
Nata

Client:

LumCAT: 4-2273-M

Luminaire: 92.70.135.00

Report No: nata-0100

Test No: GC2018053103

LampCAT: NICHIA NFCWD084B-V3

Lamp flux(lm): 2169.0

Number of Lamps: 1

Length(mm): 100

Phm Type: C

Voltage(V): 34.2000

Current(A): 0.5000

Power (W): 17.1000

PF: 0.0000

Ballast type: DC

Width(mm): 100

Height(mm): 0

Photometric Results

Lumens(lm): 1924.81, Efficiency(%): 88.74% , Luminous Efficacy(lm/W): 112.56

Central intensity(cd): 28154.470, Maximum intensity(cd): 28154.470

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=10.0

[C90/270]Total=10.0

Field angle(10%Imax): [C0/180]Total=20.6

[C90/270]Total=20.6

Maximum s/h(1/2): C0_180=0.17 C90_270=0.17

Maximum s/h(1/4): C0_180=0.18 C90_270=0.18

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 89.97%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 97.365%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	28154.467	26.943	26.943	1.242%	1.400%
2.0	25343.148	193.975	220.917	8.943%	11.477%
4.0	18081.211	276.616	497.533	12.753%	25.848%
6.0	10051.922	230.435	727.968	10.624%	37.820%
8.0	5650.301	172.461	900.43	7.951%	46.780%
10.0	3016.334	114.872	1015.302	5.296%	52.748%
12.0	1732.900	79.016	1094.319	3.643%	56.853%
14.0	1105.594	58.659	1152.978	2.704%	59.901%
16.0	924.314	55.876	1208.853	2.576%	62.804%
18.0	833.967	56.519	1265.373	2.606%	65.740%
20.0	789.818	59.244	1324.617	2.731%	68.818%
22.0	755.539	62.072	1386.689	2.862%	72.043%
24.0	724.219	64.602	1451.291	2.978%	75.399%
26.0	701.487	67.441	1518.733	3.109%	78.903%
28.0	681.419	70.160	1588.893	3.235%	82.548%
30.0	661.344	72.521	1661.413	3.344%	86.315%
32.0	640.003	74.380	1735.794	3.429%	90.180%
34.0	570.467	69.961	1805.755	3.226%	93.814%
36.0	381.603	49.192	1854.947	2.268%	96.370%
38.0	170.193	22.980	1877.927	1.059%	97.564%
40.0	37.232	5.249	1883.176	.242%	97.837%
42.0	18.341	2.691	1885.867	.124%	97.977%
44.0	11.665	1.777	1887.644	.082%	98.069%
46.0	9.848	1.554	1889.198	.072%	98.150%
48.0	9.456	1.541	1890.739	.071%	98.230%
50.0	9.132	1.534	1892.273	.071%	98.309%
52.0	8.892	1.537	1893.81	.071%	98.389%
54.0	8.665	1.537	1895.347	.071%	98.469%
56.0	8.534	1.552	1896.899	.072%	98.550%
58.0	8.417	1.565	1898.464	.072%	98.631%
60.0	8.334	1.583	1900.047	.073%	98.713%
62.0	8.258	1.599	1901.646	.074%	98.796%
64.0	8.203	1.617	1903.263	.075%	98.880%
66.0	8.162	1.635	1904.899	.075%	98.965%
68.0	8.148	1.657	1906.556	.076%	99.051%
70.0	8.114	1.672	1908.228	.077%	99.138%
72.0	8.100	1.690	1909.917	.078%	99.226%
74.0	8.080	1.703	1911.621	.079%	99.315%

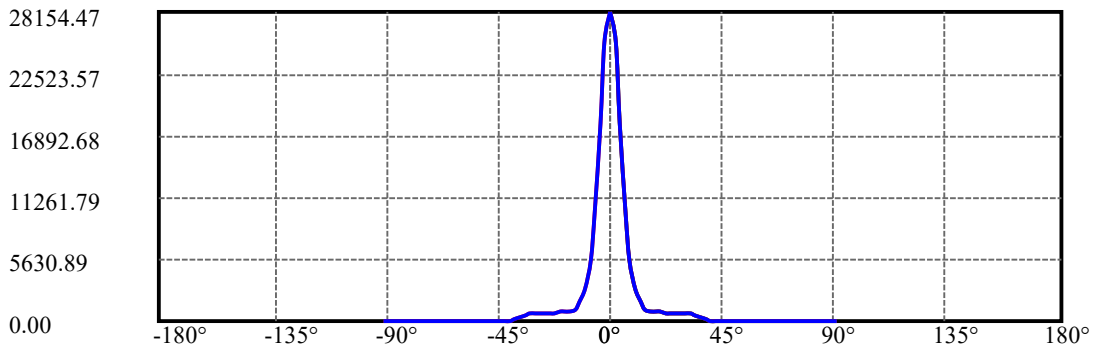
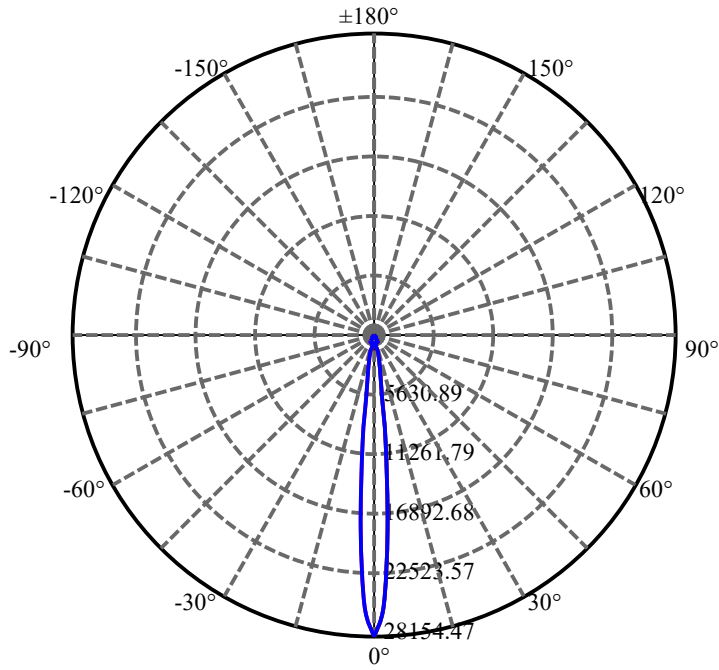
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	8.100	1.724	1913.344	.079%	99.404%
78.0	8.162	1.751	1915.095	.081%	99.495%
80.0	8.217	1.775	1916.87	.082%	99.587%
82.0	8.155	1.771	1918.641	.082%	99.679%
84.0	8.135	1.774	1920.415	.082%	99.771%
86.0	8.114	1.775	1922.191	.082%	99.864%
88.0	7.983	1.750	1923.94	.081%	99.955%
90.0	7.976	0.875	1924.815	.040%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1661.41	76.60%	86.32%
0-40	1883.18	86.82%	97.84%
0-60	1900.05	87.60%	98.71%
0-90	1923.94	88.70%	99.95%
0-120	1923.94	88.70%	99.95%
0-180	1924.81	88.74%	100.00%
60-90	25.48	1.17%	1.32%
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%
0-26.60	1539.85	70.99%	80.00%

ZONAL LUMEN SUMMARY

0-10	1015.30
10-20	309.31
20-30	336.80
30-40	221.76
40-50	9.10
50-60	7.77
60-70	8.18
70-80	8.64
80-90	7.07
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



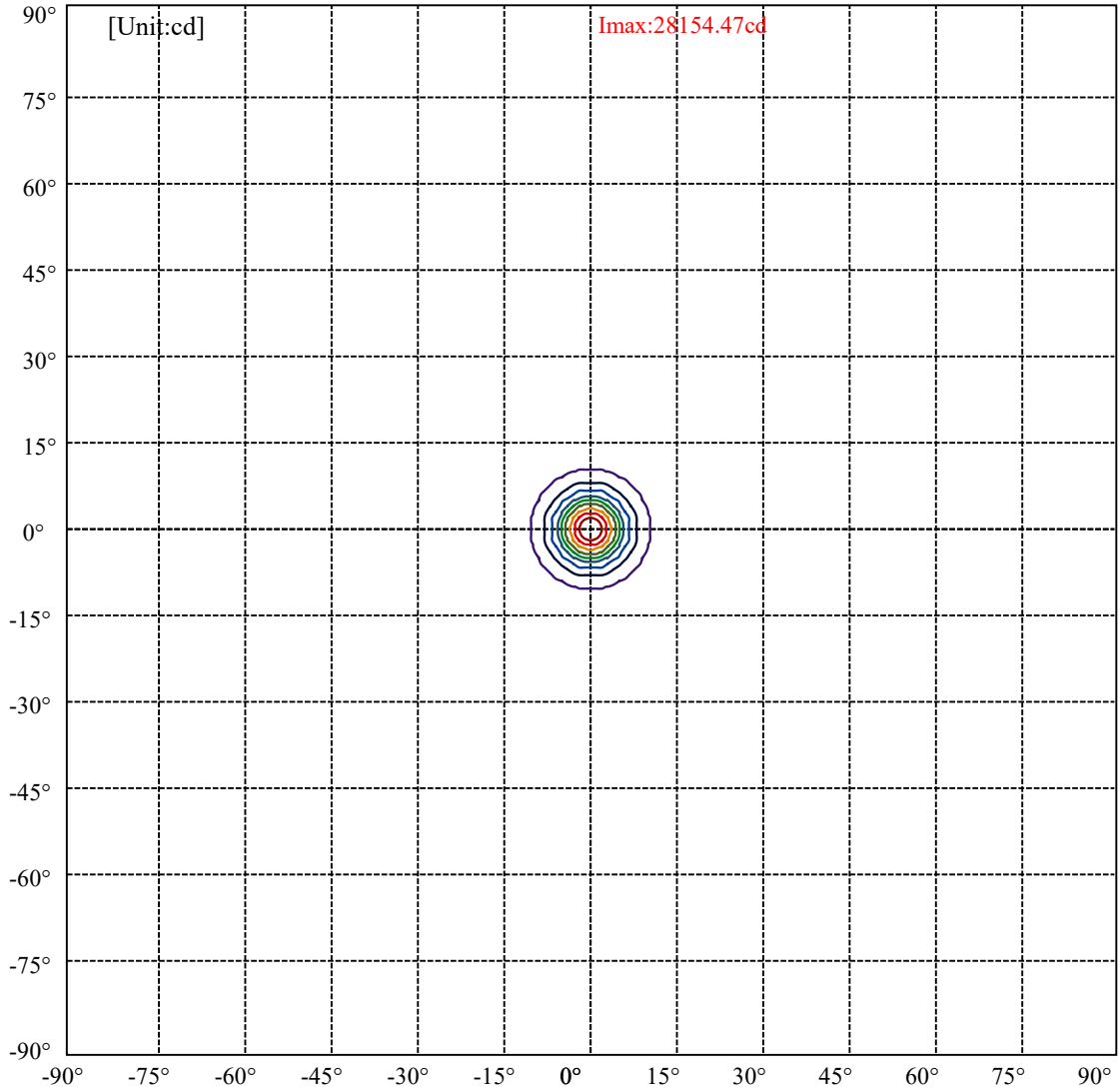
C0(Max): —————

C0/C180: —————

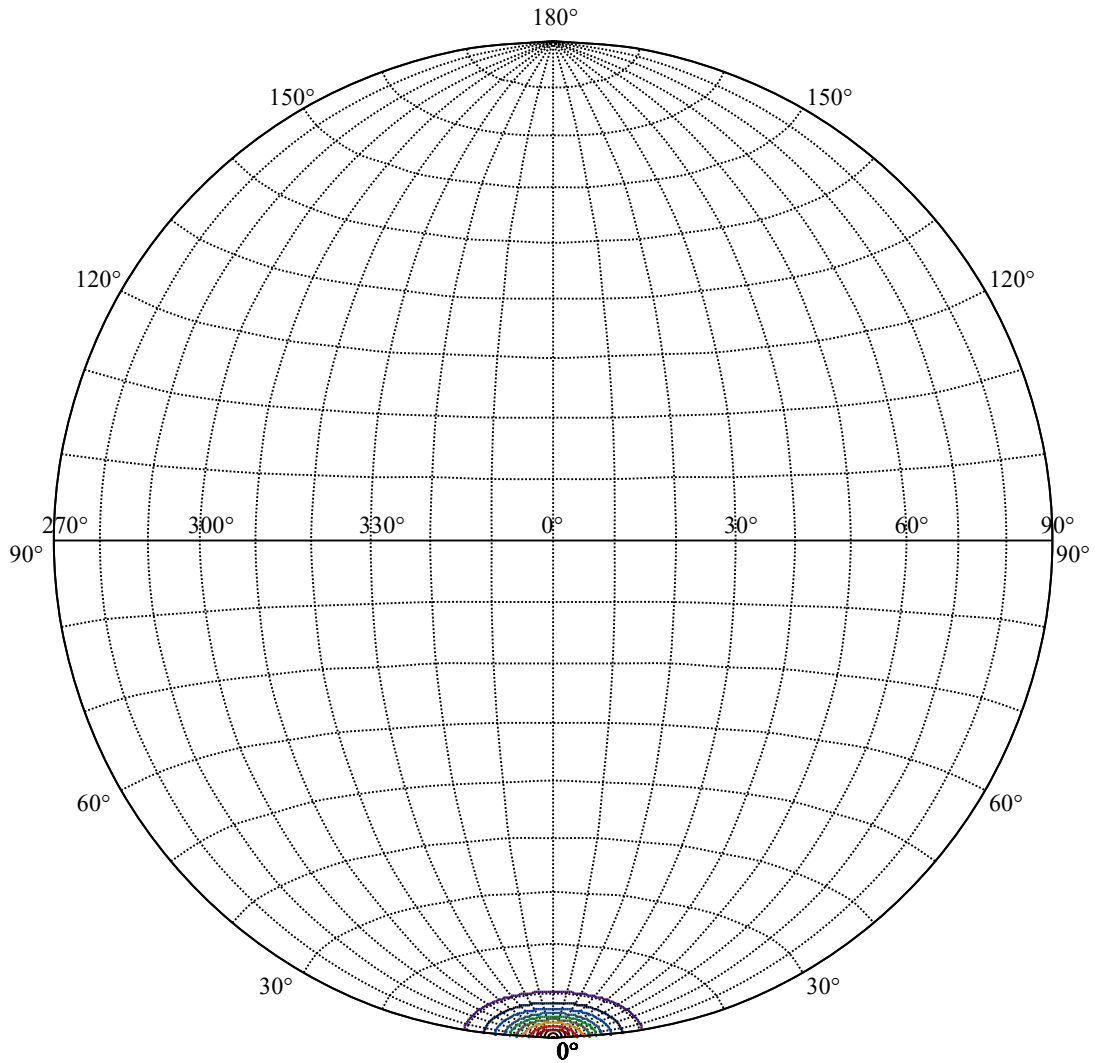
C90/C270: —————

Field angle(10%Imax):C0/180Left:10.3 Right:10.3
:C90/270Left:10.3 Right:10.3

Beam Angle(50%Imax):C0/180Left:5.0 Right:5.0
:C90/270Left:5.0 Right:5.0



(10%Imax) 2815.45	—
(20%Imax) 5630.89	—
(30%Imax) 8446.34	—
(40%Imax) 11261.8	—
(50%Imax) 14077.2	—
(60%Imax) 16892.7	—
(70%Imax) 19708.1	—
(80%Imax) 22523.6	—
(90%Imax) 25339	—



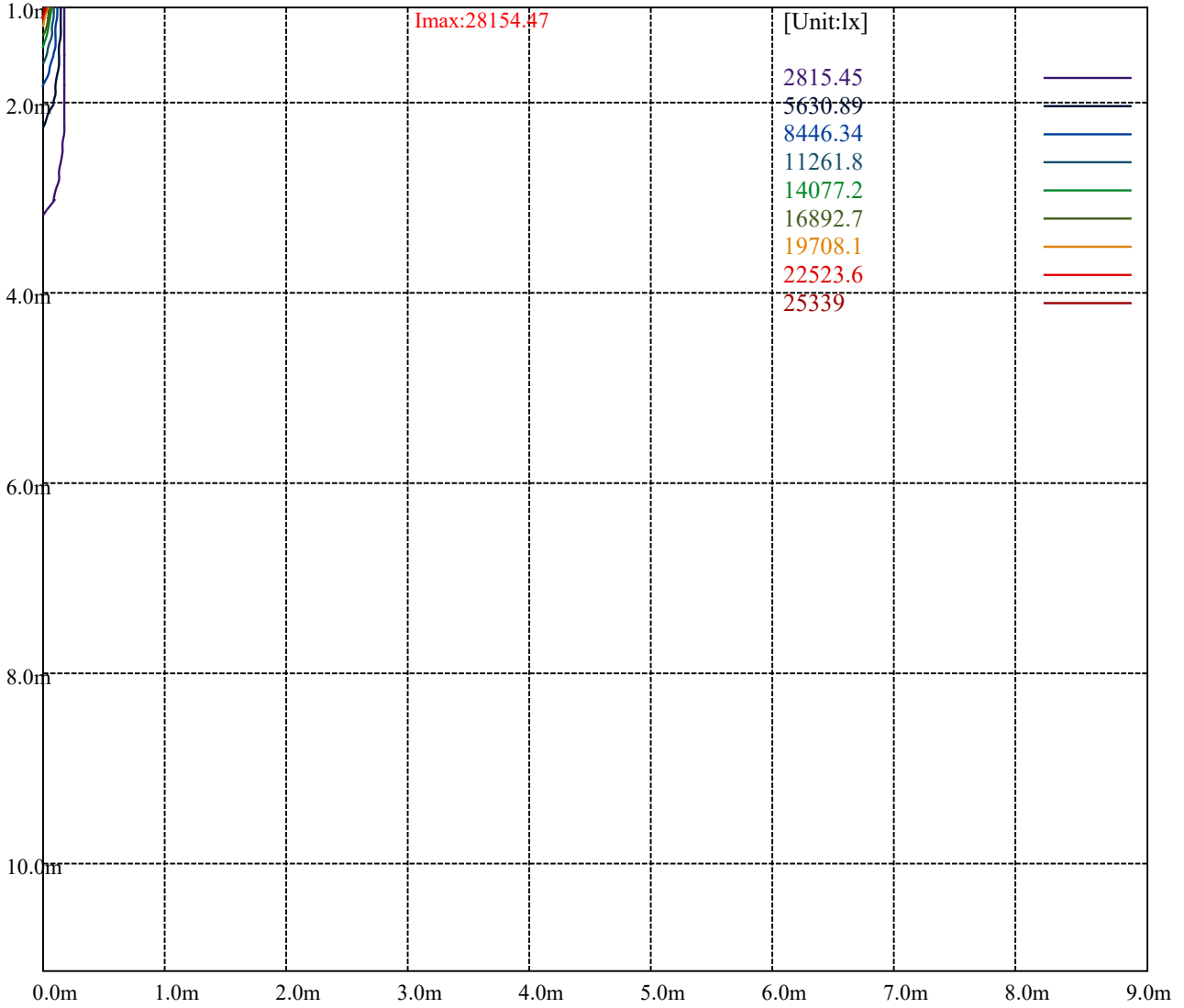
House

[Unit:cd]

Road

Imax:28154.47

(10%Imax)	2815.45	—
(20%Imax)	5630.89	—
(30%Imax)	8446.34	—
(40%Imax)	11261.8	—
(50%Imax)	14077.2	—
(60%Imax)	16892.7	—
(70%Imax)	19708.1	—
(80%Imax)	22523.6	—
(90%Imax)	25339	—



Luminance Table

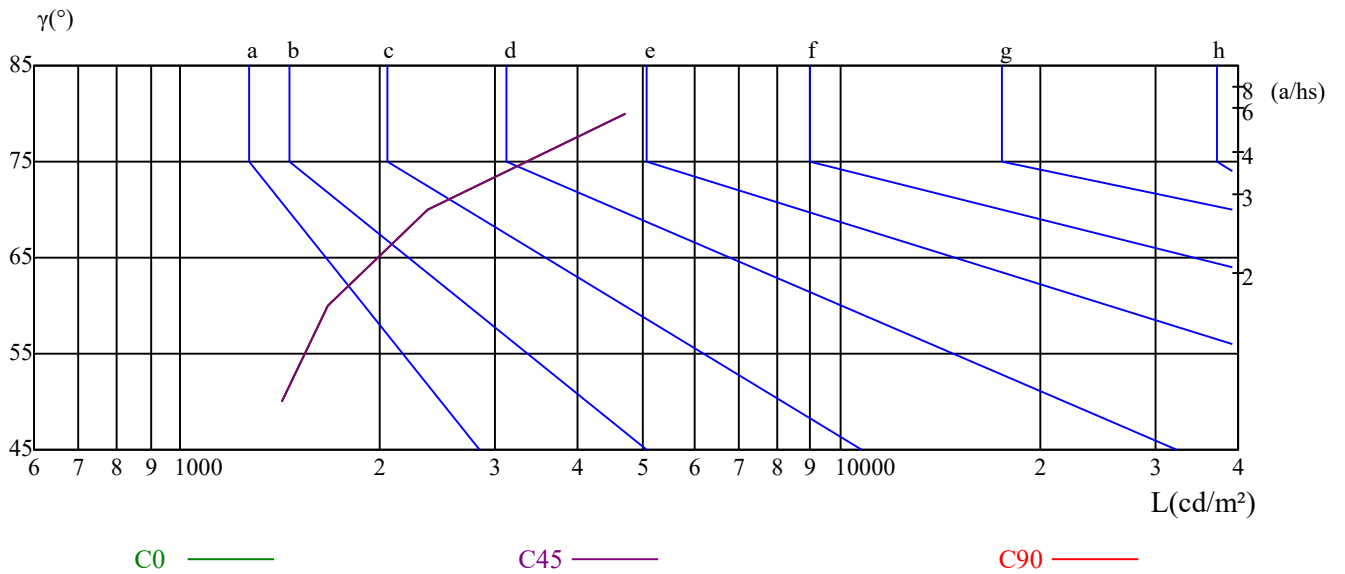
γ	45	50	55	60	65	70	75	80	85
C0	0	1421	0	1667	0	2372	0	4732	0
C45	0	1421	0	1667	0	2372	0	4732	0
C90	0	1421	0	1667	0	2372	0	4732	0

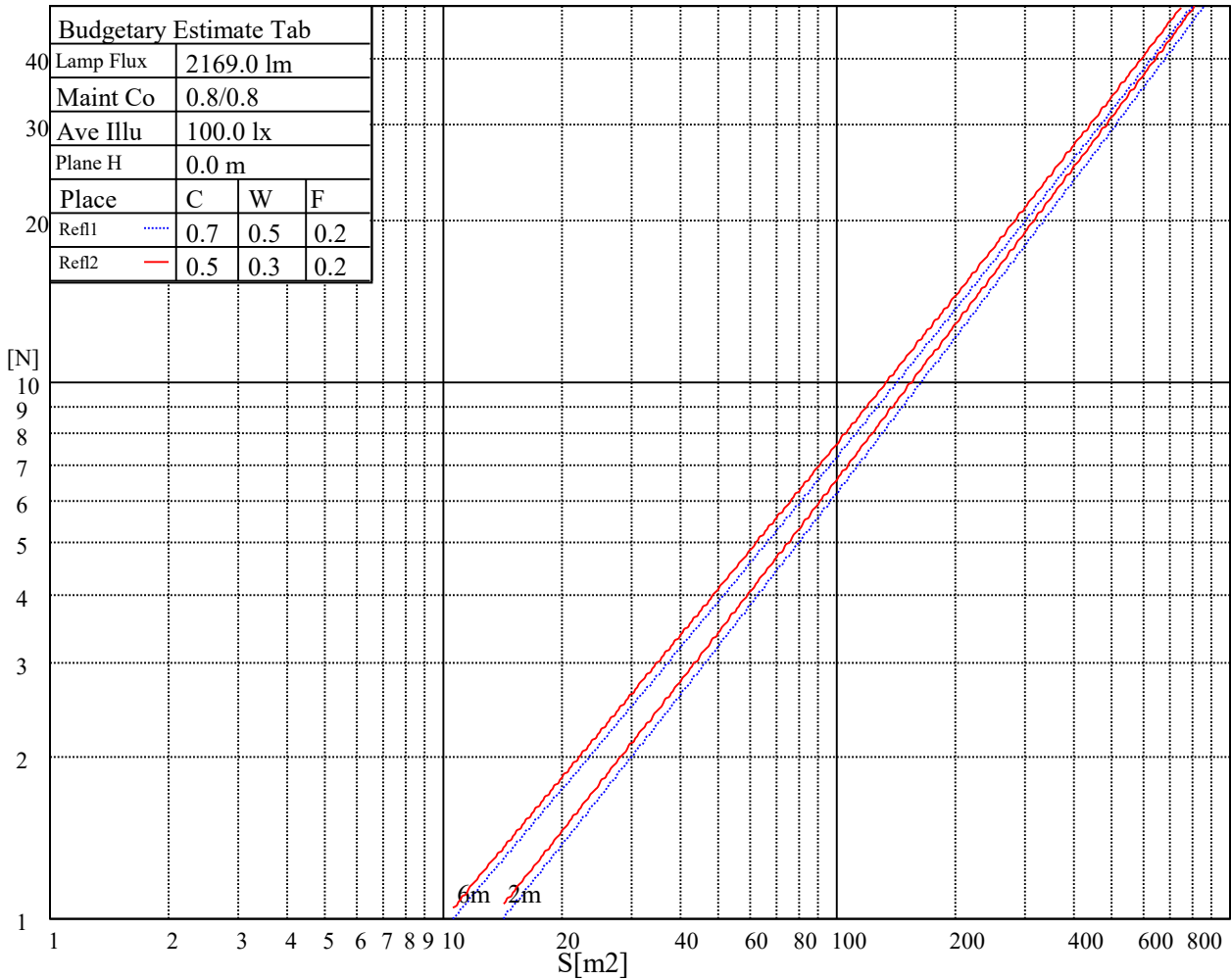
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
65378	65248	65251	100745	100532	100639	291530	290898	291214

Glare Table

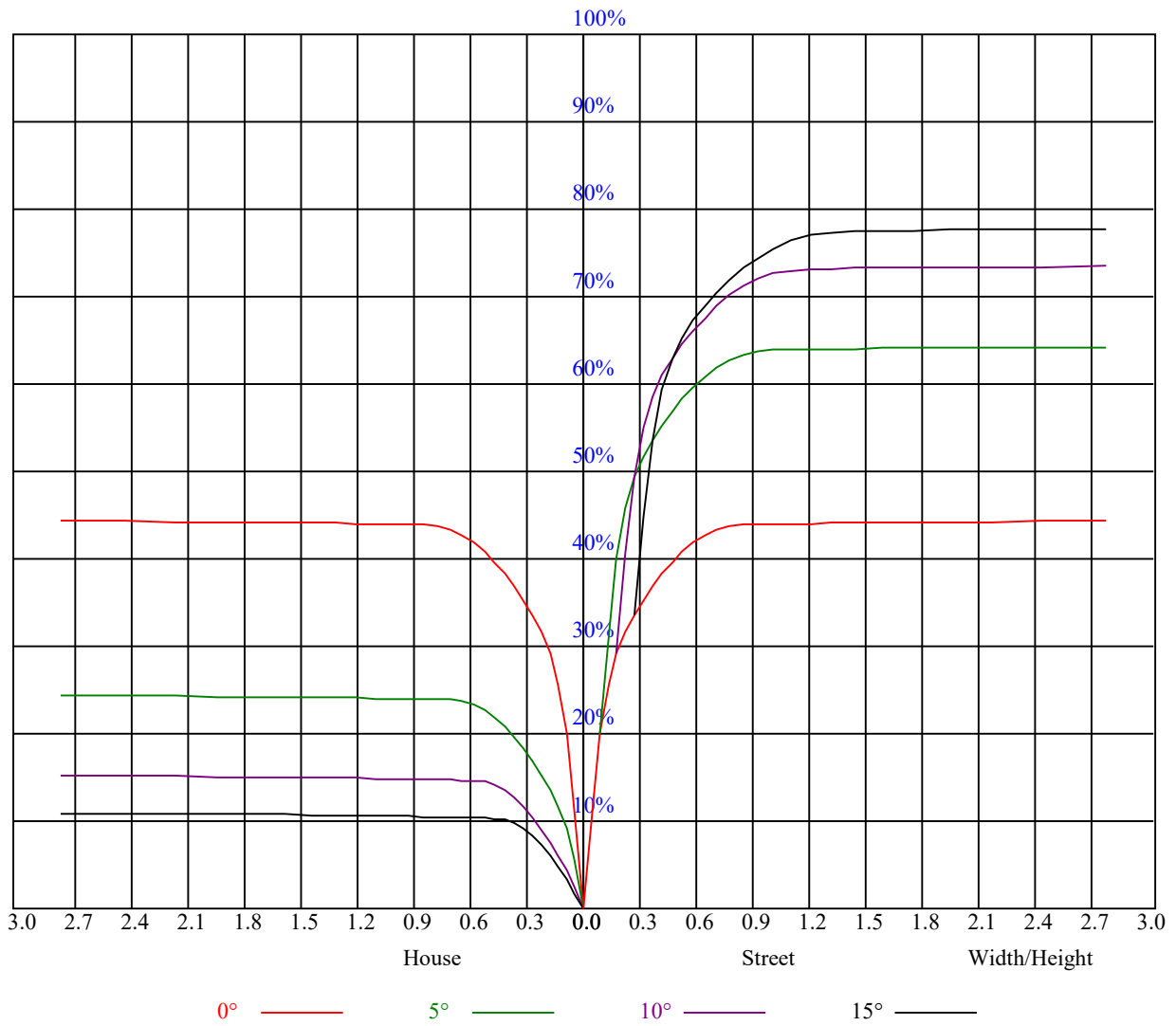
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

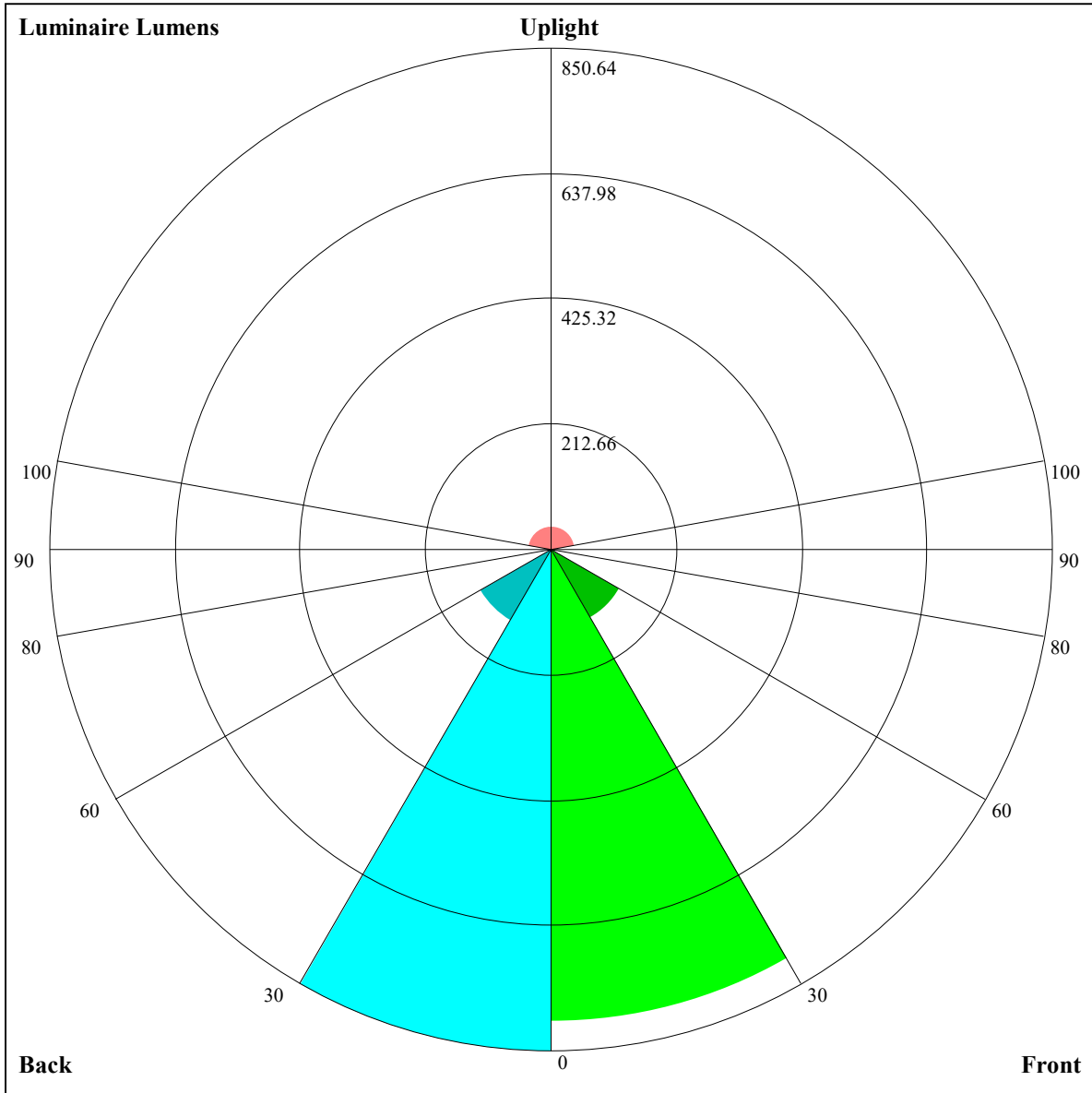
Luminance Limiting Curve





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	1.07	1.07	1.07	1.05	1.05	1.05	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.90
1	1.00	0.97	0.95	0.98	0.96	0.94	0.94	0.92	0.91	0.91	0.89	0.88	0.88	0.87	0.86	0.84
2	0.95	0.92	0.89	0.93	0.90	0.88	0.90	0.88	0.86	0.88	0.86	0.84	0.85	0.84	0.83	0.81
3	0.91	0.87	0.84	0.89	0.86	0.83	0.87	0.84	0.82	0.85	0.83	0.81	0.83	0.81	0.80	0.78
4	0.87	0.83	0.80	0.86	0.83	0.80	0.84	0.81	0.79	0.83	0.80	0.78	0.81	0.79	0.77	0.76
5	0.84	0.80	0.77	0.83	0.79	0.77	0.82	0.79	0.76	0.80	0.78	0.75	0.79	0.77	0.75	0.74
6	0.81	0.77	0.74	0.81	0.77	0.74	0.79	0.76	0.74	0.78	0.75	0.73	0.77	0.75	0.73	0.72
7	0.79	0.75	0.72	0.78	0.74	0.72	0.77	0.74	0.71	0.76	0.73	0.71	0.75	0.73	0.71	0.70
8	0.76	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.70	0.74	0.71	0.69	0.74	0.71	0.69	0.68
9	0.74	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.68	0.73	0.70	0.68	0.72	0.69	0.67	0.67
10	0.73	0.69	0.66	0.72	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.70	0.68	0.66	0.65





Luminaire Lumens:

FL=801.79,FM=132.62,FH=8.37,FVH=4.42

BL=850.64,BM=139.98,BH=8.37,BVH=4.41

UL=8.7,UH=41.41

BUG Rating:B2-U2-G0

Intensity data(cd)

C/γ(°)	0.0	2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.0
0.0	28100.79	23949.53	16258.15	8660.37	4833.95	2796.87	1487.62	1069.75	907.33
45.0	28398.09	23822.90	15993.88	8500.71	4866.99	2857.43	1482.12	1060.94	900.72
90.0	27979.66	22683.24	12855.67	7644.58	4036.74	2126.28	1337.32	989.03	868.18
135.0	28139.33	25705.83	18449.40	10312.06	5654.29	2929.00	1644.53	1117.09	913.94
180.0	28100.79	26399.54	19979.97	10579.64	6167.42	3161.89	1848.24	1084.72	925.17
225.0	28398.09	27269.43	20943.45	10871.99	6612.27	3493.88	1957.81	1095.18	957.27
270.0	27979.66	28045.73	22496.05	13841.18	7669.36	3975.07	2447.81	1337.87	999.82
315.0	28139.33	24868.98	17673.10	10004.85	5361.39	2790.26	1657.75	1090.17	922.08
360.0	28100.79	23949.53	16258.15	8660.37	4833.95	2796.87	1487.62	1069.75	907.33
C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	829.70	787.86	755.37	728.95	706.92	686.00	667.83	646.91	554.42
45.0	825.30	782.90	744.91	716.83	697.01	676.64	656.82	636.45	530.19
90.0	803.93	765.12	734.78	708.14	686.99	665.14	647.57	622.08	489.40
135.0	822.54	787.31	751.52	722.89	698.67	679.40	657.37	637.00	571.49
180.0	834.32	792.43	760.82	724.49	698.50	679.89	661.17	638.65	599.78
225.0	844.68	796.72	764.35	728.45	703.18	682.97	662.99	642.07	609.03
270.0	874.30	815.94	776.85	736.65	715.73	694.81	673.34	654.62	630.40
315.0	836.97	790.28	755.70	727.35	704.89	686.50	663.65	642.23	579.03
360.0	829.70	787.86	755.37	728.95	706.92	686.00	667.83	646.91	554.42
C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	361.72	132.80	21.69	15.36	10.35	9.74	9.36	9.08	8.81
45.0	315.47	118.15	21.69	15.31	10.24	9.74	9.41	9.08	8.86
90.0	275.06	74.60	19.93	13.76	10.02	9.63	9.25	8.97	8.81
135.0	389.25	172.60	29.57	18.83	10.68	9.69	9.36	9.08	8.86
180.0	413.14	208.61	45.37	21.47	12.55	9.80	9.41	9.08	8.86
225.0	436.76	223.97	55.83	22.24	13.38	10.13	9.69	9.30	9.03
270.0	483.95	282.99	74.88	22.46	15.75	10.24	9.74	9.36	9.08
315.0	377.47	147.83	28.90	17.29	10.35	9.80	9.41	9.08	8.81
360.0	361.72	132.80	21.69	15.36	10.35	9.74	9.36	9.08	8.81
C/γ(°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
0.0	8.59	8.48	8.37	8.31	8.26	8.15	8.15	8.09	8.09
45.0	8.70	8.53	8.42	8.37	8.26	8.26	8.20	8.15	8.15
90.0	8.59	8.48	8.37	8.31	8.26	8.20	8.15	8.15	8.09
135.0	8.64	8.53	8.42	8.37	8.26	8.20	8.15	8.20	8.15
180.0	8.64	8.53	8.42	8.31	8.26	8.20	8.15	8.15	8.09
225.0	8.75	8.59	8.42	8.31	8.26	8.20	8.15	8.15	8.09
270.0	8.81	8.64	8.53	8.42	8.31	8.26	8.20	8.20	8.15
315.0	8.59	8.48	8.37	8.26	8.20	8.15	8.15	8.09	8.09
360.0	8.59	8.48	8.37	8.31	8.26	8.15	8.15	8.09	8.09
C/γ(°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0
0.0	8.09	8.04	8.04	8.09	8.09	8.09	8.09	8.09	7.98
45.0	8.15	8.15	8.26	8.48	8.70	8.42	8.31	8.20	7.98
90.0	8.09	8.09	8.09	8.20	8.31	8.20	8.20	8.15	7.98
135.0	8.09	8.09	8.09	8.15	8.20	8.15	8.15	8.15	7.98
180.0	8.09	8.09	8.09	8.20	8.26	8.20	8.09	8.09	7.98
225.0	8.09	8.04	8.09	8.04	8.04	8.04	8.04	8.04	7.98
270.0	8.09	8.09	8.09	8.09	8.09	8.09	8.15	8.15	7.98
315.0	8.09	8.04	8.04	8.04	8.04	8.04	8.04	8.04	7.98
360.0	8.09	8.04	8.04	8.09	8.09	8.09	8.09	8.09	7.98

Intensity data(cd)

C/γ(°)	90.0
0.0	7.98
45.0	7.98
90.0	7.98
135.0	7.98
180.0	7.93
225.0	7.98
270.0	7.98
315.0	7.98
360.0	7.98