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Nata

Client:

LumCAT: 2-2183-M

Luminaire: BJB 47.360.5080

Report No: nt0100

Test No: GC2020031331

LampCAT: NICHIA NFCWJ108B-V3

Lamp flux(lm): 2445.0

Number of Lamps: 1

Length(mm): 0

Phm Type: C

Voltage(V): 220.4000

Current(A): 0.1080

Power (W): 22.8900

PF: 0.9570

Ballast type: AC

Width(mm): 0

Height(mm): 0

Photometric Results

Lumens(lm): 1866.93, Efficiency(%): 76.36% , Luminous Efficacy(lm/W): 81.56

Central intensity(cd): 14385.640, Maximum intensity(cd): 14385.640

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=17.4

[C90/270]Total=17.4

Field angle(10%Imax): [C0/180]Total=38.4

[C90/270]Total=38.4

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

Maximum s/h(1/4): C0_180=0.32 C90_270=0.32

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 76.36%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 99.207%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	14385.640	0.000	0	.000%	.000%
1.0	14259.771	13.706	13.706	.561%	.734%
2.0	13897.245	40.414	54.12	1.653%	2.899%
3.0	13380.427	65.239	119.359	2.668%	6.393%
4.0	12327.234	86.052	205.411	3.519%	11.003%
5.0	11375.385	101.967	307.378	4.170%	16.464%
6.0	10041.962	112.554	419.932	4.603%	22.493%
7.0	8858.607	117.315	537.248	4.798%	28.777%
8.0	7974.101	120.468	657.716	4.927%	35.230%
9.0	6906.709	120.601	778.317	4.933%	41.690%
10.0	5955.266	116.396	894.713	4.761%	47.924%
11.0	5117.512	110.640	1005.353	4.525%	53.851%
12.0	4385.151	103.878	1109.231	4.249%	59.415%
13.0	3753.485	96.585	1205.816	3.950%	64.588%
14.0	3213.814	89.181	1294.997	3.647%	69.365%
15.0	2770.140	82.150	1377.147	3.360%	73.765%
16.0	2423.739	76.105	1453.252	3.113%	77.842%
17.0	2126.688	70.862	1524.114	2.898%	81.637%
18.0	1744.104	63.821	1587.935	2.610%	85.056%
19.0	1498.863	56.421	1644.356	2.308%	88.078%
20.0	1130.391	48.123	1692.479	1.968%	90.656%
21.0	902.499	39.036	1731.514	1.597%	92.747%
22.0	723.643	32.678	1764.192	1.337%	94.497%
23.0	529.717	26.299	1790.491	1.076%	95.906%
24.0	360.212	19.457	1809.948	.796%	96.948%
25.0	243.142	13.719	1823.667	.561%	97.683%
26.0	134.773	8.921	1832.588	.365%	98.161%
27.0	68.538	4.974	1837.562	.203%	98.427%
28.0	18.335	2.199	1839.761	.090%	98.545%
29.0	11.612	0.784	1840.545	.032%	98.587%
30.0	8.573	0.545	1841.09	.022%	98.616%
31.0	7.970	0.460	1841.55	.019%	98.641%
32.0	7.465	0.442	1841.992	.018%	98.664%
33.0	7.094	0.429	1842.421	.018%	98.687%
34.0	6.641	0.416	1842.837	.017%	98.710%
35.0	6.322	0.403	1843.24	.016%	98.731%
36.0	6.038	0.394	1843.633	.016%	98.752%
37.0	5.777	0.385	1844.019	.016%	98.773%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	5.528	0.377	1844.396	.015%	98.793%
39.0	5.313	0.370	1844.766	.015%	98.813%
40.0	5.139	0.365	1845.131	.015%	98.832%
41.0	4.971	0.360	1845.491	.015%	98.852%
42.0	4.814	0.356	1845.846	.015%	98.871%
43.0	4.658	0.351	1846.197	.014%	98.889%
44.0	4.536	0.347	1846.544	.014%	98.908%
45.0	4.437	0.345	1846.889	.014%	98.927%
46.0	4.321	0.343	1847.231	.014%	98.945%
47.0	4.229	0.340	1847.571	.014%	98.963%
48.0	4.153	0.339	1847.91	.014%	98.981%
49.0	4.118	0.340	1848.25	.014%	98.999%
50.0	4.043	0.340	1848.59	.014%	99.018%
51.0	4.025	0.341	1848.931	.014%	99.036%
52.0	3.996	0.344	1849.276	.014%	99.054%
53.0	3.979	0.347	1849.623	.014%	99.073%
54.0	3.944	0.349	1849.972	.014%	99.092%
55.0	3.933	0.352	1850.323	.014%	99.111%
56.0	3.892	0.354	1850.677	.014%	99.129%
57.0	3.886	0.356	1851.033	.015%	99.149%
58.0	3.875	0.359	1851.392	.015%	99.168%
59.0	3.863	0.362	1851.753	.015%	99.187%
60.0	3.834	0.364	1852.117	.015%	99.207%
61.0	3.834	0.366	1852.483	.015%	99.226%
62.0	3.875	0.371	1852.854	.015%	99.246%
63.0	3.979	0.382	1853.236	.016%	99.267%
64.0	4.112	0.397	1853.633	.016%	99.288%
65.0	4.362	0.419	1854.053	.017%	99.310%
66.0	4.716	0.453	1854.506	.019%	99.335%
67.0	5.209	0.499	1855.005	.020%	99.361%
68.0	5.847	0.560	1855.565	.023%	99.391%
69.0	6.572	0.634	1856.198	.026%	99.425%
70.0	7.541	0.725	1856.923	.030%	99.464%
71.0	8.324	0.820	1857.743	.034%	99.508%
72.0	9.025	0.902	1858.645	.037%	99.556%
73.0	9.385	0.963	1859.608	.039%	99.608%
74.0	9.339	0.984	1860.592	.040%	99.661%
75.0	8.730	0.955	1861.547	.039%	99.712%

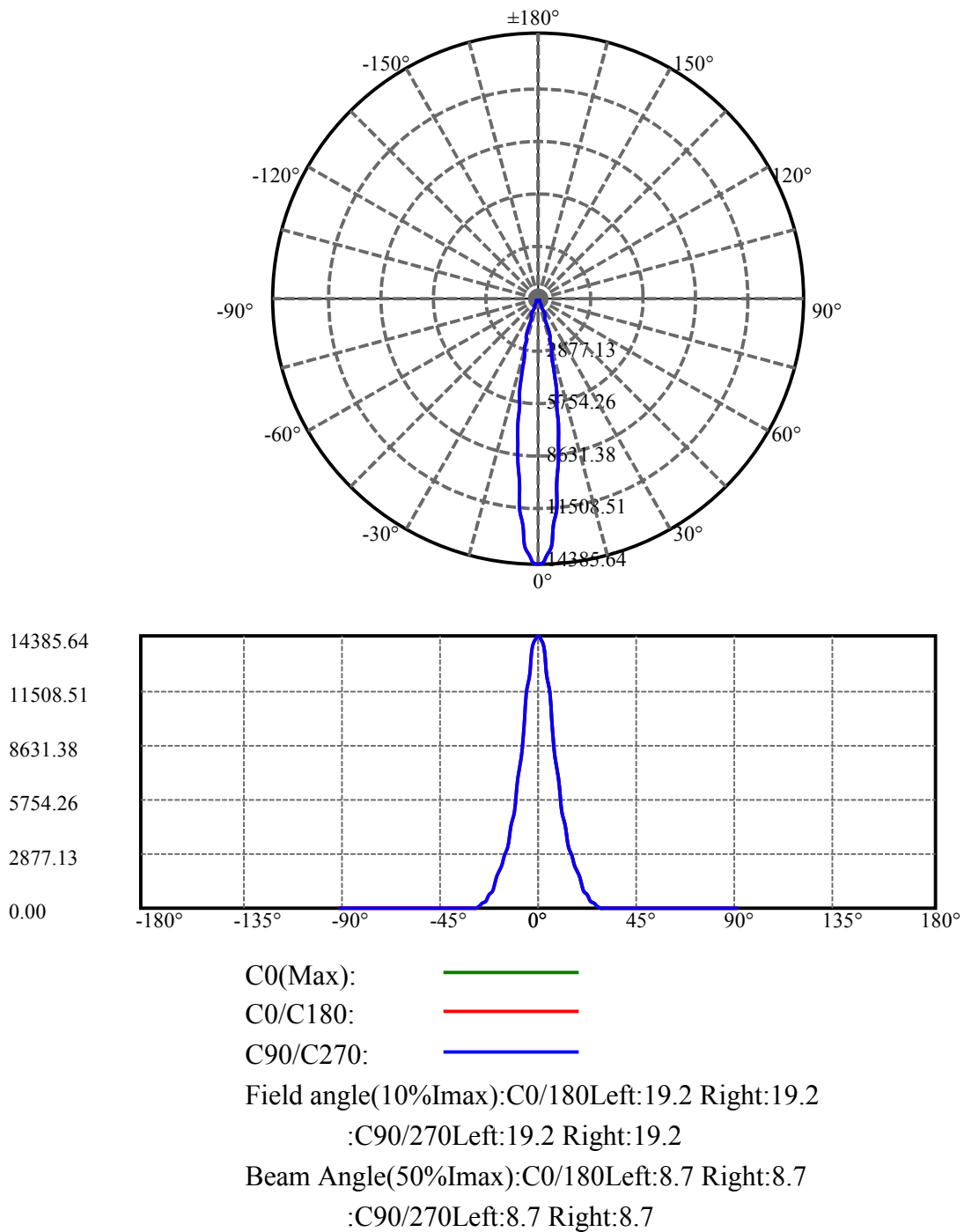
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	7.987	0.887	1862.434	.036%	99.759%
77.0	6.752	0.786	1863.22	.032%	99.801%
78.0	5.128	0.636	1863.856	.026%	99.835%
79.0	3.846	0.482	1864.338	.020%	99.861%
80.0	3.051	0.372	1864.71	.015%	99.881%
81.0	2.454	0.298	1865.008	.012%	99.897%
82.0	2.164	0.250	1865.258	.010%	99.910%
83.0	1.943	0.223	1865.481	.009%	99.922%
84.0	1.798	0.204	1865.685	.008%	99.933%
85.0	1.787	0.196	1865.881	.008%	99.944%
86.0	1.787	0.195	1866.076	.008%	99.954%
87.0	1.862	0.200	1866.276	.008%	99.965%
88.0	1.926	0.207	1866.483	.008%	99.976%
89.0	2.024	0.217	1866.7	.009%	99.988%
90.0	2.164	0.230	1866.929	.009%	100.000%

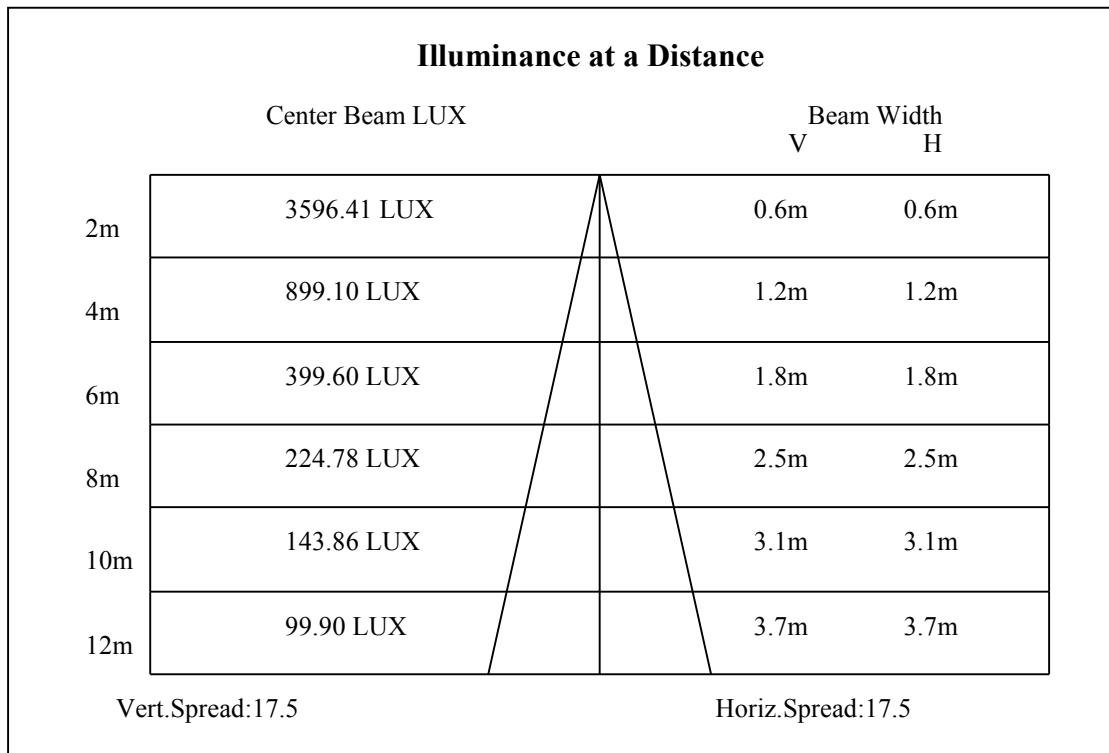
ZONAL LUMEN SUMMARY

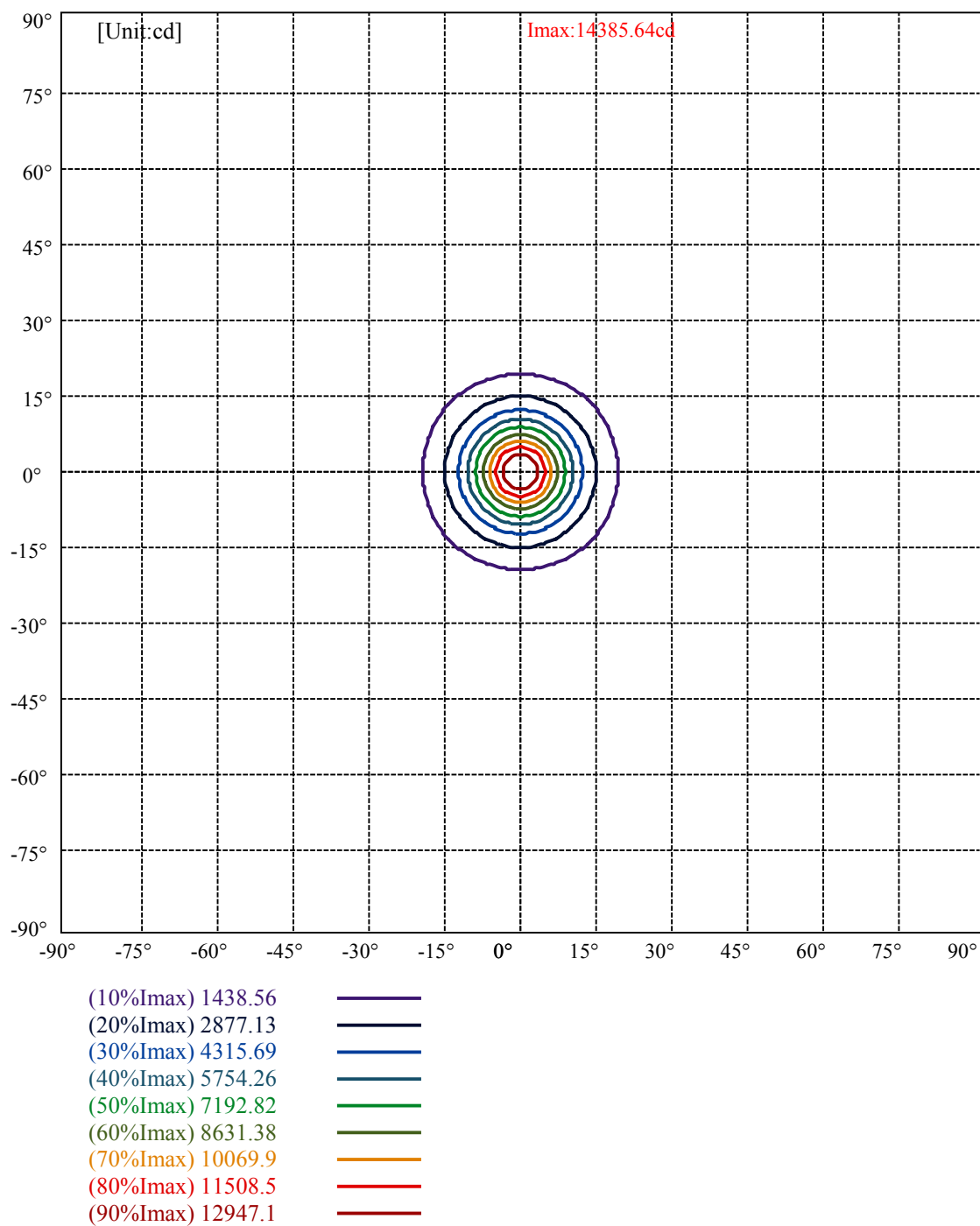
Zone	Lumens	%Lamp	%Fixt
0-30	1841.09	75.30%	98.62%
0-40	1845.13	75.47%	98.83%
0-60	1852.12	75.75%	99.21%
0-90	1866.70	76.35%	99.99%
0-120	1866.70	76.35%	99.99%
0-180	1866.93	76.36%	100.00%
60-90	14.95	0.61%	0.80%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-16.57	1493.54	61.09%	80.00%

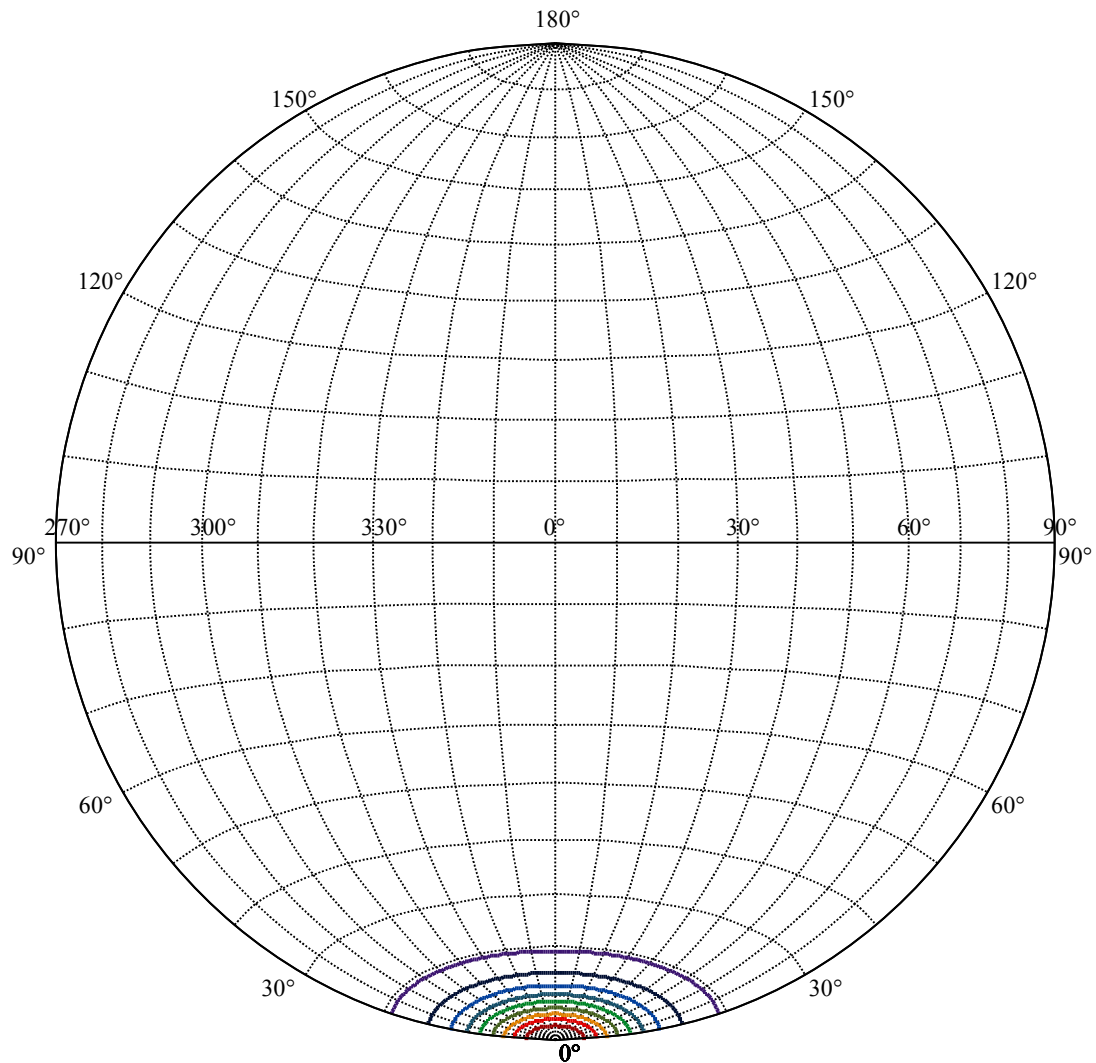
ZONAL LUMEN SUMMARY

0-10	894.71
10-20	797.77
20-30	148.61
30-40	4.04
40-50	3.46
50-60	3.53
60-70	4.81
70-80	7.79
80-90	1.99
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









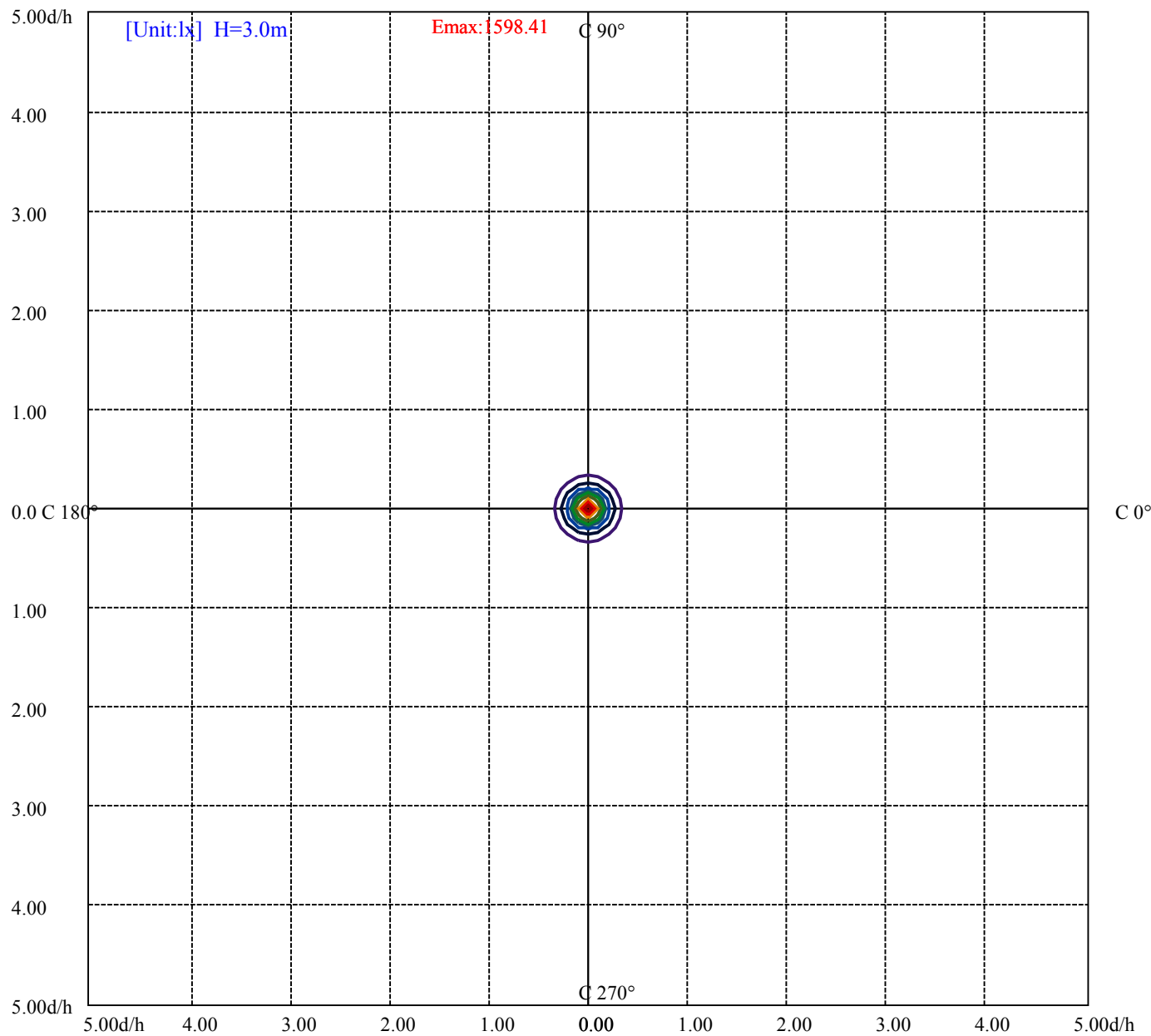
House

[Unit:cd]

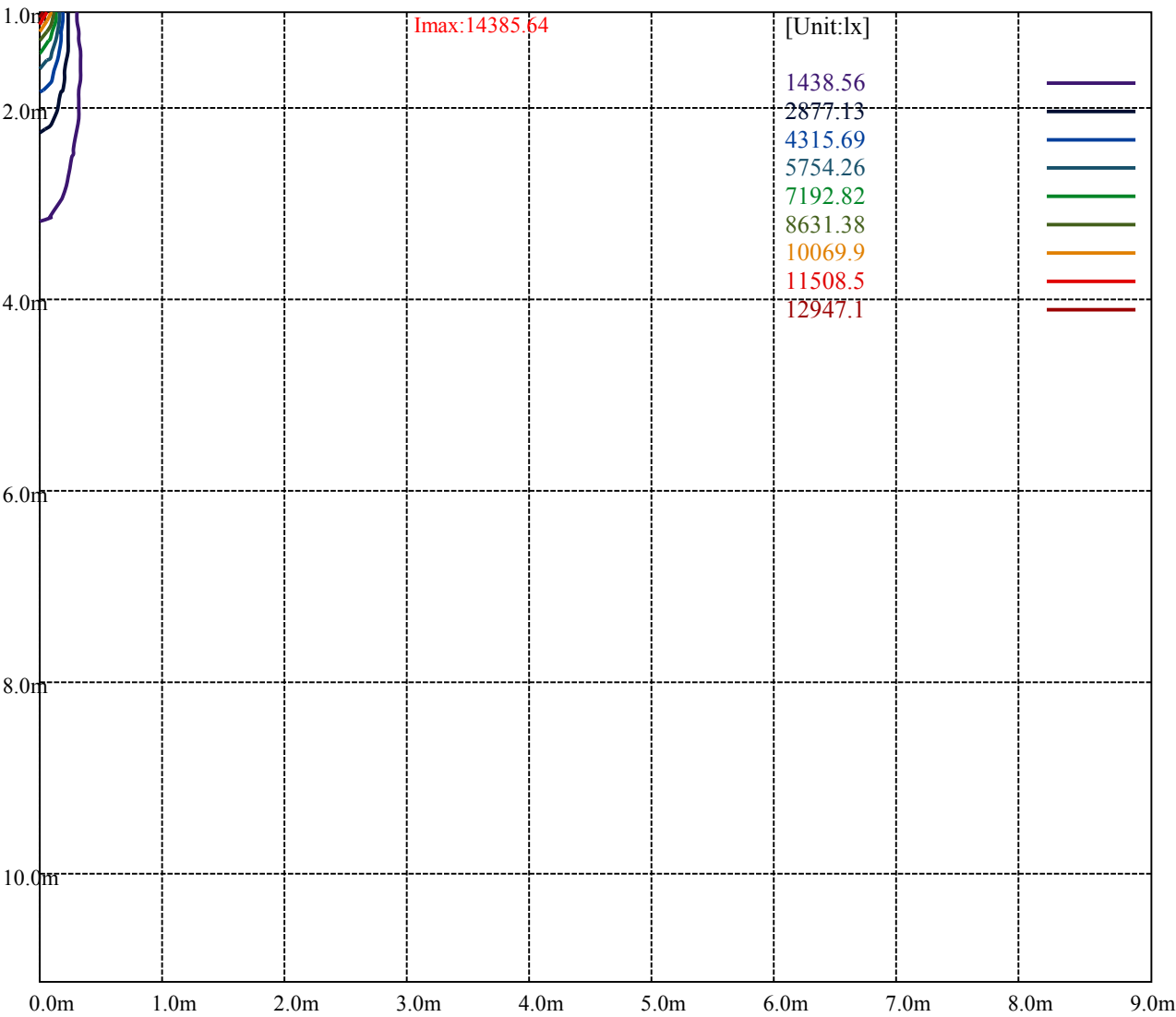
Road

Imax:14385.64

(10%Imax)	1438.56	—
(20%Imax)	2877.13	—
(30%Imax)	4315.69	—
(40%Imax)	5754.26	—
(50%Imax)	7192.82	—
(60%Imax)	8631.38	—
(70%Imax)	10069.9	—
(80%Imax)	11508.5	—
(90%Imax)	12947.1	—



(10%Emax)	159.84	
(20%Emax)	319.68	
(30%Emax)	479.5211	
(40%Emax)	639.3611	
(50%Emax)	799.2011	
(60%Emax)	959.0411	
(70%Emax)	1118.878	
(80%Emax)	1278.722	
(90%Emax)	1438.567	



Luminance Table

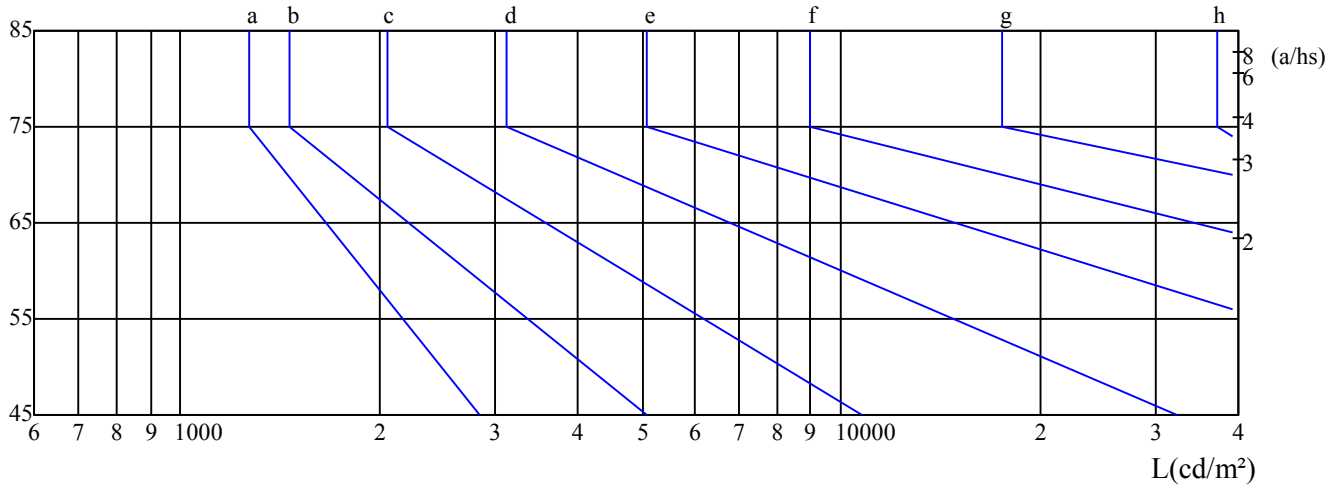
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	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

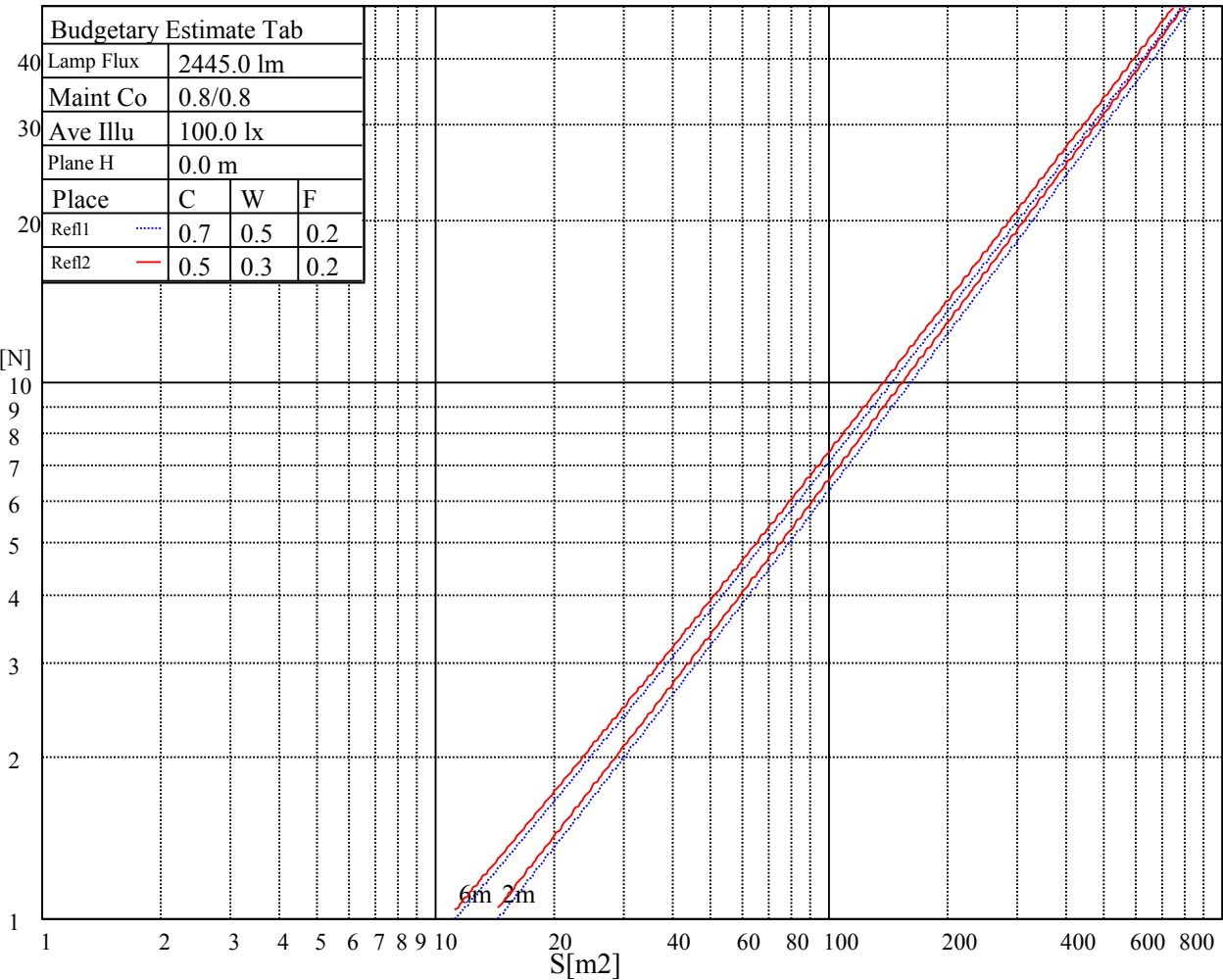
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

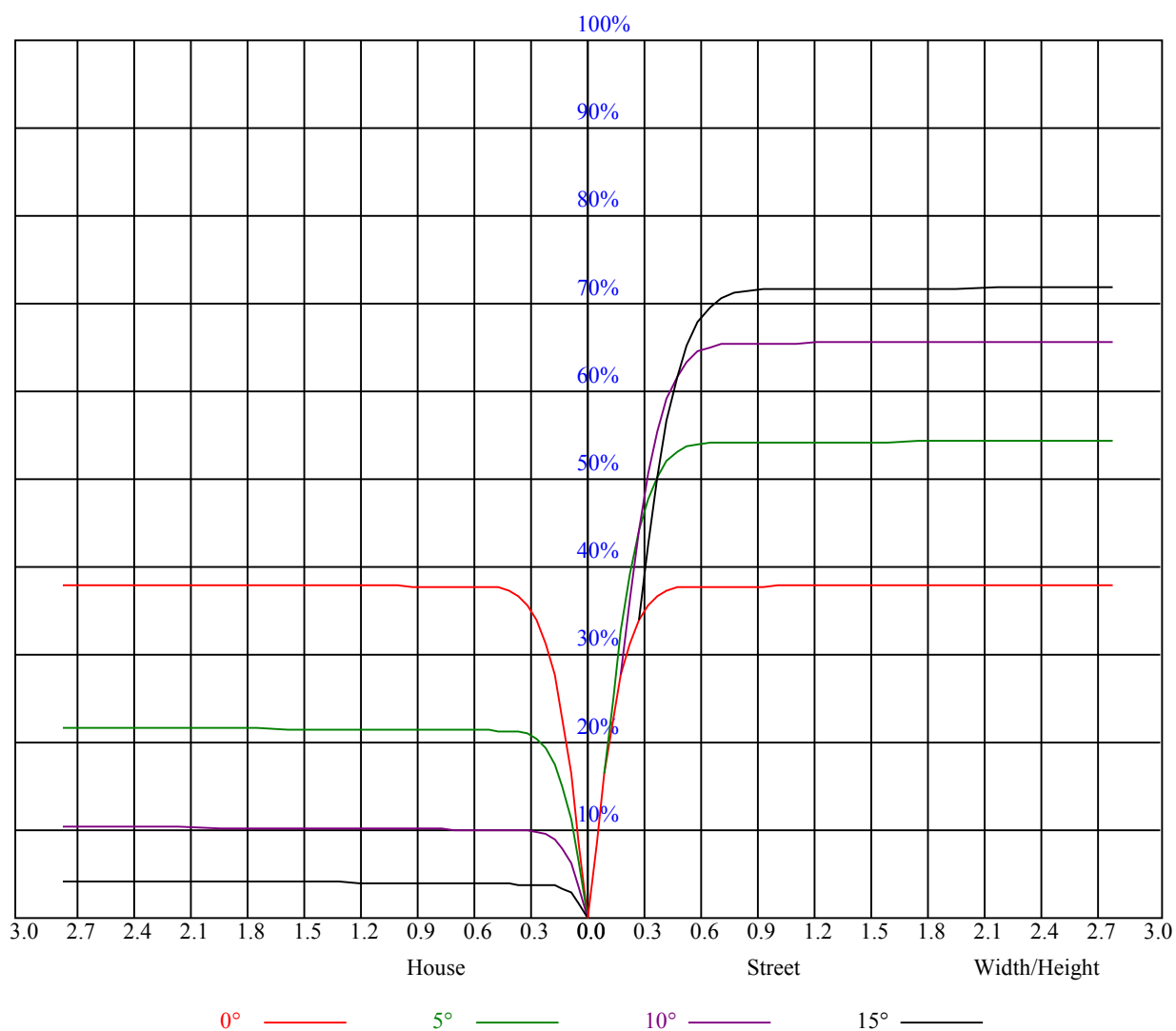
C0 ———

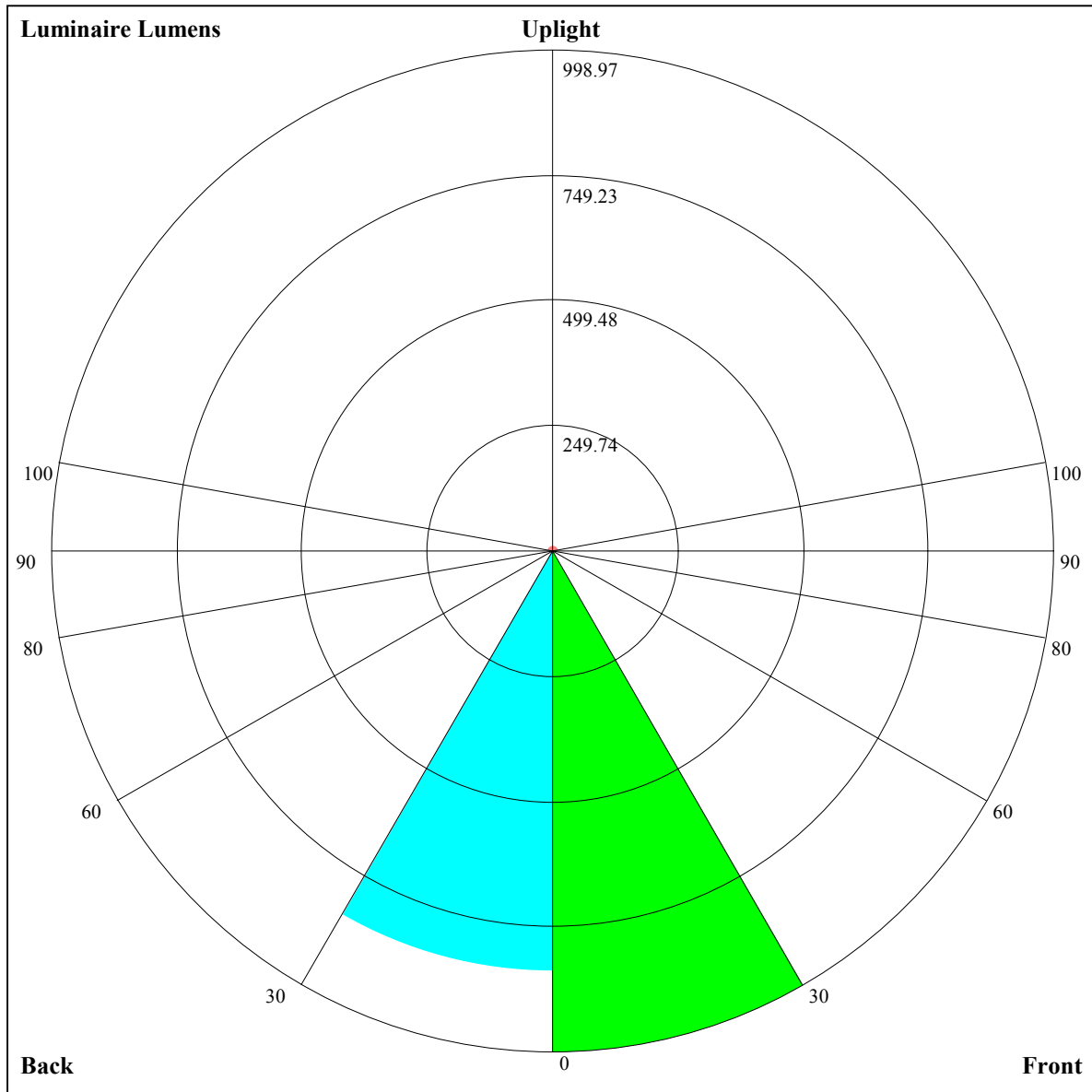
C45 ———

C90 ———



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	0.91	0.91	0.91	0.89	0.89	0.89	0.85	0.85	0.85	0.81	0.81	0.81	0.78	0.78	0.78	0.76
1	0.87	0.85	0.84	0.85	0.84	0.83	0.82	0.81	0.80	0.79	0.78	0.78	0.77	0.76	0.76	0.74
2	0.83	0.81	0.79	0.82	0.80	0.78	0.79	0.78	0.77	0.77	0.76	0.75	0.75	0.74	0.74	0.72
3	0.80	0.78	0.76	0.79	0.77	0.75	0.77	0.75	0.74	0.76	0.74	0.73	0.74	0.73	0.72	0.71
4	0.78	0.75	0.73	0.77	0.74	0.72	0.75	0.73	0.72	0.74	0.72	0.71	0.73	0.71	0.70	0.69
5	0.75	0.73	0.70	0.75	0.72	0.70	0.73	0.71	0.70	0.72	0.70	0.69	0.71	0.70	0.68	0.68
6	0.73	0.70	0.68	0.73	0.70	0.68	0.72	0.70	0.68	0.71	0.69	0.67	0.70	0.68	0.67	0.66
7	0.71	0.69	0.67	0.71	0.68	0.67	0.70	0.68	0.66	0.70	0.68	0.66	0.69	0.67	0.66	0.65
8	0.70	0.67	0.65	0.69	0.67	0.65	0.69	0.67	0.65	0.68	0.66	0.65	0.68	0.66	0.64	0.64
9	0.68	0.66	0.64	0.68	0.65	0.64	0.67	0.65	0.64	0.67	0.65	0.63	0.66	0.65	0.63	0.63
10	0.67	0.64	0.63	0.67	0.64	0.62	0.66	0.64	0.62	0.66	0.64	0.62	0.65	0.63	0.62	0.61





Luminaire Lumens:

FL=998.97,FM=5.5,FH=5.94,FVH=1.07

BL=837.44,BM=5.53,BH=6.41,BVH=1.19

UL=2.36,UH=11.23

BUG Rating:B2-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	14557.33	14589.81	14459.89	14269.63	13397.25	12845.05	11754.57	9211.57	9211.57
45.0	14200.03	14432.04	14520.21	14432.04	14111.86	13485.42	12552.71	11429.75	10181.50
90.0	14353.16	14223.23	13619.98	13179.15	12237.17	10613.05	8851.95	8361.46	7238.50
135.0	14432.04	14302.11	13935.53	13267.32	12325.33	11188.45	9940.20	8682.67	7513.30
180.0	14557.33	14320.68	13810.24	12984.26	11907.70	10687.29	9401.92	8167.59	7049.27
225.0	14200.03	13517.90	12631.59	11763.85	8735.01	8735.01	8019.01	6933.63	5975.41
270.0	14353.16	14329.96	14125.78	13647.83	12886.81	11893.78	10733.70	9490.09	8269.68
315.0	14432.04	14362.44	14074.74	13499.34	13016.74	11555.04	9081.64	8592.09	8353.58
360.0	14557.33	14589.81	14459.89	14269.63	13397.25	12845.05	11754.57	9211.57	9211.57
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	8000.45	6923.43	5978.65	5120.19	4370.78	3733.20	3192.13	2727.63	2329.96
45.0	8914.69	7726.76	6668.76	5740.70	4919.36	4204.75	3592.22	3077.14	2631.67
90.0	6251.97	5379.59	4612.07	3943.87	3382.39	2906.75	2499.33	2280.31	1813.95
135.0	6487.79	5578.29	4780.15	4088.74	3504.06	3012.18	2585.27	2288.29	2288.29
180.0	6065.52	5193.14	4446.04	3796.40	3248.84	2784.80	2395.02	2395.02	2013.02
225.0	5117.87	4375.42	3742.01	3206.05	2750.84	2355.48	2138.78	1688.20	1515.12
270.0	7174.56	6209.37	5332.35	4566.69	3907.76	3341.64	2872.97	2459.98	2311.49
315.0	7240.82	6256.15	5380.05	4618.57	3943.87	3371.71	2885.41	2473.34	2110.01
360.0	8000.45	6923.43	5978.65	5120.19	4370.78	3733.20	3192.13	2727.63	2329.96
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	2041.79	1658.50	1432.98	837.44	837.44	701.90	493.69	315.03	177.96
45.0	2399.66	2399.66	1729.50	1441.33	1179.62	931.83	703.06	495.63	314.20
90.0	1636.23	1360.13	872.15	872.15	647.70	445.80	276.01	149.93	64.13
135.0	1659.43	1384.72	1123.94	879.39	656.65	455.73	288.68	232.99	124.92
180.0	1503.05	1238.55	987.05	753.64	539.72	351.32	257.58	257.58	33.04
225.0	911.22	911.22	724.54	514.57	330.53	186.50	83.99	25.80	9.19
270.0	2016.74	1547.13	1282.17	1030.66	798.18	580.09	386.59	230.67	230.67
315.0	1784.72	1490.99	890.80	890.80	799.30	584.59	392.11	237.49	124.08
360.0	2041.79	1658.50	1432.98	837.44	837.44	701.90	493.69	315.03	177.96
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	81.58	25.71	9.93	9.19	8.54	7.93	7.66	7.01	6.64
45.0	314.20	59.77	29.14	8.96	8.17	7.84	7.29	6.77	6.40
90.0	18.98	9.56	8.82	8.31	7.70	7.19	6.91	6.50	6.22
135.0	25.71	10.86	10.02	9.51	8.86	8.35	7.93	7.52	7.15
180.0	11.00	9.42	8.82	8.40	7.75	7.42	7.05	6.59	6.36
225.0	8.26	7.66	7.05	6.59	6.22	5.89	5.71	5.24	5.06
270.0	41.11	11.04	9.00	8.31	7.93	7.10	6.68	6.40	6.13
315.0	47.47	12.67	10.12	9.33	8.58	7.98	7.52	7.10	6.64
360.0	81.58	25.71	9.93	9.19	8.54	7.93	7.66	7.01	6.64
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	6.40	5.89	5.75	5.48	5.24	5.06	4.87	4.64	4.50
45.0	6.03	5.71	5.43	5.10	4.97	4.78	4.55	4.36	4.22
90.0	5.99	5.75	5.43	5.24	5.10	4.97	4.83	4.69	4.59
135.0	6.77	6.54	6.31	6.13	5.85	5.71	5.52	5.43	5.24
180.0	6.08	5.94	5.66	5.43	5.29	5.15	5.01	4.83	4.73
225.0	4.92	4.73	4.59	4.41	4.32	4.22	4.08	3.94	3.85
270.0	5.85	5.52	5.29	5.10	4.97	4.73	4.59	4.50	4.41
315.0	6.26	6.13	5.75	5.61	5.38	5.15	5.06	4.87	4.73
360.0	6.40	5.89	5.75	5.48	5.24	5.06	4.87	4.64	4.50

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	4.36	4.27	4.08	3.99	3.94	3.90	3.76	3.67	3.62
45.0	4.08	3.94	3.81	3.71	3.67	3.53	3.53	3.43	3.34
90.0	4.50	4.41	4.27	4.18	4.18	4.08	4.04	4.04	4.08
135.0	5.15	5.06	4.97	4.87	4.87	4.83	4.83	4.78	4.87
180.0	4.64	4.50	4.41	4.36	4.32	4.18	4.13	4.13	4.08
225.0	3.81	3.67	3.62	3.57	3.53	3.39	3.39	3.39	3.29
270.0	4.32	4.18	4.13	4.08	4.04	3.99	3.99	4.04	3.99
315.0	4.64	4.55	4.55	4.45	4.41	4.45	4.55	4.50	4.55
360.0	4.36	4.27	4.08	3.99	3.94	3.90	3.76	3.67	3.62
C/ γ (°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	3.57	3.53	3.43	3.43	3.39	3.39	3.39	3.29	3.29
45.0	3.25	3.25	3.16	3.06	3.06	3.02	3.02	2.88	2.83
90.0	4.04	4.08	4.08	4.13	4.08	4.13	4.08	4.04	3.99
135.0	4.87	4.87	4.87	4.92	4.92	4.83	4.83	4.92	5.01
180.0	4.04	3.99	3.94	3.90	3.94	3.99	3.99	4.04	4.13
225.0	3.20	3.20	3.16	3.11	3.11	3.02	2.92	2.97	2.92
270.0	3.99	3.99	3.99	4.04	3.99	3.99	3.94	3.94	3.94
315.0	4.59	4.55	4.50	4.50	4.50	4.55	4.50	4.59	4.87
360.0	3.57	3.53	3.43	3.43	3.39	3.39	3.39	3.29	3.29
C/ γ (°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	3.39	3.43	3.62	3.71	3.99	4.50	5.38	6.59	8.03
45.0	2.83	2.78	2.74	2.69	2.74	2.64	2.60	2.55	2.55
90.0	4.04	4.04	4.08	4.22	4.45	4.83	5.43	6.17	7.15
135.0	5.15	5.43	5.85	6.64	7.61	8.77	9.61	11.79	12.53
180.0	4.22	4.36	4.64	5.06	5.99	7.42	9.42	11.69	13.97
225.0	2.88	2.78	2.78	2.78	2.74	2.69	2.69	2.64	2.55
270.0	3.94	4.04	4.32	4.69	5.06	5.61	6.26	6.82	7.10
315.0	5.38	6.03	6.87	7.93	9.10	10.30	11.18	12.06	12.71
360.0	3.39	3.43	3.62	3.71	3.99	4.50	5.38	6.59	8.03
C/ γ (°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	9.56	11.00	12.02	11.93	10.81	8.40	5.66	3.62	2.64
45.0	2.60	2.55	2.51	2.51	2.46	2.46	2.41	2.37	2.32
90.0	7.89	8.12	8.21	8.07	7.56	7.15	6.40	5.48	4.45
135.0	13.41	14.29	14.34	13.92	12.99	11.60	9.33	6.22	4.18
180.0	15.78	16.19	15.45	12.48	10.77	7.66	4.13	2.78	2.41
225.0	2.60	2.60	2.51	2.41	2.37	2.32	2.23	2.04	1.90
270.0	7.24	7.24	7.10	6.73	6.31	5.71	5.20	4.22	3.11
315.0	13.13	13.09	12.58	11.79	10.63	8.72	5.66	4.04	3.39
360.0	9.56	11.00	12.02	11.93	10.81	8.40	5.66	3.62	2.64
C/ γ (°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	1.95	1.76	1.62	1.72	1.86	1.81	1.72	1.67	1.62
45.0	2.27	2.09	2.04	1.86	1.72	1.62	1.53	1.48	1.44
90.0	2.83	2.41	2.13	1.76	1.67	1.53	1.53	1.58	1.53
135.0	3.39	2.83	2.18	1.86	1.86	1.86	1.90	2.04	2.32
180.0	2.09	2.09	2.04	2.04	2.13	2.32	2.83	2.92	3.06
225.0	1.76	1.67	1.67	1.67	1.76	1.86	2.18	2.41	2.46
270.0	2.41	2.04	1.81	1.62	1.53	1.53	1.48	1.53	1.72
315.0	2.92	2.41	2.04	1.86	1.76	1.76	1.72	1.76	2.04
360.0	1.95	1.76	1.62	1.72	1.86	1.81	1.72	1.67	1.62

Intensity data(cd)

Appendix Page: 19 Total:19

C/ γ (°)	90.0
0.0	1.90
45.0	1.44
90.0	1.53
135.0	2.74
180.0	3.20
225.0	2.32
270.0	1.95
315.0	2.23
360.0	1.90