.66	3.66	3.60	3.66	3.66	3.66	3.66	3.66
225.0	3.60	3.60	3.60	3.60	3.60	3.54	3.54	3.54	3.54
270.0	3.71	3.71	3.66	3.66	3.66	3.60	3.60	3.60	3.60
315.0	3.71	3.71	3.71	3.66	3.66	3.66	3.66	3.66	3.66
360.0	3.71	3.71	3.66	3.66	3.66	3.66	3.66	3.66	3.60

Intensity data(cd)

<b>C/γ(°)</b>	<b>90.0</b>
<b>0.0</b>	<b>3.66</b>
<b>45.0</b>	<b>3.54</b>
<b>90.0</b>	<b>3.60</b>
<b>135.0</b>	<b>3.66</b>
<b>180.0</b>	<b>3.66</b>
<b>225.0</b>	<b>3.54</b>
<b>270.0</b>	<b>3.60</b>
<b>315.0</b>	<b>3.60</b>
<b>360.0</b>	<b>3.66</b>