
Nata

Client:

LumCAT: 3-2042-M

Luminaire: 92.70.131.00

Report No: nata-0100

Test No:

LampCAT: CREE CMT1922

Lamp flux(lm): 2545.4

Number of Lamps: 1

Length(mm): 84

Phm Type: C

Voltage(V): 34.9000

Current(A): 0.6000

Power (W): 20.9400

PF: 0.0000

Ballast type: DC

Width(mm): 84

Height(mm): 0

Photometric Results

Lumens(lm): 2355.80, Efficiency(%): 92.55% , Luminous Efficacy(lm/W): 112.50

Central intensity(cd): 21528.430, Maximum intensity(cd): 21528.430

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=13.8

[C90/270]Total=13.8

Field angle(10%Imax): [C0/180]Total=26.8

[C90/270]Total=26.8

Maximum s/h(1/2): C0_180=0.24 C90_270=0.24

Maximum s/h(1/4): C0_180=0.23 C90_270=0.23

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 93.35%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 97.914%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	21528.430	20.602	20.602	.809%	.875%
2.0	20741.811	158.756	179.358	6.237%	7.613%
4.0	17963.527	274.816	454.174	10.797%	19.279%
6.0	12893.727	295.582	749.756	11.613%	31.826%
8.0	8183.583	249.784	999.54	9.813%	42.429%
10.0	4566.309	173.900	1173.44	6.832%	49.811%
12.0	2814.758	128.347	1301.787	5.042%	55.259%
14.0	1841.637	97.711	1399.498	3.839%	59.406%
16.0	1401.323	84.711	1484.209	3.328%	63.002%
18.0	1159.295	78.567	1562.777	3.087%	66.337%
20.0	1038.653	77.909	1640.686	3.061%	69.644%
22.0	962.689	79.091	1719.776	3.107%	73.002%
24.0	909.153	81.099	1800.875	3.186%	76.444%
26.0	872.066	83.841	1884.716	3.294%	80.003%
28.0	838.323	86.315	1971.031	3.391%	83.667%
30.0	809.935	88.815	2059.846	3.489%	87.437%
32.0	753.000	87.512	2147.359	3.438%	91.152%
34.0	605.586	74.268	2221.627	2.918%	94.304%
36.0	391.774	50.503	2272.13	1.984%	96.448%
38.0	201.968	27.270	2299.4	1.071%	97.606%
40.0	53.357	7.522	2306.922	.296%	97.925%
42.0	20.137	2.955	2309.877	.116%	98.050%
44.0	13.606	2.073	2311.95	.081%	98.138%
46.0	11.472	1.810	2313.76	.071%	98.215%
48.0	10.977	1.789	2315.549	.070%	98.291%
50.0	10.653	1.790	2317.339	.070%	98.367%
52.0	10.385	1.795	2319.133	.071%	98.443%
54.0	10.172	1.805	2320.938	.071%	98.520%
56.0	10.013	1.821	2322.759	.072%	98.597%
58.0	9.917	1.844	2324.603	.072%	98.676%
60.0	9.848	1.870	2326.474	.073%	98.755%
62.0	9.779	1.894	2328.367	.074%	98.835%
64.0	9.752	1.922	2330.29	.076%	98.917%
66.0	9.704	1.944	2332.234	.076%	98.999%
68.0	9.683	1.969	2334.203	.077%	99.083%
70.0	9.656	1.990	2336.193	.078%	99.168%
72.0	9.628	2.008	2338.201	.079%	99.253%
74.0	9.628	2.030	2340.231	.080%	99.339%

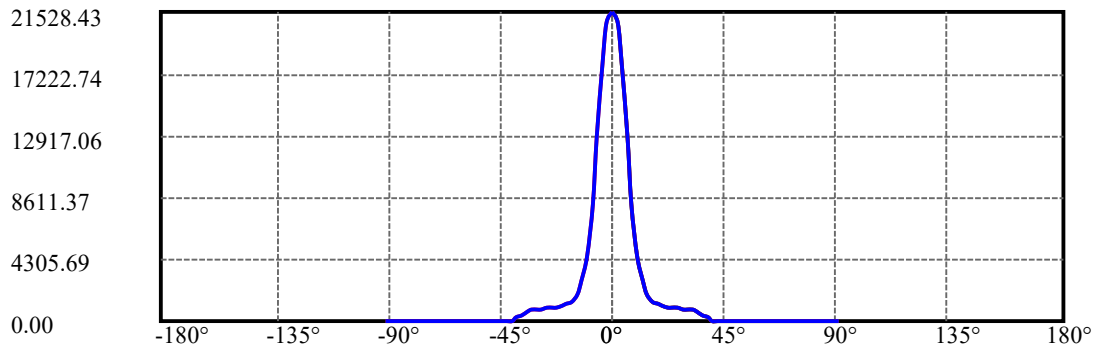
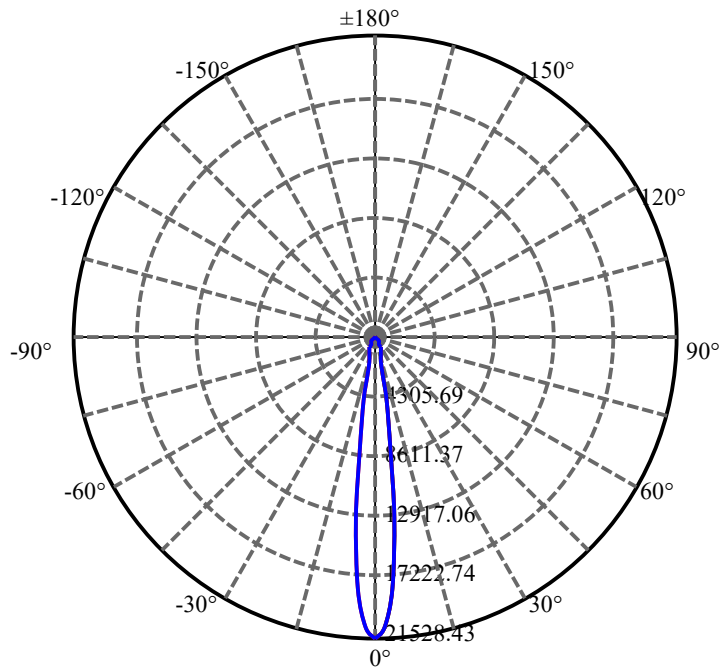
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	9.607	2.044	2342.275	.080%	99.426%
78.0	9.587	2.057	2344.332	.081%	99.513%
80.0	9.580	2.069	2346.401	.081%	99.601%
82.0	9.580	2.081	2348.481	.082%	99.689%
84.0	9.573	2.088	2350.569	.082%	99.778%
86.0	9.559	2.091	2352.661	.082%	99.867%
88.0	9.559	2.095	2354.756	.082%	99.955%
90.0	9.566	1.049	2355.805	.041%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2059.85	80.93%	87.44%
0-40	2306.92	90.63%	97.93%
0-60	2326.47	91.40%	98.75%
0-90	2354.76	92.51%	99.96%
0-120	2354.76	92.51%	99.96%
0-180	2355.80	92.55%	100.00%
60-90	30.15	1.18%	1.28%
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%
0-26.00	1884.64	74.04%	80.00%

ZONAL LUMEN SUMMARY

0-10	1173.44
10-20	467.25
20-30	419.16
30-40	247.08
40-50	10.42
50-60	9.14
60-70	9.72
70-80	10.21
80-90	8.36
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:

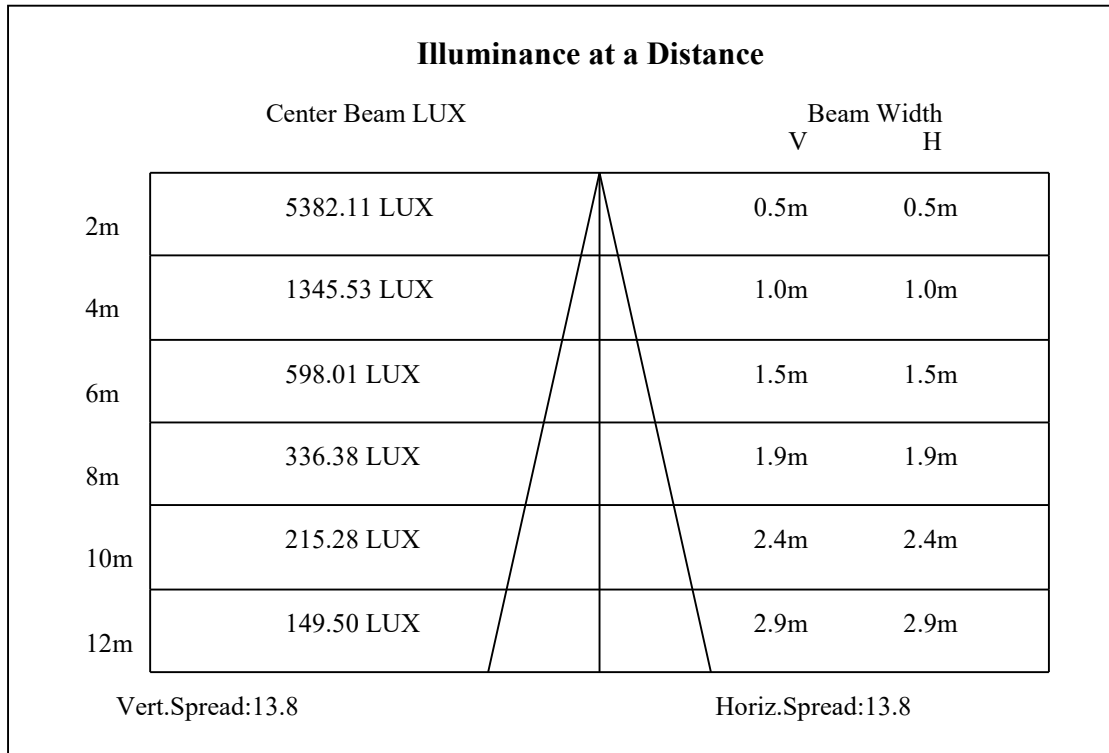
C90/C270:

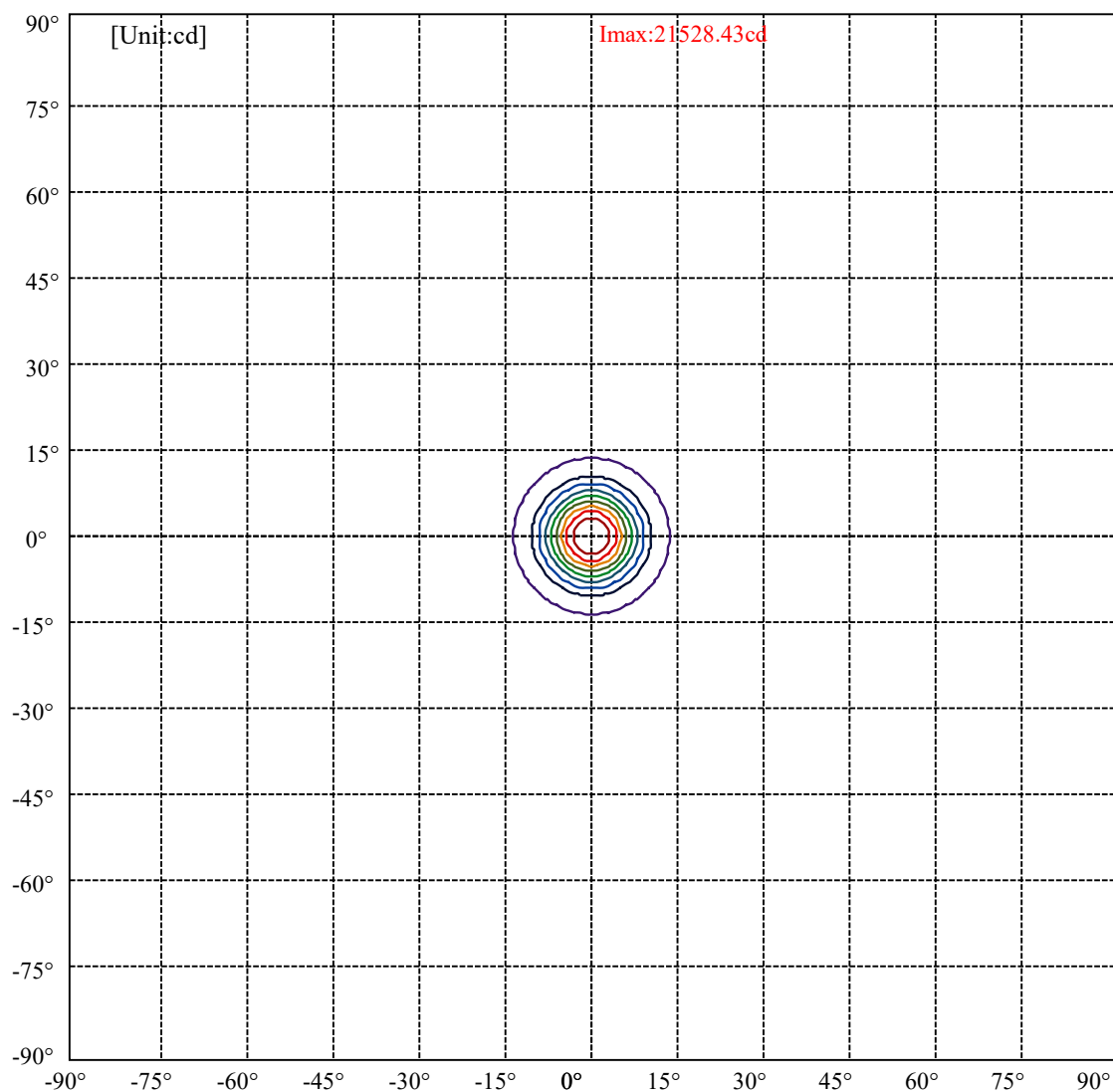
Field angle(10%Imax):C0/180Left:13.4 Right:13.4

:C90/270Left:13.4 Right:13.4

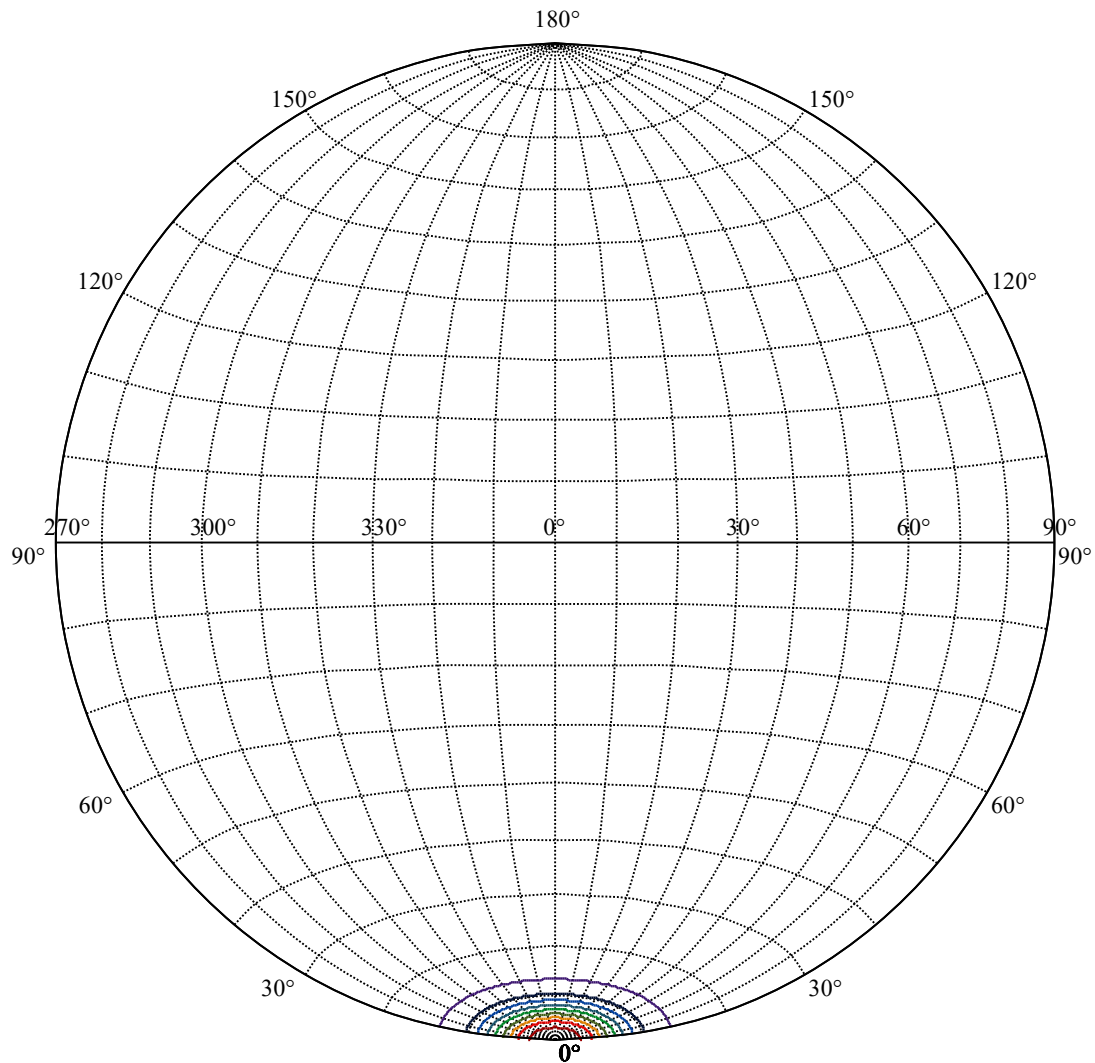
Beam Angle(50%Imax):C0/180Left:6.9 Right:6.9

:C90/270Left:6.9 Right:6.9





(10%Imax) 2152.84	———
(20%Imax) 4305.69	———
(30%Imax) 6458.53	———
(40%Imax) 8611.37	———
(50%Imax) 10764.2	———
(60%Imax) 12917.1	———
(70%Imax) 15069.9	———
(80%Imax) 17222.7	———
(90%Imax) 19375.6	———



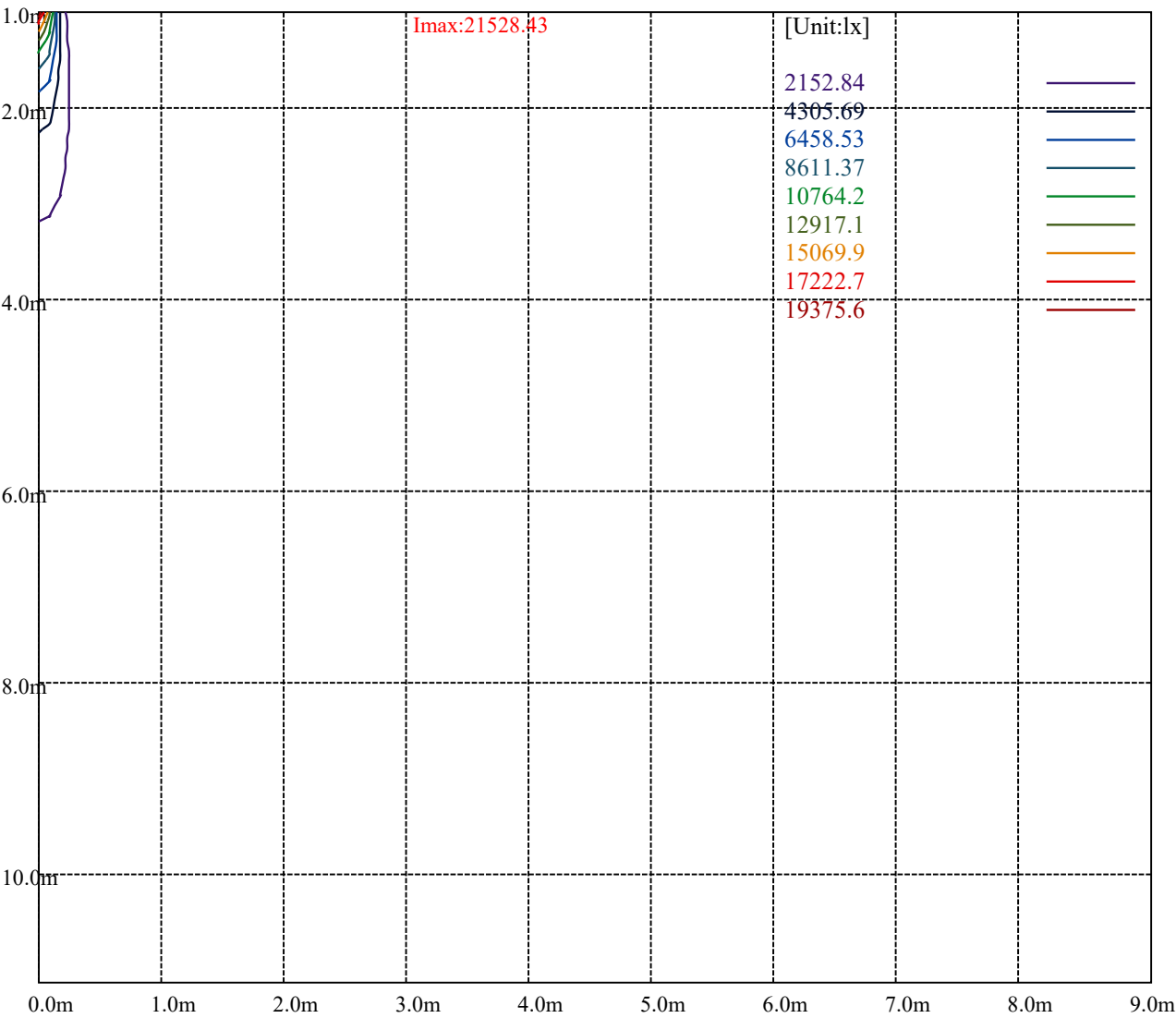
House

[Unit:cd]

Road

Imax:21528.43

(10%Imax)	2152.84	—
(20%Imax)	4305.69	—
(30%Imax)	6458.53	—
(40%Imax)	8611.37	—
(50%Imax)	10764.2	—
(60%Imax)	12917.1	—
(70%Imax)	15069.9	—
(80%Imax)	17222.7	—
(90%Imax)	19375.6	—



Luminance Table

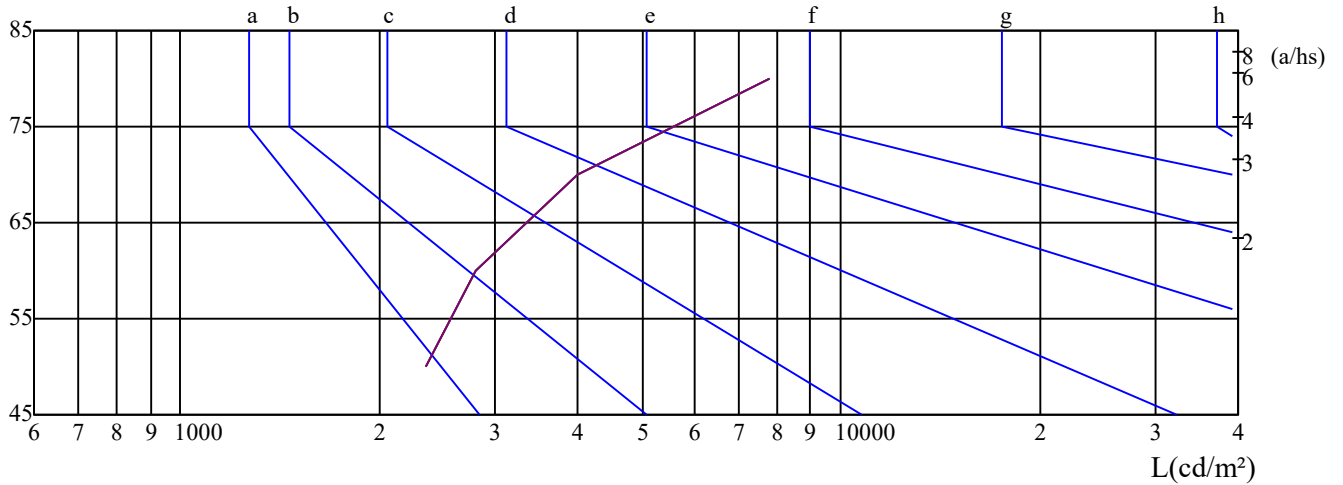
γ	45	50	55	60	65	70	75	80	85
C0	0	2349	0	2791	0	4001	0	7819	0
C45	0	2349	0	2791	0	4001	0	7819	0
C90	0	2349	0	2791	0	4001	0	7819	0

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3388	3388	3388	5419	5419	5419	15992	15992	15992

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

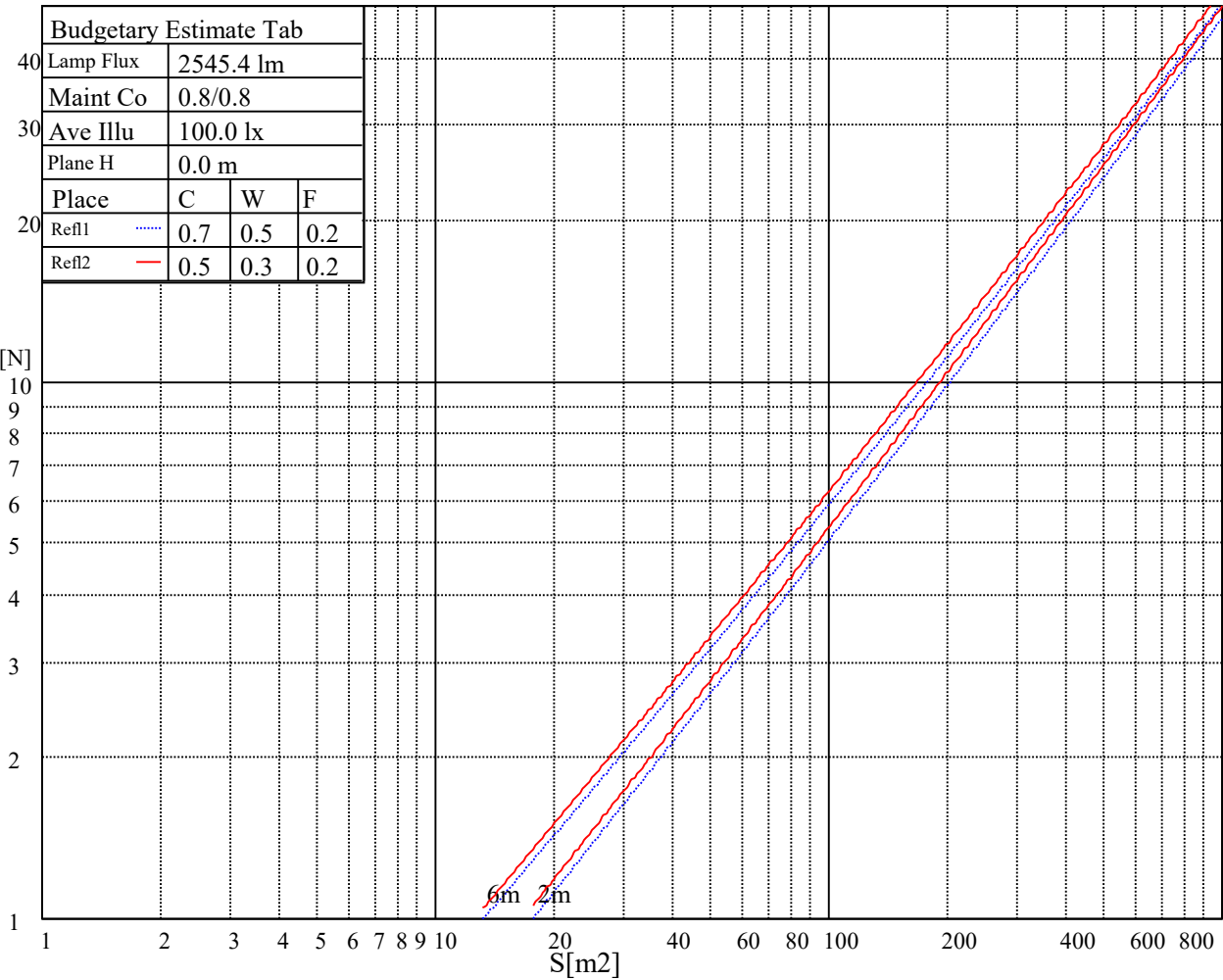
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

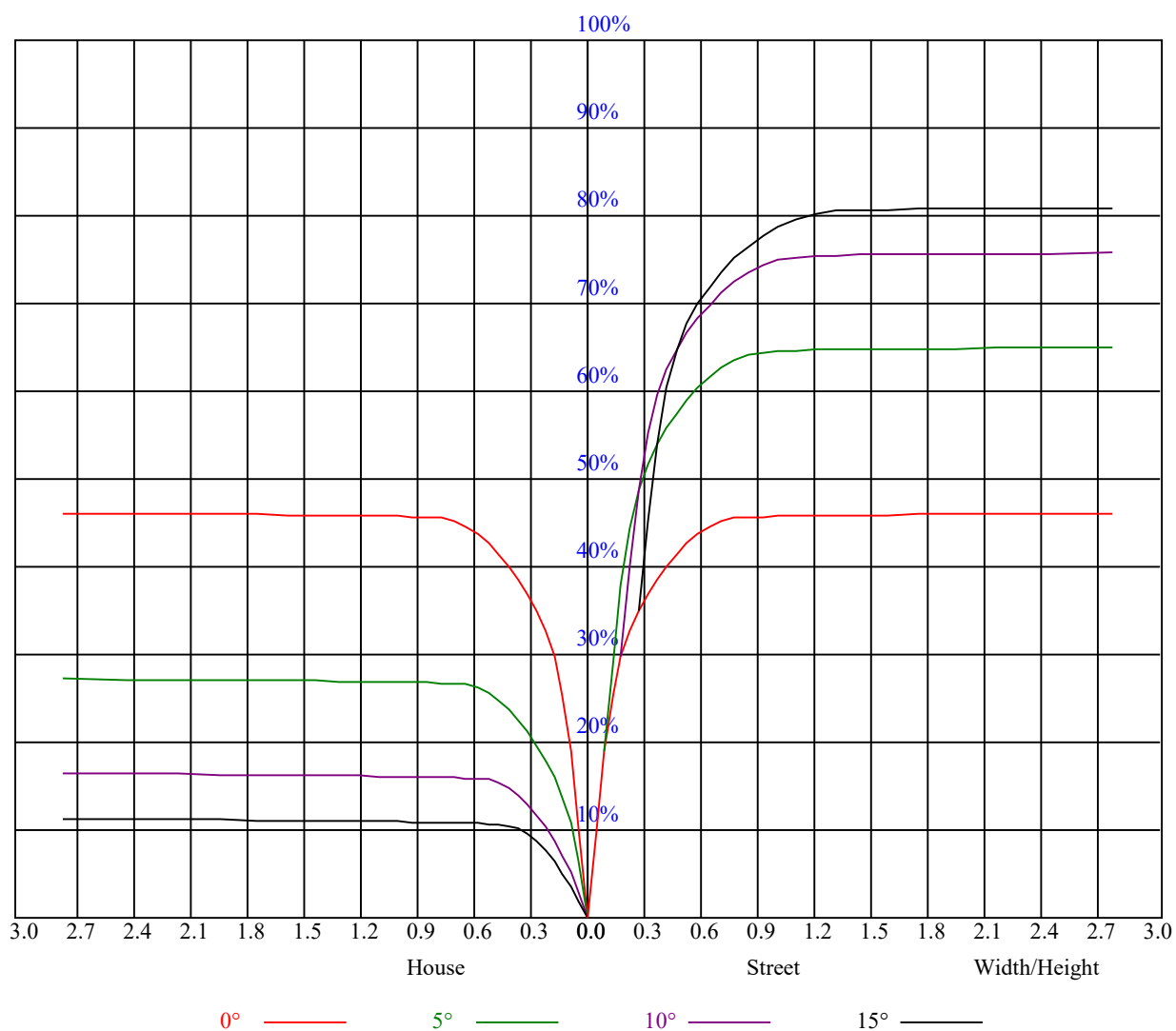
C0 ———

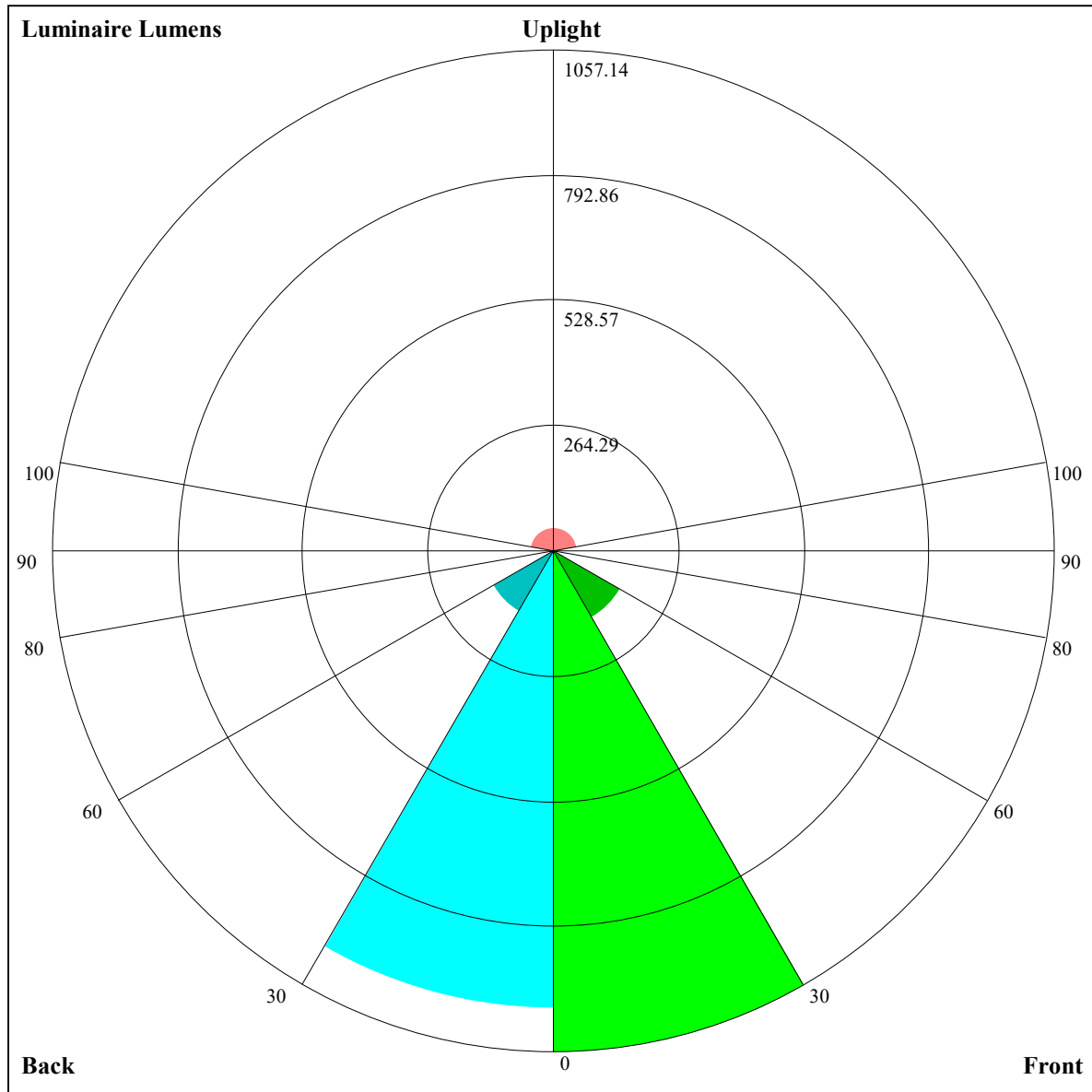
C45 ———

C90 ———



RHOC	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	1.11	1.11	1.11	1.09	1.09	1.09	1.04	1.04	1.04	0.99	0.99	0.99	0.95	0.95	0.95	0.93
1	1.04	1.02	1.00	1.02	1.00	0.98	0.98	0.97	0.95	0.95	0.94	0.93	0.92	0.91	0.90	0.88
2	0.99	0.96	0.93	0.97	0.95	0.92	0.94	0.92	0.90	0.92	0.90	0.88	0.89	0.88	0.87	0.85
3	0.95	0.91	0.88	0.93	0.90	0.87	0.91	0.88	0.86	0.89	0.87	0.85	0.87	0.85	0.83	0.82
4	0.91	0.87	0.84	0.90	0.86	0.84	0.88	0.85	0.83	0.86	0.84	0.82	0.85	0.83	0.81	0.80
5	0.88	0.84	0.81	0.87	0.83	0.80	0.85	0.82	0.80	0.84	0.81	0.79	0.83	0.80	0.78	0.77
6	0.85	0.81	0.78	0.84	0.80	0.77	0.83	0.79	0.77	0.82	0.79	0.77	0.81	0.78	0.76	0.75
7	0.82	0.78	0.75	0.82	0.78	0.75	0.80	0.77	0.75	0.80	0.77	0.74	0.79	0.76	0.74	0.73
8	0.80	0.76	0.73	0.79	0.75	0.73	0.78	0.75	0.73	0.78	0.75	0.72	0.77	0.74	0.72	0.71
9	0.78	0.74	0.71	0.77	0.73	0.71	0.76	0.73	0.71	0.76	0.73	0.71	0.75	0.72	0.70	0.69
10	0.76	0.72	0.69	0.75	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.69	0.73	0.71	0.69	0.68





Luminaire Lumens:

FL=1057.14,FM=161.09,FH=9.92,FVH=5.22

BL=967.28,BM=148.33,BH=9.91,BVH=5.22

UL=10.44,UH=49.67

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	21367.39	21383.91	19864.35	15531.41	10301.05	5891.03	3380.46	2111.41	1561.40
45.0	21549.07	21549.07	19979.97	16010.40	10697.46	5896.54	3474.06	2168.12	1541.58
90.0	21670.20	21356.38	19170.64	14402.75	9349.68	5060.78	3020.94	2016.17	1491.48
135.0	21527.05	20921.43	18680.64	13863.20	8742.96	4960.58	2962.03	1951.75	1479.37
180.0	21367.39	19655.13	15746.13	10251.50	5895.99	3441.03	2214.92	1592.23	1264.09
225.0	21549.07	19963.45	15867.25	10557.06	6158.06	3461.40	2197.30	1565.25	1248.13
270.0	21670.20	20486.49	17045.46	11820.61	7003.17	3853.95	2851.92	1649.49	1308.14
315.0	21527.05	20618.62	17353.78	10712.87	7320.30	3965.16	2416.43	1678.67	1316.40
360.0	21367.39	21383.91	19864.35	15531.41	10301.05	5891.03	3380.46	2111.41	1561.40
C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	1254.18	1098.93	1010.84	942.02	894.12	855.03	825.85	795.56	693.71
45.0	1261.89	1099.48	1006.98	940.91	893.57	852.82	822.54	793.91	684.90
90.0	1209.04	1069.64	977.31	915.70	877.65	838.73	811.42	776.79	645.04
135.0	1196.93	1048.27	968.44	910.08	873.19	840.16	810.43	774.64	648.56
180.0	1076.41	983.58	917.13	876.06	847.43	819.35	792.21	703.02	519.13
225.0	1075.03	983.86	922.86	885.91	856.84	829.92	802.83	709.84	519.24
270.0	1106.63	1004.23	947.52	902.37	868.24	838.51	811.53	736.10	578.09
315.0	1094.25	1021.24	950.44	900.17	865.49	832.07	802.67	734.12	556.01
360.0	1254.18	1098.93	1010.84	942.02	894.12	855.03	825.85	795.56	693.71
C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	489.45	289.60	91.39	23.18	16.41	11.78	11.23	10.85	10.52
45.0	501.01	286.84	101.74	23.23	15.58	11.95	11.29	10.90	10.63
90.0	444.42	241.64	64.03	21.64	13.93	11.45	11.01	10.68	10.41
135.0	441.55	279.14	59.96	20.48	13.60	11.51	10.96	10.68	10.41
180.0	299.18	123.22	25.16	16.96	11.84	11.07	10.74	10.46	10.24
225.0	301.38	113.09	25.93	18.61	11.95	11.29	10.90	10.57	10.30
270.0	339.15	134.72	29.07	18.50	12.55	11.40	10.90	10.57	10.35
315.0	318.06	147.50	29.57	18.50	12.99	11.34	10.79	10.52	10.24
360.0	489.45	289.60	91.39	23.18	16.41	11.78	11.23	10.85	10.52
C/γ(°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
0.0	10.24	10.08	9.97	9.86	9.80	9.74	9.69	9.69	9.63
45.0	10.35	10.19	10.08	9.97	9.91	9.86	9.80	9.74	9.74
90.0	10.19	10.02	9.91	9.86	9.80	9.80	9.74	9.69	9.69
135.0	10.19	10.02	9.91	9.86	9.80	9.74	9.69	9.69	9.69
180.0	10.08	9.97	9.86	9.80	9.74	9.69	9.69	9.63	9.63
225.0	10.13	9.97	9.86	9.86	9.74	9.74	9.69	9.69	9.63
270.0	10.13	9.97	9.91	9.86	9.74	9.74	9.69	9.69	9.63
315.0	10.08	9.91	9.86	9.74	9.69	9.69	9.63	9.63	9.58
360.0	10.24	10.08	9.97	9.86	9.80	9.74	9.69	9.69	9.63
C/γ(°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0
0.0	9.63	9.63	9.58	9.58	9.58	9.58	9.58	9.58	9.58
45.0	9.69	9.69	9.69	9.69	9.63	9.63	9.63	9.58	9.58
90.0	9.63	9.63	9.63	9.58	9.58	9.58	9.58	9.58	9.58
135.0	9.63	9.63	9.58	9.58	9.58	9.58	9.52	9.52	9.52
180.0	9.58	9.58	9.58	9.58	9.58	9.58	9.52	9.52	9.52
225.0	9.63	9.63	9.63	9.58	9.58	9.58	9.63	9.58	9.58
270.0	9.63	9.63	9.58	9.58	9.58	9.58	9.58	9.58	9.58
315.0	9.58	9.58	9.58	9.52	9.52	9.52	9.52	9.52	9.52
360.0	9.63	9.63	9.58	9.58	9.58	9.58	9.58	9.58	9.58

Intensity data(cd)

Appendix Page: 17 Total:17

C/ $\gamma(^{\circ})$	90.0
0.0	9.58
45.0	9.58
90.0	9.58
135.0	9.52
180.0	9.58
225.0	9.58
270.0	9.58
315.0	9.52
360.0	9.58